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WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS

6150 THUNDER ROAD: SWM REPORT

NOVEMBER 2021

Prepared For:

LRL Engineering
5430 Canotek Road
Ottawa, Ontario
K1J 9G2
Tel: (877) 632-5664

Prepared By:

J.F. Sabourin and Associates Inc.
52 Springbrook Drive,
Ottawa, ON
K2S 1B9
Tel: 613-836-3884 Fax: 613-836-0332

6150 THUNDER ROAD: SWM REPORT

In the City of Ottawa, Ontario

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TABLE OF CONTENTS:

FIGURES:

TABLES:

APPENDICES:

1 Introduction

J.F Sabourin and Associates (JFSA) were commissioned by LRL Associates (LRL) to complete the stormwater management analysis for the proposed industrial development located at 6150 Thunder Road in Ottawa. The proposed development will be a 12.3 ha Industrial Park, comprising primarily of office spaces, loading bays and parking lots. The site under existing conditions is undeveloped vegetated land, with several small drainage channels, which all ultimately discharge to the Bear Brook tributary. These lands under proposed conditions will also discharge to Bear Brook tributary. The site will implement various SWM solutions to ensure that the proposed development does not result in increases in peak flows from existing conditions and will not have any adverse impacts on the existing watercourse. Figure 1 below outlines the approximate extent and location of the proposed development. The following document outlines and assesses the various stormwater management solutions that are proposed for this site.

Figure 1: Development Overview

1.1 Background Data / Information

The following section outlines the background data and information used to support and supplement this study:

1.1.1 Topographic Survey

A detailed topographic survey of the site was completed by Annis, O'Sullivan Vollebekk LTD (AOV) in March 2021. This topographic information has been merged with the City of Ottawa LiDAR to determine the pre-development conditions of the site.

1.1.2 LiDAR

LiDAR data was purchased from the City of Ottawa to supplement locations where there is insufficient topographic detail included in the survey by AOV. This LiDAR was merged with AOV's survey to provide a complete picture of the topography throughout the development area.

1.1.3 Existing Reports

The following background documents were reviewed in preparing this report:

- 5368 Boundary Road and 6150 Thunder Road Functional Serviceability Report, LRL, December 2020
- Environmental Impact Statement, 6150 Thunder Road, Ottawa, Kilgore & Associates LTD, December 2020
- 6150 Thunder Road: Floodplain Mapping, JFSA, July 2021
- Stormwater Management Planning and Design Manual, Ministry of the Environment, March 2003.
- Erosion and Sediment Control Guidelines for Urban Construction, Conservation Halton et al., December 2006.
- City of Ottawa Sewer Design Guidelines, City of Ottawa, October 2012.
- Technical Bulletin ISDTB-2014-01, Revisions to Ottawa Design Guidelines – Sewer, City of Ottawa, February 2014.
- City of Ottawa Technical Bulletin PIEDTB-2016-01, City of Ottawa, September 2016.
- City of Ottawa Technical Bulletin ISTB-2018-04, City of Ottawa, June 2018.

2 Existing Conditions

Given that the site under existing conditions is a large natural undeveloped area, it was determined that the SWMHYMO modelling software would be the most suitable hydrologic modelling program to use to determine the pre-development flows. The following outlines the derivation of key model parameters used to represent these existing lands, and in turn, determined the post-development target release rates.

2.1.1 Drainage Areas

As identified above, LiDAR data was merged with the detailed topographic survey of the site completed by AOV to derive a single Digital Terrain Model (DTM). This data was imported into GIS software where watershed delineation algorithms were applied. Figure A1 in Appendix A provides a visual overview of the existing drainage areas within the study area. Note that the majority of the site drains directly to the Bear Brook tributary, with a small portion of the site in the northeast corner draining to a roadside ditch before discharging to the Bear Brook tributary

2.1.2 Land Use

Land use data has been taken from Land Information Ontario's (LIO) Southern Ontario Land Resource Information System (SOLRIS) data package, which is a primary data layer that provides a comprehensive, standardized, landscape-level inventory of natural, rural and urban lands throughout southern Ontario. This data was discretized based on the respective subcatchments. Figure A2 in Appendix A provides a visual overview of the respective land use data for each of the subcatchments within the study area. Under existing conditions, the site primarily consists of plantation and treed swamplands.

2.1.3 Soil/Infiltration Data

Soil data within the study area has been taken from the Soil Survey Complex Data available on Land Information Ontario (LIO). Figure A3 in Appendix A provides a visual overview of the respective soil type data for each of the subcatchments within the study area. Under existing conditions, the site primarily consists of Allendale and Cheney Soils both of which are Loamy Fine Sand soils (Hydrologic Soil Type C)

2.1.4 Curve Number (CN)

Based on the underlying Land Use Type and Soil Classification at each location within a subcatchment, a Curve Number (CN) was calculated, based on applicable values outlined in Tables A2 and A3 in the SWMHYMO Manual. Each Curve Number was then weighted based on the total area within a given subcatchment to determine the weighted CN for that subcatchment. Table A1 in Appendix A provides a full summary of the CN calculations for each of the pre-development subcatchments.

2.1.5 Time to Peak (t_p)

The time to peak values for each of the subcatchments has been calculated based on existing topography. Flow paths have been discretized based on the topographic data using GIS tools and the longest major flow path within each subcatchment identified; refer to Figure A4 in Appendix A for the flow paths discretized for each subcatchment. The upstream and downstream topographic elevations and flow lengths were identified for each subcatchment and used in the calculations. For these natural subcatchments, the Federal Aviation Administration (FFA) method was determined to be the most appropriate method to calculate the Time to Peak. Full details of these calculations have been provided in Table A2 in Appendix A, along with other time to peak values using alternative t_p calculation methods.

2.2 Results

The following table outlines the peak flow at key locations within the study area based on the SWMHYMO simulations. Note that both the 3 Hour Chicago and 24 Hour SCS design storms were assessed in this study. The peak flows determined by this model have been used to set the maximum allowable post-development release rates. Full input and summary files of the proposed SWMHYMO models have been provided in Appendix A.

Table 1: Pre-Development Peak Flows

Event	Peak Flow (m^3/s)	
	Bear Brook Trib	Thunder Road Ditch
25mm CHI 4Hr	0.020	0.001
2-Year CHI 3Hr	0.039	0.002
5-Year CHI 3Hr	0.072	0.005
100-Year CHI 3Hr	0.198	0.013
100-Year SCS 24 Hr	0.270	0.019
100-Year CHI 3Hr +20%	0.276	0.019

3 Proposed Conditions

3.1 Model Overview

3.1.1 Drainage Areas / Imperviousness

Under proposed conditions, the drainage areas have been delineated by LRL based on the site's proposed grading. The impervious values for each of these areas are based on the proposed development footprint of the site. For these lands, the following Horton's Infiltration parameters have been assumed: F_o=76.2 mm/hr, F_c=13.2 mm/hr, DCAY=4.14 /hr, F=0 mm, and initial abstraction values of 1.57mm and 4.67 mm for impervious and pervious surfaces, all as per the City of Ottawa design guidelines. An overview of the proposed development drainage areas and imperviousness have been provided in Figure B1 of Appendix B.

3.1.2 Storm Sewer Network & Pumping Station

The storm sewer network was designed by LRL based on rational method calculations and general site grading constraints (see Appendix B for full rational method calculations). The storm sewer network plan has been incorporated into the model based on this design, with exit losses applied to the model to account for losses that occur at bends in the system. Due to grade raise restrictions across the site, flows captured by the storm sewer network will need to be pumped to the proposed SWM pond. At this stage of the design, a conceptual pumping system has been implemented that conveys all flows from this pipe network to the SWM pond unobstructed, as the proposed pumping station will be sufficiently sized to convey the full runoff from the site to the pond without flooding the site. As such full pump operation curves will be implemented in future iterations of this analysis. The full storm sewer network has been outlined in Figure B2 of Appendix B.

3.1.3 Road Storage & ICDs

The site grading has been optimized to make full use of any potential major system ponding locations throughout the site. This storage has been represented in the model through the use of storage nodes, which are depth/area curves based on LRL's detailed grading of the site. Inlet control devices (ICD) are proposed to be implemented downstream of each of the CBs to make full use of this storage during extreme events. For emergencies, a major system flow route from these areas to the SWM pond has also been provided in the event of a blockage in the storm sewer network or a malfunction with the storm sewer pumping system. The required ICD sizes have been outlined in Figure B2 of Appendix B. Figure B3 of Appendix B outlines the major system flow routes within the development.

3.1.4 Roof Top Storage

To optimize storage volume throughout the site, rooftop storage is proposed on all buildings. per MTO guidelines, this rooftop storage has not been accounted for in this analysis to ensure a conservative design (as the flow constriction device that creates the rooftop storage could be easily removed post-construction). As such flows from these locations to the storm sewer network have been restricted based on the capacity of the lead pipe from the rooftop storage to the storm sewer network (which conversely, can not be easily removed or replaced). The ponding option has been implemented at these locations within the model, with a ponding area reflective of the respective roof footprints. This representation intends to ensure that that head can build on the lead pipe increasing flows to the storm sewer as if no rooftop storage was provided.

3.1.5 SWM Ponds

There are 3 SWM ponds proposed throughout the site. These ponds will be dry ponds and will attenuate runoff from the development to match the pre-development rates that have been specified above in Section 2.2. Ponds 1 & 2 are located in the northwest of the development and service the larger portion of the site and will discharge directly to the Bear Brook tributary through an outlet in Pond 1. The pond 1 outlet will consist of 3 components, a 150 mm circular orifice at the invert elevation of the pond (75.8 m), a 0.40 m wide x 0.5 m high rectangular opening 45cm above the pond invert (76.25 m) and a 5 m wide emergency overflow weir 0.85m above the pond invert (76.6m). Pond 1 and Pond 2 are directly connected via two 525 mm CSPs that pass under the proposed access road to the site, with the intention of the two ponds to hydraulically operate as a single system, making full use of potential storage volume throughout the site without impeding on the lot layout.

Pond 3 is located in the northeast corner of the development servicing a smaller portion of the development and will discharge to the roadside ditch along thunder road, before discharging to the Bear brook tributary. Given the small release rates for this location, a conventional orifice outlet configuration is not a feasible option as the orifice opening sizes would be so small that it would be at risk of blockage. Alternatively, a hydrovex flow control device is proposed to be implemented at this location to limit the flows to the required rate while avoiding the risk of blockage. For this analysis, a Veolia 75 VHV-1 hydrovex unit has been assumed. A 5 m wide emergency overflow weir set 0.60 m above the pond invert (77.25 m) has also been included in the pond outlet structure.

3.1.6 Swale

A grass swale will be implemented along with the southern extent of the site. This swale will capture runoff from the parking spaces at the back of the building and will provide hydration to an existing stream to the south. To attenuate runoff from this location a 50mm orifice plate will be implemented at the swale outlet, for the more extreme events a 20m overflow with a crest 0.75m above the swale invert will also be implemented.

3.1.7 Oil and Grit Separator (OGS) Units

Throughout this site, Oil and grit separator (OGS) units will be implemented to provide enhanced (80%) water quality treatment for the site. OGS units will be implemented upstream of both SWM ponds and downstream of the proposed swale. The exact details of these OGS units will be determined in future submissions.

3.2 Results

The following section outlines the various results for the proposed development

3.2.1 Post-Development Release Rates

Table 2 outlines the peak flows from the development from Pond 1, the southern swale and Pond 3. Note that the peak flows from Pond 1 and the southern swale have been summed together to determine the total peak flow to the Bear Brook tributary. As seen below the peak flows to both the Bear Brook Tributary and the Thunder Roadside Ditch are either equal to or less than that under pre-development conditions as outlined in Table 1 above, as such the proposed development should have no negative impacts on the existing floodplain. Additionally, peak flows for the 25mm event are also either less than or equal to pre-development conditions and as such the proposed development will not exacerbate any existing erosion concerns.

Table 2: Post Development Peak Flows

Event	Pond 1 Outlet	Swale Outlet	Bear Brook Trib [1]	Thunder Road Ditch
25mm CHI 4Hr	0.019	0.002	0.021	0.000
2-Year CHI 3Hr	0.023	0.003	0.025	0.002
5-Year CHI 3Hr	0.037	0.003	0.040	0.003
100-Year CHI 3Hr	0.164	0.004	0.168	0.004
100-Year SCS 24 Hr	0.225	0.004	0.229	0.004
100-Year CHI 3Hr +20%	0.228	0.004	0.233	0.043

[1] Sum of peak flows out of Pond 1 outlet and Swale Outlet

3.2.2 SWM Pond

Table 3 outlines the peak water levels and depths for Pond 1, 2 & 3 for the various return periods. Note that flows are contained within the pond for all events, including the stress test.

Table 3: SWM Pond Peak Water Surface Elevation (WSE) and Depth

Event	Pond 1		Pond 2		Pond 3	
	Max WSE (m)	Max Depth (m)	Max WSE (m)	Max Depth (m)	Max WSE (m)	Max Depth (m)
25mm CHI 4Hr	76.09	0.29	76.09	0.29	76.72	0.07
2-Year CHI 3Hr	76.18	0.38	76.18	0.38	76.80	0.15
5-Year CHI 3Hr	76.31	0.51	76.31	0.51	76.90	0.25
100-Year CHI 3Hr	76.56	0.76	76.56	0.76	77.21	0.56
100-Year SCS 24 Hr	76.65	0.85	76.65	0.85	77.18	0.53
100-Year CHI 3Hr +20%	76.65	0.85	76.65	0.85	77.27	0.62

3.2.3 HGL Summary

Table 4 outlines the maximum HGL within the storm sewer trunk system for both the 100 Year Chicago 3Hr and 100 Year SCS 24Hr events. Refer to Figure B2 in Appendix B for the exact location of each MH. As outlined below the HGL is below the rim elevation for all MHs and as such, the storm sewer network throughout the site is sufficiently sized to convey the proposed flows.

Table 4: Storm Sewer 100 Year HGL

ID	100 Year Chicago 3Hr			100 Year SCS 24 Hr		
	HGL (m)	Rim Elevation (m)	Freeboard (m)	HGL (m)	Rim Elevation (m)	Freeboard (m)
STM_MH01	76.16	77.50	1.34	76.16	77.50	1.34
STM_MH02	75.98	77.15	1.17	75.98	77.15	1.17
STM_MH03	75.88	77.30	1.42	75.88	77.30	1.42
STM_MH04	75.77	77.15	1.38	75.76	77.15	1.39
STM_MH05	75.64	77.15	1.51	75.64	77.15	1.51
STM_MH06	75.46	77.00	1.54	75.45	77.00	1.55
STM_MH07	75.11	76.90	1.79	75.09	76.90	1.81
STM_MH08	75.09	76.95	1.86	75.04	76.95	1.91
STM_MH09	74.97	77.23	2.26	74.91	77.23	2.32
STM_CB109	77.08	77.10	0.02	76.02	77.10	1.08
STM_CBMH102	75.92	76.90	0.98	75.41	76.90	1.49
STM_CBMH103	76.03	76.80	0.77	75.47	76.80	1.33
STM_CBMH104	76.14	76.80	0.66	75.52	76.80	1.28
STM_CBMH105	76.27	76.90	0.63	75.58	76.90	1.32
STM_CBMH106	76.47	77.20	0.73	75.65	77.20	1.55
STM_CBMH107	76.62	77.20	0.58	75.71	77.20	1.49
STM_CBMH108	76.85	77.20	0.35	75.87	77.20	1.33
STM_MH09	74.97	77.23	2.26	74.91	77.23	2.32
STM_MH101	75.53	77.23	1.70	75.21	77.23	2.02

3.2.4 Road Ponding

Table 5 outlines the maximum ponding depth and elevation throughout the major system ponding locations. Refer to Figure B3 in Appendix B for the exact location of each of these items. Based on this table below it is seen that the maximum ponding elevation for both 100-year events is less than 0.35m. for the stress test the maximum ponding elevation is below the finished floor level (77.5m and 78.0m), as such the major system ponding elevations do not pose a risk to the proposed buildings.

Table 5: Maximum Surface Ponding Depth & Elevation

Location	100 Year Chicago		100 Year SCS 24 Hr		100 Year Chicago 3Hr +20%	
	WSE (m)	Depth (m)	WSE (m)	Depth (m)	WSE (m)	Depth (m)
SURF-WS-01	77.57	0.31	77.55	0.30	77.59	0.33
SURF-WS-02	77.59	0.28	77.59	0.28	77.60	0.29
SURF-WS-03	77.20	0.29	77.18	0.27	77.25	0.34
SURF-WS-04	77.25	0.34	77.21	0.30	77.31	0.41
SURF-WS-05	77.20	0.29	77.18	0.28	77.23	0.32
SURF-WS-06	77.25	0.34	77.23	0.32	77.28	0.37
SURF-WS-07	77.20	0.29	77.18	0.28	77.23	0.32
SURF-WS-08	77.21	0.30	77.19	0.28	77.23	0.33
SURF-WS-09	77.15	0.25	77.14	0.23	77.18	0.28
SURF-WS-10	77.08	0.17	77.06	0.16	77.09	0.19
SURF-WS-11	77.07	0.31	77.06	0.30	77.08	0.32
SURF-WS-12	77.08	0.32	77.06	0.30	77.09	0.33
SURF-WS-13	77.01	0.25	76.99	0.23	77.06	0.30
SURF-WS-14	77.06	0.30	77.03	0.27	77.09	0.33
SURF-WS-15	77.07	0.31	77.05	0.30	77.10	0.34
SURF-WS-16	77.05	0.30	77.03	0.28	77.07	0.31
SURF-WS-18	77.01	0.10	77.00	0.09	77.02	0.11
SURF-WS-19	76.85	0.05	76.85	0.05	76.87	0.06
SURF-WS-20	76.89	0.08	76.87	0.07	76.91	0.10
SURF-WS-21	76.98	0.05	76.98	0.05	76.99	0.06

3.3 Erosion and sediment control during and after construction

Silt and erosion control strategies shall be implemented during construction activities to minimize the transfer of silt off-site. The following measures should be implemented:

i) Silt control fences shall be installed as required to prevent the movement of silt off-site during rainfall events.

ii) Construction of a mud mat shall be installed at the site entrance to promote self-cleaning of truck tires when leaving the site.

iii) All catch basins shall be equipped with a crushed stone filter to prevent the capture of silt in the storm sewer system.

iv) Regular cleaning of the adjacent roads shall be undertaken during the construction activities.

v) Regular inspection and maintenance of the silt control measures shall be undertaken until the site has been stabilized.

vi) The erosion and sediment control devices shall be removed after the site has been stabilized.

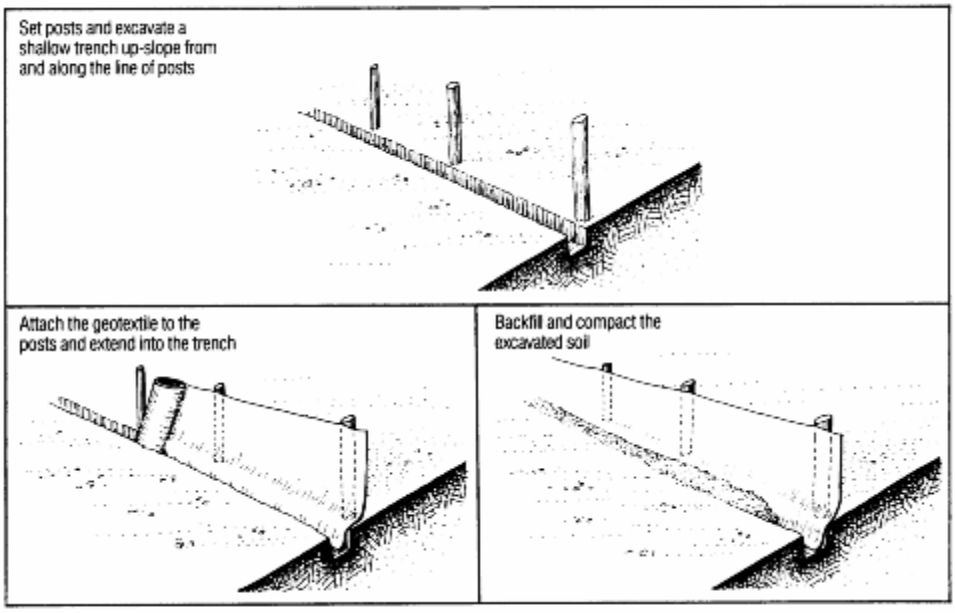

Figure 7: Typical installation of silt fences

4 CONCLUSION

As documented above, J.F. Sabourin and Associates Inc (JFSA) has completed a detailed hydrologic analysis of the proposed development site under pre-development conditions to establish target release rates. A detailed PCSWMM model was then created based on the detailed design developed by LRL to assess the hydrologic and hydraulic operations of the site under post-development conditions to ensure that: the developments storm sewer network is sufficiently sized, the proposed SWM ponds have sufficient capacity to attenuate flows to pre-development conditions and that the major system storage locations do not pose a risk to the proposed building. Based on this analysis it was determined that the proposed SWM infrastructure is sufficiently sized to ensure no risk to both the proposed development and surrounding existing lands

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Appendix A

Pre-Development Model
(SWMHYMO)

N

Legend

Subcathcments
<Name>
<Area>

SCALE: 1:3000

0 50 100 m

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WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
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Figure A1: Subcatchments

PROJECT	2120(01)-21
DRAWN	MP
DATE	NOV 2021

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N

Legend

Land Use

- Plantation
- Treed Swamp
- Subcatchments

SCALE: 1:3000

0 50 100 m

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Figure A2: Land Use

PROJECT	2120(01)-21
DRAWN	MP
DATE	NOV 2021

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N

Legend

Soil Name (Type)

- ALLENDALE (C)
- CHENEY (C)
- Subcatchments

SCALE: 1:3000

0 50 100 m

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Figure A3: Soil Types

PROJECT	2120(01)-21
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DATE	NOV 2021

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N

Legend

- Development Area
- Streams
- Major Flow Path

Terrain (m)

- 70
- 72
- 74
- 76
- 78
- 80
- 82
- 84

SCALE: 1:3000

0 50 100 m

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Figure A4: Terrain

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Table A1: Calculation of SCS Curve Number (CN) and Modified Curve Number (CN*)

EWS-01 (11.632 ha)							
Area (ha)	Land Type	Soil Name	Soil Condition	Soil Group	CN	% of Catchment	Weighted CN
5.833	Treed Swamp	CHENEY	C	Good	50	50.1%	25.1
5.798	Plantation	ALLENDALE	C	Good	70	49.8%	34.9
						CN	**60.0**

EWS-02 (0.669 ha)							
Area (ha)	Land Type	Soil Name	Soil Condition	Soil Group	CN	% of Catchment	Weighted CN
0.669	Treed Swamp	CHENEY	C	Good	50	100.0%	50.0
						CN	**50.0**

Table A2: Time to Peak Calculations

Parameter	Units	EWS-01	EWS-02
Area	ha	11.63	0.67
CN	-	60	50
Ptotal to calc C from CN, use 2	P(mm)	43.2	43.2
yr 12 hr SCS stom	Ia(mm)	4.67	4.67
	RV(mm)	7.1	5.1
C	-	0.17	0.12
Length of Channel	m	514	120
	ft	1686	394
Elevation of Head Water	m	77.04	77.00
	ft	253	253
Elevation of Outlet	m	76.22	76.83
	ft	250	252
Average Slope	m/m	0.16%	0.14%
	ft/ft	0.16%	0.14%
Kirpich			
Time of Concentration	mins	28	10
Time to Peak	min	19	7
Time to Peak	Hours	0.32	0.11
FAA			
Time of Concentration	mins	128	68
Time to Peak	mins	85	45
Time to Peak	Hours	1.42	0.75
Barnsby Williams			
Time of Concentration	mins	33	11
Time to Peak	mins	22	7
Time to Peak	Hours	0.37	0.12
SCS			
Time of Concentration	mins	210	90
Time to Peak	mins	140	60
Time to Peak	Hours	2.33	1.00
Selected Method			
FAA			
Time to Peak	min	85	45
Time to Peak	Hours	1.42	0.75

Note:

