Annex I

Operating Plan, Hydraulic Modelling, Hydrology, Erosion Studies and Sound Study

Contents

Report

ORTECH Environmental
a division of ORTECH Consulting Inc.

Proposed Operating Plan & Water Management Plan Amendment Wabageshik Rapid Small Waterpower Project

A Report to:	Xeneca Power Development Inc. 5255Yonge Street, Suite 1200 Toronto, Ontario M2N 6P4
Submitted by:	ORTECH Consulting Inc. 804 Southdown Road Mississauga, Ontario L5J 2Y4
Project No.	91195
Date:	July2013

Xeneca Power Development Inc.

TABLE OF CONTENTS

1 INTRODUCTION

This document outlines the proposed Operating Plan and Water Management Plan (WMP) Amendment for the proposed Wabageshik Rapid small waterpower project on the Vermillion River near the Town of Espanola, Ontario. The document has been prepared in support of regulatory approval processes required for the construction and operation of the project. The document should be considered "draft" until all relevant regulatory processes related to the operation of the project have been successfully completed. Once the regulatory processes have been completed, this document forms a binding commitment and regulatory requirement on the project and its owner and operator.

The purpose of this document is to describe and propose parameters for the long term operation of the project and to facilitate integration of the new project into the"Spanish/Vermillion Rivers Water Management Plan" (currently in draft stage). In particular, operating parameters are proposed for:

- Operating levels of the upstream headpond,
- Flow allocation between the powerhouse and the spillway, and
- Downstream Flow and Level control.

The objective of setting operating parameters is to allow flexibility in the electricity generation while limiting significant negative impacts due to variability in flows and fluctuation in levels.

1.1 Regulatory Context

Wabageshik Rapid, located along the Vermillion River comprises a portion of the larger Spanish/Vermillion Rivers watershed. Waterpower facilities and associated control structures operating within this river system are currently governed by a draft Spanish/Vermillion Rivers Water Management Plan(WMP) under the authority of the Ministry of Natural Resources (MNR) through the Lakes and Rivers Improvement Act (LRIA). An amendment to the WMP will be required establishing the operational parameters for the Wabageshik Rapid waterpower project.

The MNR (2007) recommended a coordinated approach between the Environmental Screening Process (Class Environmental Assessment for Waterpower Facilities, April 2012) and the WMP process to avoid duplication of effort. This report and the supporting referenced documents have been prepared in accordance with the MNR's WMP Guidelines (2002).

Acceptance of the Operating Plan will not relieve the Proponent from responsibility to comply with other applicable legislation or provide authority to flood private or public lands without consent of the owners of the affected property.

Field studies and technical reports used in the development of the Operating Plan include:

1. LiDAR Survey: detailed topographic mapping of the upstream and downstream river reach.
2. Conceptual Design: drawings of the structures as conceptually proposed for the project.
3. Hydrology Study: an analysis of the natural river flows.

4. Bathymetric Study: a field study of water depths upstream and downstream of the project location and a spot measurement of flows required for hydraulic model calibration.
5. Hydraulic Studies: detailed hydraulic engineering analyses were carried out under separate cover to better understand the various hydraulic parameters relevant to assess operational and environmental matters. The work included 1 dimensional steady state HEC RAS modeling in the upstream and downstream area and unsteady flow modeling in the downstream area affected by operation of the project.
6. Erosion Survey: a desktop survey of upstream locations that could be sensitive to future shoreline erosion after the project is built.
7. Environmental Field Studies: studies of environmental areas and aspects of interest as documented in other parts of this environmental assessment.
8. Fluvial Geomorphic Assessments: Determining and Quantifying bank and bed erosion potential and general sediment transport associated with the proposed generating station.

Establishment of targeted operational parameters reflecting the objectives of the existing draft WMP, discussion of potential environmental and socio-economic effects on the river, mitigation of these effects and proposed operational monitoring plans are provided within the Environmental Screening Report,2013.

2 MODES OF OPERATION

The electricity generated from this project has been contracted to the Ontario Power Authority under a FIT Contract. The terms and conditions of the FIT Contract encourage the facility to generate electricity when needed most in Ontario, between the hours of 11:00 a.m. and 7:00 p.m. on business days. The mode of operation takes into account the objective of building and operating the project in an environmentally sensible manner within the framework of the existing WMP.

It is proposed to operate the facility as a "modified run-of-river" generating facility. During certain times, the facility would operate at the same rate as the natural flow in the river (i.e. "run-of-river") with no variation in upstream water levels due to operation and no man-made variation in downstream flows from those experienced naturally. At other times, the facility would "modify" the natural flow in the river by storing some of the natural river flow during night time hours to be used during daytime hours (i.e. on business days from 11:00 a.m. to 7:00 p.m.) when the need for electricity in the Province is greater.

Run-of-river operation would occur during two (2) types of natural flow conditions:

1. High Flow - When natural river flows are greater than the maximum turbine capacity (Q_{Tmax}): Since the natural flow exceeds the amount of water that can be processed through the turbine, any excess water is bypassed through the spillway structure. The combined flow of the water used in the turbine to generate electricity and the water bypassed over the spillway equals the natural flow. This situation occurs primarily during spring thaw run-off conditions and during major storm events in the spring, summer and fall.
2. Very Low Flow - When natural flows are so low that any available water must be released downstream to protect the environment: The flow in this situation is typically too low to generate electricity. This situation occurs primarily in late summer and late winter when natural flows are typically very low. This situation may also occur during certain years when spring run-off flow is unusually low and the amount of water available is needed downstream to protect the environment.

Modified run-of-river operation would occur during moderate and low flows when the natural flow in the river is below the maximum turbine flow capacity (Q_{Tmax}) but above the minimum flow required to protect the environment (Q_{EA}). During these flow conditions, some of the natural river flow during night-time hours can be stored and used to produce electricity during daytime hours. There are two modes of modified operation as follows:

1. Moderate Flow - Facility runs at reduced rate at night: When natural river flows are moderate (i.e. between the minimum (Q_{Tmin}) and the maximum (Q_{Tmax}) rate of turbine capacity), the facility runs continuously, but some of the water is saved during night-time hours. This operation results in downstream flows that are smaller than natural river flows during night-time hours and larger than natural river flows during daytime hours

when electricity use is higher. However, the minimum flow in this mode of operation is not less than the minimum turbine capacity (Q_{Tmin}).

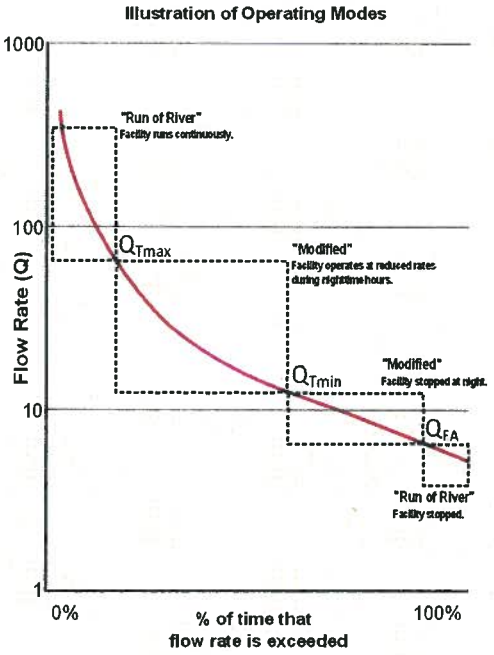
2. Low Flow - Facility is stopped at night: When natural river flows are low (i.e. below the minimum turbine capacity (Q_{Tmin})), the facility will need to stop operation during some night-time hours and save water until operation is again possible. The lower the natural river flow, the longer the period of stoppage will be. When the facility operates, it operates at a rate less than maximum turbine capacity (Q_{Tmax}). To ensure that the downstream river reach receives enough water flow to protect the environment (Q_{EA}), the appropriate amount of water is released through a bypass in the powerhouse structure while the turbine operation is stopped.

Establishment of the operating targets, consistency with the WMP, assessment of potential effects on the river, mitigation and monitoring plans are provided within the Environmental Screening Report.

Figure 1 illustrates the mode of operation that occurs depending on the amount of natural flow in the river.

An important factor in modified run-of-river operation is the availability of storage upstream of the facility. As described in the project description section of the environmental assessment, the amount of storage created as part of the project is very limited. To achieve the objective of building a project with limited environmental impact, the conceptual design of the facility limits the height of structure, the depth and the area of inundation upstream. Consequently, the amount of storage available for operation is inherently limited in relation to the natural flow in the river, thereby limiting the storage to a few hours during moderate and low flows. The ability to use this storage is further constrained by environmental constraints outlined in other parts of the environmental assessment document. It is the limited storage that differentiates modified run-of-river projects from hydroelectric projects that create large storage reservoirs with the ability to store water for weeks or seasons to "peak" when seasonal periods of hot or cold spells raise the need for extra electricity production. Typically, modified run-of-river projects have significantly less environmental impact than peaking hydroelectric projects.

Figure 1: Operating Modes



3 HEADPOND OPERATING OBJECTIVES

During periods of moderate and low flows when the facility operates in modified run-of-river operation mode, headpond water levels upstream of the facility will fluctuate from daytime to night-time hours. Water levels will rise during the night as production is reduced below the natural rate of river inflow. Conversely, water levels will fall during the next business day as production is increased above the natural rate of river inflow. The objective of the Operating Plan is to allow some fluctuations in headpond levels without a significant negative impact on:

1. Shoreline Erosion
2. Aquatic Habitat
3. Civil Structures & Private Property

3.1 Shoreline Erosion

The fluctuation in daily water levels upstream can increase the amount of shoreline erosion that would occur without modified operation. A small amount of shoreline erosion occurs naturally in the river; however, accelerated and persistent shoreline erosion is undesirable for the following reasons:

1. Natural shoreline vegetation cannot establish where accelerated erosion occurs on an ongoing basis.
2. Shoreline aquatic habitat can be affected negatively in the immediate area around the erosion location.
3. In extreme cases, erosion can cause an increase in the overall sediment load in the river with the potential for secondary effects on water turbidity and aquatic conditions.

For significant and persistent acceleration of shoreline erosion to occur, two (2) conditions must coincide:

1. Slope: the slope of the ground must be steep at the location where it intersects the shoreline of the inundated area upstream of the facility.
2. Soil Material: the soil material must be susceptible to erosion (i.e. this depends on the type of soil material and can range from negligible for rock to very high for pure silt with negligible clay content and cohesion).

An erosion survey was completed along the upstream shoreline to identify those locations where the potential for erosion will exist after inundation. The objective of the headpond operating parameters provided later in this document is to limit headpond fluctuation so that pore pressure changes at the shoreline remain small.

3.2 Aquatic Habitat Upstream

Daily fluctuation of water levels during periods of modified run-of-river operation may impact certain sensitive aquatic habitat at the upstream shoreline area. The existence and extent of any sensitive aquatic habitat areas within the headpond have been documented as part of the environmental field studies that are presented in other sections of this environmental assessment document. Although Wabageshik Lake is hydraulically connected to the headpond, waterpower operations will be managed to maintain naturally occurring levels as discussed further in this report and are therefore not considered part of the headpond. Specific effects within the headpond can include such things as:

1. Effects on fish spawning in shallow water areas along the shoreline where daily fluctuations are significant in relation to the typical water depth.
2. Effects on water mammal habitat such as beaver houses where significant water level fluctuations create unfavorable conditions in shallow areas.
3. Movement of ice causing sediment scouring, sediment movement or turbidity at affected shoreline locations.
4. Effects on avian nests, typically found in shallow water areas only.

The significant aquatic habitat issues identified in the field studies were reviewed and considered in developing this Operating Plan. Also considered was the time of year when various habitat activities occur. The objective of the operating parameters is to limit the times when headpond fluctuations would occur as well as the extent of fluctuation.

3.3 Civil Structures and Private Property

Civil structures are man-made structures, such as bridges, roads, transmission lines, water intakes, boat launches and docks. Private property includes any leased, deeded, eased or owned real property (i.e. land). During the conceptual engineering design of the project, the upstream area that could be affected by the project and by inundation was reviewed. A static inundation map was created to identify potential sites of concern where the upstream inundation of the project could affect civil structures. Where the potential for effects on civil structures exists, steps were taken in the conceptual design to avoid or minimize impacts. These matters are discussed in other sections of this document.

In developing the Operating Plan, the additional effect created by modified operation of the project was assessed. Extensive hydraulic modeling was carried out as part of the hydraulic studies to evaluate the following:

1. Upstream water levels during various natural river flows and under operating conditions.
2. Backwater effects beyond the static inundation considered in the conceptual design work.

3. The upstream distance from the facility to where the flood levels and inundation will not be affected by the project.
4. Mapping of the estimated natural High Water Mark (i.e. the visible demarcation left in the vegetated shoreline from repeated annual flooding).
5. Any upstream locations where the facility operation could impact the natural High Water Mark.

The objective of the headpond operating parameters is to limit the extent of inundation that occurs at locations upstream during various inflow and operating conditions, including flood events.

3.4 Upstream Lake Levels in Wabageshik Lake

The increase in upstream water level created by the facility creates a headpond that abuts into the outlet of Wabageshik Lake, located 0.8 km upstream of the facility. In addition to the man-made inundation area created by the facility, the headpond will be hydraulically connected to the lake under certain conditions. This implies that a change in water level upstream of the facility could impact lake levels.

As the facility is located downstream of the natural lake outlet, a drop in water level at the facility cannot cause a drop in lake level that is lower than would could occur naturally. However, a man made increase in water level at the facility above natural lake levels would cause an increase in lake level. This situation occurs when the rate of water release through the facility is less than the rate of water release that would naturally occur at the lake outlet over an extended period of time. To mitigate any undesirable effect on lake levels, the operations plan is designed to follow seasonal lake levels as described:

1. Normal Lake Level: The water level at the facility shall be maintained at a level that results in a lake level that is equal to the lake level under natural conditions.
2. Fluctuation of Lake Level: The water level at the facility shall be maintained at a level that does not cause fluctuations in lake level that have an adverse effect on recreational uses and the environment. For greater certainty, the effect on lake level fluctuations due to daily facility operation shall be within +/- 5cm.
3. Desired Lake Level: Where government directs to maintain the lake level at a desired level, and where such desired level does not conflict with the objectives described above, the facility shall be operated in a manner that achieves the desired lake level to the extent reasonably possible.

It is noted that the operating approach proposed above provides some ability to manage the lake level in a manner that would enhance recreational uses. It is further noted that rapid increases in lake level can occur naturally due to inflow of natural flood flows. Such natural events cannot be controlled by the facility.

4 SPILLWAY FLOW ALLOCATION OBJECTIVES

At the site where the powerhouse and spillway are located, downstream flow is divided between the two structures, causing changes to water depth and flow velocity at those locations. The apportioning of flows between the two structures depends on the amount of inflow to the project and the operating status of the powerhouse.

During the modes of operations described in Section 2 above, the following flow conditions generally arise in the area immediately downstream of the powerhouse and the spillway:

- High Flow: When flows exceed the maximum powerhouse capacity, any excess flow is directed over the spillway. This condition occurs primarily during spring flood flows. Where fish spawning occurs at these times in the vicinity of the spillway, additional flow is provided for in the operating plan.
- Moderate Flow: When flows are in the range of the powerhouse capacity, all flows are typically passed through the powerhouse to generate electricity. Moderate flow occurs much of the time and during various times of the year. Depending on ecological requirements that have been identified for the spillway area, special flow requirements areprovided for in the operating plan.
- Low Flow: During low flows, all flows are typically passed through the powerhouse to generate electricity. However, since the amount of flow is insufficient for continuous operation, powerhouse flow is interrupted intermittently. Depending on ecological requirements that have been identified for powerhouse and spillway areas, special flow requirements may need to be provided for either (or both) areas.
- Very Low Flow: During very low flows, inflow is insufficient for any type of operation. Any inflow is directed over the spillway structure. The powerhouse is inactive and no operation is possible. No special flow requirements can be provided beyond those provided by the natural inflow.

The objective of the downstream flow allocation in the spillway and powerhouse areas is to ensure that ecological flow requirements identified as part of the environmental assessment process are met. Since flow occurs preferentially through the powerhouse, the primary focus of flow allocation is the provision of any compensatory flow (Q_{Comp}) through an orfice in the spillway structure.

5 DOWNSTREAM FLOW& LEVEL OBJECTIVES

During periods of moderate and low flows when the facility operates in modified run-of-river operation mode, the flows downstream of the facility will vary from certain daytime to night-time hours. At certain night-time hours (i.e. outside of the hours of 11:00 a.m. to 7:00 p.m. on business days), flows will be substantially lower than natural river flows. At certain daytime hours (i.e. during the hours of 11:00 a.m. to 7:00 p.m. on business days), flows will be greater than natural river flows.

The variability in flow can be significant from an area immediately downstream of the facility to a distance downstream where the variability in flow is attenuated by the presence of a lake or confluence with another significant tributary (the "Variable Flow Reach"). Within the Variable Flow Reach, water depth, flow velocity and wetted perimeter will change from daytime to night-time while the modified operation is occurring.

The degree of variability depends on the mode of operation and the difference between the daytime and night-time flow. While the facility is operating continuously, but at a reduced rate at night, the amount of water discharged at all times is very significant. Also, the rate of variability is in the same general range where daytime flow is typically not more than four (4) times larger than night-time flow. Under continuous operation, the potential for environmental impact is limited as flows will be substantial enough at all times for most environmental requirements.

While the facility is operating intermittently (i.e. stopped at certain times at night), the variability in the flow can be large. The amount of water released at night is only the minimum amount required to protect the environment. The minimum amount released while operating is at least the minimum turbine capacity (Q_{Tmin}) or more. The difference in this mode of operation can result in daytime flows that are 10+ times larger than at night-time. Out of the four (4) operating modes, it is this mode that warrants the greatest consideration for operations planning.

In this mode, the variability can affect:

1. Aquatic Habitat
2. Navigation
3. Public Safety & Civil Structures
4. Ice Scour

5.1 Downstream Aquatic Habitat

The daily variability in flow during modified operation may impact certain sensitive aquatic habitat in the Variable Flow Reach downstream of the facility. Examples of possible concerns include:

1. Effects on fish spawning and foraging.

2. Effects on benthic organisms in the river sediment.

The significant aquatic habitat issues that were identified in the field studies were reviewed and considered in developing the operating plan. To reduce the potential for impact in the Variable Flow Reach during intermittent operations, the following operating parameters were established within the Environmental Screening Report:

1. Timing of Event
2. Sizing of bypass flows
3. Controlled ramping of flows
4. Limiting maximum turbine flow (Q_{Lim})

The objective of the downstream flow and level parameters is to ensure that ecological flow requirements identified as part of the environmental assessment process are met.

5.2 Navigation

Navigation impacts could result during times of modified run-of-river operation in the Variable Flow Reach. During certain hours, the flows and water depths would be lower than normal and during certain other hours, the flows and water depth would be greater than normal.

The river is not used for commercial navigation but sporadically for recreational canoeing or boating. This matter is being addressed through the stakeholder consultation process. Where navigation concerns have been or are identified, the objective of the operating parameters is to ensure that downstream navigation constraints are considered.

5.3 Public Safety & Civil Structures

Public safety considerations could arise due to variability in flows and the rate of change in flows and levels in the Variable Flow Reach. Possibly affected could be recreational uses such as camping, fishing or hiking at the edge of the river in this area. The effect on uses is being assessed as part of the public stakeholder consultation associated with the environmental assessment process.

The scope of the potential change in water flows and levels due to intermittent operation was quantified in the hydraulic studies referenced at the end of this document. The models provide information about the water depth at various flows, including an assessment of the changes in flows and water depths that occur during an intermittent operations event. The expected water flow changes are included in the section on the proposed operating flows and levels presented below.

It should be recognized that intermittent operation would only occur during low flows during the winter months when this situation occurs the river is frozen and recreational uses are limited. During the summer months, some consideration was given to increasing the environmental flows (Q_{EA}) that occur when the facility is stopped to mitigate potential restrictions to canoeing. During the daytime hours river flows will be higher than the daily average flow and some positive benefits to recreational use may occur. Safety issues that are identified will be addressed through an awareness plan once the facility goes into operation.

The maximum downstream river flows associated with maximum turbine capacity (Q_{Tmax}) are in the range of normal river flows and well below the flood flows experienced during spring freshet or major rain events.

Downstream features were identified as part of the environmental assessment process. The objective of the downstream operating parameters is to avoid significant negative impact on public safety and civil structures due to variable flows and fluctuating levels.

6 SEASONAL OPERATIONS

Environmental protection requirements vary significantly depending on the time of year. Operating parameters have to be set accordingly to address these changing requirements throughout the year.

For operating purposes, operating seasons can be defined in various ways, including calendar seasons, periods of consistent meteorological conditions and periods of special environmental significance. The approach used in this operating plan divides the year into the following operating seasons:

1. Spring Freshet: The spring freshet period begins with the rapid increase in the spring snow melt flow on the hydrograph of average annual flows and ends with the levelling off of flows after flood waters have receded. The period coincides with increases in water temperature and flows that trigger various aquatic activities in the river.
2. Summer Low: The summer low period begins with the end of the freshet and lasts until the upward inflection that occurs on the hydrograph of average annual flows in early fall. The period typically exhibits warm water temperatures and a high degree of activity in the entire food chain. Flows are generally low but highly variable, depending on rainfall events.
3. Fall Freshet: The fall freshet begins with the upward inflection on the hydrograph of average annual flows and ends with the levelling off of flows after the freshet flows have receded. The period exhibits decreasing water temperatures and moderate flows. The insect activity has become minimal due to cool air temperatures above the water and the associated food chain activity is slowing down.
4. Winter Low: The winter low period begins with the end of the fall freshet and finishes when the spring freshet starts. Water and air temperatures are cold. Most water surfaces freeze during this period and various fish and aquatic species either hibernate or seek deeper waters such as pools and lakes. Flows are generally low and decrease gradually but continuously until spring freshet.

The start and end dates for the above operating seasons have been picked from the hydrograph of average annual flows (see Figure 2) and summarized in the Table 1. A flow exceedance curve is provided for each season in Figure 3.

Table 1: Hydrologic Flow Seasons

Season	Season Start Date
Spring	March 20
Summer	May 25
Fall	October 12
Winter	December 25

As shown on the hydrograph in Figure 2 below, flows vary substantially for the same day from one year to the next. While the hydrograph of the average annual flow provides a reasonable representation of the typical start and end times for each operating season, the actual start and end times will vary every year. This weather related aspect means that calendar dates can only serve as approximations of the actual timing of natural events. For the purposes of the operating plan, the start and end dates in Table 2provide some perspective as to when certain flow conditions are most likely to occur.

Figure 2: Annual Hydrograph

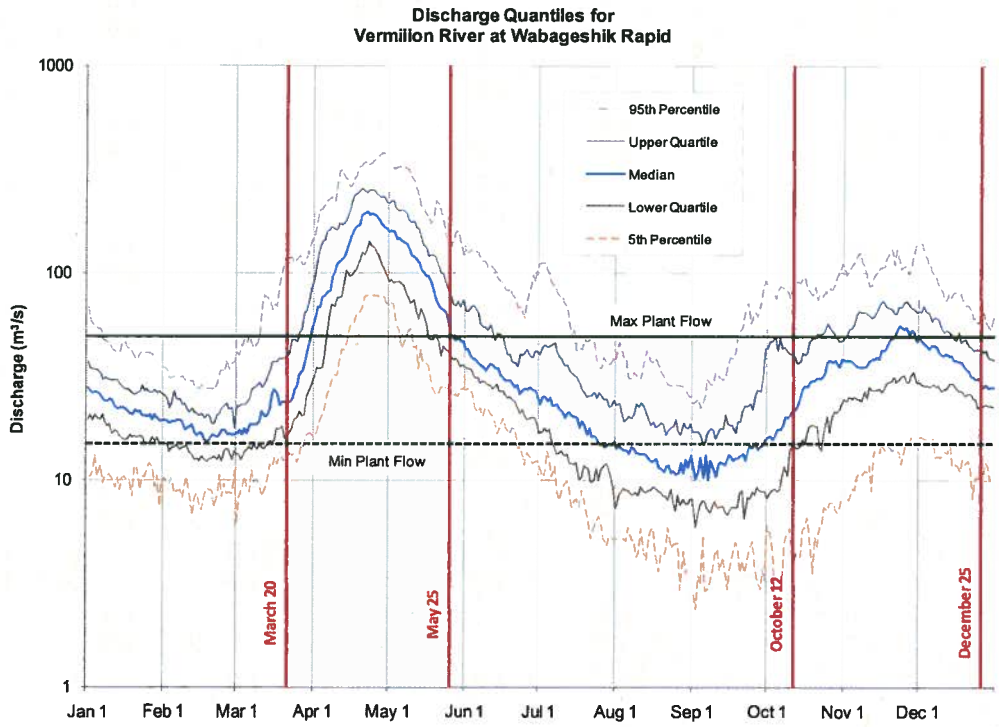


Figure 3: Seasonal and Annual Flow Duration Curves

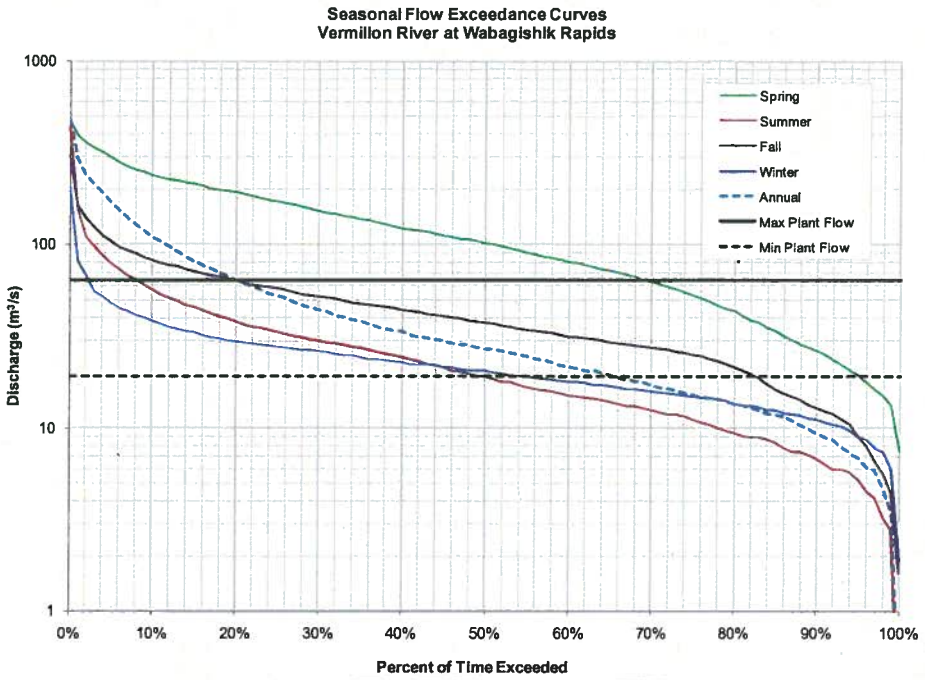


Table 2 below summarizes relevant reference values derived from the flow hydrology information for the project site. Additional information about the site hydrology can be found in the hydrology study referenced at the end of this report. Also shown are turbine flow parameters as contemplated in the conceptual design. It should be noted that turbine flow parameters may change as the project proceeds to detailed engineering design and commercially available equipment options are selected as part of the construction procurement process.

Table 2: Hydrologic and Turbine Flow Parameters

Acronym	Description	Project &Streamflow Conditions (m^3/s)			
		Spring (Mar 20 - May 24)	Summer (May 25 - Oct 11)	Fall (Oct 12 - Dec 24)	Winter (Dec 25 - Mar 19)
Q_{99}	Streamflow exceeded 99% of time	13.2	2.78	4.45	5.92
Q_{95}	Streamflow exceeded 95% of time	19.3	5.19	8.89	8.89
Q_{80}	Streamflow exceeded 80% of time	43.2	9.40	21.6	13.5
Q_{50}	Streamflow exceeded 50% of time	102	18.9	37.7	20.5
Q_{20}	Streamflow exceeded 20% of time	193	38.2	63.4	29.9
Q_{Tmax}	Maximum turbine flow	64.0			
Q_{Tmin}	Minimum turbine flow	19.2			
LTAF	Long term annual flow, average annual mean	47.3			
Q_{MED}	Median streamflow value	27.3			
7Q2	2 year return period 7-day-average-low flow	6.84			
7Q10	10 year return period 7-day-average-low flow	3.50			
7Q20	20 year return period 7-day-average-low flow	2.89			
$Q_{1:2}$	High streamflow event; occurrence of 1 in 2 yr	268			
$Q_{1:100}$	High streamflow event; occurrence of 1 in 100 yr	507			
	Turbine Ramp Time	60 min			
	Turbine Down Ramp Time	60 min			

Table 3 below summarizes the predicted frequency for each of the operating modes by season, based on the available flow and turbine information. The frequency values have been derived from the available hydrology, design parameters and operating restrictions outlined in this document.

Table 3: Operating Mode Occurrence by Season

Operating Mode	InFlow	Spring	Summer	Fall	Winter	Annual
Run-of-River (Continuous Operation)	>QTmax	67%	8%	20%	4%	20%
Modified Run-of-River (Continuous Operation)	>QTmin	28%	42%	63%	57%	47%
Modified Run-of-River (Intermittent Operation)	<QTmin	4%	45%	16%	38%	31%
Run-of-River (Facility Not Operating)	<QEA	1%	5%	1%	1%	2%
		100%	100%	100%	100%	100%

Note: Based upon period of record 1954 – 2011.

7 PROPOSED OPERATING PARAMETERS

This section summarizes the proposed operations parameters for the project. In selecting the operations parameters, the environmental aspects outlined as part of the environmental assessment process and the public stakeholder consultation process were considered so as to provide a reasonable balance among operational constraints, environmental aspects and mitigation of possible impacts. Different operating parameters are proposed for each of the ecological seasons to reflect different needs and mitigation objectives for various times of the year. In addition, special operating protocols are provided for spawning periods identified in the environmental assessment process.

It should be noted that changes in upstream levels and downstream flows related to operation occur only when the facility is in modified run-of-river operations mode. While the facility is in run-of-river mode and subject to the amount of natural flow in the river, the upstream levels will be maintained at a constant level and downstream flows will equal the natural flow in the river.

To better illustrate the type of operation that typically occurs at various times of the year, a series of daily operations graphs are presented in Appendix 1. Each graph illustrates the hour-by-hour operation of the headpond and the downstream flows for a given operating scenario.

7.1 Upstream Operation Parameters:

This section outlines the relevant operating parameter for the headpond. Table 4 below lists the key headpond parameters including inundation area of the headpond and operating levels. Figure 4 below shows a map of the headpond inundation extent. Wabageshik Lake which is hydraulically connected to the project, and occupies approximately 629 hectares will not experience any additional inundation above which occurs currently under natural lake levels. Natural lake levels vary seasonally in the range of 150 cm, the impact of the proposed 5 cm operating band is shown by Figure 5.

Table 4: Upstream Operating Parameters

Inundation Area at LTAF	4.4	ha
Inundation Area - Post-project	4.8	ha
Upstream Extent	0.8	km
Normal Operating Target	Nat. Lake Level	m MSL
Minimum Operating Target	204.0	m MSL
Maximum Daily Fluctuation	0.1	m

Note: values are for normal flow conditions, parameters may vary during droughts or floods due to factors of nature.

Figure 4: Headpond Extent

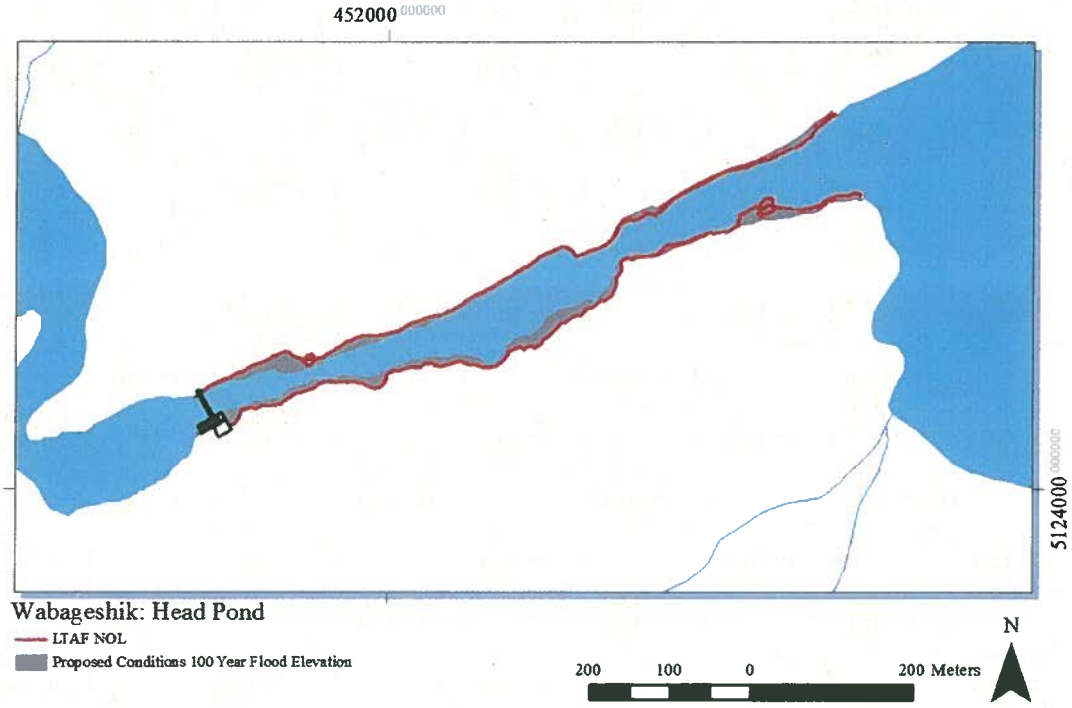
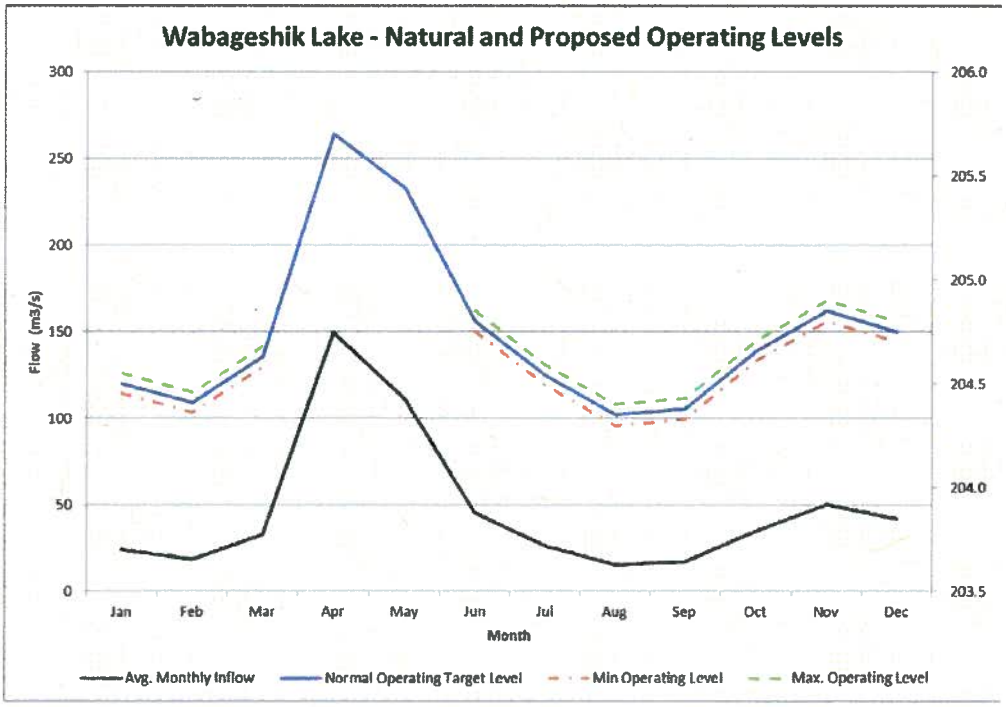
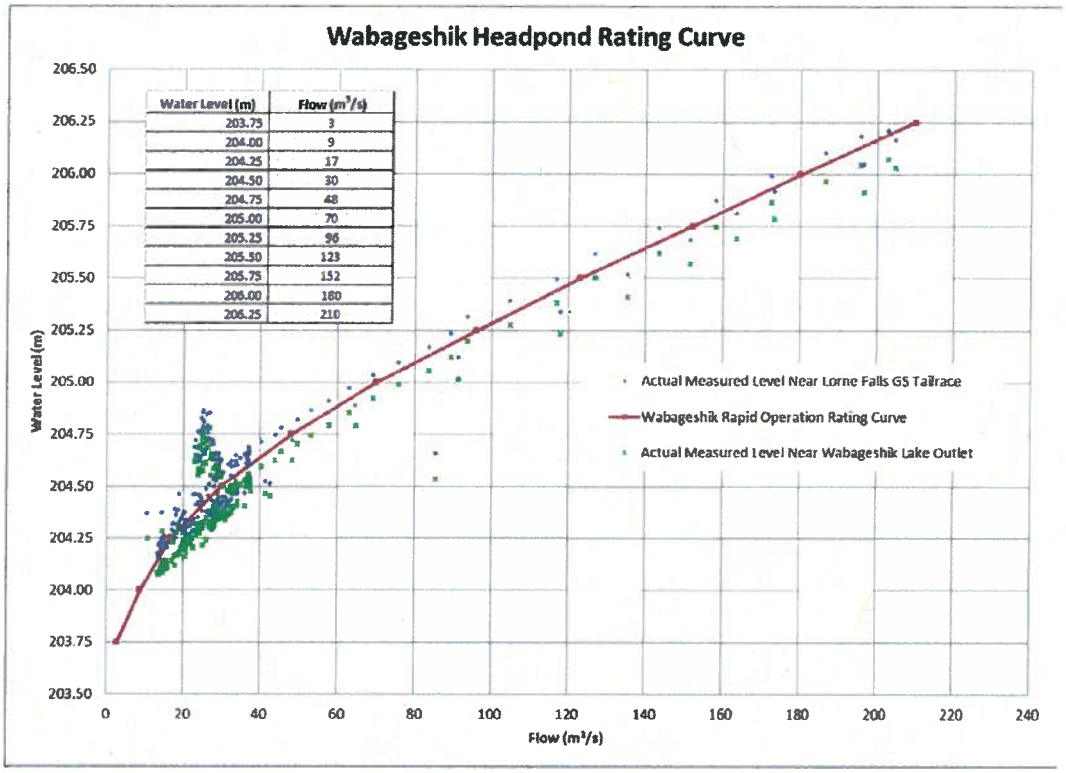


Figure 5: Wabageshik Lake Levels with Operating Band



Two water level loggers installed near the lake outlet and near the Lorne Falls GS tailrace area, both on Wagabeshik Lake, served to establish the outflow rating curve shown in Figure 6. From this relationship turbine operations will be planned 24 hours in advance as illustrated in the operating charts provided in Attachment 1. Turbine operations can be controlled to achieve the target lake levels for outflows equal to or less than the maximum turbine design flow. Wind induced wave and seiche effects on lake levels will be resolved through a comparison of these two level loggers based upon average measurements taken over a time period.

Figure 6: Headpond Rating Curve



7.2 Downstream Operation Parameters:

This section outlines the relevant operating parameters for the downstream river section, including any compensatory flow (Q_{Comp}) allocation for the spillway structure. Table 5 below provides general reference values and the minimum compliance values for downstream environmental flow (Q_{EA}) allocated to the powerhouse structure and compensatory flow (Q_{Comp}) allocated to the spillway structure. Figure 7 below shows the operating flow limits in graphical form. Operating parameters are provided for each of the operating seasons. Environmental flow (Q_{EA}) values relate primarily tointermittent operation (i.e. when natural flows in the river are low but still above the minimum environmental flow (Q_{EA})).

Figure 7: Downstream Operating Limits

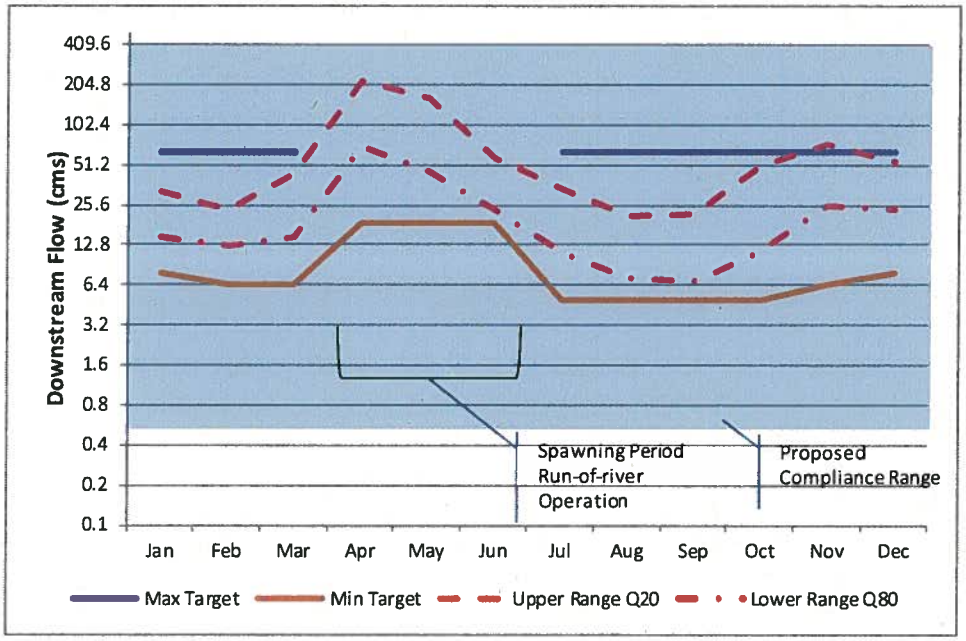


Table 5: Downstream Operating Parameters

	Parameter	Flows m^3/s by Hydrologic Season			
		Spring	Summer	Fall	Winter
Q_{EA}	Min. Env. Flow during int. op.	No int. op.	5.0	Oct = 5.0 Nov = 6.5 Dec = 8.0	Jan = 8.0Feb = 6.5 Mar = 6.5
Q_{Comp}	Min. compensatory flow in spillway area(1)	2.0	0.5	0.5	0.5
Q_D	Max. turbine flow during continuous op.	64	64	64	64
Q_{TL}	Max. turbine flow during int. op.	25	25	25	25

Note (1) flows above the minimum values will be provided in spillway when inflow exceeds 64 cms. Refer to Table 7 for monthly seasonal conditions when this condition is expected to occur.
(2) compensatory flow ranging from 2.0 cms to 0.5 cms will be achieved via a variable flow adjustment

Modified operation will cause downstream flows to vary and river levels to fluctuate during the course of a day. The amount of daily change in flows and levels has been assessed using an unsteady state hydraulic model. Modeled were those operations scenarios shown in Appendix

1that could result in significant level fluctuations. The operating scenarios in Appendix 1 further incorporate a storage balancing methodology whereby the available headpond storage is evenly utilized across a generation/storage cycle. Under this approach both the frequency and magnitude of downstream flows are minimized. The full results are contained in the unsteady state hydraulic study referenced at the end of this report.

Downstream features that could be affected by the flow and level changes have been documented as part of the environmental assessment process. Where the predicted changes in flows and levels result in unacceptable effects, further operating constraints are required. Table 6 below lists the additional operating constraints.

Table 6: Additional Operating Constraints

	Additional Operating Constraint
1	Spawning operation to occur in accordance with Appendix 2.
2	Daily water level fluctuation due to operation not to exceed the operating band of Domtar headpond. Compliance to be demonstrated through ongoing monitoring.
3	Facility to go into run-of-river operation when a level 3 drought for the effected watershed is declared by Province. This provision addresses the situation where inflow into the headpond exceeds minimum environmental flows (QEA) discussed in the operations plan and additional flows are required for the watershed.
4	Predictive hydraulic model of downstream flows and levels to be verified with operation data within first year of operation.
5	Daily water level fluctuations due to operations not to exceed +/- 15 cm of daily average in pool 400 metres downstream of facility. Compliance to be demonstrated through ongoing monitoring.
6	Natural lake level and outflow to be maintained in Wabageshik Lake. Total daily facility releases to equal pre-project rating curve. Compliance to be demonstrated through ongoing lake level monitoring with a +/- 5 cm target level established.
7	Deer crossings have been observed downstream of the facility underlying varying flow conditions. Turbine outflows will be monitored for 3 years post operation in relation to deer crossing to determine if movements are impacted.
8	When intermittent operations occur, with environmental flows (Q_{EA}) provided downstream, a limited turbine operation (Q_{TL}) of 25 cms will be enacted to reduce downstream flow and level fluctuations.
9	When natural inflow into the project is sufficient to support minimum generation requirements (Q_{MIN}=19.2 cms + Q_{COMP})intermittent operations will not occur.

10	To avoid impacts on spawning, run-of-river operation will occur in the spring, beginning when water temperature reaches 8 degrees Celsius and continuing until egg incubation and larval development is complete. This is determined based on a water of 16 degrees Celsius, plus 25 days, after which time limited modified operations will be permitted. These modified operations will avoid intermittent operations of the turbine and restrict daily operational ranges 20 cms to facilitate downstream larval drift.
11	Monitoring of dissolved oxygen concentrations within the pool immediately downstream of the spillway structure to confirm compensatory flows (0.5 cms) are sufficient. An adaptive management process for increased compensatory flows of up to 2 cms to be implemented pending the results of the initial monitoring program.
12	Water resources will be managed in such a manner that peaking cycles occur no more than once per 24 hour period whereby the volume of water within the headpondover this time period remains approximately equal. A peaking cycle occurs when headpond storage is released at a rate greater than the inflow rate followed by a period where downstram flows are less than the inflow rate and water is allowed to accumulate within the headpond. Operations will further seek to achieve a constant generation discharge rate during a high or low flow cycle period.
13	Downstream environmental flows provided during intermittent operation less than 6.5m^3/s as shown in Table 5 are subject to a water sharing agreement between Xeneca and Domtar. These downstream flow objectives will address Xeneca operations in the event dissolved oxygen levels downstream of Domtar fall below the provincial water quality objective. In the absence of such an agreement downstream environmental flows will be a minimum of 6.5 m^3/s during intermittent operations.

For illustrative purposes Table 7 provides proposed unrestricted and restricted operations under varying monthly inflow conditions. The unrestricted flows represent the operating strategy of limiting operations to one peaking cycle over a 24 hour period with constant downstream flows during a high or low period. The restricted flow conditions reflects additional mitigation measures proposed under specified flow or time periods proposed to minimize environmental impacts, restricted flow conditions take precedence over the unrestricted flow values.