All methods calculated as per Appendix A of the SWMHYMO manual

Time to Peak calculated as 2/3 Time of concentration

```
20    Metric units / ID numbers OFF
*#*************************************************************************
*#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
*#*************************************************************************
*#  Project Name  : [6150 Thunder Road SWM - Existing Conditions]
*#  Project Number: [2196]
*#  Date          : 2021/08/23
*#  Modeller      : J. Burnett, P.Eng.
*#  Company       : J.F. Sabourin and Associates
*#  License #     : 2582634
*#*************************************************************************
*Model developed to set pre-development release rates for future industrial park
*#*************************************************************************
*%  25 mm Storm based on 2-Year, 4-Hour Chicago Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[001]
                   ["25MM4H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
READ STORM          STORM_FILENAME=["storm.001"]
*%-----------------|-------------------------------------------------------|
*DEFAULT VALUES      ICASEdef=[1],  read and print values
*                    DEFVAL_FILENAME=["Ottawa.val"]
*%-----------------|-------------------------------------------------------|
*#########################################################################
*# Pre-Development Drainage Area
*#########################################################################
CALIB NASHYD        NHYD=["EWS-01"], DT=[1](min), AREA=[11.632](ha),
                    DWF=[0](cms), CN=[60], IA=[ 4.67](mm), N=[ 3 ], TP[ 1.42 ](hrs),
                    RAINFALL[ , , -1]
*%-----------------|-------------------------------------------------------|
CALIB NASHYD        NHYD=["EWS-02"], DT=[1](min), AREA=[0.669](ha),
                    DWF=[0](cms), CN=[50], IA=[ 4.67](mm), N=[ 3 ], TP[ 0.75 ](hrs),
                    RAINFALL[ , , -1]
*%-----------------|-------------------------------------------------------|
*#########################################################################
*# STORMS
*#########################################################################
*%  25 mm Storm based on 2-Year, 3-Hour Chicago Storm
*%START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[001]
*%                   ["25MMC3H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  2-Year, 3-Hour Chicago Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[002]
                   ["002YC3H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  5-Year, 3-Hour Chicago Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[005]
                   ["005YC3H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  10-Year, 3-Hour Chicago Storm
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[010]
*%                   ["010YC3H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  25-Year, 3-Hour Chicago Storm
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[025]
*%                   ["025YC3H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  50-Year, 3-Hour Chicago Storm
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[050]
*%                   ["050YC3H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  100-Year, 3-Hour Chicago Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[099]
                   ["100YC3H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  2-Year, 24-Hour SCS Storm
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[102]
```

```
*%                  ["SC24002x.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  5-Year, 24-Hour SCS Storm
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[105]
*%                  ["SC24005x.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  10-Year, 24-Hour SCS Storm
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[110]
*%                  ["SC24010x.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  25-Year, 24-Hour SCS Storm
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[125]
*%                  ["SC24025x.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  50-Year, 24-Hour SCS Storm
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[150]
*%                  ["SC24050x.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  100-Year, 24-Hour SCS Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[199]
                   ["SC24100x.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  2-Year, 12-Hour SCS Storm
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[202]
*%                  ["SC12002c.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  5-Year, 12-Hour SCS Storm
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[205]
*%                  ["SC12005c.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  10-Year, 12-Hour SCS Storm
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[210]
*%                  ["SC12010c.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  25-Year, 12-Hour SCS Storm
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[225]
*%                  ["SC12025c.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  50-Year, 12-Hour SCS Storm
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[250]
*%                  ["SC12050c.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  100-Year, 12-Hour SCS Storm
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[299]
*%                  ["SC12100c.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  July 1st, 1979 Storm - Ottawa International Airport
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[979]
*%                  ["19790701.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  August 4th, 1988 Storm - Ottawa International Airport
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[988]
*%                  ["19880804.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  August 8th, 1996 Storm - Ottawa International Airport
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[996]
*%                  ["19960808.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  100-Year, 24-Hour SCS Storm + 20%
*START              TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[998]
*%                  ["SC24100x+.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
*%  100-Year, 3-Hour Chicago Storm + 20%
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[999]
                   ["100YC3H+.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------|
```

```
133   FINISH
```

```
00001>  ------------------------------------------------------------------------------------------------
00002>
00003>  SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO          222     000    11   5555   ---------
00004>  S       W W W   MM MM   H   H    Y Y    MM MM   O   O          2     0   0   1 1   5       
00005>  SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2     0   0   11    5       Ver 5.500
00006>      S   W W     M   M   H   H     Y     M   M   O   O        222     0   0   11    555     FEB  2015
00007>  SSSSS    W W     M   M   H   H     Y     M   M    OOO        2       0   0   11      5     ---------
00008>                                                               2       0   0   11      5     # 2549237
00009>         StormWater Management HYdrologic Model                222     000    11   555     ---------
00010>
00011>  ************************************************************************************************
00012>  ***************************************  SWMHYMO Ver 5.500  ************************************
00013>  ***************** A single event and continuous hydrologic simulation model  *******************
00014>  *****************       based on the principles of HYMO and its successors    *******************
00015>  *****************                  OTTHYMO-83 and OTTHYMO-89.                 *******************
00016>  ************************************************************************************************
00017>  ***************** Distributed by:  J.F. Sabourin and Associates Inc.          *******************
00018>  *****************                  Ottawa, Ontario: (613) 836-3884            *******************
00019>  *****************                  Gatineau, Quebec: (819) 243-6858           *******************
00020>  *****************                  E-Mail: swmhymo@jfsa.com                   *******************
00021>  ************************************************************************************************
00022>
00023>  ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00024>  ++++++++++++++++++ Licensed user: JFSAinc.                                  ++++++++++++++++++
00025>  ++++++++++++++++++          Ottawa                  SERIAL#:2549237         ++++++++++++++++++
00026>  ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
00027>
00028>  ************************************************************************************************
00029>  *****************          ++++++ PROGRAM ARRAY DIMENSIONS ++++++          *******************
00030>  *****************          Maximum value for ID numbers  :    11          *******************
00031>  *****************          Max. number of rainfall points: 105408         *******************
00032>  *****************          Max. number of flow points   : 105408          *******************
00033>  ************************************************************************************************
00034>
00035>
00036>  ********************************  S U M M A R Y   O U T P U T  ************************************
00037>  ************************************************************************************************
00038>  *                    RUN DATE: 2021-11-02      TIME: 18:26:41      RUN COUNTER: 006029           *
00039>  ************************************************************************************************
00040>  * Input   file: C:\Temp\20211005-Pre-Dev Flows\THUN_v01-EX.dat                                   *
00041>  * Output  file: C:\Temp\20211005-Pre-Dev Flows\THUN_v01-EX.out                                   *
00042>  * Summary file: C:\Temp\20211005-Pre-Dev Flows\THUN_v01-EX.sum                                   *
00043>  * User comments:                                                                                *
00044>  * 1:_____________________________________________________________________________________________*
00045>  * 2:_____________________________________________________________________________________________*
00046>  * 3:_____________________________________________________________________________________________*
00047>  ************************************************************************************************
00048>
00049>
00050> #*************************************************************************
00051> #  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
00052> #*************************************************************************
00053> #  Project Name  : [6150 Thunder Road SWM - Existing Conditions]
00054> #  Project Number: [2196]
00055> #  Date          : 2021/08/23
00056> #  Modeller      : J. Burnett, P.Eng.
00057> #  Company       : J.F. Sabourin and Associates
00058> #  License #     : 2582634
00059> #*************************************************************************
00060> #*************************************************************************
00061>  RUN#:COMMAND#
00062> R0001:C00001-------------------------------------------------------------------------------
00063>       START
00064>        [TZERO =    .00 hrs on        0]
00065>        [METOUT=   2    (1=imperial, 2=metric output)]
00066>        [NSTORM=   1 ]
00067>        [NRUN  = 0001 ]
00068> R0001:C00002-------------------------------------------------------------------------------
00069>       READ STORM
00070>        Filename = storm.001
00071>        Comment  = 25 mm 4 Hours step 10 min, City of Ottawa
00072>        [SDT=10.00:SDUR=   4.00:PTOT=  25.00]
00073> ##########################################################################
00074> # Pre-Development Drainage Area
00075> ##########################################################################
00076> R0001:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00077>      CALIB NASHYD           1.0 01:EWS-01        11.63     .020 No_date    3:21    2.18 .087     .000
00078>        [CN= 60.0: N= 3.00: Tp= 1.42]
00079> R0001:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00080>      CALIB NASHYD           1.0 01:EWS-02          .67     .001 No_date    2:24    1.50 .060     .000
00081>        [CN= 50.0: N= 3.00: Tp=  .75]
00082> ##########################################################################
00083> # STORMS
00084> ##########################################################################
00085>   ** END OF RUN :    1
00086>
00087> ************************************************************************************************
00088>
00089>
00090>
00091>
00092>
00093>  RUN#:COMMAND#
00094> R0002:C00001-------------------------------------------------------------------------------
00095>       START
00096>        [TZERO =    .00 hrs on        0]
00097>        [METOUT=   2    (1=imperial, 2=metric output)]
00098>        [NSTORM=   1 ]
00099>        [NRUN  = 0002 ]
00100> #*************************************************************************
00101> #  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
00102> #*************************************************************************
00103> #  Project Name  : [6150 Thunder Road SWM - Existing Conditions]
00104> #  Project Number: [2196]
00105> #  Date          : 2021/08/23
00106> #  Modeller      : J. Burnett, P.Eng.
00107> #  Company       : J.F. Sabourin and Associates
00108> #  License #     : 2582634
00109> #*************************************************************************
00110> #*************************************************************************
00111> R0002:C00002-------------------------------------------------------------------------------
00112>       READ STORM
00113>        Filename = storm.001
00114>        Comment  = CHICAGO STORM 2 Year, 3 Hours
00115>        [SDT=10.00:SDUR=   3.00:PTOT=  31.86]
00116> ##########################################################################
00117> # Pre-Development Drainage Area
00118> ##########################################################################
00119> R0002:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00120>      CALIB NASHYD           1.0 01:EWS-01        11.63     .039 No_date    2:58    3.76 .118     .000
00121>        [CN= 60.0: N= 3.00: Tp= 1.42]
00122> R0002:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00123>      CALIB NASHYD           1.0 01:EWS-02          .67     .002 No_date    2:03    2.63 .082     .000
00124>        [CN= 50.0: N= 3.00: Tp=  .75]
00125> ##########################################################################
00126> # STORMS
00127> ##########################################################################
00128>   ** END OF RUN :    4
00129>
00130> ************************************************************************************************
00131>
00132>
00133>
00134>
00135>
00136>  RUN#:COMMAND#
00137> R0005:C00001-------------------------------------------------------------------------------
00138>       START
00139>        [TZERO =    .00 hrs on        0]
00140>        [METOUT=   2    (1=imperial, 2=metric output)]
00141>        [NSTORM=   1 ]
00142>        [NRUN  = 0005 ]
00143> #*************************************************************************
00144> #  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
00145> #*************************************************************************
00146> #  Project Name  : [6150 Thunder Road SWM - Existing Conditions]
00147> #  Project Number: [2196]
00148> #  Date          : 2021/08/23
00149> #  Modeller      : J. Burnett, P.Eng.
00150> #  Company       : J.F. Sabourin and Associates
00151> #  License #     : 2582634
00152> #*************************************************************************
00153> #*************************************************************************
00154> R0005:C00002-------------------------------------------------------------------------------
00155>       READ STORM
00156>        Filename = storm.001
00157>        Comment  = CHICAGO STORM  5 Year, 3 Hours
00158>        [SDT=10.00:SDUR=   3.00:PTOT=  42.51]
00159> ##########################################################################
00160> # Pre-Development Drainage Area
00161> ##########################################################################
00162> R0005:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00163>      CALIB NASHYD           1.0 01:EWS-01        11.63     .072 No_date    2:55    6.91 .163     .000
00164>        [CN= 60.0: N= 3.00: Tp= 1.42]
00165> R0005:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00166>      CALIB NASHYD           1.0 01:EWS-02          .67     .005 No_date    2:00    4.91 .115     .000
00167>        [CN= 50.0: N= 3.00: Tp=  .75]
00168> ##########################################################################
00169> # STORMS
00170> ##########################################################################
00171>   ** END OF RUN :   98
00172>
00173> ************************************************************************************************
00174>
00175>
00176>
00177>
00178>
00179>  RUN#:COMMAND#
00180> R0099:C00001-------------------------------------------------------------------------------
00181>       START
00182>        [TZERO =    .00 hrs on        0]
00183>        [METOUT=   2    (1=imperial, 2=metric output)]
00184>        [NSTORM=   1 ]
00185>        [NRUN  = 0099 ]
00186> #*************************************************************************
00187> #  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
00188> #*************************************************************************
00189> #  Project Name  : [6150 Thunder Road SWM - Existing Conditions]
00190> #  Project Number: [2196]
00191> #  Date          : 2021/08/23
00192> #  Modeller      : J. Burnett, P.Eng.
00193> #  Company       : J.F. Sabourin and Associates
00194> #  License #     : 2582634
00195> #*************************************************************************
00196> #*************************************************************************
00197> R0099:C00002-------------------------------------------------------------------------------
00198>       READ STORM
00199>        Filename = storm.001
00200>        Comment  = CHICAGO STORM   100 Year, 3 Hours
00201>        [SDT=10.00:SDUR=   3.00:PTOT=  71.66]
00202> ##########################################################################
00203> # Pre-Development Drainage Area
00204> ##########################################################################
00205> R0099:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00206>      CALIB NASHYD           1.0 01:EWS-01        11.63     .198 No_date    2:50   18.99 .265     .000
00207>        [CN= 60.0: N= 3.00: Tp= 1.42]
00208> R0099:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00209>      CALIB NASHYD           1.0 01:EWS-02          .67     .013 No_date    1:58   13.98 .195     .000
00210>        [CN= 50.0: N= 3.00: Tp=  .75]
00211> ##########################################################################
00212> # STORMS
00213> ##########################################################################
00214>   ** END OF RUN :  198
00215>
00216> ************************************************************************************************
00217>
00218>
00219>
00220>
00221>
00222>  RUN#:COMMAND#
00223> R0199:C00001-------------------------------------------------------------------------------
00224>       START
00225>        [TZERO =    .00 hrs on        0]
00226>        [METOUT=   2    (1=imperial, 2=metric output)]
00227>        [NSTORM=   1 ]
00228>        [NRUN  = 0199 ]
00229> #*************************************************************************
00230> #  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
00231> #*************************************************************************
00232> #  Project Name  : [6150 Thunder Road SWM - Existing Conditions]
00233> #  Project Number: [2196]
00234> #  Date          : 2021/08/23
00235> #  Modeller      : J. Burnett, P.Eng.
00236> #  Company       : J.F. Sabourin and Associates
00237> #  License #     : 2582634
00238> #*************************************************************************
00239> #*************************************************************************
00240> R0199:C00002-------------------------------------------------------------------------------
00241>       READ STORM
00242>        Filename = storm.001
00243>        Comment  = 100 years SCS Type 2 Storm 24 Hours step 10 min, City of Ottawa
00244>        [SDT=10.00:SDUR=  24.00:PTOT= 106.73]
00245> ##########################################################################
00246> # Pre-Development Drainage Area
00247> ##########################################################################
00248> R0199:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00249>      CALIB NASHYD           1.0 01:EWS-01        11.63     .270 No_date   13:30   38.38 .360     .000
00250>        [CN= 60.0: N= 3.00: Tp= 1.42]
00251> R0199:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00252>      CALIB NASHYD           1.0 01:EWS-02          .67     .019 No_date   12:44   29.25 .274     .000
00253>        [CN= 50.0: N= 3.00: Tp=  .75]
00254> ##########################################################################
00255> # STORMS
00256> ##########################################################################
00257>   ** END OF RUN :  998
00258>
00259> ************************************************************************************************
00260>
00261>
00262>
00263>
00264>
00265>  RUN#:COMMAND#
00266> R0999:C00001-------------------------------------------------------------------------------
00267>       START
00268>        [TZERO =    .00 hrs on        0]
00269>        [METOUT=   2    (1=imperial, 2=metric output)]
00270>        [NSTORM=   1 ]
00271>        [NRUN  = 0999 ]
00272> #*************************************************************************
00273> #  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
00274> #*************************************************************************
00275> #  Project Name  : [6150 Thunder Road SWM - Existing Conditions]
00276> #  Project Number: [2196]
00277> #  Date          : 2021/08/23
00278> #  Modeller      : J. Burnett, P.Eng.
00279> #  Company       : J.F. Sabourin and Associates
00280> #  License #     : 2582634
00281> #*************************************************************************
00282> #*************************************************************************
00283> R0999:C00002-------------------------------------------------------------------------------
00284>       READ STORM
00285>        Filename = storm.001
00286>        Comment  = CHICAGO STORM   100 Year, 3 Hours  +20% Stress Test
00287>        [SDT=10.00:SDUR=   3.00:PTOT=  86.00]
00288> ##########################################################################
00289> # Pre-Development Drainage Area
00290> ##########################################################################
00291> R0999:C00003------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00292>      CALIB NASHYD           1.0 01:EWS-01        11.63     .276 No_date    2:48   26.39 .307     .000
00293>        [CN= 60.0: N= 3.00: Tp= 1.42]
00294> R0999:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
00295>      CALIB NASHYD           1.0 01:EWS-02          .67     .019 No_date    1:57   19.72 .229     .000
00296>        [CN= 50.0: N= 3.00: Tp=  .75]
00297> ##########################################################################
00298> # STORMS
00299> ##########################################################################
00300> R0999:C00002-------------------------------------------------------------------------------
00301>     FINISH
00302> -------------------------------------------------------------------------------
00303> ************************************************************************************************
00304>      WARNINGS / ERRORS / NOTES
00305>      -------------------------
00306>    Simulation ended on 2021-11-02     at 18:26:41
00307> ================================================================================================
00308>
```

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Québec. QC

Appendix B

Post Development Model

(PCSWMM)

N

Legend

- Subcatchments
  - <Name>
  - <Area (ha)>
  - <% Imp>
- Site Plan

SCALE: 1:3000

0 50 100 m

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

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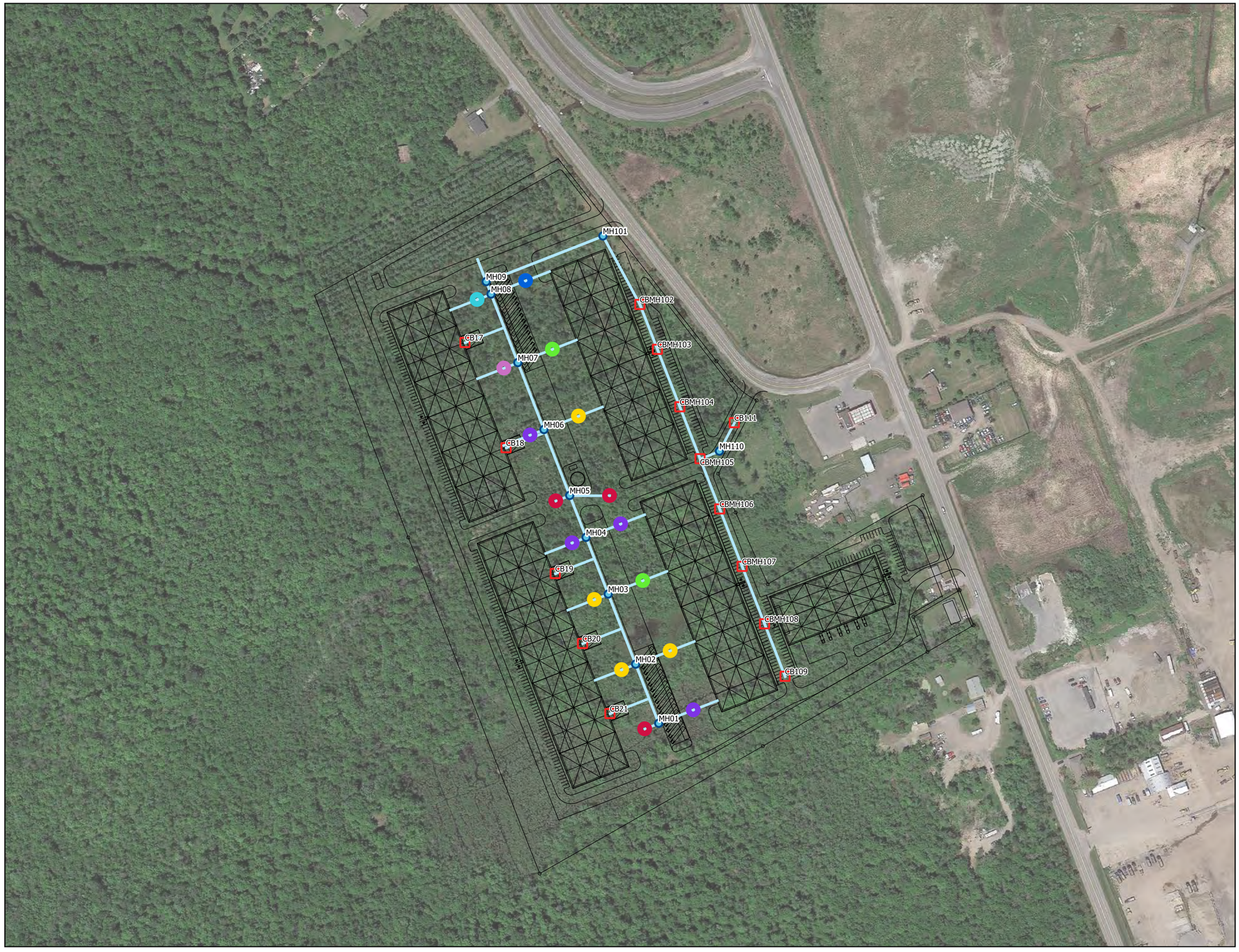
6150 Thunder Road SWM Report

Figure B1: Subcatchments

PROJECT	2120(01)-21
DRAWN	MP
DATE	NOV 2021



N

Legend

- Site Plan
- MH
- CB

ICDs

- 83mm Circular Orifice Plate
- 94mm Circular Orifice Plate
- 102mm Circular Orifice Plate
- 108mm Circular Orifice Plate
- 127mm Circular Orifice Plate
- 152mm Circular Orifice Plate
- 178mm Circular Orifice Plate

SCALE: 1:3000

0 50 100 m

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
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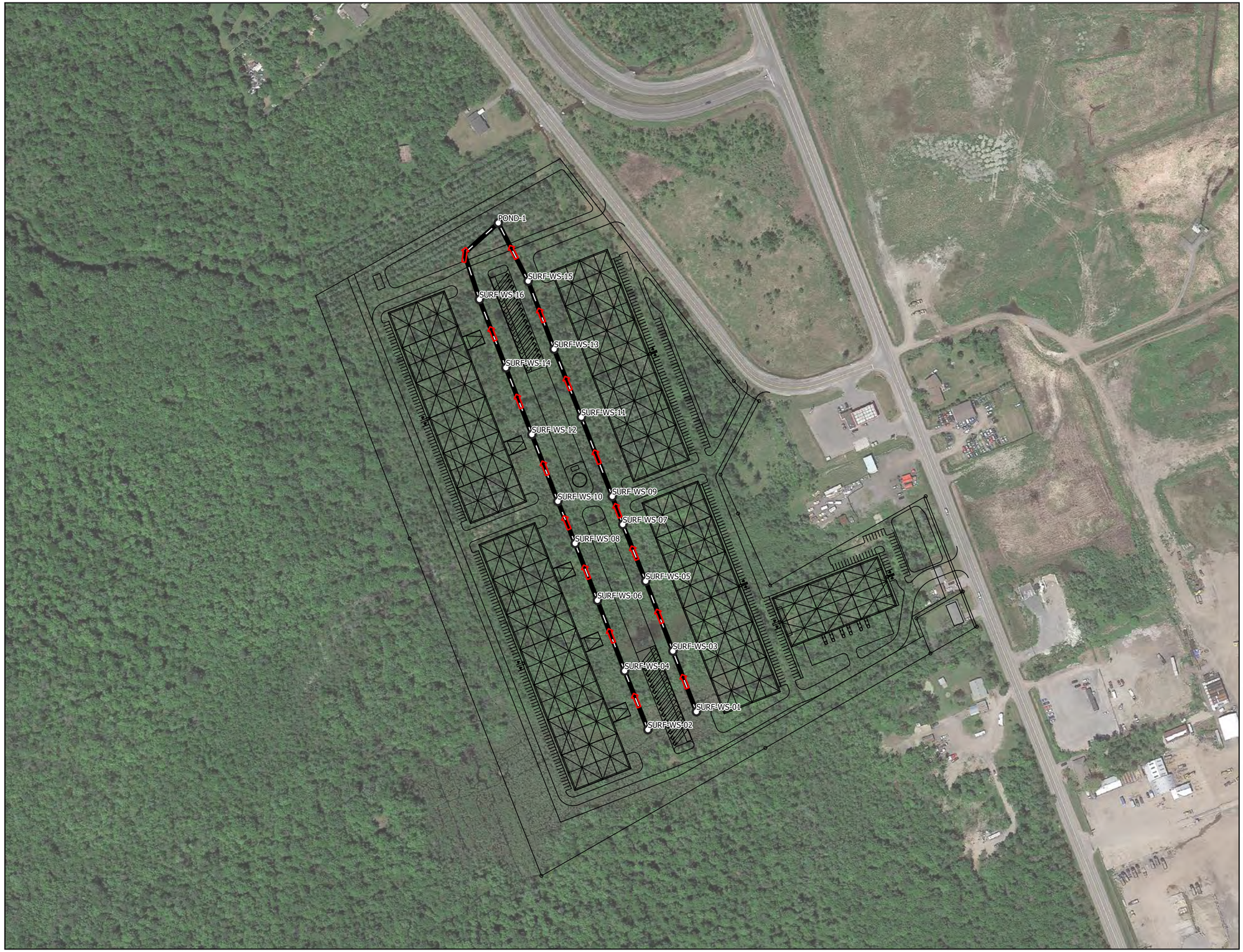
Figure B2: Minor System

PROJECT	2120(01)-21
DRAWN	MP
DATE	NOV 2021

C:\OneDrive\J.F. Sabourin and Associates Inc\JFSA-OTTAWA-SERVER - Documents\PROJ\2120(01)-21\Design\GIS\20211101-Report Figures



N

Legend

- Site Plan
- Major System Junctions
- Major System Conduits

SCALE: 1:3000

0 50 100 m

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

LRJ
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6150 Thunder Road SWM Report

Figure B3: Major System

PROJECT	2120(01)-21
DRAWN	MP
DATE	NOV 2021

LRL Associates Ltd.

Storm Design Sheet

LRL File No.	200578
Project:	Thunder Development
Location:	Boundary Rd, Ottawa (ON)
Date:	November 24, 2021
Designed:	M. Longtin
Checked:	V. Johnson
Drawing Reference:	C.401

Storm Design Parameters

Rational Method	Runoff Coefficient (C)		Prescott IDF curve
Q = 2.78CIA	Grass	0.2	Equation (5 year event, intensity in mm/hr)
Q = Peak flow (L/s)	Gravel	0.80	$I = 27.0\ (Td/60)^{-0.699}$
A = Drainage area (ha)	Asphalt / rooftop	0.90	Min. velocity = 0.80 m/s
C = Runoff coefficient			Manning's "n" = 0.013
I = Rainfall intensity (mm/hr)			

LOCATION			AREA (ha)			FLOW					STORM SEWER							
WATERSHED / STREET	From MH	To MH	C = 0.20	C = 0.80	C = 0.90	Indiv. 2.78AC	Accum. 2.78AC	Time of Conc. (min.)	Rainfall Intensity (mm/hr)	Peak Flow Q (L/s)	Pipe Diameter (mm)	Type	Slope (%)	Length (m)	Capacity Full (L/s)	Velocity Full (m/s)	Time of Flow (min.)	Ratio (Q/Q_{FULL})
WS-01A (ROOF)	RD	CB	0.000	0.000	0.149	0.37	0.37	10.00	104.90	2.52	100	PVC	1.00%	33.0	5.2	0.66	0.84	**0.49**
WS-01	STM CB02	STM MH01	0.051	0.000	0.227	0.60	0.60	10.00	104.90	65.14	300	Concrete	1.00%	30.0	96.7	1.37	0.37	**0.67**
WS-02A (ROOF)	RD	CB	0.000	0.000	0.149	0.37	0.37	10.00	104.90	2.52	100	PVC	1.00%	33.0	5.2	0.66	0.84	**0.49**
WS-02	STM CB01	STM MH01	0.031	0.000	0.263	0.67	0.67	10.00	104.90	73.29	300	Concrete	1.00%	12.2	96.7	1.37	0.15	**0.76**
	STM MH01	STM MH02	0.083	0.000	0.490	1.27	1.27	10.51	105.41	139.09	525	Concrete	0.20%	51.5	192.3	0.89	0.97	**0.72**
WS-03A (ROOF)	RD	CB	0.000	0.000	0.298	0.75	0.75	10.00	104.90	5.04	100	PVC	1.50%	33.0	6.3	0.81	0.68	**0.80**
WS-03	STM CB04	STM MH02	0.000	0.000	0.393	0.98	0.98	10.00	104.90	103.20	300	Concrete	1.50%	30.0	118.4	1.68	0.30	**0.87**
WS-04A (ROOF)	RD	CB	0.000	0.000	0.297	0.74	0.74	10.00	104.90	5.04	100	PVC	1.50%	33.0	6.3	0.81	0.68	**0.80**
WS-04	STM CB03	STM MH02	0.000	0.000	0.281	0.70	0.70	10.00	104.90	78.76	300	Concrete	1.25%	12.2	108.1	1.53	0.13	**0.73**
	STM MH02	STM MH03	0.000	0.000	0.674	1.69	2.96	10.95	106.29	329.56	750	Concrete	0.15%	61.0	431.2	0.98	1.04	**0.76**
WS-05A (ROOF)	RD	CB	0.000	0.000	0.297	0.74	0.74	10.00	104.90	5.04	100	PVC	1.50%	33.0	6.3	0.81	0.68	**0.80**
WS-05	STM CB06	STM MH03	0.000	0.000	0.244	0.61	0.61	10.00	104.90	69.18	300	Concrete	1.25%	30.0	108.1	1.53	0.33	**0.64**
WS-06A (ROOF)	RD	CB	0.000	0.000	0.446	1.12	1.12	10.00	104.90	7.56	150	PVC	1.00%	33.0	15.2	0.86	0.64	**0.50**
WS-06	STM CB05	STM MH03	0.000	0.000	0.281	0.70	0.70	10.00	104.90	81.31	300	Concrete	1.25%	12.2	108.1	1.53	0.13	**0.75**
	STM MH03	STM MH04	0.000	0.000	0.525	1.31	4.27	11.41	106.40	482.34	825	Concrete	0.20%	61.0	641.9	1.20	0.85	**0.75**
WS-07A (ROOF)	RD	CB	0.000	0.000	0.149	0.37	0.37	10.00	104.90	2.52	100	PVC	1.00%	33.0	5.2	0.66	0.84	**0.49**

LRL Associates Ltd.

Storm Design Sheet

LRL File No.	200578
Project:	Thunder Development
Location:	Boundary Rd, Ottawa (ON)
Date:	November 24, 2021
Designed:	M. Longtin
Checked:	V. Johnson
Drawing Reference:	C.401

Storm Design Parameters

Rational Method	Runoff Coefficient (C)		Prescott IDF curve
Q = 2.78CIA	Grass	0.2	Equation (5 year event, intensity in mm/hr)
Q = Peak flow (L/s)	Gravel	0.80	$I = 27.0\ (Td/60)^{-0.699}$
A = Drainage area (ha)	Asphalt / rooftop	0.90	Min. velocity = 0.80 m/s
C = Runoff coefficient			Manning's "n" = 0.013
I = Rainfall intensity (mm/hr)			

WS-07	STM CB08	STM MH04	0.000	0.000	0.119	0.30	0.30	10.00	104.90	33.67	300	PVC	1.00%	30.0	96.7	1.37	0.37	**0.35**
WS-08A (ROOF)	RD	CB	0.000	0.000	0.149	0.37	0.37	10.00	104.90	2.52	100	PVC	1.00%	33.0	5.2	0.66	0.84	**0.49**
WS-08	STM CB07	STM MH04	0.000	0.000	0.174	0.44	0.44	10.00	104.90	48.24	300	PVC	1.00%	12.2	96.7	1.37	0.15	**0.50**
	STM MH04	STM MH05	0.000	0.000	0.293	0.73	5.01	11.92	106.26	564.64	825	Concrete	0.20%	61.0	641.9	1.20	0.85	**0.88**
WS-09	STM CB10	STM MH05	0.037	0.000	0.110	0.30	0.30	10.00	104.90	31.05	300	PVC	0.50%	32.3	68.4	0.97	0.56	**0.45**
WS-10	STM CB09	STM MH05	0.037	0.000	0.170	0.44	0.44	10.00	104.90	46.67	300	PVC	0.50%	12.2	68.4	0.97	0.21	**0.68**
	STM MH05	STM MH06	0.074	0.000	0.280	0.74	5.75	12.69	106.51	644.83	900	Concrete	0.20%	61.0	809.6	1.27	0.80	**0.80**
WS-11A (ROOF)	RD	CB	0.000	0.000	0.446	1.12	1.12	10.00	104.90	7.56	150	PVC	1.00%	33.0	15.2	0.86	0.64	**0.50**
WS-11	STM CB12	STM MH06	0.000	0.000	0.344	0.86	0.86	10.00	104.90	97.84	300	PVC	1.50%	30.0	118.4	1.68	0.30	**0.83**
WS-12A (ROOF)	RD	CB	0.000	0.000	0.297	0.74	0.74	10.00	104.90	5.04	100	PVC	1.50%	33.0	6.3	0.81	0.68	**0.80**
WS-12	STM CB11	STM MH06	0.000	0.000	0.314	0.79	0.79	10.00	104.90	87.42	300	PVC	1.50%	12.2	118.4	1.68	0.12	**0.74**
	STM MH06	STM MH07	0.000	0.000	0.658	1.65	7.39	13.11	106.11	907.55	975	Concrete	0.30%	61.0	1227.5	1.64	0.62	**0.74**
WS-13A (ROOF)	RD	CB	0.000	0.000	0.297	0.74	0.74	10.00	104.90	5.04	100	PVC	1.50%	33.0	6.3	0.81	0.68	**0.80**
WS-13	STM CB14	STM MH07	0.000	0.000	0.240	0.60	0.60	10.00	104.90	68.11	300	PVC	1.25%	30.0	108.1	1.53	0.33	**0.63**
WS-14A (ROOF)	RD	CB	0.000	0.000	0.297	0.74	0.74	10.00	104.90	5.04	100	PVC	1.50%	33.0	6.3	0.81	0.68	**0.80**
WS-14	STM CB13	STM MH07	0.000	0.000	0.277	0.69	0.69	10.00	104.90	77.69	300	PVC	1.25%	12.2	108.1	1.53	0.13	**0.72**
	STM MH07	STM MH08	0.000	0.000	0.517	1.29	8.69	13.57	105.97	1838.17	1200	Concrete	0.30%	61.0	2135.4	1.89	0.54	**0.86**
WS-15A (ROOF)	RD	CB	0.000	0.000	0.149	0.37	0.37	10.00	104.90	2.52	100	PVC	1.00%	33.0	5.2	0.66	0.84	**0.49**

LRL Associates Ltd.