Table 7: Proposed Unrestricted and Restricted Operations

Month	Condition	INFLOW m3/s	OUTPUT	UNRESTRICTED m3/s	RESTRICTED m3/s	SPILLWAY FLOW m3/s
JAN	wet	31	Hi(day)	55.8		0.5
			Lo(night)	19.2	19.2	0.5
	typical	22	Hi(day)	28.2		0.5
			Lo(night)	19.2	19.2	0.5
	dry	15	Hi(day)	32.3	25.0	0.5
			Lo(night)	6.5	6.5	0.5
FEB	wet	24	Hi(day)	33.6		0.5
			Lo(night)	19.2	19.2	0.5
	typical	17	Hi(day)	39.2	25.0	0.5
			Lo(night)	6.5	6.5	0.5
	dry	12	Hi(day)	24.2		0.5
			Lo(night)	6.5	6.5	0.5
MAR	wet	44	Hi(day)	57.6		0.5
			Lo(night)	37.1		0.5
	typical	23	Hi(day)	30.3		0.5
			Lo(night)	19.2	19.2	0.5
	dry	15	Hi(day)	31.7	25.0	0.5
			Lo(night)	6.5	6.5	0.5
APR	wet	221	Hi(day)	64.0		157.0
			Lo(night)	64.0		157.0
	typical	134	Hi(day)	64.0		70.0
			Lo(night)	64.0		70.0
	dry	71	Hi(day)	64.0		6.8
			Lo(night)	64.0		6.8
MAY	wet	163	Hi(day)	64.0		99.0
			Lo(night)	64.0		99.0
	typical	89	Hi(day)	64.0		24.6
			Lo(night)	64.0		24.6
	dry	46	Hi(day)	57.6		2.0
			Lo(night)	40.4		2.0
JUN	wet	59	Hi(day)	57.6		2.0
			Lo(night)	59.0		2.0
	typical	33	Hi(day)	57.6		2.0
			Lo(night)	20.7		2.0
	dry	24	Hi(day)	33.0		2.0
			Lo(night)	19.2	19.2	2.0

Table 7: (continued)

Month	Condition	INFLOW m3/s	OUTPUT	UNRESTRICTED m3/s	RESTRICTED m3/s	SPILLWAY FLOW m3/s
JUL	wet	34	Hi(day)	57.6		0.5
			Lo(night)	22.7		0.5
	typical	18	Hi(day)	43.4	25.0	0.5
			Lo(night)	6.5	6.5	0.5
	dry	12	Hi(day)	24.5		0.5
			Lo(night)	6.5	6.5	0.5
AUG	wet	22	Hi(day)	26.7		0.5
			Lo(night)	19.2	19.2	0.5
	typical	13	Hi(day)	28.1	25.0	0.5
			Lo(night)	6.5	6.5	0.5
	dry	7	Hi(day)	7.0		7.0
			Lo(night)	7.0		7.0
SEP	wet	22	Hi(day)	28.2		0.5
			Lo(night)	19.2	19.2	0.5
	typical	13	Hi(day)	28.4	25.0	0.5
			Lo(night)	6.5	6.5	0.5
	dry	7	Hi(day)	7.0		7.0
			Lo(night)	7.0		7.0
OCT	wet	52	Hi(day)	57.6		0.5
			Lo(night)	48.6		0.5
	typical	27	Hi(day)	42.6		0.5
			Lo(night)	19.2	19.2	0.5
	dry	12	Hi(day)	25.4	25.0	0.5
			Lo(night)	6.5	6.5	0.5
NOV	wet	73	Hi(day)	64.0		8.6
			Lo(night)	64.0		8.6
	typical	43	Hi(day)	57.6		0.5
			Lo(night)	35.9		0.5
	dry	26	Hi(day)	38.1		0.5
			Lo(night)	19.2	19.2	0.5
DEC	wet	55	Hi(day)	57.6		0.5
			Lo(night)	53.9		0.5
	typical	36	Hi(day)	57.6		0.5
			Lo(night)	25.1		0.5
	dry	24	Hi(day)	32.1		0.5
			Lo(night)	19.2	19.2	0.5

Notes:Actual operations are constrained based upon available water storage.

When minimum environmental flows are provided turbine flow is limited to 25 cms.

Facility will be operated as run-of-river during spawning periods as described in Appendix 2 in the Operating Plan.

Other information contained within the operational plan such as compliance limits and targets have an overriding effect on this table.

Attached Appendix 2 outlines a protocol for operation during spawning. The intent of the protocol is to ensure that operation does not interfere with successful spawning outcomes. The protocol is based on monitoring river temperature and/or other indicators as described to identify the most likely time when spawning is occurring and to constrain operations accordingly.

7.3 Special Event Operation

During special events, such as floods, droughts and safety emergencies, it will be necessary to deviate from the normal operating parameters to manage flows and mitigate impacts.

1. Normal Flood Operation: Normal flood events are defined as event flows that exceed the maximum throughput capacity of the plant (Q_{Tmax}) up to and including the one in two year flood event level ($Q_{1:2}$). Flood events of this magnitude are normal occurrences in the river and present little concern for safety or environmental impacts. During these periods, the facility is operated to manage water levels upstream below the maximum upstream operating water level where possible. This is achieved by allowing any water that is in excess of the maximum turbine capacity (Q_{Tmax}) to bypass the facility through the spillway and by operating the spillway and the power generation in a manner that achieves this objective.
2. High Flood Operation: High flood events are defined as events that exceed the one in two year flood event level (Q2) but are within the safe design level of the facility. Flood events of this frequency occur only infrequently over the life of the facility. The emphasis on operation is on ensuring public safety. This is typically achieved by allowing any water that is in excess of the maximum turbine capacity (Q_{Tmax}) to bypass the facility through the spillway and by operating the spillway and the power generation in a manner that achieves this objective.
3. Extreme Flood Operation: Extreme flood events are defined as events at which the facility cannot be attended safely by operators and where the risk of flooding of the generation equipment is possible. The emphasis on operation is on ensuring public and operator safety. Where advance warning is received that an extreme event may occur, the facility will be prepared in advance of the flood peak to maximize the ability to pass water and provide minimal obstruction to the passing flood waters.

The inundation map referenced in the section on "Upstream Storage Effects" shows the extent for various flood conditions. The objective of flood operation for the spillway, turbine and bypass is to ensure that the backwater effect is within the upstream river channel and lake levels are kept within the present range of values experienced under those inflow conditions.

It should be recognized that the facility is not designed to mitigate the effects of naturally occurring events such as floods and droughts. However, there are circumstances where the existence of the facility can either aid in managing a special event or pose an additional risk. The flood risk aspects are managed, in part, through the government approval under the Lakes

and Rivers Improvement Act of the engineering plans and specifications for the design of the facility. The purpose of this process is to ensure that the flood passage capacity of the facility is adequate and that the risk to property and public safety is duly considered. This aspect of the approval process will be dealt with after the environmental assessment process is completed and when the detailed engineering design has been finalized.

Where the operation of the facility requires co-ordination with other facilities and government agencies, Xeneca will work collaboratively with those entities on a bilateral or group basis to ensure that operating objectives are met. Examples of areas and events where coordination is required include where:

1. Normal facility operation impacts other facilities or uses on the river system;
2. Flood flow events pose risks to property or public safety;
3. Drought flow events pose risks to aquatic habitat or water uses downstream.

8 SUMMARY DISCUSSION ON OPERATIONS

The Wabageshik facility has effects on upstream water levels and downstream flows. This operating plan demonstrates how operating objectives established through the Environmental Screening Report will be achieved. The Environmental Screening Report concludes that the project can be operated in such a manner that significant environmental impacts are avoided.

Key operating objectives in this pan relate to the following:

1. Wabegeshik Lake: Potential effects on lake levels and lake level fluctuations in Wabageshik Lake have been carefully considered and minimized. Areas of new inundation will be limited to the upstream river channel and will not result in any new inundation areas within Wabageshik Lake. The facility will be operated in a manner such that normal lake levels (+/- 5cm) and daily outflow are maintained.
2. Downstream outflow and levels will be regulated to protect environmentally significant features such as fish spawning beds.
3. Operation of the facility will avoid impacts to civil structures and mitigate impacts to recreational use of the area.

Appendix 1: Operating Scenario Graphs

(5 pages)

Vermillion River: Wabageshik Rapids

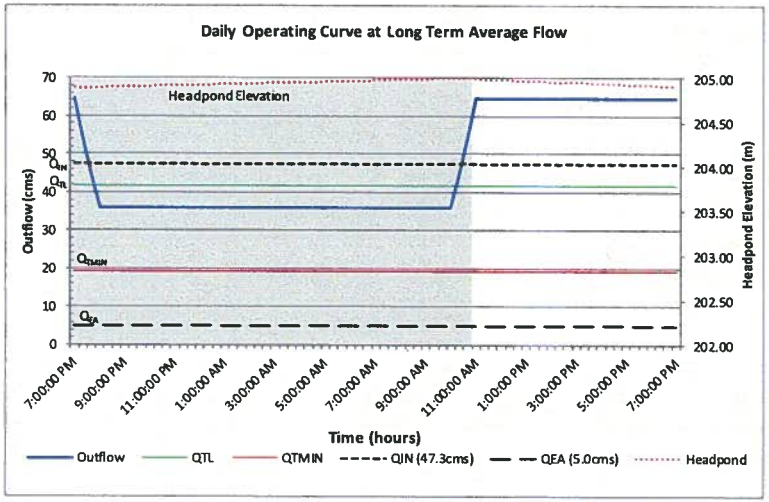


Figure 1

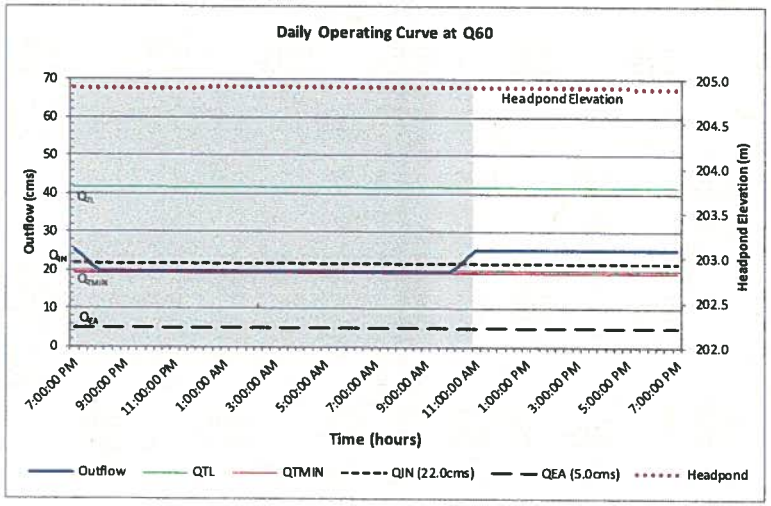


Figure 2

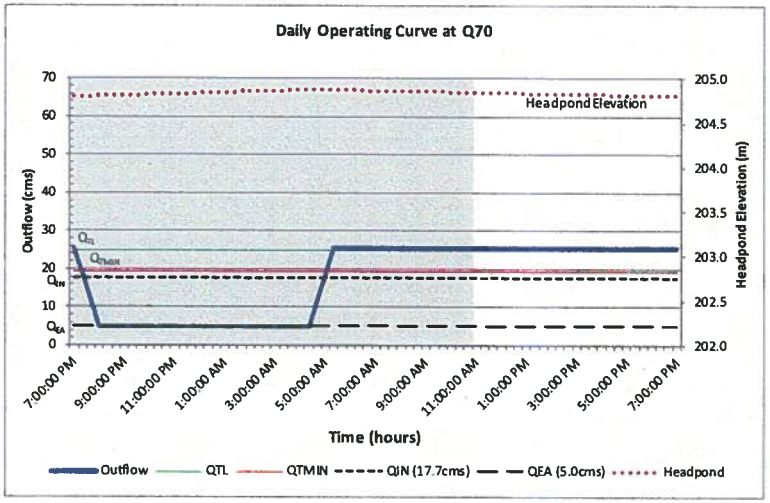


Figure 3

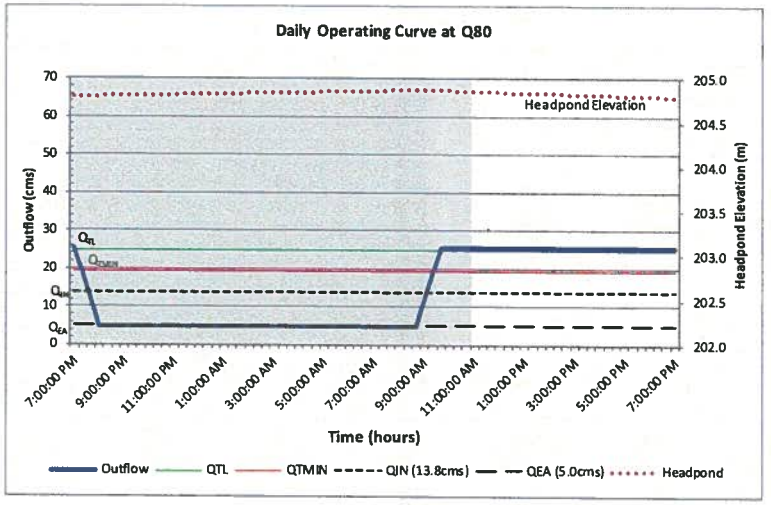


Figure 4

Vermillion River: Wabageshik Rapids

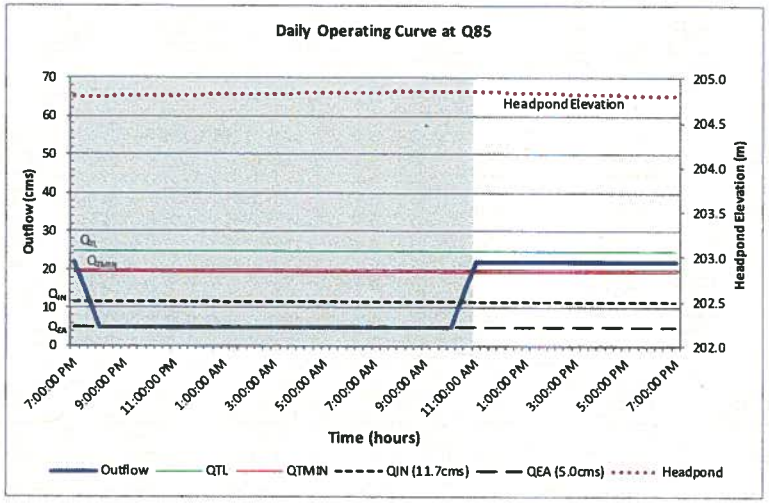


Figure 5

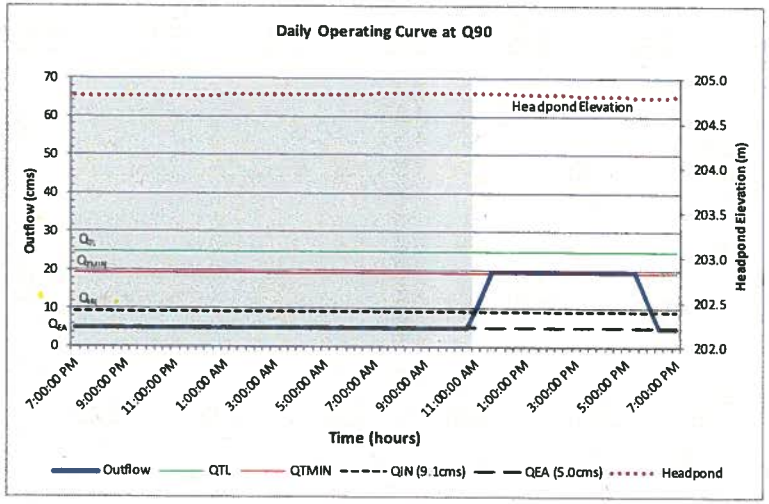


Figure 6

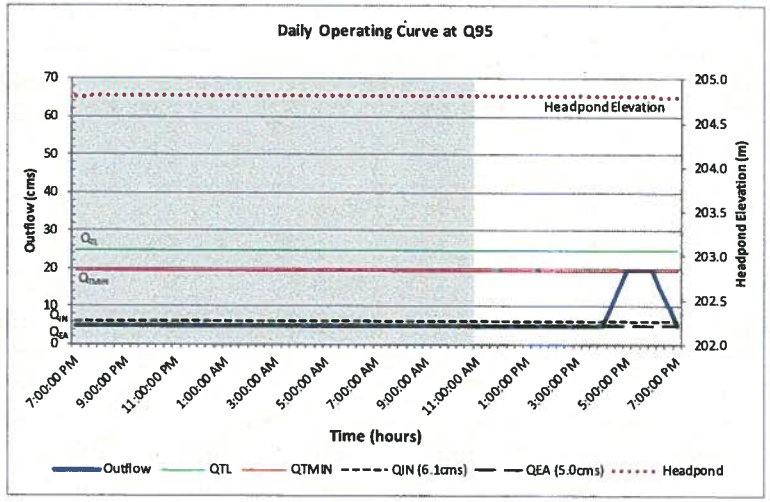


Figure 7

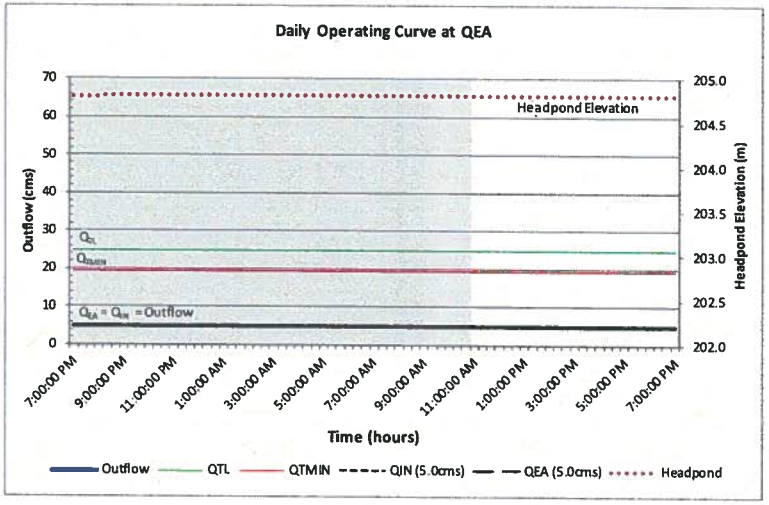


Figure 8

Vermillion River: Wabageshik Rapids

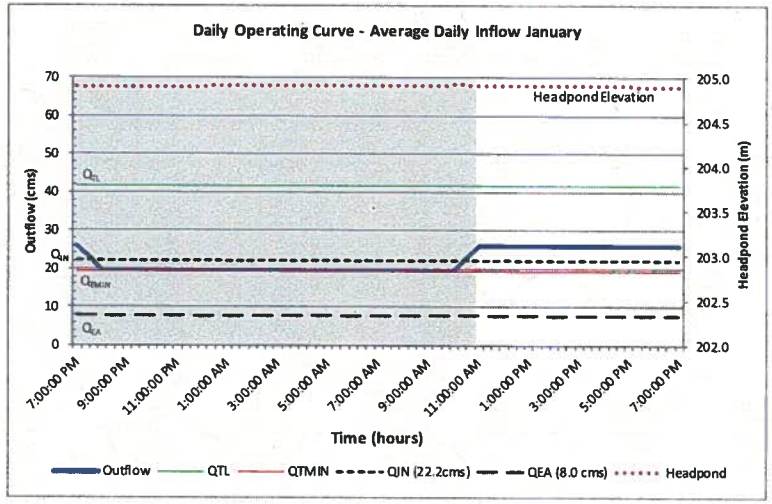


Figure 9

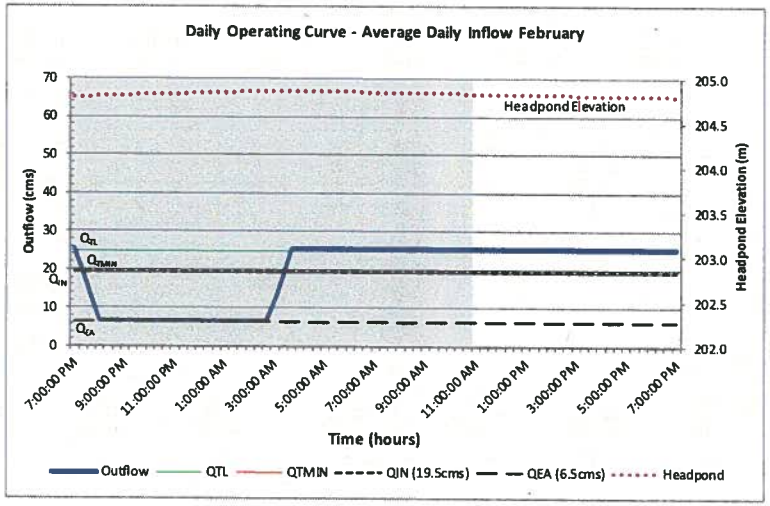


Figure 10

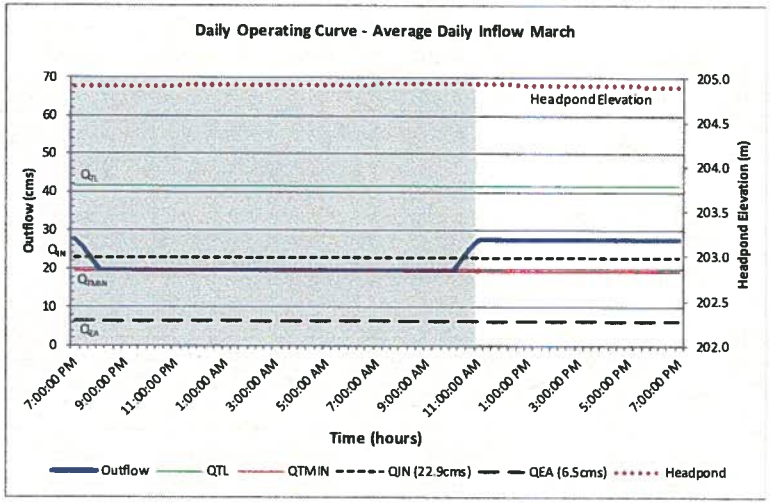


Figure 11

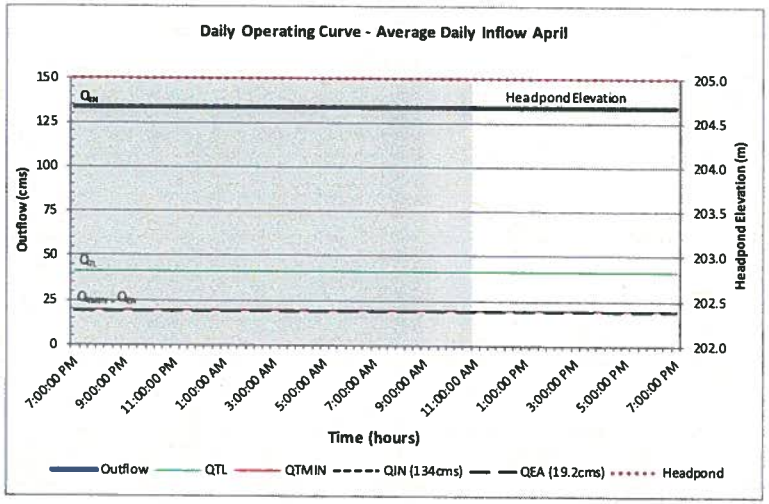


Figure 12

Vermillion River: Wabageshik Rapids

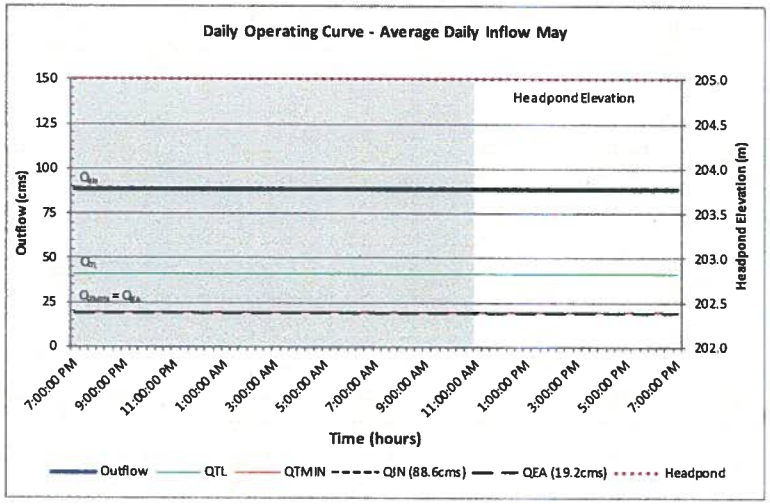


Figure 13

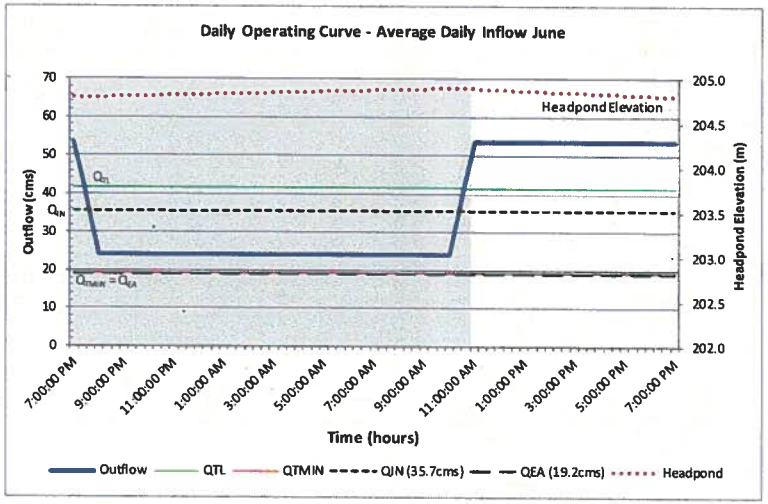


Figure 14

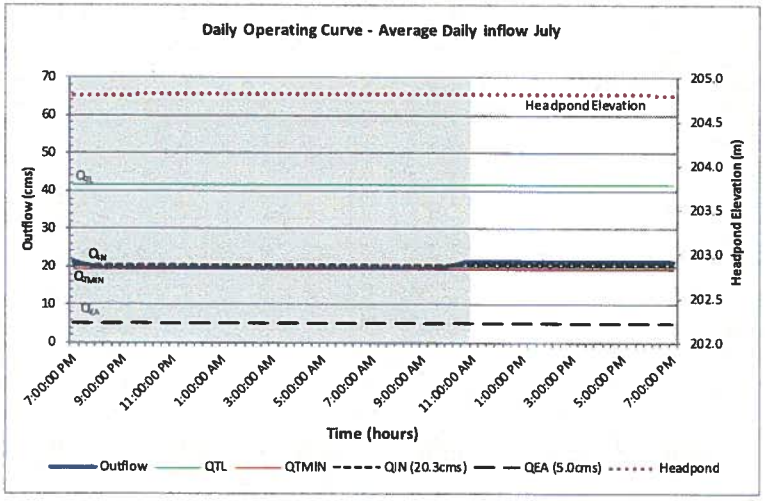


Figure 15

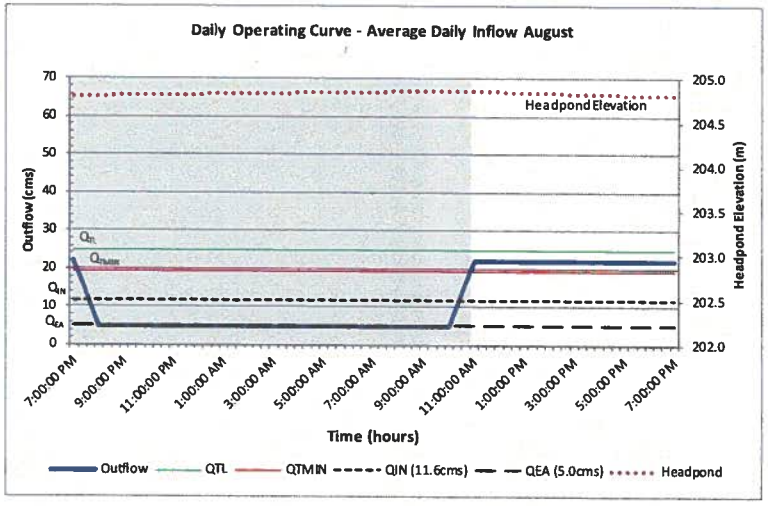


Figure 16

Vermillion River: Wabageshik Rapids

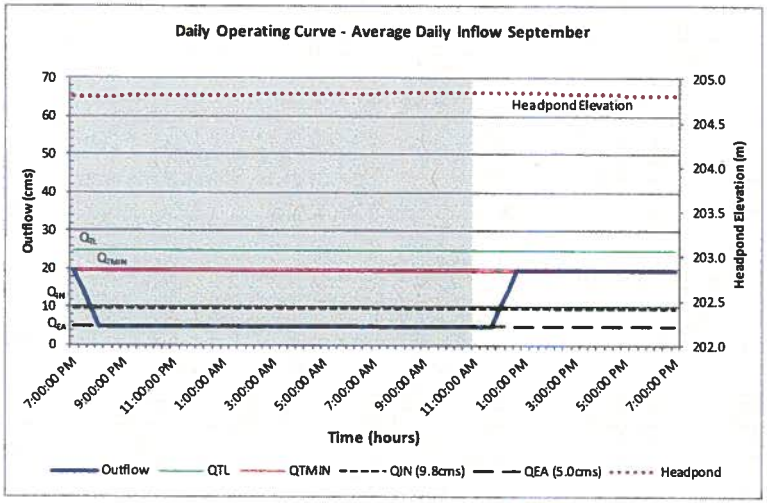


Figure 17

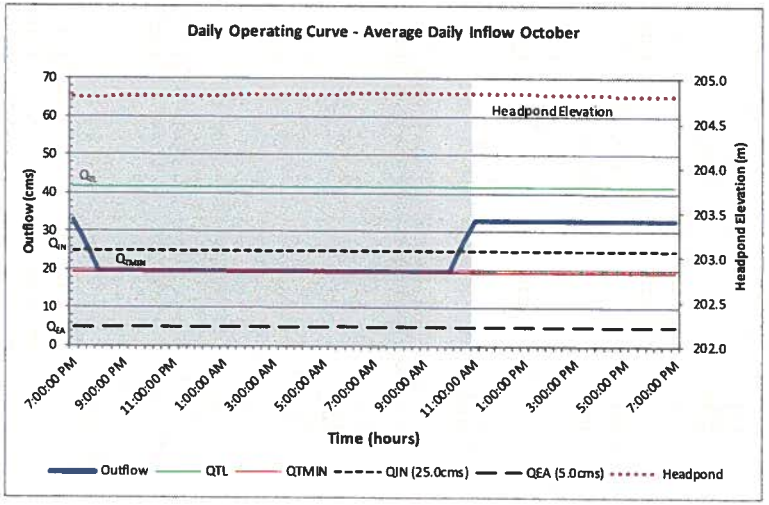


Figure 18

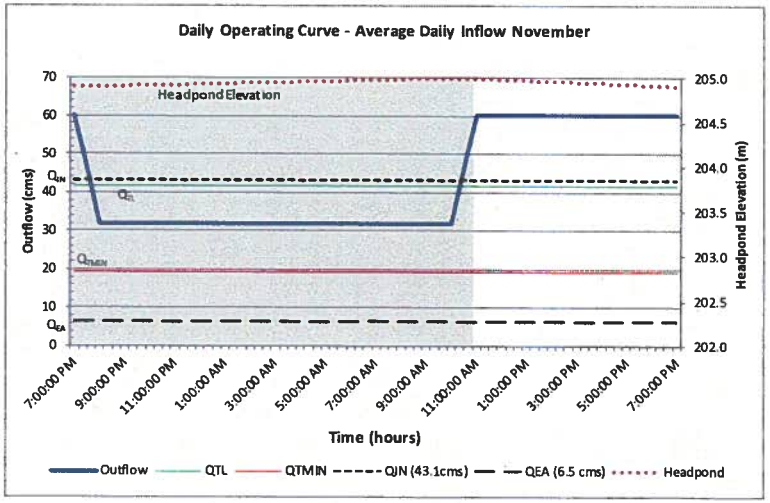


Figure 19

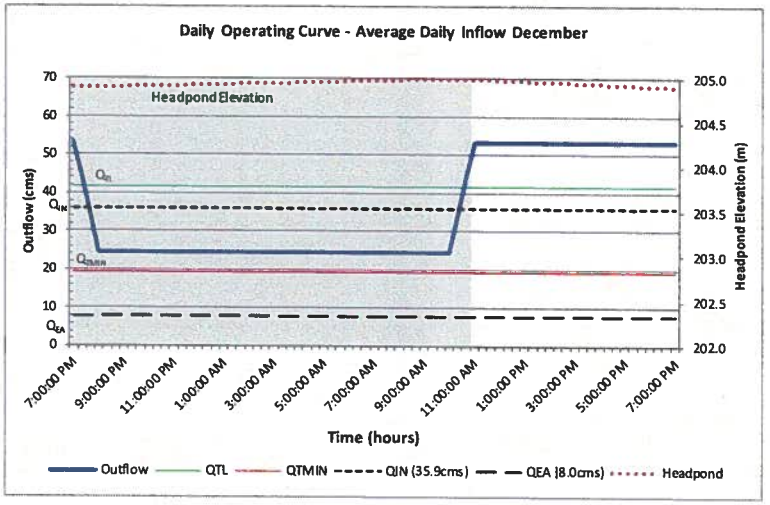


Figure 20

Appendix 2: Operation Restrictions

(2pages)

Operating Restrictions for Walleye Spawning

Walleye Life Stage	Water Temperature/ Timing	Temperature / Cumulative Time Trigger	Mode of Operation	Rationale
Beginning of Walleye staging and spawning	4°C	4°C	Begin run of the river	Ensures staging is not affected by operations
Beginning of active Walleye spawning	6°C	-	Continue run of the river	Ensures spawning is not affected by operations
End of active Walleye spawning, ongoing egg incubation	12°C*	-	Continue run of the river	Ensures eggs are not dewatered by operations
Walleye egg incubation time from end of spawning until hatch	Allow 18 days after spawning	-	Continue run of the river	Ensures eggs are not dewatered by operations
Hatch, yolk sac absorption and continued larval development until fry are free swimming	Allow additional 15 days after hatch	-	Continue run of the river	Ensures recently hatched larvae are not stranded due to operations
Fry disperse into open water	-	33 days after 12°C is reached*	End run of the river, begin normal summer operations	Operations no longer affect fry as they have dispersed from the spawning grounds

*If water temperature rises very slowly, the range of spawning temperatures (6 -12°C) may be experienced for several weeks. In these instances, Walleye may spawn at lower than normal temperatures and spawning will end before the temperature reaches 12°C. Alternatively, they may reabsorb their eggs and not spawn. In such circumstances, consultation between Xeneca Power and the MNR may result in a conclusion being reached that the spawn is over (based on known conclusion of spawning elsewhere in the area). In this case, egg incubation time would be considered to start at the time this determination is made.

Operating Restrictions for Lake Sturgeon Spawning

Lake Sturgeon Life Stage	Water Temperature/ Timing	Temperature / Cumulative Time Trigger	Mode of Operation	Objective
Beginning of Lake Sturgeon spawning	8°C	8°C	Begin run of the river	Ensure spawning is not affected by operations.
Beginning of active Lake Sturgeon spawning	11°C	-	Continue run of the river	Ensure spawning is not affected by operations.
End of active Lake Sturgeon spawning, ongoing egg incubation	16°C	-	Continue run of the river	Ensure eggs are not dewatered by operations.
Lake Sturgeon egg incubation from end of spawning until hatch	Allow 8 days after spawning	-	Continue run of the river	Ensure eggs are not dewatered by operations.
Hatch, yolk sac absorption and continued larval development	Allow additional 17 days after hatch	-	Continue run of the river	Ensure recently hatched larvae are not stranded due to operations.
Beginning of Lake Sturgeon larval drift	-	25 days after 16°C is reached	Begin modified operations with a maximum daily range of 20 cms and no intermittent operations	Facilitate lake sturgeon larval drift.
Lake Sturgeon larval drift	Allow 21 days for larval drift	-	Continue the modified operations with a maximum daily range of 20 cms and no intermittent operations	Facilitate lake sturgeon larval drift.
End of Lake Sturgeon larval drift	-	46 days after 16°C is reached	End special operating restrictions for Lake Sturgeon larval drift, begin normal summer operations.	Allow normal summer operations once ample time has been given for drift in the section of river from Wabageshik Rapids to the Domtar headpond.

5255 Yonge St., Suite 1200, North York, ON M2N 6P4
tel 416-590-9362 fax 416-590-9955 www.xeneca.com

March 12, 2013

Bob Robinson
MNR Sudbury District
Suite 5
3767 Hwy 69 S
Sudbury ON P3G 1E7

Re: Evaluation of Flow Fluctuations at Domtar Dam due to Wabageshik Rapid GS Operations

Dear Bob,

In the recent meetings with Xeneca, MNR expressed concerns on the flow fluctuations downstream of Domtar Dam at Espanola due to the operation of the Wabageshik Rapid project. This document summarizes the existing flow fluctuations at the Domtar Dam and compares them to the proposed operation of the Wabageshik Rapids project in the Vermillion River upstream.

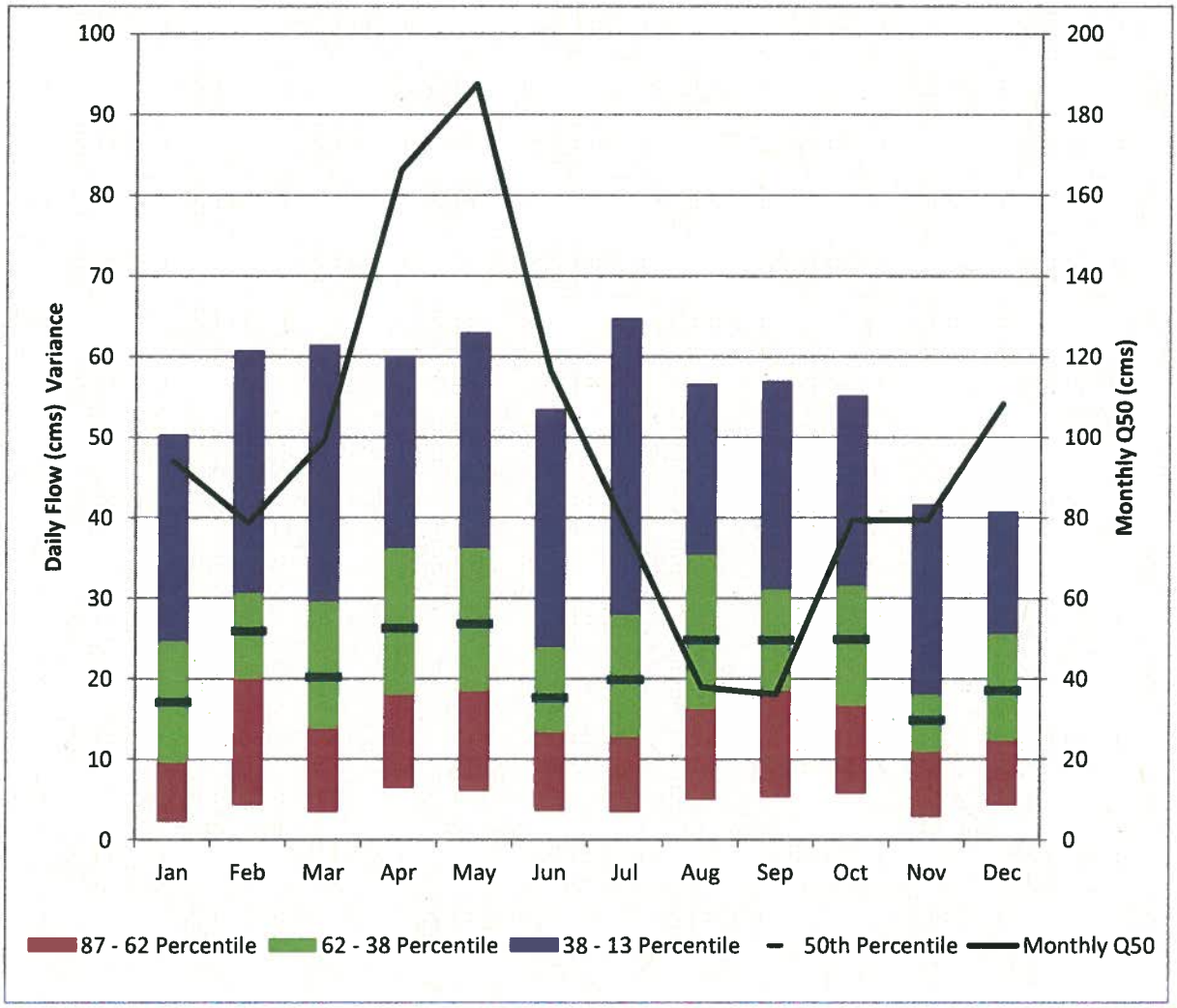
1. Existing Flow fluctuation at Domtar Dam

This analysis is based on the hourly flow data at Domtar Dam at Espanola for the period 2006 to 2012. This hourly flow data is recorded by Domtar. Table 1 and Figure 1 below summarize the existing flow fluctuations at Domtar Dam at Espanola. The table and figure show, on average (50th percentile), in any given month, the daily flow fluctuation at Domtar dam varies from 17 cms to 27 cms. The 13th percentile flow fluctuations, representing daily fluctuations that occur on a significant number of days in any month range from 41 cms to 63 cms. The data clearly show that large flow fluctuations occur downstream of Domtar Dam on a daily basis for every month of the year under existing conditions.

Table 1: Existing Daily Flow Fluctuation in Spanish River at Domtar Dam at Espanola (Flow in CMS)

Flow Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
87 - 62 Percentile	7	16	10	12	12	10	9	11	13	11	8	8
62 - 38 Percentile	15	11	16	18	18	11	15	19	13	15	7	13
38 - 13 Percentile	26	30	32	24	27	30	37	21	26	24	24	15
50th Percentile	17	26	20	26	27	18	20	25	25	25	15	19
87th Percentile	2	4	3	6	6	4	3	5	5	6	3	4
62nd Percentile	10	20	14	18	18	13	13	16	18	17	11	12
38th Percentile	25	31	30	36	36	24	28	35	31	32	18	26
13th Percentile	50	61	62	60	63	53	65	57	57	55	42	41
Monthly Q50	94	79	99	166	188	116	78	38	36	79	79	108

Figure 1: Spanish River at Domtar Dam at Espanola



2. Purposed Operation Flow variations

Appendix I attached with this document contains the flow and level charts of the Wabageshik Rapids project for all 12 months as proposed. Table 2 below summarizes the maximum daily flow fluctuations of the Wabageshik Rapid project under typical monthly inflow conditions. The flow fluctuation values listed on the table are at the Wabageshik GS site. It should be noted that the flows listed will be significantly attenuated by the Domtar dam due to the confluence with flows from the Spanish River and the storage effect of the 22 cm operating range in the headpond of Domtar Dam. The net fluctuations in flows experienced at Domtar Dam due to Wabageshik would be less than the values shown in Table 2. However, a detailed routing analysis would require operating data from the facilities upstream on the

Spanish River which are not available to us. Using the values Table 2 provides a conservative assessment of the flow variability contribution at Domtar Dam.

Table 2: Maximum daily flow fluctuations of Wabageshik Rapid GS (Flow in CMS)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg Inflow	22.2	17.4	22.9	134	89	33	17.8	12.7	12.8	27	43.1	24.6
Max Outflow	26	26	28	134	89	50	26	25	25	38	60	53
Min Outflow	20	7	20	134	89	22	5	5	5	20	32	25
Max Flow Fluctuation	6	19	8	0	0	29	21	20	20	18	29	29

Comparing the daily flow fluctuation at Wabageshik (last row of Table 2) to the average daily flow fluctuation at Domtar Dam under existing conditions (50th Percentile row in Table 1) shows that the proposed fluctuations at Wabageshik are significantly less than the existing fluctuations at Domtar Dam most of the time, and significantly less than the 13th Percentile fluctuations at Domtar Dam under existing conditions at all times.

It should be noted that the total range of flow fluctuation at Domtar Dam is limited to the maximum turbine operating range at that location. The underlying flow data in Figure 1 clearly shows that on many days, the turbines at Domtar Dam run at maximum capacity. The operation of Wabageshik would have no affect on maximum flow variability at those times. Any additional water made available by Wabageshik would have to be processed by extending the run time, thereby not further contributing to variability. At times when maximum turbine flow is reached under existing conditions, the operation of Wabageshik will have no additional effect on the frequency or magnitude of flow fluctuations downstream of Domtar Dam, only on flow duration.

Based on this analysis, the flow fluctuations resulting from the proposed Wabageshik project would not significantly increase the flow fluctuations occurring downstream of Domtar Dam under existing conditions. We trust this information is sufficient to address the question raised by MNR regarding potential impacts downstream of Domtar Dam at the meetings on February 27 and 28, 2013.

Yours Truly,

Nava Pokharel, P. Eng.
Senior Project Manager
Xeneca Power Development Inc.

Appendix I

ORTECH Environmental
a division of ORTECH Consulting Inc.

www.ortech.ca Mississauga • Sarnia • Windsor
804 Southdown Road
Mississauga, ON
Canada L5J 2Y4
Tel 905-822-4120
877-774-6560
Fax 905-855-0406

March 12, 2013

Xeneca Power Development Inc.
5255 Yonge Street, Suite 1200
Toronto, Ontario
M2N 6P4

Vermilion River: Wabageshik Rapid – Proposed Operating Flows and Level Charts

ORTECH has produced a series of proposed operating curves for the "Wabageshik Rapid" waterpower development. The curves depict flow conditions (in cubic meters per second or cms) downstream of the development and the associated water elevations (in meters) immediately upstream of the development, referred to as Headpond Elevation. Operational Parameters used in the development of the curves are provided at the end of this discussion. Inflow conditions depicted on the operating curves are as follows:

- Long Term Average Flow (LTAF);
- Q60 (inflow exceeded 60% of the period of record);
- Q70;
- Q80;
- Q85;
- Q90;
- Q95;
- Q_{EA} (Environmental Flow Target – Summer conditions), and
- Average Daily Inflows (January – December).

The methodology used in the creation of the curves is outlined below:

1) Each hour is divided into 20 minute segments to assist in the display of ramp up / ramp down activities. Ramp up /down activities are evenly distributed across a 60 minute time period. A mass balance of inflow – outflow is conducted for each time segment with the overall goal to maximize headpond storage capacity at the end of the off peak period and to minimize headpond storage (zero storage = no accumulation over 24 hours) at the end of the on peak period.
2) If the inflow rate exceeds the minimum turbine generation flow (Q_{TMIN}) then off-peak time segments are set to Q_{TMIN}, otherwise all off peak segments are set to the minimum flow value of $Q_{COMP} + Q_{EA}$.

3) During periods when the minimum outflow is $Q_{COMP} + Q_{EA}$ the turbine generation capacity is restricted to 25 cms.
4) On peak and off peak flows are further averaged across the respective on peak / off peak times to provide uniform flows. This averaging approach seeks to reduce the frequency of variable river flow while balancing daily inflow / outflows.

The above methodology takes into account ramp up / ramp down times and the associated water volumes. Understanding that some loss of generating flow and turbine efficiency will result from these operations, a minimum headpond storage volume equivalent to two hours of generating flow at Q_{TMIN} was selected as a minimum operating condition. This criterion was further based upon a consideration for the limited storage capacity at this site.

Under low inflow conditions, such as depicted by the Q85 curve, operation may occur for two hours one day and three hours the next day. Operation of the generating station for a period of less than two hours to "zero out" headpond storage is unlikely For this reason some net storage may exist at the end of a 24 hour cycle.

The proposed operating curves are further based on maintaining headpond water elevations near the Normal Operating Level (NOL) to maximize the potential energy benefit (head) during periods of low inflow. Consequently the starting headpond water elevation will be maintained at the end of a 24 hour cycle rather than depleting the headpond storage, resulting in reduced energy potential for the next 24 hour generating cycle.

Table 1: Wabageshik Rapids Operation Table

Acronym	Description	Project & Streamflow Conditions (m^3/s)			
		Spring (Mar 20 - May 24)	Summer (May 25 - Oct 11)	Fall (Oct 12 - Dec 24)	Winter (Dec 25 - Mar 19)
Q_{99}	Streamflow exceeded 99% of time	13.2	2.78	4.45	5.92
Q_{95}	Streamflow exceeded 95% of time	19.3	5.19	8.89	8.89
Q_{80}	Streamflow exceeded 80% of time	43.2	9.40	21.6	13.5
Q_{50}	Streamflow exceeded 50% of time	102	18.9	37.7	20.5
Q_{20}	Streamflow exceeded 20% of time	193	38.2	63.4	29.9
Q_{EA}	Downstream environmental flow target	No int. op.	5.0	Oct = 5.0 Nov = 6.5 Dec = 8.0	Jan = 8.0 Feb = 6.5 Mar = 6.5
Q_{COMP}	Compensatory flow (between tailrace and dam)	2.0	0.5	0.5	0.5
Q_{Tmax}	Maximum turbine capacity	64.0			
Q_{Tmin}	Minimum turbine flow	19.2			
Q_{TL}	Limited turbine flow - modified ROR	41.6			
	Maximum turbine flow during intermittent op	25.0			
LTAF	Long term annual flow, average annual mean	47.3			
Q_{MED}	Median streamflow value	27.3			
7Q2	2 year return period 7-day-average-low flow	6.84			
7Q10	10 year return period 7-day-average-low flow	3.50			
7Q20	20 year return period 7-day-average-low flow	2.89			
Q_{HWM}	Streamflow corresponding to high water mark *	110			
$Q_{1:2}$	High streamflow event; occurrence of 1 in 2 yr	268			
$Q_{1:100}$	High streamflow event; occurrence of 1 in 100 yr	507			
	Turbine Ramp Time	60 min			
	Turbine Down Ramp Time	60 min			

Table 2 provides a summary of the monthly headpond statistics resulting from the proposed operating scenarios.

Table 2: Summary of Headpond Statistics

Chart Notes and Comments:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Headpond Variance (m)	0.02	0.07	0.03	0.00	0.00	0.10	0.07	0.07	0.07	0.06	0.10	0.10
Max Headpond Fill Rate (cm/hr)	0.1	0.4	0.1	0.0	0.0	0.5	0.5	0.3	0.3	0.3	0.5	0.5
Max Headpond Drawdown Rate (cm/hr)	-0.2	-0.3	-0.2	0.0	0.0	-0.7	-0.3	-0.5	-0.5	-0.5	-0.7	-0.7

Note: The above values are representative of average monthly conditions and operating scenarios. These values are not intended nor should they be used to represent compliance targets or operating limits.

Vermillion River: Wabageshik Rapids

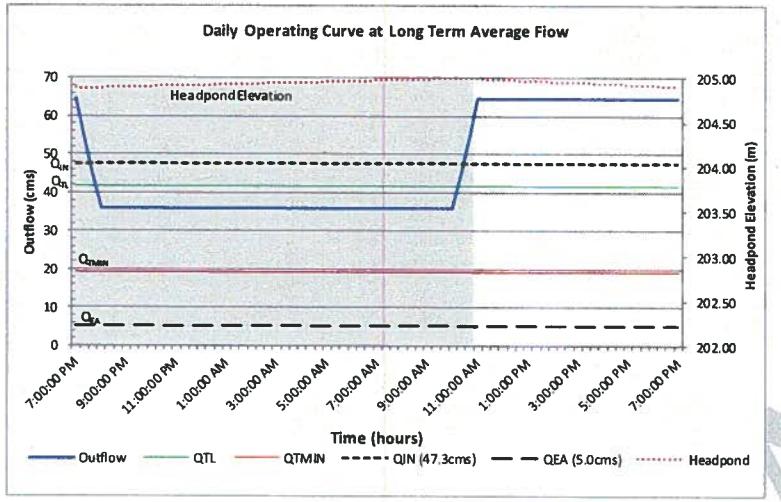


Figure 1

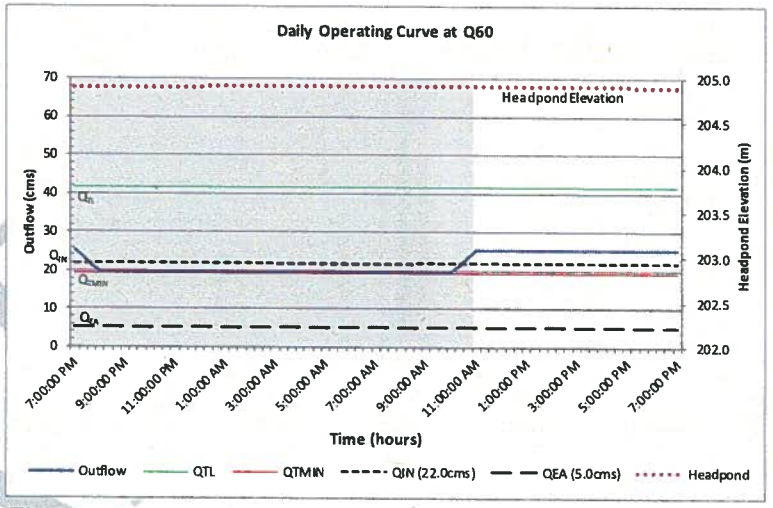


Figure 2

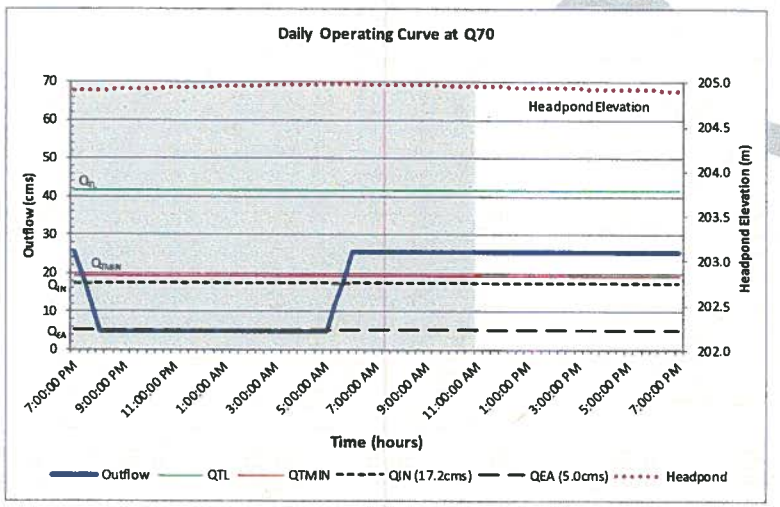


Figure 3

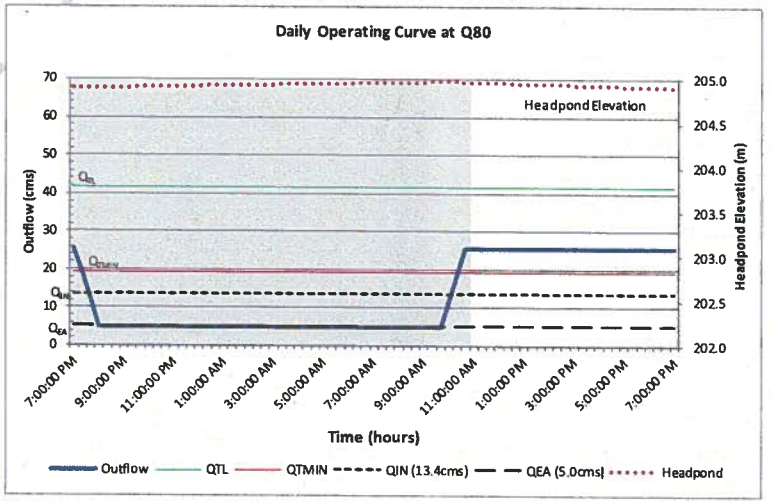


Figure 4

Vermillion River: Wabageshik Rapids

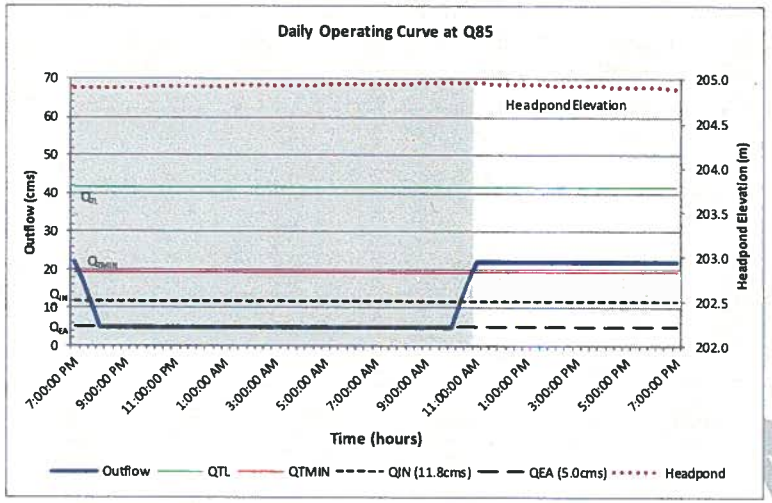


Figure 5

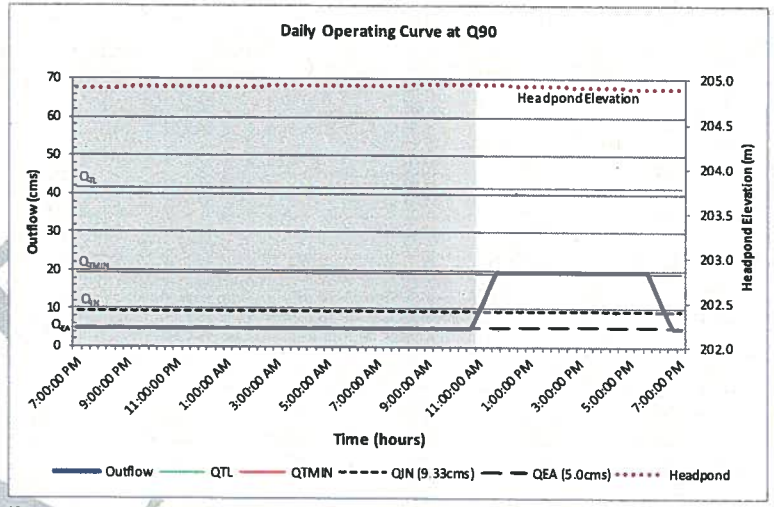


Figure 6

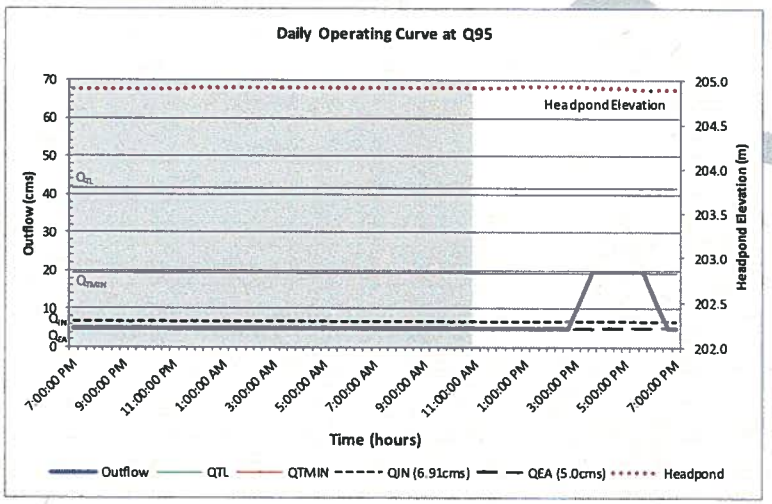


Figure 7

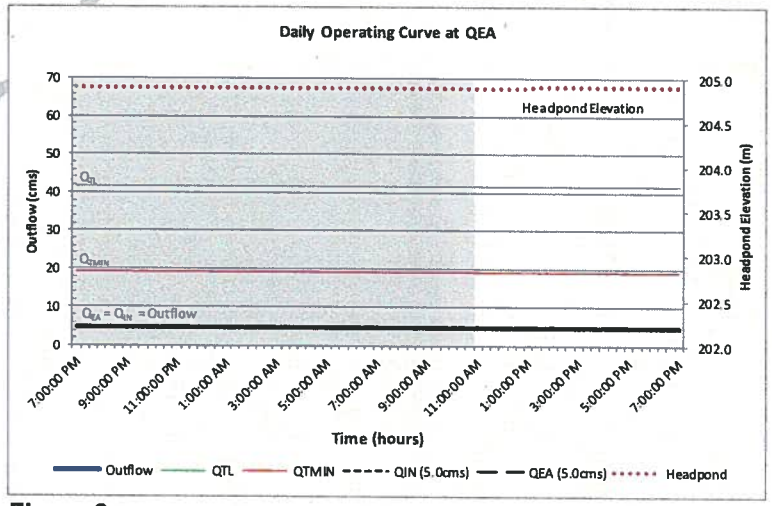


Figure 8

Vermillion River: Wabageshik Rapids

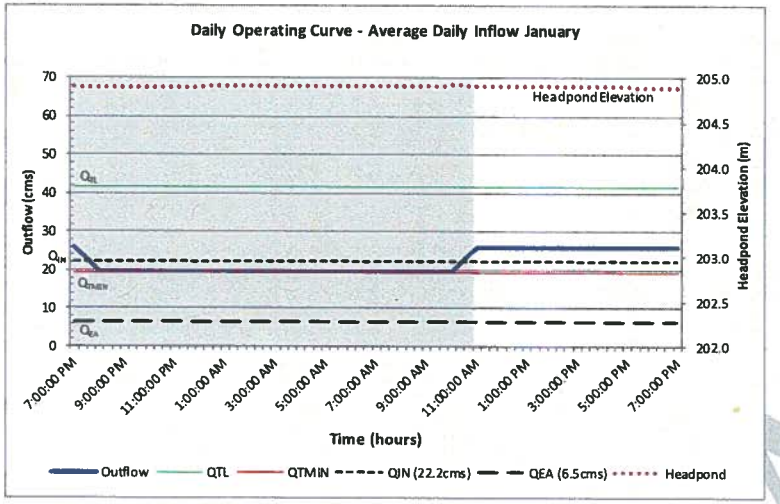


Figure 9

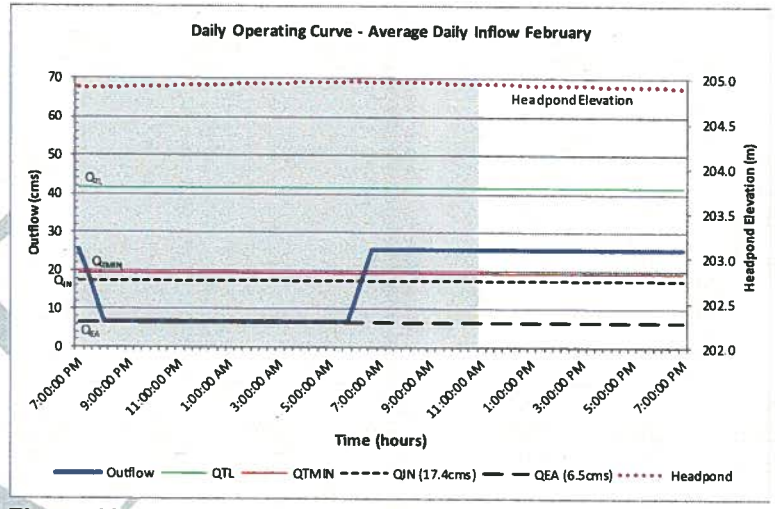


Figure 10

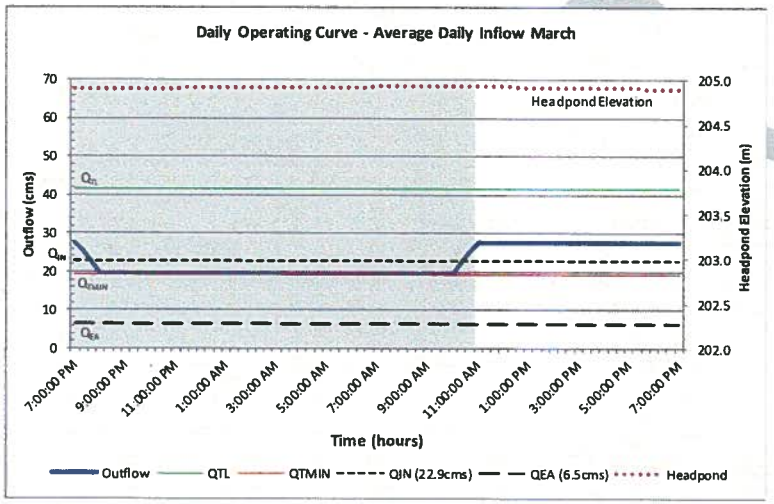


Figure 11

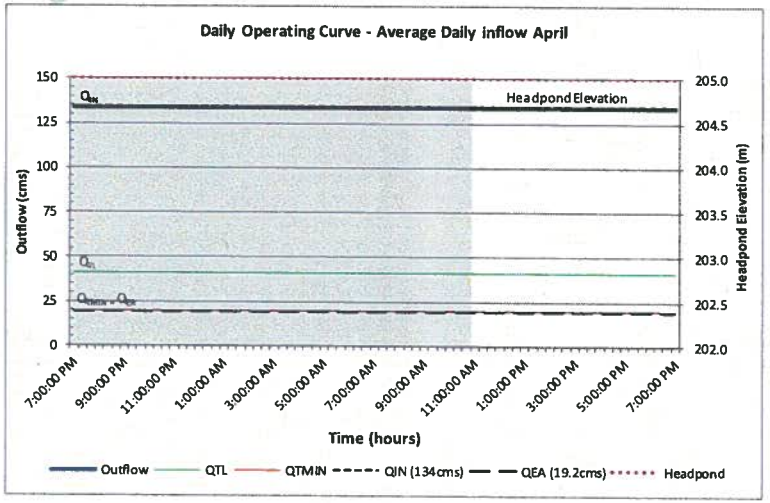


Figure 12

Vermillion River: Wabageshik Rapids

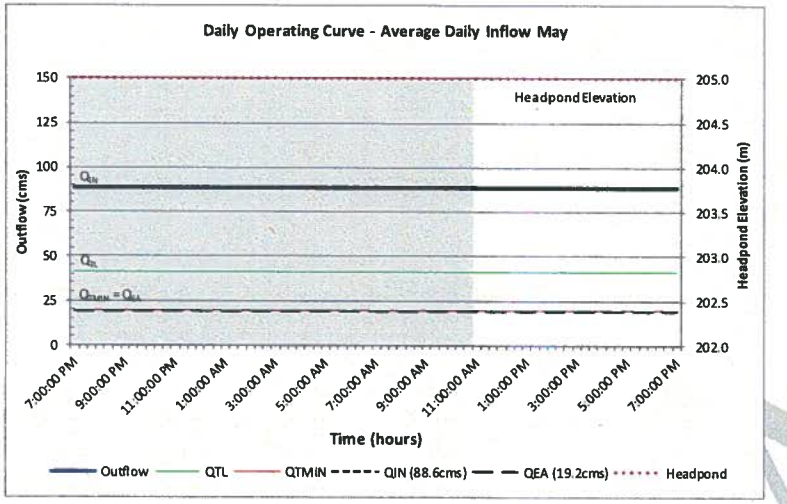


Figure 13

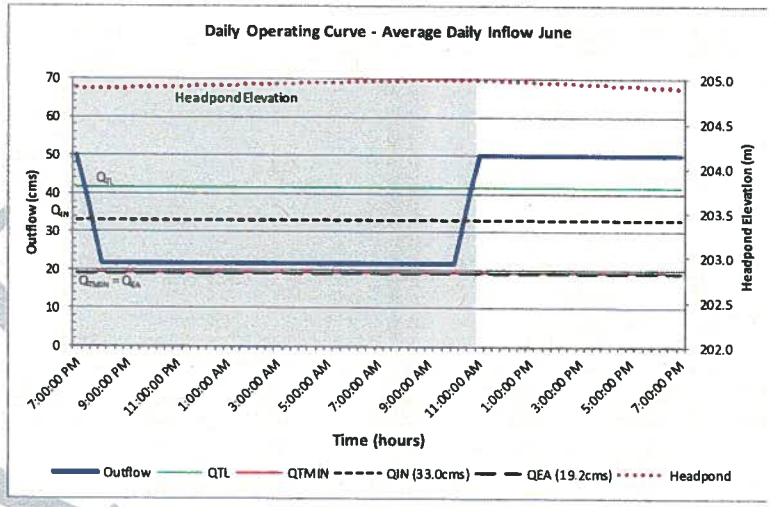


Figure 14

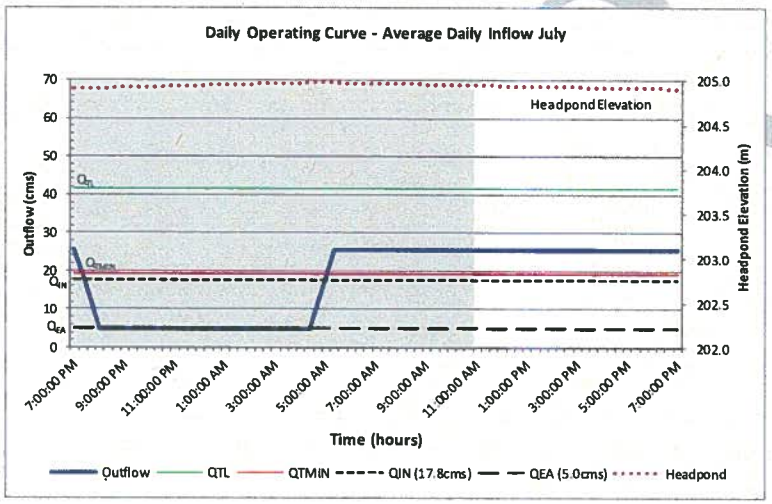


Figure 15

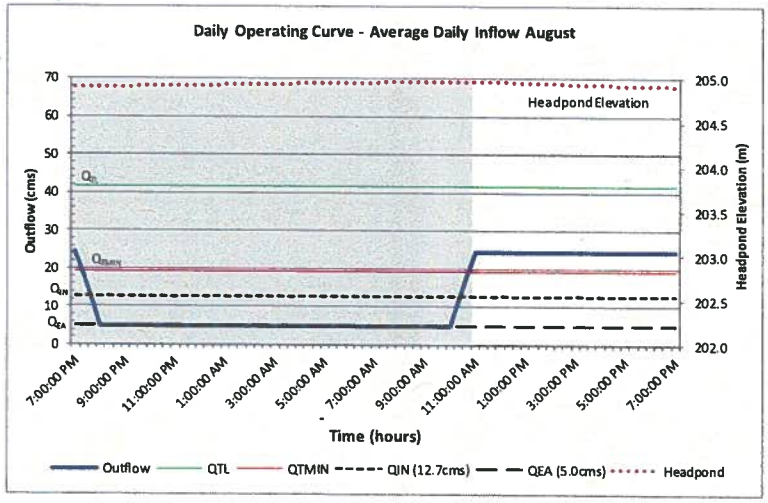


Figure 16

Vermillion River: Wabageshik Rapids

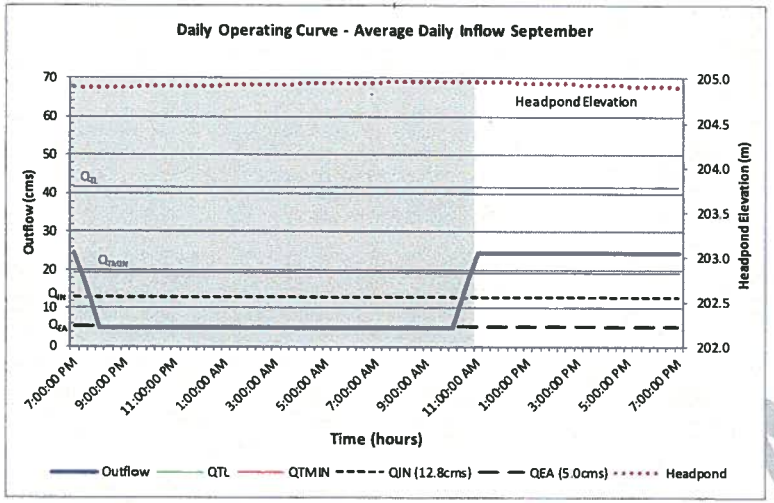


Figure 17

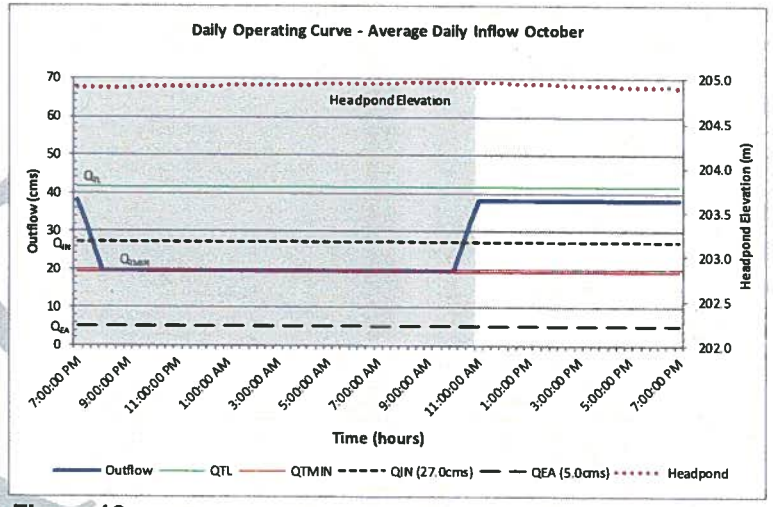


Figure 18

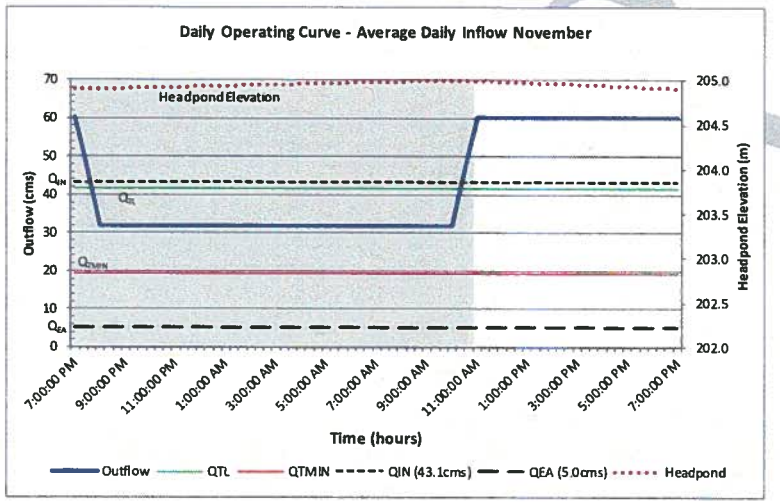


Figure 19

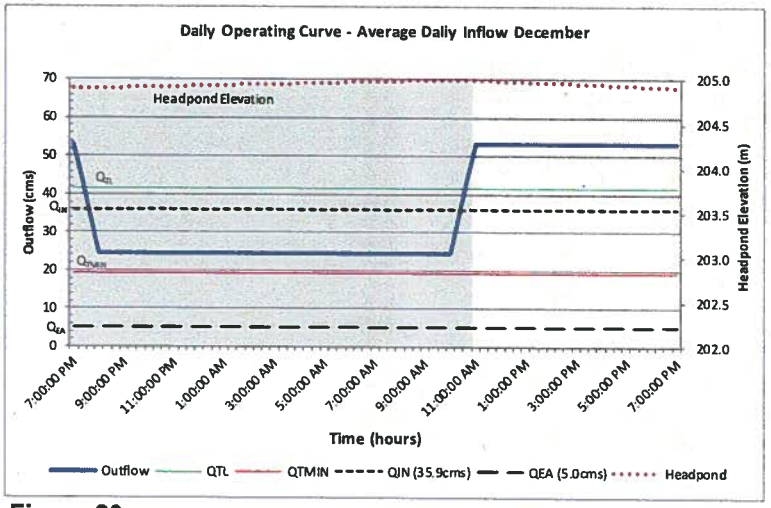


Figure 20

CANADIAN PROJECTS LIMITED
#240, 523 Woodpark Blvd SW
Calgary, Alberta T2W 4J3
Phone: (403) 508-1560 Fax: (403) 238-5460

File: 1052-001-3.1.3

March 29, 2012

Mr. Nava Pokharel, M.Sc., P.Eng.
Senior Project Manager
Xeneca Power Development Inc.
5160 Yonge Street, Suite 520
Toronto, ON, M2N 6L9

Dear Nava:

Re: Ontario South Hydro
HEC-RAS Inundation Mapping
Vermilion River – Wabageshik Rapids

1.0 Introduction

As per our proposal dated November 19, 2010, and further requests from Xeneca Power (Xeneca), Canadian Projects Ltd. (CPL) is pleased to provide this summary letter report together with the flood inundation mapping for the Wabageshik Rapids Project (the Project) on the Vermilion River. This report includes the simple HEC-RAS (Hydraulic Engineering Centre River Analysis System, Version 4.1.0) river model in electronic format.

Based on the proposal dated November 19, 2010, the scope of this work included:

- Review of the existing hydrologic analyses and reassessment of the flood frequency estimates by Hatch Ltd. to determine the suitability of flood flow estimates at the Project (presented in a separate letter[i]);
- Compilation of bathymetric and LiDAR survey data into a single model for the Project and the development of cross sections suitable for use in one-dimensional hydraulic modelling;
- Creation and calibration of the HEC-RAS hydraulic model along the river reach near the Project; and
- Production of digital and hard-copy flood and headpond inundation mapping for the Project based on the results of the HEC-RAS model for the conditions outlined in Table 1.

A report dated March 3, 2011 was issued to Xeneca Power (Xeneca) which included the results of the above work and the inundation mapping for the Project.

On February 3, 2012, Xeneca provided CPL with an expanded scope of work based on additional survey information gathered in late 2011. The expanded scope of work included:

- Addition of more cross sections throughout the river at locations which had been surveyed during late 2011, particularly at the outlet of Wabageshik Lake;
- Determination of the pre and post-project tailwater rating curves at the upstream Lorne Falls Generating Station (Lorne Falls);
- Revision of the dam location upstream from the position used for the March 3, 2011 letter report;
- Incorporation of the snowmobile bridge below the outlet of Wabageshik Lake into the HEC-RAS model;
- Re-calibration of the HEC-RAS hydraulic model considering the added cross sections and new calibration information gathered in late 2011;
- Reproduction of the digital and hard-copy flood and headpond inundation mapping for the Project based on the revised results for the conditions outlined in Table 1;
- Production of hydraulic information tables for the Project based on the results of the HEC-RAS model for the conditions outlined in Table 2; and
- Production of hydraulic information tables for the Project based on the results of the HEC-RAS model for monthly 10% and 90% exceedance flows.

This revised report includes the updated results of the original work and detailed results of the defined critical river reaches based on the most recent updated scope.

The results of the HEC-RAS modelling presented within this letter report are intended to provide an estimate of the relative magnitude of difference between water surface elevations pre and post-project. The accuracy of the predicted water surface elevations is discussed in Section 4.0.

In addition to the flow conditions described in Section 2.3, one unsteady flow condition specified by Xeneca and described in Section 6.0 was tested to confirm the model's ability to handle unsteady flow conditions. The unsteady flow model was not updated with the 2011 sections and has been kept separate within the HEC-RAS model.

The HEC-RAS input and output electronic files have been provided along with digital copies of the flood and headpond inundation maps.

2.0 Input Information

The creation of the HEC-RAS hydraulic model requires various hydrologic, hydraulic and geometric inputs.

2.1 Geometry

LiDAR survey data was provided by Xeneca Power (Xeneca) and was obtained by flight over the Project on November 15, 16 and 17, 2009 by Terrapoint[ii]. The LiDAR survey covered a river length approximately 13.1 km upstream and 1.4 km downstream of the proposed structure. The

vertical and horizontal accuracies are reported by Terrapoint as ± 0.16 m and ± 0.98 m respectively at the 95% confidence level.

Bathymetric survey information was provided by Xeneca and was obtained on October 28, 2010 by BPR Engineering[iii] and covers some areas and specific cross sections of a 1.5 km reach near the proposed structure location. The vertical and horizontal accuracies of this bathymetric data are reported by BPR Engineering as ± 0.1 m and ± 0.2 m respectively.

An additional bathymetric survey was completed on November 14, 2011 by BPR Engineering and included the following:

- A river centreline survey including 8 cross sections of the reach of the Vermilion River downstream of Lorne Falls;
- A single cross section within Wabageshik Lake;
- An area and a specific cross section at the outlet of Wabageshik Lake; and
- A river centreline survey including 16 cross sections of the reach of the Vermilion River downstream of the Project.

CPL has not been provided with the summary report of this 2011 survey work and thus the accuracies of the provided survey cannot be reported.

The LiDAR and bathymetric survey points were compiled into a single three-dimensional model and a triangulated irregular network (TIN) surface was created from these points. Representative cross sections of the river valley were then extracted from the TIN surface for inclusion in the HEC-RAS model.

Cross sections were selected upstream to below Lorne and downstream 4.2 km from the proposed structure. Locations of cross sections were selected such that abrupt changes in the river valley geometry or hydraulic properties were minimized between any two sections.

At cross section locations where no bathymetric information was available, the channel bed cross sectional geometry was estimated using available information from nearby surveyed bathymetric sections or from Google Earth aerial photography (i.e. relative depth estimates from water colour and surface turbulence) and CPL's engineering judgement based on river planform. Straight reaches were assumed to have symmetrical bed geometry while significant bends were assumed to have a lower bed elevation on the outside of the bend. Estimated bed geometry was adjusted as part of the model calibration as discussed in Section 3.0.

Channel reach lengths were based on river centreline stationing and meandering characteristics. Station 0+000 represents the approximate initial location of the proposed structure however it was revised to be located at approximately station 0+255. For the modelled river reach of approximately 15,660 m, a total of 60 cross sections were obtained of which 31 included surveyed bathymetry. The 0 and -4 cross sections referred to by BPR based on the 2010 survey are believed to be incomplete and thus were not included in the 31 surveyed cross sections.

The locations of the cross sections used for the HEC-RAS hydraulic analysis of the Project are shown on the attached Drawings 06-121 to 06-126.

The proposed dam and spillway structure was modelled using the rating curve shown in Figure 1. The conceptual design drawings produced by Hatch for the original proposed structure at station 0+000 suggested that the structure would maintain normal operating levels at flows up to at least the 1:100 year flood. CPL has assumed that the revised structure and location would be operated to maintain the normal operating level of 205 m MSL during all flow magnitudes.

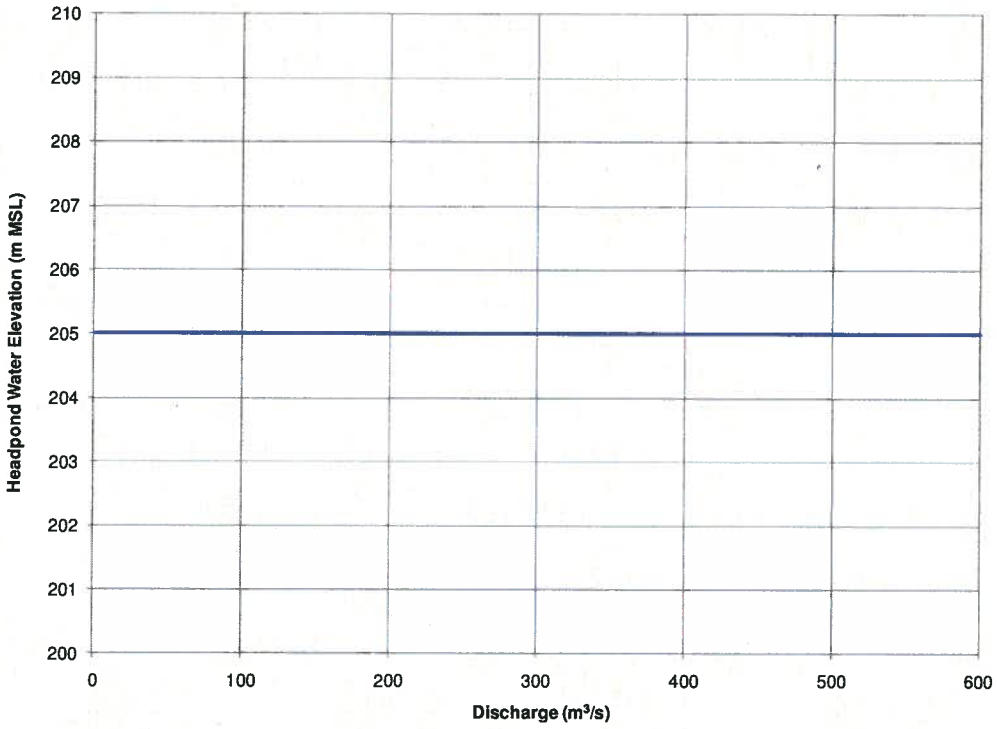


Figure 1: Proposed Structure Rating Curve

2.2 Roughness Estimates

The roughness of the majority of the main channel was estimated as a Manning's n value of 0.035 which is considered to be representative of clean, straight, full channels with no pools and shoals and some weeds and stones[iv].

Site photos taken during the CPL site visits in the fall of 2010 and aerial photography from Google Earth were used to estimate the overbank roughness values for pre-project conditions. In general, the overbank area of the river in the vicinity of the Project is densely covered in both tree and bush vegetation. Dense vegetation, especially in deciduous forests, can have highly variable roughness values associated with the summer and winter months. CPL has conservatively chosen roughness values which are representative of summer months. In densely vegetated areas a Manning's n value of 0.100 was used which represents medium to dense brush in summer or heavy stands of timber[iv]. A range of other Manning's n values were

used in the model including 0.025 for clean, straight, smooth pools and 0.045 for areas with large rock outcrops.

The effect of the roughness value assumptions was tested as part of the sensitivity analysis discussed in Section 5.0.

2.3 Steady Flow Data

The following flows of interest were modelled at the Project:

- 1:2, 1:5, 1:10, 1:20, 1:50, 1:100, 1:1,000 and 1:10,000 year flood flows as estimated by CPL[i];
- Flow on the date of the LiDAR survey as estimated by CPL;
- Monthly 10% and 90% exceedance values as determined by CPL[v];
- A variety of flows of interest as specified by Xeneca and listed in Table 2;
- Flow corresponding to 2010 HWM survey data collected by BPR Engineering[iii];
- Measured flows from the 2010[iii] and 2011[vi] BPR Engineering surveys; and
- LTAF estimated by Hatch Ltd.[vii]

The flow magnitudes associated with these scenarios are included in the HEC-RAS electronic files. Inundation mapping was generated only for the scenarios listed in Table 1.

The complete calibrated model was used to estimate the flow which most appropriately corresponds to the surveyed HWM from BPR Engineering. The estimated HWM flow of 75 m^3/s is approximately the mean annual (1:1 year) flood. The water surface elevation predicted by the model was generally within ± 0.15 m of the surveyed HWM.

There are no major tributaries entering the river within the reach of interest.

Table 1: Flow Conditions Presented on Inundation Maps

Flow Description	Flow (m^3/s)	Condition Modelled	
		Pre-Project	Post-Project
Long Term Annual Flow (LTAF)	47.3	X	X
1:2 Year Flood Flow	268	X	X
High Water Mark (HWM) Flow	75.0	X	
1:100 Year Flood Flow	507	X	X

Table 2: Flow Conditions Modelled for Determination of Channel Hydraulics

Flow Description	Flow (m^3/s)
Reference Flow	1.0
Reference Flow	2.0
Reference Flow	3.0
Reference Flow	5.0
Reference Flow	10.0
Reference Flow	15.0
Reference Flow	19.2
Reference Flow	30.0
Reference Flow	41.6
LTAF	47.3
Reference Flow	64.0

2.4 Boundary Conditions

For the steady flow condition the model was analyzed as a mixed flow system which accounts for sections of both subcritical and supercritical flow. When analyzing a mixed flow condition within HEC-RAS, both upstream and downstream boundary conditions must be imposed on the model.

For the steady flow analysis, the upstream boundary condition was taken as the estimated river slope of 0.0001 m/m however as discussed in Section 5.0, this condition did not affect the results of the model.

The downstream boundary condition was taken as the approximate water surface elevation on the date of the 2011 bathymetry survey of 198.0 m MSL. Due to only having a single water level and discharge, there is insufficient information to estimate a rating curve or channel slope at the downstream end of the model. The effect of the downstream boundary condition assumption was tested as part of the sensitivity analysis discussed in Section 5.0.

3.0 Model Calibration

The model was calibrated using available observed flow and level conditions.

The flow and water level information gathered as part of the 2010 and 2011 bathymetric surveys was used as the primary calibration method. The water surface profile produced by HEC-RAS at the measured flow of 27.2 m^3/s was compared to the water surface elevations surveyed during the October 28, 2010 bathymetric survey. Similarly, the water surface profile produced by HEC-RAS at the measured flow of 56.5 m^3/s was compared to the water surface elevations surveyed during the November 14, 2011 bathymetric survey.

Flow data was provided by Xeneca, originally obtained from Vale Limited, provided flow releases from Lorne Falls. The flow releases on October 28, 2010 and November 14, 2011 were 28.6 m3/s and 58.4 m3/s respectively, which agree within 5% of the measured flows during the bathymetry survey. This provides confidence in the measured and reported discharges with the measured discharges being used for modelling.

The comparison is a useful means of determining locations where additional cross sections are needed or where estimated channel geometry needs refinement. Cross sections were added and estimated bed geometry was adjusted to increase the accuracy of the predicted water surface throughout the modelled reach.

The modelled water levels compared very well to the surveyed water levels after calibration of the model was complete. Tables 3 and 4 compare the water levels during the bathymetric surveys to those estimated by the HEC-RAS model at the listed flows. The BPR cross section -4 surveyed in 2010 did not have a surveyed water level and thus is not included in Table 3.

Table 3: Surveyed Water Levels during 2010 Bathymetric Survey

BPR Engineering Cross Section	Approximate Cross Section	Surveyed Water Level (m MSL)	Modelled Water Level (m MSL)
-3	0+955	203.95	203.98
-2	0+801	202.84	202.80
-1	0+637	202.64	202.65
0	0+400	199.90	199.88
1	0+255	199.27	199.35
2	0+000	198.66	198.72

Table 4: Surveyed Water Levels during 2011 Bathymetric Survey

BPR Engineering Cross Section	Approximate Cross Section	Surveyed Water Level (m MSL)	Modelled Water Level (m MSL)
101	11+566	204.94	204.94
102	11+277	204.97	204.94
103	10+772	204.86	204.94
104	10+364	204.89	204.94
105	9+897	204.96	204.93
106	9+197	204.91	204.93
107	8+732	204.07	204.93
108	8+494	204.91	204.93

BPR Engineering Cross Section	Approximate Cross Section	Surveyed Water Level (m MSL)	Modelled Water Level (m MSL)
109	6+137	204.94	204.93
110	0+988	204.66	204.69
111	-0+040	198.91	198.89
112	-0+105	198.85	198.89
113	-0+219	198.91	198.89
114	-0+462	198.89	198.89
115	-0+798	198.84	198.89
116	-1+452	198.93	198.89
117	-2+478	198.80	198.86
118	-3+343	198.87	198.85
119	-3+469	198.78	198.68
120	-3+539	198.18	198.10
121	-3+625	198.02	197.99
122	-3+730	197.67	198.00
123	-3+815	198.00	198.00
124	-3+878	198.04	198.00
125	-3+927	198.04	198.00
126	-3+997	198.04	198.00

With the exception of BPR cross sections 107 and 122 (which based on nearby surveyed water levels are considered to be erroneous), all modelled water levels are within the ± 0.1 m accuracy of the bathymetric surveys.

The second source of calibration was the LiDAR survey information combined with the reported flow release from Lorne Falls of 33.3 m^3/s over the three day LiDAR survey period of November 15 through 17, 2009. Although the LiDAR survey is unable to detect a water surface, the riverbank is detected at the edge of the water. The conversion of these riverbank points into a TIN surface across the river width produces a reasonable estimate of the water surface elevation.

A comparison of the water surface profile from the LiDAR survey and the complete calibrated HEC-RAS model is shown on Figure 2 for the entire river reach and on Figure 3 for the rapids near the Project. Points shown on the "HEC-RAS Model" series indicate locations of cross sections in the HEC-RAS model. The LiDAR water surface profile shows some scatter of elevations due to the conversion of the LiDAR riverbank survey points to the TIN surface.