Storm Design Sheet

LRL File No.	200578
Project:	Thunder Development
Location:	Boundary Rd, Ottawa (ON)
Date:	November 24, 2021
Designed:	M. Longtin
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Drawing Reference:	C.401

Storm Design Parameters

Rational Method	Runoff Coefficient (C)		Prescott IDF curve
Q = 2.78CIA	Grass	0.2	Equation (5 year event, intensity in mm/hr)
Q = Peak flow (L/s)	Gravel	0.80	$I = 27.0\ (Td/60)^{-0.699}$
A = Drainage area (ha)	Asphalt / rooftop	0.90	Min. velocity = 0.80 m/s
C = Runoff coefficient			Manning's "n" = 0.013
I = Rainfall intensity (mm/hr)			

WS-15	STM CB16	STM MH08	0.070	0.000	0.225	0.60	0.60	10.00	104.90	65.54	300	PVC	1.00%	30.0	96.7	1.37	0.37	**0.68**
WS-16A (ROOF)	RD	CB	0.000	0.000	0.297	0.74	0.74	10.00	104.90	5.04	100	PVC	1.50%	33.0	6.3	0.81	0.68	**0.80**
WS-16	STM CB15	STM MH08	0.012	0.000	0.261	0.66	0.66	10.00	104.90	74.24	300	PVC	1.00%	12.2	96.7	1.37	0.15	**0.77**
	STM MH07	STM MH08	0.082	0.000	0.486	1.26	9.95	14.08	105.95	2899.60	1350	Concrete	0.40%	61.0	3375.7	2.36	0.43	**0.86**
WS-25	STM CB109	STM CBMH108	0.000	0.000	0.138	0.34	0.34	10.00	104.90	36.14	300	PVC	0.35%	45.7	57.2	0.81	0.94	**0.63**
WS-24	STM CB108	STM CBMH107	0.000	0.000	0.104	0.26	0.26	10.00	104.90	63.33	375	PVC	0.25%	50.0	87.7	0.79	1.05	**0.72**
WS-23	STM CBMH107	STM CBMH106	0.000	0.000	0.071	0.18	0.18	10.00	104.90	81.96	450	PVC	0.20%	50.0	127.5	0.80	1.04	**0.64**
WS-22	STM CBMH106	STM CBMH105	0.000	0.000	0.070	0.18	0.18	10.00	104.90	100.44	450	PVC	0.20%	43.7	127.5	0.80	0.91	**0.79**
WS-26	STM CB111	STM MH110	0.000	0.000	0.043	0.11	0.11	10.00	104.90	11.29	300	PVC	0.35%	43.7	57.2	0.81	0.90	**0.20**
WS-21	STM CBMH105	STM CBMH104	0.005	0.000	0.101	0.25	0.25	10.00	104.90	138.46	525	PVC	0.20%	43.7	192.3	0.89	0.82	**0.72**
WS-20	STM CBMH104	STM CBMH103	0.000	0.000	0.122	0.31	0.31	10.00	104.90	170.48	600	PVC	0.20%	43.7	274.6	0.97	0.75	**0.62**
WS-19	STM CBMH103	STM CBMH102	0.000	0.000	0.097	0.24	0.24	10.00	104.90	195.81	600	PVC	0.20%	43.7	274.6	0.97	0.75	**0.71**
WS-18	STM CBMH102	MH101	0.084	0.000	0.112	0.33	0.33	10.00	104.90	230.02	600	PVC	0.20%	43.7	274.6	0.97	0.75	**0.84**

Note

The Peak flow controlled by an ICD at the outlet of CBMH05

```
[TITLE]
;;Project Title/Notes

[OPTIONS]
;;Option             Value
FLOW_UNITS           CMS
INFILTRATION         HORTON
FLOW_ROUTING         DYNWAVE
LINK_OFFSETS         ELEVATION
MIN_SLOPE            0
ALLOW_PONDING        YES
SKIP_STEADY_STATE    NO

START_DATE           01/01/2019
START_TIME           00:00:00
REPORT_START_DATE    01/01/2019
REPORT_START_TIME    00:00:00
END_DATE             01/02/2019
END_TIME             00:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          00:01:00
WET_STEP             00:05:00
DRY_STEP             00:05:00
ROUTING_STEP         1
RULE_STEP            00:00:00

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         0
MAX_TRIALS           8
HEAD_TOLERANCE       0.0015
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              6

[EVAPORATION]
;;Data Source    Parameters
;;-------------- ----------------
CONSTANT         0.0
DRY_ONLY         NO

[RAINGAGES]
;;Name           Format    Interval SCF      Source
;;-------------- --------- -------- -------- ----------
002yrChicago3hr  INTENSITY 0:10     1.0      TIMESERIES 002yrChicago3hr
002YrSCS24       INTENSITY 0:10     1.0      TIMESERIES 002YrSCS24
005yrChicago3hr  INTENSITY 0:10     1.0      TIMESERIES 005yrChicago3hr
005YrSCS24       INTENSITY 0:10     1.0      TIMESERIES 005YrSCS24
010yrChicago3hr  INTENSITY 0:10     1.0      TIMESERIES 010yrChicago3hr
010YrSCS24       INTENSITY 0:10     1.0      TIMESERIES 010YrSCS24
025yrChicago3hr  INTENSITY 0:10     1.0      TIMESERIES 025yrChicago3hr
```

```
025YrSCS24       INTENSITY 0:10     1.0      TIMESERIES 025YrSCS24
050yrChicago3hr  INTENSITY 0:10     1.0      TIMESERIES 050yrChicago3hr
050YrSCS24       INTENSITY 0:10     1.0      TIMESERIES 050YrSCS24
100yrChicago3hr  INTENSITY 0:10     1.0      TIMESERIES 100yrChicago3hr
100yrChicago3hr+20% INTENSITY 0:10     1.0      TIMESERIES 100yrChicago3hr+20%
100YrSCS24       INTENSITY 0:10     1.0      TIMESERIES 100YrSCS24
100YrSCS24+20%   INTENSITY 0:10     1.0      TIMESERIES 100YrSCS24+20%
25mmChicago4Hr   INTENSITY 0:10     1.0      TIMESERIES 25mmChicago4Hr

[SUBCATCHMENTS]
;;Name           Rain Gage        Outlet           Area     %Imperv  Width    %
Slope   CurbLen  SnowPack
;;-------------- ---------------- ---------------- -------- -------- -------- -----
--- -------- ----------------
WS-01            100YrSCS24       SURF-WS-01       0.278    81.4     79.429   2
0
WS-01A           100YrSCS24       WS-01A-Lead      0.149    100      30       0.1
0
WS-02            100YrSCS24       SURF-WS-02       0.294    90       98       2
0
WS-02A           100YrSCS24       WS-02A-Lead      0.149    100      30       0.1
0
WS-03            100YrSCS24       SURF-WS-03       0.245    100      74.242   2
0
WS-03A           100YrSCS24       WS-03A-Lead      0.298    100      60       0.1
0
WS-04            100YrSCS24       SURF-WS-04       0.281    100      78.056   2
0
WS-04A           100YrSCS24       WS-04A-Lead      0.297    100      60       0.1
0
WS-05            100YrSCS24       SURF-WS-05       0.244    100      67.778   2
0
WS-05A           100YrSCS24       WS-05A-Lead      0.297    100      61       0.1
0
WS-06            100YrSCS24       SURF-WS-06       0.281    100      75.946   2
0
WS-06A           100YrSCS24       WS-06A-Lead      0.446    100      90       0.1
0
WS-07            100YrSCS24       SURF-WS-07       0.119    100      45.769   2
0
WS-07A           100YrSCS24       WS-07A-Lead      0.149    100      30       0.1
0
WS-08            100YrSCS24       SURF-WS-08       0.174    100      64.444   2
0
WS-08A           100YrSCS24       WS-08A-Lead      0.149    100      30       0.1
0
WS-09            100YrSCS24       SURF-WS-09       0.147    74.3     70       2
0
WS-10            100YrSCS24       SURF-WS-10       0.207    81.4     66.774   2
0
WS-11            100YrSCS24       SURF-WS-11       0.344    100      57.333   2
0
WS-11A           100YrSCS24       WS-11A-Lead      0.446    100      90       0.1
0
WS-12            100YrSCS24       SURF-WS-12       0.314    100      65.417   2
0
WS-12A           100YrSCS24       WS-12A-Lead      0.297    100      60       0.1
0
WS-13            100YrSCS24       SURF-WS-13       0.24     100      68.571   2
0
```

```
WS-13A           100YrSCS24       WS-13A-Lead      0.297    100      60       0.1
0
WS-14            100YrSCS24       SURF-WS-14       0.277    100      74.865   2
0
WS-14A           100YrSCS24       WS-14A-Lead      0.297    100      60       0.1
0
WS-15            100YrSCS24       SURF-WS-15       0.295    75.7     84.286   2
0
WS-15A           100YrSCS24       WS-15A-Lead      0.149    100      30       0.1
0
WS-16            100YrSCS24       SURF-WS-16       0.273    95.7     75.833   2
0
WS-16A           100YrSCS24       WS-16A-Lead      0.297    100      59       0.1
0
WS-17_1          100YrSCS24       J2               0.6057   63       302.85   0.5
0
WS-17_2          100YrSCS24       J1               0.5432   63       271.6    0.5
0
WS-18            100YrSCS24       SURF-WS-18       0.195    57.1     90       1
0
WS-19            100YrSCS24       SURF-WS-19       0.0965   25       50       1
0
WS-20            100YrSCS24       SURF-WS-20       0.122    100      62       1
0
WS-21            100YrSCS24       SURF-WS-21       0.106    100      25       1
0
WS-22            100YrSCS24       STM_CBMH106      0.0704   100      48       1
0
WS-23            100YrSCS24       STM_CBMH107      0.071    100      50       1
0
WS-24            100YrSCS24       STM_CBMH108      0.1037   100      50       1
0
WS-25            100YrSCS24       STM_CB109        0.1377   100      68       1
0
WS-26            100YrSCS24       STM_CB111        0.043    100      8        1
0
WS-27            100YrSCS24       POND-2           0.389    7        45       0.5
0
WS-28            100YrSCS24       POND-1           0.6297   7        314.85   0.5
0
WS-29            100YrSCS24       POND-3           1.36     62.9     90.667   1
0
WS-30            100YrSCS24       SURF-WS-21       0.0984   7        196.8    0.5
0

[SUBAREAS]
;;Subcatchment   N-Imperv   N-Perv     S-Imperv   S-Perv     PctZero    RouteTo
PctRouted
;;-------------- ---------- ---------- ---------- ---------- ---------- ----------
----------
WS-01            0.013      0.25       1.57       4.67       25         OUTLET
WS-01A           0.013      0.25       1.57       4.67       25         OUTLET
WS-02            0.013      0.25       1.57       4.67       25         OUTLET
WS-02A           0.013      0.25       1.57       4.67       25         OUTLET
WS-03            0.013      0.25       1.57       4.67       25         OUTLET
WS-03A           0.013      0.25       1.57       4.67       25         OUTLET
WS-04            0.013      0.25       1.57       4.67       25         OUTLET
WS-04A           0.013      0.25       1.57       4.67       25         OUTLET
WS-05            0.013      0.25       1.57       4.67       25         OUTLET
```

```
WS-05A           0.013      0.25       1.57       4.67       25         OUTLET
WS-06            0.013      0.25       1.57       4.67       25         OUTLET
WS-06A           0.013      0.25       1.57       4.67       25         OUTLET
WS-07            0.013      0.25       1.57       4.67       25         OUTLET
WS-07A           0.013      0.25       1.57       4.67       25         OUTLET
WS-08            0.013      0.25       1.57       4.67       25         OUTLET
WS-08A           0.013      0.25       1.57       4.67       25         OUTLET
WS-09            0.013      0.25       1.57       4.67       25         OUTLET
WS-10            0.013      0.25       1.57       4.67       25         OUTLET
WS-11            0.013      0.25       1.57       4.67       25         OUTLET
WS-11A           0.013      0.25       1.57       4.67       25         OUTLET
WS-12            0.013      0.25       1.57       4.67       25         OUTLET
WS-12A           0.013      0.25       1.57       4.67       25         OUTLET
WS-13            0.013      0.25       1.57       4.67       25         OUTLET
WS-13A           0.013      0.25       1.57       4.67       25         OUTLET
WS-14            0.013      0.25       1.57       4.67       25         OUTLET
WS-14A           0.013      0.25       1.57       4.67       25         OUTLET
WS-15            0.013      0.25       1.57       4.67       25         OUTLET
WS-15A           0.013      0.25       1.57       4.67       25         OUTLET
WS-16            0.013      0.25       1.57       4.67       25         OUTLET
WS-16A           0.013      0.25       1.57       4.67       25         OUTLET
WS-17_1          0.013      0.25       1.57       4.67       25         PERVIOUS
100
WS-17_2          0.013      0.25       1.57       4.67       25         PERVIOUS
100
WS-18            0.013      0.25       1.57       4.67       25         OUTLET
WS-19            0.013      0.25       1.57       4.67       25         OUTLET
WS-20            0.013      0.25       1.57       4.67       25         OUTLET
WS-21            0.013      0.25       1.57       4.67       25         OUTLET
WS-22            0.013      0.25       1.57       4.67       25         OUTLET
WS-23            0.013      0.25       1.57       4.67       25         OUTLET
WS-24            0.013      0.25       1.57       4.67       25         OUTLET
WS-25            0.013      0.25       1.57       4.67       25         OUTLET
WS-26            0.013      0.25       1.57       4.67       25         OUTLET
WS-27            0.013      0.25       1.57       4.67       25         OUTLET
WS-28            0.013      0.25       1.57       4.67       25         OUTLET
WS-29            0.013      0.25       1.57       4.67       25         PERVIOUS
100
WS-30            0.013      0.25       1.57       4.67       25         OUTLET

[INFILTRATION]
;;Subcatchment   Param1     Param2     Param3     Param4     Param5
;;-------------- ---------- ---------- ---------- ---------- ----------
WS-01            76.2       13.2       4.14       7          0
WS-01A           76.2       13.2       4.14       7          0
WS-02            76.2       13.2       4.14       7          0
WS-02A           76.2       13.2       4.14       7          0
WS-03            76.2       13.2       4.14       7          0
WS-03A           76.2       13.2       4.14       7          0
WS-04            76.2       13.2       4.14       7          0
WS-04A           76.2       13.2       4.14       7          0
WS-05            76.2       13.2       4.14       7          0
WS-05A           76.2       13.2       4.14       7          0
WS-06            76.2       13.2       4.14       7          0
WS-06A           76.2       13.2       4.14       7          0
WS-07            76.2       13.2       4.14       7          0
WS-07A           76.2       13.2       4.14       7          0
```

```
WS-08            76.2       13.2       4.14       7          0
WS-08A           76.2       13.2       4.14       7          0
WS-09            76.2       13.2       4.14       7          0
WS-10            76.2       13.2       4.14       7          0
WS-11            76.2       13.2       4.14       7          0
WS-11A           76.2       13.2       4.14       7          0
WS-12            76.2       13.2       4.14       7          0
WS-12A           76.2       13.2       4.14       7          0
WS-13            76.2       13.2       4.14       7          0
WS-13A           76.2       13.2       4.14       7          0
WS-14            76.2       13.2       4.14       7          0
WS-14A           76.2       13.2       4.14       7          0
WS-15            76.2       13.2       4.14       7          0
WS-15A           76.2       13.2       4.14       7          0
WS-16            76.2       13.2       4.14       7          0
WS-16A           76.2       13.2       4.14       7          0
WS-17_1          76.2       13.2       4.14       7          0
WS-17_2          76.2       13.2       4.14       7          0
WS-18            76.2       13.2       4.14       7          0
WS-19            76.2       13.2       4.14       7          0
WS-20            76.2       13.2       4.14       7          0
WS-21            76.2       13.2       4.14       7          0
WS-22            76.2       13.2       4.14       7          0
WS-23            76.2       13.2       4.14       7          0
WS-24            76.2       13.2       4.14       7          0
WS-25            76.2       13.2       4.14       7          0
WS-26            76.2       13.2       4.14       7          0
WS-27            76.2       13.2       4.14       7          0
WS-28            76.2       13.2       4.14       7          0
WS-29            76.2       13.2       4.14       7          0
WS-30            76.2       13.2       4.14       7          0

[JUNCTIONS]
;;Name           Elevation  MaxDepth   InitDepth  SurDepth   Aponded
;;-------------- ---------- ---------- ---------- ---------- ----------
J1               76.7       0.3        0          0          1
J2               76.85      0.3        0          0          0
J3               77.05      0.3        0          0          0
OF3              0          0          0          0          0
Out              0          0          0          0          0
PUMP_CHAMBER     74.125     2.925      0          0          0
STM_CB09         75.992     5.914      0          0          0
STM_CB10         76.193     5.715      0          0          0
STM_CB109        75.8       1.3        0          0          1
STM_CB111        75.481     1.519      0          0          1
STM_CB17         75.48      0.82       0          0          1
STM_CB18         75.67      0.71       0          0          1
STM_CB19         76.01      0.79       0          0          0
STM_CB20         76.07      0.73       0          0          0
STM_CB21         76.12      0.71       0          0          0
STM_CBMH01       76.322     5.987      0          0          0
STM_CBMH02       76.5       5.757      0          0          0
STM_CBMH03       76.2       5.707      0          0          0
STM_CBMH04       76.19      5.719      0          0          0
STM_CBMH05       75.962     5.947      0          0          0
STM_CBMH06       76.19      5.714      0          0          0
STM_CBMH07       76.012     5.896      0          0          0
```

```
STM_CBMH08       76.206     5.7        0          0          0
STM_CBMH102      74.64      2.26       0          0          0
STM_CBMH103      74.78      2.02       0          0          1
STM_CBMH104      74.91      1.89       0          0          1
STM_CBMH105      75.08      1.82       0          0          1
STM_CBMH106      75.25      1.95       0          0          1
STM_CBMH107      75.38      1.82       0          0          1
STM_CBMH108      75.56      1.64       0          0          1
STM_CBMH11       75.682     6.08       0          0          0
STM_CBMH12       75.951     5.807      0          0          0
STM_CBMH13       75.682     6.073      0          0          0
STM_CBMH14       75.906     5.853      0          0          0
STM_CBMH15       75.472     6.283      0          0          1
STM_CBMH16       75.65      6.106      0          0          0
STM_MH01         75.98      1.52       0          0          0
STM_MH02         75.65      1.5        0          0          0
STM_MH03         75.49      1.806      0          0          0
STM_MH04         75.36      1.79       0          0          0
STM_MH05         75.22      1.93       0          0          0
STM_MH06         75.03      1.97       0          0          0
STM_MH07         74.63      2.27       0          0          0
STM_MH08         74.42      2.53       0          0          0
STM_MH09         74.19      3.037      0          0          0
STM_MH101        74.45      2.777      0          0          1
STM_MH110        75.359     1.891      0          0          0
SURF-WS-17       76.25      1          0          0          0
SWM_Out          75.8       2.288      0          0          0
TREATMENT_UNIT_1 74.15      3.035      0          0          1
WS-01A-Lead      76.739     4          0          0          1490
WS-02A-Lead      76.581     4          0          0          1490
WS-03A-Lead      76.534     4          0          0          2980
WS-04A-Lead      76.576     4          0          0          2970
WS-05A-Lead      76.533     4          0          0          2970
WS-06A-Lead      76.221     4          0          0          4460
WS-07A-Lead      76.449     4          0          0          1490
WS-08A-Lead      76.391     4          0          0          1490
WS-11A-Lead      76.208     4          0          0          4460
WS-12A-Lead      76.227     4          0          0          2970
WS-13A-Lead      76.322     4          0          0          2970
WS-14A-Lead      76.227     4          0          0          2970
WS-15A-Lead      76.058     4          0          0          1490
WS-16A-Lead      76.018     4          0          0          2970

[OUTFALLS]
;;Name           Elevation  Type       Stage Data       Gated    Route To
;;-------------- ---------- ---------- ---------------- -------- ----------------
OF1              75.79      FREE                        NO
OF2              0          FREE                        NO
OF4              0          FREE                        NO

[STORAGE]
;;Name           Elev.    MaxDepth   InitDepth  Shape      Curve Name/Params
N/A      Fevap    Psi      Ksat     IMD
;;-------------- -------- ---------- ---------- ---------- ------------------------
---- -------- --------          -------- --------
;0.9m
POND-1           75.8     5          0          TABULAR    WS-28
0        0
```

```
;0.9m
POND-2           75.8     5          0          TABULAR    WS-27
0        0
;0.65m
POND-3           76.65    0.65       0          TABULAR    Pond_3
0        0
SURF-WS-01       77.257   5          0          TABULAR    WS-01
0        0
SURF-WS-02       77.309   5          0          TABULAR    WS-02
0        0
SURF-WS-03       76.909   5          0          TABULAR    WS-03
0        0
SURF-WS-04       76.907   5          0          TABULAR    WS-04
0        0
SURF-WS-05       76.904   5          0          TABULAR    WS-05
0        0
SURF-WS-06       76.909   5          0          TABULAR    WS-06
0        0
SURF-WS-07       76.906   5          0          TABULAR    WS-07
0        0
SURF-WS-08       76.908   5          0          TABULAR    WS-08
0        0
SURF-WS-09       76.908   5          0          TABULAR    WS-09
0        0
SURF-WS-10       76.906   5          0          TABULAR    WS-10
0        0
SURF-WS-11       76.758   5          0          TABULAR    WS-11
0        0
SURF-WS-12       76.762   5          0          TABULAR    WS-12
0        0
SURF-WS-13       76.759   5          0          TABULAR    WS-13
0        0
SURF-WS-14       76.755   5          0          TABULAR    WS-14
0        0
SURF-WS-15       76.756   5          0          TABULAR    WS-15
0        0
SURF-WS-16       76.755   5          0          TABULAR    WS-16
0        0
SURF-WS-18       76.91    5          0          TABULAR    WS-18
0        0
SURF-WS-19       76.804   5          0          TABULAR    WS-19
0        0
SURF-WS-20       76.805   5          0          TABULAR    WS-20
0        0
SURF-WS-21       76.925   5          0          TABULAR    Pond_3
0        0

[CONDUITS]
;;Name            From Node        To Node          Length     Roughness  InOffset
OutOffset  InitFlow   MaxFlow
;;--------------- ---------------- ---------------- ---------- ---------- ----------
---------- ---------- ----------
C1               SURF-WS-01       SURF-WS-03       5          0.013      77.56
77.555     0          0
C10              SURF-WS-10       SURF-WS-12       5          0.013      76.906
76.901     0          0
C11              SURF-WS-11       SURF-WS-13       5          0.013      77.05
77.045     0          0
C12              SURF-WS-12       SURF-WS-14       5          0.013      77.05
77.045     0          0
```

C13	SURF-WS-13	SURF-WS-15	5	0.013	77.18	
77.175	0	0				
C14	SURF-WS-14	SURF-WS-16	59.161	0.013	77.09	
77.085	0	0				
C15	SURF-WS-15	POND-1	5	0.013	77.14	
77.135	0	0				
C16	SURF-WS-16	POND-1	76.066	0.013	77.05	
77.045	0	0				
C17	Out	OF2	6.249	0.013	0	
0	0	0				
C18	J3	J2	100.003	0.035	77.05	
76.85	0	0				
C19	J2	SURF-WS-17	236.971	0.035	76.85	
76.25	0	0				
C2	SURF-WS-02	SURF-WS-04	51.101	0.013	77.54	
77.535	0	0				
C20	J1	SURF-WS-17	188.35	0.035	76.7	
76.25	0	0				
C21	OF3	OF4	3.965	0.01	0	
0	0	0				
C3	SURF-WS-03	SURF-WS-05	60.636	0.013	77.3	
77.295	0	0				
C4	SURF-WS-04	SURF-WS-06	5	0.013	77.4	
77.395	0	0				
C5	SURF-WS-05	SURF-WS-07	49.387	0.013	77.29	
77.285	0	0				
C6	SURF-WS-06	SURF-WS-08	5	0.013	77.54	
77.535	0	0				
C7	SURF-WS-07	SURF-WS-09	24.247	0.013	77.26	
77.255	0	0				
C8	SURF-WS-08	SURF-WS-10	5	0.013	77.21	
77.205	0	0				
C9	SURF-WS-09	SURF-WS-11	5	0.013	77.38	
77.375	0	0				
Out	SWM_Out	OF1	44.493	0.013	75.8	
75.79	0	0				
Pipe_-_03	TREATMENT_UNIT_1	PUMP_CHAMBER	12.381	0.013	74.15	
74.125	0	0				
Pipe_-_04	STM_MH09	TREATMENT_UNIT_1	7.146	0.013	74.19	
74.176	0	0				
Pipe_-_05	STM_MH08	STM_MH09	10.848	0.013	74.42	
74.377	0	0				
Pipe_-_06	STM_MH07	STM_MH08	59.651	0.013	74.63	
74.451	0	0				
Pipe_-_07	STM_MH06	STM_MH07	58.253	0.013	75.03	
74.855	0	0				
Pipe_-_08	STM_MH05	STM_MH06	57.381	0.013	75.22	
75.105	0	0				
Pipe_-_09	STM_MH04	STM_MH05	36.456	0.013	75.36	
75.287	0	0				
Pipe_-_10	STM_MH03	STM_MH04	49.35	0.013	75.49	
75.391	0	0				
Pipe_-_100	STM_MH101	STM_MH09	101.654	0.013	74.45	
74.247	0	0				
Pipe_-_101	STM_CBMH102	STM_MH101	63.074	0.013	74.64	
74.514	0	0				
Pipe_-_102	STM_CBMH103	STM_CBMH102	39.087	0.013	74.78	
74.702	0	0				
Pipe_-_103	STM_CBMH104	STM_CBMH103	50	0.013	74.91	
74.81	0	0				

```
Pipe_-_104      STM_CBMH105     STM_CBMH104     45.147     0.013      75.08
74.99      0          0
Pipe_-_105      STM_MH110       STM_CBMH105     16.862     0.013      75.359
75.3       0          0
Pipe_-_106      STM_CB111       STM_MH110       26.032     0.013      75.481
75.39      0          0
Pipe_-_107      STM_CBMH106     STM_CBMH105     43.741     0.013      75.25
75.163     0          0
Pipe_-_108      STM_CBMH107     STM_CBMH106     50         0.013      75.38
75.28      0          0
Pipe_-_109      STM_CBMH108     STM_CBMH107     50         0.013      75.56
75.46      0          0
Pipe_-_11       STM_MH02        STM_MH03        61.037     0.013      75.65
75.558     0          0
Pipe_-_110      STM_CB109       STM_CBMH108     45.669     0.013      75.8
75.64      0          0
Pipe_-_12       STM_MH01        STM_MH02        51.5       0.013      75.98
75.877     0          0
Pipe_-_29       STM_CB17        STM_MH08        34.011     0.013      75.48
75.14      0          0
Pipe_-_30       STM_CB18        STM_MH06        34.011     0.013      75.67
75.5       0          0
Pipe_-_31       STM_CB19        STM_MH04        34.011     0.013      76.01
75.84      0          0
Pipe_-_32       STM_CB20        STM_MH03        34.011     0.013      76.07
75.9       0          0
Pipe_-_33       STM_CB21        STM_MH02        34.011     0.013      76.12
75.95      0          0
Pipe_-_34       WS-15A-Lead     STM_CBMH16      20.811     0.013      76.058
75.85      0          0
Pipe_-_35       WS-16A-Lead     STM_CBMH15      23.185     0.013      76.018
75.67      0          0
Pipe_-_36       WS-13A-Lead     STM_CBMH14      20.831     0.013      76.322
76.01      0          0
Pipe_-_37       WS-14A-Lead     STM_CBMH13      23.165     0.013      76.227
75.88      0          0
Pipe_-_38       WS-11A-Lead     STM_CBMH12      20.85      0.013      76.208
76         0          0
Pipe_-_39       WS-12A-Lead     STM_CBMH11      23.146     0.013      76.227
75.88      0          0
Pipe_-_40       WS-07A-Lead     STM_CBMH08      20.881     0.013      76.449
76.24      0          0
Pipe_-_41       WS-08A-Lead     STM_CBMH07      23.115     0.013      76.391
76.16      0          0
Pipe_-_42       WS-05A-Lead     STM_CBMH06      20.897     0.013      76.533
76.22      0          0
Pipe_-_43       WS-06A-Lead     STM_CBMH05      23.098     0.013      76.221
75.99      0          0
Pipe_-_44       WS-03A-Lead     STM_CBMH04      20.918     0.013      76.534
76.22      0          0
Pipe_-_45       WS-04A-Lead     STM_CBMH03      23.098     0.013      76.576
76.23      0          0
Pipe_-_46       WS-01A-Lead     STM_CBMH02      20.918     0.013      76.739
76.53      0          0
Pipe_-_47       WS-02A-Lead     STM_CBMH01      23.098     0.013      76.581
76.35      0          0
Ponds           POND-2          POND-1          50         0.013      75.81
75.8       0          0

[PUMPS]
```

```
;;Name           From Node        To Node          Pump Curve       Status
Startup  Shutoff
;;-------------- ---------------- ---------------- ---------------- -------- ------
-- --------
P1               PUMP_CHAMBER     POND-1           Pond_Pump        ON       0
0

[ORIFICES]
;;Name           From Node        To Node          Type         Offset     Qcoeff
Gated    CloseTime
;;-------------- ---------------- ---------------- ------------ ---------- --------
-- -------- ----------
GRATE-01         SURF-WS-01       STM_CBMH02       BOTTOM       77.257     0.62
NO       0
GRATE-02         SURF-WS-02       STM_CBMH01       BOTTOM       77.309     0.62
NO       0
GRATE-03         SURF-WS-03       STM_CBMH04       BOTTOM       76.909     0.62
NO       0
GRATE-04         SURF-WS-04       STM_CBMH03       BOTTOM       76.907     0.62
NO       0
GRATE-05         SURF-WS-05       STM_CBMH06       BOTTOM       76.904     0.62
NO       0
GRATE-06         SURF-WS-06       STM_CBMH05       BOTTOM       76.909     0.62
NO       0
GRATE-07         SURF-WS-07       STM_CBMH08       BOTTOM       76.906     0.62
NO       0
GRATE-08         SURF-WS-08       STM_CBMH07       BOTTOM       76.908     0.62
NO       0
GRATE-09         SURF-WS-09       STM_CB10         BOTTOM       76.908     0.62
NO       0
GRATE-10         SURF-WS-10       STM_CB09         BOTTOM       76.906     0.62
NO       0
GRATE-11         SURF-WS-11       STM_CBMH12       BOTTOM       76.758     0.62
NO       0
GRATE-12         SURF-WS-12       STM_CBMH11       BOTTOM       76.762     0.62
NO       0
GRATE-13         SURF-WS-13       STM_CBMH14       BOTTOM       76.759     0.62
NO       0
GRATE-14         SURF-WS-14       STM_CBMH13       BOTTOM       76.755     0.62
NO       0
GRATE-15         SURF-WS-15       STM_CBMH16       BOTTOM       76.756     0.62
NO       0
GRATE-16         SURF-WS-16       STM_CBMH15       BOTTOM       76.755     0.62
NO       0
GRATE-18         SURF-WS-18       STM_CBMH102      BOTTOM       76.91      0.62
NO       0
GRATE-19         SURF-WS-19       STM_CBMH103      BOTTOM       76.804     0.62
NO       0
GRATE-20         SURF-WS-20       STM_CBMH104      BOTTOM       76.805     0.62
NO       0
GRATE-21         SURF-WS-21       STM_CBMH105      BOTTOM       76.925     0.62
NO       0
OR18             POND-1           SWM_Out          SIDE         76.25      0.62
NO       0
OR20             SURF-WS-17       OF3              SIDE         76.25      0.62
NO       0
Pipe_-_13        STM_CBMH16       STM_MH08         SIDE         75.65      0.62
NO       0
Pipe_-_14        STM_CBMH15       STM_MH08         SIDE         75.472     0.62
NO       0
```

```
Pipe_-_15        STM_CBMH14       STM_MH07         SIDE         75.906     0.62
NO       0
Pipe_-_16        STM_CBMH13       STM_MH07         SIDE         75.682     0.62
NO       0
Pipe_-_17        STM_CBMH12       STM_MH06         SIDE         75.951     0.62
NO       0
Pipe_-_18        STM_CBMH11       STM_MH06         SIDE         75.682     0.62
NO       0
Pipe_-_19        STM_CB10         STM_MH05         SIDE         76.193     0.62
NO       0
Pipe_-_20        STM_CB09         STM_MH05         SIDE         75.992     0.62
NO       0
Pipe_-_21        STM_CBMH08       STM_MH04         SIDE         76.206     0.62
NO       0
Pipe_-_22        STM_CBMH07       STM_MH04         SIDE         76.012     0.62
NO       0
Pipe_-_23        STM_CBMH06       STM_MH03         SIDE         76.19      0.62
NO       0
Pipe_-_24        STM_CBMH05       STM_MH03         SIDE         75.962     0.62
NO       0
Pipe_-_25        STM_CBMH04       STM_MH02         SIDE         76.19      0.62
NO       0
Pipe_-_26        STM_CBMH03       STM_MH02         SIDE         76.2       0.62
NO       0
Pipe_-_27        STM_CBMH02       STM_MH01         SIDE         76.5       0.62
NO       0
Pipe_-_28        STM_CBMH01       STM_MH01         SIDE         76.322     0.62
NO       0
Qual1            POND-1           SWM_Out          SIDE         75.8       0.62
NO       0

[WEIRS]
;;Name           From Node        To Node          Type         CrestHt    Qcoeff
Gated    EndCon   EndCoeff   Surcharge  RoadWidth  RoadSurf   Coeff. Curve
;;-------------- ---------------- ---------------- ------------ ---------- --------
-- -------- -------- ---------- ---------- ---------- ---------- ----------------
W1               SURF-WS-17       OF3              TRANSVERSE   77         1.58
NO       0        0          YES
W2               POND-3           Out              TRANSVERSE   77.2       1.8
NO       0        0          YES
W3               POND-1           SWM_Out          TRANSVERSE   76.65      1.8
NO       0        0          YES

[OUTLETS]
;;Name           From Node        To Node          Offset     Type
QTable/Qcoeff    Qexpon     Gated
;;-------------- ---------------- ---------------- ---------- ---------------- ----
------------ ---------- --------
OL1              POND-3           Out              76.65      TABULAR/HEAD
75_VHV-1                    NO

[XSECTIONS]
;;Link           Shape        Geom1            Geom2      Geom3      Geom4
Barrels    Culvert
;;-------------- ------------ ---------------- ---------- ---------- ---------- ---
------- ----------
C1               IRREGULAR    C1               0          0          0          1
C10              IRREGULAR    C10              0          0          0          1
C11              IRREGULAR    C11              0          0          0          1
C12              IRREGULAR    C12              0          0          0          1
```