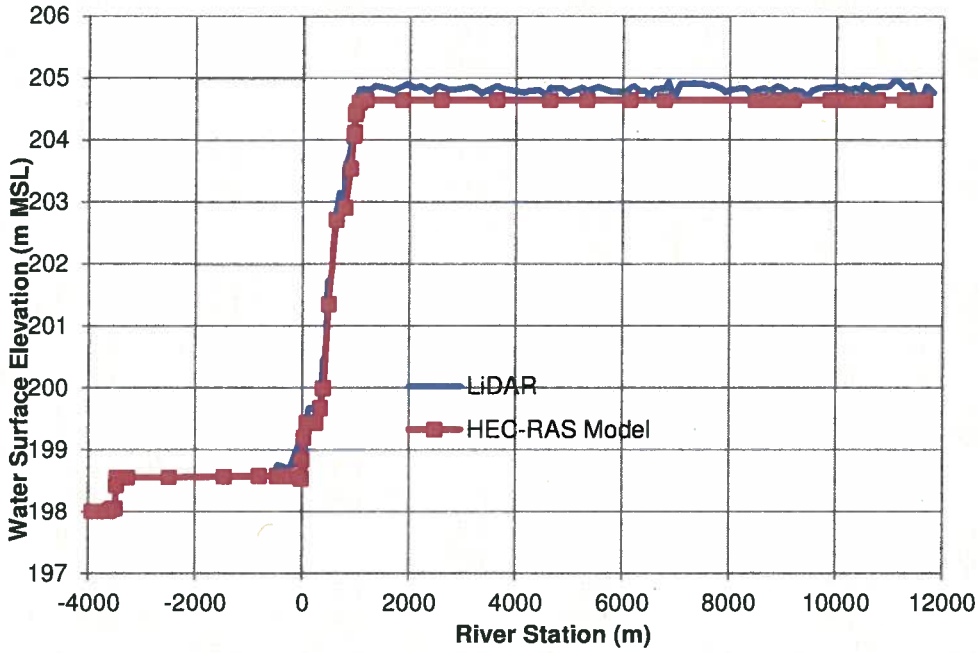


Figure 2: Calibrated HEC-RAS Water Surface Profile – Full Reach

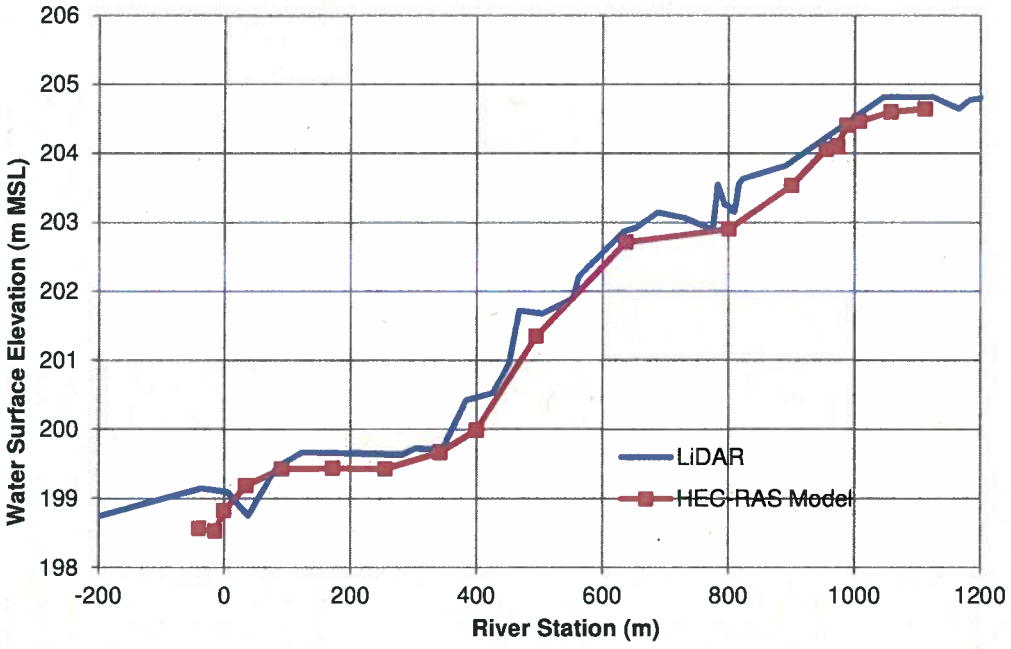


Figure 3: Calibrated HEC-RAS Water Surface Profile – Rapids near Project

The LiDAR water surface profile shows some scatter of elevations due to the conversion of the LiDAR riverbank survey points to the TIN surface.

4.0 Modelling

4.1 Inundation Limits

Modelled water surface profiles for the flow conditions in Table 1 are provided in Table A-1 in the Appendix and illustrated in Figures 4 through 7 for pre and post-project conditions including the estimated water level increases. Table A-2 in the Appendix summarizes the hydraulic properties of the cross sections upstream of the project for both pre and post-project conditions.

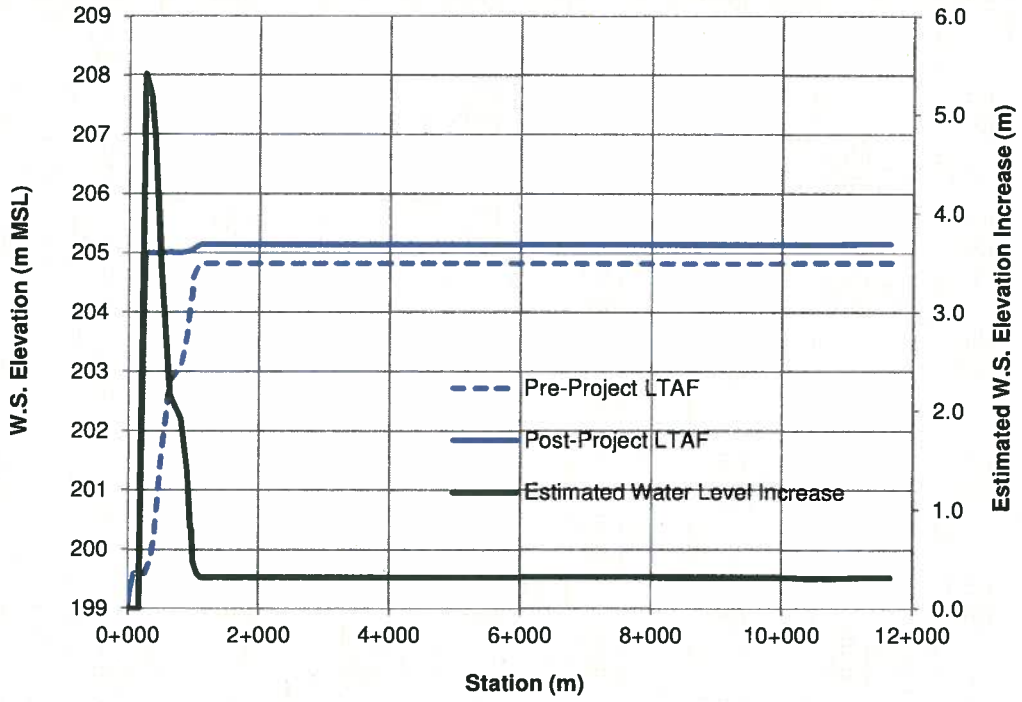


Figure 4: LTAF Water Surface Elevation Profile Summary

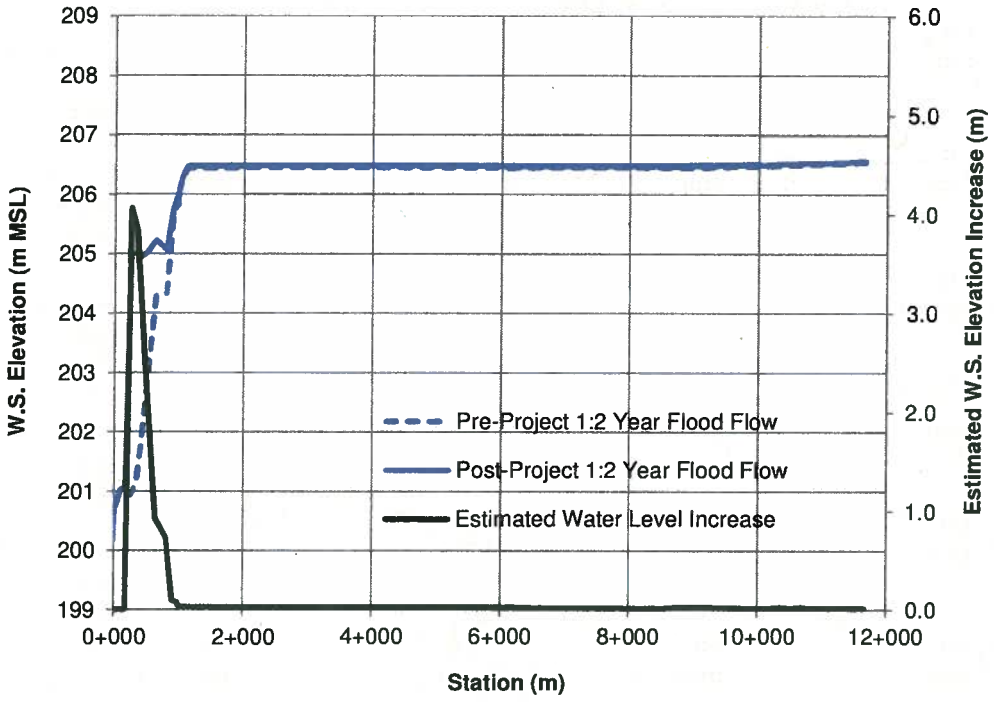


Figure 5: 1:2 Year Flood Water Surface Elevation Profile Summary

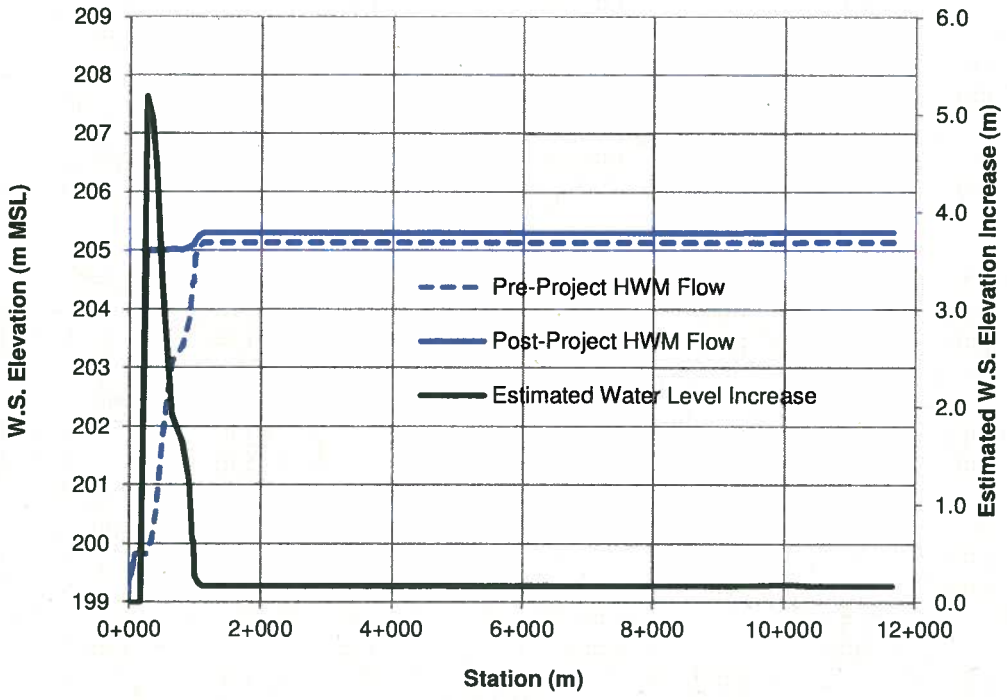


Figure 6: HWM Flow Water Surface Elevation Profile Summary

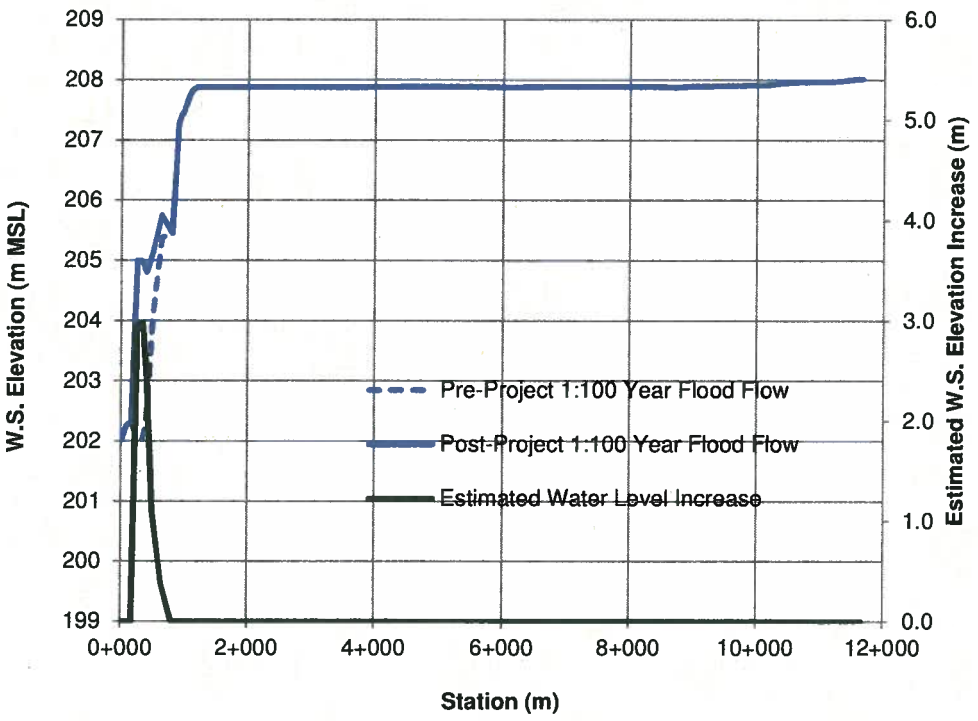


Figure 7: 1:100 Year Flood Water Surface Elevation Profile Summary

Through the range of flows modelled, water levels in the headpond immediately upstream of the proposed structure location will be raised by approximately 4.0 – 5.5 m. The headpond will extend approximately 11.5 km upstream during the LTAF and approximately 0.6 km during the 1:100 year flood. The proposed structure would raise water levels upstream in Wabageshik Lake during all normal flows but excluding the extremely rare flood events. This rise in water levels would extend to the downstream side of the Lorne Falls Hydropower Generating Station. There would be no effect on downstream water levels due to the proposed structure.

The rating curve illustrated on Figure 1 governs the water level increase at the proposed structure.

The HEC-RAS model is predicting several hydraulic jumps which occur within the reach immediately upstream of the project which account for the variable water surface elevations shown between stations -0+478 and 1+183.

Figure 8 compares the approximate water levels at the LTAF pre and post-project to those at the 1:100 year flood pre-project.

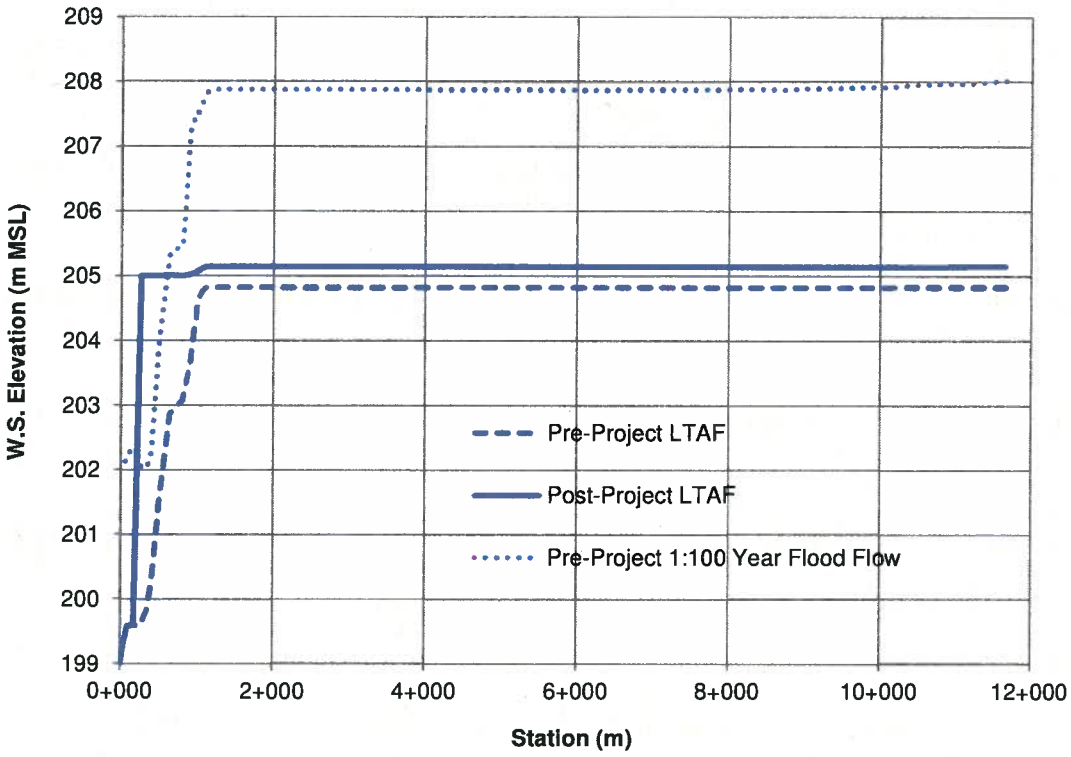


Figure 8: Pre and Post-Project Water Level Comparison

As illustrated by Figure 8, water levels upstream of the proposed structure post-project during the LTAF will generally be lower than those reached by 1:100 year flood pre-project.

As stated in Section 1.0, the results of the HEC-RAS model presented within this section are intended to provide an estimate of the relative magnitude of difference between water surface elevations pre and post-project.

4.2 Lorne Falls Tailwater Rating Curve

Figure 9 illustrates the modelled pre-project and post-project rating curves at cross section 11+658 which represent the tailwater rating curve for the Lorne Falls Generating Station.

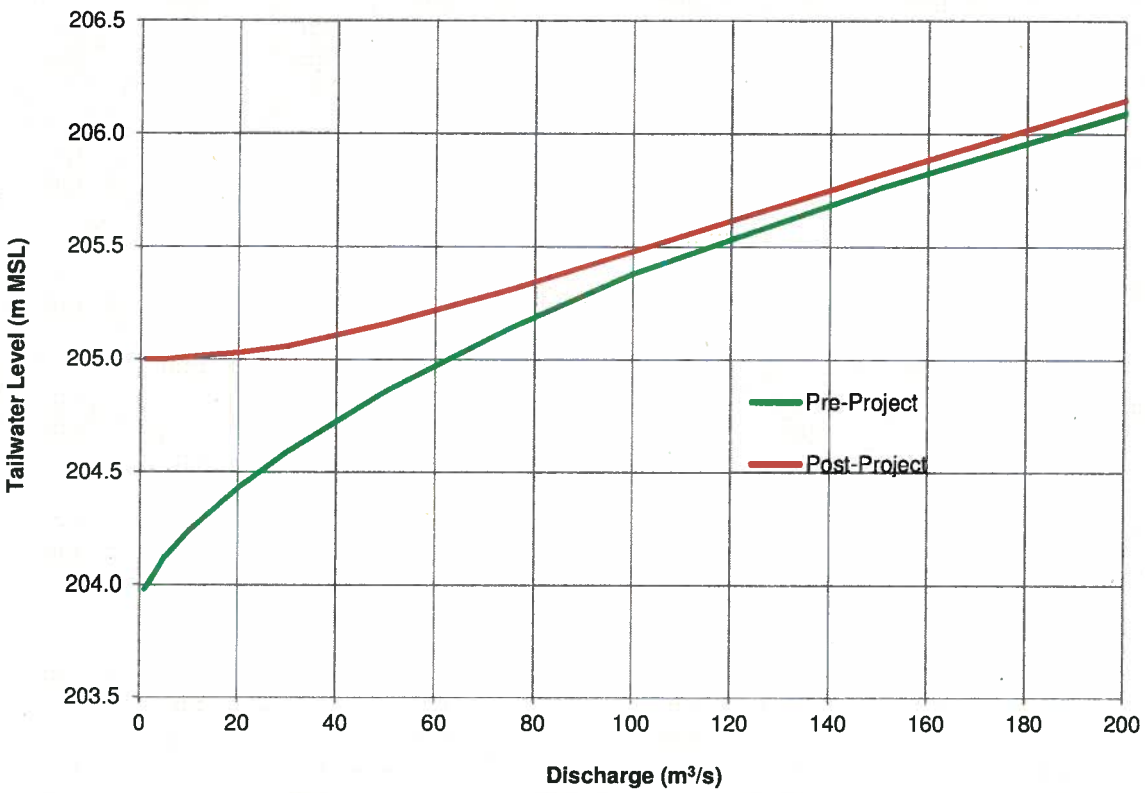


Figure 9: Pre and Post-Project Lorne Falls Tailwater Rating Curves

The effect of the Project is expected to diminish to under 0.1 m at a discharge of approximately 100 m^3/s based on the rating curve of the proposed structure in Figure 1. At the LTAF, the effect is expected to be about 0.3 m. To support higher accuracy, the Lorn Falls tailwater rating curve should be confirmed, preferably by on-site level and flow measurements.

4.3 Environmentally Sensitive Areas

Modelled water surface profiles throughout the river reach downstream of the dam and spillway for the flow conditions in Table 2 are illustrated in Figure 10. The channel consists of rapids with high velocity flow and several drops and pools. The maximum difference between water levels from 1.0 m^3/s to 64.0 m^3/s is estimated to be about 1.3 m. Further details on water depth flow velocity, flow area and wetted perimeter can be found in Table A-3 in the Appendix.

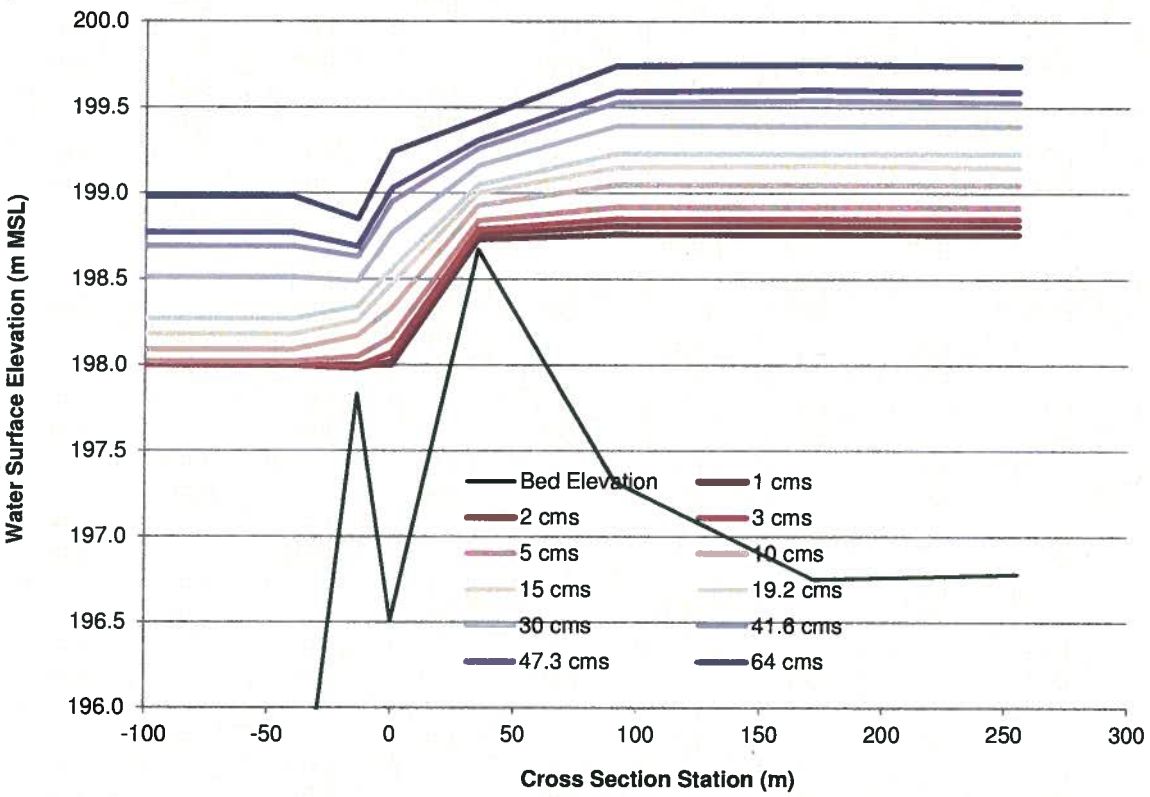


Figure 10: Water Levels Downstream of Project

4.4 Monthly 10% and 90% Flow Exceedance Levels

In addition to the results presented above, the model was run with the monthly 10% and 90% exceedance flows provided by CPL[v]. The results of the existing conditions are shown in Table A-4 in the Appendix while the results upstream of Project for proposed conditions are shown in Table A-5.

4.5 Modelling Error

HEC-RAS uses Manning's equation to evaluate friction losses along the river which are key to determining the water surface profile for steady flows. A propagation of error analysis was completed using Manning's equation to determine the approximate error associated with the values in Tables A-1 through A-5. The absolute error associated with the water surface elevation is expected to be in the range of ± 0.7 m for flood flows, decreasing to ± 0.4 m for flows near the LTAF and possibly increasing above ± 0.4 m for low flows. This error estimate does not apply to levels controlled by the proposed structure or to those within the reach affected by the downstream boundary condition as discussed in Section 5.0. Further calibration information, for example the flow out of Lorne Falls on the date of the LiDAR survey, would allow for better calibration of the model and thus a reduced error in the range of normal flows.

5.0 Sensitivity Analysis

A sensitivity analysis was undertaken to determine the effects of varying roughness estimates and boundary conditions on the water surface results of the model. The analysis was undertaken using the river geometry pre-project and the LTAF.

The roughness estimates were varied to ± 20% of the estimated Manning's n value. The increased roughness values resulted in an average water level increase of approximately 0.03 m throughout the modelled river reach while the decreased roughness values resulted in an average water level decrease of 0.03 m throughout the modelled river reach.

The upstream boundary condition was varied to ± 20% of the original channel slope. Neither adjustment had an effect on the water levels in the model.

The downstream boundary condition was varied to ± 1.0 m of the original water level. An increase of 1.0 m affected the upstream reach approximately 4.3 km upstream (including the reach of the proposed tailrace and up to the dam). A decrease of 1.0 m affected the upstream reach approximately 0.5 km upstream (about 3.7 km downstream of the Project).

The results of the sensitivity analysis confirm that the assumed roughness values and upstream boundary condition are not significantly affecting the model results. The assumed downstream boundary condition does affect the predicted tailwater levels at the Project. The project tailwater curve should be confirmed, preferably by on-site level and flow measurements, to support project head and energy estimates.

6.0 Unsteady Flow

For the purpose of future modelling of unsteady flow conditions for both normal operation and dam break analysis the original model provided with the 2011 letter report was checked for its ability to handle these conditions.

The HEC-RAS software has the ability to model unsteady flow conditions consisting of changes of inflow over a standard time step. An unsteady flow analysis allows the user to examine how the entire river system manages varying inflow conditions such as floods or operational procedures at various river stations. Computational instability can be encountered when modelling unsteady flow conditions and can be attributed to distances between consecutive cross sections and computational time steps[iv]. When model instability is encountered in HEC-RAS, unrealistic results are produced due to growing numerical errors at each computational time step.

In addition to the 24 cross sections obtained for the modelling, 108 cross sections were interpolated using HEC-RAS such that the maximum distance between any two sections was 100 m. An unsteady flow analysis was undertaken on the flow series illustrated in Figure 11 which was provided by Xeneca and is considered to be representative of the operation of a modified run of river hydropower plant. This flow series serves as the upstream boundary condition of the unsteady model.

To obtain stability within the model, it was necessary to add a fictitious cross section at the downstream end of the model and use a normal depth boundary condition for this cross section in order to produce reasonable downstream water levels. When tested with the representative

hydrograph the model produced stable results. However, numerical stability for other hydrographs cannot be guaranteed.

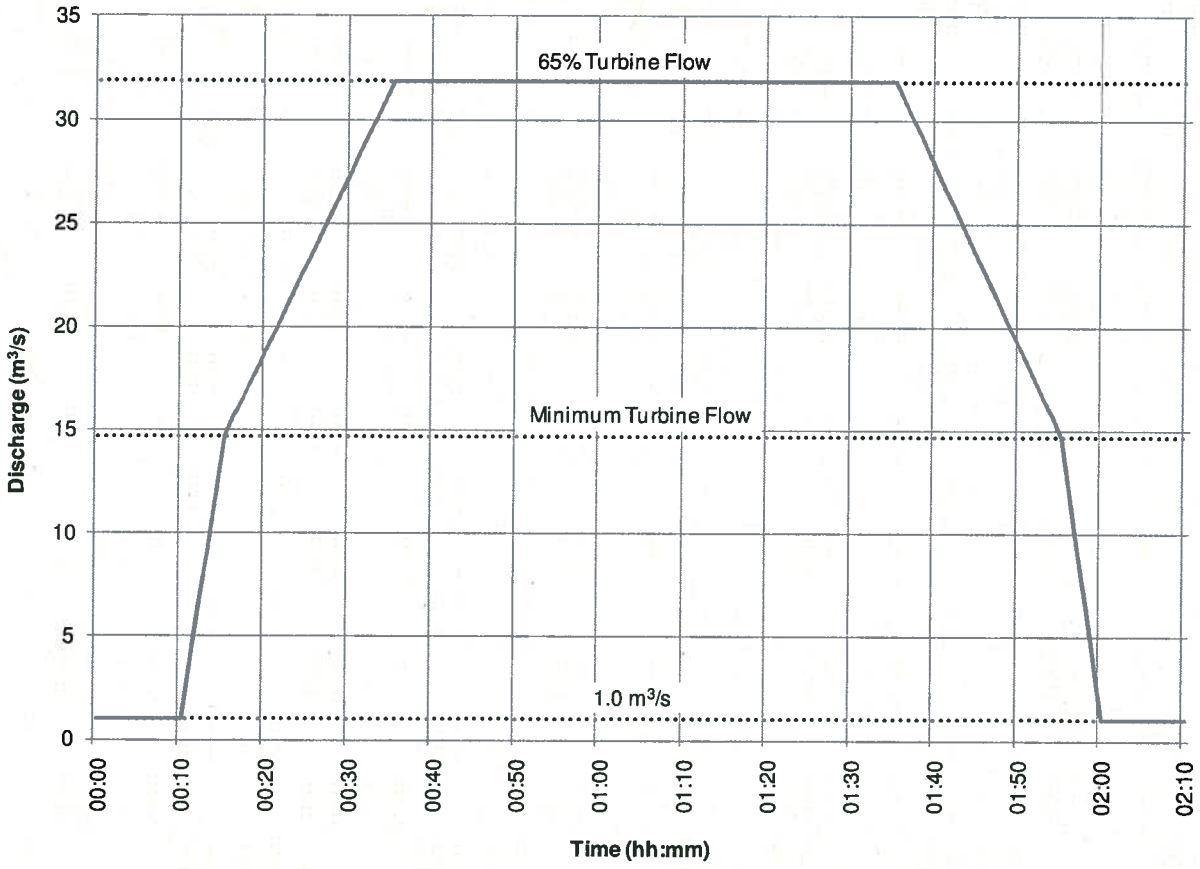


Figure 11: Representative Unsteady Flow Hydrograph

7.0 Conclusion

The results of the one-dimensional hydraulic modelling using HEC-RAS for the Wabageshik Rapids Project on the Vermilion River are presented within this letter report and are supplemented by the inundation maps and electronic modelling files.

To support higher accuracy project head and energy estimates, the project tailwater curve should be confirmed, preferably by on-site level and flow measurements.

The information expressed in this Report represents Canadian Projects Limited's best professional judgement and is based on Canadian Projects Limited's experience as applied to the information provided at the time of preparation within the scope of the assignment. Canadian Projects Limited does not guarantee or warrant the water surface profile or flood inundation maps expressed herein.

We trust that this report meets with your requirements. If you require any clarification, have questions or would like to discuss the information contained within, please contact us.

Sincerely,

CANADIAN PROJECTS LIMITED

Sean Sullivan, M.Sc., P.Eng.
Hydrotechnical Engineer

David Kushner, E.I.T.
Junior Engineer

Reviewed by,

Richard Slopek, P.Eng.
Project Manager

SMS/sms
Attachments:
Wabageshik Rapids Project – Headpond Inundation Mapping (6 pages)
HEC-RAS Input and Output files on CD

---

[i] Hydrology Review and Flood Frequency Analyses – DRAFT – Ontario South Hydro. Canadian Projects Limited. February 17, 2011.
[ii] Terrapoint #: 2009-161-C; 2009-172-C; and 2009-174-C. Terrapoint. October 1, 2010.
[iii] Hydrological Memo Report, 06 – Wabageshik, Vermilion River. BPR Engineering. November 30, 2010.
[iv] HEC-RAS Hydraulic Reference Manual, Version 4.1. USACE. January 2010.
[v] Vermilion River at Wabagishik Rapid Hydrologic Analyses – Ontario South Hydro. Canadian Projects Limited. April 11, 2011.
[vi] Flow Measurement Memo Report. Vermilion River at Wabagishik. BPR Engineering. Survey Date: November 14, 2011.
[vii] Hydrology Review for Vermilion River Hydropower Project. Hatch Ltd. October 6, 2009.

Appendix

List of Tables

Table A-1: HEC-RAS Water Surface Elevation Summary

Section ID - BPR Engineering	Cross Section Station - CPL	Approximate Water Surface Elevation Pre-Project (m MSL)				Approximate Water Surface Elevation Post-Project (m MSL)				Estimated Water Surface Elevation Increase (m) (m MSL)			
	(m)	LTAF	HWM Flow	1:2 Year Flood Flow	1:100 Year Flood Flow	LTAF	HWM Flow	1:2 Year Flood Flow	1:100 Year Flood Flow	LTAF	HWM Flow	1:2 Year Flood Flow	1:100 Year Flood Flow
	11+658	204.83	205.14	206.54	208.01	205.15	205.31	206.56	208.01	0.32	0.17	0.02	0.00
101	11+566	204.83	205.14	206.54	208.01	205.15	205.31	206.56	208.01	0.32	0.17	0.02	0.00
102	11+277	204.83	205.14	206.52	207.97	205.15	205.31	206.54	207.97	0.32	0.17	0.02	0.00
103	10+772	204.83	205.14	206.51	207.96	205.14	205.31	206.53	207.96	0.31	0.17	0.02	0.00
	10+686	204.83	205.14	206.50	207.96	205.14	205.31	206.53	207.96	0.31	0.17	0.03	0.00
	10+493	204.83	205.14	206.50	207.95	205.14	205.31	206.52	207.95	0.31	0.17	0.02	0.00
104	10+364	204.83	205.14	206.49	207.94	205.14	205.31	206.52	207.94	0.31	0.17	0.03	0.00
	10+115	204.82	205.13	206.48	207.91	205.14	205.31	206.50	207.91	0.32	0.18	0.02	0.00
105	9+897	204.82	205.13	206.48	207.91	205.14	205.31	206.50	207.91	0.32	0.18	0.02	0.00
106	9+197	204.82	205.13	206.46	207.89	205.14	205.30	206.49	207.89	0.32	0.17	0.03	0.00
	8+975	204.82	205.13	206.46	207.89	205.14	205.30	206.49	207.89	0.32	0.17	0.03	0.00
107	8+732	204.82	205.13	206.45	207.87	205.14	205.30	206.48	207.87	0.32	0.17	0.03	0.00
	8+531	204.82	205.13	206.46	207.88	205.14	205.30	206.48	207.88	0.32	0.17	0.02	0.00
108	8+494	204.82	205.13	206.46	207.88	205.14	205.30	206.48	207.88	0.32	0.17	0.02	0.00
	6+793	204.82	205.13	206.46	207.88	205.14	205.30	206.48	207.88	0.32	0.17	0.02	0.00
109	6+137	204.82	205.13	206.45	207.87	205.14	205.30	206.48	207.87	0.32	0.17	0.03	0.00
	5+329	204.82	205.13	206.45	207.88	205.14	205.30	206.48	207.88	0.32	0.17	0.03	0.00
	4+633	204.82	205.13	206.45	207.88	205.14	205.30	206.48	207.88	0.32	0.17	0.03	0.00
	3+638	204.82	205.13	206.45	207.87	205.14	205.30	206.48	207.87	0.32	0.17	0.03	0.00
	2+606	204.82	205.13	206.45	207.87	205.14	205.30	206.48	207.87	0.32	0.17	0.03	0.00
	1+873	204.82	205.13	206.45	207.87	205.14	205.30	206.48	207.87	0.32	0.17	0.03	0.00
	1+183	204.82	205.13	206.45	207.87	205.14	205.30	206.48	207.87	0.32	0.17	0.03	0.00
-4	1+112	204.82	205.13	206.43	207.83	205.14	205.30	206.46	207.83	0.32	0.17	0.03	0.00
	1+058	204.77	205.07	206.31	207.70	205.12	205.26	206.34	207.70	0.35	0.19	0.03	0.00
	1+008	204.64	204.94	206.14	207.55	205.08	205.19	206.18	207.55	0.44	0.25	0.04	0.00
110	0+988	204.58	204.87	206.04	207.51	205.07	205.15	206.09	207.51	0.49	0.28	0.05	0.00
	0+973	204.24	204.46	205.81	207.43	205.04	205.09	205.89	207.43	0.80	0.63	0.08	0.00
-3	0+955	204.21	204.46	205.86	207.45	205.04	205.10	205.94	207.45	0.83	0.64	0.08	0.00
	0+900	203.63	203.81	205.63	207.27	205.02	205.06	205.73	207.27	1.39	1.25	0.10	0.00
-2	0+801	203.08	203.37	204.33	205.45	205.00	205.01	205.06	205.45	1.92	1.64	0.73	0.00
-1	0+637	202.86	203.10	204.30	205.37	205.01	205.02	205.22	205.75	2.15	1.92	0.92	0.38

Section ID - BPR Engineering	Cross Section Station - CPL	Approximate Water Surface Elevation Pre-Project (m MSL)				Approximate Water Surface Elevation Post-Project (m MSL)				Estimated Water Surface Elevation Increase (m) (m MSL)			
	(m)	LTAF	HWM Flow	1:2 Year Flood Flow	1:100 Year Flood Flow	LTAF	HWM Flow	1:2 Year Flood Flow	1:100 Year Flood Flow	LTAF	HWM Flow	1:2 Year Flood Flow	1:100 Year Flood Flow
	0+495	201.50	201.75	202.77	204.01	205.00	205.00	205.02	205.12	3.50	3.25	2.25	1.11
0	0+400	200.20	200.53	201.73	202.29	205.00	205.00	204.95	204.80	4.80	4.47	3.22	2.51
	0+342	199.82	200.06	201.16	202.02	205.00	205.00	205.00	204.99	5.18	4.94	3.84	2.97
1	0+255	199.59	199.82	200.94	202.06	205.00	205.00	205.00	205.00	5.41	5.18	4.06	2.94
	0+172	199.60	199.84	201.07	202.31	199.60	199.84	201.07	202.31	0.00	0.00	0.00	0.00
	0+091	199.59	199.82	201.02	202.26	199.59	199.82	201.02	202.26	0.00	0.00	0.00	0.00
	0+035	199.31	199.50	200.79	202.07	199.31	199.50	200.79	202.07	0.00	0.00	0.00	0.00
2	0+000	199.03	199.37	200.69	202.05	199.03	199.37	200.69	202.05	0.00	0.00	0.00	0.00
	-0+014	198.69	198.95	200.18	201.97	198.69	198.95	200.18	201.97	0.00	0.00	0.00	0.00
111	-0+040	198.77	199.11	200.52	202.13	198.77	199.11	200.52	202.13	0.00	0.00	0.00	0.00
112	-0+105	198.77	199.11	200.53	202.13	198.77	199.11	200.53	202.13	0.00	0.00	0.00	0.00
113	-0+219	198.77	199.11	200.52	202.13	198.77	199.11	200.52	202.13	0.00	0.00	0.00	0.00
114	-0+462	198.77	199.11	200.52	202.13	198.77	199.11	200.52	202.13	0.00	0.00	0.00	0.00
115	-0+798	198.77	199.10	200.51	202.12	198.77	199.10	200.51	202.12	0.00	0.00	0.00	0.00
116	-1+452	198.77	199.10	200.48	202.07	198.77	199.10	200.48	202.07	0.00	0.00	0.00	0.00
117	-2+478	198.75	199.06	200.27	201.77	198.75	199.06	200.27	201.77	0.00	0.00	0.00	0.00
	-3+261	198.74	199.05	200.23	201.69	198.74	199.05	200.23	201.69	0.00	0.00	0.00	0.00
118	-3+343	198.74	199.05	200.22	201.68	198.74	199.05	200.22	201.68	0.00	0.00	0.00	0.00
	-3+460	198.74	199.05	200.22	201.67	198.74	199.05	200.22	201.67	0.00	0.00	0.00	0.00
119	-3+469	198.59	198.85	199.89	201.49	198.59	198.85	199.89	201.49	0.00	0.00	0.00	0.00
	-3+490	198.20	198.43	199.75	201.46	198.20	198.43	199.75	201.46	0.00	0.00	0.00	0.00
120	-3+539	198.07	198.18	199.56	201.12	198.07	198.18	199.56	201.12	0.00	0.00	0.00	0.00
	-3+580	198.03	198.09	199.37	200.95	198.03	198.09	199.37	200.95	0.00	0.00	0.00	0.00
121	-3+625	197.99	197.98	198.18	199.36	197.99	197.98	198.18	199.36	0.00	0.00	0.00	0.00
122	-3+730	198.00	197.99	197.89	197.07	198.00	197.99	197.89	197.07	0.00	0.00	0.00	0.00
123	-3+815	198.00	198.00	197.95	197.82	198.00	198.00	197.95	197.82	0.00	0.00	0.00	0.00
124	-3+878	198.00	198.00	197.99	197.97	198.00	198.00	197.99	197.97	0.00	0.00	0.00	0.00
125	-3+927	198.00	198.00	198.00	197.99	198.00	198.00	198.00	197.99	0.00	0.00	0.00	0.00
126	-3+997	198.00	198.00	198.00	198.00	198.00	198.00	198.00	198.00	0.00	0.00	0.00	0.00

Table A-2: HEC-RAS Upstream Inundation Results

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		11658	LTAF	Existing r1	47.3	0.03	1668	432	432	197.35	204.83	3.86	7.48
Wabageshik		11658	LTAF	Proposed r1	47.3	0.03	1807	444	444	197.35	205.15	4.07	7.80
Wabageshik		11658	1:2	Existing r1	268	0.11	2441	468	468	197.35	206.54	5.22	9.19
Wabageshik		11658	1:2	Proposed r1	268	0.11	2453	468	469	197.35	206.56	5.24	9.21
Wabageshik		11658	1:100	Existing r1	507	0.16	3140	480	481	197.35	208.01	6.54	10.66
Wabageshik		11658	1:100	Proposed r1	507	0.16	3140	480	481	197.35	208.01	6.54	10.66
Wabageshik		11658	HWM Flow	Existing r1	75	0.04	1806	444	444	197.35	205.14	4.07	7.79
Wabageshik		11658	HWM Flow	Proposed r1	75	0.04	1882	447	447	197.35	205.31	4.21	7.96
Wabageshik	101	11566	LTAF	Existing r1	47.3	0.03	1445	321	324	196.96	204.83	4.51	7.87
Wabageshik	101	11566	LTAF	Proposed r1	47.3	0.03	1548	329	333	196.96	205.15	4.70	8.19
Wabageshik	101	11566	1:2	Existing r1	268	0.13	2023	351	355	196.96	206.54	5.77	9.58
Wabageshik	101	11566	1:2	Proposed r1	268	0.13	2031	351	355	196.96	206.56	5.79	9.60
Wabageshik	101	11566	1:100	Existing r1	507	0.20	2544	357	362	196.96	208.01	7.13	11.05
Wabageshik	101	11566	1:100	Proposed r1	507	0.20	2544	357	362	196.96	208.01	7.13	11.05
Wabageshik	101	11566	HWM Flow	Existing r1	75	0.05	1547	329	333	196.96	205.14	4.70	8.18
Wabageshik	101	11566	HWM Flow	Proposed r1	75	0.05	1604	332	336	196.96	205.31	4.83	8.35
Wabageshik	102	11277	LTAF	Existing r1	47.3	0.15	319	86	88	199.69	204.83	3.70	5.14
Wabageshik	102	11277	LTAF	Proposed r1	47.3	0.14	347	91	93	199.69	205.15	3.79	5.46
Wabageshik	102	11277	1:2	Existing r1	268	0.56	479	102	104	199.69	206.52	4.72	6.83
Wabageshik	102	11277	1:2	Proposed r1	268	0.56	482	102	104	199.69	206.54	4.74	6.85
Wabageshik	102	11277	1:100	Existing r1	507	0.80	723	254	257	199.69	207.97	2.84	8.28
Wabageshik	102	11277	1:100	Proposed r1	507	0.80	723	254	257	199.69	207.97	2.84	8.28
Wabageshik	102	11277	HWM Flow	Existing r1	75	0.22	346	91	93	199.69	205.14	3.79	5.45
Wabageshik	102	11277	HWM Flow	Proposed r1	75	0.21	362	93	95	199.69	205.31	3.89	5.62
Wabageshik	103	10772	LTAF	Existing r1	47.3	0.10	470	141	142	198.50	204.83	3.34	6.33
Wabageshik	103	10772	LTAF	Proposed r1	47.3	0.09	516	149	150	198.50	205.14	3.47	6.64
Wabageshik	103	10772	1:2	Existing r1	268	0.36	750	216	218	198.50	206.51	3.47	8.01
Wabageshik	103	10772	1:2	Proposed r1	268	0.35	756	217	219	198.50	206.53	3.48	8.03
Wabageshik	103	10772	1:100	Existing r1	507	0.48	1110	275	276	198.50	207.96	4.04	9.46
Wabageshik	103	10772	1:100	Proposed r1	507	0.48	1110	275	276	198.50	207.96	4.04	9.46
Wabageshik	103	10772	HWM Flow	Existing r1	75	0.15	515	149	150	198.50	205.14	3.46	6.64
Wabageshik	103	10772	HWM Flow	Proposed r1	75	0.14	541	152	153	198.50	205.31	3.57	6.81
Wabageshik		10686	LTAF	Existing r1	47.3	0.11	430	133	134	199.96	204.83	3.24	4.87
Wabageshik		10686	LTAF	Proposed r1	47.3	0.10	475	144	144	199.96	205.14	3.31	5.18
Wabageshik		10686	1:2	Existing r1	268	0.39	680	166	167	199.96	206.50	4.09	6.54

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		10686	1:2	Proposed r1	268	0.39	685	167	168	199.96	206.53	4.11	6.57
Wabageshik		10686	1:100	Existing r1	507	0.55	999	244	245	199.96	207.96	4.10	8.00
Wabageshik		10686	1:100	Proposed r1	507	0.55	999	244	245	199.96	207.96	4.10	8.00
Wabageshik		10686	HWM Flow	Existing r1	75	0.16	474	144	144	199.96	205.14	3.30	5.18
Wabageshik		10686	HWM Flow	Proposed r1	75	0.15	499	145	146	199.96	205.31	3.43	5.35
Wabageshik		10493	LTAF	Existing r1	47.3	0.09	507	101	103	197.90	204.83	5.00	6.93
Wabageshik		10493	LTAF	Proposed r1	47.3	0.09	540	107	109	197.90	205.14	5.03	7.24
Wabageshik		10493	1:2	Existing r1	268	0.38	709	154	156	197.90	206.50	4.62	8.60
Wabageshik		10493	1:2	Proposed r1	268	0.38	713	158	160	197.90	206.52	4.50	8.62
Wabageshik		10493	1:100	Existing r1	507	0.55	1133	376	378	197.90	207.95	3.02	10.05
Wabageshik		10493	1:100	Proposed r1	507	0.55	1133	376	378	197.90	207.95	3.02	10.05
Wabageshik		10493	HWM Flow	Existing r1	75	0.14	539	107	109	197.90	205.14	5.03	7.24
Wabageshik		10493	HWM Flow	Proposed r1	75	0.13	558	114	116	197.90	205.31	4.91	7.41
Wabageshik	104	10364	LTAF	Existing r1	47.3	0.10	474	103	108	198.19	204.83	4.59	6.64
Wabageshik	104	10364	LTAF	Proposed r1	47.3	0.09	508	108	113	198.19	205.14	4.71	6.95
Wabageshik	104	10364	1:2	Existing r1	268	0.40	666	130	135	198.19	206.49	5.14	8.30
Wabageshik	104	10364	1:2	Proposed r1	268	0.40	670	141	146	198.19	206.52	4.75	8.33
Wabageshik	104	10364	1:100	Existing r1	507	0.58	1005	327	332	198.19	207.94	3.07	9.75
Wabageshik	104	10364	1:100	Proposed r1	507	0.58	1005	327	332	198.19	207.94	3.07	9.75
Wabageshik	104	10364	HWM Flow	Existing r1	75	0.15	507	108	113	198.19	205.14	4.70	6.95
Wabageshik	104	10364	HWM Flow	Proposed r1	75	0.14	526	110	115	198.19	205.31	4.77	7.12
Wabageshik		10115	LTAF	Existing r1	47.3	0.14	336	75	77	198.97	204.82	4.45	5.85
Wabageshik		10115	LTAF	Proposed r1	47.3	0.13	360	79	80	198.97	205.14	4.59	6.17
Wabageshik		10115	1:2	Existing r1	268	0.57	470	85	87	198.97	206.48	5.54	7.51
Wabageshik		10115	1:2	Proposed r1	268	0.57	472	85	87	198.97	206.50	5.56	7.53
Wabageshik		10115	1:100	Existing r1	507	0.85	595	90	93	198.97	207.91	6.60	8.94
Wabageshik		10115	1:100	Proposed r1	507	0.85	595	90	93	198.97	207.91	6.60	8.94
Wabageshik		10115	HWM Flow	Existing r1	75	0.21	360	78	80	198.97	205.13	4.58	6.16
Wabageshik		10115	HWM Flow	Proposed r1	75	0.20	373	79	81	198.97	205.31	4.70	6.34
Wabageshik	105	9897	LTAF	Existing r1	47.3	0.10	454	97	99	197.31	204.82	4.70	7.51
Wabageshik	105	9897	LTAF	Proposed r1	47.3	0.10	486	102	105	197.31	205.14	4.76	7.83
Wabageshik	105	9897	1:2	Existing r1	268	0.43	629	111	114	197.31	206.48	5.69	9.17
Wabageshik	105	9897	1:2	Proposed r1	268	0.42	632	111	114	197.31	206.50	5.71	9.19
Wabageshik	105	9897	1:100	Existing r1	507	0.64	801	144	147	197.31	207.91	5.56	10.60
Wabageshik	105	9897	1:100	Proposed r1	507	0.64	801	144	147	197.31	207.91	5.56	10.60
Wabageshik	105	9897	HWM Flow	Existing r1	75	0.15	486	102	105	197.31	205.13	4.76	7.82

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	105	9897	HWM Flow	Proposed r1	75	0.15	503	105	107	197.31	205.31	4.80	8.00
Wabageshik	106	9197	LTAF	Existing r1	47.3	0.09	529	109	112	194.91	204.82	4.86	9.91
Wabageshik	106	9197	LTAF	Proposed r1	47.3	0.08	564	114	117	194.91	205.14	4.93	10.23
Wabageshik	106	9197	1:2	Existing r1	268	0.37	727	129	132	194.91	206.46	5.64	11.55
Wabageshik	106	9197	1:2	Proposed r1	268	0.37	730	129	132	194.91	206.49	5.66	11.58
Wabageshik	106	9197	1:100	Existing r1	507	0.56	945	172	176	194.91	207.89	5.49	12.98
Wabageshik	106	9197	1:100	Proposed r1	507	0.56	945	172	176	194.91	207.89	5.49	12.98
Wabageshik	106	9197	HWM Flow	Existing r1	75	0.13	563	114	117	194.91	205.13	4.93	10.22
Wabageshik	106	9197	HWM Flow	Proposed r1	75	0.13	583	117	120	194.91	205.30	4.98	10.39
Wabageshik		8975	LTAF	Existing r1	47.3	0.06	810	156	157	196.87	204.82	5.20	7.95
Wabageshik		8975	LTAF	Proposed r1	47.3	0.06	860	160	161	196.87	205.14	5.38	8.27
Wabageshik		8975	1:2	Existing r1	268	0.25	1077	168	169	196.87	206.46	6.43	9.59
Wabageshik		8975	1:2	Proposed r1	268	0.25	1082	168	170	196.87	206.49	6.45	9.62
Wabageshik		8975	1:100	Existing r1	507	0.38	1328	187	189	196.87	207.89	7.11	11.02
Wabageshik		8975	1:100	Proposed r1	507	0.38	1328	187	189	196.87	207.89	7.11	11.02
Wabageshik		8975	HWM Flow	Existing r1	75	0.09	858	160	161	196.87	205.13	5.38	8.26
Wabageshik		8975	HWM Flow	Proposed r1	75	0.08	886	161	163	196.87	205.30	5.49	8.43
Wabageshik	107	8732	LTAF	Existing r1	47.3	0.11	411	88	91	197.01	204.82	4.68	7.81
Wabageshik	107	8732	LTAF	Proposed r1	47.3	0.11	441	96	99	197.01	205.14	4.59	8.13
Wabageshik	107	8732	1:2	Existing r1	268	0.44	605	160	163	197.01	206.45	3.79	9.44
Wabageshik	107	8732	1:2	Proposed r1	268	0.44	609	164	167	197.01	206.48	3.71	9.47
Wabageshik	107	8732	1:100	Existing r1	507	0.62	912	263	266	197.01	207.87	3.47	10.86
Wabageshik	107	8732	1:100	Proposed r1	507	0.62	912	263	266	197.01	207.87	3.47	10.86
Wabageshik	107	8732	HWM Flow	Existing r1	75	0.17	440	96	99	197.01	205.13	4.60	8.12
Wabageshik	107	8732	HWM Flow	Proposed r1	75	0.16	456	100	103	197.01	205.30	4.57	8.29
Wabageshik		8531	LTAF	Existing r1	47.3	0.06	753	277	278	199.83	204.82	2.71	4.99
Wabageshik		8531	LTAF	Proposed r1	47.3	0.06	842	283	284	199.83	205.14	2.97	5.31
Wabageshik		8531	1:2	Existing r1	268	0.22	1225	298	299	199.83	206.46	4.12	6.63
Wabageshik		8531	1:2	Proposed r1	268	0.22	1233	298	299	199.83	206.48	4.14	6.65
Wabageshik		8531	1:100	Existing r1	507	0.31	1654	306	308	199.83	207.88	5.40	8.05
Wabageshik		8531	1:100	Proposed r1	507	0.31	1654	306	308	199.83	207.88	5.40	8.05
Wabageshik		8531	HWM Flow	Existing r1	75	0.09	839	283	284	199.83	205.13	2.96	5.30
Wabageshik		8531	HWM Flow	Proposed r1	75	0.08	888	286	287	199.83	205.30	3.11	5.47
Wabageshik	108	8494	LTAF	Existing r1	47.3	0.05	892	355	357	198.76	204.82	2.51	6.06
Wabageshik	108	8494	LTAF	Proposed r1	47.3	0.05	1006	359	360	198.76	205.14	2.80	6.38

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	108	8494	1:2	Existing r1	268	0.18	1485	370	372	198.76	206.46	4.01	7.70
Wabageshik	108	8494	1:2	Proposed r1	268	0.18	1495	370	372	198.76	206.48	4.04	7.72
Wabageshik	108	8494	1:100	Existing r1	507	0.25	2020	380	382	198.76	207.88	5.31	9.12
Wabageshik	108	8494	1:100	Proposed r1	507	0.25	2020	380	382	198.76	207.88	5.31	9.12
Wabageshik	108	8494	HWM Flow	Existing r1	75	0.07	1002	359	360	198.76	205.13	2.79	6.37
Wabageshik	108	8494	HWM Flow	Proposed r1	75	0.07	1064	360	362	198.76	205.30	2.95	6.54
Wabageshik		6793	LTAF	Existing r1	47.3	0.01	6591	1638	1638	199.47	204.82	4.02	5.35
Wabageshik		6793	LTAF	Proposed r1	47.3	0.01	7118	1662	1661	199.47	205.14	4.28	5.67
Wabageshik		6793	1:2	Existing r1	268	0.03	9318	1707	1680	199.47	206.46	5.46	6.99
Wabageshik		6793	1:2	Proposed r1	268	0.03	9362	1708	1680	199.47	206.48	5.48	7.01
Wabageshik		6793	1:100	Existing r1	507	0.04	11717	1738	1688	199.47	207.88	6.74	8.41
Wabageshik		6793	1:100	Proposed r1	507	0.04	11717	1738	1688	199.47	207.88	6.74	8.41
Wabageshik		6793	HWM Flow	Existing r1	75	0.01	7101	1662	1661	199.47	205.13	4.27	5.66
Wabageshik		6793	HWM Flow	Proposed r1	75	0.01	7386	1666	1663	199.47	205.30	4.43	5.83
Wabageshik	109	6137	LTAF	Existing r1	47.3	0.08	565	132	134	196.80	204.82	4.28	8.02
Wabageshik	109	6137	LTAF	Proposed r1	47.3	0.08	608	142	144	196.80	205.14	4.28	8.34
Wabageshik	109	6137	1:2	Existing r1	268	0.33	803	153	155	196.80	206.45	5.25	9.65
Wabageshik	109	6137	1:2	Proposed r1	268	0.33	807	153	155	196.80	206.48	5.27	9.68
Wabageshik	109	6137	1:100	Existing r1	507	0.50	1026	164	167	196.80	207.87	6.24	11.07
Wabageshik	109	6137	1:100	Proposed r1	507	0.50	1026	164	167	196.80	207.87	6.24	11.07
Wabageshik	109	6137	HWM Flow	Existing r1	75	0.12	607	141	143	196.80	205.13	4.29	8.33
Wabageshik	109	6137	HWM Flow	Proposed r1	75	0.12	632	145	147	196.80	205.30	4.35	8.50
Wabageshik		5329	LTAF	Existing r1	47.3	0.01	5842	1507	1508	199.90	204.82	3.88	4.92
Wabageshik		5329	LTAF	Proposed r1	47.3	0.01	6325	1521	1521	199.90	205.14	4.16	5.24
Wabageshik		5329	1:2	Existing r1	268	0.03	8332	1534	1534	199.90	206.45	5.43	6.55
Wabageshik		5329	1:2	Proposed r1	268	0.03	8371	1534	1534	199.90	206.48	5.46	6.58
Wabageshik		5329	1:100	Existing r1	507	0.05	10518	1547	1548	199.90	207.88	6.80	7.98
Wabageshik		5329	1:100	Proposed r1	507	0.05	10518	1547	1548	199.90	207.88	6.80	7.98
Wabageshik		5329	HWM Flow	Existing r1	75	0.01	6309	1521	1521	199.90	205.13	4.15	5.23
Wabageshik		5329	HWM Flow	Proposed r1	75	0.01	6570	1523	1523	199.90	205.30	4.31	5.40
Wabageshik		4633	LTAF	Existing r1	47.3	0.02	2978	756	756	199.94	204.82	3.94	4.88
Wabageshik		4633	LTAF	Proposed r1	47.3	0.01	3221	765	765	199.94	205.14	4.21	5.20
Wabageshik		4633	1:2	Existing r1	268	0.06	4231	775	776	199.94	206.45	5.46	6.51
Wabageshik		4633	1:2	Proposed r1	268	0.06	4251	775	776	199.94	206.48	5.49	6.54
Wabageshik		4633	1:100	Existing r1	507	0.10	5338	781	783	199.94	207.88	6.83	7.94
Wabageshik		4633	1:100	Proposed r1	507	0.10	5338	781	783	199.94	207.88	6.83	7.94

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		4633	HWM Flow	Existing r1	75	0.02	3213	765	765	199.94	205.13	4.20	5.19
Wabageshik		4633	HWM Flow	Proposed r1	75	0.02	3344	766	766	199.94	205.30	4.36	5.36
Wabageshik		3638	LTAF	Existing r1	47.3	0.03	1713	447	447	199.95	204.82	3.83	4.87
Wabageshik		3638	LTAF	Proposed r1	47.3	0.03	1856	452	452	199.95	205.14	4.11	5.19
Wabageshik		3638	1:2	Existing r1	268	0.11	2455	463	464	199.95	206.45	5.30	6.50
Wabageshik		3638	1:2	Proposed r1	268	0.11	2467	463	464	199.95	206.48	5.32	6.53
Wabageshik		3638	1:100	Existing r1	507	0.16	3120	472	473	199.95	207.87	6.61	7.92
Wabageshik		3638	1:100	Proposed r1	507	0.16	3120	472	473	199.95	207.87	6.61	7.92
Wabageshik		3638	HWM Flow	Existing r1	75	0.04	1851	452	452	199.95	205.13	4.10	5.18
Wabageshik		3638	HWM Flow	Proposed r1	75	0.04	1929	453	453	199.95	205.30	4.26	5.35
Wabageshik		2606	LTAF	Existing r1	47.3	0.02	3131	807	807	199.72	204.82	3.88	5.10
Wabageshik		2606	LTAF	Proposed r1	47.3	0.01	3389	811	812	199.72	205.14	4.18	5.42
Wabageshik		2606	1:2	Existing r1	268	0.06	4460	821	822	199.72	206.45	5.43	6.73
Wabageshik		2606	1:2	Proposed r1	268	0.06	4482	821	822	199.72	206.48	5.46	6.76
Wabageshik		2606	1:100	Existing r1	507	0.09	5632	828	829	199.72	207.87	6.80	8.15
Wabageshik		2606	1:100	Proposed r1	507	0.09	5632	828	829	199.72	207.87	6.80	8.15
Wabageshik		2606	HWM Flow	Existing r1	75	0.02	3380	811	812	199.72	205.13	4.17	5.41
Wabageshik		2606	HWM Flow	Proposed r1	75	0.02	3520	813	813	199.72	205.30	4.33	5.58
Wabageshik		1873	LTAF	Existing r1	47.3	0.03	1692	418	419	199.83	204.82	4.04	4.99
Wabageshik		1873	LTAF	Proposed r1	47.3	0.03	1827	425	426	199.83	205.14	4.29	5.31
Wabageshik		1873	1:2	Existing r1	268	0.11	2390	435	436	199.83	206.45	5.50	6.62
Wabageshik		1873	1:2	Proposed r1	268	0.11	2401	435	436	199.83	206.48	5.52	6.65
Wabageshik		1873	1:100	Existing r1	507	0.17	3014	445	446	199.83	207.87	6.78	8.04
Wabageshik		1873	1:100	Proposed r1	507	0.17	3014	445	446	199.83	207.87	6.78	8.04
Wabageshik		1873	HWM Flow	Existing r1	75	0.04	1822	425	426	199.83	205.13	4.28	5.30
Wabageshik		1873	HWM Flow	Proposed r1	75	0.04	1895	426	427	199.83	205.30	4.45	5.47
Wabageshik		1183	LTAF	Existing r1	47.3	0.03	1741	507	441	199.81	204.82	3.43	5.01
Wabageshik		1183	LTAF	Proposed r1	47.3	0.03	1881	512	442	199.81	205.14	3.68	5.33
Wabageshik		1183	1:2	Existing r1	268	0.11	2462	530	445	199.81	206.45	4.65	6.64
Wabageshik		1183	1:2	Proposed r1	268	0.11	2474	530	445	199.81	206.48	4.67	6.67
Wabageshik		1183	1:100	Existing r1	507	0.16	3095	541	448	199.81	207.87	5.72	8.06
Wabageshik		1183	1:100	Proposed r1	507	0.16	3095	541	448	199.81	207.87	5.72	8.06
Wabageshik		1183	HWM Flow	Existing r1	75	0.04	1877	511	442	199.81	205.13	3.67	5.32
Wabageshik		1183	HWM Flow	Proposed r1	75	0.04	1953	513	443	199.81	205.30	3.81	5.49
Wabageshik	-4	1112	LTAF	Existing r1	47.3	0.15	309	98	99	200.00	204.82	3.15	4.82

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	-4	1112	LTAF	Proposed r1	47.3	0.14	341	101	102	200.00	205.14	3.38	5.14
Wabageshik	-4	1112	1:2	Existing r1	268	0.56	477	111	112	200.00	206.43	4.31	6.43
Wabageshik	-4	1112	1:2	Proposed r1	268	0.56	480	111	112	200.00	206.46	4.32	6.46
Wabageshik	-4	1112	1:100	Existing r1	507	0.80	639	119	121	200.00	207.83	5.36	7.83
Wabageshik	-4	1112	1:100	Proposed r1	507	0.80	639	119	121	200.00	207.83	5.36	7.83
Wabageshik	-4	1112	HWM Flow	Existing r1	75	0.22	340	101	101	200.00	205.13	3.37	5.13
Wabageshik	-4	1112	HWM Flow	Proposed r1	75	0.21	357	102	103	200.00	205.30	3.50	5.30
Wabageshik		1058	LTAF	Existing r1	47.3	0.94	50	68	69	203.89	204.77	0.73	0.88
Wabageshik		1058	LTAF	Proposed r1	47.3	0.63	75	76	76	203.89	205.12	0.99	1.23
Wabageshik		1058	1:2	Existing r1	268	1.55	173	87	88	203.89	206.31	1.98	2.42
Wabageshik		1058	1:2	Proposed r1	268	1.52	176	88	88	203.89	206.34	2.01	2.45
Wabageshik		1058	1:100	Existing r1	507	1.72	300	95	96	203.89	207.70	3.15	3.81
Wabageshik		1058	1:100	Proposed r1	507	1.72	300	95	96	203.89	207.70	3.15	3.81
Wabageshik		1058	HWM Flow	Existing r1	75	1.05	71	76	76	203.89	205.07	0.95	1.18
Wabageshik		1058	HWM Flow	Proposed r1	75	0.87	86	78	78	203.89	205.26	1.11	1.37
Wabageshik		1008	LTAF	Existing r1	47.3	1.09	43	53	53	203.57	204.64	0.82	1.07
Wabageshik		1008	LTAF	Proposed r1	47.3	0.70	68	60	60	203.57	205.08	1.13	1.51
Wabageshik		1008	1:2	Existing r1	268	1.96	137	70	70	203.57	206.14	1.96	2.57
Wabageshik		1008	1:2	Proposed r1	268	1.92	140	70	71	203.57	206.18	1.99	2.61
Wabageshik		1008	1:100	Existing r1	507	2.15	244	80	81	203.57	207.55	3.04	3.98
Wabageshik		1008	1:100	Proposed r1	507	2.15	244	80	81	203.57	207.55	3.04	3.98
Wabageshik		1008	HWM Flow	Existing r1	75	1.26	59	57	57	203.57	204.94	1.04	1.37
Wabageshik		1008	HWM Flow	Proposed r1	75	1.01	74	62	62	203.57	205.19	1.21	1.62
Wabageshik	110	988	LTAF	Existing r1	47.3	1.07	44	47	51	202.51	204.58	0.94	2.07
Wabageshik	110	988	LTAF	Proposed r1	47.3	0.68	69	56	62	202.51	205.07	1.23	2.56
Wabageshik	110	988	1:2	Existing r1	268	2.06	130	68	78	202.51	206.04	1.91	3.53
Wabageshik	110	988	1:2	Proposed r1	268	2.01	133	69	78	202.51	206.09	1.95	3.58
Wabageshik	110	988	1:100	Existing r1	507	2.15	239	77	89	202.51	207.51	3.09	5.00
Wabageshik	110	988	1:100	Proposed r1	507	2.15	239	77	89	202.51	207.51	3.09	5.00
Wabageshik	110	988	HWM Flow	Existing r1	75	1.28	58	53	58	202.51	204.87	1.10	2.36
Wabageshik	110	988	HWM Flow	Proposed r1	75	1.01	74	57	64	202.51	205.15	1.30	2.64
Wabageshik		973	LTAF	Existing r1	47.3	2.36	20	36	36	203.53	204.24	0.56	0.71
Wabageshik		973	LTAF	Proposed r1	47.3	0.83	57	55	56	203.53	205.04	1.04	1.51
Wabageshik		973	1:2	Existing r1	268	2.63	102	62	64	203.53	205.81	1.63	2.28
Wabageshik		973	1:2	Proposed r1	268	2.51	107	63	64	203.53	205.89	1.70	2.36
Wabageshik		973	1:100	Existing r1	507	2.32	219	75	78	203.53	207.43	2.92	3.90

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		973	1:100	Proposed r1	507	2.32	219	75	78	203.53	207.43	2.92	3.90
Wabageshik		973	HWM Flow	Existing r1	75	2.67	28	39	40	203.53	204.46	0.72	0.93
Wabageshik		973	HWM Flow	Proposed r1	75	1.25	60	55	56	203.53	205.09	1.09	1.56
Wabageshik	-3	955	LTAF	Existing r1	47.3	1.11	43	50	50	202.93	204.21	0.85	1.28
Wabageshik	-3	955	LTAF	Proposed r1	47.3	0.52	91	68	69	202.93	205.04	1.34	2.11
Wabageshik	-3	955	1:2	Existing r1	268	1.82	148	71	73	202.93	205.86	2.08	2.93
Wabageshik	-3	955	1:2	Proposed r1	268	1.75	153	71	73	202.93	205.94	2.15	3.01
Wabageshik	-3	955	1:100	Existing r1	507	1.95	263	75	78	202.93	207.45	3.52	4.52
Wabageshik	-3	955	1:100	Proposed r1	507	1.95	263	75	78	202.93	207.45	3.52	4.52
Wabageshik	-3	955	HWM Flow	Existing r1	75	1.35	56	52	53	202.93	204.46	1.07	1.53
Wabageshik	-3	955	HWM Flow	Proposed r1	75	0.79	95	68	70	202.93	205.10	1.39	2.17
Wabageshik		900	LTAF	Existing r1	47.3	2.20	21	44	45	202.91	203.63	0.48	0.72
Wabageshik		900	LTAF	Proposed r1	47.3	0.52	91	55	56	202.91	205.02	1.66	2.11
Wabageshik		900	1:2	Existing r1	268	2.14	125	57	58	202.91	205.63	2.20	2.72
Wabageshik		900	1:2	Proposed r1	268	2.04	131	57	59	202.91	205.73	2.29	2.82
Wabageshik		900	1:100	Existing r1	507	2.31	223	62	64	202.91	207.27	3.61	4.36
Wabageshik		900	1:100	Proposed r1	507	2.31	223	62	64	202.91	207.27	3.61	4.36
Wabageshik		900	HWM Flow	Existing r1	75	2.54	29	45	46	202.91	203.81	0.65	0.90
Wabageshik		900	HWM Flow	Proposed r1	75	0.81	93	55	56	202.91	205.06	1.69	2.15
Wabageshik	-2	801	LTAF	Existing r1	47.3	1.46	32	17	24	197.72	203.08	1.87	5.36
Wabageshik	-2	801	LTAF	Proposed r1	47.3	0.61	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	1:2	Existing r1	268	4.50	59	25	32	197.72	204.33	2.36	6.61
Wabageshik	-2	801	1:2	Proposed r1	268	3.41	79	28	36	197.72	205.06	2.82	7.34
Wabageshik	-2	801	1:100	Existing r1	507	5.71	90	30	38	197.72	205.45	3.01	7.73
Wabageshik	-2	801	1:100	Proposed r1	507	5.71	90	30	38	197.72	205.45	3.01	7.73
Wabageshik	-2	801	HWM Flow	Existing r1	75	2.00	37	19	25	197.72	203.37	2.01	5.65
Wabageshik	-2	801	HWM Flow	Proposed r1	75	0.97	77	28	35	197.72	205.01	2.79	7.29
Wabageshik	-1	637	LTAF	Existing r1	47.3	1.05	45	65	65	201.61	202.86	0.69	1.25
Wabageshik	-1	637	LTAF	Proposed r1	47.3	0.23	205	87	89	201.61	205.01	2.35	3.40
Wabageshik	-1	637	1:2	Existing r1	268	1.80	149	77	78	201.61	204.30	1.92	2.69
Wabageshik	-1	637	1:2	Proposed r1	268	1.21	224	93	94	201.61	205.22	2.42	3.61
Wabageshik	-1	637	1:100	Existing r1	507	2.17	239	96	97	201.61	205.37	2.49	3.76
Wabageshik	-1	637	1:100	Proposed r1	507	1.92	276	100	102	201.61	205.75	2.75	4.14
Wabageshik	-1	637	HWM Flow	Existing r1	75	1.22	61	68	68	201.61	203.10	0.91	1.49
Wabageshik	-1	637	HWM Flow	Proposed r1	75	0.37	206	88	89	201.61	205.02	2.35	3.41

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		495	LTAF	Existing r1	47.3	2.51	19	30	30	200.68	201.50	0.63	0.82
Wabageshik		495	LTAF	Proposed r1	47.3	0.30	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	1:2	Existing r1	268	4.02	67	41	42	200.68	202.77	1.62	2.09
Wabageshik		495	1:2	Proposed r1	268	1.69	166	47	49	200.68	205.02	3.53	4.34
Wabageshik		495	1:100	Existing r1	507	4.32	120	44	46	200.68	204.01	2.70	3.33
Wabageshik		495	1:100	Proposed r1	507	3.11	171	47	50	200.68	205.12	3.59	4.44
Wabageshik		495	HWM Flow	Existing r1	75	2.79	27	34	34	200.68	201.75	0.79	1.07
Wabageshik		495	HWM Flow	Proposed r1	75	0.47	165	47	49	200.68	205.00	3.51	4.32
Wabageshik	0	400	LTAF	Existing r1	47.3	1.12	42	18	20	197.00	200.20	2.30	3.20
Wabageshik	0	400	LTAF	Proposed r1	47.3	0.31	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	1:2	Existing r1	268	3.64	74	23	26	197.00	201.73	3.21	4.73
Wabageshik	0	400	1:2	Proposed r1	268	1.78	159	32	37	197.00	204.95	5.00	7.95
Wabageshik	0	400	1:100	Existing r1	507	5.84	87	24	28	197.00	202.29	3.57	5.29
Wabageshik	0	400	1:100	Proposed r1	507	3.44	154	31	36	197.00	204.80	5.03	7.80
Wabageshik	0	400	HWM Flow	Existing r1	75	1.55	48	19	21	197.00	200.53	2.50	3.53
Wabageshik	0	400	HWM Flow	Proposed r1	75	0.49	160	32	37	197.00	205.00	4.99	8.00
Wabageshik		342	LTAF	Existing r1	47.3	2.51	19	30	30	199.05	199.82	0.63	0.77
Wabageshik		342	LTAF	Proposed r1	47.3	0.20	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	1:2	Existing r1	268	3.98	67	42	42	199.05	201.16	1.61	2.11
Wabageshik		342	1:2	Proposed r1	268	1.12	261	56	59	199.05	205.00	4.64	5.95
Wabageshik		342	1:100	Existing r1	507	4.83	106	47	48	199.05	202.02	2.25	2.97
Wabageshik		342	1:100	Proposed r1	507	2.11	260	56	59	199.05	204.99	4.64	5.94
Wabageshik		342	HWM Flow	Existing r1	75	2.82	27	33	33	199.05	200.06	0.80	1.01
Wabageshik		342	HWM Flow	Proposed r1	75	0.31	261	56	59	199.05	205.00	4.65	5.95
Wabageshik	1	255	LTAF	Existing r1	47.3	0.70	68	34	37	196.78	199.59	1.98	2.81
Wabageshik	1	255	LTAF	Proposed r1	47.3	0.16	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	1:2	Existing r1	268	2.24	120	42	46	196.78	200.94	2.86	4.16
Wabageshik	1	255	1:2	Proposed r1	268	0.91	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	1:100	Existing r1	507	3.03	168	45	50	196.78	202.06	3.72	5.28
Wabageshik	1	255	1:100	Proposed r1	507	1.71	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	HWM Flow	Existing r1	75	0.98	76	35	38	196.78	199.82	2.17	3.04
Wabageshik	1	255	HWM Flow	Proposed r1	75	0.25	314	54	61	196.78	205.00	5.82	8.22
Wabageshik		172	LTAF	Existing r1	47.3	0.23	203	96	96	196.75	199.60	2.12	2.85
Wabageshik		172	LTAF	Proposed r1	47.3	0.23	203	96	96	196.75	199.60	2.12	2.85
Wabageshik		172	1:2	Existing r1	268	0.75	356	109	109	196.75	201.07	3.28	4.32
Wabageshik		172	1:2	Proposed r1	268	0.75	356	109	109	196.75	201.07	3.28	4.32

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		172	1:100	Existing r1	507	1.03	494	113	115	196.75	202.31	4.37	5.56
Wabageshik		172	1:100	Proposed r1	507	1.03	494	113	115	196.75	202.31	4.37	5.56
Wabageshik		172	HWM Flow	Existing r1	75	0.33	228	100	101	196.75	199.84	2.27	3.09
Wabageshik		172	HWM Flow	Proposed r1	75	0.33	228	100	101	196.75	199.84	2.27	3.09
Wabageshik		91	LTAF	Existing r1	47.3	0.43	110	91	91	197.32	199.59	1.22	2.27
Wabageshik		91	LTAF	Proposed r1	47.3	0.43	110	91	91	197.32	199.59	1.22	2.27
Wabageshik		91	1:2	Existing r1	268	1.05	256	110	111	197.32	201.02	2.33	3.70
Wabageshik		91	1:2	Proposed r1	268	1.05	256	110	111	197.32	201.02	2.33	3.70
Wabageshik		91	1:100	Existing r1	507	1.30	398	123	124	197.32	202.26	3.24	4.94
Wabageshik		91	1:100	Proposed r1	507	1.30	398	123	124	197.32	202.26	3.24	4.94
Wabageshik		91	HWM Flow	Existing r1	75	0.57	133	94	94	197.32	199.82	1.41	2.50
Wabageshik		91	HWM Flow	Proposed r1	75	0.57	133	94	94	197.32	199.82	1.41	2.50
Wabageshik		35	LTAF	Existing r1	47.3	2.14	22	48	48	198.67	199.31	0.46	0.64
Wabageshik		35	LTAF	Proposed r1	47.3	2.14	22	48	48	198.67	199.31	0.46	0.64
Wabageshik		35	1:2	Existing r1	268	2.08	129	85	85	198.67	200.79	1.52	2.12
Wabageshik		35	1:2	Proposed r1	268	2.08	129	85	85	198.67	200.79	1.52	2.12
Wabageshik		35	1:100	Existing r1	507	2.11	260	118	118	198.67	202.07	2.21	3.40
Wabageshik		35	1:100	Proposed r1	507	2.11	260	118	118	198.67	202.07	2.21	3.40
Wabageshik		35	HWM Flow	Existing r1	75	2.31	32	60	60	198.67	199.50	0.54	0.83
Wabageshik		35	HWM Flow	Proposed r1	75	2.31	32	60	60	198.67	199.50	0.54	0.83
Wabageshik	2	0	LTAF	Existing r1	47.3	1.11	43	28	29	196.51	199.03	1.50	2.52
Wabageshik	2	0	LTAF	Proposed r1	47.3	1.11	43	28	29	196.51	199.03	1.50	2.52
Wabageshik	2	0	1:2	Existing r1	268	2.03	132	85	86	196.51	200.69	1.55	4.18
Wabageshik	2	0	1:2	Proposed r1	268	2.03	132	85	86	196.51	200.69	1.55	4.18
Wabageshik	2	0	1:100	Existing r1	507	1.93	285	122	123	196.51	202.05	2.34	5.54
Wabageshik	2	0	1:100	Proposed r1	507	1.93	285	122	123	196.51	202.05	2.34	5.54
Wabageshik	2	0	HWM Flow	Existing r1	75	1.42	53	35	36	196.51	199.37	1.50	2.86
Wabageshik	2	0	HWM Flow	Proposed r1	75	1.42	53	35	36	196.51	199.37	1.50	2.86
Wabageshik		-14	LTAF	Existing r1	47.3	2.59	18	27	27	197.83	198.69	0.67	0.86
Wabageshik		-14	LTAF	Proposed r1	47.3	2.59	18	27	27	197.83	198.69	0.67	0.86
Wabageshik		-14	1:2	Existing r1	268	3.43	78	67	67	197.83	200.18	1.17	2.35
Wabageshik		-14	1:2	Proposed r1	268	3.43	78	67	67	197.83	200.18	1.17	2.35
Wabageshik		-14	1:100	Existing r1	507	2.22	275	127	128	197.83	201.97	2.17	4.14
Wabageshik		-14	1:100	Proposed r1	507	2.22	275	127	128	197.83	201.97	2.17	4.14
Wabageshik		-14	HWM Flow	Existing r1	75	2.91	26	30	30	197.83	198.95	0.85	1.12
Wabageshik		-14	HWM Flow	Proposed r1	75	2.91	26	30	30	197.83	198.95	0.85	1.12

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	111	-40	LTAF	Existing r1	47.3	0.09	555	280	281	194.78	198.77	1.98	3.99
Wabageshik	111	-40	LTAF	Proposed r1	47.3	0.09	555	280	281	194.78	198.77	1.98	3.99
Wabageshik	111	-40	1:2	Existing r1	268	0.23	1177	398	400	194.78	200.52	2.96	5.74
Wabageshik	111	-40	1:2	Proposed r1	268	0.23	1177	398	400	194.78	200.52	2.96	5.74
Wabageshik	111	-40	1:100	Existing r1	507	0.28	1826	408	411	194.78	202.13	4.47	7.35
Wabageshik	111	-40	1:100	Proposed r1	507	0.28	1826	408	411	194.78	202.13	4.47	7.35
Wabageshik	111	-40	HWM Flow	Existing r1	75	0.12	651	307	309	194.78	199.11	2.12	4.33
Wabageshik	111	-40	HWM Flow	Proposed r1	75	0.12	651	307	309	194.78	199.11	2.12	4.33
Wabageshik	112	-105	LTAF	Existing r1	47.3	0.04	1163	376	379	193.80	198.77	3.09	4.97
Wabageshik	112	-105	LTAF	Proposed r1	47.3	0.04	1163	376	379	193.80	198.77	3.09	4.97
Wabageshik	112	-105	1:2	Existing r1	268	0.15	1829	384	387	193.80	200.53	4.77	6.73
Wabageshik	112	-105	1:2	Proposed r1	268	0.15	1829	384	387	193.80	200.53	4.77	6.73
Wabageshik	112	-105	1:100	Existing r1	507	0.21	2458	401	405	193.80	202.13	6.13	8.33
Wabageshik	112	-105	1:100	Proposed r1	507	0.21	2458	401	405	193.80	202.13	6.13	8.33
Wabageshik	112	-105	HWM Flow	Existing r1	75	0.06	1289	377	380	193.80	199.11	3.41	5.31
Wabageshik	112	-105	HWM Flow	Proposed r1	75	0.06	1289	377	380	193.80	199.11	3.41	5.31
Wabageshik	113	-219	LTAF	Existing r1	47.3	0.05	864	299	301	193.42	198.77	2.89	5.35
Wabageshik	113	-219	LTAF	Proposed r1	47.3	0.05	864	299	301	193.42	198.77	2.89	5.35
Wabageshik	113	-219	1:2	Existing r1	268	0.19	1402	318	321	193.42	200.52	4.41	7.10
Wabageshik	113	-219	1:2	Proposed r1	268	0.19	1402	318	321	193.42	200.52	4.41	7.10
Wabageshik	113	-219	1:100	Existing r1	507	0.26	1935	344	347	193.42	202.13	5.62	8.71
Wabageshik	113	-219	1:100	Proposed r1	507	0.26	1935	344	347	193.42	202.13	5.62	8.71
Wabageshik	113	-219	HWM Flow	Existing r1	75	0.08	964	302	304	193.42	199.11	3.19	5.69
Wabageshik	113	-219	HWM Flow	Proposed r1	75	0.08	964	302	304	193.42	199.11	3.19	5.69
Wabageshik	114	-462	LTAF	Existing r1	47.3	0.04	1151	428	430	193.16	198.77	2.69	5.61
Wabageshik	114	-462	LTAF	Proposed r1	47.3	0.04	1151	428	430	193.16	198.77	2.69	5.61
Wabageshik	114	-462	1:2	Existing r1	268	0.14	1914	446	449	193.16	200.52	4.29	7.36
Wabageshik	114	-462	1:2	Proposed r1	268	0.14	1914	446	449	193.16	200.52	4.29	7.36
Wabageshik	114	-462	1:100	Existing r1	507	0.19	2688	503	506	193.16	202.13	5.34	8.97
Wabageshik	114	-462	1:100	Proposed r1	507	0.19	2688	503	506	193.16	202.13	5.34	8.97
Wabageshik	114	-462	HWM Flow	Existing r1	75	0.06	1294	430	432	193.16	199.11	3.01	5.95
Wabageshik	114	-462	HWM Flow	Proposed r1	75	0.06	1294	430	432	193.16	199.11	3.01	5.95
Wabageshik	115	-798	LTAF	Existing r1	47.3	0.13	368	141	142	193.93	198.77	2.61	4.84
Wabageshik	115	-798	LTAF	Proposed r1	47.3	0.13	368	141	142	193.93	198.77	2.61	4.84
Wabageshik	115	-798	1:2	Existing r1	268	0.41	661	426	224	193.93	200.51	1.55	6.58

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	115	-798	1:2	Proposed r1	268	0.41	661	426	224	193.93	200.51	1.55	6.58
Wabageshik	115	-798	1:100	Existing r1	507	0.50	1022	569	234	193.93	202.12	1.80	8.19
Wabageshik	115	-798	1:100	Proposed r1	507	0.50	1022	569	234	193.93	202.12	1.80	8.19
Wabageshik	115	-798	HWM Flow	Existing r1	75	0.18	415	163	145	193.93	199.10	2.55	5.17
Wabageshik	115	-798	HWM Flow	Proposed r1	75	0.18	415	163	145	193.93	199.10	2.55	5.17
Wabageshik	116	-1452	LTAF	Existing r1	47.3	0.13	368	102	104	194.01	198.77	3.62	4.76
Wabageshik	116	-1452	LTAF	Proposed r1	47.3	0.13	368	102	104	194.01	198.77	3.62	4.76
Wabageshik	116	-1452	1:2	Existing r1	268	0.49	545	104	109	194.01	200.48	5.26	6.47
Wabageshik	116	-1452	1:2	Proposed r1	268	0.49	545	104	109	194.01	200.48	5.26	6.47
Wabageshik	116	-1452	1:100	Existing r1	507	0.71	710	104	112	194.01	202.07	6.85	8.06
Wabageshik	116	-1452	1:100	Proposed r1	507	0.71	710	104	112	194.01	202.07	6.85	8.06
Wabageshik	116	-1452	HWM Flow	Existing r1	75	0.19	402	103	106	194.01	199.10	3.89	5.09
Wabageshik	116	-1452	HWM Flow	Proposed r1	75	0.19	402	103	106	194.01	199.10	3.89	5.09
Wabageshik	117	-2478	LTAF	Existing r1	47.3	0.47	100	44	46	195.27	198.75	2.27	3.48
Wabageshik	117	-2478	LTAF	Proposed r1	47.3	0.47	100	44	46	195.27	198.75	2.27	3.48
Wabageshik	117	-2478	1:2	Existing r1	268	1.51	178	58	60	195.27	200.27	3.04	5.00
Wabageshik	117	-2478	1:2	Proposed r1	268	1.51	178	58	60	195.27	200.27	3.04	5.00
Wabageshik	117	-2478	1:100	Existing r1	507	1.90	267	60	65	195.27	201.77	4.43	6.50
Wabageshik	117	-2478	1:100	Proposed r1	507	1.90	267	60	65	195.27	201.77	4.43	6.50
Wabageshik	117	-2478	HWM Flow	Existing r1	75	0.66	114	46	48	195.27	199.06	2.46	3.79
Wabageshik	117	-2478	HWM Flow	Proposed r1	75	0.66	114	46	48	195.27	199.06	2.46	3.79
Wabageshik		-3261	LTAF	Existing r1	47.3	0.16	297	72	74	193.01	198.74	4.15	5.73
Wabageshik		-3261	LTAF	Proposed r1	47.3	0.16	297	72	74	193.01	198.74	4.15	5.73
Wabageshik		-3261	1:2	Existing r1	268	0.66	405	73	78	193.01	200.23	5.56	7.22
Wabageshik		-3261	1:2	Proposed r1	268	0.66	405	73	78	193.01	200.23	5.56	7.22
Wabageshik		-3261	1:100	Existing r1	507	0.99	512	73	81	193.01	201.69	7.02	8.68
Wabageshik		-3261	1:100	Proposed r1	507	0.99	512	73	81	193.01	201.69	7.02	8.68
Wabageshik		-3261	HWM Flow	Existing r1	75	0.24	319	72	75	193.01	199.05	4.44	6.04
Wabageshik		-3261	HWM Flow	Proposed r1	75	0.24	319	72	75	193.01	199.05	4.44	6.04
Wabageshik	118	-3343	LTAF	Existing r1	47.3	0.17	283	71	73	193.21	198.74	4.00	5.53
Wabageshik	118	-3343	LTAF	Proposed r1	47.3	0.17	283	71	73	193.21	198.74	4.00	5.53
Wabageshik	118	-3343	1:2	Existing r1	268	0.69	390	73	77	193.21	200.22	5.35	7.01
Wabageshik	118	-3343	1:2	Proposed r1	268	0.69	390	73	77	193.21	200.22	5.35	7.01
Wabageshik	118	-3343	1:100	Existing r1	507	1.02	496	73	80	193.21	201.68	6.81	8.47
Wabageshik	118	-3343	1:100	Proposed r1	507	1.02	496	73	80	193.21	201.68	6.81	8.47
Wabageshik	118	-3343	HWM Flow	Existing r1	75	0.25	305	72	75	193.21	199.05	4.25	5.84

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	118	-3343	HWM Flow	Proposed r1	75	0.25	305	72	75	193.21	199.05	4.25	5.84
Wabageshik		-3460	LTAF	Existing r1	47.3	0.17	283	71	73	193.21	198.74	4.00	5.53
Wabageshik		-3460	LTAF	Proposed r1	47.3	0.17	283	71	73	193.21	198.74	4.00	5.53
Wabageshik		-3460	1:2	Existing r1	268	0.69	389	73	77	193.21	200.22	5.34	7.01
Wabageshik		-3460	1:2	Proposed r1	268	0.69	389	73	77	193.21	200.22	5.34	7.01
Wabageshik		-3460	1:100	Existing r1	507	1.02	495	73	80	193.21	201.67	6.80	8.46
Wabageshik		-3460	1:100	Proposed r1	507	1.02	495	73	80	193.21	201.67	6.80	8.46
Wabageshik		-3460	HWM Flow	Existing r1	75	0.25	305	72	75	193.21	199.05	4.25	5.84
Wabageshik		-3460	HWM Flow	Proposed r1	75	0.25	305	72	75	193.21	199.05	4.25	5.84
Wabageshik	119	-3469	LTAF	Existing r1	47.3	1.67	28	40	41	197.43	198.59	0.72	1.16
Wabageshik	119	-3469	LTAF	Proposed r1	47.3	1.67	28	40	41	197.43	198.59	0.72	1.16
Wabageshik	119	-3469	1:2	Existing r1	268	2.51	107	76	80	197.43	199.89	1.40	2.46
Wabageshik	119	-3469	1:2	Proposed r1	268	2.51	107	76	80	197.43	199.89	1.40	2.46
Wabageshik	119	-3469	1:100	Existing r1	507	2.06	246	92	99	197.43	201.49	2.67	4.06
Wabageshik	119	-3469	1:100	Proposed r1	507	2.06	246	92	99	197.43	201.49	2.67	4.06
Wabageshik	119	-3469	HWM Flow	Existing r1	75	1.90	39	47	49	197.43	198.85	0.84	1.42
Wabageshik	119	-3469	HWM Flow	Proposed r1	75	1.90	39	47	49	197.43	198.85	0.84	1.42
Wabageshik		-3490	LTAF	Existing r1	47.3	2.40	20	34	35	197.28	198.20	0.58	0.92
Wabageshik		-3490	LTAF	Proposed r1	47.3	2.40	20	34	35	197.28	198.20	0.58	0.92
Wabageshik		-3490	1:2	Existing r1	268	2.48	108	77	81	197.28	199.75	1.40	2.47
Wabageshik		-3490	1:2	Proposed r1	268	2.48	108	77	81	197.28	199.75	1.40	2.47
Wabageshik		-3490	1:100	Existing r1	507	1.97	257	92	99	197.28	201.46	2.79	4.18
Wabageshik		-3490	1:100	Proposed r1	507	1.97	257	92	99	197.28	201.46	2.79	4.18
Wabageshik		-3490	HWM Flow	Existing r1	75	2.66	28	40	41	197.28	198.43	0.71	1.15
Wabageshik		-3490	HWM Flow	Proposed r1	75	2.66	28	40	41	197.28	198.43	0.71	1.15
Wabageshik	120	-3539	LTAF	Existing r1	47.3	0.81	59	38	39	195.96	198.07	1.56	2.11
Wabageshik	120	-3539	LTAF	Proposed r1	47.3	0.81	59	38	39	195.96	198.07	1.56	2.11
Wabageshik	120	-3539	1:2	Existing r1	268	2.29	117	41	44	195.96	199.56	2.88	3.60
Wabageshik	120	-3539	1:2	Proposed r1	268	2.29	117	41	44	195.96	199.56	2.88	3.60
Wabageshik	120	-3539	1:100	Existing r1	507	2.81	181	41	47	195.96	201.12	4.44	5.16
Wabageshik	120	-3539	1:100	Proposed r1	507	2.81	181	41	47	195.96	201.12	4.44	5.16
Wabageshik	120	-3539	HWM Flow	Existing r1	75	1.20	63	38	40	195.96	198.18	1.65	2.22
Wabageshik	120	-3539	HWM Flow	Proposed r1	75	1.20	63	38	40	195.96	198.18	1.65	2.22
Wabageshik		-3580	LTAF	Existing r1	47.3	0.86	55	37	39	196.01	198.03	1.48	2.02
Wabageshik		-3580	LTAF	Proposed r1	47.3	0.86	55	37	39	196.01	198.03	1.48	2.02