C13	IRREGULAR	C13	0	0	0	1
C14	IRREGULAR	C14	0	0	0	1
C15	IRREGULAR	C15	0	0	0	1
C16	IRREGULAR	C16	0	0	0	1
C17	TRAPEZOIDAL	1	1	3	3	1
C18	TRIANGULAR	0.3	6	0	0	1
C19	TRIANGULAR	0.3	6	0	0	1
C2	IRREGULAR	C2	0	0	0	1
C20	TRIANGULAR	0.3	6	0	0	1
C21	TRAPEZOIDAL	1	1	3	3	1
C3	IRREGULAR	C3	0	0	0	1
C4	IRREGULAR	C4	0	0	0	1
C5	IRREGULAR	C5	0	0	0	1
C6	IRREGULAR	C6	0	0	0	1
C7	IRREGULAR	C7	0	0	0	1
C8	IRREGULAR	C8	0	0	0	1
C9	IRREGULAR	C9	0	0	0	1
Out	CIRCULAR	0.6	0	0	0	1
Pipe_-_03	CIRCULAR	0.6	0	0	0	1
Pipe_-_04	CIRCULAR	0.6	0	0	0	1
Pipe_-_05	CIRCULAR	0.6	0	0	0	1
Pipe_-_06	CIRCULAR	1.2	0	0	0	1
Pipe_-_07	CIRCULAR	0.975	0	0	0	1
Pipe_-_08	CIRCULAR	0.9	0	0	0	1
Pipe_-_09	CIRCULAR	0.825	0	0	0	1
Pipe_-_10	CIRCULAR	0.825	0	0	0	1
Pipe_-_100	CIRCULAR	0.6	0	0	0	1
Pipe_-_101	CIRCULAR	0.6	0	0	0	1
Pipe_-_102	CIRCULAR	0.6	0	0	0	1
Pipe_-_103	CIRCULAR	0.6	0	0	0	1
Pipe_-_104	CIRCULAR	0.525	0	0	0	1
Pipe_-_105	CIRCULAR	0.3	0	0	0	1
Pipe_-_106	CIRCULAR	0.3	0	0	0	1
Pipe_-_107	CIRCULAR	0.45	0	0	0	1
Pipe_-_108	CIRCULAR	0.45	0	0	0	1
Pipe_-_109	CIRCULAR	0.375	0	0	0	1
Pipe_-_11	CIRCULAR	0.75	0	0	0	1
Pipe_-_110	CIRCULAR	0.3	0	0	0	1
Pipe_-_12	CIRCULAR	0.525	0	0	0	1
Pipe_-_29	CIRCULAR	0.3	0	0	0	1
Pipe_-_30	CIRCULAR	0.3	0	0	0	1
Pipe_-_31	CIRCULAR	0.3	0	0	0	1
Pipe_-_32	CIRCULAR	0.3	0	0	0	1
Pipe_-_33	CIRCULAR	0.3	0	0	0	1
Pipe_-_34	CIRCULAR	0.1	0	0	0	1
Pipe_-_35	CIRCULAR	0.1	0	0	0	1
Pipe_-_36	CIRCULAR	0.1	0	0	0	1
Pipe_-_37	CIRCULAR	0.1	0	0	0	1
Pipe_-_38	CIRCULAR	0.15	0	0	0	1
Pipe_-_39	CIRCULAR	0.1	0	0	0	1
Pipe_-_40	CIRCULAR	0.1	0	0	0	1
Pipe_-_41	CIRCULAR	0.1	0	0	0	1
Pipe_-_42	CIRCULAR	0.1	0	0	0	1
Pipe_-_43	CIRCULAR	0.15	0	0	0	1
Pipe_-_44	CIRCULAR	0.1	0	0	0	1
Pipe_-_45	CIRCULAR	0.1	0	0	0	1
Pipe_-_46	CIRCULAR	0.1	0	0	0	1

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Pipe_-_47        CIRCULAR     0.1              0          0          0          1
Ponds            CIRCULAR     0.525            0          0          0          2
GRATE-01         RECT_CLOSED  0.35             0.35       0          0
GRATE-02         RECT_CLOSED  0.35             0.35       0          0
GRATE-03         RECT_CLOSED  0.35             0.35       0          0
GRATE-04         RECT_CLOSED  0.35             0.35       0          0
GRATE-05         RECT_CLOSED  0.35             0.35       0          0
GRATE-06         RECT_CLOSED  0.35             0.35       0          0
GRATE-07         RECT_CLOSED  0.35             0.35       0          0
GRATE-08         RECT_CLOSED  0.35             0.35       0          0
GRATE-09         RECT_CLOSED  0.35             0.35       0          0
GRATE-10         RECT_CLOSED  0.35             0.35       0          0
GRATE-11         RECT_CLOSED  0.35             0.35       0          0
GRATE-12         RECT_CLOSED  0.35             0.35       0          0
GRATE-13         RECT_CLOSED  0.35             0.35       0          0
GRATE-14         RECT_CLOSED  0.35             0.35       0          0
GRATE-15         RECT_CLOSED  0.35             0.35       0          0
GRATE-16         RECT_CLOSED  0.35             0.35       0          0
GRATE-18         RECT_CLOSED  0.35             0.35       0          0
GRATE-19         RECT_CLOSED  0.35             0.35       0          0
GRATE-20         RECT_CLOSED  0.35             0.35       0          0
GRATE-21         RECT_CLOSED  0.35             0.35       0          0
OR18             RECT_CLOSED  0.5              0.4        0          0
OR20             CIRCULAR     0.05             0          0          0
Pipe_-_13        CIRCULAR     0.108            0          0          0
Pipe_-_14        CIRCULAR     0.094            0          0          0
Pipe_-_15        CIRCULAR     0.152            0          0          0
Pipe_-_16        CIRCULAR     0.102            0          0          0
Pipe_-_17        CIRCULAR     0.178            0          0          0
Pipe_-_18        CIRCULAR     0.127            0          0          0
Pipe_-_19        CIRCULAR     0.083            0          0          0
Pipe_-_20        CIRCULAR     0.083            0          0          0
Pipe_-_21        CIRCULAR     0.127            0          0          0
Pipe_-_22        CIRCULAR     0.127            0          0          0
Pipe_-_23        CIRCULAR     0.152            0          0          0
Pipe_-_24        CIRCULAR     0.178            0          0          0
Pipe_-_25        CIRCULAR     0.178            0          0          0
Pipe_-_26        CIRCULAR     0.178            0          0          0
Pipe_-_27        CIRCULAR     0.127            0          0          0
Pipe_-_28        CIRCULAR     0.083            0          0          0
Qual1            CIRCULAR     0.15             0          0          0
W1               RECT_OPEN    1                20         0          0
W2               RECT_OPEN    0.1              5          0          0
W3               RECT_OPEN    0.1              5          0          0

[TRANSECTS]
;;Transect Data in HEC-2 format
;
;Transect created from transect line: 11
NC 0.01     0.01     0.01
X1 C1               38       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.645   0        77.642   1        77.629   3        77.624   4        77.62
5
GR 77.613   6        77.61    7        77.604   8        77.596   9        77.595
10
GR 77.588   11       77.578   13       77.572   14       77.565   15       77.561
16
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GR 77.555   17       77.554   18       77.546   19       77.546   20       77.568
21
GR 77.604   23       77.627   24       77.641   25       77.659   26       77.681
27
GR 77.7     28       77.721   29       77.737   30       77.758   31       77.794
33
GR 77.81    34       77.833   35       77.851   36       77.871   37       77.892
38
GR 77.906   39       77.929   40       77.929   40.0508674578319
;
;Transect created from transect line: 6
NC 0.01     0.01     0.01
X1 C10              30       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.243   0        77.232   1        77.229   3        77.223   5        77.223
6
GR 77.217   7        77.213   9        77.208   10       77.205   11       77.205
12
GR 77.203   13       77.199   14       77.196   15       77.194   16       77.194
17
GR 77.193   18       77.195   19       77.192   20       77.194   21       77.191
22
GR 77.194   23       77.192   25       77.192   26       77.193   27       77.191
28
GR 77.195   30       77.201   31       77.198   32       77.196   33       77.194
48.3572602284857
;
;Transect created from transect line: 16
NC 0.01     0.01     0.01
X1 C11              37       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.191   0        77.173   1        77.159   2        77.167   3        77.165
4
GR 77.159   5        77.151   6        77.147   7        77.137   8        77.128
9
GR 77.122   10       77.113   11       77.103   12       77.083   15       77.074
16
GR 77.058   18       77.049   19       77.053   20       77.067   21       77.086
22
GR 77.103   23       77.125   24       77.144   25       77.162   26       77.184
27
GR 77.202   28       77.219   29       77.239   30       77.258   31       77.3
33
GR 77.316   34       77.337   35       77.369   37       77.391   38       77.411
39
GR 77.436   40       77.436   40.0484821846399
;
;Transect created from transect line: 5
NC 0.01     0.01     0.01
X1 C12              33       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.442   0        77.421   1        77.402   2        77.33    6        77.316
7
GR 77.299   8        77.263   10       77.244   11       77.227   12       77.208
13
GR 77.196   14       77.176   15       77.159   16       77.123   18       77.104
19
GR 77.087   20       77.073   21       77.047   22       77.052   23       77.06
24
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GR 77.065   25       77.105   31       77.113   32       77.122   34       77.132
35
GR 77.142   37       77.151   38       77.156   39       77.17    41       77.175
42
GR 77.183   43       77.189   44       77.191   46.1322376312043
;
;Transect created from transect line: 2
NC 0.01     0.01     0.01
X1 C13              39       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.19    0        77.189   1        77.194   2        77.204   3        77.205
4
GR 77.223   5        77.201   6        77.228   7        77.236   8        77.204
9
GR 77.253   10       77.21    11       77.269   12       77.272   13       77.273
14
GR 77.292   15       77.276   16       77.297   17       77.305   18       77.308
19
GR 77.326   20       77.322   21       77.329   22       77.338   23       77.339
24
GR 77.342   25       77.356   26       77.348   27       77.359   28       77.374
29
GR 77.376   30       77.395   31       77.391   32       77.393   33       77.412
34
GR 77.408   35       77.424   37       77.428   38       77.428   40.0484822233505
;
;Transect created from transect line: 1
NC 0.01     0.01     0.01
X1 C14              25       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.093   0        77.088   1        77.088   4        77.058   5        77.049
6
GR 77.051   7        77.056   8        77.059   9        77.066   10       77.067
11
GR 77.071   12       77.077   13       77.083   15       77.088   16       77.091
17
GR 77.096   18       77.112   20       77.121   21       77.126   22       77.133
23
GR 77.144   24       77.157   26       77.167   27       77.189   30       77.19
46.1489919329164
;
;Transect created from transect line: 4
NC 0.01     0.01     0.01
X1 C15              59       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.336   0        77.323   1        77.314   2        77.29    3        77.282
4
GR 77.263   5        77.265   6        77.25    7        77.241   8        77.234
9
GR 77.217   10       77.21    11       77.205   12       77.197   13       77.172
14
GR 77.162   15       77.151   16       77.143   17       77.144   18       77.16
19
GR 77.16    20       77.166   21       77.173   22       77.177   23       77.193
24
GR 77.19    25       77.194   26       77.205   27       77.208   28       77.21
29
GR 77.223   30       77.227   31       77.233   32       77.241   33       77.234
34
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GR 77.257   35       77.251   36       77.251   37       77.274   38       77.267
39
GR 77.271   40       77.286   41       77.291   42       77.289   43       77.305
44
GR 77.308   45       77.32    46       77.325   47       77.327   48       77.343
49
GR 77.345   50       77.35    51       77.358   52       77.364   53       77.364
54
GR 77.377   55       77.381   56       77.391   57       77.396   64.4486216262681
;
;Transect created from transect line: 3
NC 0.01     0.01     0.01
X1 C16              31       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.187   0        77.18    1        77.17    2        77.161   3        77.155
4
GR 77.142   5        77.135   6        77.126   7        77.123   8        77.112
9
GR 77.105   10       77.095   11       77.086   12       77.08    13       77.067
14
GR 77.061   15       77.052   16       77.052   17       77.056   18       77.061
19
GR 77.084   20       77.091   21       77.108   22       77.121   24       77.14
25
GR 77.146   26       77.165   27       77.166   28       77.176   29       77.195
30
GR 77.195   61.4699167630226
;
;Transect created from transect line: 10
NC 0.01     0.01     0.01
X1 C2               25       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.542   0        77.545   1        77.55    2        77.551   3        77.558
4
GR 77.559   5        77.561   6        77.567   7        77.571   9        77.576
10
GR 77.581   12       77.586   13       77.596   17       77.603   18       77.603
19
GR 77.606   20       77.612   21       77.617   23       77.622   24       77.623
25
GR 77.628   26       77.63    27       77.638   29       77.644   30       77.645
46.0939675103782
;
;Transect created from transect line: 12
NC 0.01     0.01     0.01
X1 C3               34       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.397   0        77.395   1        77.388   2        77.38    3        77.374
4
GR 77.37    5        77.364   6        77.356   8        77.343   10       77.328
13
GR 77.32    14       77.313   16       77.305   17       77.299   18       77.299
19
GR 77.308   20       77.34    21       77.367   22       77.397   23       77.43
24
GR 77.46    25       77.558   28       77.577   29       77.612   30       77.644
31
GR 77.672   32       77.705   33       77.736   34       77.772   35       77.799
36
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GR 77.824   37       77.893   39       77.919   40       77.92    40.0946857436173
;
;Transect created from transect line: 9
NC 0.01     0.01     0.01
X1 C4                22       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.532   0        77.531   1        77.523   2        77.517   3        77.515
4
GR 77.509   5        77.501   7        77.494   8        77.47    13       77.464
14
GR 77.463   15       77.449   17       77.446   18       77.44    19       77.433
21
GR 77.426   22       77.423   23       77.415   24       77.403   27       77.395
28
GR 77.397   29       77.397   46.0831975261376
;
;Transect created from transect line: 13
NC 0.01     0.01     0.01
X1 C5                35       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.391   0        77.394   1        77.384   2        77.371   5        77.353
8
GR 77.348   9        77.332   12       77.325   13       77.323   14       77.309
16
GR 77.306   17       77.299   18       77.296   19       77.31    20       77.338
21
GR 77.371   22       77.4     23       77.432   24       77.466   25       77.497
26
GR 77.516   27       77.552   28       77.584   29       77.618   30       77.645
31
GR 77.677   32       77.713   33       77.737   34       77.765   35       77.799
36
GR 77.832   37       77.859   38       77.892   39       77.932   40       77.932
40.0965854482443
;
;Transect created from transect line: 8
NC 0.01     0.01     0.01
X1 C6                26       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.549   0        77.517   1        77.492   2        77.471   3        77.453
4
GR 77.432   5        77.408   6        77.318   10       77.299   11       77.296
12
GR 77.299   13       77.308   14       77.311   15       77.316   16       77.323
17
GR 77.326   18       77.333   19       77.355   23       77.358   24       77.364
25
GR 77.369   26       77.372   27       77.379   28       77.384   29       77.391
30
GR 77.391   46.0949701672376
;
;Transect created from transect line: 14
NC 0.01     0.01     0.01
X1 C7                32       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.4     0        77.368   2        77.343   4        77.337   5        77.327
6
GR 77.327   7        77.316   8        77.303   9        77.284   11       77.285
12
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GR 77.316   13       77.344   15       77.35    16       77.36    17       77.369
18
GR 77.422   19       77.437   20       77.451   21       77.467   22       77.542
23
GR 77.592   24       77.663   25       77.723   26       77.773   27       77.832
28
GR 77.831   29       77.86    30       77.838   31       77.86    32       77.905
33
GR 77.913   34       77.913   43.4275612791544
;
;Transect created from transect line: 7
NC 0.01     0.01     0.01
X1 C8               39       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.91    0        77.865   1        77.865   2        77.71    3        77.575
4
GR 77.463   5        77.449   6        77.446   7        77.433   8        77.438
9
GR 77.43    10       77.428   11       77.424   12       77.425   13       77.403
14
GR 77.336   15       77.232   16       77.241   17       77.215   18       77.233
19
GR 77.246   20       77.28    21       77.273   22       77.289   23       77.295
24
GR 77.316   25       77.302   26       77.327   27       77.322   28       77.325
29
GR 77.35    30       77.35    31       77.362   32       77.369   33       77.378
34
GR 77.385   35       77.388   36       77.395   37       77.399   46.5139438528636
;
;Transect created from transect line: 15
NC 0.01     0.01     0.01
X1 C9               26       0        0        0.0      0.0      0.0      0.0
0.0
GR 77.38    0        77.375   1        77.365   2        77.366   3        77.357
4
GR 77.357   5        77.349   6        77.34    7        77.342   8        77.333
9
GR 77.334   10       77.328   11       77.326   12       77.337   13       77.335
14
GR 77.342   15       77.341   16       77.342   17       77.352   18       77.351
19
GR 77.358   20       77.356   21       77.356   22       77.362   23       77.348
24
GR 77.347   40.6132507847166

[LOSSES]
;;Link            Kentry     Kexit      Kavg       Flap Gate  Seepage
;;--------------- ---------- ---------- ---------- ---------- ----------
Pipe_-_03        0          0.02       0          NO         0
Pipe_-_04        0          0.02       0          NO         0
Pipe_-_05        0          0.02       0          NO         0
Pipe_-_06        0          0.02       0          NO         0
Pipe_-_07        0          0.02       0          NO         0
Pipe_-_08        0          0.02       0          NO         0
Pipe_-_09        0          0.02       0          NO         0
Pipe_-_10        0          0.02       0          NO         0
Pipe_-_100       0          1.33       0          NO         0
Pipe_-_101       0          1.19       0          NO         0
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Pipe_-_102       0           0.055       0           NO          0
Pipe_-_103       0           0.02        0           NO          0
Pipe_-_104       0           0.035       0           NO          0
Pipe_-_105       0           1.33        0           NO          0
Pipe_-_106       0           0.39        0           NO          0
Pipe_-_107       0           0.035       0           NO          0
Pipe_-_108       0           0.02        0           NO          0
Pipe_-_109       0           0.02        0           NO          0
Pipe_-_11        0           0.02        0           NO          0
Pipe_-_110       0           0.02        0           NO          0
Pipe_-_12        0           0.02        0           NO          0
Pipe_-_29        0           0.02        0           NO          0
Pipe_-_30        0           0.035       0           NO          0
Pipe_-_31        0           0.02        0           NO          0
Pipe_-_32        0           0.02        0           NO          0
Pipe_-_33        0           0.02        0           NO          0
Pipe_-_34        0           0.035       0           NO          0
Pipe_-_35        0           0.035       0           NO          0
Pipe_-_36        0           0.02        0           NO          0
Pipe_-_37        0           0.02        0           NO          0
Pipe_-_38        0           0.02        0           NO          0
Pipe_-_39        0           0.02        0           NO          0
Pipe_-_40        0           0.02        0           NO          0
Pipe_-_41        0           0.02        0           NO          0
Pipe_-_42        0           0.02        0           NO          0
Pipe_-_43        0           0.035       0           NO          0
Pipe_-_44        0           0.02        0           NO          0
Pipe_-_45        0           0.02        0           NO          0
Pipe_-_46        0           0.02        0           NO          0
Pipe_-_47        0           0.02        0           NO          0
Ponds            0.9         0           0           NO          0

[CURVES]
;;Name           Type        X-Value     Y-Value
;;-------------- ----------- ----------- -----------
Pond_Pump        Pump3       0           1
Pond_Pump                    2.5         1

125-VHV-2        Rating      0           0
125-VHV-2                    0.066       0
125-VHV-2                    0.076       0
125-VHV-2                    0.086       0.001
125-VHV-2                    0.096       0.001
125-VHV-2                    0.106       0.002
125-VHV-2                    0.116       0.002
125-VHV-2                    0.126       0.003
125-VHV-2                    0.136       0.004
125-VHV-2                    0.146       0.004
125-VHV-2                    0.156       0.005
125-VHV-2                    0.176       0.006
125-VHV-2                    0.206       0.007
125-VHV-2                    0.256       0.009
125-VHV-2                    0.306       0.01
125-VHV-2                    0.356       0.011
125-VHV-2                    0.456       0.013
125-VHV-2                    0.556       0.014
125-VHV-2                    0.656       0.016
```

125-VHV-2		0.756	0.017
125-VHV-2		0.856	0.018
125-VHV-2		0.956	0.019
125-VHV-2		1.056	0.02
125-VHV-2		1.156	0.021
125-VHV-2		1.256	0.022
125-VHV-2		1.356	0.023
125-VHV-2		1.456	0.024
125-VHV-2		1.556	0.025
125-VHV-2		1.656	0.026
125-VHV-2		1.756	0.027
125-VHV-2		1.856	0.028
125-VHV-2		1.956	0.028
125-VHV-2		2.056	0.029
125-VHV-2		2.156	0.03
125-VHV-2		2.256	0.03
125-VHV-2		2.356	0.031
125-VHV-2		2.456	0.032
125-VHV-2		2.556	0.032
125-VHV-2		2.656	0.033
125-VHV-2		2.756	0.034
125-VHV-2		2.856	0.034
125-VHV-2		2.956	0.035
125-VHV-2		3.056	0.036
125-VHV-2		4.056	0.041
125-VHV-2		5.056	0.046
125-VHV-2		6.056	0.05
125-VHV-2		6.306	0.051
75_VHV-1	Rating	0	0
75_VHV-1		0.086	0.000105
75_VHV-1		0.096	0.000205
75_VHV-1		0.106	0.000446
75_VHV-1		0.116	0.000776
75_VHV-1		0.126	0.001182
75_VHV-1		0.136	0.001664
75_VHV-1		0.146	0.002133
75_VHV-1		0.156	0.002362
75_VHV-1		0.166	0.002577
75_VHV-1		0.176	0.002752
75_VHV-1		0.186	0.002908
75_VHV-1		0.196	0.003023
75_VHV-1		0.206	0.00314
75_VHV-1		0.216	0.003257
75_VHV-1		0.226	0.00334
75_VHV-1		0.236	0.00337
75_VHV-1		0.246	0.0033
75_VHV-1		0.256	0.00325
75_VHV-1		0.266	0.003262
75_VHV-1		0.276	0.00324
75_VHV-1		0.286	0.002885
75_VHV-1		0.296	0.002811
75_VHV-1		0.306	0.002794
75_VHV-1		0.316	0.002819
75_VHV-1		0.326	0.002854
75_VHV-1		0.336	0.002889
75_VHV-1		0.346	0.002939

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75_VHV-1                    0.356      0.002979
75_VHV-1                    0.366      0.003019
75_VHV-1                    0.376      0.003064
75_VHV-1                    0.476      0.003485
75_VHV-1                    0.576      0.003913
75_VHV-1                    0.676      0.004271
75_VHV-1                    0.776      0.004614
75_VHV-1                    0.876      0.004932
75_VHV-1                    0.976      0.005231
75_VHV-1                    1.076      0.005514
75_VHV-1                    1.176      0.005783
75_VHV-1                    1.276      0.00604
75_VHV-1                    1.376      0.006287
75_VHV-1                    1.476      0.006524
75_VHV-1                    1.576      0.006753
75_VHV-1                    1.676      0.006975
75_VHV-1                    1.776      0.00719
75_VHV-1                    1.876      0.007398
75_VHV-1                    1.976      0.007601
75_VHV-1                    2.076      0.007798
75_VHV-1                    2.176      0.007991
75_VHV-1                    2.276      0.008179
75_VHV-1                    2.376      0.008363
75_VHV-1                    2.476      0.008543
75_VHV-1                    2.576      0.008719
75_VHV-1                    2.676      0.008891
75_VHV-1                    2.776      0.009061
75_VHV-1                    2.876      0.009227
75_VHV-1                    2.976      0.00939
75_VHV-1                    3.076      0.009551
75_VHV-1                    4.076      0.011028
75_VHV-1                    5.076      0.01233
75_VHV-1                    6.076      0.013507
75_VHV-1                    7.076      0.014589
75_VHV-1                    8.076      0.015597
75_VHV-1                    9.076      0.016543
75_VHV-1                    10.076     0.017437

;From Storage Creator, Name = WS-20; Minimum Elev. = 75.8; Maximum Elev. = 77.396;
Depth = 1.596
Pond             Storage    0          3995
Pond                        0.05       4053
Pond                        0.1        4108
Pond                        0.15       4168
Pond                        0.2        4225
Pond                        0.25       4281
Pond                        0.3        4337
Pond                        0.35       4396
Pond                        0.4        4457
Pond                        0.45       4511
Pond                        0.5        4572
Pond                        0.55       4628
Pond                        0.6        4687
Pond                        0.65       4749
Pond                        0.7        4809
Pond                        0.75       4867
Pond                        0.8        4926
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Pond                        0.85        4977
Pond                        0.9         5017
Pond                        0.95        5017
Pond                        1           5017
Pond                        1.05        5017
Pond                        1.1         5017
Pond                        1.15        5017
Pond                        1.2         5017
Pond                        1.25        5017
Pond                        1.3         5021
Pond                        1.35        5024
Pond                        1.4         5031
Pond                        1.45        5036
Pond                        1.5         5039
Pond                        1.55        5043
Pond                        1.596       5046

Pond_3          Storage     0           1000
Pond_3                      0.65        1300

;From Storage Creator, Name = WS-01; Minimum Elev. = 77.258; Maximum Elev. = 77.95;
Depth = 0.692
WS-01           Storage     0           1
WS-01                       0.025       11
WS-01                       0.05        27
WS-01                       0.075       61
WS-01                       0.1         99
WS-01                       0.125       154
WS-01                       0.15        215
WS-01                       0.175       283
WS-01                       0.2         370
WS-01                       0.225       465
WS-01                       0.25        574
WS-01                       0.275       683
WS-01                       0.3         803
WS-01                       0.325       940
WS-01                       0.35        1055
WS-01                       0.375       1188
WS-01                       0.4         1378
WS-01                       0.425       1525
WS-01                       0.45        1634
WS-01                       0.475       1719
WS-01                       0.5         1790
WS-01                       0.525       1856
WS-01                       0.55        1917
WS-01                       0.575       1974
WS-01                       0.6         2058
WS-01                       0.625       2124
WS-01                       0.65        2185
WS-01                       0.675       2235
WS-01                       0.692       2246

;From Storage Creator, Name = WS-01A; Minimum Elev. = 77.934; Maximum Elev. =
77.947; Depth = 0.013
WS-01A          Storage     0           1
WS-01A                      0.013       10
```

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;From Storage Creator, Name = WS-02; Minimum Elev. = 77.309; Maximum Elev. = 100;
Depth = 22.691
WS-02            Storage    0          1
WS-02                       0.025      14
WS-02                       0.05       43
WS-02                       0.075      88
WS-02                       0.1        145
WS-02                       0.125      216
WS-02                       0.15       302
WS-02                       0.175      406
WS-02                       0.2        526
WS-02                       0.225      655
WS-02                       0.25       800
WS-02                       0.275      944
WS-02                       0.3        1083
WS-02                       0.325      1218
WS-02                       0.35       1347
WS-02                       0.375      1463
WS-02                       0.4        1565
WS-02                       0.425      1646
WS-02                       0.45       1716
WS-02                       0.475      1775
WS-02                       0.5        1833