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		-3580	1:2	Existing r1	268	2.50	107	41	44	196.01	199.37	2.65	3.36
Wabageshik		-3580	1:2	Proposed r1	268	2.50	107	41	44	196.01	199.37	2.65	3.36
Wabageshik		-3580	1:100	Existing r1	507	2.95	172	41	47	196.01	200.95	4.22	4.94
Wabageshik		-3580	1:100	Proposed r1	507	2.95	172	41	47	196.01	200.95	4.22	4.94
Wabageshik		-3580	HWM Flow	Existing r1	75	1.31	57	38	39	196.01	198.09	1.53	2.08
Wabageshik		-3580	HWM Flow	Proposed r1	75	1.31	57	38	39	196.01	198.09	1.53	2.08
Wabageshik	121	-3625	LTAF	Existing r1	47.3	0.90	53	26	28	194.72	197.99	2.06	3.27
Wabageshik	121	-3625	LTAF	Proposed r1	47.3	0.90	53	26	28	194.72	197.99	2.06	3.27
Wabageshik	121	-3625	1:2	Existing r1	268	4.67	57	26	29	194.72	198.18	2.20	3.46
Wabageshik	121	-3625	1:2	Proposed r1	268	4.67	57	26	29	194.72	198.18	2.20	3.46
Wabageshik	121	-3625	1:100	Existing r1	507	5.69	90	28	33	194.72	199.36	3.19	4.64
Wabageshik	121	-3625	1:100	Proposed r1	507	5.69	90	28	33	194.72	199.36	3.19	4.64
Wabageshik	121	-3625	HWM Flow	Existing r1	75	1.43	52	26	28	194.72	197.98	2.05	3.26
Wabageshik	121	-3625	HWM Flow	Proposed r1	75	1.43	52	26	28	194.72	197.98	2.05	3.26
Wabageshik	122	-3730	LTAF	Existing r1	47.3	0.39	120	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	LTAF	Proposed r1	47.3	0.39	120	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	1:2	Existing r1	268	2.31	116	42	46	192.92	197.89	2.75	4.97
Wabageshik	122	-3730	1:2	Proposed r1	268	2.31	116	42	46	192.92	197.89	2.75	4.97
Wabageshik	122	-3730	1:100	Existing r1	507	6.03	84	36	40	192.92	197.07	2.31	4.15
Wabageshik	122	-3730	1:100	Proposed r1	507	6.03	84	36	40	192.92	197.07	2.31	4.15
Wabageshik	122	-3730	HWM Flow	Existing r1	75	0.62	120	42	46	192.92	197.99	2.83	5.07
Wabageshik	122	-3730	HWM Flow	Proposed r1	75	0.62	120	42	46	192.92	197.99	2.83	5.07
Wabageshik	123	-3815	LTAF	Existing r1	47.3	0.21	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	LTAF	Proposed r1	47.3	0.21	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	1:2	Existing r1	268	1.20	222	63	69	191.43	197.95	3.52	6.52
Wabageshik	123	-3815	1:2	Proposed r1	268	1.20	222	63	69	191.43	197.95	3.52	6.52
Wabageshik	123	-3815	1:100	Existing r1	507	2.37	214	63	69	191.43	197.82	3.39	6.39
Wabageshik	123	-3815	1:100	Proposed r1	507	2.37	214	63	69	191.43	197.82	3.39	6.39
Wabageshik	123	-3815	HWM Flow	Existing r1	75	0.33	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	HWM Flow	Proposed r1	75	0.33	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	124	-3878	LTAF	Existing r1	47.3	0.09	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	LTAF	Proposed r1	47.3	0.09	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	1:2	Existing r1	268	0.51	530	83	90	189.06	197.99	6.37	8.93
Wabageshik	124	-3878	1:2	Proposed r1	268	0.51	530	83	90	189.06	197.99	6.37	8.93
Wabageshik	124	-3878	1:100	Existing r1	507	0.96	529	83	90	189.06	197.97	6.35	8.91
Wabageshik	124	-3878	1:100	Proposed r1	507	0.96	529	83	90	189.06	197.97	6.35	8.91

Reach	BPR Sta	River Sta	Profile	Plan	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
					(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	124	-3878	HWM Flow	Existing r1	75	0.14	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	HWM Flow	Proposed r1	75	0.14	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	125	-3927	LTAF	Existing r1	47.3	0.05	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	LTAF	Proposed r1	47.3	0.05	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	1:2	Existing r1	268	0.26	1028	125	134	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	1:2	Proposed r1	268	0.26	1028	125	134	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	1:100	Existing r1	507	0.49	1028	125	134	187.07	197.99	8.22	10.92
Wabageshik	125	-3927	1:100	Proposed r1	507	0.49	1028	125	134	187.07	197.99	8.22	10.92
Wabageshik	125	-3927	HWM Flow	Existing r1	75	0.07	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	HWM Flow	Proposed r1	75	0.07	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	126	-3997		Existing r1	47.3	0.02	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997		Proposed r1	47.3	0.02	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997		Existing r1	268	0.11	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997		Proposed r1	268	0.11	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997		Existing r1	507	0.22	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997		Proposed r1	507	0.22	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997		Existing r1	75	0.03	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997		Proposed r1	75	0.03	2354	362	373	186.58	198.00	6.50	11.42

Table A-3: HEC-RAS Results Bypass Channel – Low Flows

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	1	255	1.0 cms	1	0.02	40	32	34	196.78	198.76	1.25	1.98
Wabageshik	1	255	2.0 cms	2	0.05	42	32	34	196.78	198.81	1.29	2.03
Wabageshik	1	255	3.0 cms	3	0.07	43	33	35	196.78	198.85	1.33	2.07
Wabageshik	1	255	5.0 cms	5	0.11	45	33	35	196.78	198.92	1.38	2.14
Wabageshik	1	255	10.0 cms	10	0.20	50	33	36	196.78	199.05	1.49	2.27
Wabageshik	1	255	15.0 cms	15	0.28	53	34	36	196.78	199.15	1.58	2.37
Wabageshik	1	255	19.2 cms	19.2	0.34	56	34	36	196.78	199.23	1.65	2.45
Wabageshik	1	255	30.0 cms	30	0.49	61	34	37	196.78	199.39	1.80	2.61
Wabageshik	1	255	41.6 cms	41.6	0.63	66	34	37	196.78	199.53	1.92	2.75
Wabageshik	1	255	47.3 cms	47.3	0.70	68	34	37	196.78	199.59	1.98	2.81
Wabageshik	1	255	64.0 cms	64	0.87	73	35	38	196.78	199.74	2.10	2.96
Wabageshik		172	1.0 cms	1	0.01	129	81	82	196.75	198.76	1.59	2.01
Wabageshik		172	2.0 cms	2	0.01	133	82	83	196.75	198.81	1.62	2.06
Wabageshik		172	3.0 cms	3	0.02	137	83	83	196.75	198.85	1.65	2.10
Wabageshik		172	5.0 cms	5	0.04	143	84	84	196.75	198.92	1.69	2.17
Wabageshik		172	10.0 cms	10	0.07	154	86	87	196.75	199.05	1.78	2.30
Wabageshik		172	15.0 cms	15	0.09	163	88	89	196.75	199.16	1.85	2.41
Wabageshik		172	19.2 cms	19.2	0.11	170	90	90	196.75	199.23	1.89	2.48
Wabageshik		172	30.0 cms	30	0.16	184	92	93	196.75	199.39	2.00	2.64
Wabageshik		172	41.6 cms	41.6	0.21	198	95	95	196.75	199.54	2.09	2.79
Wabageshik		172	47.3 cms	47.3	0.23	203	96	96	196.75	199.60	2.12	2.85
Wabageshik		172	64.0 cms	64	0.29	219	99	99	196.75	199.75	2.21	3.00
Wabageshik		91	1.0 cms	1	0.02	43	73	73	197.32	198.76	0.59	1.44
Wabageshik		91	2.0 cms	2	0.04	47	74	74	197.32	198.81	0.64	1.49
Wabageshik		91	3.0 cms	3	0.06	50	75	75	197.32	198.85	0.67	1.53
Wabageshik		91	5.0 cms	5	0.09	55	76	76	197.32	198.92	0.73	1.60
Wabageshik		91	10.0 cms	10	0.15	65	79	79	197.32	199.05	0.83	1.73
Wabageshik		91	15.0 cms	15	0.20	74	81	81	197.32	199.15	0.91	1.83
Wabageshik		91	19.2 cms	19.2	0.24	80	82	82	197.32	199.23	0.97	1.91
Wabageshik		91	30.0 cms	30	0.32	93	85	86	197.32	199.39	1.09	2.07
Wabageshik		91	41.6 cms	41.6	0.40	105	90	90	197.32	199.53	1.17	2.21
Wabageshik		91	47.3 cms	47.3	0.43	110	91	91	197.32	199.59	1.22	2.27
Wabageshik		91	64.0 cms	64	0.51	125	93	93	197.32	199.74	1.34	2.42
Wabageshik		35	1.0 cms	1	0.74	1	24	24	198.67	198.73	0.06	0.06
Wabageshik		35	2.0 cms	2	0.92	2	25	25	198.67	198.76	0.09	0.09
Wabageshik		35	3.0 cms	3	1.04	3	27	27	198.67	198.79	0.11	0.12

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		35	5.0 cms	5	1.21	4	28	28	198.67	198.84	0.15	0.17
Wabageshik		35	10.0 cms	10	1.46	7	32	32	198.67	198.93	0.21	0.26
Wabageshik		35	15.0 cms	15	1.62	9	35	35	198.67	199.00	0.26	0.33
Wabageshik		35	19.2 cms	19.2	1.72	11	37	37	198.67	199.05	0.30	0.38
Wabageshik		35	30.0 cms	30	1.92	16	42	42	198.67	199.16	0.37	0.49
Wabageshik		35	41.6 cms	41.6	2.08	20	46	46	198.67	199.26	0.44	0.59
Wabageshik		35	47.3 cms	47.3	2.14	22	48	48	198.67	199.31	0.46	0.64
Wabageshik		35	64.0 cms	64	2.25	28	56	56	198.67	199.43	0.51	0.76
Wabageshik	2	0	1.0 cms	1	0.06	18	20	21	196.51	198.00	0.88	1.49
Wabageshik	2	0	2.0 cms	2	0.11	18	20	21	196.51	198.02	0.89	1.51
Wabageshik	2	0	3.0 cms	3	0.16	19	21	21	196.51	198.07	0.92	1.56
Wabageshik	2	0	5.0 cms	5	0.24	21	21	22	196.51	198.16	0.98	1.65
Wabageshik	2	0	10.0 cms	10	0.40	25	23	23	196.51	198.33	1.10	1.82
Wabageshik	2	0	15.0 cms	15	0.54	28	24	24	196.51	198.47	1.18	1.96
Wabageshik	2	0	19.2 cms	19.2	0.63	30	25	25	196.51	198.56	1.23	2.05
Wabageshik	2	0	30.0 cms	30	0.84	36	26	27	196.51	198.77	1.34	2.26
Wabageshik	2	0	41.6 cms	41.6	1.03	41	28	29	196.51	198.95	1.45	2.44
Wabageshik	2	0	47.3 cms	47.3	1.11	43	28	29	196.51	199.03	1.50	2.52
Wabageshik	2	0	64.0 cms	64	1.31	49	30	31	196.51	199.24	1.63	2.73
Wabageshik		-14	1.0 cms	1	0.38	3	17	17	197.83	198.00	0.15	0.17
Wabageshik		-14	2.0 cms	2	0.84	2	17	17	197.83	197.98	0.14	0.15
Wabageshik		-14	3.0 cms	3	1.20	3	17	17	197.83	197.99	0.15	0.16
Wabageshik		-14	5.0 cms	5	1.40	4	18	18	197.83	198.05	0.20	0.22
Wabageshik		-14	10.0 cms	10	1.71	6	20	20	197.83	198.17	0.29	0.34
Wabageshik		-14	15.0 cms	15	1.91	8	21	21	197.83	198.26	0.37	0.43
Wabageshik		-14	19.2 cms	19.2	2.04	9	22	23	197.83	198.34	0.42	0.51
Wabageshik		-14	30.0 cms	30	2.29	13	25	25	197.83	198.49	0.53	0.66
Wabageshik		-14	41.6 cms	41.6	2.50	17	26	27	197.83	198.63	0.63	0.80
Wabageshik		-14	47.3 cms	47.3	2.59	18	27	27	197.83	198.69	0.67	0.86
Wabageshik		-14	64.0 cms	64	2.80	23	29	29	197.83	198.85	0.79	1.02
Wabageshik	111	-40	1.0 cms	1	0.00	357	229	230	194.78	198.00	1.56	3.22
Wabageshik	111	-40	2.0 cms	2	0.01	358	229	230	194.78	198.00	1.56	3.22
Wabageshik	111	-40	3.0 cms	3	0.01	359	230	230	194.78	198.01	1.56	3.23
Wabageshik	111	-40	5.0 cms	5	0.01	362	230	231	194.78	198.02	1.57	3.24
Wabageshik	111	-40	10.0 cms	10	0.03	378	234	235	194.78	198.09	1.61	3.31
Wabageshik	111	-40	15.0 cms	15	0.04	400	242	243	194.78	198.18	1.65	3.40
Wabageshik	111	-40	19.2 cms	19.2	0.05	422	251	252	194.78	198.27	1.68	3.49

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	111	-40	30.0 cms	30	0.06	483	267	268	194.78	198.51	1.81	3.73
Wabageshik	111	-40	41.6 cms	41.6	0.08	533	278	279	194.78	198.69	1.92	3.91
Wabageshik	111	-40	47.3 cms	47.3	0.09	555	280	281	194.78	198.77	1.98	3.99
Wabageshik	111	-40	64.0 cms	64	0.10	614	287	288	194.78	198.98	2.14	4.20
Wabageshik	112	-105	1.0 cms	1	0.00	874	366	368	193.80	198.00	2.39	4.20
Wabageshik	112	-105	2.0 cms	2	0.00	875	366	368	193.80	198.00	2.39	4.20
Wabageshik	112	-105	3.0 cms	3	0.00	877	366	368	193.80	198.01	2.39	4.21
Wabageshik	112	-105	5.0 cms	5	0.01	883	367	369	193.80	198.02	2.41	4.22
Wabageshik	112	-105	10.0 cms	10	0.01	907	370	372	193.80	198.09	2.46	4.29
Wabageshik	112	-105	15.0 cms	15	0.02	941	373	375	193.80	198.18	2.52	4.38
Wabageshik	112	-105	19.2 cms	19.2	0.02	976	374	376	193.80	198.27	2.61	4.47
Wabageshik	112	-105	30.0 cms	30	0.03	1064	375	378	193.80	198.51	2.84	4.71
Wabageshik	112	-105	41.6 cms	41.6	0.04	1133	376	378	193.80	198.69	3.02	4.89
Wabageshik	112	-105	47.3 cms	47.3	0.04	1163	376	379	193.80	198.77	3.09	4.97
Wabageshik	112	-105	64.0 cms	64	0.05	1241	377	379	193.80	198.98	3.29	5.18
Wabageshik	113	-219	1.0 cms	1	0.00	636	287	289	193.42	198.00	2.21	4.58
Wabageshik	113	-219	2.0 cms	2	0.00	637	288	289	193.42	198.00	2.21	4.58
Wabageshik	113	-219	3.0 cms	3	0.00	638	288	289	193.42	198.01	2.22	4.59
Wabageshik	113	-219	5.0 cms	5	0.01	643	288	290	193.42	198.02	2.23	4.60
Wabageshik	113	-219	10.0 cms	10	0.02	662	290	291	193.42	198.09	2.29	4.67
Wabageshik	113	-219	15.0 cms	15	0.02	688	292	293	193.42	198.18	2.36	4.76
Wabageshik	113	-219	19.2 cms	19.2	0.03	715	295	297	193.42	198.27	2.42	4.85
Wabageshik	113	-219	30.0 cms	30	0.04	785	297	299	193.42	198.51	2.64	5.09
Wabageshik	113	-219	41.6 cms	41.6	0.05	840	299	300	193.42	198.69	2.81	5.27
Wabageshik	113	-219	47.3 cms	47.3	0.05	864	299	301	193.42	198.77	2.89	5.35
Wabageshik	113	-219	64.0 cms	64	0.07	926	301	303	193.42	198.98	3.07	5.56
Wabageshik	114	-462	1.0 cms	1	0.00	824	420	422	193.16	198.00	1.96	4.84
Wabageshik	114	-462	2.0 cms	2	0.00	825	420	422	193.16	198.00	1.97	4.84
Wabageshik	114	-462	3.0 cms	3	0.00	827	420	422	193.16	198.01	1.97	4.85
Wabageshik	114	-462	5.0 cms	5	0.01	834	420	422	193.16	198.02	1.98	4.86
Wabageshik	114	-462	10.0 cms	10	0.01	862	421	423	193.16	198.09	2.05	4.93
Wabageshik	114	-462	15.0 cms	15	0.02	900	422	424	193.16	198.18	2.13	5.02
Wabageshik	114	-462	19.2 cms	19.2	0.02	939	423	425	193.16	198.27	2.22	5.11
Wabageshik	114	-462	30.0 cms	30	0.03	1039	426	427	193.16	198.51	2.44	5.35
Wabageshik	114	-462	41.6 cms	41.6	0.04	1118	427	429	193.16	198.69	2.62	5.53
Wabageshik	114	-462	47.3 cms	47.3	0.04	1151	428	430	193.16	198.77	2.69	5.61
Wabageshik	114	-462	64.0 cms	64	0.05	1240	429	431	193.16	198.98	2.89	5.82

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	115	-798	1.0 cms	1	0.00	261	134	135	193.93	198.00	1.95	4.07
Wabageshik	115	-798	2.0 cms	2	0.01	262	134	135	193.93	198.00	1.96	4.07
Wabageshik	115	-798	3.0 cms	3	0.01	262	134	135	193.93	198.01	1.96	4.08
Wabageshik	115	-798	5.0 cms	5	0.02	264	134	135	193.93	198.02	1.97	4.09
Wabageshik	115	-798	10.0 cms	10	0.04	273	135	136	193.93	198.09	2.03	4.16
Wabageshik	115	-798	15.0 cms	15	0.05	286	137	138	193.93	198.18	2.08	4.25
Wabageshik	115	-798	19.2 cms	19.2	0.06	298	138	139	193.93	198.27	2.17	4.34
Wabageshik	115	-798	30.0 cms	30	0.09	331	139	141	193.93	198.51	2.38	4.58
Wabageshik	115	-798	41.6 cms	41.6	0.12	356	140	142	193.93	198.69	2.54	4.76
Wabageshik	115	-798	47.3 cms	47.3	0.13	368	141	142	193.93	198.77	2.61	4.84
Wabageshik	115	-798	64.0 cms	64	0.16	397	142	144	193.93	198.98	2.79	5.05
Wabageshik	116	-1452	1.0 cms	1	0.00	292	95	96	194.01	198.00	3.09	3.99
Wabageshik	116	-1452	2.0 cms	2	0.01	293	95	96	194.01	198.00	3.10	3.99
Wabageshik	116	-1452	3.0 cms	3	0.01	293	95	96	194.01	198.01	3.10	4.00
Wabageshik	116	-1452	5.0 cms	5	0.02	295	95	96	194.01	198.02	3.11	4.01
Wabageshik	116	-1452	10.0 cms	10	0.03	301	95	97	194.01	198.09	3.15	4.08
Wabageshik	116	-1452	15.0 cms	15	0.05	310	96	98	194.01	198.18	3.21	4.17
Wabageshik	116	-1452	19.2 cms	19.2	0.06	318	98	100	194.01	198.27	3.25	4.26
Wabageshik	116	-1452	30.0 cms	30	0.09	342	100	102	194.01	198.51	3.43	4.50
Wabageshik	116	-1452	41.6 cms	41.6	0.12	360	101	103	194.01	198.69	3.56	4.68
Wabageshik	116	-1452	47.3 cms	47.3	0.13	368	102	104	194.01	198.77	3.62	4.76
Wabageshik	116	-1452	64.0 cms	64	0.16	389	103	105	194.01	198.97	3.77	4.96
Wabageshik	117	-2478	1.0 cms	1	0.01	69	40	41	195.27	198.00	1.72	2.73
Wabageshik	117	-2478	2.0 cms	2	0.03	69	40	41	195.27	198.00	1.73	2.73
Wabageshik	117	-2478	3.0 cms	3	0.04	69	40	41	195.27	198.01	1.73	2.74
Wabageshik	117	-2478	5.0 cms	5	0.07	69	40	41	195.27	198.02	1.74	2.75
Wabageshik	117	-2478	10.0 cms	10	0.14	72	40	42	195.27	198.09	1.79	2.82
Wabageshik	117	-2478	15.0 cms	15	0.20	76	41	42	195.27	198.18	1.86	2.91
Wabageshik	117	-2478	19.2 cms	19.2	0.24	79	41	43	195.27	198.27	1.93	3.00
Wabageshik	117	-2478	30.0 cms	30	0.34	89	42	44	195.27	198.50	2.10	3.23
Wabageshik	117	-2478	41.6 cms	41.6	0.43	96	43	45	195.27	198.67	2.22	3.40
Wabageshik	117	-2478	47.3 cms	47.3	0.47	100	44	46	195.27	198.75	2.27	3.48
Wabageshik	117	-2478	64.0 cms	64	0.59	108	45	47	195.27	198.94	2.39	3.67
Wabageshik		-3261	1.0 cms	1	0.00	245	68	70	193.01	198.00	3.59	4.99
Wabageshik		-3261	2.0 cms	2	0.01	246	68	70	193.01	198.00	3.60	4.99
Wabageshik		-3261	3.0 cms	3	0.01	246	68	70	193.01	198.01	3.60	5.00

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		-3261	5.0 cms	5	0.02	247	68	70	193.01	198.02	3.61	5.01
Wabageshik		-3261	10.0 cms	10	0.04	251	69	70	193.01	198.09	3.67	5.08
Wabageshik		-3261	15.0 cms	15	0.06	257	69	71	193.01	198.18	3.74	5.17
Wabageshik		-3261	19.2 cms	19.2	0.07	264	69	71	193.01	198.27	3.82	5.26
Wabageshik		-3261	30.0 cms	30	0.11	279	70	73	193.01	198.50	3.97	5.49
Wabageshik		-3261	41.6 cms	41.6	0.14	292	71	74	193.01	198.67	4.08	5.66
Wabageshik		-3261	47.3 cms	47.3	0.16	297	72	74	193.01	198.74	4.15	5.73
Wabageshik		-3261	64.0 cms	64	0.21	311	72	75	193.01	198.93	4.33	5.92
Wabageshik	118	-3343	1.0 cms	1	0.00	232	67	69	193.21	198.00	3.47	4.79
Wabageshik	118	-3343	2.0 cms	2	0.01	232	67	69	193.21	198.00	3.47	4.79
Wabageshik	118	-3343	3.0 cms	3	0.01	232	67	69	193.21	198.01	3.47	4.80
Wabageshik	118	-3343	5.0 cms	5	0.02	233	67	69	193.21	198.02	3.47	4.81
Wabageshik	118	-3343	10.0 cms	10	0.04	238	68	70	193.21	198.09	3.50	4.88
Wabageshik	118	-3343	15.0 cms	15	0.06	244	68	70	193.21	198.18	3.57	4.97
Wabageshik	118	-3343	19.2 cms	19.2	0.08	250	68	70	193.21	198.27	3.65	5.06
Wabageshik	118	-3343	30.0 cms	30	0.11	266	69	71	193.21	198.49	3.84	5.28
Wabageshik	118	-3343	41.6 cms	41.6	0.15	278	70	73	193.21	198.67	3.95	5.46
Wabageshik	118	-3343	47.3 cms	47.3	0.17	283	71	73	193.21	198.74	4.00	5.53
Wabageshik	118	-3343	64.0 cms	64	0.22	296	72	74	193.21	198.93	4.14	5.72
Wabageshik		-3460	1.0 cms	1	0.00	232	67	69	193.21	198.00	3.47	4.79
Wabageshik		-3460	2.0 cms	2	0.01	232	67	69	193.21	198.00	3.47	4.79
Wabageshik		-3460	3.0 cms	3	0.01	232	67	69	193.21	198.01	3.47	4.80
Wabageshik		-3460	5.0 cms	5	0.02	233	67	69	193.21	198.02	3.47	4.81
Wabageshik		-3460	10.0 cms	10	0.04	238	68	70	193.21	198.09	3.50	4.88
Wabageshik		-3460	15.0 cms	15	0.06	244	68	70	193.21	198.18	3.57	4.97
Wabageshik		-3460	19.2 cms	19.2	0.08	250	68	70	193.21	198.27	3.65	5.06
Wabageshik		-3460	30.0 cms	30	0.11	266	69	71	193.21	198.49	3.84	5.28
Wabageshik		-3460	41.6 cms	41.6	0.15	278	70	73	193.21	198.67	3.95	5.46
Wabageshik		-3460	47.3 cms	47.3	0.17	283	71	73	193.21	198.74	4.00	5.53
Wabageshik		-3460	64.0 cms	64	0.22	296	72	74	193.21	198.93	4.14	5.72
Wabageshik	119	-3469	1.0 cms	1	0.10	10	22	23	197.43	198.00	0.45	0.57
Wabageshik	119	-3469	2.0 cms	2	0.20	10	22	23	197.43	198.00	0.45	0.57
Wabageshik	119	-3469	3.0 cms	3	0.30	10	22	23	197.43	198.00	0.45	0.57
Wabageshik	119	-3469	5.0 cms	5	0.49	10	22	23	197.43	198.01	0.46	0.58
Wabageshik	119	-3469	10.0 cms	10	0.92	11	23	23	197.43	198.04	0.48	0.61
Wabageshik	119	-3469	15.0 cms	15	1.25	12	24	24	197.43	198.09	0.51	0.66
Wabageshik	119	-3469	19.2 cms	19.2	1.40	14	27	27	197.43	198.16	0.51	0.73

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	119	-3469	30.0 cms	30	1.47	20	35	36	197.43	198.37	0.59	0.94
Wabageshik	119	-3469	41.6 cms	41.6	1.60	26	38	40	197.43	198.53	0.68	1.10
Wabageshik	119	-3469	47.3 cms	47.3	1.67	28	40	41	197.43	198.59	0.72	1.16
Wabageshik	119	-3469	64.0 cms	64	1.83	35	43	45	197.43	198.75	0.81	1.32
Wabageshik		-3490	1.0 cms	1	0.07	14	26	27	197.28	198.00	0.51	0.72
Wabageshik		-3490	2.0 cms	2	0.15	14	26	27	197.28	198.00	0.51	0.72
Wabageshik		-3490	3.0 cms	3	0.22	14	26	27	197.28	198.00	0.51	0.72
Wabageshik		-3490	5.0 cms	5	0.37	13	26	27	197.28	198.00	0.51	0.72
Wabageshik		-3490	10.0 cms	10	0.75	13	26	27	197.28	197.99	0.51	0.71
Wabageshik		-3490	15.0 cms	15	1.16	13	25	26	197.28	197.98	0.51	0.70
Wabageshik		-3490	19.2 cms	19.2	1.55	12	24	25	197.28	197.95	0.51	0.67
Wabageshik		-3490	30.0 cms	30	2.25	13	26	27	197.28	197.99	0.51	0.71
Wabageshik		-3490	41.6 cms	41.6	2.36	18	32	32	197.28	198.14	0.56	0.86
Wabageshik		-3490	47.3 cms	47.3	2.40	20	34	35	197.28	198.20	0.58	0.92
Wabageshik		-3490	64.0 cms	64	2.55	25	38	39	197.28	198.35	0.66	1.07
Wabageshik	120	-3539	1.0 cms	1	0.02	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	2.0 cms	2	0.04	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	3.0 cms	3	0.05	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	5.0 cms	5	0.09	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	10.0 cms	10	0.18	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	15.0 cms	15	0.27	56	38	39	195.96	198.01	1.50	2.05
Wabageshik	120	-3539	19.2 cms	19.2	0.34	56	38	39	195.96	198.01	1.50	2.05
Wabageshik	120	-3539	30.0 cms	30	0.53	57	38	39	195.96	198.03	1.52	2.07
Wabageshik	120	-3539	41.6 cms	41.6	0.72	58	38	39	195.96	198.06	1.54	2.10
Wabageshik	120	-3539	47.3 cms	47.3	0.81	59	38	39	195.96	198.07	1.56	2.11
Wabageshik	120	-3539	64.0 cms	64	1.05	61	38	40	195.96	198.13	1.61	2.17
Wabageshik		-3580	1.0 cms	1	0.02	54	37	39	196.01	198.00	1.44	1.99
Wabageshik		-3580	2.0 cms	2	0.04	54	37	39	196.01	198.00	1.44	1.99
Wabageshik		-3580	3.0 cms	3	0.06	54	37	39	196.01	198.00	1.44	1.99
Wabageshik		-3580	5.0 cms	5	0.09	54	37	39	196.01	198.00	1.44	1.99
Wabageshik		-3580	10.0 cms	10	0.18	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	15.0 cms	15	0.28	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	19.2 cms	19.2	0.35	54	37	39	196.01	198.01	1.45	2.00
Wabageshik		-3580	30.0 cms	30	0.55	55	37	39	196.01	198.01	1.46	2.00
Wabageshik		-3580	41.6 cms	41.6	0.76	55	37	39	196.01	198.03	1.47	2.02
Wabageshik		-3580	47.3 cms	47.3	0.86	55	37	39	196.01	198.03	1.48	2.02
Wabageshik		-3580	64.0 cms	64	1.13	56	38	39	196.01	198.06	1.50	2.05

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	121	-3625	1.0 cms	1	0.02	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	2.0 cms	2	0.04	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	3.0 cms	3	0.06	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	5.0 cms	5	0.09	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	10.0 cms	10	0.19	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	15.0 cms	15	0.28	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	19.2 cms	19.2	0.36	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	30.0 cms	30	0.57	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	41.6 cms	41.6	0.79	53	26	28	194.72	197.99	2.06	3.27
Wabageshik	121	-3625	47.3 cms	47.3	0.90	53	26	28	194.72	197.99	2.06	3.27
Wabageshik	121	-3625	64.0 cms	64	1.22	53	26	28	194.72	197.99	2.05	3.27
Wabageshik	122	-3730	1.0 cms	1	0.01	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	2.0 cms	2	0.02	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	3.0 cms	3	0.02	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	5.0 cms	5	0.04	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	10.0 cms	10	0.08	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	15.0 cms	15	0.12	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	19.2 cms	19.2	0.16	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	30.0 cms	30	0.25	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	41.6 cms	41.6	0.35	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	47.3 cms	47.3	0.39	120	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	64.0 cms	64	0.53	120	42	46	192.92	197.99	2.84	5.07
Wabageshik	123	-3815	1.0 cms	1	0.00	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	2.0 cms	2	0.01	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	3.0 cms	3	0.01	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	5.0 cms	5	0.02	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	10.0 cms	10	0.04	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	15.0 cms	15	0.07	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	19.2 cms	19.2	0.09	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	30.0 cms	30	0.13	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	41.6 cms	41.6	0.18	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	47.3 cms	47.3	0.21	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	64.0 cms	64	0.28	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	124	-3878	1.0 cms	1	0.00	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	2.0 cms	2	0.00	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	3.0 cms	3	0.01	531	83	90	189.06	198.00	6.37	8.94

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	124	-3878	5.0 cms	5	0.01	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	10.0 cms	10	0.02	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	15.0 cms	15	0.03	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	19.2 cms	19.2	0.04	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	30.0 cms	30	0.06	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	41.6 cms	41.6	0.08	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	47.3 cms	47.3	0.09	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	64.0 cms	64	0.12	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	125	-3927	1.0 cms	1	0.00	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	2.0 cms	2	0.00	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	3.0 cms	3	0.00	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	5.0 cms	5	0.00	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	10.0 cms	10	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	15.0 cms	15	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	19.2 cms	19.2	0.02	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	30.0 cms	30	0.03	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	41.6 cms	41.6	0.04	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	47.3 cms	47.3	0.05	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	64.0 cms	64	0.06	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	126	-3997	1.0 cms	1	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	2.0 cms	2	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	3.0 cms	3	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	5.0 cms	5	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	10.0 cms	10	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	15.0 cms	15	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	19.2 cms	19.2	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	30.0 cms	30	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	41.6 cms	41.6	0.02	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	47.3 cms	47.3	0.02	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	64.0 cms	64	0.03	2354	362	373	186.58	198.00	6.50	11.42

Table A-4: HEC-RAS Results for Monthly Q10 and Q90 Flows – Existing Conditions

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		11658	Jan 10%	38.5	0.02	1619	426	427	197.35	204.71	3.80	7.36
Wabageshik		11658	Feb 10%	28.0	0.02	1555	419	420	197.35	204.56	3.71	7.21
Wabageshik		11658	Mar 10%	70.3	0.04	1784	443	443	197.35	205.09	4.03	7.74
Wabageshik		11658	Apr 10%	268.0	0.11	2441	468	468	197.35	206.54	5.22	9.19
Wabageshik		11658	May 10%	215.0	0.09	2280	462	463	197.35	206.19	4.94	8.84
Wabageshik		11658	Jun 10%	78.8	0.04	1823	444	445	197.35	205.18	4.10	7.83
Wabageshik		11658	Jul 10%	47.7	0.03	1670	432	432	197.35	204.83	3.87	7.48
Wabageshik		11658	Aug 10%	28.7	0.02	1559	420	420	197.35	204.57	3.71	7.22
Wabageshik		11658	Sep 10%	32.0	0.02	1580	422	423	197.35	204.62	3.74	7.27
Wabageshik		11658	Oct 10%	69.9	0.04	1782	442	443	197.35	205.09	4.03	7.74
Wabageshik		11658	Nov 10%	93.5	0.05	1886	447	448	197.35	205.32	4.22	7.97
Wabageshik		11658	Dec 10%	70.6	0.04	1785	443	443	197.35	205.10	4.03	7.75
Wabageshik		11658	Jan 90%	11.8	0.01	1437	407	407	197.35	204.28	3.53	6.93
Wabageshik		11658	Feb 90%	10.3	0.01	1425	406	406	197.35	204.25	3.51	6.90
Wabageshik		11658	Mar 90%	12.4	0.01	1442	407	408	197.35	204.29	3.54	6.94
Wabageshik		11658	Apr 90%	43.9	0.03	1649	429	430	197.35	204.79	3.84	7.44
Wabageshik		11658	May 90%	35.3	0.02	1600	424	425	197.35	204.67	3.77	7.32
Wabageshik		11658	Jun 90%	19.3	0.01	1496	413	414	197.35	204.42	3.62	7.07
Wabageshik		11658	Jul 90%	8.9	0.01	1412	404	405	197.35	204.22	3.49	6.87
Wabageshik		11658	Aug 90%	5.7	0.00	1381	401	401	197.35	204.14	3.45	6.79
Wabageshik		11658	Sep 90%	4.9	0.00	1372	400	400	197.35	204.12	3.43	6.77
Wabageshik		11658	Oct 90%	6.9	0.00	1393	402	402	197.35	204.17	3.47	6.82
Wabageshik		11658	Nov 90%	14.4	0.01	1459	409	410	197.35	204.33	3.56	6.98
Wabageshik		11658	Dec 90%	16.3	0.01	1473	411	411	197.35	204.37	3.59	7.02
Wabageshik	101	11566	Jan 10%	38.5	0.03	1409	320	324	196.96	204.71	4.40	7.75
Wabageshik	101	11566	Feb 10%	28.0	0.02	1360	320	323	196.96	204.56	4.26	7.60
Wabageshik	101	11566	Mar 10%	70.3	0.05	1531	328	332	196.96	205.09	4.66	8.13
Wabageshik	101	11566	Apr 10%	268.0	0.13	2023	351	355	196.96	206.54	5.77	9.58
Wabageshik	101	11566	May 10%	215.0	0.11	1902	347	352	196.96	206.19	5.48	9.23
Wabageshik	101	11566	Jun 10%	78.8	0.05	1560	330	334	196.96	205.18	4.73	8.22
Wabageshik	101	11566	Jul 10%	47.7	0.03	1447	321	324	196.96	204.83	4.51	7.87
Wabageshik	101	11566	Aug 10%	28.7	0.02	1364	320	323	196.96	204.57	4.27	7.61
Wabageshik	101	11566	Sep 10%	32.0	0.02	1380	320	324	196.96	204.62	4.31	7.66
Wabageshik	101	11566	Oct 10%	69.9	0.05	1530	328	332	196.96	205.09	4.66	8.13
Wabageshik	101	11566	Nov 10%	93.5	0.06	1607	332	337	196.96	205.32	4.83	8.36
Wabageshik	101	11566	Dec 10%	70.6	0.05	1532	328	332	196.96	205.10	4.67	8.14

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	101	11566	Jan 90%	11.8	0.01	1270	318	322	196.96	204.28	3.99	7.32
Wabageshik	101	11566	Feb 90%	10.3	0.01	1260	318	322	196.96	204.25	3.96	7.29
Wabageshik	101	11566	Mar 90%	12.4	0.01	1274	318	322	196.96	204.29	4.00	7.33
Wabageshik	101	11566	Apr 90%	43.9	0.03	1431	320	324	196.96	204.79	4.47	7.83
Wabageshik	101	11566	May 90%	35.3	0.03	1395	320	324	196.96	204.67	4.36	7.71
Wabageshik	101	11566	Jun 90%	19.3	0.01	1315	319	322	196.96	204.42	4.12	7.46
Wabageshik	101	11566	Jul 90%	8.9	0.01	1250	318	321	196.96	204.22	3.93	7.26
Wabageshik	101	11566	Aug 90%	5.7	0.00	1225	318	321	196.96	204.14	3.86	7.18
Wabageshik	101	11566	Sep 90%	4.9	0.00	1218	317	321	196.96	204.12	3.84	7.16
Wabageshik	101	11566	Oct 90%	6.9	0.01	1235	318	321	196.96	204.17	3.89	7.21
Wabageshik	101	11566	Nov 90%	14.4	0.01	1286	318	322	196.96	204.33	4.04	7.37
Wabageshik	101	11566	Dec 90%	16.3	0.01	1298	319	322	196.96	204.37	4.07	7.41
Wabageshik	102	11277	Jan 10%	38.5	0.12	309	85	87	199.69	204.71	3.63	5.02
Wabageshik	102	11277	Feb 10%	28.0	0.09	296	84	86	199.69	204.56	3.53	4.87
Wabageshik	102	11277	Mar 10%	70.3	0.21	342	91	93	199.69	205.09	3.76	5.40
Wabageshik	102	11277	Apr 10%	268.0	0.56	479	102	104	199.69	206.52	4.72	6.83
Wabageshik	102	11277	May 10%	215.0	0.48	445	99	101	199.69	206.18	4.50	6.49
Wabageshik	102	11277	Jun 10%	78.8	0.23	350	92	94	199.69	205.18	3.81	5.49
Wabageshik	102	11277	Jul 10%	47.7	0.15	319	86	88	199.69	204.83	3.70	5.14
Wabageshik	102	11277	Aug 10%	28.7	0.10	297	84	86	199.69	204.57	3.54	4.88
Wabageshik	102	11277	Sep 10%	32.0	0.11	301	84	86	199.69	204.62	3.57	4.93
Wabageshik	102	11277	Oct 10%	69.9	0.20	341	91	93	199.69	205.09	3.76	5.40
Wabageshik	102	11277	Nov 10%	93.5	0.26	363	93	95	199.69	205.32	3.89	5.63
Wabageshik	102	11277	Dec 10%	70.6	0.21	342	91	93	199.69	205.10	3.76	5.41
Wabageshik	102	11277	Jan 90%	11.8	0.04	273	82	84	199.69	204.28	3.33	4.59
Wabageshik	102	11277	Feb 90%	10.3	0.04	270	82	83	199.69	204.25	3.30	4.56
Wabageshik	102	11277	Mar 90%	12.4	0.05	274	82	84	199.69	204.29	3.34	4.60
Wabageshik	102	11277	Apr 90%	43.9	0.14	315	86	88	199.69	204.78	3.67	5.09
Wabageshik	102	11277	May 90%	35.3	0.12	305	85	87	199.69	204.67	3.60	4.98
Wabageshik	102	11277	Jun 90%	19.3	0.07	284	83	85	199.69	204.42	3.43	4.73
Wabageshik	102	11277	Jul 90%	8.9	0.03	268	82	83	199.69	204.22	3.28	4.53
Wabageshik	102	11277	Aug 90%	5.7	0.02	261	81	83	199.69	204.14	3.22	4.45
Wabageshik	102	11277	Sep 90%	4.9	0.02	259	81	82	199.69	204.12	3.21	4.43
Wabageshik	102	11277	Oct 90%	6.9	0.03	264	81	83	199.69	204.17	3.25	4.48
Wabageshik	102	11277	Nov 90%	14.4	0.05	277	82	84	199.69	204.33	3.36	4.64
Wabageshik	102	11277	Dec 90%	16.3	0.06	280	83	84	199.69	204.37	3.39	4.68
Wabageshik	103	10772	Jan 10%	38.5	0.08	454	138	140	198.50	204.71	3.29	6.21
Wabageshik	103	10772	Feb 10%	28.0	0.06	434	132	133	198.50	204.56	3.29	6.06

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	103	10772	Mar 10%	70.3	0.14	508	148	150	198.50	205.09	3.43	6.59
Wabageshik	103	10772	Apr 10%	268.0	0.36	750	216	218	198.50	206.51	3.47	8.01
Wabageshik	103	10772	May 10%	215.0	0.32	682	192	193	198.50	206.17	3.56	7.67
Wabageshik	103	10772	Jun 10%	78.8	0.15	521	149	151	198.50	205.18	3.49	6.68
Wabageshik	103	10772	Jul 10%	47.7	0.10	471	141	142	198.50	204.83	3.35	6.33
Wabageshik	103	10772	Aug 10%	28.7	0.07	435	132	134	198.50	204.57	3.29	6.07
Wabageshik	103	10772	Sep 10%	32.0	0.07	442	135	136	198.50	204.62	3.28	6.12
Wabageshik	103	10772	Oct 10%	69.9	0.14	507	148	150	198.50	205.09	3.43	6.59
Wabageshik	103	10772	Nov 10%	93.5	0.17	542	152	153	198.50	205.32	3.57	6.82
Wabageshik	103	10772	Dec 10%	70.6	0.14	508	148	150	198.50	205.09	3.43	6.59
Wabageshik	103	10772	Jan 90%	11.8	0.03	398	124	125	198.50	204.28	3.21	5.78
Wabageshik	103	10772	Feb 90%	10.3	0.03	394	123	125	198.50	204.25	3.19	5.75
Wabageshik	103	10772	Mar 90%	12.4	0.03	399	124	126	198.50	204.29	3.22	5.79
Wabageshik	103	10772	Apr 90%	43.9	0.09	464	140	141	198.50	204.78	3.32	6.28
Wabageshik	103	10772	May 90%	35.3	0.08	448	137	139	198.50	204.67	3.27	6.17
Wabageshik	103	10772	Jun 90%	19.3	0.05	416	127	129	198.50	204.42	3.27	5.92
Wabageshik	103	10772	Jul 90%	8.9	0.02	390	123	125	198.50	204.22	3.17	5.72
Wabageshik	103	10772	Aug 90%	5.7	0.02	381	122	123	198.50	204.14	3.12	5.64
Wabageshik	103	10772	Sep 90%	4.9	0.01	378	122	123	198.50	204.12	3.11	5.62
Wabageshik	103	10772	Oct 90%	6.9	0.02	384	122	124	198.50	204.17	3.14	5.67
Wabageshik	103	10772	Nov 90%	14.4	0.04	404	125	126	198.50	204.33	3.24	5.83
Wabageshik	103	10772	Dec 90%	16.3	0.04	409	126	127	198.50	204.37	3.25	5.87
Wabageshik		10686	Jan 10%	38.5	0.09	415	131	131	199.96	204.71	3.17	4.75
Wabageshik		10686	Feb 10%	28.0	0.07	396	128	129	199.96	204.56	3.09	4.60
Wabageshik		10686	Mar 10%	70.3	0.15	467	143	144	199.96	205.09	3.26	5.13
Wabageshik		10686	Apr 10%	268.0	0.39	680	166	167	199.96	206.50	4.09	6.54
Wabageshik		10686	May 10%	215.0	0.34	626	153	154	199.96	206.16	4.09	6.20
Wabageshik		10686	Jun 10%	78.8	0.16	480	144	145	199.96	205.18	3.33	5.22
Wabageshik		10686	Jul 10%	47.7	0.11	431	133	134	199.96	204.83	3.24	4.87
Wabageshik		10686	Aug 10%	28.7	0.07	397	128	129	199.96	204.57	3.09	4.61
Wabageshik		10686	Sep 10%	32.0	0.08	404	129	130	199.96	204.62	3.12	4.66
Wabageshik		10686	Oct 10%	69.9	0.15	466	143	144	199.96	205.09	3.26	5.13
Wabageshik		10686	Nov 10%	93.5	0.19	500	145	146	199.96	205.32	3.44	5.36
Wabageshik		10686	Dec 10%	70.6	0.15	467	143	144	199.96	205.09	3.27	5.13
Wabageshik		10686	Jan 90%	11.8	0.03	360	123	124	199.96	204.28	2.93	4.32
Wabageshik		10686	Feb 90%	10.3	0.03	357	123	123	199.96	204.25	2.91	4.29
Wabageshik		10686	Mar 90%	12.4	0.03	362	123	124	199.96	204.29	2.93	4.33
Wabageshik		10686	Apr 90%	43.9	0.10	425	132	133	199.96	204.78	3.21	4.82
Wabageshik		10686	May 90%	35.3	0.09	410	130	131	199.96	204.67	3.15	4.71

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		10686	Jun 90%	19.3	0.05	378	126	126	199.96	204.42	3.01	4.46
Wabageshik		10686	Jul 90%	8.9	0.03	353	122	123	199.96	204.22	2.89	4.26
Wabageshik		10686	Aug 90%	5.7	0.02	343	121	121	199.96	204.14	2.85	4.18
Wabageshik		10686	Sep 90%	4.9	0.01	341	120	121	199.96	204.12	2.83	4.16
Wabageshik		10686	Oct 90%	6.9	0.02	347	121	122	199.96	204.17	2.86	4.21
Wabageshik		10686	Nov 90%	14.4	0.04	367	124	125	199.96	204.33	2.96	4.37
Wabageshik		10686	Dec 90%	16.3	0.04	371	125	125	199.96	204.37	2.98	4.41
Wabageshik		10493	Jan 10%	38.5	0.08	495	100	102	197.90	204.71	4.93	6.81
Wabageshik		10493	Feb 10%	28.0	0.06	480	99	101	197.90	204.56	4.84	6.66
Wabageshik		10493	Mar 10%	70.3	0.13	534	107	108	197.90	205.09	5.01	7.19
Wabageshik		10493	Apr 10%	268.0	0.38	709	154	156	197.90	206.50	4.62	8.60
Wabageshik		10493	May 10%	215.0	0.32	663	129	131	197.90	206.16	5.16	8.26
Wabageshik		10493	Jun 10%	78.8	0.15	543	109	110	197.90	205.18	5.01	7.28
Wabageshik		10493	Jul 10%	47.7	0.09	507	101	103	197.90	204.83	5.00	6.93
Wabageshik		10493	Aug 10%	28.7	0.06	481	99	101	197.90	204.57	4.85	6.67
Wabageshik		10493	Sep 10%	32.0	0.07	486	100	101	197.90	204.62	4.87	6.72
Wabageshik		10493	Oct 10%	69.9	0.13	534	107	108	197.90	205.08	5.01	7.18
Wabageshik		10493	Nov 10%	93.5	0.17	559	114	116	197.90	205.31	4.90	7.41
Wabageshik		10493	Dec 10%	70.6	0.13	534	107	108	197.90	205.09	5.01	7.19
Wabageshik		10493	Jan 90%	11.8	0.03	452	97	99	197.90	204.28	4.67	6.38
Wabageshik		10493	Feb 90%	10.3	0.02	450	97	98	197.90	204.25	4.65	6.35
Wabageshik		10493	Mar 90%	12.4	0.03	454	97	99	197.90	204.29	4.67	6.39
Wabageshik		10493	Apr 90%	43.9	0.09	502	101	103	197.90	204.78	4.97	6.88
Wabageshik		10493	May 90%	35.3	0.07	491	100	102	197.90	204.67	4.90	6.77
Wabageshik		10493	Jun 90%	19.3	0.04	466	98	100	197.90	204.42	4.75	6.52
Wabageshik		10493	Jul 90%	8.9	0.02	446	96	98	197.90	204.22	4.63	6.32
Wabageshik		10493	Aug 90%	5.7	0.01	439	96	97	197.90	204.14	4.58	6.24
Wabageshik		10493	Sep 90%	4.9	0.01	437	96	97	197.90	204.12	4.57	6.22
Wabageshik		10493	Oct 90%	6.9	0.02	442	96	98	197.90	204.17	4.60	6.27
Wabageshik		10493	Nov 90%	14.4	0.03	457	97	99	197.90	204.33	4.70	6.43
Wabageshik		10493	Dec 90%	16.3	0.04	461	98	99	197.90	204.37	4.72	6.47
Wabageshik	104	10364	Jan 10%	38.5	0.08	463	101	106	198.19	204.71	4.58	6.52
Wabageshik	104	10364	Feb 10%	28.0	0.06	448	99	103	198.19	204.56	4.53	6.37
Wabageshik	104	10364	Mar 10%	70.3	0.14	502	107	112	198.19	205.09	4.69	6.90
Wabageshik	104	10364	Apr 10%	268.0	0.40	666	130	135	198.19	206.49	5.14	8.30
Wabageshik	104	10364	May 10%	215.0	0.34	624	122	127	198.19	206.16	5.13	7.97
Wabageshik	104	10364	Jun 10%	78.8	0.15	511	108	113	198.19	205.18	4.72	6.99
Wabageshik	104	10364	Jul 10%	47.7	0.10	475	103	108	198.19	204.83	4.59	6.64

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	104	10364	Aug 10%	28.7	0.06	449	99	103	198.19	204.57	4.53	6.38
Wabageshik	104	10364	Sep 10%	32.0	0.07	453	100	104	198.19	204.62	4.55	6.43
Wabageshik	104	10364	Oct 10%	69.9	0.14	501	107	112	198.19	205.08	4.68	6.89
Wabageshik	104	10364	Nov 10%	93.5	0.18	526	110	115	198.19	205.31	4.77	7.12
Wabageshik	104	10364	Dec 10%	70.6	0.14	502	107	112	198.19	205.09	4.69	6.90
Wabageshik	104	10364	Jan 90%	11.8	0.03	420	96	100	198.19	204.28	4.37	6.09
Wabageshik	104	10364	Feb 90%	10.3	0.02	417	96	100	198.19	204.25	4.35	6.06
Wabageshik	104	10364	Mar 90%	12.4	0.03	421	96	101	198.19	204.29	4.38	6.10
Wabageshik	104	10364	Apr 90%	43.9	0.09	470	102	107	198.19	204.78	4.58	6.59
Wabageshik	104	10364	May 90%	35.3	0.08	458	100	105	198.19	204.67	4.57	6.48
Wabageshik	104	10364	Jun 90%	19.3	0.04	434	97	102	198.19	204.42	4.46	6.23
Wabageshik	104	10364	Jul 90%	8.9	0.02	414	96	100	198.19	204.22	4.34	6.03
Wabageshik	104	10364	Aug 90%	5.7	0.01	407	95	99	198.19	204.14	4.29	5.95
Wabageshik	104	10364	Sep 90%	4.9	0.01	405	95	99	198.19	204.12	4.28	5.93
Wabageshik	104	10364	Oct 90%	6.9	0.02	410	95	99	198.19	204.17	4.31	5.98
Wabageshik	104	10364	Nov 90%	14.4	0.03	425	97	101	198.19	204.33	4.40	6.14
Wabageshik	104	10364	Dec 90%	16.3	0.04	428	97	101	198.19	204.37	4.42	6.18
Wabageshik		10115	Jan 10%	38.5	0.12	327	75	77	198.97	204.71	4.38	5.74
Wabageshik		10115	Feb 10%	28.0	0.09	316	74	76	198.97	204.56	4.28	5.59
Wabageshik		10115	Mar 10%	70.3	0.20	356	78	80	198.97	205.09	4.55	6.12
Wabageshik		10115	Apr 10%	268.0	0.57	470	85	87	198.97	206.48	5.54	7.51
Wabageshik		10115	May 10%	215.0	0.49	442	83	86	198.97	206.14	5.29	7.17
Wabageshik		10115	Jun 10%	78.8	0.22	363	79	81	198.97	205.17	4.61	6.20
Wabageshik		10115	Jul 10%	47.7	0.14	336	76	77	198.97	204.83	4.45	5.86
Wabageshik		10115	Aug 10%	28.7	0.09	317	74	76	198.97	204.57	4.29	5.60
Wabageshik		10115	Sep 10%	32.0	0.10	321	74	76	198.97	204.62	4.32	5.65
Wabageshik		10115	Oct 10%	69.9	0.20	356	78	80	198.97	205.08	4.55	6.11
Wabageshik		10115	Nov 10%	93.5	0.25	374	79	81	198.97	205.31	4.71	6.34
Wabageshik		10115	Dec 10%	70.6	0.20	356	78	80	198.97	205.09	4.55	6.12
Wabageshik		10115	Jan 90%	11.8	0.04	296	72	74	198.97	204.28	4.10	5.31
Wabageshik		10115	Feb 90%	10.3	0.04	293	72	74	198.97	204.25	4.08	5.28
Wabageshik		10115	Mar 90%	12.4	0.04	296	72	74	198.97	204.29	4.11	5.32
Wabageshik		10115	Apr 90%	43.9	0.13	333	75	77	198.97	204.78	4.42	5.81
Wabageshik		10115	May 90%	35.3	0.11	324	75	76	198.97	204.67	4.35	5.70
Wabageshik		10115	Jun 90%	19.3	0.06	306	73	75	198.97	204.42	4.19	5.45
Wabageshik		10115	Jul 90%	8.9	0.03	291	72	73	198.97	204.22	4.06	5.25
Wabageshik		10115	Aug 90%	5.7	0.02	285	71	73	198.97	204.14	4.01	5.17
Wabageshik		10115	Sep 90%	4.9	0.02	284	71	73	198.97	204.12	3.99	5.15
Wabageshik		10115	Oct 90%	6.9	0.02	288	71	73	198.97	204.17	4.03	5.20

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		10115	Nov 90%	14.4	0.05	299	72	74	198.97	204.33	4.13	5.36
Wabageshik		10115	Dec 90%	16.3	0.05	302	73	74	198.97	204.37	4.15	5.40
Wabageshik	105	9897	Jan 10%	38.5	0.09	444	95	98	197.31	204.71	4.66	7.40
Wabageshik	105	9897	Feb 10%	28.0	0.07	430	93	95	197.31	204.56	4.62	7.25
Wabageshik	105	9897	Mar 10%	70.3	0.15	481	101	104	197.31	205.09	4.74	7.78
Wabageshik	105	9897	Apr 10%	268.0	0.43	629	111	114	197.31	206.48	5.69	9.17
Wabageshik	105	9897	May 10%	215.0	0.36	593	109	112	197.31	206.14	5.45	8.83
Wabageshik	105	9897	Jun 10%	78.8	0.16	489	103	105	197.31	205.17	4.77	7.86
Wabageshik	105	9897	Jul 10%	47.7	0.10	455	97	99	197.31	204.83	4.70	7.52
Wabageshik	105	9897	Aug 10%	28.7	0.07	431	93	96	197.31	204.57	4.62	7.26
Wabageshik	105	9897	Sep 10%	32.0	0.07	435	94	96	197.31	204.62	4.63	7.31
Wabageshik	105	9897	Oct 10%	69.9	0.15	480	101	104	197.31	205.08	4.74	7.77
Wabageshik	105	9897	Nov 10%	93.5	0.19	504	105	107	197.31	205.31	4.80	8.00
Wabageshik	105	9897	Dec 10%	70.6	0.15	481	101	104	197.31	205.09	4.74	7.78
Wabageshik	105	9897	Jan 90%	11.8	0.03	404	89	92	197.31	204.28	4.52	6.97
Wabageshik	105	9897	Feb 90%	10.3	0.03	401	89	92	197.31	204.25	4.50	6.94
Wabageshik	105	9897	Mar 90%	12.4	0.03	405	90	92	197.31	204.29	4.52	6.98
Wabageshik	105	9897	Apr 90%	43.9	0.10	450	96	99	197.31	204.78	4.69	7.47
Wabageshik	105	9897	May 90%	35.3	0.08	440	95	97	197.31	204.67	4.65	7.36
Wabageshik	105	9897	Jun 90%	19.3	0.05	417	91	93	197.31	204.42	4.59	7.11
Wabageshik	105	9897	Jul 90%	8.9	0.02	398	89	91	197.31	204.22	4.48	6.91
Wabageshik	105	9897	Aug 90%	5.7	0.01	391	88	91	197.31	204.14	4.43	6.83
Wabageshik	105	9897	Sep 90%	4.9	0.01	390	88	90	197.31	204.12	4.42	6.81
Wabageshik	105	9897	Oct 90%	6.9	0.02	394	89	91	197.31	204.17	4.45	6.86
Wabageshik	105	9897	Nov 90%	14.4	0.04	409	90	92	197.31	204.33	4.55	7.02
Wabageshik	105	9897	Dec 90%	16.3	0.04	412	90	93	197.31	204.37	4.57	7.06
Wabageshik	106	9197	Jan 10%	38.5	0.07	517	106	109	194.91	204.71	4.87	9.80
Wabageshik	106	9197	Feb 10%	28.0	0.06	501	104	107	194.91	204.56	4.83	9.65
Wabageshik	106	9197	Mar 10%	70.3	0.13	558	114	116	194.91	205.08	4.91	10.17
Wabageshik	106	9197	Apr 10%	268.0	0.37	727	129	132	194.91	206.46	5.64	11.55
Wabageshik	106	9197	May 10%	215.0	0.31	685	126	129	194.91	206.13	5.43	11.22
Wabageshik	106	9197	Jun 10%	78.8	0.14	568	115	118	194.91	205.17	4.94	10.26
Wabageshik	106	9197	Jul 10%	47.7	0.09	529	109	112	194.91	204.83	4.86	9.92
Wabageshik	106	9197	Aug 10%	28.7	0.06	502	104	107	194.91	204.57	4.83	9.66
Wabageshik	106	9197	Sep 10%	32.0	0.06	507	105	107	194.91	204.62	4.84	9.71
Wabageshik	106	9197	Oct 10%	69.9	0.13	557	113	116	194.91	205.08	4.91	10.17
Wabageshik	106	9197	Nov 10%	93.5	0.16	584	117	120	194.91	205.31	4.98	10.40
Wabageshik	106	9197	Dec 10%	70.6	0.13	558	114	116	194.91	205.09	4.91	10.18

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	106	9197	Jan 90%	11.8	0.02	473	99	102	194.91	204.28	4.75	9.37
Wabageshik	106	9197	Feb 90%	10.3	0.02	469	99	102	194.91	204.25	4.74	9.34
Wabageshik	106	9197	Mar 90%	12.4	0.03	474	100	102	194.91	204.29	4.76	9.38
Wabageshik	106	9197	Apr 90%	43.9	0.08	524	108	111	194.91	204.78	4.87	9.87
Wabageshik	106	9197	May 90%	35.3	0.07	512	105	108	194.91	204.67	4.86	9.76
Wabageshik	106	9197	Jun 90%	19.3	0.04	487	101	104	194.91	204.42	4.81	9.51
Wabageshik	106	9197	Jul 90%	8.9	0.02	466	99	102	194.91	204.22	4.72	9.31
Wabageshik	106	9197	Aug 90%	5.7	0.01	459	98	101	194.91	204.14	4.67	9.23
Wabageshik	106	9197	Sep 90%	4.9	0.01	457	98	101	194.91	204.12	4.66	9.21
Wabageshik	106	9197	Oct 90%	6.9	0.01	462	98	101	194.91	204.17	4.69	9.26
Wabageshik	106	9197	Nov 90%	14.4	0.03	478	100	103	194.91	204.33	4.78	9.42
Wabageshik	106	9197	Dec 90%	16.3	0.03	481	100	103	194.91	204.37	4.79	9.46
Wabageshik		8975	Jan 10%	38.5	0.05	792	154	155	196.87	204.71	5.14	7.84
Wabageshik		8975	Feb 10%	28.0	0.04	769	152	153	196.87	204.56	5.05	7.69
Wabageshik		8975	Mar 10%	70.3	0.08	851	159	161	196.87	205.08	5.34	8.21
Wabageshik		8975	Apr 10%	268.0	0.25	1077	168	169	196.87	206.46	6.43	9.59
Wabageshik		8975	May 10%	215.0	0.21	1022	166	168	196.87	206.13	6.14	9.26
Wabageshik		8975	Jun 10%	78.8	0.09	865	160	161	196.87	205.17	5.40	8.30
Wabageshik		8975	Jul 10%	47.7	0.06	810	156	157	196.87	204.83	5.20	7.96
Wabageshik		8975	Aug 10%	28.7	0.04	771	152	153	196.87	204.57	5.06	7.70
Wabageshik		8975	Sep 10%	32.0	0.04	778	153	154	196.87	204.62	5.09	7.75
Wabageshik		8975	Oct 10%	69.9	0.08	850	159	161	196.87	205.08	5.34	8.21
Wabageshik		8975	Nov 10%	93.5	0.11	886	161	163	196.87	205.31	5.50	8.44
Wabageshik		8975	Dec 10%	70.6	0.08	851	159	161	196.87	205.09	5.34	8.22
Wabageshik		8975	Jan 90%	11.8	0.02	727	148	149	196.87	204.28	4.90	7.41
Wabageshik		8975	Feb 90%	10.3	0.01	722	148	149	196.87	204.25	4.88	7.38
Wabageshik		8975	Mar 90%	12.4	0.02	729	149	150	196.87	204.29	4.91	7.42
Wabageshik		8975	Apr 90%	43.9	0.05	803	155	156	196.87	204.78	5.18	7.91
Wabageshik		8975	May 90%	35.3	0.04	785	154	155	196.87	204.67	5.11	7.80
Wabageshik		8975	Jun 90%	19.3	0.03	748	150	151	196.87	204.42	4.98	7.55
Wabageshik		8975	Jul 90%	8.9	0.01	718	148	149	196.87	204.22	4.87	7.35
Wabageshik		8975	Aug 90%	5.7	0.01	706	146	148	196.87	204.14	4.82	7.27
Wabageshik		8975	Sep 90%	4.9	0.01	703	146	147	196.87	204.12	4.81	7.25
Wabageshik		8975	Oct 90%	6.9	0.01	711	147	148	196.87	204.17	4.84	7.30
Wabageshik		8975	Nov 90%	14.4	0.02	735	149	150	196.87	204.33	4.93	7.46
Wabageshik		8975	Dec 90%	16.3	0.02	740	150	151	196.87	204.37	4.95	7.50
Wabageshik	107	8732	Jan 10%	38.5	0.10	402	86	88	197.01	204.71	4.69	7.70
Wabageshik	107	8732	Feb 10%	28.0	0.07	389	83	86	197.01	204.56	4.69	7.55

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	107	8732	Mar 10%	70.3	0.16	435	95	98	197.01	205.08	4.60	8.07
Wabageshik	107	8732	Apr 10%	268.0	0.44	605	160	163	197.01	206.45	3.79	9.44
Wabageshik	107	8732	May 10%	215.0	0.39	557	139	143	197.01	206.13	4.00	9.12
Wabageshik	107	8732	Jun 10%	78.8	0.18	443	97	100	197.01	205.17	4.59	8.16
Wabageshik	107	8732	Jul 10%	47.7	0.12	412	88	91	197.01	204.83	4.68	7.82
Wabageshik	107	8732	Aug 10%	28.7	0.07	390	83	86	197.01	204.57	4.69	7.56
Wabageshik	107	8732	Sep 10%	32.0	0.08	394	84	87	197.01	204.62	4.69	7.61
Wabageshik	107	8732	Oct 10%	69.9	0.16	435	94	97	197.01	205.08	4.60	8.07
Wabageshik	107	8732	Nov 10%	93.5	0.20	457	100	103	197.01	205.30	4.57	8.29
Wabageshik	107	8732	Dec 10%	70.6	0.16	435	95	98	197.01	205.09	4.60	8.08
Wabageshik	107	8732	Jan 90%	11.8	0.03	366	79	82	197.01	204.28	4.63	7.27
Wabageshik	107	8732	Feb 90%	10.3	0.03	364	79	82	197.01	204.25	4.60	7.24
Wabageshik	107	8732	Mar 90%	12.4	0.03	367	79	82	197.01	204.29	4.64	7.28
Wabageshik	107	8732	Apr 90%	43.9	0.11	408	87	90	197.01	204.78	4.68	7.77
Wabageshik	107	8732	May 90%	35.3	0.09	398	85	88	197.01	204.67	4.69	7.66
Wabageshik	107	8732	Jun 90%	19.3	0.05	378	80	83	197.01	204.42	4.70	7.41
Wabageshik	107	8732	Jul 90%	8.9	0.02	361	79	81	197.01	204.22	4.57	7.21
Wabageshik	107	8732	Aug 90%	5.7	0.02	355	79	81	197.01	204.14	4.51	7.13
Wabageshik	107	8732	Sep 90%	4.9	0.01	354	79	81	197.01	204.12	4.49	7.11
Wabageshik	107	8732	Oct 90%	6.9	0.02	358	79	81	197.01	204.17	4.53	7.16
Wabageshik	107	8732	Nov 90%	14.4	0.04	370	79	82	197.01	204.33	4.67	7.32
Wabageshik	107	8732	Dec 90%	16.3	0.04	373	79	82	197.01	204.37	4.70	7.36
Wabageshik		8531	Jan 10%	38.5	0.05	722	275	276	199.83	204.71	2.62	4.88
Wabageshik		8531	Feb 10%	28.0	0.04	681	273	273	199.83	204.56	2.50	4.73
Wabageshik		8531	Mar 10%	70.3	0.09	826	282	283	199.83	205.08	2.92	5.25
Wabageshik		8531	Apr 10%	268.0	0.22	1225	298	299	199.83	206.46	4.12	6.63
Wabageshik		8531	May 10%	215.0	0.19	1128	294	295	199.83	206.13	3.83	6.30
Wabageshik		8531	Jun 10%	78.8	0.09	850	284	284	199.83	205.17	3.00	5.34
Wabageshik		8531	Jul 10%	47.7	0.06	754	278	278	199.83	204.83	2.72	5.00
Wabageshik		8531	Aug 10%	28.7	0.04	684	273	273	199.83	204.57	2.51	4.74
Wabageshik		8531	Sep 10%	32.0	0.05	697	274	274	199.83	204.62	2.55	4.79
Wabageshik		8531	Oct 10%	69.9	0.08	824	282	283	199.83	205.08	2.92	5.25
Wabageshik		8531	Nov 10%	93.5	0.11	889	286	287	199.83	205.30	3.11	5.47
Wabageshik		8531	Dec 10%	70.6	0.09	826	282	283	199.83	205.09	2.93	5.26
Wabageshik		8531	Jan 90%	11.8	0.02	605	267	268	199.83	204.28	2.26	4.45
Wabageshik		8531	Feb 90%	10.3	0.02	597	267	267	199.83	204.25	2.24	4.42
Wabageshik		8531	Mar 90%	12.4	0.02	608	268	268	199.83	204.29	2.27	4.46
Wabageshik		8531	Apr 90%	43.9	0.06	741	277	277	199.83	204.78	2.68	4.95
Wabageshik		8531	May 90%	35.3	0.05	710	275	275	199.83	204.67	2.59	4.84

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		8531	Jun 90%	19.3	0.03	643	270	271	199.83	204.42	2.38	4.59
Wabageshik		8531	Jul 90%	8.9	0.02	588	266	267	199.83	204.22	2.21	4.39
Wabageshik		8531	Aug 90%	5.7	0.01	567	265	265	199.83	204.14	2.14	4.31
Wabageshik		8531	Sep 90%	4.9	0.01	562	264	265	199.83	204.12	2.13	4.29
Wabageshik		8531	Oct 90%	6.9	0.01	576	265	266	199.83	204.17	2.17	4.34
Wabageshik		8531	Nov 90%	14.4	0.02	619	268	269	199.83	204.33	2.31	4.50
Wabageshik		8531	Dec 90%	16.3	0.03	628	269	270	199.83	204.37	2.34	4.54
Wabageshik	108	8494	Jan 10%	38.5	0.05	852	354	355	198.76	204.71	2.41	5.95
Wabageshik	108	8494	Feb 10%	28.0	0.04	800	351	353	198.76	204.56	2.28	5.80
Wabageshik	108	8494	Mar 10%	70.3	0.07	985	358	360	198.76	205.08	2.75	6.32
Wabageshik	108	8494	Apr 10%	268.0	0.18	1485	370	372	198.76	206.46	4.01	7.70
Wabageshik	108	8494	May 10%	215.0	0.16	1364	367	369	198.76	206.13	3.71	7.37
Wabageshik	108	8494	Jun 10%	78.8	0.08	1016	359	361	198.76	205.17	2.83	6.41
Wabageshik	108	8494	Jul 10%	47.7	0.05	894	355	357	198.76	204.83	2.52	6.07
Wabageshik	108	8494	Aug 10%	28.7	0.04	803	352	353	198.76	204.57	2.28	5.81
Wabageshik	108	8494	Sep 10%	32.0	0.04	820	352	354	198.76	204.62	2.33	5.86
Wabageshik	108	8494	Oct 10%	69.9	0.07	983	358	360	198.76	205.08	2.74	6.32
Wabageshik	108	8494	Nov 10%	93.5	0.09	1065	360	362	198.76	205.30	2.96	6.54
Wabageshik	108	8494	Dec 10%	70.6	0.07	986	358	360	198.76	205.09	2.75	6.33
Wabageshik	108	8494	Jan 90%	11.8	0.02	701	346	347	198.76	204.28	2.03	5.52
Wabageshik	108	8494	Feb 90%	10.3	0.01	691	346	347	198.76	204.25	2.00	5.49
Wabageshik	108	8494	Mar 90%	12.4	0.02	706	346	347	198.76	204.29	2.04	5.53
Wabageshik	108	8494	Apr 90%	43.9	0.05	877	355	356	198.76	204.78	2.47	6.02
Wabageshik	108	8494	May 90%	35.3	0.04	837	353	354	198.76	204.67	2.37	5.91
Wabageshik	108	8494	Jun 90%	19.3	0.03	750	349	350	198.76	204.42	2.15	5.66
Wabageshik	108	8494	Jul 90%	8.9	0.01	680	345	347	198.76	204.22	1.97	5.46
Wabageshik	108	8494	Aug 90%	5.7	0.01	653	344	346	198.76	204.14	1.90	5.38
Wabageshik	108	8494	Sep 90%	4.9	0.01	646	344	346	198.76	204.12	1.88	5.36
Wabageshik	108	8494	Oct 90%	6.9	0.01	664	345	346	198.76	204.17	1.92	5.41
Wabageshik	108	8494	Nov 90%	14.4	0.02	719	347	348	198.76	204.33	2.08	5.57
Wabageshik	108	8494	Dec 90%	16.3	0.02	732	347	349	198.76	204.37	2.11	5.61
Wabageshik		6793	Jan 10%	38.5	0.01	6408	1622	1622	199.47	204.71	3.95	5.24
Wabageshik		6793	Feb 10%	28.0	0.00	6168	1599	1599	199.47	204.56	3.86	5.09
Wabageshik		6793	Mar 10%	70.3	0.01	7021	1661	1660	199.47	205.08	4.23	5.61
Wabageshik		6793	Apr 10%	268.0	0.03	9318	1707	1680	199.47	206.46	5.46	6.99
Wabageshik		6793	May 10%	215.0	0.02	8767	1698	1678	199.47	206.13	5.16	6.66
Wabageshik		6793	Jun 10%	78.8	0.01	7164	1663	1661	199.47	205.17	4.31	5.70
Wabageshik		6793	Jul 10%	47.7	0.01	6599	1639	1639	199.47	204.83	4.03	5.36

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		6793	Aug 10%	28.7	0.00	6184	1601	1601	199.47	204.57	3.86	5.10
Wabageshik		6793	Sep 10%	32.0	0.01	6263	1608	1608	199.47	204.62	3.89	5.15
Wabageshik		6793	Oct 10%	69.9	0.01	7015	1661	1660	199.47	205.08	4.22	5.61
Wabageshik		6793	Nov 10%	93.5	0.01	7390	1666	1663	199.47	205.30	4.44	5.83
Wabageshik		6793	Dec 10%	70.6	0.01	7027	1661	1660	199.47	205.09	4.23	5.62
Wabageshik		6793	Jan 90%	11.8	0.00	5723	1557	1557	199.47	204.28	3.68	4.81
Wabageshik		6793	Feb 90%	10.3	0.00	5676	1553	1553	199.47	204.25	3.66	4.78
Wabageshik		6793	Mar 90%	12.4	0.00	5742	1559	1559	199.47	204.29	3.68	4.82
Wabageshik		6793	Apr 90%	43.9	0.01	6522	1632	1632	199.47	204.78	4.00	5.31
Wabageshik		6793	May 90%	35.3	0.01	6338	1615	1615	199.47	204.67	3.92	5.20
Wabageshik		6793	Jun 90%	19.3	0.00	5944	1578	1578	199.47	204.42	3.77	4.95
Wabageshik		6793	Jul 90%	8.9	0.00	5627	1548	1548	199.47	204.22	3.64	4.75
Wabageshik		6793	Aug 90%	5.7	0.00	5506	1536	1536	199.47	204.14	3.58	4.67
Wabageshik		6793	Sep 90%	4.9	0.00	5474	1533	1533	199.47	204.12	3.57	4.65
Wabageshik		6793	Oct 90%	6.9	0.00	5554	1541	1541	199.47	204.17	3.60	4.70
Wabageshik		6793	Nov 90%	14.4	0.00	5804	1565	1565	199.47	204.33	3.71	4.86
Wabageshik		6793	Dec 90%	16.3	0.00	5859	1570	1570	199.47	204.37	3.73	4.90
Wabageshik	109	6137	Jan 10%	38.5	0.07	550	131	133	196.80	204.71	4.19	7.91
Wabageshik	109	6137	Feb 10%	28.0	0.05	531	130	132	196.80	204.56	4.08	7.76
Wabageshik	109	6137	Mar 10%	70.3	0.12	600	139	140	196.80	205.08	4.33	8.28
Wabageshik	109	6137	Apr 10%	268.0	0.33	803	153	155	196.80	206.45	5.25	9.65
Wabageshik	109	6137	May 10%	215.0	0.29	753	151	153	196.80	206.12	4.99	9.32
Wabageshik	109	6137	Jun 10%	78.8	0.13	612	144	145	196.80	205.17	4.27	8.37
Wabageshik	109	6137	Jul 10%	47.7	0.08	566	132	134	196.80	204.83	4.28	8.03
Wabageshik	109	6137	Aug 10%	28.7	0.05	532	130	132	196.80	204.57	4.09	7.77
Wabageshik	109	6137	Sep 10%	32.0	0.06	539	131	132	196.80	204.62	4.12	7.82
Wabageshik	109	6137	Oct 10%	69.9	0.12	600	138	140	196.80	205.08	4.33	8.28
Wabageshik	109	6137	Nov 10%	93.5	0.15	632	145	147	196.80	205.30	4.35	8.50
Wabageshik	109	6137	Dec 10%	70.6	0.12	601	139	141	196.80	205.08	4.33	8.28
Wabageshik	109	6137	Jan 90%	11.8	0.02	495	127	129	196.80	204.28	3.89	7.48
Wabageshik	109	6137	Feb 90%	10.3	0.02	491	127	128	196.80	204.25	3.87	7.45
Wabageshik	109	6137	Mar 90%	12.4	0.02	496	127	129	196.80	204.29	3.90	7.49
Wabageshik	109	6137	Apr 90%	43.9	0.08	560	132	134	196.80	204.78	4.25	7.98
Wabageshik	109	6137	May 90%	35.3	0.06	545	131	133	196.80	204.67	4.16	7.87
Wabageshik	109	6137	Jun 90%	19.3	0.04	513	129	130	196.80	204.42	3.99	7.62
Wabageshik	109	6137	Jul 90%	8.9	0.02	487	127	128	196.80	204.22	3.85	7.42
Wabageshik	109	6137	Aug 90%	5.7	0.01	477	126	127	196.80	204.14	3.80	7.34
Wabageshik	109	6137	Sep 90%	4.9	0.01	474	125	127	196.80	204.12	3.78	7.32
Wabageshik	109	6137	Oct 90%	6.9	0.01	481	126	128	196.80	204.17	3.82	7.37

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	109	6137	Nov 90%	14.4	0.03	501	128	129	196.80	204.33	3.93	7.53
Wabageshik	109	6137	Dec 90%	16.3	0.03	506	128	130	196.80	204.37	3.95	7.57
Wabageshik		5329	Jan 10%	38.5	0.01	5673	1494	1494	199.90	204.71	3.80	4.81
Wabageshik		5329	Feb 10%	28.0	0.01	5452	1475	1475	199.90	204.56	3.70	4.66
Wabageshik		5329	Mar 10%	70.3	0.01	6236	1520	1520	199.90	205.08	4.10	5.18
Wabageshik		5329	Apr 10%	268.0	0.03	8332	1534	1534	199.90	206.45	5.43	6.55
Wabageshik		5329	May 10%	215.0	0.03	7829	1531	1532	199.90	206.13	5.11	6.23
Wabageshik		5329	Jun 10%	78.8	0.01	6367	1521	1521	199.90	205.17	4.19	5.27
Wabageshik		5329	Jul 10%	47.7	0.01	5850	1508	1508	199.90	204.83	3.88	4.93
Wabageshik		5329	Aug 10%	28.7	0.01	5468	1476	1476	199.90	204.57	3.70	4.67
Wabageshik		5329	Sep 10%	32.0	0.01	5540	1482	1482	199.90	204.62	3.74	4.72
Wabageshik		5329	Oct 10%	69.9	0.01	6230	1520	1520	199.90	205.08	4.10	5.18
Wabageshik		5329	Nov 10%	93.5	0.01	6574	1523	1523	199.90	205.30	4.32	5.40
Wabageshik		5329	Dec 10%	70.6	0.01	6241	1520	1520	199.90	205.09	4.11	5.19
Wabageshik		5329	Jan 90%	11.8	0.00	5042	1438	1438	199.90	204.28	3.51	4.38
Wabageshik		5329	Feb 90%	10.3	0.00	4998	1434	1434	199.90	204.25	3.48	4.35
Wabageshik		5329	Mar 90%	12.4	0.00	5059	1440	1440	199.90	204.29	3.51	4.39
Wabageshik		5329	Apr 90%	43.9	0.01	5778	1503	1503	199.90	204.78	3.84	4.88
Wabageshik		5329	May 90%	35.3	0.01	5609	1488	1488	199.90	204.67	3.77	4.77
Wabageshik		5329	Jun 90%	19.3	0.00	5246	1456	1457	199.90	204.42	3.60	4.52
Wabageshik		5329	Jul 90%	8.9	0.00	4953	1430	1430	199.90	204.22	3.46	4.32
Wabageshik		5329	Aug 90%	5.7	0.00	4841	1420	1420	199.90	204.14	3.41	4.24
Wabageshik		5329	Sep 90%	4.9	0.00	4811	1417	1417	199.90	204.12	3.39	4.22
Wabageshik		5329	Oct 90%	6.9	0.00	4885	1424	1424	199.90	204.17	3.43	4.27
Wabageshik		5329	Nov 90%	14.4	0.00	5116	1445	1445	199.90	204.33	3.54	4.43
Wabageshik		5329	Dec 90%	16.3	0.00	5168	1450	1450	199.90	204.37	3.56	4.47
Wabageshik		4633	Jan 10%	38.5	0.01	2893	749	749	199.94	204.71	3.86	4.77
Wabageshik		4633	Feb 10%	28.0	0.01	2782	740	741	199.94	204.56	3.76	4.62
Wabageshik		4633	Mar 10%	70.3	0.02	3176	765	765	199.94	205.08	4.15	5.14
Wabageshik		4633	Apr 10%	268.0	0.06	4231	775	776	199.94	206.45	5.46	6.51
Wabageshik		4633	May 10%	215.0	0.05	3977	772	773	199.94	206.13	5.15	6.19
Wabageshik		4633	Jun 10%	78.8	0.02	3241	765	766	199.94	205.17	4.24	5.23
Wabageshik		4633	Jul 10%	47.7	0.02	2982	756	756	199.94	204.83	3.94	4.89
Wabageshik		4633	Aug 10%	28.7	0.01	2790	741	741	199.94	204.57	3.76	4.63
Wabageshik		4633	Sep 10%	32.0	0.01	2826	744	744	199.94	204.62	3.80	4.68
Wabageshik		4633	Oct 10%	69.9	0.02	3173	765	765	199.94	205.08	4.15	5.14
Wabageshik		4633	Nov 10%	93.5	0.03	3346	766	766	199.94	205.30	4.37	5.36
Wabageshik		4633	Dec 10%	70.6	0.02	3178	765	765	199.94	205.09	4.16	5.15

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		4633	Jan 90%	11.8	0.00	2576	724	724	199.94	204.28	3.56	4.34
Wabageshik		4633	Feb 90%	10.3	0.00	2554	722	723	199.94	204.25	3.54	4.31
Wabageshik		4633	Mar 90%	12.4	0.00	2585	725	725	199.94	204.29	3.57	4.35
Wabageshik		4633	Apr 90%	43.9	0.01	2946	753	753	199.94	204.78	3.91	4.84
Wabageshik		4633	May 90%	35.3	0.01	2861	747	747	199.94	204.67	3.83	4.73
Wabageshik		4633	Jun 90%	19.3	0.01	2679	732	732	199.94	204.42	3.66	4.48
Wabageshik		4633	Jul 90%	8.9	0.00	2531	721	721	199.94	204.22	3.51	4.28
Wabageshik		4633	Aug 90%	5.7	0.00	2475	716	716	199.94	204.14	3.46	4.20
Wabageshik		4633	Sep 90%	4.9	0.00	2460	715	715	199.94	204.12	3.44	4.18
Wabageshik		4633	Oct 90%	6.9	0.00	2497	718	718	199.94	204.17	3.48	4.23
Wabageshik		4633	Nov 90%	14.4	0.01	2613	727	727	199.94	204.33	3.59	4.39
Wabageshik		4633	Dec 90%	16.3	0.01	2639	729	729	199.94	204.37	3.62	4.43
Wabageshik		3638	Jan 10%	38.5	0.02	1663	443	443	199.95	204.71	3.75	4.76
Wabageshik		3638	Feb 10%	28.0	0.02	1597	438	438	199.95	204.56	3.65	4.61
Wabageshik		3638	Mar 10%	70.3	0.04	1830	452	452	199.95	205.08	4.05	5.13
Wabageshik		3638	Apr 10%	268.0	0.11	2455	463	464	199.95	206.45	5.30	6.50
Wabageshik		3638	May 10%	215.0	0.09	2304	459	460	199.95	206.12	5.02	6.17
Wabageshik		3638	Jun 10%	78.8	0.04	1868	452	452	199.95	205.17	4.13	5.22
Wabageshik		3638	Jul 10%	47.7	0.03	1715	447	447	199.95	204.83	3.83	4.88
Wabageshik		3638	Aug 10%	28.7	0.02	1602	438	438	199.95	204.57	3.66	4.62
Wabageshik		3638	Sep 10%	32.0	0.02	1623	440	440	199.95	204.62	3.69	4.67
Wabageshik		3638	Oct 10%	69.9	0.04	1828	452	452	199.95	205.08	4.05	5.13
Wabageshik		3638	Nov 10%	93.5	0.05	1930	453	453	199.95	205.30	4.26	5.35
Wabageshik		3638	Dec 10%	70.6	0.04	1831	452	452	199.95	205.09	4.05	5.14
Wabageshik		3638	Jan 90%	11.8	0.01	1475	427	427	199.95	204.28	3.46	4.33
Wabageshik		3638	Feb 90%	10.3	0.01	1462	425	426	199.95	204.25	3.44	4.30
Wabageshik		3638	Mar 90%	12.4	0.01	1481	427	427	199.95	204.29	3.47	4.34
Wabageshik		3638	Apr 90%	43.9	0.03	1694	446	446	199.95	204.78	3.80	4.83
Wabageshik		3638	May 90%	35.3	0.02	1644	442	442	199.95	204.67	3.72	4.72
Wabageshik		3638	Jun 90%	19.3	0.01	1536	432	432	199.95	204.42	3.55	4.47
Wabageshik		3638	Jul 90%	8.9	0.01	1449	424	424	199.95	204.22	3.42	4.27
Wabageshik		3638	Aug 90%	5.7	0.00	1416	421	421	199.95	204.14	3.36	4.19
Wabageshik		3638	Sep 90%	4.9	0.00	1407	420	421	199.95	204.12	3.35	4.17
Wabageshik		3638	Oct 90%	6.9	0.00	1429	422	423	199.95	204.17	3.38	4.22
Wabageshik		3638	Nov 90%	14.4	0.01	1497	429	429	199.95	204.33	3.49	4.38
Wabageshik		3638	Dec 90%	16.3	0.01	1513	430	430	199.95	204.37	3.52	4.42
Wabageshik		2606	Jan 10%	38.5	0.01	3041	799	800	199.72	204.71	3.80	4.99
Wabageshik		2606	Feb 10%	28.0	0.01	2922	788	788	199.72	204.56	3.71	4.84

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		2606	Mar 10%	70.3	0.02	3341	811	811	199.72	205.08	4.12	5.36
Wabageshik		2606	Apr 10%	268.0	0.06	4460	821	822	199.72	206.45	5.43	6.73
Wabageshik		2606	May 10%	215.0	0.05	4192	820	820	199.72	206.12	5.11	6.40
Wabageshik		2606	Jun 10%	78.8	0.02	3411	812	812	199.72	205.17	4.20	5.45
Wabageshik		2606	Jul 10%	47.7	0.02	3135	807	807	199.72	204.83	3.88	5.11
Wabageshik		2606	Aug 10%	28.7	0.01	2931	789	789	199.72	204.57	3.71	4.85
Wabageshik		2606	Sep 10%	32.0	0.01	2969	793	793	199.72	204.62	3.75	4.90
Wabageshik		2606	Oct 10%	69.9	0.02	3338	811	811	199.72	205.08	4.12	5.36
Wabageshik		2606	Nov 10%	93.5	0.03	3521	813	813	199.72	205.30	4.33	5.58
Wabageshik		2606	Dec 10%	70.6	0.02	3344	811	811	199.72	205.09	4.12	5.37
Wabageshik		2606	Jan 90%	11.8	0.00	2703	767	767	199.72	204.28	3.53	4.56
Wabageshik		2606	Feb 90%	10.3	0.00	2680	765	765	199.72	204.25	3.51	4.53
Wabageshik		2606	Mar 90%	12.4	0.00	2713	768	768	199.72	204.29	3.53	4.57
Wabageshik		2606	Apr 90%	43.9	0.01	3097	805	805	199.72	204.78	3.85	5.06
Wabageshik		2606	May 90%	35.3	0.01	3006	796	796	199.72	204.67	3.78	4.95
Wabageshik		2606	Jun 90%	19.3	0.01	2812	778	778	199.72	204.42	3.62	4.70
Wabageshik		2606	Jul 90%	8.9	0.00	2656	762	762	199.72	204.22	3.48	4.50
Wabageshik		2606	Aug 90%	5.7	0.00	2597	756	756	199.72	204.14	3.43	4.42
Wabageshik		2606	Sep 90%	4.9	0.00	2581	755	755	199.72	204.12	3.42	4.40
Wabageshik		2606	Oct 90%	6.9	0.00	2620	759	759	199.72	204.17	3.45	4.45
Wabageshik		2606	Nov 90%	14.4	0.01	2743	771	771	199.72	204.33	3.56	4.61
Wabageshik		2606	Dec 90%	16.3	0.01	2771	774	774	199.72	204.37	3.58	4.65
Wabageshik		1873	Jan 10%	38.5	0.02	1645	415	415	199.83	204.71	3.97	4.88
Wabageshik		1873	Feb 10%	28.0	0.02	1584	410	410	199.83	204.56	3.86	4.73
Wabageshik		1873	Mar 10%	70.3	0.04	1802	425	426	199.83	205.08	4.24	5.25
Wabageshik		1873	Apr 10%	268.0	0.11	2390	435	436	199.83	206.45	5.50	6.62
Wabageshik		1873	May 10%	215.0	0.10	2248	432	433	199.83	206.12	5.20	6.29
Wabageshik		1873	Jun 10%	78.8	0.04	1838	426	426	199.83	205.17	4.32	5.34
Wabageshik		1873	Jul 10%	47.7	0.03	1694	418	419	199.83	204.83	4.05	5.00
Wabageshik		1873	Aug 10%	28.7	0.02	1588	410	411	199.83	204.57	3.87	4.74
Wabageshik		1873	Sep 10%	32.0	0.02	1608	412	412	199.83	204.62	3.90	4.79
Wabageshik		1873	Oct 10%	69.9	0.04	1800	425	426	199.83	205.08	4.23	5.25
Wabageshik		1873	Nov 10%	93.5	0.05	1896	426	427	199.83	205.30	4.45	5.47
Wabageshik		1873	Dec 10%	70.6	0.04	1803	425	426	199.83	205.08	4.24	5.25
Wabageshik		1873	Jan 90%	11.8	0.01	1469	401	401	199.83	204.28	3.66	4.45
Wabageshik		1873	Feb 90%	10.3	0.01	1457	400	401	199.83	204.25	3.64	4.42
Wabageshik		1873	Mar 90%	12.4	0.01	1474	402	402	199.83	204.29	3.67	4.46
Wabageshik		1873	Apr 90%	43.9	0.03	1674	417	417	199.83	204.78	4.01	4.95
Wabageshik		1873	May 90%	35.3	0.02	1627	413	414	199.83	204.67	3.94	4.84

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		1873	Jun 90%	19.3	0.01	1526	406	406	199.83	204.42	3.76	4.59
Wabageshik		1873	Jul 90%	8.9	0.01	1445	399	400	199.83	204.22	3.62	4.39
Wabageshik		1873	Aug 90%	5.7	0.00	1414	397	397	199.83	204.14	3.56	4.31
Wabageshik		1873	Sep 90%	4.9	0.00	1405	396	396	199.83	204.12	3.55	4.29
Wabageshik		1873	Oct 90%	6.9	0.00	1426	398	398	199.83	204.17	3.58	4.34
Wabageshik		1873	Nov 90%	14.4	0.01	1490	403	403	199.83	204.33	3.70	4.50
Wabageshik		1873	Dec 90%	16.3	0.01	1505	404	404	199.83	204.37	3.72	4.54
Wabageshik		1183	Jan 10%	38.5	0.02	1692	501	437	199.81	204.71	3.38	4.90
Wabageshik		1183	Feb 10%	28.0	0.02	1627	493	431	199.81	204.56	3.30	4.75
Wabageshik		1183	Mar 10%	70.3	0.04	1855	511	442	199.81	205.08	3.63	5.27
Wabageshik		1183	Apr 10%	268.0	0.11	2462	530	445	199.81	206.45	4.65	6.64
Wabageshik		1183	May 10%	215.0	0.09	2317	524	445	199.81	206.12	4.42	6.31
Wabageshik		1183	Jun 10%	78.8	0.04	1893	512	442	199.81	205.17	3.70	5.36
Wabageshik		1183	Jul 10%	47.7	0.03	1743	507	441	199.81	204.83	3.44	5.02
Wabageshik		1183	Aug 10%	28.7	0.02	1631	493	432	199.81	204.57	3.31	4.76
Wabageshik		1183	Sep 10%	32.0	0.02	1653	496	433	199.81	204.62	3.33	4.81
Wabageshik		1183	Oct 10%	69.9	0.04	1854	511	442	199.81	205.08	3.63	5.27
Wabageshik		1183	Nov 10%	93.5	0.05	1953	513	443	199.81	205.30	3.81	5.49
Wabageshik		1183	Dec 10%	70.6	0.04	1857	511	442	199.81	205.08	3.63	5.27
Wabageshik		1183	Jan 90%	11.8	0.01	1507	477	421	199.81	204.28	3.16	4.47
Wabageshik		1183	Feb 90%	10.3	0.01	1494	476	420	199.81	204.25	3.14	4.44
Wabageshik		1183	Mar 90%	12.4	0.01	1512	478	422	199.81	204.29	3.16	4.48
Wabageshik		1183	Apr 90%	43.9	0.03	1722	505	439	199.81	204.78	3.41	4.97
Wabageshik		1183	May 90%	35.3	0.02	1673	498	435	199.81	204.67	3.36	4.86
Wabageshik		1183	Jun 90%	19.3	0.01	1567	485	426	199.81	204.42	3.23	4.61
Wabageshik		1183	Jul 90%	8.9	0.01	1481	474	419	199.81	204.22	3.12	4.41
Wabageshik		1183	Aug 90%	5.7	0.00	1448	470	416	199.81	204.14	3.08	4.33
Wabageshik		1183	Sep 90%	4.9	0.00	1439	469	416	199.81	204.12	3.07	4.31
Wabageshik		1183	Oct 90%	6.9	0.00	1461	471	418	199.81	204.17	3.10	4.36
Wabageshik		1183	Nov 90%	14.4	0.01	1529	480	423	199.81	204.33	3.18	4.52
Wabageshik		1183	Dec 90%	16.3	0.01	1544	482	425	199.81	204.37	3.20	4.56
Wabageshik	-4	1112	Jan 10%	38.5	0.13	298	97	97	200.00	204.71	3.09	4.71
Wabageshik	-4	1112	Feb 10%	28.0	0.10	284	95	95	200.00	204.56	3.00	4.56
Wabageshik	-4	1112	Mar 10%	70.3	0.21	335	100	101	200.00	205.08	3.34	5.08
Wabageshik	-4	1112	Apr 10%	268.0	0.56	477	111	112	200.00	206.43	4.31	6.43
Wabageshik	-4	1112	May 10%	215.0	0.49	442	108	109	200.00	206.11	4.09	6.11
Wabageshik	-4	1112	Jun 10%	78.8	0.23	343	101	102	200.00	205.16	3.40	5.16
Wabageshik	-4	1112	Jul 10%	47.7	0.15	310	98	99	200.00	204.83	3.15	4.83