;From Storage Creator, Name = WS-02A; Minimum Elev. = 99.755; Maximum Elev. = 100;
Depth = 0.245
WS-02A           Storage    0          1
WS-02A                      0.025      10
WS-02A                      0.05       36
WS-02A                      0.075      76
WS-02A                      0.1        130
WS-02A                      0.125      202
WS-02A                      0.15       285
WS-02A                      0.175      385
WS-02A                      0.2        500
WS-02A                      0.225      628
WS-02A                      0.245      710

;From Storage Creator, Name = WS-03; Minimum Elev. = 76.903; Maximum Elev. =
77.949; Depth = 1.047
WS-03            Storage    0          1
WS-03                       0.025      4
WS-03                       0.05       16
WS-03                       0.075      33
WS-03                       0.1        58
WS-03                       0.125      90
WS-03                       0.15       128
WS-03                       0.175      173
WS-03                       0.2        228
WS-03                       0.225      287
WS-03                       0.25       354
WS-03                       0.275      425
WS-03                       0.3        507
WS-03                       0.325      595
WS-03                       0.35       688
WS-03                       0.375      789
WS-03                       0.4        895
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WS-03                       0.425      997
WS-03                       0.45       1096
WS-03                       0.475      1195
WS-03                       0.5        1285
WS-03                       0.525      1380
WS-03                       0.55       1472
WS-03                       0.575      1561
WS-03                       0.6        1647
WS-03                       0.625      1731
WS-03                       0.65       1811
WS-03                       0.675      1891
WS-03                       0.7        1959
WS-03                       0.725      2019
WS-03                       0.75       2064
WS-03                       0.775      2102
WS-03                       0.8        2141
WS-03                       0.825      2179
WS-03                       0.85       2214
WS-03                       0.875      2253
WS-03                       0.9        2290
WS-03                       0.925      2320
WS-03                       0.95       2356
WS-03                       0.975      2392
WS-03                       1          2421
WS-03                       1.025      2446
WS-03                       1.047      2447

;From Storage Creator, Name = WS-03A; Minimum Elev. = 77.916; Maximum Elev. =
77.935; Depth = 0.018
WS-03A           Storage    0          1
WS-03A                      0.018      21

;From Storage Creator, Name = WS-04; Minimum Elev. = 76.91; Maximum Elev. = 77.65;
Depth = 0.74
WS-04            Storage    0          1
WS-04                       0.025      7
WS-04                       0.05       20
WS-04                       0.075      40
WS-04                       0.1        68
WS-04                       0.125      99
WS-04                       0.15       140
WS-04                       0.175      189
WS-04                       0.2        242
WS-04                       0.225      301
WS-04                       0.25       368
WS-04                       0.275      443
WS-04                       0.3        526
WS-04                       0.325      614
WS-04                       0.35       707
WS-04                       0.375      810
WS-04                       0.4        920
WS-04                       0.425      1034
WS-04                       0.45       1158
WS-04                       0.475      1284
WS-04                       0.5        1416
WS-04                       0.525      1540
WS-04                       0.55       1653
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WS-04                       0.575      1760
WS-04                       0.6        1857
WS-04                       0.625      1948
WS-04                       0.65       2034
WS-04                       0.675      2106
WS-04                       0.7        2165
WS-04                       0.725      2210
WS-04                       0.74       2233

;From Storage Creator, Name = WS-04A; Minimum Elev. = 99.991; Maximum Elev. =
99.996; Depth = 0.005
WS-04A           Storage    0          1
WS-04A                      0.005      7

;From Storage Creator, Name = WS-05; Minimum Elev. = 76.908; Maximum Elev. = 77.95;
Depth = 1.042
WS-05            Storage    0          1
WS-05                       0.025      8
WS-05                       0.05       26
WS-05                       0.075      51
WS-05                       0.1        87
WS-05                       0.125      133
WS-05                       0.15       186
WS-05                       0.175      246
WS-05                       0.2        324
WS-05                       0.225      404
WS-05                       0.25       491
WS-05                       0.275      588
WS-05                       0.3        705
WS-05                       0.325      815
WS-05                       0.35       950
WS-05                       0.375      1093
WS-05                       0.4        1241
WS-05                       0.425      1379
WS-05                       0.45       1499
WS-05                       0.475      1613
WS-05                       0.5        1732
WS-05                       0.525      1770
WS-05                       0.55       1809
WS-05                       0.575      1847
WS-05                       0.6        1881
WS-05                       0.625      1920
WS-05                       0.65       1958
WS-05                       0.675      1991
WS-05                       0.7        2026
WS-05                       0.725      2064
WS-05                       0.75       2102
WS-05                       0.775      2134
WS-05                       0.8        2172
WS-05                       0.825      2207
WS-05                       0.85       2236
WS-05                       0.875      2272
WS-05                       0.9        2305
WS-05                       0.925      2336
WS-05                       0.95       2366
WS-05                       0.975      2401
WS-05                       1          2431
```

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WS-05                       1.025      2445
WS-05                       1.042      2445

;From Storage Creator, Name = WS-05A; Minimum Elev. = 77.919; Maximum Elev. =
77.938; Depth = 0.019
WS-05A           Storage    0          1
WS-05A                      0.019      24

;From Storage Creator, Name = WS-06; Minimum Elev. = 76.913; Maximum Elev. =
77.545; Depth = 0.633
WS-06            Storage    0          1
WS-06                       0.025      10
WS-06                       0.05       26
WS-06                       0.075      50
WS-06                       0.1        80
WS-06                       0.125      122
WS-06                       0.15       171
WS-06                       0.175      229
WS-06                       0.2        296
WS-06                       0.225      369
WS-06                       0.25       451
WS-06                       0.275      539
WS-06                       0.3        635
WS-06                       0.325      737
WS-06                       0.35       851
WS-06                       0.375      976
WS-06                       0.4        1105
WS-06                       0.425      1229
WS-06                       0.45       1349
WS-06                       0.475      1461
WS-06                       0.5        1550
WS-06                       0.525      1674
WS-06                       0.55       1788
WS-06                       0.575      1892
WS-06                       0.6        1984
WS-06                       0.625      2059
WS-06                       0.633      2083

;From Storage Creator, Name = WS-07; Minimum Elev. = 76.911; Maximum Elev. = 77.95;
Depth = 1.039
WS-07            Storage    0          1
WS-07                       0.025      4
WS-07                       0.05       15
WS-07                       0.075      26
WS-07                       0.1        45
WS-07                       0.125      67
WS-07                       0.15       92
WS-07                       0.175      124
WS-07                       0.2        160
WS-07                       0.225      199
WS-07                       0.25       241
WS-07                       0.275      290
WS-07                       0.3        346
WS-07                       0.325      405
WS-07                       0.35       464
WS-07                       0.375      536
WS-07                       0.4        604
```

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WS-07                       0.425      666
WS-07                       0.45       732
WS-07                       0.475      794
WS-07                       0.5        850
WS-07                       0.525      866
WS-07                       0.55       885
WS-07                       0.575      903
WS-07                       0.6        916
WS-07                       0.625      932
WS-07                       0.65       948
WS-07                       0.675      963
WS-07                       0.7        977
WS-07                       0.725      993
WS-07                       0.75       1007
WS-07                       0.775      1023
WS-07                       0.8        1035
WS-07                       0.825      1050
WS-07                       0.85       1064
WS-07                       0.875      1078
WS-07                       0.9        1091
WS-07                       0.925      1104
WS-07                       0.95       1117
WS-07                       0.975      1129
WS-07                       1          1141
WS-07                       1.025      1145
WS-07                       1.039      1145

;From Storage Creator, Name = WS-07A; Minimum Elev. = 77.919; Maximum Elev. =
77.917; Depth = -0.002
;From Storage Creator, Name = WS-08; Minimum Elev. = 76.912; Maximum Elev. =
77.856; Depth = 0.944
WS-08            Storage    0          1
WS-08                       0.025      7
WS-08                       0.05       18
WS-08                       0.075      38
WS-08                       0.1        61
WS-08                       0.125      90
WS-08                       0.15       129
WS-08                       0.175      172
WS-08                       0.2        219
WS-08                       0.225      276
WS-08                       0.25       338
WS-08                       0.275      401
WS-08                       0.3        473
WS-08                       0.325      552
WS-08                       0.35       628
WS-08                       0.375      712
WS-08                       0.4        795
WS-08                       0.425      877
WS-08                       0.45       958
WS-08                       0.475      1039
WS-08                       0.5        1090
WS-08                       0.525      1118
WS-08                       0.55       1148
WS-08                       0.575      1178
WS-08                       0.6        1208
WS-08                       0.625      1236
```

```
WS-08                       0.65       1266
WS-08                       0.675      1289
WS-08                       0.7        1311
WS-08                       0.725      1332
WS-08                       0.75       1355
WS-08                       0.775      1377
WS-08                       0.8        1396
WS-08                       0.825      1415
WS-08                       0.85       1439
WS-08                       0.875      1458
WS-08                       0.9        1475
WS-08                       0.925      1493
WS-08                       0.944      1508

;From Storage Creator, Name = WS-09; Minimum Elev. = 76.91; Maximum Elev. = 77.948;
Depth = 1.038
WS-09            Storage    0          1
WS-09                       0.025      7
WS-09                       0.05       25
WS-09                       0.075      46
WS-09                       0.1        79
WS-09                       0.125      125
WS-09                       0.15       166
WS-09                       0.175      223
WS-09                       0.2        281
WS-09                       0.225      333
WS-09                       0.25       403
WS-09                       0.275      464
WS-09                       0.3        532
WS-09                       0.325      604
WS-09                       0.35       674
WS-09                       0.375      751
WS-09                       0.4        829
WS-09                       0.425      897
WS-09                       0.45       941
WS-09                       0.475      975
WS-09                       0.5        996
WS-09                       0.525      998
WS-09                       0.55       999
WS-09                       0.575      999
WS-09                       0.6        1000
WS-09                       0.625      1000
WS-09                       0.65       1000
WS-09                       0.675      1002
WS-09                       0.7        1002
WS-09                       0.725      1002
WS-09                       0.75       1002
WS-09                       0.775      1003
WS-09                       0.8        1003
WS-09                       0.825      1005
WS-09                       0.85       1005
WS-09                       0.875      1006
WS-09                       0.9        1007
WS-09                       0.925      1007
WS-09                       0.95       1008
WS-09                       0.975      1009
WS-09                       1          1010
```

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WS-09                       1.025      1011
WS-09                       1.038      1011

;From Storage Creator, Name = WS-10; Minimum Elev. = 76.913; Maximum Elev. =
77.918; Depth = 1.005
WS-10            Storage    0          1
WS-10                       0.025      10
WS-10                       0.05       30
WS-10                       0.075      60
WS-10                       0.1        97
WS-10                       0.125      147
WS-10                       0.15       208
WS-10                       0.175      278
WS-10                       0.2        361
WS-10                       0.225      453
WS-10                       0.25       556
WS-10                       0.275      663
WS-10                       0.3        747
WS-10                       0.325      804
WS-10                       0.35       852
WS-10                       0.375      898
WS-10                       0.4        946
WS-10                       0.425      997
WS-10                       0.45       1044
WS-10                       0.475      1093
WS-10                       0.5        1147
WS-10                       0.525      1150
WS-10                       0.55       1150
WS-10                       0.575      1151
WS-10                       0.6        1151
WS-10                       0.625      1151
WS-10                       0.65       1151
WS-10                       0.675      1151
WS-10                       0.7        1151
WS-10                       0.725      1151
WS-10                       0.75       1151
WS-10                       0.775      1151
WS-10                       0.8        1151
WS-10                       0.825      1151
WS-10                       0.85       1152
WS-10                       0.875      1152
WS-10                       0.9        1152
WS-10                       0.925      1152
WS-10                       0.95       1153
WS-10                       0.975      1153
WS-10                       1          1153
WS-10                       1.005      1153

;From Storage Creator, Name = WS-11; Minimum Elev. = 76.754; Maximum Elev. = 77.45;
Depth = 0.695
WS-11            Storage    0          1
WS-11                       0.025      11
WS-11                       0.05       40
WS-11                       0.075      86
WS-11                       0.1        148
WS-11                       0.125      226
WS-11                       0.15       321
```

```
WS-11                          0.175       432
WS-11                          0.2         565
WS-11                          0.225       709
WS-11                          0.25        874
WS-11                          0.275       1055
WS-11                          0.3         1255
WS-11                          0.325       1448
WS-11                          0.35        1637
WS-11                          0.375       1819
WS-11                          0.4         1975
WS-11                          0.425       2115
WS-11                          0.45        2234
WS-11                          0.475       2348
WS-11                          0.5         2465
WS-11                          0.525       2585
WS-11                          0.55        2709
WS-11                          0.575       2837
WS-11                          0.6         2969
WS-11                          0.625       3088
WS-11                          0.65        3176
WS-11                          0.675       3245
WS-11                          0.695       3250

;From Storage Creator, Name = WS-11A; Minimum Elev. = 77.43; Maximum Elev. =
77.441; Depth = 0.011
WS-11A            Storage      0           1
WS-11A                         0.011       27

;From Storage Creator, Name = WS-12; Minimum Elev. = 76.757; Maximum Elev. =
77.439; Depth = 0.681
WS-12             Storage      0           1
WS-12                          0.025       9
WS-12                          0.05        33
WS-12                          0.075       68
WS-12                          0.1         120
WS-12                          0.125       184
WS-12                          0.15        253
WS-12                          0.175       337
WS-12                          0.2         438
WS-12                          0.225       554
WS-12                          0.25        681
WS-12                          0.275       820
WS-12                          0.3         965
WS-12                          0.325       1093
WS-12                          0.35        1201
WS-12                          0.375       1287
WS-12                          0.4         1362
WS-12                          0.425       1531
WS-12                          0.45        1880
WS-12                          0.475       2276
WS-12                          0.5         2690
WS-12                          0.525       2741
WS-12                          0.55        2773
WS-12                          0.575       2798
WS-12                          0.6         2823
WS-12                          0.625       2848
WS-12                          0.65        2874
```

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WS-12                       0.675      2898
WS-12                       0.681      2902

;From Storage Creator, Name = WS-13; Minimum Elev. = 76.759; Maximum Elev. = 77.45;
Depth = 0.69
WS-13            Storage    0          1
WS-13                       0.025      14
WS-13                       0.05       40
WS-13                       0.075      76
WS-13                       0.1        131
WS-13                       0.125      205
WS-13                       0.15       282
WS-13                       0.175      379
WS-13                       0.2        491
WS-13                       0.225      608
WS-13                       0.25       751
WS-13                       0.275      900
WS-13                       0.3        1067
WS-13                       0.325      1234
WS-13                       0.35       1376
WS-13                       0.375      1518
WS-13                       0.4        1636
WS-13                       0.425      1743
WS-13                       0.45       1836
WS-13                       0.475      1916
WS-13                       0.5        1990
WS-13                       0.525      2064
WS-13                       0.55       2133
WS-13                       0.575      2200
WS-13                       0.6        2256
WS-13                       0.625      2314
WS-13                       0.65       2366
WS-13                       0.675      2404
WS-13                       0.69       2404

;From Storage Creator, Name = WS-13A; Minimum Elev. = 77.428; Maximum Elev. =
77.436; Depth = 0.008
WS-13A           Storage    0          1
WS-13A                      0.008      13

;From Storage Creator, Name = WS-14; Minimum Elev. = 76.759; Maximum Elev. =
77.439; Depth = 0.68
WS-14            Storage    0          1
WS-14                       0.025      17
WS-14                       0.05       53
WS-14                       0.075      107
WS-14                       0.1        179
WS-14                       0.125      273
WS-14                       0.15       385
WS-14                       0.175      516
WS-14                       0.2        665
WS-14                       0.225      834
WS-14                       0.25       1020
WS-14                       0.275      1234
WS-14                       0.3        1449
WS-14                       0.325      1648
WS-14                       0.35       1806
```

```
WS-14                       0.375      1933
WS-14                       0.4        2035
WS-14                       0.425      2110
WS-14                       0.45       2165
WS-14                       0.475      2222
WS-14                       0.5        2273
WS-14                       0.525      2326
WS-14                       0.55       2376
WS-14                       0.575      2426
WS-14                       0.6        2474
WS-14                       0.625      2522
WS-14                       0.65       2571
WS-14                       0.675      2617
WS-14                       0.68       2625

;From Storage Creator, Name = WS-15; Minimum Elev. = 76.754; Maximum Elev. = 77.45;
Depth = 0.696
WS-15            Storage    0          1
WS-15                       0.025      8
WS-15                       0.05       30
WS-15                       0.075      64
WS-15                       0.1        109
WS-15                       0.125      171
WS-15                       0.15       240
WS-15                       0.175      330
WS-15                       0.2        422
WS-15                       0.225      534
WS-15                       0.25       657
WS-15                       0.275      810
WS-15                       0.3        1050
WS-15                       0.325      1198
WS-15                       0.35       1343
WS-15                       0.375      1505
WS-15                       0.4        1650
WS-15                       0.425      1782
WS-15                       0.45       1895
WS-15                       0.475      1994
WS-15                       0.5        2112
WS-15                       0.525      2233
WS-15                       0.55       2345
WS-15                       0.575      2444
WS-15                       0.6        2539
WS-15                       0.625      2619
WS-15                       0.65       2680
WS-15                       0.675      2742
WS-15                       0.696      2773

;From Storage Creator, Name = WS-15A; Minimum Elev. = 77.432; Maximum Elev. =
77.45; Depth = 0.018
WS-15A           Storage    0          1
WS-15A                      0.018      23

;From Storage Creator, Name = WS-16; Minimum Elev. = 76.757; Maximum Elev. =
77.333; Depth = 0.576
WS-16            Storage    0          1
WS-16                       0.025      16
WS-16                       0.05       47
```

```
WS-16                          0.075      103
WS-16                          0.1        171
WS-16                          0.125      260
WS-16                          0.15       368
WS-16                          0.175      497
WS-16                          0.2        640
WS-16                          0.225      804
WS-16                          0.25       993
WS-16                          0.275      1195
WS-16                          0.3        1386
WS-16                          0.325      1546
WS-16                          0.35       1682
WS-16                          0.375      1786
WS-16                          0.4        1869
WS-16                          0.425      1927
WS-16                          0.45       1963
WS-16                          0.475      1992
WS-16                          0.5        2020
WS-16                          0.525      2050
WS-16                          0.55       2076
WS-16                          0.575      2105
WS-16                          0.576      2105

;From Storage Creator, Name = WS-17; Minimum Elev. = 76.26; Maximum Elev. = 77.897;
Depth = 1.637
WS-17             Storage      0          1
WS-17                          0.05       15
WS-17                          0.1        45
WS-17                          0.15       68
WS-17                          0.2        117
WS-17                          0.25       196
WS-17                          0.3        311
WS-17                          0.35       474
WS-17                          0.4        715
WS-17                          0.45       1046
WS-17                          0.5        1390
WS-17                          0.55       1542
WS-17                          0.6        1674
WS-17                          0.65       1801
WS-17                          0.7        1954
WS-17                          0.75       2129
WS-17                          0.8        2312
WS-17                          0.85       2537
WS-17                          0.9        2716
WS-17                          0.95       2879
WS-17                          1          3042
WS-17                          1.05       3189
WS-17                          1.1        3297
WS-17                          1.15       3385
WS-17                          1.2        3394
WS-17                          1.25       3410
WS-17                          1.3        3423
WS-17                          1.35       3428
WS-17                          1.4        3439
WS-17                          1.45       3446
WS-17                          1.5        3448
WS-17                          1.55       3450
```

```
WS-17                       1.6         3450
WS-17                       1.637       3450

;From Storage Creator, Name = WS-17_1; Minimum Elev. = 76.273; Maximum Elev. =
77.886; Depth = 1.613
WS-17_1           Storage   0           1
WS-17_1                     0.025       4
WS-17_1                     0.05        9
WS-17_1                     0.075       17
WS-17_1                     0.1         21
WS-17_1                     0.125       27
WS-17_1                     0.15        31
WS-17_1                     0.175       39
WS-17_1                     0.2         46
WS-17_1                     0.225       60
WS-17_1                     0.25        75
WS-17_1                     0.275       93
WS-17_1                     0.3         114
WS-17_1                     0.325       143
WS-17_1                     0.35        167
WS-17_1                     0.375       197
WS-17_1                     0.4         231
WS-17_1                     0.425       267
WS-17_1                     0.45        303
WS-17_1                     0.475       345
WS-17_1                     0.5         395
WS-17_1                     0.525       444
WS-17_1                     0.55        492
WS-17_1                     0.575       552
WS-17_1                     0.6         603
WS-17_1                     0.625       660
WS-17_1                     0.65        723
WS-17_1                     0.675       785
WS-17_1                     0.7         860
WS-17_1                     0.725       948
WS-17_1                     0.75        1042
WS-17_1                     0.775       1123
WS-17_1                     0.8         1209
WS-17_1                     0.825       1301
WS-17_1                     0.85        1438
WS-17_1                     0.875       1522
WS-17_1                     0.9         1601
WS-17_1                     0.925       1691
WS-17_1                     0.95        1770
WS-17_1                     0.975       1850
WS-17_1                     1           1922
WS-17_1                     1.025       2005
WS-17_1                     1.05        2065
WS-17_1                     1.075       2122
WS-17_1                     1.1         2172
WS-17_1                     1.125       2214
WS-17_1                     1.15        2234
WS-17_1                     1.175       2245
WS-17_1                     1.2         2248
WS-17_1                     1.225       2252
WS-17_1                     1.25        2262
WS-17_1                     1.275       2265
```

```
WS-17_1                     1.3         2269
WS-17_1                     1.325       2275
WS-17_1                     1.35        2277
WS-17_1                     1.375       2278
WS-17_1                     1.4         2281
WS-17_1                     1.425       2282
WS-17_1                     1.45        2284
WS-17_1                     1.475       2284
WS-17_1                     1.5         2284
WS-17_1                     1.525       2284
WS-17_1                     1.55        2284
WS-17_1                     1.575       2284
WS-17_1                     1.6         2284
WS-17_1                     1.613       2284

;From Storage Creator, Name = WS-17_2; Minimum Elev. = 76.266; Maximum Elev. =
76.921; Depth = 0.655
WS-17_2           Storage   0           1
WS-17_2                     0.025       5
WS-17_2                     0.05        11
WS-17_2                     0.075       20
WS-17_2                     0.1         27
WS-17_2                     0.125       32
WS-17_2                     0.15        41
WS-17_2                     0.175       59
WS-17_2                     0.2         82
WS-17_2                     0.225       109
WS-17_2                     0.25        138
WS-17_2                     0.275       178
WS-17_2                     0.3         219
WS-17_2                     0.325       272
WS-17_2                     0.35        341
WS-17_2                     0.375       423
WS-17_2                     0.4         535
WS-17_2                     0.425       659
WS-17_2                     0.45        811
WS-17_2                     0.475       955
WS-17_2                     0.5         1032
WS-17_2                     0.525       1065
WS-17_2                     0.55        1077
WS-17_2                     0.575       1091
WS-17_2                     0.6         1101
WS-17_2                     0.625       1112
WS-17_2                     0.65        1117
WS-17_2                     0.655       1119

;From Storage Creator, Name = WS-18; Minimum Elev. = 76.91; Maximum Elev. = 77.334;
Depth = 0.424
WS-18             Storage   0           1
WS-18                       0.025       9
WS-18                       0.05        26
WS-18                       0.075       48
WS-18                       0.1         84
WS-18                       0.125       130
WS-18                       0.15        174
WS-18                       0.175       233
WS-18                       0.2         297
```

```
WS-18                       0.225      348
WS-18                       0.25       414
WS-18                       0.275      476
WS-18                       0.3        530
WS-18                       0.325      574
WS-18                       0.35       617
WS-18                       0.375      647
WS-18                       0.4        665
WS-18                       0.424      672

;From Storage Creator, Name = WS-19; Minimum Elev. = 76.804; Maximum Elev. = 77.25;
Depth = 0.446
WS-19            Storage    0          1
WS-19                       0.025      7
WS-19                       0.05       21
WS-19                       0.075      45
WS-19                       0.1        79
WS-19                       0.125      120
WS-19                       0.15       170
WS-19                       0.175      231
WS-19                       0.2        297
WS-19                       0.225      376
WS-19                       0.25       463
WS-19                       0.275      535
WS-19                       0.3        603
WS-19                       0.325      654
WS-19                       0.35       696
WS-19                       0.375      734
WS-19                       0.4        766
WS-19                       0.425      793
WS-19                       0.446      815

;From Storage Creator, Name = WS-20; Minimum Elev. = 76.805; Maximum Elev. =
77.244; Depth = 0.439
WS-20            Storage    0          1
WS-20                       0.025      8
WS-20                       0.05       25
WS-20                       0.075      53
WS-20                       0.1        91
WS-20                       0.125      141
WS-20                       0.15       202
WS-20                       0.175      271
WS-20                       0.2        352
WS-20                       0.225      441
WS-20                       0.25       536
WS-20                       0.275      627
WS-20                       0.3        709
WS-20                       0.325      782
WS-20                       0.35       850
WS-20                       0.375      916
WS-20                       0.4        986
WS-20                       0.425      1027
WS-20                       0.439      1042

;From Storage Creator, Name = WS-25; Minimum Elev. = 77.943; Maximum Elev. =
77.942; Depth = -0.001
;From Storage Creator, Name = WS-27; Minimum Elev. = 75.8; Maximum Elev. = 77.327;
Depth = 1.527
```

WS-27	Storage	0	1860
WS-27		0.025	1881
WS-27		0.05	1900
WS-27		0.075	1920
WS-27		0.1	1944
WS-27		0.125	1967
WS-27		0.15	1989
WS-27		0.175	2011
WS-27		0.2	2032
WS-27		0.225	2053
WS-27		0.25	2075
WS-27		0.275	2097
WS-27		0.3	2119
WS-27		0.325	2141
WS-27		0.35	2163
WS-27		0.375	2182
WS-27		0.4	2205
WS-27		0.425	2228
WS-27		0.45	2253
WS-27		0.475	2277
WS-27		0.5	2297
WS-27		0.525	2318
WS-27		0.55	2341
WS-27		0.575	2367
WS-27		0.6	2388
WS-27		0.625	2408
WS-27		0.65	2432
WS-27		0.675	2452
WS-27		0.7	2477
WS-27		0.725	2503
WS-27		0.75	2524
WS-27		0.775	2547
WS-27		0.8	2571
WS-27		0.825	2590
WS-27		0.85	2614
WS-27		0.875	2638
WS-27		0.9	2676
WS-27		0.925	2676
WS-27		0.95	2676
WS-27		0.975	2676
WS-27		1	2676
WS-27		1.025	2676
WS-27		1.05	2676
WS-27		1.075	2676
WS-27		1.1	2676
WS-27		1.125	2676
WS-27		1.15	2676
WS-27		1.175	2676
WS-27		1.2	2676
WS-27		1.225	2676
WS-27		1.25	2681
WS-27		1.275	2692
WS-27		1.3	2707
WS-27		1.325	2725
WS-27		1.35	2740
WS-27		1.375	2750
WS-27		1.4	2758

```
WS-27                       1.425      2770
WS-27                       1.45       2779
WS-27                       1.475      2781
WS-27                       1.5        2784
WS-27                       1.525      2787
WS-27                       1.527      2787

;From Storage Creator, Name = WS-28; Minimum Elev. = 75.8; Maximum Elev. = 77.392;
Depth = 1.592
WS-28            Storage    0          3997
WS-28                       0.025      4024
WS-28                       0.05       4053
WS-28                       0.075      4082
WS-28                       0.1        4108
WS-28                       0.125      4139
WS-28                       0.15       4166
WS-28                       0.175      4195
WS-28                       0.2        4224
WS-28                       0.225      4250
WS-28                       0.25       4282
WS-28                       0.275      4309
WS-28                       0.3        4340
WS-28                       0.325      4367
WS-28                       0.35       4395
WS-28                       0.375      4425
WS-28                       0.4        4455
WS-28                       0.425      4483
WS-28                       0.45       4515
WS-28                       0.475      4541
WS-28                       0.5        4572
WS-28                       0.525      4600
WS-28                       0.55       4631
WS-28                       0.575      4656
WS-28                       0.6        4686
WS-28                       0.625      4720
WS-28                       0.65       4748
WS-28                       0.675      4777
WS-28                       0.7        4804
WS-28                       0.725      4837
WS-28                       0.75       4867
WS-28                       0.775      4888
WS-28                       0.8        4907
WS-28                       0.825      4924
WS-28                       0.85       4942
WS-28                       0.875      4959
WS-28                       0.9        4974
WS-28                       0.925      4974
WS-28                       0.95       4974
WS-28                       0.975      4974
WS-28                       1          4974
WS-28                       1.025      4974
WS-28                       1.05       4974
WS-28                       1.075      4974
WS-28                       1.1        4974
WS-28                       1.125      4974
WS-28                       1.15       4974
WS-28                       1.175      4974
```

```
WS-28                       1.2         4974
WS-28                       1.225       4974
WS-28                       1.25        4974
WS-28                       1.275       4978
WS-28                       1.3         4980
WS-28                       1.325       4982
WS-28                       1.35        4985
WS-28                       1.375       4991
WS-28                       1.4         4996
WS-28                       1.425       5001
WS-28                       1.45        5005
WS-28                       1.475       5009
WS-28                       1.5         5012
WS-28                       1.525       5015
WS-28                       1.55        5017
WS-28                       1.575       5020
WS-28                       1.592       5022

;From Storage Creator, Name = WS-29; Minimum Elev. = 76.65; Maximum Elev. = 77.299;
Depth = 0.649
WS-29            Storage    0           1065
WS-29                       0.025       1076
WS-29                       0.05        1084
WS-29                       0.075       1093
WS-29                       0.1         1103
WS-29                       0.125       1114
WS-29                       0.15        1124
WS-29                       0.175       1134
WS-29                       0.2         1145
WS-29                       0.225       1157
WS-29                       0.25        1171
WS-29                       0.275       1180
WS-29                       0.3         1190
WS-29                       0.325       1199
WS-29                       0.35        1207
WS-29                       0.375       1219
WS-29                       0.4         1229
WS-29                       0.425       1242
WS-29                       0.45        1252
WS-29                       0.475       1264
WS-29                       0.5         1274
WS-29                       0.525       1285
WS-29                       0.55        1295
WS-29                       0.575       1306
WS-29                       0.6         1319
WS-29                       0.625       1329
WS-29                       0.649       1341

;From Storage Creator, Name = WS-30; Minimum Elev. = 77.412; Maximum Elev. =
77.415; Depth = 0.004
WS-30            Storage    0           1
WS-30                       0.004       1

[TIMESERIES]
;;Name           Date       Time       Value
;;-------------- ---------- ---------- ----------
;Rainfall (mm/hr)
```

```
002yrChicago3hr  01/01/2019 00:00:00   0
002yrChicago3hr  01/01/2019 00:10:00   2.81459
002yrChicago3hr  01/01/2019 00:20:00   3.49824
002yrChicago3hr  01/01/2019 00:30:00   4.68718
002yrChicago3hr  01/01/2019 00:40:00   7.30485
002yrChicago3hr  01/01/2019 00:50:00   18.20881
002yrChicago3hr  01/01/2019 01:00:00   76.805
002yrChicago3hr  01/01/2019 01:10:00   24.07906
002yrChicago3hr  01/01/2019 01:20:00   12.36376
002yrChicago3hr  01/01/2019 01:30:00   8.32403
002yrChicago3hr  01/01/2019 01:40:00   6.30341
002yrChicago3hr  01/01/2019 01:50:00   5.09498
002yrChicago3hr  01/01/2019 02:00:00   4.29133
002yrChicago3hr  01/01/2019 02:10:00   3.71786
002yrChicago3hr  01/01/2019 02:20:00   3.28762
002yrChicago3hr  01/01/2019 02:30:00   2.95254
002yrChicago3hr  01/01/2019 02:40:00   2.68388
002yrChicago3hr  01/01/2019 02:50:00   2.46348
002yrChicago3hr  01/01/2019 03:00:00   2.27921

;Rainfall (mm/hr)
002YrSCS24       01/01/2019 00:00:00   0.53
002YrSCS24       01/01/2019 00:10:00   0.53
002YrSCS24       01/01/2019 00:20:00   0.53
002YrSCS24       01/01/2019 00:30:00   0.53
002YrSCS24       01/01/2019 00:40:00   0.53
002YrSCS24       01/01/2019 00:50:00   0.53
002YrSCS24       01/01/2019 01:00:00   0.53
002YrSCS24       01/01/2019 01:10:00   0.53
002YrSCS24       01/01/2019 01:20:00   0.53
002YrSCS24       01/01/2019 01:30:00   0.53
002YrSCS24       01/01/2019 01:40:00   0.53
002YrSCS24       01/01/2019 01:50:00   0.53
002YrSCS24       01/01/2019 02:00:00   0.63
002YrSCS24       01/01/2019 02:10:00   0.63
002YrSCS24       01/01/2019 02:20:00   0.63
002YrSCS24       01/01/2019 02:30:00   0.63
002YrSCS24       01/01/2019 02:40:00   0.63
002YrSCS24       01/01/2019 02:50:00   0.63
002YrSCS24       01/01/2019 03:00:00   0.63
002YrSCS24       01/01/2019 03:10:00   0.63
002YrSCS24       01/01/2019 03:20:00   0.63
002YrSCS24       01/01/2019 03:30:00   0.63
002YrSCS24       01/01/2019 03:40:00   0.63
002YrSCS24       01/01/2019 03:50:00   0.63
002YrSCS24       01/01/2019 04:00:00   0.78
002YrSCS24       01/01/2019 04:10:00   0.78
002YrSCS24       01/01/2019 04:20:00   0.78
002YrSCS24       01/01/2019 04:30:00   0.78
002YrSCS24       01/01/2019 04:40:00   0.78
002YrSCS24       01/01/2019 04:50:00   0.78
002YrSCS24       01/01/2019 05:00:00   0.78
002YrSCS24       01/01/2019 05:10:00   0.78
002YrSCS24       01/01/2019 05:20:00   0.78
002YrSCS24       01/01/2019 05:30:00   0.78
002YrSCS24       01/01/2019 05:40:00   0.78
002YrSCS24       01/01/2019 05:50:00   0.78
```

002YrSCS24	01/01/2019 06:00:00	0.87
002YrSCS24	01/01/2019 06:10:00	0.87
002YrSCS24	01/01/2019 06:20:00	0.87
002YrSCS24	01/01/2019 06:30:00	0.87
002YrSCS24	01/01/2019 06:40:00	0.87
002YrSCS24	01/01/2019 06:50:00	0.87
002YrSCS24	01/01/2019 07:00:00	1.07
002YrSCS24	01/01/2019 07:10:00	1.07
002YrSCS24	01/01/2019 07:20:00	1.07
002YrSCS24	01/01/2019 07:30:00	1.07
002YrSCS24	01/01/2019 07:40:00	1.07
002YrSCS24	01/01/2019 07:50:00	1.07
002YrSCS24	01/01/2019 08:00:00	1.26
002YrSCS24	01/01/2019 08:10:00	1.26
002YrSCS24	01/01/2019 08:20:00	1.26
002YrSCS24	01/01/2019 08:30:00	1.36
002YrSCS24	01/01/2019 08:40:00	1.36
002YrSCS24	01/01/2019 08:50:00	1.36
002YrSCS24	01/01/2019 09:00:00	1.55
002YrSCS24	01/01/2019 09:10:00	1.55
002YrSCS24	01/01/2019 09:20:00	1.55
002YrSCS24	01/01/2019 09:30:00	1.74
002YrSCS24	01/01/2019 09:40:00	1.74
002YrSCS24	01/01/2019 09:50:00	1.74
002YrSCS24	01/01/2019 10:00:00	2.23
002YrSCS24	01/01/2019 10:10:00	2.23
002YrSCS24	01/01/2019 10:20:00	2.23
002YrSCS24	01/01/2019 10:30:00	3.01
002YrSCS24	01/01/2019 10:40:00	3.01
002YrSCS24	01/01/2019 10:50:00	3.01
002YrSCS24	01/01/2019 11:00:00	4.65
002YrSCS24	01/01/2019 11:10:00	4.65
002YrSCS24	01/01/2019 11:20:00	4.65
002YrSCS24	01/01/2019 11:30:00	14.35
002YrSCS24	01/01/2019 11:40:00	36.84
002YrSCS24	01/01/2019 11:50:00	59.33
002YrSCS24	01/01/2019 12:00:00	6.98
002YrSCS24	01/01/2019 12:10:00	6.98
002YrSCS24	01/01/2019 12:20:00	6.98
002YrSCS24	01/01/2019 12:30:00	3.59
002YrSCS24	01/01/2019 12:40:00	3.59
002YrSCS24	01/01/2019 12:50:00	3.59
002YrSCS24	01/01/2019 13:00:00	2.62
002YrSCS24	01/01/2019 13:10:00	2.62
002YrSCS24	01/01/2019 13:20:00	2.62
002YrSCS24	01/01/2019 13:30:00	2.04
002YrSCS24	01/01/2019 13:40:00	2.04
002YrSCS24	01/01/2019 13:50:00	2.04
002YrSCS24	01/01/2019 14:00:00	1.45
002YrSCS24	01/01/2019 14:10:00	1.45
002YrSCS24	01/01/2019 14:20:00	1.45
002YrSCS24	01/01/2019 14:30:00	1.45
002YrSCS24	01/01/2019 14:40:00	1.45
002YrSCS24	01/01/2019 14:50:00	1.45
002YrSCS24	01/01/2019 15:00:00	1.45
002YrSCS24	01/01/2019 15:10:00	1.45
002YrSCS24	01/01/2019 15:20:00	1.45

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002YrSCS24       01/01/2019 15:30:00   1.45
002YrSCS24       01/01/2019 15:40:00   1.45
002YrSCS24       01/01/2019 15:50:00   1.45
002YrSCS24       01/01/2019 16:00:00   0.87
002YrSCS24       01/01/2019 16:10:00   0.87
002YrSCS24       01/01/2019 16:20:00   0.87
002YrSCS24       01/01/2019 16:30:00   0.87
002YrSCS24       01/01/2019 16:40:00   0.87
002YrSCS24       01/01/2019 16:50:00   0.87
002YrSCS24       01/01/2019 17:00:00   0.87
002YrSCS24       01/01/2019 17:10:00   0.87
002YrSCS24       01/01/2019 17:20:00   0.87
002YrSCS24       01/01/2019 17:30:00   0.87
002YrSCS24       01/01/2019 17:40:00   0.87
002YrSCS24       01/01/2019 17:50:00   0.87
002YrSCS24       01/01/2019 18:00:00   0.87
002YrSCS24       01/01/2019 18:10:00   0.87
002YrSCS24       01/01/2019 18:20:00   0.87
002YrSCS24       01/01/2019 18:30:00   0.87
002YrSCS24       01/01/2019 18:40:00   0.87
002YrSCS24       01/01/2019 18:50:00   0.87
002YrSCS24       01/01/2019 19:00:00   0.87
002YrSCS24       01/01/2019 19:10:00   0.87
002YrSCS24       01/01/2019 19:20:00   0.87
002YrSCS24       01/01/2019 19:30:00   0.87
002YrSCS24       01/01/2019 19:40:00   0.87
002YrSCS24       01/01/2019 19:50:00   0.87
002YrSCS24       01/01/2019 20:00:00   0.58
002YrSCS24       01/01/2019 20:10:00   0.58
002YrSCS24       01/01/2019 20:20:00   0.58
002YrSCS24       01/01/2019 20:30:00   0.58
002YrSCS24       01/01/2019 20:40:00   0.58
002YrSCS24       01/01/2019 20:50:00   0.58
002YrSCS24       01/01/2019 21:00:00   0.58
002YrSCS24       01/01/2019 21:10:00   0.58
002YrSCS24       01/01/2019 21:20:00   0.58
002YrSCS24       01/01/2019 21:30:00   0.58
002YrSCS24       01/01/2019 21:40:00   0.58
002YrSCS24       01/01/2019 21:50:00   0.58
002YrSCS24       01/01/2019 22:00:00   0.58
002YrSCS24       01/01/2019 22:10:00   0.58
002YrSCS24       01/01/2019 22:20:00   0.58
002YrSCS24       01/01/2019 22:30:00   0.58
002YrSCS24       01/01/2019 22:40:00   0.58
002YrSCS24       01/01/2019 22:50:00   0.58
002YrSCS24       01/01/2019 23:00:00   0.58
002YrSCS24       01/01/2019 23:10:00   0.58
002YrSCS24       01/01/2019 23:20:00   0.58
002YrSCS24       01/01/2019 23:30:00   0.58
002YrSCS24       01/01/2019 23:40:00   0.58
002YrSCS24       01/01/2019 23:50:00   0.58

;Rainfall (mm/hr)
005yrChicago3hr  01/01/2019 00:00:00   0
005yrChicago3hr  01/01/2019 00:10:00   3.68223
005yrChicago3hr  01/01/2019 00:20:00   4.58232
005yrChicago3hr  01/01/2019 00:30:00   6.15055
```

```
005yrChicago3hr  01/01/2019 00:40:00   9.6141
005yrChicago3hr  01/01/2019 00:50:00   24.17035
005yrChicago3hr  01/01/2019 01:00:00   104.193
005yrChicago3hr  01/01/2019 01:10:00   32.03692
005yrChicago3hr  01/01/2019 01:20:00   16.3375
005yrChicago3hr  01/01/2019 01:30:00   10.96479
005yrChicago3hr  01/01/2019 01:40:00   8.28693
005yrChicago3hr  01/01/2019 01:50:00   6.68897
005yrChicago3hr  01/01/2019 02:00:00   5.6279
005yrChicago3hr  01/01/2019 02:10:00   4.87167
005yrChicago3hr  01/01/2019 02:20:00   4.30483
005yrChicago3hr  01/01/2019 02:30:00   3.8637
005yrChicago3hr  01/01/2019 02:40:00   3.51028
005yrChicago3hr  01/01/2019 02:50:00   3.22046
005yrChicago3hr  01/01/2019 03:00:00   2.97831

;Rainfall (mm/hr)
005YrSCS24       01/01/2019 00:00:00   0.71
005YrSCS24       01/01/2019 00:10:00   0.71
005YrSCS24       01/01/2019 00:20:00   0.71
005YrSCS24       01/01/2019 00:30:00   0.71
005YrSCS24       01/01/2019 00:40:00   0.71
005YrSCS24       01/01/2019 00:50:00   0.71
005YrSCS24       01/01/2019 01:00:00   0.71
005YrSCS24       01/01/2019 01:10:00   0.71
005YrSCS24       01/01/2019 01:20:00   0.71
005YrSCS24       01/01/2019 01:30:00   0.71
005YrSCS24       01/01/2019 01:40:00   0.71
005YrSCS24       01/01/2019 01:50:00   0.71
005YrSCS24       01/01/2019 02:00:00   0.83
005YrSCS24       01/01/2019 02:10:00   0.83
005YrSCS24       01/01/2019 02:20:00   0.83
005YrSCS24       01/01/2019 02:30:00   0.83
005YrSCS24       01/01/2019 02:40:00   0.83
005YrSCS24       01/01/2019 02:50:00   0.83
005YrSCS24       01/01/2019 03:00:00   0.83
005YrSCS24       01/01/2019 03:10:00   0.83
005YrSCS24       01/01/2019 03:20:00   0.83
005YrSCS24       01/01/2019 03:30:00   0.83
005YrSCS24       01/01/2019 03:40:00   0.83
005YrSCS24       01/01/2019 03:50:00   0.83
005YrSCS24       01/01/2019 04:00:00   1.03
005YrSCS24       01/01/2019 04:10:00   1.03
005YrSCS24       01/01/2019 04:20:00   1.03
005YrSCS24       01/01/2019 04:30:00   1.03
005YrSCS24       01/01/2019 04:40:00   1.03
005YrSCS24       01/01/2019 04:50:00   1.03
005YrSCS24       01/01/2019 05:00:00   1.03
005YrSCS24       01/01/2019 05:10:00   1.03
005YrSCS24       01/01/2019 05:20:00   1.03
005YrSCS24       01/01/2019 05:30:00   1.03
005YrSCS24       01/01/2019 05:40:00   1.03
005YrSCS24       01/01/2019 05:50:00   1.03
005YrSCS24       01/01/2019 06:00:00   1.15
005YrSCS24       01/01/2019 06:10:00   1.15
005YrSCS24       01/01/2019 06:20:00   1.15
005YrSCS24       01/01/2019 06:30:00   1.15
```

005YrSCS24	01/01/2019 06:40:00	1.15
005YrSCS24	01/01/2019 06:50:00	1.15
005YrSCS24	01/01/2019 07:00:00	1.41
005YrSCS24	01/01/2019 07:10:00	1.41
005YrSCS24	01/01/2019 07:20:00	1.41
005YrSCS24	01/01/2019 07:30:00	1.41
005YrSCS24	01/01/2019 07:40:00	1.41
005YrSCS24	01/01/2019 07:50:00	1.41
005YrSCS24	01/01/2019 08:00:00	1.67
005YrSCS24	01/01/2019 08:10:00	1.67
005YrSCS24	01/01/2019 08:20:00	1.67
005YrSCS24	01/01/2019 08:30:00	1.8
005YrSCS24	01/01/2019 08:40:00	1.8
005YrSCS24	01/01/2019 08:50:00	1.8
005YrSCS24	01/01/2019 09:00:00	2.05
005YrSCS24	01/01/2019 09:10:00	2.05
005YrSCS24	01/01/2019 09:20:00	2.05
005YrSCS24	01/01/2019 09:30:00	2.31
005YrSCS24	01/01/2019 09:40:00	2.31
005YrSCS24	01/01/2019 09:50:00	2.31
005YrSCS24	01/01/2019 10:00:00	2.95
005YrSCS24	01/01/2019 10:10:00	2.95
005YrSCS24	01/01/2019 10:20:00	2.95
005YrSCS24	01/01/2019 10:30:00	3.98
005YrSCS24	01/01/2019 10:40:00	3.98
005YrSCS24	01/01/2019 10:50:00	3.98
005YrSCS24	01/01/2019 11:00:00	6.16
005YrSCS24	01/01/2019 11:10:00	6.16
005YrSCS24	01/01/2019 11:20:00	6.16
005YrSCS24	01/01/2019 11:30:00	18.98
005YrSCS24	01/01/2019 11:40:00	48.73
005YrSCS24	01/01/2019 11:50:00	78.48
005YrSCS24	01/01/2019 12:00:00	9.23
005YrSCS24	01/01/2019 12:10:00	9.23
005YrSCS24	01/01/2019 12:20:00	9.23
005YrSCS24	01/01/2019 12:30:00	4.74
005YrSCS24	01/01/2019 12:40:00	4.74
005YrSCS24	01/01/2019 12:50:00	4.74
005YrSCS24	01/01/2019 13:00:00	3.46
005YrSCS24	01/01/2019 13:10:00	3.46
005YrSCS24	01/01/2019 13:20:00	3.46
005YrSCS24	01/01/2019 13:30:00	2.69
005YrSCS24	01/01/2019 13:40:00	2.69
005YrSCS24	01/01/2019 13:50:00	2.69
005YrSCS24	01/01/2019 14:00:00	1.92
005YrSCS24	01/01/2019 14:10:00	1.92
005YrSCS24	01/01/2019 14:20:00	1.92
005YrSCS24	01/01/2019 14:30:00	1.92
005YrSCS24	01/01/2019 14:40:00	1.92
005YrSCS24	01/01/2019 14:50:00	1.92
005YrSCS24	01/01/2019 15:00:00	1.92
005YrSCS24	01/01/2019 15:10:00	1.92
005YrSCS24	01/01/2019 15:20:00	1.92
005YrSCS24	01/01/2019 15:30:00	1.92
005YrSCS24	01/01/2019 15:40:00	1.92
005YrSCS24	01/01/2019 15:50:00	1.92
005YrSCS24	01/01/2019 16:00:00	1.15

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005YrSCS24       01/01/2019 16:10:00   1.15
005YrSCS24       01/01/2019 16:20:00   1.15
005YrSCS24       01/01/2019 16:30:00   1.15
005YrSCS24       01/01/2019 16:40:00   1.15
005YrSCS24       01/01/2019 16:50:00   1.15
005YrSCS24       01/01/2019 17:00:00   1.15
005YrSCS24       01/01/2019 17:10:00   1.15
005YrSCS24       01/01/2019 17:20:00   1.15
005YrSCS24       01/01/2019 17:30:00   1.15
005YrSCS24       01/01/2019 17:40:00   1.15
005YrSCS24       01/01/2019 17:50:00   1.15
005YrSCS24       01/01/2019 18:00:00   1.15
005YrSCS24       01/01/2019 18:10:00   1.15
005YrSCS24       01/01/2019 18:20:00   1.15
005YrSCS24       01/01/2019 18:30:00   1.15
005YrSCS24       01/01/2019 18:40:00   1.15
005YrSCS24       01/01/2019 18:50:00   1.15
005YrSCS24       01/01/2019 19:00:00   1.15
005YrSCS24       01/01/2019 19:10:00   1.15
005YrSCS24       01/01/2019 19:20:00   1.15
005YrSCS24       01/01/2019 19:30:00   1.15
005YrSCS24       01/01/2019 19:40:00   1.15
005YrSCS24       01/01/2019 19:50:00   1.15
005YrSCS24       01/01/2019 20:00:00   0.77
005YrSCS24       01/01/2019 20:10:00   0.77
005YrSCS24       01/01/2019 20:20:00   0.77
005YrSCS24       01/01/2019 20:30:00   0.77
005YrSCS24       01/01/2019 20:40:00   0.77
005YrSCS24       01/01/2019 20:50:00   0.77
005YrSCS24       01/01/2019 21:00:00   0.77
005YrSCS24       01/01/2019 21:10:00   0.77
005YrSCS24       01/01/2019 21:20:00   0.77
005YrSCS24       01/01/2019 21:30:00   0.77
005YrSCS24       01/01/2019 21:40:00   0.77
005YrSCS24       01/01/2019 21:50:00   0.77
005YrSCS24       01/01/2019 22:00:00   0.77
005YrSCS24       01/01/2019 22:10:00   0.77
005YrSCS24       01/01/2019 22:20:00   0.77
005YrSCS24       01/01/2019 22:30:00   0.77
005YrSCS24       01/01/2019 22:40:00   0.77
005YrSCS24       01/01/2019 22:50:00   0.77
005YrSCS24       01/01/2019 23:00:00   0.77
005YrSCS24       01/01/2019 23:10:00   0.77
005YrSCS24       01/01/2019 23:20:00   0.77
005YrSCS24       01/01/2019 23:30:00   0.77
005YrSCS24       01/01/2019 23:40:00   0.77
005YrSCS24       01/01/2019 23:50:00   0.77

;Rainfall (mm/hr)
010yrChicago3hr  01/01/2019 00:00:00   0
010yrChicago3hr  01/01/2019 00:10:00   4.24804
010yrChicago3hr  01/01/2019 00:20:00   5.29032
010yrChicago3hr  01/01/2019 00:30:00   7.10821
010yrChicago3hr  01/01/2019 00:40:00   11.12994
010yrChicago3hr  01/01/2019 00:50:00   28.09961
010yrChicago3hr  01/01/2019 01:00:00   122.1418
010yrChicago3hr  01/01/2019 01:10:00   37.28489
```

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010yrChicago3hr  01/01/2019 01:20:00   18.95368
010yrChicago3hr  01/01/2019 01:30:00   12.69959
010yrChicago3hr  01/01/2019 01:40:00   9.58762
010yrChicago3hr  01/01/2019 01:50:00   7.7327
010yrChicago3hr  01/01/2019 02:00:00   6.50203
010yrChicago3hr  01/01/2019 02:10:00   5.6255
010yrChicago3hr  01/01/2019 02:20:00   4.96886
010yrChicago3hr  01/01/2019 02:30:00   4.45808
010yrChicago3hr  01/01/2019 02:40:00   4.04902
010yrChicago3hr  01/01/2019 02:50:00   3.71371
010yrChicago3hr  01/01/2019 03:00:00   3.4336

;Rainfall (mm/hr)
010YrSCS24       01/01/2019 00:00:00   0.82
010YrSCS24       01/01/2019 00:10:00   0.82
010YrSCS24       01/01/2019 00:20:00   0.82
010YrSCS24       01/01/2019 00:30:00   0.82
010YrSCS24       01/01/2019 00:40:00   0.82
010YrSCS24       01/01/2019 00:50:00   0.82
010YrSCS24       01/01/2019 01:00:00   0.82
010YrSCS24       01/01/2019 01:10:00   0.82
010YrSCS24       01/01/2019 01:20:00   0.82
010YrSCS24       01/01/2019 01:30:00   0.82
010YrSCS24       01/01/2019 01:40:00   0.82
010YrSCS24       01/01/2019 01:50:00   0.82
010YrSCS24       01/01/2019 02:00:00   0.97
010YrSCS24       01/01/2019 02:10:00   0.97
010YrSCS24       01/01/2019 02:20:00   0.97
010YrSCS24       01/01/2019 02:30:00   0.97
010YrSCS24       01/01/2019 02:40:00   0.97
010YrSCS24       01/01/2019 02:50:00   0.97
010YrSCS24       01/01/2019 03:00:00   0.97
010YrSCS24       01/01/2019 03:10:00   0.97
010YrSCS24       01/01/2019 03:20:00   0.97
010YrSCS24       01/01/2019 03:30:00   0.97
010YrSCS24       01/01/2019 03:40:00   0.97
010YrSCS24       01/01/2019 03:50:00   0.97
010YrSCS24       01/01/2019 04:00:00   1.19
010YrSCS24       01/01/2019 04:10:00   1.19
010YrSCS24       01/01/2019 04:20:00   1.19
010YrSCS24       01/01/2019 04:30:00   1.19
010YrSCS24       01/01/2019 04:40:00   1.19
010YrSCS24       01/01/2019 04:50:00   1.19
010YrSCS24       01/01/2019 05:00:00   1.19
010YrSCS24       01/01/2019 05:10:00   1.19
010YrSCS24       01/01/2019 05:20:00   1.19
010YrSCS24       01/01/2019 05:30:00   1.19
010YrSCS24       01/01/2019 05:40:00   1.19
010YrSCS24       01/01/2019 05:50:00   1.19
010YrSCS24       01/01/2019 06:00:00   1.34
010YrSCS24       01/01/2019 06:10:00   1.34
010YrSCS24       01/01/2019 06:20:00   1.34
010YrSCS24       01/01/2019 06:30:00   1.34
010YrSCS24       01/01/2019 06:40:00   1.34
010YrSCS24       01/01/2019 06:50:00   1.34
010YrSCS24       01/01/2019 07:00:00   1.64
010YrSCS24       01/01/2019 07:10:00   1.64
```

010YrSCS24	01/01/2019 07:20:00	1.64
010YrSCS24	01/01/2019 07:30:00	1.64
010YrSCS24	01/01/2019 07:40:00	1.64
010YrSCS24	01/01/2019 07:50:00	1.64
010YrSCS24	01/01/2019 08:00:00	1.93
010YrSCS24	01/01/2019 08:10:00	1.93
010YrSCS24	01/01/2019 08:20:00	1.93
010YrSCS24	01/01/2019 08:30:00	2.08
010YrSCS24	01/01/2019 08:40:00	2.08
010YrSCS24	01/01/2019 08:50:00	2.08
010YrSCS24	01/01/2019 09:00:00	2.38
010YrSCS24	01/01/2019 09:10:00	2.38
010YrSCS24	01/01/2019 09:20:00	2.38
010YrSCS24	01/01/2019 09:30:00	2.68
010YrSCS24	01/01/2019 09:40:00	2.68
010YrSCS24	01/01/2019 09:50:00	2.68
010YrSCS24	01/01/2019 10:00:00	3.42
010YrSCS24	01/01/2019 10:10:00	3.42
010YrSCS24	01/01/2019 10:20:00	3.42
010YrSCS24	01/01/2019 10:30:00	4.61
010YrSCS24	01/01/2019 10:40:00	4.61
010YrSCS24	01/01/2019 10:50:00	4.61
010YrSCS24	01/01/2019 11:00:00	7.14
010YrSCS24	01/01/2019 11:10:00	7.14
010YrSCS24	01/01/2019 11:20:00	7.14
010YrSCS24	01/01/2019 11:30:00	22
010YrSCS24	01/01/2019 11:40:00	56.5
010YrSCS24	01/01/2019 11:50:00	90.99
010YrSCS24	01/01/2019 12:00:00	10.7
010YrSCS24	01/01/2019 12:10:00	10.7
010YrSCS24	01/01/2019 12:20:00	10.7
010YrSCS24	01/01/2019 12:30:00	5.5
010YrSCS24	01/01/2019 12:40:00	5.5
010YrSCS24	01/01/2019 12:50:00	5.5
010YrSCS24	01/01/2019 13:00:00	4.01
010YrSCS24	01/01/2019 13:10:00	4.01
010YrSCS24	01/01/2019 13:20:00	4.01
010YrSCS24	01/01/2019 13:30:00	3.12
010YrSCS24	01/01/2019 13:40:00	3.12
010YrSCS24	01/01/2019 13:50:00	3.12
010YrSCS24	01/01/2019 14:00:00	2.23
010YrSCS24	01/01/2019 14:10:00	2.23
010YrSCS24	01/01/2019 14:20:00	2.23
010YrSCS24	01/01/2019 14:30:00	2.23
010YrSCS24	01/01/2019 14:40:00	2.23
010YrSCS24	01/01/2019 14:50:00	2.23
010YrSCS24	01/01/2019 15:00:00	2.23
010YrSCS24	01/01/2019 15:10:00	2.23
010YrSCS24	01/01/2019 15:20:00	2.23
010YrSCS24	01/01/2019 15:30:00	2.23
010YrSCS24	01/01/2019 15:40:00	2.23
010YrSCS24	01/01/2019 15:50:00	2.23
010YrSCS24	01/01/2019 16:00:00	1.34
010YrSCS24	01/01/2019 16:10:00	1.34
010YrSCS24	01/01/2019 16:20:00	1.34
010YrSCS24	01/01/2019 16:30:00	1.34
010YrSCS24	01/01/2019 16:40:00	1.34

```
010YrSCS24       01/01/2019 16:50:00   1.34
010YrSCS24       01/01/2019 17:00:00   1.34
010YrSCS24       01/01/2019 17:10:00   1.34
010YrSCS24       01/01/2019 17:20:00   1.34
010YrSCS24       01/01/2019 17:30:00   1.34
010YrSCS24       01/01/2019 17:40:00   1.34
010YrSCS24       01/01/2019 17:50:00   1.34
010YrSCS24       01/01/2019 18:00:00   1.34
010YrSCS24       01/01/2019 18:10:00   1.34
010YrSCS24       01/01/2019 18:20:00   1.34
010YrSCS24       01/01/2019 18:30:00   1.34
010YrSCS24       01/01/2019 18:40:00   1.34
010YrSCS24       01/01/2019 18:50:00   1.34
010YrSCS24       01/01/2019 19:00:00   1.34
010YrSCS24       01/01/2019 19:10:00   1.34
010YrSCS24       01/01/2019 19:20:00   1.34
010YrSCS24       01/01/2019 19:30:00   1.34
010YrSCS24       01/01/2019 19:40:00   1.34
010YrSCS24       01/01/2019 19:50:00   1.34
010YrSCS24       01/01/2019 20:00:00   0.89
010YrSCS24       01/01/2019 20:10:00   0.89
010YrSCS24       01/01/2019 20:20:00   0.89
010YrSCS24       01/01/2019 20:30:00   0.89
010YrSCS24       01/01/2019 20:40:00   0.89
010YrSCS24       01/01/2019 20:50:00   0.89
010YrSCS24       01/01/2019 21:00:00   0.89
010YrSCS24       01/01/2019 21:10:00   0.89
010YrSCS24       01/01/2019 21:20:00   0.89
010YrSCS24       01/01/2019 21:30:00   0.89
010YrSCS24       01/01/2019 21:40:00   0.89
010YrSCS24       01/01/2019 21:50:00   0.89
010YrSCS24       01/01/2019 22:00:00   0.89
010YrSCS24       01/01/2019 22:10:00   0.89
010YrSCS24       01/01/2019 22:20:00   0.89
010YrSCS24       01/01/2019 22:30:00   0.89
010YrSCS24       01/01/2019 22:40:00   0.89
010YrSCS24       01/01/2019 22:50:00   0.89
010YrSCS24       01/01/2019 23:00:00   0.89
010YrSCS24       01/01/2019 23:10:00   0.89
010YrSCS24       01/01/2019 23:20:00   0.89
010YrSCS24       01/01/2019 23:30:00   0.89
010YrSCS24       01/01/2019 23:40:00   0.89
010YrSCS24       01/01/2019 23:50:00   0.89

;Rainfall (mm/hr)
025yrChicago3hr  01/01/2019 00:00:00   0
025yrChicago3hr  01/01/2019 00:10:00   4.9336
025yrChicago3hr  01/01/2019 00:20:00   6.15217
025yrChicago3hr  01/01/2019 00:30:00   8.28157
025yrChicago3hr  01/01/2019 00:40:00   13.00553
025yrChicago3hr  01/01/2019 00:50:00   33.04079
025yrChicago3hr  01/01/2019 01:00:00   144.693
025yrChicago3hr  01/01/2019 01:10:00   43.90416
025yrChicago3hr  01/01/2019 01:20:00   22.22391
025yrChicago3hr  01/01/2019 01:30:00   14.85162
025yrChicago3hr  01/01/2019 01:40:00   11.19158
025yrChicago3hr  01/01/2019 01:50:00   9.01374
```

```
025yrChicago3hr  01/01/2019 02:00:00   7.57085
025yrChicago3hr  01/01/2019 02:10:00   6.54433
025yrChicago3hr  01/01/2019 02:20:00   5.77608
025yrChicago3hr  01/01/2019 02:30:00   5.17898
025yrChicago3hr  01/01/2019 02:40:00   4.7011
025yrChicago3hr  01/01/2019 02:50:00   4.30965
025yrChicago3hr  01/01/2019 03:00:00   3.98283

;Rainfall (mm/hr)
025YrSCS24       01/01/2019 00:00:00   0.96
025YrSCS24       01/01/2019 00:10:00   0.96
025YrSCS24       01/01/2019 00:20:00   0.96
025YrSCS24       01/01/2019 00:30:00   0.96
025YrSCS24       01/01/2019 00:40:00   0.96
025YrSCS24       01/01/2019 00:50:00   0.96
025YrSCS24       01/01/2019 01:00:00   0.96
025YrSCS24       01/01/2019 01:10:00   0.96
025YrSCS24       01/01/2019 01:20:00   0.96
025YrSCS24       01/01/2019 01:30:00   0.96
025YrSCS24       01/01/2019 01:40:00   0.96
025YrSCS24       01/01/2019 01:50:00   0.96
025YrSCS24       01/01/2019 02:00:00   1.13
025YrSCS24       01/01/2019 02:10:00   1.13
025YrSCS24       01/01/2019 02:20:00   1.13
025YrSCS24       01/01/2019 02:30:00   1.13
025YrSCS24       01/01/2019 02:40:00   1.13
025YrSCS24       01/01/2019 02:50:00   1.13
025YrSCS24       01/01/2019 03:00:00   1.13
025YrSCS24       01/01/2019 03:10:00   1.13
025YrSCS24       01/01/2019 03:20:00   1.13
025YrSCS24       01/01/2019 03:30:00   1.13
025YrSCS24       01/01/2019 03:40:00   1.13
025YrSCS24       01/01/2019 03:50:00   1.13
025YrSCS24       01/01/2019 04:00:00   1.39
025YrSCS24       01/01/2019 04:10:00   1.39
025YrSCS24       01/01/2019 04:20:00   1.39
025YrSCS24       01/01/2019 04:30:00   1.39
025YrSCS24       01/01/2019 04:40:00   1.39
025YrSCS24       01/01/2019 04:50:00   1.39
025YrSCS24       01/01/2019 05:00:00   1.39
025YrSCS24       01/01/2019 05:10:00   1.39
025YrSCS24       01/01/2019 05:20:00   1.39
025YrSCS24       01/01/2019 05:30:00   1.39
025YrSCS24       01/01/2019 05:40:00   1.39
025YrSCS24       01/01/2019 05:50:00   1.39
025YrSCS24       01/01/2019 06:00:00   1.56
025YrSCS24       01/01/2019 06:10:00   1.56
025YrSCS24       01/01/2019 06:20:00   1.56
025YrSCS24       01/01/2019 06:30:00   1.56
025YrSCS24       01/01/2019 06:40:00   1.56
025YrSCS24       01/01/2019 06:50:00   1.56
025YrSCS24       01/01/2019 07:00:00   1.91
025YrSCS24       01/01/2019 07:10:00   1.91
025YrSCS24       01/01/2019 07:20:00   1.91
025YrSCS24       01/01/2019 07:30:00   1.91
025YrSCS24       01/01/2019 07:40:00   1.91
025YrSCS24       01/01/2019 07:50:00   1.91
```

025YrSCS24	01/01/2019 08:00:00	2.26
025YrSCS24	01/01/2019 08:10:00	2.26
025YrSCS24	01/01/2019 08:20:00	2.26
025YrSCS24	01/01/2019 08:30:00	2.43
025YrSCS24	01/01/2019 08:40:00	2.43
025YrSCS24	01/01/2019 08:50:00	2.43
025YrSCS24	01/01/2019 09:00:00	2.78
025YrSCS24	01/01/2019 09:10:00	2.78
025YrSCS24	01/01/2019 09:20:00	2.78
025YrSCS24	01/01/2019 09:30:00	3.13
025YrSCS24	01/01/2019 09:40:00	3.13
025YrSCS24	01/01/2019 09:50:00	3.13
025YrSCS24	01/01/2019 10:00:00	4
025YrSCS24	01/01/2019 10:10:00	4
025YrSCS24	01/01/2019 10:20:00	4
025YrSCS24	01/01/2019 10:30:00	5.39
025YrSCS24	01/01/2019 10:40:00	5.39
025YrSCS24	01/01/2019 10:50:00	5.39
025YrSCS24	01/01/2019 11:00:00	8.34
025YrSCS24	01/01/2019 11:10:00	8.34
025YrSCS24	01/01/2019 11:20:00	8.34
025YrSCS24	01/01/2019 11:30:00	25.73
025YrSCS24	01/01/2019 11:40:00	66.05
025YrSCS24	01/01/2019 11:50:00	106.38
025YrSCS24	01/01/2019 12:00:00	12.52
025YrSCS24	01/01/2019 12:10:00	12.52
025YrSCS24	01/01/2019 12:20:00	12.52
025YrSCS24	01/01/2019 12:30:00	6.43
025YrSCS24	01/01/2019 12:40:00	6.43
025YrSCS24	01/01/2019 12:50:00	6.43
025YrSCS24	01/01/2019 13:00:00	4.69
025YrSCS24	01/01/2019 13:10:00	4.69
025YrSCS24	01/01/2019 13:20:00	4.69
025YrSCS24	01/01/2019 13:30:00	3.65
025YrSCS24	01/01/2019 13:40:00	3.65
025YrSCS24	01/01/2019 13:50:00	3.65
025YrSCS24	01/01/2019 14:00:00	2.61
025YrSCS24	01/01/2019 14:10:00	2.61
025YrSCS24	01/01/2019 14:20:00	2.61
025YrSCS24	01/01/2019 14:30:00	2.61
025YrSCS24	01/01/2019 14:40:00	2.61
025YrSCS24	01/01/2019 14:50:00	2.61
025YrSCS24	01/01/2019 15:00:00	2.61
025YrSCS24	01/01/2019 15:10:00	2.61
025YrSCS24	01/01/2019 15:20:00	2.61
025YrSCS24	01/01/2019 15:30:00	2.61
025YrSCS24	01/01/2019 15:40:00	2.61
025YrSCS24	01/01/2019 15:50:00	2.61
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025YrSCS24	01/01/2019 16:10:00	1.56
025YrSCS24	01/01/2019 16:20:00	1.56
025YrSCS24	01/01/2019 16:30:00	1.56
025YrSCS24	01/01/2019 16:40:00	1.56
025YrSCS24	01/01/2019 16:50:00	1.56
025YrSCS24	01/01/2019 17:00:00	1.56
025YrSCS24	01/01/2019 17:10:00	1.56
025YrSCS24	01/01/2019 17:20:00	1.56

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025YrSCS24       01/01/2019 17:30:00   1.56
025YrSCS24       01/01/2019 17:40:00   1.56
025YrSCS24       01/01/2019 17:50:00   1.56
025YrSCS24       01/01/2019 18:00:00   1.56
025YrSCS24       01/01/2019 18:10:00   1.56
025YrSCS24       01/01/2019 18:20:00   1.56
025YrSCS24       01/01/2019 18:30:00   1.56
025YrSCS24       01/01/2019 18:40:00   1.56
025YrSCS24       01/01/2019 18:50:00   1.56
025YrSCS24       01/01/2019 19:00:00   1.56
025YrSCS24       01/01/2019 19:10:00   1.56
025YrSCS24       01/01/2019 19:20:00   1.56
025YrSCS24       01/01/2019 19:30:00   1.56
025YrSCS24       01/01/2019 19:40:00   1.56
025YrSCS24       01/01/2019 19:50:00   1.56
025YrSCS24       01/01/2019 20:00:00   1.04
025YrSCS24       01/01/2019 20:10:00   1.04
025YrSCS24       01/01/2019 20:20:00   1.04
025YrSCS24       01/01/2019 20:30:00   1.04
025YrSCS24       01/01/2019 20:40:00   1.04
025YrSCS24       01/01/2019 20:50:00   1.04
025YrSCS24       01/01/2019 21:00:00   1.04
025YrSCS24       01/01/2019 21:10:00   1.04
025YrSCS24       01/01/2019 21:20:00   1.04
025YrSCS24       01/01/2019 21:30:00   1.04
025YrSCS24       01/01/2019 21:40:00   1.04
025YrSCS24       01/01/2019 21:50:00   1.04
025YrSCS24       01/01/2019 22:00:00   1.04
025YrSCS24       01/01/2019 22:10:00   1.04
025YrSCS24       01/01/2019 22:20:00   1.04
025YrSCS24       01/01/2019 22:30:00   1.04
025YrSCS24       01/01/2019 22:40:00   1.04
025YrSCS24       01/01/2019 22:50:00   1.04
025YrSCS24       01/01/2019 23:00:00   1.04
025YrSCS24       01/01/2019 23:10:00   1.04
025YrSCS24       01/01/2019 23:20:00   1.04
025YrSCS24       01/01/2019 23:30:00   1.04
025YrSCS24       01/01/2019 23:40:00   1.04
025YrSCS24       01/01/2019 23:50:00   1.04

;Rainfall (mm/hr)
050yrChicago3hr  01/01/2019 00:00:00   0
050yrChicago3hr  01/01/2019 00:10:00   5.46715
050yrChicago3hr  01/01/2019 00:20:00   6.8204
050yrChicago3hr  01/01/2019 00:30:00   9.18659
050yrChicago3hr  01/01/2019 00:40:00   14.44064
050yrChicago3hr  01/01/2019 00:50:00   36.76423
050yrChicago3hr  01/01/2019 01:00:00   161.4707
050yrChicago3hr  01/01/2019 01:10:00   48.876
050yrChicago3hr  01/01/2019 01:20:00   24.70426
050yrChicago3hr  01/01/2019 01:30:00   16.49475
050yrChicago3hr  01/01/2019 01:40:00   12.42227
050yrChicago3hr  01/01/2019 01:50:00   10.00043
050yrChicago3hr  01/01/2019 02:00:00   8.39661
050yrChicago3hr  01/01/2019 02:10:00   7.256
050yrChicago3hr  01/01/2019 02:20:00   6.40264
050yrChicago3hr  01/01/2019 02:30:00   5.73956
```

```
050yrChicago3hr  01/01/2019 02:40:00   5.20902
050yrChicago3hr  01/01/2019 02:50:00   4.77451
050yrChicago3hr  01/01/2019 03:00:00   4.41182

;Rainfall (mm/hr)
050YrSCS24       01/01/2019 00:00:00   1.06
050YrSCS24       01/01/2019 00:10:00   1.06
050YrSCS24       01/01/2019 00:20:00   1.06
050YrSCS24       01/01/2019 00:30:00   1.06
050YrSCS24       01/01/2019 00:40:00   1.06
050YrSCS24       01/01/2019 00:50:00   1.06
050YrSCS24       01/01/2019 01:00:00   1.06
050YrSCS24       01/01/2019 01:10:00   1.06
050YrSCS24       01/01/2019 01:20:00   1.06
050YrSCS24       01/01/2019 01:30:00   1.06
050YrSCS24       01/01/2019 01:40:00   1.06
050YrSCS24       01/01/2019 01:50:00   1.06
050YrSCS24       01/01/2019 02:00:00   1.25
050YrSCS24       01/01/2019 02:10:00   1.25
050YrSCS24       01/01/2019 02:20:00   1.25
050YrSCS24       01/01/2019 02:30:00   1.25
050YrSCS24       01/01/2019 02:40:00   1.25
050YrSCS24       01/01/2019 02:50:00   1.25
050YrSCS24       01/01/2019 03:00:00   1.25
050YrSCS24       01/01/2019 03:10:00   1.25
050YrSCS24       01/01/2019 03:20:00   1.25
050YrSCS24       01/01/2019 03:30:00   1.25
050YrSCS24       01/01/2019 03:40:00   1.25
050YrSCS24       01/01/2019 03:50:00   1.25
050YrSCS24       01/01/2019 04:00:00   1.54
050YrSCS24       01/01/2019 04:10:00   1.54
050YrSCS24       01/01/2019 04:20:00   1.54
050YrSCS24       01/01/2019 04:30:00   1.54
050YrSCS24       01/01/2019 04:40:00   1.54
050YrSCS24       01/01/2019 04:50:00   1.54
050YrSCS24       01/01/2019 05:00:00   1.54
050YrSCS24       01/01/2019 05:10:00   1.54
050YrSCS24       01/01/2019 05:20:00   1.54
050YrSCS24       01/01/2019 05:30:00   1.54
050YrSCS24       01/01/2019 05:40:00   1.54
050YrSCS24       01/01/2019 05:50:00   1.54
050YrSCS24       01/01/2019 06:00:00   1.74
050YrSCS24       01/01/2019 06:10:00   1.74
050YrSCS24       01/01/2019 06:20:00   1.74
050YrSCS24       01/01/2019 06:30:00   1.74
050YrSCS24       01/01/2019 06:40:00   1.74
050YrSCS24       01/01/2019 06:50:00   1.74
050YrSCS24       01/01/2019 07:00:00   2.12
050YrSCS24       01/01/2019 07:10:00   2.12
050YrSCS24       01/01/2019 07:20:00   2.12
050YrSCS24       01/01/2019 07:30:00   2.12
050YrSCS24       01/01/2019 07:40:00   2.12
050YrSCS24       01/01/2019 07:50:00   2.12
050YrSCS24       01/01/2019 08:00:00   2.51
050YrSCS24       01/01/2019 08:10:00   2.51
050YrSCS24       01/01/2019 08:20:00   2.51
050YrSCS24       01/01/2019 08:30:00   2.7
```

050YrSCS24	01/01/2019 08:40:00	2.7
050YrSCS24	01/01/2019 08:50:00	2.7
050YrSCS24	01/01/2019 09:00:00	3.09
050YrSCS24	01/01/2019 09:10:00	3.09
050YrSCS24	01/01/2019 09:20:00	3.09
050YrSCS24	01/01/2019 09:30:00	3.48
050YrSCS24	01/01/2019 09:40:00	3.48
050YrSCS24	01/01/2019 09:50:00	3.48
050YrSCS24	01/01/2019 10:00:00	4.44
050YrSCS24	01/01/2019 10:10:00	4.44
050YrSCS24	01/01/2019 10:20:00	4.44
050YrSCS24	01/01/2019 10:30:00	5.98
050YrSCS24	01/01/2019 10:40:00	5.98
050YrSCS24	01/01/2019 10:50:00	5.98
050YrSCS24	01/01/2019 11:00:00	9.27
050YrSCS24	01/01/2019 11:10:00	9.27
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050YrSCS24	01/01/2019 12:40:00	7.14
050YrSCS24	01/01/2019 12:50:00	7.14
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050YrSCS24	01/01/2019 14:30:00	2.9
050YrSCS24	01/01/2019 14:40:00	2.9
050YrSCS24	01/01/2019 14:50:00	2.9
050YrSCS24	01/01/2019 15:00:00	2.9
050YrSCS24	01/01/2019 15:10:00	2.9
050YrSCS24	01/01/2019 15:20:00	2.9
050YrSCS24	01/01/2019 15:30:00	2.9
050YrSCS24	01/01/2019 15:40:00	2.9
050YrSCS24	01/01/2019 15:50:00	2.9
050YrSCS24	01/01/2019 16:00:00	1.74
050YrSCS24	01/01/2019 16:10:00	1.74
050YrSCS24	01/01/2019 16:20:00	1.74
050YrSCS24	01/01/2019 16:30:00	1.74
050YrSCS24	01/01/2019 16:40:00	1.74
050YrSCS24	01/01/2019 16:50:00	1.74
050YrSCS24	01/01/2019 17:00:00	1.74
050YrSCS24	01/01/2019 17:10:00	1.74
050YrSCS24	01/01/2019 17:20:00	1.74
050YrSCS24	01/01/2019 17:30:00	1.74
050YrSCS24	01/01/2019 17:40:00	1.74
050YrSCS24	01/01/2019 17:50:00	1.74
050YrSCS24	01/01/2019 18:00:00	1.74

```
050YrSCS24       01/01/2019 18:10:00   1.74
050YrSCS24       01/01/2019 18:20:00   1.74
050YrSCS24       01/01/2019 18:30:00   1.74
050YrSCS24       01/01/2019 18:40:00   1.74
050YrSCS24       01/01/2019 18:50:00   1.74
050YrSCS24       01/01/2019 19:00:00   1.74
050YrSCS24       01/01/2019 19:10:00   1.74
050YrSCS24       01/01/2019 19:20:00   1.74
050YrSCS24       01/01/2019 19:30:00   1.74
050YrSCS24       01/01/2019 19:40:00   1.74
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050YrSCS24       01/01/2019 20:00:00   1.16
050YrSCS24       01/01/2019 20:10:00   1.16
050YrSCS24       01/01/2019 20:20:00   1.16
050YrSCS24       01/01/2019 20:30:00   1.16
050YrSCS24       01/01/2019 20:40:00   1.16
050YrSCS24       01/01/2019 20:50:00   1.16
050YrSCS24       01/01/2019 21:00:00   1.16
050YrSCS24       01/01/2019 21:10:00   1.16
050YrSCS24       01/01/2019 21:20:00   1.16
050YrSCS24       01/01/2019 21:30:00   1.16
050YrSCS24       01/01/2019 21:40:00   1.16
050YrSCS24       01/01/2019 21:50:00   1.16
050YrSCS24       01/01/2019 22:00:00   1.16
050YrSCS24       01/01/2019 22:10:00   1.16
050YrSCS24       01/01/2019 22:20:00   1.16
050YrSCS24       01/01/2019 22:30:00   1.16
050YrSCS24       01/01/2019 22:40:00   1.16
050YrSCS24       01/01/2019 22:50:00   1.16
050YrSCS24       01/01/2019 23:00:00   1.16
050YrSCS24       01/01/2019 23:10:00   1.16
050YrSCS24       01/01/2019 23:20:00   1.16
050YrSCS24       01/01/2019 23:30:00   1.16
050YrSCS24       01/01/2019 23:40:00   1.16
050YrSCS24       01/01/2019 23:50:00   1.16

;Rainfall (mm/hr)
100yrChicago3hr  01/01/2019 00:00:00   0
100yrChicago3hr  01/01/2019 00:10:00   6.04573
100yrChicago3hr  01/01/2019 00:20:00   7.54219
100yrChicago3hr  01/01/2019 00:30:00   10.1588
100yrChicago3hr  01/01/2019 00:40:00   15.96889
100yrChicago3hr  01/01/2019 00:50:00   40.65497
100yrChicago3hr  01/01/2019 01:00:00   178.559
100yrChicago3hr  01/01/2019 01:10:00   54.04853
100yrChicago3hr  01/01/2019 01:20:00   27.3187
100yrChicago3hr  01/01/2019 01:30:00   18.24039
100yrChicago3hr  01/01/2019 01:40:00   13.73692
100yrChicago3hr  01/01/2019 01:50:00   11.05876
100yrChicago3hr  01/01/2019 02:00:00   9.28521
100yrChicago3hr  01/01/2019 02:10:00   8.02389
100yrChicago3hr  01/01/2019 02:20:00   7.08022
100yrChicago3hr  01/01/2019 02:30:00   6.34698
100yrChicago3hr  01/01/2019 02:40:00   5.76029
100yrChicago3hr  01/01/2019 02:50:00   5.27978
100yrChicago3hr  01/01/2019 03:00:00   4.87871
```

```
;Rainfall (mm/hr)
100yrChicago3hr+20% 01/01/2019 00:00:00   0
100yrChicago3hr+20% 01/01/2019 00:10:00   7.25488
100yrChicago3hr+20% 01/01/2019 00:20:00   9.05063
100yrChicago3hr+20% 01/01/2019 00:30:00   12.19056
100yrChicago3hr+20% 01/01/2019 00:40:00   19.16267
100yrChicago3hr+20% 01/01/2019 00:50:00   48.78596
100yrChicago3hr+20% 01/01/2019 01:00:00   214.2708
100yrChicago3hr+20% 01/01/2019 01:10:00   64.85824
100yrChicago3hr+20% 01/01/2019 01:20:00   32.78244
100yrChicago3hr+20% 01/01/2019 01:30:00   21.88847
100yrChicago3hr+20% 01/01/2019 01:40:00   16.4843
100yrChicago3hr+20% 01/01/2019 01:50:00   13.27051
100yrChicago3hr+20% 01/01/2019 02:00:00   11.14225
100yrChicago3hr+20% 01/01/2019 02:10:00   9.62867
100yrChicago3hr+20% 01/01/2019 02:20:00   8.49626
100yrChicago3hr+20% 01/01/2019 02:30:00   7.61638
100yrChicago3hr+20% 01/01/2019 02:40:00   6.91235
100yrChicago3hr+20% 01/01/2019 02:50:00   6.33574
100yrChicago3hr+20% 01/01/2019 03:00:00   5.85445

;Rainfall (mm/hr)
100YrSCS24        01/01/2019 00:00:00   1.17
100YrSCS24        01/01/2019 00:10:00   1.17
100YrSCS24        01/01/2019 00:20:00   1.17
100YrSCS24        01/01/2019 00:30:00   1.17
100YrSCS24        01/01/2019 00:40:00   1.17
100YrSCS24        01/01/2019 00:50:00   1.17
100YrSCS24        01/01/2019 01:00:00   1.17
100YrSCS24        01/01/2019 01:10:00   1.17
100YrSCS24        01/01/2019 01:20:00   1.17
100YrSCS24        01/01/2019 01:30:00   1.17
100YrSCS24        01/01/2019 01:40:00   1.17
100YrSCS24        01/01/2019 01:50:00   1.17
100YrSCS24        01/01/2019 02:00:00   1.39
100YrSCS24        01/01/2019 02:10:00   1.39
100YrSCS24        01/01/2019 02:20:00   1.39
100YrSCS24        01/01/2019 02:30:00   1.39
100YrSCS24        01/01/2019 02:40:00   1.39
100YrSCS24        01/01/2019 02:50:00   1.39
100YrSCS24        01/01/2019 03:00:00   1.39
100YrSCS24        01/01/2019 03:10:00   1.39
100YrSCS24        01/01/2019 03:20:00   1.39
100YrSCS24        01/01/2019 03:30:00   1.39
100YrSCS24        01/01/2019 03:40:00   1.39
100YrSCS24        01/01/2019 03:50:00   1.39
100YrSCS24        01/01/2019 04:00:00   1.71
100YrSCS24        01/01/2019 04:10:00   1.71
100YrSCS24        01/01/2019 04:20:00   1.71
100YrSCS24        01/01/2019 04:30:00   1.71
100YrSCS24        01/01/2019 04:40:00   1.71
100YrSCS24        01/01/2019 04:50:00   1.71
100YrSCS24        01/01/2019 05:00:00   1.71
100YrSCS24        01/01/2019 05:10:00   1.71
100YrSCS24        01/01/2019 05:20:00   1.71
100YrSCS24        01/01/2019 05:30:00   1.71
100YrSCS24        01/01/2019 05:40:00   1.71
```

100YrSCS24	01/01/2019 05:50:00	1.71
100YrSCS24	01/01/2019 06:00:00	1.92
100YrSCS24	01/01/2019 06:10:00	1.92
100YrSCS24	01/01/2019 06:20:00	1.92
100YrSCS24	01/01/2019 06:30:00	1.92
100YrSCS24	01/01/2019 06:40:00	1.92
100YrSCS24	01/01/2019 06:50:00	1.92
100YrSCS24	01/01/2019 07:00:00	2.35
100YrSCS24	01/01/2019 07:10:00	2.35
100YrSCS24	01/01/2019 07:20:00	2.35
100YrSCS24	01/01/2019 07:30:00	2.35
100YrSCS24	01/01/2019 07:40:00	2.35
100YrSCS24	01/01/2019 07:50:00	2.35
100YrSCS24	01/01/2019 08:00:00	2.78
100YrSCS24	01/01/2019 08:10:00	2.78
100YrSCS24	01/01/2019 08:20:00	2.78
100YrSCS24	01/01/2019 08:30:00	2.99
100YrSCS24	01/01/2019 08:40:00	2.99
100YrSCS24	01/01/2019 08:50:00	2.99
100YrSCS24	01/01/2019 09:00:00	3.42
100YrSCS24	01/01/2019 09:10:00	3.42
100YrSCS24	01/01/2019 09:20:00	3.42
100YrSCS24	01/01/2019 09:30:00	3.84
100YrSCS24	01/01/2019 09:40:00	3.84
100YrSCS24	01/01/2019 09:50:00	3.84
100YrSCS24	01/01/2019 10:00:00	4.91
100YrSCS24	01/01/2019 10:10:00	4.91
100YrSCS24	01/01/2019 10:20:00	4.91
100YrSCS24	01/01/2019 10:30:00	6.62
100YrSCS24	01/01/2019 10:40:00	6.62
100YrSCS24	01/01/2019 10:50:00	6.62
100YrSCS24	01/01/2019 11:00:00	10.25
100YrSCS24	01/01/2019 11:10:00	10.25
100YrSCS24	01/01/2019 11:20:00	10.25
100YrSCS24	01/01/2019 11:30:00	31.6
100YrSCS24	01/01/2019 11:40:00	81.12
100YrSCS24	01/01/2019 11:50:00	130.65
100YrSCS24	01/01/2019 12:00:00	15.37
100YrSCS24	01/01/2019 12:10:00	15.37
100YrSCS24	01/01/2019 12:20:00	15.37
100YrSCS24	01/01/2019 12:30:00	7.9
100YrSCS24	01/01/2019 12:40:00	7.9
100YrSCS24	01/01/2019 12:50:00	7.9
100YrSCS24	01/01/2019 13:00:00	5.76
100YrSCS24	01/01/2019 13:10:00	5.76
100YrSCS24	01/01/2019 13:20:00	5.76
100YrSCS24	01/01/2019 13:30:00	4.48
100YrSCS24	01/01/2019 13:40:00	4.48
100YrSCS24	01/01/2019 13:50:00	4.48
100YrSCS24	01/01/2019 14:00:00	3.2
100YrSCS24	01/01/2019 14:10:00	3.2
100YrSCS24	01/01/2019 14:20:00	3.2
100YrSCS24	01/01/2019 14:30:00	3.2
100YrSCS24	01/01/2019 14:40:00	3.2
100YrSCS24	01/01/2019 14:50:00	3.2
100YrSCS24	01/01/2019 15:00:00	3.2
100YrSCS24	01/01/2019 15:10:00	3.2

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100YrSCS24       01/01/2019 15:20:00   3.2
100YrSCS24       01/01/2019 15:30:00   3.2
100YrSCS24       01/01/2019 15:40:00   3.2
100YrSCS24       01/01/2019 15:50:00   3.2
100YrSCS24       01/01/2019 16:00:00   1.92
100YrSCS24       01/01/2019 16:10:00   1.92
100YrSCS24       01/01/2019 16:20:00   1.92
100YrSCS24       01/01/2019 16:30:00   1.92
100YrSCS24       01/01/2019 16:40:00   1.92
100YrSCS24       01/01/2019 16:50:00   1.92
100YrSCS24       01/01/2019 17:00:00   1.92
100YrSCS24       01/01/2019 17:10:00   1.92
100YrSCS24       01/01/2019 17:20:00   1.92
100YrSCS24       01/01/2019 17:30:00   1.92
100YrSCS24       01/01/2019 17:40:00   1.92
100YrSCS24       01/01/2019 17:50:00   1.92
100YrSCS24       01/01/2019 18:00:00   1.92
100YrSCS24       01/01/2019 18:10:00   1.92
100YrSCS24       01/01/2019 18:20:00   1.92
100YrSCS24       01/01/2019 18:30:00   1.92
100YrSCS24       01/01/2019 18:40:00   1.92
100YrSCS24       01/01/2019 18:50:00   1.92
100YrSCS24       01/01/2019 19:00:00   1.92
100YrSCS24       01/01/2019 19:10:00   1.92
100YrSCS24       01/01/2019 19:20:00   1.92
100YrSCS24       01/01/2019 19:30:00   1.92
100YrSCS24       01/01/2019 19:40:00   1.92
100YrSCS24       01/01/2019 19:50:00   1.92
100YrSCS24       01/01/2019 20:00:00   1.28
100YrSCS24       01/01/2019 20:10:00   1.28
100YrSCS24       01/01/2019 20:20:00   1.28
100YrSCS24       01/01/2019 20:30:00   1.28
100YrSCS24       01/01/2019 20:40:00   1.28
100YrSCS24       01/01/2019 20:50:00   1.28
100YrSCS24       01/01/2019 21:00:00   1.28
100YrSCS24       01/01/2019 21:10:00   1.28
100YrSCS24       01/01/2019 21:20:00   1.28
100YrSCS24       01/01/2019 21:30:00   1.28
100YrSCS24       01/01/2019 21:40:00   1.28
100YrSCS24       01/01/2019 21:50:00   1.28
100YrSCS24       01/01/2019 22:00:00   1.28
100YrSCS24       01/01/2019 22:10:00   1.28
100YrSCS24       01/01/2019 22:20:00   1.28
100YrSCS24       01/01/2019 22:30:00   1.28
100YrSCS24       01/01/2019 22:40:00   1.28
100YrSCS24       01/01/2019 22:50:00   1.28
100YrSCS24       01/01/2019 23:00:00   1.28
100YrSCS24       01/01/2019 23:10:00   1.28
100YrSCS24       01/01/2019 23:20:00   1.28
100YrSCS24       01/01/2019 23:30:00   1.28
100YrSCS24       01/01/2019 23:40:00   1.28
100YrSCS24       01/01/2019 23:50:00   1.28

;Rainfall (mm/hr)
100YrSCS24+20%   01/01/2019 00:00:00   1.404
100YrSCS24+20%   01/01/2019 00:10:00   1.404
100YrSCS24+20%   01/01/2019 00:20:00   1.404
```

100YrSCS24+20%	01/01/2019 00:30:00	1.404
100YrSCS24+20%	01/01/2019 00:40:00	1.404
100YrSCS24+20%	01/01/2019 00:50:00	1.404
100YrSCS24+20%	01/01/2019 01:00:00	1.404
100YrSCS24+20%	01/01/2019 01:10:00	1.404
100YrSCS24+20%	01/01/2019 01:20:00	1.404
100YrSCS24+20%	01/01/2019 01:30:00	1.404
100YrSCS24+20%	01/01/2019 01:40:00	1.404
100YrSCS24+20%	01/01/2019 01:50:00	1.404
100YrSCS24+20%	01/01/2019 02:00:00	1.668
100YrSCS24+20%	01/01/2019 02:10:00	1.668
100YrSCS24+20%	01/01/2019 02:20:00	1.668
100YrSCS24+20%	01/01/2019 02:30:00	1.668
100YrSCS24+20%	01/01/2019 02:40:00	1.668
100YrSCS24+20%	01/01/2019 02:50:00	1.668
100YrSCS24+20%	01/01/2019 03:00:00	1.668
100YrSCS24+20%	01/01/2019 03:10:00	1.668
100YrSCS24+20%	01/01/2019 03:20:00	1.668
100YrSCS24+20%	01/01/2019 03:30:00	1.668
100YrSCS24+20%	01/01/2019 03:40:00	1.668
100YrSCS24+20%	01/01/2019 03:50:00	1.668
100YrSCS24+20%	01/01/2019 04:00:00	2.052
100YrSCS24+20%	01/01/2019 04:10:00	2.052
100YrSCS24+20%	01/01/2019 04:20:00	2.052
100YrSCS24+20%	01/01/2019 04:30:00	2.052
100YrSCS24+20%	01/01/2019 04:40:00	2.052
100YrSCS24+20%	01/01/2019 04:50:00	2.052
100YrSCS24+20%	01/01/2019 05:00:00	2.052
100YrSCS24+20%	01/01/2019 05:10:00	2.052
100YrSCS24+20%	01/01/2019 05:20:00	2.052
100YrSCS24+20%	01/01/2019 05:30:00	2.052
100YrSCS24+20%	01/01/2019 05:40:00	2.052
100YrSCS24+20%	01/01/2019 05:50:00	2.052
100YrSCS24+20%	01/01/2019 06:00:00	2.304
100YrSCS24+20%	01/01/2019 06:10:00	2.304
100YrSCS24+20%	01/01/2019 06:20:00	2.304
100YrSCS24+20%	01/01/2019 06:30:00	2.304
100YrSCS24+20%	01/01/2019 06:40:00	2.304
100YrSCS24+20%	01/01/2019 06:50:00	2.304
100YrSCS24+20%	01/01/2019 07:00:00	2.82
100YrSCS24+20%	01/01/2019 07:10:00	2.82
100YrSCS24+20%	01/01/2019 07:20:00	2.82
100YrSCS24+20%	01/01/2019 07:30:00	2.82
100YrSCS24+20%	01/01/2019 07:40:00	2.82
100YrSCS24+20%	01/01/2019 07:50:00	2.82
100YrSCS24+20%	01/01/2019 08:00:00	3.336
100YrSCS24+20%	01/01/2019 08:10:00	3.336
100YrSCS24+20%	01/01/2019 08:20:00	3.336
100YrSCS24+20%	01/01/2019 08:30:00	3.588
100YrSCS24+20%	01/01/2019 08:40:00	3.588
100YrSCS24+20%	01/01/2019 08:50:00	3.588
100YrSCS24+20%	01/01/2019 09:00:00	4.104
100YrSCS24+20%	01/01/2019 09:10:00	4.104
100YrSCS24+20%	01/01/2019 09:20:00	4.104
100YrSCS24+20%	01/01/2019 09:30:00	4.608
100YrSCS24+20%	01/01/2019 09:40:00	4.608
100YrSCS24+20%	01/01/2019 09:50:00	4.608

100YrSCS24+20%	01/01/2019 10:00:00	5.892
100YrSCS24+20%	01/01/2019 10:10:00	5.892
100YrSCS24+20%	01/01/2019 10:20:00	5.892
100YrSCS24+20%	01/01/2019 10:30:00	7.944
100YrSCS24+20%	01/01/2019 10:40:00	7.944
100YrSCS24+20%	01/01/2019 10:50:00	7.944
100YrSCS24+20%	01/01/2019 11:00:00	12.3
100YrSCS24+20%	01/01/2019 11:10:00	12.3
100YrSCS24+20%	01/01/2019 11:20:00	12.3
100YrSCS24+20%	01/01/2019 11:30:00	37.92
100YrSCS24+20%	01/01/2019 11:40:00	97.344
100YrSCS24+20%	01/01/2019 11:50:00	156.78
100YrSCS24+20%	01/01/2019 12:00:00	18.444
100YrSCS24+20%	01/01/2019 12:10:00	18.444
100YrSCS24+20%	01/01/2019 12:20:00	18.444
100YrSCS24+20%	01/01/2019 12:30:00	9.48
100YrSCS24+20%	01/01/2019 12:40:00	9.48
100YrSCS24+20%	01/01/2019 12:50:00	9.48
100YrSCS24+20%	01/01/2019 13:00:00	6.912
100YrSCS24+20%	01/01/2019 13:10:00	6.912
100YrSCS24+20%	01/01/2019 13:20:00	6.912
100YrSCS24+20%	01/01/2019 13:30:00	5.376
100YrSCS24+20%	01/01/2019 13:40:00	5.376
100YrSCS24+20%	01/01/2019 13:50:00	5.376
100YrSCS24+20%	01/01/2019 14:00:00	3.84
100YrSCS24+20%	01/01/2019 14:10:00	3.84
100YrSCS24+20%	01/01/2019 14:20:00	3.84
100YrSCS24+20%	01/01/2019 14:30:00	3.84
100YrSCS24+20%	01/01/2019 14:40:00	3.84
100YrSCS24+20%	01/01/2019 14:50:00	3.84
100YrSCS24+20%	01/01/2019 15:00:00	3.84
100YrSCS24+20%	01/01/2019 15:10:00	3.84
100YrSCS24+20%	01/01/2019 15:20:00	3.84
100YrSCS24+20%	01/01/2019 15:30:00	3.84
100YrSCS24+20%	01/01/2019 15:40:00	3.84
100YrSCS24+20%	01/01/2019 15:50:00	3.84
100YrSCS24+20%	01/01/2019 16:00:00	2.304
100YrSCS24+20%	01/01/2019 16:10:00	2.304
100YrSCS24+20%	01/01/2019 16:20:00	2.304
100YrSCS24+20%	01/01/2019 16:30:00	2.304
100YrSCS24+20%	01/01/2019 16:40:00	2.304
100YrSCS24+20%	01/01/2019 16:50:00	2.304
100YrSCS24+20%	01/01/2019 17:00:00	2.304
100YrSCS24+20%	01/01/2019 17:10:00	2.304
100YrSCS24+20%	01/01/2019 17:20:00	2.304
100YrSCS24+20%	01/01/2019 17:30:00	2.304
100YrSCS24+20%	01/01/2019 17:40:00	2.304
100YrSCS24+20%	01/01/2019 17:50:00	2.304
100YrSCS24+20%	01/01/2019 18:00:00	2.304
100YrSCS24+20%	01/01/2019 18:10:00	2.304
100YrSCS24+20%	01/01/2019 18:20:00	2.304
100YrSCS24+20%	01/01/2019 18:30:00	2.304
100YrSCS24+20%	01/01/2019 18:40:00	2.304
100YrSCS24+20%	01/01/2019 18:50:00	2.304
100YrSCS24+20%	01/01/2019 19:00:00	2.304
100YrSCS24+20%	01/01/2019 19:10:00	2.304
100YrSCS24+20%	01/01/2019 19:20:00	2.304

```
100YrSCS24+20%   01/01/2019 19:30:00   2.304
100YrSCS24+20%   01/01/2019 19:40:00   2.304
100YrSCS24+20%   01/01/2019 19:50:00   2.304
100YrSCS24+20%   01/01/2019 20:00:00   1.536
100YrSCS24+20%   01/01/2019 20:10:00   1.536
100YrSCS24+20%   01/01/2019 20:20:00   1.536
100YrSCS24+20%   01/01/2019 20:30:00   1.536
100YrSCS24+20%   01/01/2019 20:40:00   1.536
100YrSCS24+20%   01/01/2019 20:50:00   1.536
100YrSCS24+20%   01/01/2019 21:00:00   1.536
100YrSCS24+20%   01/01/2019 21:10:00   1.536
100YrSCS24+20%   01/01/2019 21:20:00   1.536
100YrSCS24+20%   01/01/2019 21:30:00   1.536
100YrSCS24+20%   01/01/2019 21:40:00   1.536
100YrSCS24+20%   01/01/2019 21:50:00   1.536
100YrSCS24+20%   01/01/2019 22:00:00   1.536
100YrSCS24+20%   01/01/2019 22:10:00   1.536
100YrSCS24+20%   01/01/2019 22:20:00   1.536
100YrSCS24+20%   01/01/2019 22:30:00   1.536
100YrSCS24+20%   01/01/2019 22:40:00   1.536
100YrSCS24+20%   01/01/2019 22:50:00   1.536
100YrSCS24+20%   01/01/2019 23:00:00   1.536
100YrSCS24+20%   01/01/2019 23:10:00   1.536
100YrSCS24+20%   01/01/2019 23:20:00   1.536
100YrSCS24+20%   01/01/2019 23:30:00   1.536
100YrSCS24+20%   01/01/2019 23:40:00   1.536
100YrSCS24+20%   01/01/2019 23:50:00   1.536

;Rainfall (mm/hr)
25mmChicago4Hr   01/01/2019 00:00:00   0
25mmChicago4Hr   01/01/2019 00:10:00   1.5122
25mmChicago4Hr   01/01/2019 00:20:00   1.7483
25mmChicago4Hr   01/01/2019 00:30:00   2.0803
25mmChicago4Hr   01/01/2019 00:40:00   2.5819
25mmChicago4Hr   01/01/2019 00:50:00   3.4597
25mmChicago4Hr   01/01/2019 01:00:00   5.3924
25mmChicago4Hr   01/01/2019 01:10:00   13.4405
25mmChicago4Hr   01/01/2019 01:20:00   56.6613
25mmChicago4Hr   01/01/2019 01:30:00   17.7634
25mmChicago4Hr   01/01/2019 01:40:00   9.1177
25mmChicago4Hr   01/01/2019 01:50:00   6.1375
25mmChicago4Hr   01/01/2019 02:00:00   4.6474
25mmChicago4Hr   01/01/2019 02:10:00   3.7548
25mmChicago4Hr   01/01/2019 02:20:00   3.1647
25mmChicago4Hr   01/01/2019 02:30:00   2.7442
25mmChicago4Hr   01/01/2019 02:40:00   2.427
25mmChicago4Hr   01/01/2019 02:50:00   2.1762
25mmChicago4Hr   01/01/2019 03:00:00   1.977
25mmChicago4Hr   01/01/2019 03:10:00   1.8147
25mmChicago4Hr   01/01/2019 03:20:00   1.6819
25mmChicago4Hr   01/01/2019 03:30:00   1.5639
25mmChicago4Hr   01/01/2019 03:40:00   1.468
25mmChicago4Hr   01/01/2019 03:50:00   1.3795
25mmChicago4Hr   01/01/2019 04:00:00   1.3057

[REPORT]
;;Reporting Options
```

```
INPUT      YES
CONTROLS   NO
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]
Node       PUMP_CHAMBER     Minor
Node       STM_CB09         Minor
Node       STM_CB10         Minor
Node       STM_CB109        Minor
Node       STM_CB111        Minor
Node       STM_CB17         Minor
Node       STM_CB18         Minor
Node       STM_CB19         Minor
Node       STM_CB20         Minor
Node       STM_CB21         Minor
Node       STM_CBMH01       Minor
Node       STM_CBMH02       Minor
Node       STM_CBMH03       Minor
Node       STM_CBMH04       Minor
Node       STM_CBMH05       Minor
Node       STM_CBMH06       Minor
Node       STM_CBMH07       Minor
Node       STM_CBMH08       Minor
Node       STM_CBMH102      Minor
Node       STM_CBMH103      Minor
Node       STM_CBMH104      Minor
Node       STM_CBMH105      Minor
Node       STM_CBMH106      Minor
Node       STM_CBMH107      Minor
Node       STM_CBMH108      Minor
Node       STM_CBMH11       Minor
Node       STM_CBMH12       Minor
Node       STM_CBMH13       Minor
Node       STM_CBMH14       Minor
Node       STM_CBMH15       Minor
Node       STM_CBMH16       Minor
Node       STM_MH01         Minor
Node       STM_MH02         Minor
Node       STM_MH03         Minor
Node       STM_MH04         Minor
Node       STM_MH05         Minor
Node       STM_MH06         Minor
Node       STM_MH07         Minor
Node       STM_MH08         Minor
Node       STM_MH09         Minor
Node       STM_MH101        Minor
Node       STM_MH110        Minor
Node       TREATMENT_UNIT_1 Minor
Link       C1               Maj
Link       C10              Maj
Link       C11              Maj
Link       C12              Maj
Link       C13              Maj
Link       C14              Maj
Link       C15              Maj
```

Link	C16	Maj
Link	C2	Maj
Link	C3	Maj
Link	C4	Maj
Link	C5	Maj
Link	C6	Maj
Link	C7	Maj
Link	C8	Maj
Link	C9	Maj
Link	Out	Minor
Link	Pipe_-_03	Minor
Link	Pipe_-_04	Minor
Link	Pipe_-_05	Minor
Link	Pipe_-_06	Minor
Link	Pipe_-_07	Minor
Link	Pipe_-_08	Minor
Link	Pipe_-_09	Minor
Link	Pipe_-_10	Minor
Link	Pipe_-_100	Minor
Link	Pipe_-_101	Minor
Link	Pipe_-_102	Minor
Link	Pipe_-_103	Minor
Link	Pipe_-_104	Minor
Link	Pipe_-_105	Minor
Link	Pipe_-_106	Minor
Link	Pipe_-_107	Minor
Link	Pipe_-_108	Minor
Link	Pipe_-_109	Minor
Link	Pipe_-_11	Minor
Link	Pipe_-_110	Minor
Link	Pipe_-_12	Minor
Link	Pipe_-_29	Minor
Link	Pipe_-_30	Minor
Link	Pipe_-_31	Minor
Link	Pipe_-_32	Minor
Link	Pipe_-_33	Minor
Link	Pipe_-_34	Minor
Link	Pipe_-_35	Minor
Link	Pipe_-_36	Minor
Link	Pipe_-_37	Minor
Link	Pipe_-_38	Minor
Link	Pipe_-_39	Minor
Link	Pipe_-_40	Minor
Link	Pipe_-_41	Minor
Link	Pipe_-_42	Minor
Link	Pipe_-_43	Minor
Link	Pipe_-_44	Minor
Link	Pipe_-_45	Minor
Link	Pipe_-_46	Minor
Link	Pipe_-_47	Minor
Link	Ponds	Minor
Link	Pipe_-_13	Minor
Link	Pipe_-_14	Minor
Link	Pipe_-_15	Minor
Link	Pipe_-_16	Minor
Link	Pipe_-_17	Minor
Link	Pipe_-_18	Minor

```
Link       Pipe_-_19        Minor
Link       Pipe_-_20        Minor
Link       Pipe_-_21        Minor
Link       Pipe_-_22        Minor
Link       Pipe_-_23        Minor
Link       Pipe_-_24        Minor
Link       Pipe_-_25        Minor
Link       Pipe_-_26        Minor
Link       Pipe_-_27        Minor
Link       Pipe_-_28        Minor

[MAP]
DIMENSIONS       387137.50125     5022963.37325    387684.59175     5023546.56575
UNITS            Meters

[COORDINATES]
;;Node           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
J1               387180.602         5023391.565
J2               387335.38          5022995.436
J3               387428.523         5023031.829
OF3              387242.977         5023213.605
Out              387633.642         5023242.746
PUMP_CHAMBER     387268.611         5023444.736
STM_CB09         387332.11          5023248.803
STM_CB10         387375.735         5023253.13
STM_CB109        387518.063         5023106.554
STM_CB111        387476.937         5023312.161
STM_CB17         387258.496         5023377.169
STM_CB18         387291.823         5023291.875
STM_CB19         387331.68          5023189.868
STM_CB20         387353.842         5023133.148
STM_CB21         387376.035         5023076.348
STM_CBMH01       387404.238         5023063.988
STM_CBMH02       387443.626         5023079.373
STM_CBMH03       387385.496         5023111.956
STM_CBMH04       387424.885         5023127.337
STM_CBMH05       387363.363         5023168.818
STM_CBMH06       387402.671         5023184.192
STM_CBMH07       387345.401         5023214.789
STM_CBMH08       387384.71          5023230.158
STM_CBMH102      387400.34          5023408.029
STM_CBMH103      387414.565         5023371.622
STM_CBMH104      387432.762         5023325.05
STM_CBMH105      387449.13          5023282.975
STM_CBMH106      387465.049         5023242.233
STM_CBMH107      387483.246         5023195.662
STM_CBMH108      387501.443         5023149.091
STM_CBMH11       387311.248         5023302.198
STM_CBMH12       387350.56          5023317.56
STM_CBMH13       387290.052         5023356.444
STM_CBMH14       387329.371         5023371.791
STM_CBMH15       387268.319         5023412.068
STM_CBMH16       387307.651         5023427.379
STM_MH01         387415.641         5023068.437
STM_MH02         387396.899         5023116.406
STM_MH03         387374.685         5023173.257
```

```
STM_MH04         387356.725         5023219.223
STM_MH05         387343.458         5023253.18
STM_MH06         387322.575         5023306.626
STM_MH07         387301.375         5023360.884
STM_MH08         387279.666         5023416.444
STM_MH09         387275.718         5023426.548
STM_MH101        387370.401         5023463.544
STM_MH110        387464.836         5023289.112
SURF-WS-17       387247.252         5023215.406
SWM_Out          387199.254         5023438.675
TREATMENT_UNIT_1 387273.117         5023433.204
WS-01A-Lead      387463.104         5023086.999
WS-02A-Lead      387382.727         5023055.573
WS-03A-Lead      387444.363         5023134.963
WS-04A-Lead      387363.983         5023103.547
WS-05A-Lead      387422.135         5023191.797
WS-06A-Lead      387341.85          5023160.409
WS-07A-Lead      387404.16          5023237.757
WS-08A-Lead      387323.876         5023206.365
WS-11A-Lead      387369.981         5023325.145
WS-12A-Lead      387289.689         5023293.776
WS-13A-Lead      387348.774         5023379.369
WS-14A-Lead      387268.482         5023347.997
WS-15A-Lead      387327.047         5023434.921
WS-16A-Lead      387246.724         5023403.63
OF1              387165.653         5023467.838
OF2              387638.696         5023246.422
OF4              387239.293         5023212.144
POND-1           387284.107         5023474.415
POND-2           387407.252         5023423.406
POND-3           387605.252         5023233.406
SURF-WS-01       387444.252         5023079.406
SURF-WS-02       387405.065         5023064.895
SURF-WS-03       387425.252         5023128.406
SURF-WS-04       387386.252         5023112.406
SURF-WS-05       387403.299         5023184.928
SURF-WS-06       387364.252         5023169.406
SURF-WS-07       387384.725         5023230.688
SURF-WS-08       387346.252         5023215.406
SURF-WS-09       387376.252         5023253.406
SURF-WS-10       387332.252         5023249.406
SURF-WS-11       387351.252         5023317.406
SURF-WS-12       387311.252         5023303.406
SURF-WS-13       387329.252         5023372.406
SURF-WS-14       387290.252         5023357.406
SURF-WS-15       387308.252         5023427.406
SURF-WS-16       387268.892         5023412.575
SURF-WS-18       387400.252         5023409.928
SURF-WS-19       387415.252         5023371.928
SURF-WS-20       387433.252         5023325.928
SURF-WS-21       387450.252         5023283.928

[VERTICES]
;;Link            X-Coord            Y-Coord
;;--------------- ------------------ ------------------
C16              387256.659         5023449.844
Pipe_-_29        387290.205         5023389.487
```

```
Pipe_-_30        387323.529         5023304.206
Pipe_-_31        387363.371         5023202.174
Pipe_-_32        387385.577         5023145.435
Pipe_-_33        387407.765         5023088.539
Ponds            387356.466         5023486.577
OR18             387241.177         5023461.426
W1               387244.542         5023215.905
W2               387621.611         5023243.648
W3               387241.52          5023463.672

[POLYGONS]
;;Subcatchment   X-Coord            Y-Coord
;;-------------- ------------------ ------------------
WS-01            387438.828         5023039.111
WS-01            387417.812         5023092.658
WS-01            387455.152         5023107.246
WS-01            387455.712         5023105.947
WS-01            387466.814         5023077.561
WS-01            387489.523         5023086.443
WS-01            387496.487         5023068.619
WS-01            387461.132         5023048.488
WS-01            387450.398         5023043.636
WS-01            387438.828         5023039.111
WS-01A           387466.814         5023077.561
WS-01A           387455.718         5023105.958
WS-01A           387501.134         5023123.712
WS-01A           387512.23          5023095.315
WS-01A           387466.814         5023077.561
WS-02            387417.812         5023092.658
WS-02            387438.828         5023039.111
WS-02            387427.709         5023034.762
WS-02            387373.154         5023013.425
WS-02            387368.851         5023024.428
WS-02            387391.56          5023033.309
WS-02            387380.482         5023061.681
WS-02            387374.881         5023075.878
WS-02            387417.812         5023092.658
WS-02A           387380.458         5023061.695
WS-02A           387391.553         5023033.298
WS-02A           387346.139         5023015.54
WS-02A           387335.043         5023043.938
WS-02A           387380.458         5023061.695
WS-03            387417.802         5023092.682
WS-03            387395.627         5023149.438
WS-03            387432.964         5023164.033
WS-03            387433.508         5023162.72
WS-03            387455.196         5023107.265
WS-03            387417.802         5023092.682
WS-03A           387455.115         5023107.233
WS-03A           387433.441         5023162.702
WS-03A           387478.935         5023180.487
WS-03A           387501.12          5023123.707
WS-03A           387455.717         5023105.963
WS-03A           387455.115         5023107.233
WS-04            387395.627         5023149.438
WS-04            387417.802         5023092.682
WS-04            387374.881         5023075.878
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WS-04	387358.253	5023118.468
WS-04	387352.706	5023132.662
WS-04	387395.627	5023149.438
WS-04A	387358.253	5023118.468
WS-04A	387380.446	5023061.669
WS-04A	387335.034	5023043.919
WS-04A	387312.841	5023100.718
WS-04A	387358.253	5023118.468
WS-05	387395.627	5023149.438
WS-05	387373.441	5023206.218
WS-05	387410.781	5023220.807
WS-05	387411.287	5023219.485
WS-05	387433.508	5023162.72
WS-05	387432.966	5023164.027
WS-05	387395.627	5023149.438
WS-05A	387456.729	5023237.263
WS-05A	387478.917	5023180.475
WS-05A	387433.508	5023162.72
WS-05A	387411.319	5023219.507
WS-05A	387456.729	5023237.263
WS-06	387395.627	5023149.438
WS-06	387352.684	5023132.654
WS-06	387330.517	5023189.441
WS-06	387373.441	5023206.218
WS-06	387395.627	5023149.438
WS-06A	387324.947	5023203.626
WS-06A	387330.492	5023189.431
WS-06A	387352.684	5023132.653
WS-06A	387358.253	5023118.468
WS-06A	387312.836	5023100.745
WS-06A	387279.515	5023185.857
WS-06A	387324.947	5023203.626
WS-07	387360.85	5023238.412
WS-07	387391.122	5023243.637
WS-07	387391.122	5023243.637
WS-07	387391.25	5023243.34
WS-07	387391.399	5023243.052
WS-07	387391.566	5023242.775
WS-07	387391.752	5023242.51
WS-07	387391.956	5023242.258
WS-07	387392.176	5023242.021
WS-07	387392.412	5023241.799
WS-07	387392.663	5023241.594
WS-07	387392.927	5023241.406
WS-07	387393.203	5023241.237
WS-07	387393.49	5023241.087
WS-07	387393.787	5023240.958
WS-07	387394.092	5023240.848
WS-07	387394.403	5023240.76
WS-07	387394.72	5023240.693
WS-07	387395.041	5023240.648
WS-07	387395.364	5023240.625
WS-07	387395.688	5023240.624
WS-07	387396.011	5023240.646
WS-07	387396.332	5023240.689
WS-07	387396.649	5023240.754
WS-07	387396.961	5023240.84

WS-07	387397.266	5023240.948
WS-07	387402.163	5023242.863
WS-07	387410.788	5023220.81
WS-07	387373.446	5023206.205
WS-07	387360.85	5023238.412
WS-07A	387400.201	5023247.878
WS-07A	387445.619	5023265.641
WS-07A	387456.721	5023237.255
WS-07A	387411.278	5023219.506
WS-07A	387410.781	5023220.807
WS-07A	387402.163	5023242.863
WS-07A	387400.201	5023247.878
WS-08	387360.85	5023238.412
WS-08	387373.443	5023206.213
WS-08	387330.517	5023189.441
WS-08	387324.947	5023203.626
WS-08	387315.806	5023226.997
WS-08	387320.703	5023228.912
WS-08	387360.85	5023238.412
WS-08A	387313.845	5023232.012
WS-08A	387324.941	5023203.615
WS-08A	387279.525	5023185.861
WS-08A	387268.429	5023214.258
WS-08A	387313.845	5023232.012
WS-09	387391.122	5023243.637
WS-09	387360.85	5023238.412
WS-09	387352.062	5023260.879
WS-09	387386.714	5023267.928
WS-09	387391.611	5023269.843
WS-09	387393.572	5023264.828
WS-09	387416.281	5023273.709
WS-09	387422.91	5023256.76
WS-09	387400.201	5023247.878
WS-09	387402.163	5023242.861
WS-09	387397.266	5023240.948
WS-09	387396.961	5023240.84
WS-09	387396.649	5023240.754
WS-09	387396.332	5023240.689
WS-09	387396.011	5023240.646
WS-09	387395.688	5023240.624
WS-09	387395.364	5023240.625
WS-09	387395.041	5023240.648
WS-09	387394.72	5023240.693
WS-09	387394.403	5023240.76
WS-09	387394.092	5023240.848
WS-09	387393.787	5023240.958
WS-09	387393.49	5023241.087
WS-09	387393.203	5023241.237
WS-09	387392.927	5023241.406
WS-09	387392.663	5023241.594
WS-09	387392.412	5023241.799
WS-09	387392.176	5023242.021
WS-09	387391.956	5023242.258
WS-09	387391.752	5023242.51
WS-09	387391.566	5023242.775
WS-09	387391.399	5023243.052
WS-09	387391.25	5023243.34

WS-09	387391.122	5023243.637
WS-10	387360.85	5023238.412
WS-10	387320.703	5023228.912
WS-10	387315.806	5023226.997
WS-10	387313.845	5023232.012
WS-10	387291.136	5023223.131
WS-10	387284.507	5023240.08
WS-10	387307.216	5023248.962
WS-10	387305.254	5023253.977
WS-10	387310.01	5023255.837
WS-10	387338.265	5023273.218
WS-10	387338.197	5023273.411
WS-10	387338.143	5023273.609
WS-10	387338.101	5023273.809
WS-10	387338.074	5023274.012
WS-10	387338.061	5023274.217
WS-10	387338.061	5023274.422
WS-10	387338.076	5023274.626
WS-10	387338.104	5023274.829
WS-10	387338.147	5023275.029
WS-10	387338.202	5023275.226
WS-10	387338.272	5023275.419
WS-10	387338.354	5023275.607
WS-10	387338.448	5023275.788
WS-10	387338.555	5023275.963
WS-10	387338.674	5023276.13
WS-10	387338.804	5023276.289
WS-10	387338.944	5023276.438
WS-10	387339.094	5023276.577
WS-10	387339.253	5023276.706
WS-10	387339.421	5023276.824
WS-10	387339.596	5023276.93
WS-10	387339.778	5023277.024
WS-10	387339.967	5023277.105
WS-10	387339.967	5023277.105
WS-10	387344.954	5023279.055
WS-10	387352.062	5023260.879
WS-10	387360.85	5023238.412
WS-11	387359.393	5023352.216
WS-11	387360.257	5023349.991
WS-11	387391.605	5023269.84
WS-11	387386.714	5023267.928
WS-11	387352.062	5023260.879
WS-11	387344.954	5023279.055
WS-11	387322.073	5023337.634
WS-11	387359.375	5023352.209
WS-11	387359.393	5023352.216
WS-11A	387405.695	5023367.754
WS-11A	387438.978	5023282.586
WS-11A	387393.569	5023264.827
WS-11A	387391.605	5023269.84
WS-11A	387360.287	5023350.003
WS-11A	387405.695	5023367.754
WS-12	387322.073	5023337.634
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WS-12	387339.967	5023277.105
WS-12	387339.778	5023277.024

WS-12	387339.596	5023276.93
WS-12	387339.421	5023276.824
WS-12	387339.253	5023276.706
WS-12	387339.094	5023276.577
WS-12	387338.944	5023276.438
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[SYMBOLS]
;;Gage           X-Coord            Y-Coord
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[PROFILES]
;;Name           Links
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"Main Trunk      " Pipe_-_08 Pipe_-_09 Pipe_-_10 Pipe_-_11 Pipe_-_12
"Main Trunk      " Pipe_-_28 Pipe_-_47
"Secondary Trunk " P1 Pipe_-_03 Pipe_-_04 Pipe_-_100 Pipe_-_101
"Secondary Trunk " Pipe_-_102 Pipe_-_103 Pipe_-_104 Pipe_-_107 Pipe_-_108
"Secondary Trunk " Pipe_-_109 Pipe_-_110
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