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	-4	1112	Aug 10%	28.7	0.10	285	95	95	200.00	204.57	3.01	4.57
Wabageshik	-4	1112	Sep 10%	32.0	0.11	290	95	96	200.00	204.62	3.04	4.62
Wabageshik	-4	1112	Oct 10%	69.9	0.21	334	100	101	200.00	205.08	3.33	5.08
Wabageshik	-4	1112	Nov 10%	93.5	0.26	357	102	103	200.00	205.30	3.50	5.30
Wabageshik	-4	1112	Dec 10%	70.6	0.21	335	100	101	200.00	205.08	3.34	5.08
Wabageshik	-4	1112	Jan 90%	11.8	0.05	258	91	91	200.00	204.28	2.85	4.28
Wabageshik	-4	1112	Feb 90%	10.3	0.04	255	90	91	200.00	204.25	2.83	4.25
Wabageshik	-4	1112	Mar 90%	12.4	0.05	259	91	91	200.00	204.29	2.85	4.29
Wabageshik	-4	1112	Apr 90%	43.9	0.14	305	98	98	200.00	204.78	3.12	4.78
Wabageshik	-4	1112	May 90%	35.3	0.12	294	96	97	200.00	204.67	3.06	4.67
Wabageshik	-4	1112	Jun 90%	19.3	0.07	271	93	93	200.00	204.42	2.93	4.42
Wabageshik	-4	1112	Jul 90%	8.9	0.04	252	90	90	200.00	204.22	2.81	4.22
Wabageshik	-4	1112	Aug 90%	5.7	0.02	245	89	89	200.00	204.14	2.77	4.14
Wabageshik	-4	1112	Sep 90%	4.9	0.02	243	88	89	200.00	204.12	2.76	4.12
Wabageshik	-4	1112	Oct 90%	6.9	0.03	248	89	90	200.00	204.17	2.79	4.17
Wabageshik	-4	1112	Nov 90%	14.4	0.05	263	91	92	200.00	204.33	2.88	4.33
Wabageshik	-4	1112	Dec 90%	16.3	0.06	266	92	92	200.00	204.37	2.90	4.37
Wabageshik		1058	Jan 10%	38.5	0.90	43	66	66	203.89	204.66	0.65	0.77
Wabageshik		1058	Feb 10%	28.0	0.83	34	62	62	203.89	204.52	0.55	0.63
Wabageshik		1058	Mar 10%	70.3	1.03	68	75	75	203.89	205.02	0.91	1.13
Wabageshik		1058	Apr 10%	268.0	1.55	173	87	88	203.89	206.31	1.98	2.42
Wabageshik		1058	May 10%	215.0	1.47	146	85	85	203.89	206.00	1.72	2.11
Wabageshik		1058	Jun 10%	78.8	1.06	74	76	76	203.89	205.10	0.98	1.21
Wabageshik		1058	Jul 10%	47.7	0.95	50	69	69	203.89	204.78	0.74	0.89
Wabageshik		1058	Aug 10%	28.7	0.83	35	62	62	203.89	204.53	0.56	0.64
Wabageshik		1058	Sep 10%	32.0	0.85	37	63	63	203.89	204.58	0.59	0.69
Wabageshik		1058	Oct 10%	69.9	1.03	68	75	75	203.89	205.02	0.90	1.13
Wabageshik		1058	Nov 10%	93.5	1.11	84	77	78	203.89	205.23	1.09	1.34
Wabageshik		1058	Dec 10%	70.6	1.03	68	75	75	203.89	205.02	0.91	1.13
Wabageshik		1058	Jan 90%	11.8	0.64	18	55	55	203.89	204.26	0.33	0.37
Wabageshik		1058	Feb 90%	10.3	0.61	17	54	54	203.89	204.23	0.31	0.34
Wabageshik		1058	Mar 90%	12.4	0.65	19	55	55	203.89	204.27	0.34	0.38
Wabageshik		1058	Apr 90%	43.9	0.93	47	67	67	203.89	204.73	0.70	0.84
Wabageshik		1058	May 90%	35.3	0.88	40	65	65	203.89	204.62	0.62	0.73
Wabageshik		1058	Jun 90%	19.3	0.75	26	58	58	203.89	204.39	0.44	0.50
Wabageshik		1058	Jul 90%	8.9	0.58	15	53	53	203.89	204.20	0.28	0.31
Wabageshik		1058	Aug 90%	5.7	0.50	11	52	52	203.89	204.12	0.22	0.23
Wabageshik		1058	Sep 90%	4.9	0.48	10	51	51	203.89	204.10	0.20	0.21
Wabageshik		1058	Oct 90%	6.9	0.54	13	52	52	203.89	204.15	0.25	0.26

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		1058	Nov 90%	14.4	0.68	21	56	56	203.89	204.30	0.37	0.41
Wabageshik		1058	Dec 90%	16.3	0.71	23	57	57	203.89	204.34	0.40	0.45
Wabageshik		1008	Jan 10%	38.5	1.02	38	52	52	203.57	204.53	0.73	0.96
Wabageshik		1008	Feb 10%	28.0	0.93	30	50	50	203.57	204.39	0.60	0.82
Wabageshik		1008	Mar 10%	70.3	1.24	57	56	56	203.57	204.89	1.02	1.32
Wabageshik		1008	Apr 10%	268.0	1.96	137	70	70	203.57	206.14	1.96	2.57
Wabageshik		1008	May 10%	215.0	1.86	115	67	68	203.57	205.82	1.71	2.25
Wabageshik		1008	Jun 10%	78.8	1.28	61	58	58	203.57	204.97	1.06	1.40
Wabageshik		1008	Jul 10%	47.7	1.10	44	53	53	203.57	204.65	0.82	1.08
Wabageshik		1008	Aug 10%	28.7	0.94	31	50	50	203.57	204.40	0.61	0.83
Wabageshik		1008	Sep 10%	32.0	0.97	33	51	51	203.57	204.45	0.65	0.88
Wabageshik		1008	Oct 10%	69.9	1.24	57	56	56	203.57	204.89	1.02	1.32
Wabageshik		1008	Nov 10%	93.5	1.36	69	60	60	203.57	205.10	1.14	1.53
Wabageshik		1008	Dec 10%	70.6	1.24	57	56	56	203.57	204.89	1.02	1.32
Wabageshik		1008	Jan 90%	11.8	0.75	16	47	47	203.57	204.09	0.34	0.52
Wabageshik		1008	Feb 90%	10.3	0.73	14	47	47	203.57	204.06	0.30	0.49
Wabageshik		1008	Mar 90%	12.4	0.75	16	47	47	203.57	204.11	0.35	0.54
Wabageshik		1008	Apr 90%	43.9	1.07	41	53	53	203.57	204.60	0.78	1.03
Wabageshik		1008	May 90%	35.3	1.00	35	51	51	203.57	204.49	0.69	0.92
Wabageshik		1008	Jun 90%	19.3	0.84	23	49	49	203.57	204.24	0.47	0.67
Wabageshik		1008	Jul 90%	8.9	0.72	12	45	45	203.57	204.02	0.27	0.45
Wabageshik		1008	Aug 90%	5.7	0.73	8	37	37	203.57	203.91	0.21	0.34
Wabageshik		1008	Sep 90%	4.9	0.73	7	35	35	203.57	203.88	0.19	0.31
Wabageshik		1008	Oct 90%	6.9	0.73	10	40	40	203.57	203.95	0.24	0.38
Wabageshik		1008	Nov 90%	14.4	0.78	19	48	48	203.57	204.15	0.39	0.58
Wabageshik		1008	Dec 90%	16.3	0.80	20	48	48	203.57	204.19	0.42	0.62
Wabageshik	110	988	Jan 10%	38.5	0.98	39	46	49	202.51	204.48	0.86	1.97
Wabageshik	110	988	Feb 10%	28.0	0.85	33	44	47	202.51	204.34	0.75	1.83
Wabageshik	110	988	Mar 10%	70.3	1.25	56	52	57	202.51	204.83	1.07	2.32
Wabageshik	110	988	Apr 10%	268.0	2.06	130	68	78	202.51	206.04	1.91	3.53
Wabageshik	110	988	May 10%	215.0	1.98	109	65	73	202.51	205.72	1.67	3.21
Wabageshik	110	988	Jun 10%	78.8	1.31	60	54	59	202.51	204.90	1.12	2.39
Wabageshik	110	988	Jul 10%	47.7	1.07	44	47	51	202.51	204.59	0.94	2.08
Wabageshik	110	988	Aug 10%	28.7	0.86	33	44	47	202.51	204.35	0.75	1.84
Wabageshik	110	988	Sep 10%	32.0	0.90	35	45	48	202.51	204.39	0.79	1.88
Wabageshik	110	988	Oct 10%	69.9	1.25	56	52	57	202.51	204.82	1.07	2.31
Wabageshik	110	988	Nov 10%	93.5	1.39	67	56	61	202.51	205.03	1.21	2.52
Wabageshik	110	988	Dec 10%	70.6	1.25	56	52	57	202.51	204.83	1.07	2.32

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	110	988	Jan 90%	11.8	0.57	21	40	42	202.51	204.05	0.52	1.54
Wabageshik	110	988	Feb 90%	10.3	0.53	19	39	41	202.51	204.01	0.50	1.50
Wabageshik	110	988	Mar 90%	12.4	0.58	21	40	43	202.51	204.06	0.53	1.55
Wabageshik	110	988	Apr 90%	43.9	1.04	42	46	50	202.51	204.54	0.91	2.03
Wabageshik	110	988	May 90%	35.3	0.94	37	45	49	202.51	204.44	0.83	1.93
Wabageshik	110	988	Jun 90%	19.3	0.72	27	42	45	202.51	204.20	0.64	1.69
Wabageshik	110	988	Jul 90%	8.9	0.49	18	37	39	202.51	203.98	0.48	1.47
Wabageshik	110	988	Aug 90%	5.7	0.39	15	32	34	202.51	203.88	0.45	1.37
Wabageshik	110	988	Sep 90%	4.9	0.36	14	31	33	202.51	203.85	0.44	1.34
Wabageshik	110	988	Oct 90%	6.9	0.44	16	34	36	202.51	203.92	0.47	1.41
Wabageshik	110	988	Nov 90%	14.4	0.63	23	41	43	202.51	204.10	0.56	1.59
Wabageshik	110	988	Dec 90%	16.3	0.66	25	42	44	202.51	204.14	0.59	1.63
Wabageshik		973	Jan 10%	38.5	2.23	17	34	35	203.53	204.16	0.50	0.63
Wabageshik		973	Feb 10%	28.0	2.04	14	33	33	203.53	204.06	0.42	0.53
Wabageshik		973	Mar 10%	70.3	2.63	27	39	39	203.53	204.42	0.69	0.89
Wabageshik		973	Apr 10%	268.0	2.63	102	62	64	203.53	205.81	1.63	2.28
Wabageshik		973	May 10%	215.0	2.77	78	57	58	203.53	205.41	1.37	1.88
Wabageshik		973	Jun 10%	78.8	2.70	29	40	40	203.53	204.48	0.74	0.95
Wabageshik		973	Jul 10%	47.7	2.37	20	36	36	203.53	204.25	0.56	0.72
Wabageshik		973	Aug 10%	28.7	2.05	14	33	33	203.53	204.07	0.42	0.54
Wabageshik		973	Sep 10%	32.0	2.12	15	34	34	203.53	204.10	0.45	0.57
Wabageshik		973	Oct 10%	69.9	2.62	27	39	39	203.53	204.42	0.69	0.89
Wabageshik		973	Nov 10%	93.5	2.82	33	41	42	203.53	204.58	0.81	1.05
Wabageshik		973	Dec 10%	70.6	2.63	27	39	39	203.53	204.43	0.69	0.90
Wabageshik		973	Jan 90%	11.8	1.58	7	30	30	203.53	203.86	0.25	0.33
Wabageshik		973	Feb 90%	10.3	1.52	7	29	29	203.53	203.83	0.23	0.30
Wabageshik		973	Mar 90%	12.4	1.61	8	30	30	203.53	203.87	0.26	0.34
Wabageshik		973	Apr 90%	43.9	2.31	19	35	36	203.53	204.21	0.54	0.68
Wabageshik		973	May 90%	35.3	2.18	16	34	34	203.53	204.13	0.48	0.60
Wabageshik		973	Jun 90%	19.3	1.82	11	32	32	203.53	203.96	0.33	0.43
Wabageshik		973	Jul 90%	8.9	1.45	6	29	29	203.53	203.81	0.21	0.28
Wabageshik		973	Aug 90%	5.7	1.28	4	27	28	203.53	203.75	0.16	0.22
Wabageshik		973	Sep 90%	4.9	1.22	4	27	27	203.53	203.74	0.15	0.21
Wabageshik		973	Oct 90%	6.9	1.35	5	28	28	203.53	203.78	0.18	0.25
Wabageshik		973	Nov 90%	14.4	1.68	9	30	30	203.53	203.90	0.28	0.37
Wabageshik		973	Dec 90%	16.3	1.74	9	31	31	203.53	203.92	0.30	0.39
Wabageshik	-3	955	Jan 10%	38.5	1.01	38	49	49	202.93	204.12	0.77	1.19
Wabageshik	-3	955	Feb 10%	28.0	0.88	32	48	48	202.93	203.99	0.66	1.06

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	-3	955	Mar 10%	70.3	1.31	54	52	52	202.93	204.42	1.03	1.49
Wabageshik	-3	955	Apr 10%	268.0	1.82	148	71	73	202.93	205.86	2.08	2.93
Wabageshik	-3	955	May 10%	215.0	1.79	120	69	71	202.93	205.47	1.73	2.54
Wabageshik	-3	955	Jun 10%	78.8	1.38	57	52	53	202.93	204.50	1.09	1.57
Wabageshik	-3	955	Jul 10%	47.7	1.11	43	50	51	202.93	204.22	0.86	1.29
Wabageshik	-3	955	Aug 10%	28.7	0.89	32	48	48	202.93	204.00	0.67	1.07
Wabageshik	-3	955	Sep 10%	32.0	0.93	34	48	49	202.93	204.04	0.71	1.11
Wabageshik	-3	955	Oct 10%	69.9	1.31	53	52	52	202.93	204.42	1.03	1.49
Wabageshik	-3	955	Nov 10%	93.5	1.44	65	60	61	202.93	204.62	1.08	1.69
Wabageshik	-3	955	Dec 10%	70.6	1.32	54	52	52	202.93	204.43	1.03	1.50
Wabageshik	-3	955	Jan 90%	11.8	0.62	19	46	46	202.93	203.72	0.42	0.79
Wabageshik	-3	955	Feb 90%	10.3	0.59	18	45	46	202.93	203.68	0.39	0.75
Wabageshik	-3	955	Mar 90%	12.4	0.63	20	46	46	202.93	203.73	0.43	0.80
Wabageshik	-3	955	Apr 90%	43.9	1.07	41	50	50	202.93	204.18	0.82	1.25
Wabageshik	-3	955	May 90%	35.3	0.98	36	49	49	202.93	204.08	0.74	1.15
Wabageshik	-3	955	Jun 90%	19.3	0.75	26	47	47	202.93	203.86	0.55	0.93
Wabageshik	-3	955	Jul 90%	8.9	0.56	16	45	45	202.93	203.65	0.35	0.72
Wabageshik	-3	955	Aug 90%	5.7	0.51	11	32	33	202.93	203.53	0.35	0.60
Wabageshik	-3	955	Sep 90%	4.9	0.50	10	27	28	202.93	203.48	0.36	0.55
Wabageshik	-3	955	Oct 90%	6.9	0.54	13	35	35	202.93	203.57	0.36	0.64
Wabageshik	-3	955	Nov 90%	14.4	0.67	22	46	46	202.93	203.77	0.47	0.84
Wabageshik	-3	955	Dec 90%	16.3	0.70	23	46	47	202.93	203.81	0.50	0.88
Wabageshik		900	Jan 10%	38.5	2.06	19	44	44	202.91	203.57	0.42	0.66
Wabageshik		900	Feb 10%	28.0	1.86	15	44	44	202.91	203.48	0.34	0.57
Wabageshik		900	Mar 10%	70.3	2.48	28	45	46	202.91	203.78	0.63	0.87
Wabageshik		900	Apr 10%	268.0	2.14	125	57	58	202.91	205.63	2.20	2.72
Wabageshik		900	May 10%	215.0	2.14	100	56	57	202.91	205.19	1.80	2.28
Wabageshik		900	Jun 10%	78.8	2.59	30	45	46	202.91	203.83	0.67	0.92
Wabageshik		900	Jul 10%	47.7	2.21	22	44	45	202.91	203.63	0.49	0.72
Wabageshik		900	Aug 10%	28.7	1.88	15	44	44	202.91	203.49	0.35	0.58
Wabageshik		900	Sep 10%	32.0	1.94	16	44	44	202.91	203.52	0.38	0.61
Wabageshik		900	Oct 10%	69.9	2.48	28	45	46	202.91	203.78	0.62	0.87
Wabageshik		900	Nov 10%	93.5	2.62	36	46	46	202.91	203.94	0.78	1.03
Wabageshik		900	Dec 10%	70.6	2.49	28	45	46	202.91	203.78	0.63	0.87
Wabageshik		900	Jan 90%	11.8	1.63	7	27	27	202.91	203.25	0.27	0.34
Wabageshik		900	Feb 90%	10.3	1.58	7	26	26	202.91	203.23	0.25	0.32
Wabageshik		900	Mar 90%	12.4	1.65	8	27	28	202.91	203.26	0.27	0.35
Wabageshik		900	Apr 90%	43.9	2.15	20	44	45	202.91	203.61	0.46	0.70
Wabageshik		900	May 90%	35.3	2.01	18	44	44	202.91	203.54	0.40	0.63

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		900	Jun 90%	19.3	1.81	11	33	33	202.91	203.37	0.33	0.46
Wabageshik		900	Jul 90%	8.9	1.51	6	25	26	202.91	203.20	0.23	0.29
Wabageshik		900	Aug 90%	5.7	1.35	4	23	23	202.91	203.13	0.18	0.22
Wabageshik		900	Sep 90%	4.9	1.29	4	23	23	202.91	203.11	0.17	0.20
Wabageshik		900	Oct 90%	6.9	1.42	5	24	24	202.91	203.16	0.20	0.25
Wabageshik		900	Nov 90%	14.4	1.72	8	28	29	202.91	203.29	0.30	0.38
Wabageshik		900	Dec 90%	16.3	1.76	9	30	30	202.91	203.32	0.31	0.41
Wabageshik	-2	801	Jan 10%	38.5	1.27	30	17	23	197.72	202.97	1.81	5.25
Wabageshik	-2	801	Feb 10%	28.0	1.00	28	16	22	197.72	202.82	1.74	5.10
Wabageshik	-2	801	Mar 10%	70.3	1.92	37	18	25	197.72	203.32	1.99	5.60
Wabageshik	-2	801	Apr 10%	268.0	4.50	59	25	32	197.72	204.33	2.36	6.61
Wabageshik	-2	801	May 10%	215.0	3.86	56	25	32	197.72	204.17	2.26	6.45
Wabageshik	-2	801	Jun 10%	78.8	2.07	38	19	25	197.72	203.40	2.03	5.68
Wabageshik	-2	801	Jul 10%	47.7	1.47	32	17	24	197.72	203.08	1.87	5.36
Wabageshik	-2	801	Aug 10%	28.7	1.02	28	16	22	197.72	202.83	1.75	5.11
Wabageshik	-2	801	Sep 10%	32.0	1.11	29	16	23	197.72	202.88	1.77	5.16
Wabageshik	-2	801	Oct 10%	69.9	1.91	37	18	25	197.72	203.32	1.99	5.60
Wabageshik	-2	801	Nov 10%	93.5	2.28	41	22	29	197.72	203.55	1.85	5.83
Wabageshik	-2	801	Dec 10%	70.6	1.92	37	18	25	197.72	203.33	1.99	5.61
Wabageshik	-2	801	Jan 90%	11.8	0.52	23	14	21	197.72	202.47	1.56	4.75
Wabageshik	-2	801	Feb 90%	10.3	0.47	22	14	20	197.72	202.43	1.53	4.71
Wabageshik	-2	801	Mar 90%	12.4	0.54	23	15	21	197.72	202.50	1.58	4.78
Wabageshik	-2	801	Apr 90%	43.9	1.39	32	17	23	197.72	203.04	1.85	5.32
Wabageshik	-2	801	May 90%	35.3	1.19	30	17	23	197.72	202.92	1.79	5.20
Wabageshik	-2	801	Jun 90%	19.3	0.76	25	15	21	197.72	202.66	1.66	4.94
Wabageshik	-2	801	Jul 90%	8.9	0.41	21	14	20	197.72	202.39	1.50	4.67
Wabageshik	-2	801	Aug 90%	5.7	0.30	19	14	20	197.72	202.24	1.38	4.52
Wabageshik	-2	801	Sep 90%	4.9	0.26	19	14	20	197.72	202.20	1.35	4.48
Wabageshik	-2	801	Oct 90%	6.9	0.34	21	14	20	197.72	202.32	1.45	4.60
Wabageshik	-2	801	Nov 90%	14.4	0.60	24	15	21	197.72	202.55	1.61	4.83
Wabageshik	-2	801	Dec 90%	16.3	0.67	24	15	21	197.72	202.59	1.63	4.87
Wabageshik	-1	637	Jan 10%	38.5	0.97	39	65	65	201.61	202.77	0.61	1.16
Wabageshik	-1	637	Feb 10%	28.0	0.87	32	64	65	201.61	202.66	0.50	1.05
Wabageshik	-1	637	Mar 10%	70.3	1.19	59	67	67	201.61	203.07	0.88	1.46
Wabageshik	-1	637	Apr 10%	268.0	1.80	149	77	78	201.61	204.30	1.92	2.69
Wabageshik	-1	637	May 10%	215.0	1.69	127	75	76	201.61	204.02	1.68	2.41
Wabageshik	-1	637	Jun 10%	78.8	1.24	64	68	68	201.61	203.14	0.94	1.53
Wabageshik	-1	637	Jul 10%	47.7	1.05	45	65	65	201.61	202.86	0.70	1.25

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	-1	637	Aug 10%	28.7	0.88	33	64	65	201.61	202.66	0.51	1.05
Wabageshik	-1	637	Sep 10%	32.0	0.91	35	64	65	201.61	202.70	0.54	1.09
Wabageshik	-1	637	Oct 10%	69.9	1.19	59	67	67	201.61	203.06	0.88	1.45
Wabageshik	-1	637	Nov 10%	93.5	1.31	71	69	69	201.61	203.25	1.04	1.64
Wabageshik	-1	637	Dec 10%	70.6	1.20	59	67	67	201.61	203.07	0.88	1.46
Wabageshik	-1	637	Jan 90%	11.8	0.71	17	46	46	201.61	202.39	0.36	0.78
Wabageshik	-1	637	Feb 90%	10.3	0.68	15	44	44	201.61	202.36	0.34	0.75
Wabageshik	-1	637	Mar 90%	12.4	0.69	18	52	52	201.61	202.42	0.35	0.81
Wabageshik	-1	637	Apr 90%	43.9	1.02	43	65	65	201.61	202.82	0.66	1.21
Wabageshik	-1	637	May 90%	35.3	0.95	37	65	65	201.61	202.74	0.58	1.13
Wabageshik	-1	637	Jun 90%	19.3	0.78	25	61	61	201.61	202.54	0.41	0.93
Wabageshik	-1	637	Jul 90%	8.9	0.65	14	43	43	201.61	202.32	0.32	0.71
Wabageshik	-1	637	Aug 90%	5.7	0.65	9	27	27	201.61	202.19	0.33	0.58
Wabageshik	-1	637	Sep 90%	4.9	0.62	8	25	25	201.61	202.16	0.31	0.55
Wabageshik	-1	637	Oct 90%	6.9	0.60	12	40	41	201.61	202.27	0.28	0.66
Wabageshik	-1	637	Nov 90%	14.4	0.72	20	55	55	201.61	202.46	0.36	0.85
Wabageshik	-1	637	Dec 90%	16.3	0.74	22	57	58	201.61	202.49	0.38	0.88
Wabageshik		495	Jan 10%	38.5	2.38	16	28	28	200.68	201.41	0.57	0.73
Wabageshik		495	Feb 10%	28.0	2.20	13	26	26	200.68	201.28	0.49	0.60
Wabageshik		495	Mar 10%	70.3	2.76	25	33	33	200.68	201.71	0.77	1.03
Wabageshik		495	Apr 10%	268.0	4.02	67	41	42	200.68	202.77	1.62	2.09
Wabageshik		495	May 10%	215.0	3.76	57	40	41	200.68	202.54	1.41	1.86
Wabageshik		495	Jun 10%	78.8	2.82	28	34	35	200.68	201.78	0.81	1.10
Wabageshik		495	Jul 10%	47.7	2.51	19	30	30	200.68	201.50	0.64	0.82
Wabageshik		495	Aug 10%	28.7	2.21	13	26	26	200.68	201.29	0.49	0.61
Wabageshik		495	Sep 10%	32.0	2.28	14	27	27	200.68	201.33	0.52	0.65
Wabageshik		495	Oct 10%	69.9	2.76	25	33	33	200.68	201.71	0.76	1.03
Wabageshik		495	Nov 10%	93.5	2.94	32	36	36	200.68	201.89	0.88	1.21
Wabageshik		495	Dec 10%	70.6	2.76	26	33	33	200.68	201.71	0.77	1.03
Wabageshik		495	Jan 90%	11.8	1.74	7	22	22	200.68	201.03	0.31	0.35
Wabageshik		495	Feb 90%	10.3	1.68	6	22	22	200.68	201.00	0.28	0.32
Wabageshik		495	Mar 90%	12.4	1.77	7	22	22	200.68	201.04	0.31	0.36
Wabageshik		495	Apr 90%	43.9	2.46	18	29	29	200.68	201.46	0.61	0.78
Wabageshik		495	May 90%	35.3	2.33	15	28	28	200.68	201.37	0.55	0.69
Wabageshik		495	Jun 90%	19.3	1.99	10	24	24	200.68	201.16	0.40	0.48
Wabageshik		495	Jul 90%	8.9	1.61	6	21	21	200.68	200.97	0.26	0.29
Wabageshik		495	Aug 90%	5.7	1.42	4	20	20	200.68	200.90	0.20	0.22
Wabageshik		495	Sep 90%	4.9	1.36	4	20	20	200.68	200.88	0.19	0.20
Wabageshik		495	Oct 90%	6.9	1.50	5	20	20	200.68	200.93	0.23	0.25

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		495	Nov 90%	14.4	1.84	8	23	23	200.68	201.08	0.34	0.40
Wabageshik		495	Dec 90%	16.3	1.91	9	23	23	200.68	201.11	0.37	0.43
Wabageshik	0	400	Jan 10%	38.5	0.97	40	18	20	197.00	200.07	2.23	3.07
Wabageshik	0	400	Feb 10%	28.0	0.76	37	17	19	197.00	199.90	2.12	2.90
Wabageshik	0	400	Mar 10%	70.3	1.49	47	19	21	197.00	200.48	2.47	3.48
Wabageshik	0	400	Apr 10%	268.0	3.64	74	23	26	197.00	201.73	3.21	4.73
Wabageshik	0	400	May 10%	215.0	3.13	69	22	25	197.00	201.51	3.08	4.51
Wabageshik	0	400	Jun 10%	78.8	1.61	49	19	22	197.00	200.57	2.52	3.57
Wabageshik	0	400	Jul 10%	47.7	1.13	42	18	20	197.00	200.21	2.31	3.21
Wabageshik	0	400	Aug 10%	28.7	0.78	37	17	19	197.00	199.91	2.13	2.91
Wabageshik	0	400	Sep 10%	32.0	0.84	38	18	19	197.00	199.97	2.16	2.97
Wabageshik	0	400	Oct 10%	69.9	1.48	47	19	21	197.00	200.48	2.47	3.48
Wabageshik	0	400	Nov 10%	93.5	1.80	52	20	22	197.00	200.71	2.61	3.71
Wabageshik	0	400	Dec 10%	70.6	1.49	47	19	21	197.00	200.48	2.47	3.48
Wabageshik	0	400	Jan 90%	11.8	0.38	31	16	18	197.00	199.54	1.91	2.54
Wabageshik	0	400	Feb 90%	10.3	0.34	30	16	17	197.00	199.50	1.88	2.50
Wabageshik	0	400	Mar 90%	12.4	0.40	31	16	18	197.00	199.56	1.92	2.56
Wabageshik	0	400	Apr 90%	43.9	1.07	41	18	20	197.00	200.15	2.28	3.15
Wabageshik	0	400	May 90%	35.3	0.91	39	18	19	197.00	200.02	2.20	3.02
Wabageshik	0	400	Jun 90%	19.3	0.57	34	17	18	197.00	199.72	2.02	2.72
Wabageshik	0	400	Jul 90%	8.9	0.30	29	16	17	197.00	199.46	1.85	2.46
Wabageshik	0	400	Aug 90%	5.7	0.21	28	16	17	197.00	199.36	1.79	2.36
Wabageshik	0	400	Sep 90%	4.9	0.18	27	15	17	197.00	199.33	1.77	2.33
Wabageshik	0	400	Oct 90%	6.9	0.24	29	16	17	197.00	199.40	1.81	2.40
Wabageshik	0	400	Nov 90%	14.4	0.45	32	16	18	197.00	199.61	1.95	2.61
Wabageshik	0	400	Dec 90%	16.3	0.50	33	17	18	197.00	199.66	1.97	2.66
Wabageshik		342	Jan 10%	38.5	2.37	16	29	29	199.05	199.73	0.57	0.68
Wabageshik		342	Feb 10%	28.0	2.18	13	27	27	199.05	199.61	0.48	0.56
Wabageshik		342	Mar 10%	70.3	2.77	25	33	33	199.05	200.03	0.77	0.98
Wabageshik		342	Apr 10%	268.0	3.98	67	42	42	199.05	201.16	1.61	2.11
Wabageshik		342	May 10%	215.0	3.77	57	40	40	199.05	200.91	1.44	1.86
Wabageshik		342	Jun 10%	78.8	2.85	28	33	34	199.05	200.10	0.83	1.05
Wabageshik		342	Jul 10%	47.7	2.51	19	30	30	199.05	199.82	0.64	0.77
Wabageshik		342	Aug 10%	28.7	2.19	13	27	27	199.05	199.62	0.48	0.57
Wabageshik		342	Sep 10%	32.0	2.26	14	28	28	199.05	199.65	0.51	0.60
Wabageshik		342	Oct 10%	69.9	2.77	25	33	33	199.05	200.02	0.77	0.97
Wabageshik		342	Nov 10%	93.5	3.00	31	34	34	199.05	200.20	0.91	1.15
Wabageshik		342	Dec 10%	70.6	2.78	25	33	33	199.05	200.03	0.77	0.98

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		342	Jan 90%	11.8	1.70	7	24	24	199.05	199.37	0.29	0.32
Wabageshik		342	Feb 90%	10.3	1.64	6	23	23	199.05	199.35	0.27	0.30
Wabageshik		342	Mar 90%	12.4	1.72	7	24	24	199.05	199.38	0.30	0.33
Wabageshik		342	Apr 90%	43.9	2.46	18	29	29	199.05	199.78	0.61	0.73
Wabageshik		342	May 90%	35.3	2.32	15	28	28	199.05	199.69	0.54	0.64
Wabageshik		342	Jun 90%	19.3	1.96	10	25	25	199.05	199.49	0.39	0.44
Wabageshik		342	Jul 90%	8.9	1.56	6	23	23	199.05	199.32	0.25	0.27
Wabageshik		342	Aug 90%	5.7	1.37	4	22	22	199.05	199.25	0.19	0.20
Wabageshik		342	Sep 90%	4.9	1.31	4	22	22	199.05	199.23	0.17	0.18
Wabageshik		342	Oct 90%	6.9	1.45	5	22	22	199.05	199.28	0.21	0.23
Wabageshik		342	Nov 90%	14.4	1.81	8	24	24	199.05	199.42	0.33	0.37
Wabageshik		342	Dec 90%	16.3	1.87	9	25	25	199.05	199.45	0.35	0.40
Wabageshik	1	255	Jan 10%	38.5	0.59	65	34	37	196.78	199.49	1.89	2.71
Wabageshik	1	255	Feb 10%	28.0	0.46	60	34	36	196.78	199.36	1.77	2.58
Wabageshik	1	255	Mar 10%	70.3	0.94	75	35	38	196.78	199.79	2.14	3.01
Wabageshik	1	255	Apr 10%	268.0	2.24	120	42	46	196.78	200.94	2.86	4.16
Wabageshik	1	255	May 10%	215.0	1.96	110	41	44	196.78	200.70	2.69	3.92
Wabageshik	1	255	Jun 10%	78.8	1.02	77	35	38	196.78	199.85	2.19	3.07
Wabageshik	1	255	Jul 10%	47.7	0.70	68	34	37	196.78	199.59	1.98	2.81
Wabageshik	1	255	Aug 10%	28.7	0.47	61	34	36	196.78	199.37	1.78	2.59
Wabageshik	1	255	Sep 10%	32.0	0.52	62	34	37	196.78	199.41	1.82	2.63
Wabageshik	1	255	Oct 10%	69.9	0.93	75	35	38	196.78	199.78	2.14	3.00
Wabageshik	1	255	Nov 10%	93.5	1.16	81	36	39	196.78	199.95	2.26	3.17
Wabageshik	1	255	Dec 10%	70.6	0.94	75	35	38	196.78	199.79	2.14	3.01
Wabageshik	1	255	Jan 90%	11.8	0.23	51	34	36	196.78	199.09	1.52	2.31
Wabageshik	1	255	Feb 90%	10.3	0.21	50	33	36	196.78	199.06	1.50	2.28
Wabageshik	1	255	Mar 90%	12.4	0.24	52	34	36	196.78	199.10	1.54	2.32
Wabageshik	1	255	Apr 90%	43.9	0.66	67	34	37	196.78	199.55	1.95	2.77
Wabageshik	1	255	May 90%	35.3	0.56	63	34	37	196.78	199.45	1.86	2.67
Wabageshik	1	255	Jun 90%	19.3	0.35	56	34	36	196.78	199.23	1.65	2.45
Wabageshik	1	255	Jul 90%	8.9	0.18	49	33	35	196.78	199.02	1.47	2.24
Wabageshik	1	255	Aug 90%	5.7	0.12	46	33	35	196.78	198.94	1.40	2.16
Wabageshik	1	255	Sep 90%	4.9	0.11	45	33	35	196.78	198.92	1.38	2.14
Wabageshik	1	255	Oct 90%	6.9	0.15	47	33	35	196.78	198.98	1.43	2.20
Wabageshik	1	255	Nov 90%	14.4	0.27	53	34	36	196.78	199.14	1.57	2.36
Wabageshik	1	255	Dec 90%	16.3	0.30	54	34	36	196.78	199.18	1.61	2.40
Wabageshik		172	Jan 10%	38.5	0.20	194	94	94	196.75	199.50	2.06	2.75
Wabageshik		172	Feb 10%	28.0	0.15	182	92	92	196.75	199.37	1.98	2.62

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		172	Mar 10%	70.3	0.31	224	100	100	196.75	199.81	2.25	3.06
Wabageshik		172	Apr 10%	268.0	0.75	356	109	109	196.75	201.07	3.28	4.32
Wabageshik		172	May 10%	215.0	0.66	327	107	108	196.75	200.80	3.05	4.05
Wabageshik		172	Jun 10%	78.8	0.34	231	101	101	196.75	199.87	2.29	3.12
Wabageshik		172	Jul 10%	47.7	0.23	204	96	96	196.75	199.60	2.13	2.85
Wabageshik		172	Aug 10%	28.7	0.16	183	92	92	196.75	199.37	1.98	2.62
Wabageshik		172	Sep 10%	32.0	0.17	187	93	93	196.75	199.42	2.01	2.67
Wabageshik		172	Oct 10%	69.9	0.31	224	100	100	196.75	199.80	2.24	3.05
Wabageshik		172	Nov 10%	93.5	0.39	241	101	102	196.75	199.98	2.38	3.23
Wabageshik		172	Dec 10%	70.6	0.31	224	100	100	196.75	199.81	2.25	3.06
Wabageshik		172	Jan 90%	11.8	0.08	157	87	87	196.75	199.09	1.80	2.34
Wabageshik		172	Feb 90%	10.3	0.07	154	87	87	196.75	199.06	1.78	2.31
Wabageshik		172	Mar 90%	12.4	0.08	158	87	88	196.75	199.10	1.81	2.35
Wabageshik		172	Apr 90%	43.9	0.22	200	95	96	196.75	199.56	2.10	2.81
Wabageshik		172	May 90%	35.3	0.19	191	93	94	196.75	199.46	2.04	2.71
Wabageshik		172	Jun 90%	19.3	0.11	170	90	90	196.75	199.23	1.89	2.48
Wabageshik		172	Jul 90%	8.9	0.06	151	86	86	196.75	199.03	1.76	2.28
Wabageshik		172	Aug 90%	5.7	0.04	144	85	85	196.75	198.94	1.71	2.19
Wabageshik		172	Sep 90%	4.9	0.03	142	84	84	196.75	198.92	1.69	2.17
Wabageshik		172	Oct 90%	6.9	0.05	147	85	85	196.75	198.98	1.73	2.23
Wabageshik		172	Nov 90%	14.4	0.09	162	88	88	196.75	199.14	1.84	2.39
Wabageshik		172	Dec 90%	16.3	0.10	165	89	89	196.75	199.18	1.86	2.43
Wabageshik		91	Jan 10%	38.5	0.38	102	88	88	197.32	199.49	1.16	2.17
Wabageshik		91	Feb 10%	28.0	0.31	91	85	85	197.32	199.36	1.07	2.04
Wabageshik		91	Mar 10%	70.3	0.54	129	93	94	197.32	199.79	1.38	2.47
Wabageshik		91	Apr 10%	268.0	1.05	256	110	111	197.32	201.02	2.33	3.70
Wabageshik		91	May 10%	215.0	0.95	227	108	109	197.32	200.76	2.10	3.44
Wabageshik		91	Jun 10%	78.8	0.58	135	94	95	197.32	199.85	1.43	2.53
Wabageshik		91	Jul 10%	47.7	0.43	111	91	91	197.32	199.59	1.22	2.27
Wabageshik		91	Aug 10%	28.7	0.31	91	85	85	197.32	199.37	1.07	2.05
Wabageshik		91	Sep 10%	32.0	0.34	95	86	86	197.32	199.41	1.11	2.09
Wabageshik		91	Oct 10%	69.9	0.54	129	93	94	197.32	199.79	1.38	2.47
Wabageshik		91	Nov 10%	93.5	0.65	145	96	96	197.32	199.96	1.51	2.64
Wabageshik		91	Dec 10%	70.6	0.55	129	93	94	197.32	199.79	1.38	2.47
Wabageshik		91	Jan 90%	11.8	0.17	68	80	80	197.32	199.09	0.86	1.77
Wabageshik		91	Feb 90%	10.3	0.16	66	79	79	197.32	199.06	0.84	1.74
Wabageshik		91	Mar 90%	12.4	0.18	69	80	80	197.32	199.10	0.87	1.78
Wabageshik		91	Apr 90%	43.9	0.41	107	90	90	197.32	199.55	1.19	2.23
Wabageshik		91	May 90%	35.3	0.36	99	87	87	197.32	199.45	1.14	2.13

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		91	Jun 90%	19.3	0.24	80	82	83	197.32	199.23	0.97	1.91
Wabageshik		91	Jul 90%	8.9	0.14	63	78	78	197.32	199.02	0.81	1.70
Wabageshik		91	Aug 90%	5.7	0.10	57	77	77	197.32	198.94	0.74	1.62
Wabageshik		91	Sep 90%	4.9	0.09	55	76	76	197.32	198.92	0.72	1.60
Wabageshik		91	Oct 90%	6.9	0.12	59	77	77	197.32	198.97	0.77	1.65
Wabageshik		91	Nov 90%	14.4	0.20	73	81	81	197.32	199.14	0.90	1.82
Wabageshik		91	Dec 90%	16.3	0.22	76	81	81	197.32	199.18	0.93	1.86
Wabageshik		35	Jan 10%	38.5	2.04	19	45	45	198.67	199.24	0.42	0.57
Wabageshik		35	Feb 10%	28.0	1.89	15	41	41	198.67	199.14	0.36	0.47
Wabageshik		35	Mar 10%	70.3	2.28	31	58	58	198.67	199.47	0.53	0.80
Wabageshik		35	Apr 10%	268.0	2.08	129	85	85	198.67	200.79	1.52	2.12
Wabageshik		35	May 10%	215.0	2.01	107	82	83	198.67	200.53	1.30	1.86
Wabageshik		35	Jun 10%	78.8	2.35	34	61	61	198.67	199.52	0.55	0.85
Wabageshik		35	Jul 10%	47.7	2.14	22	48	48	198.67	199.31	0.46	0.64
Wabageshik		35	Aug 10%	28.7	1.90	15	41	41	198.67	199.15	0.37	0.48
Wabageshik		35	Sep 10%	32.0	1.95	16	42	43	198.67	199.18	0.39	0.51
Wabageshik		35	Oct 10%	69.9	2.28	31	58	58	198.67	199.47	0.53	0.80
Wabageshik		35	Nov 10%	93.5	2.44	38	63	63	198.67	199.59	0.61	0.92
Wabageshik		35	Dec 10%	70.6	2.28	31	58	59	198.67	199.47	0.53	0.80
Wabageshik		35	Jan 90%	11.8	1.52	8	33	33	198.67	198.95	0.23	0.28
Wabageshik		35	Feb 90%	10.3	1.47	7	32	32	198.67	198.93	0.22	0.26
Wabageshik		35	Mar 90%	12.4	1.54	8	34	34	198.67	198.96	0.24	0.29
Wabageshik		35	Apr 90%	43.9	2.11	21	47	47	198.67	199.28	0.45	0.61
Wabageshik		35	May 90%	35.3	2.00	18	44	44	198.67	199.21	0.40	0.54
Wabageshik		35	Jun 90%	19.3	1.73	11	37	37	198.67	199.05	0.30	0.38
Wabageshik		35	Jul 90%	8.9	1.41	6	31	31	198.67	198.91	0.20	0.24
Wabageshik		35	Aug 90%	5.7	1.25	5	29	29	198.67	198.85	0.16	0.18
Wabageshik		35	Sep 90%	4.9	1.20	4	28	28	198.67	198.83	0.14	0.16
Wabageshik		35	Oct 90%	6.9	1.31	5	30	30	198.67	198.87	0.18	0.20
Wabageshik		35	Nov 90%	14.4	1.60	9	35	35	198.67	198.99	0.26	0.32
Wabageshik		35	Dec 90%	16.3	1.66	10	36	36	198.67	199.01	0.28	0.34
Wabageshik	2	0	Jan 10%	38.5	0.98	39	28	28	196.51	198.91	1.43	2.40
Wabageshik	2	0	Feb 10%	28.0	0.81	35	26	27	196.51	198.74	1.32	2.23
Wabageshik	2	0	Mar 10%	70.3	1.38	51	33	34	196.51	199.31	1.55	2.80
Wabageshik	2	0	Apr 10%	268.0	2.03	132	85	86	196.51	200.69	1.55	4.18
Wabageshik	2	0	May 10%	215.0	1.92	112	70	71	196.51	200.44	1.60	3.93
Wabageshik	2	0	Jun 10%	78.8	1.44	55	41	42	196.51	199.41	1.34	2.90
Wabageshik	2	0	Jul 10%	47.7	1.11	43	28	29	196.51	199.04	1.51	2.53

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	2	0	Aug 10%	28.7	0.82	35	26	27	196.51	198.75	1.33	2.24
Wabageshik	2	0	Sep 10%	32.0	0.88	36	27	27	196.51	198.80	1.36	2.29
Wabageshik	2	0	Oct 10%	69.9	1.37	51	33	34	196.51	199.31	1.55	2.80
Wabageshik	2	0	Nov 10%	93.5	1.52	61	47	48	196.51	199.56	1.31	3.05
Wabageshik	2	0	Dec 10%	70.6	1.38	51	33	34	196.51	199.32	1.55	2.81
Wabageshik	2	0	Jan 90%	11.8	0.45	26	23	24	196.51	198.38	1.13	1.87
Wabageshik	2	0	Feb 90%	10.3	0.41	25	23	23	196.51	198.34	1.10	1.83
Wabageshik	2	0	Mar 90%	12.4	0.47	26	23	24	196.51	198.40	1.14	1.89
Wabageshik	2	0	Apr 90%	43.9	1.06	41	28	29	196.51	198.99	1.47	2.48
Wabageshik	2	0	May 90%	35.3	0.93	38	27	28	196.51	198.86	1.40	2.35
Wabageshik	2	0	Jun 90%	19.3	0.64	30	25	25	196.51	198.57	1.23	2.06
Wabageshik	2	0	Jul 90%	8.9	0.37	24	22	23	196.51	198.30	1.08	1.79
Wabageshik	2	0	Aug 90%	5.7	0.26	22	22	22	196.51	198.19	1.00	1.68
Wabageshik	2	0	Sep 90%	4.9	0.24	21	21	22	196.51	198.16	0.98	1.65
Wabageshik	2	0	Oct 90%	6.9	0.31	23	22	22	196.51	198.23	1.03	1.72
Wabageshik	2	0	Nov 90%	14.4	0.52	28	24	24	196.51	198.45	1.17	1.94
Wabageshik	2	0	Dec 90%	16.3	0.57	29	24	25	196.51	198.50	1.20	1.99
Wabageshik		-14	Jan 10%	38.5	2.45	16	26	26	197.83	198.59	0.60	0.76
Wabageshik		-14	Feb 10%	28.0	2.25	12	24	25	197.83	198.46	0.51	0.63
Wabageshik		-14	Mar 10%	70.3	2.86	25	30	30	197.83	198.91	0.83	1.08
Wabageshik		-14	Apr 10%	268.0	3.43	78	67	67	197.83	200.18	1.17	2.35
Wabageshik		-14	May 10%	215.0	3.64	59	44	44	197.83	199.83	1.35	2.00
Wabageshik		-14	Jun 10%	78.8	2.94	27	31	31	197.83	198.99	0.87	1.16
Wabageshik		-14	Jul 10%	47.7	2.60	18	27	27	197.83	198.69	0.68	0.86
Wabageshik		-14	Aug 10%	28.7	2.26	13	25	25	197.83	198.47	0.52	0.64
Wabageshik		-14	Sep 10%	32.0	2.33	14	25	25	197.83	198.52	0.55	0.69
Wabageshik		-14	Oct 10%	69.9	2.85	24	30	30	197.83	198.91	0.83	1.08
Wabageshik		-14	Nov 10%	93.5	3.03	31	33	33	197.83	199.11	0.93	1.28
Wabageshik		-14	Dec 10%	70.6	2.86	25	30	30	197.83	198.92	0.83	1.09
Wabageshik		-14	Jan 90%	11.8	1.79	7	20	21	197.83	198.20	0.32	0.37
Wabageshik		-14	Feb 90%	10.3	1.72	6	20	20	197.83	198.17	0.30	0.34
Wabageshik		-14	Mar 90%	12.4	1.81	7	21	21	197.83	198.22	0.33	0.39
Wabageshik		-14	Apr 90%	43.9	2.53	17	27	27	197.83	198.65	0.65	0.82
Wabageshik		-14	May 90%	35.3	2.39	15	26	26	197.83	198.56	0.58	0.73
Wabageshik		-14	Jun 90%	19.3	2.04	9	23	23	197.83	198.34	0.42	0.51
Wabageshik		-14	Jul 90%	8.9	1.64	5	20	20	197.83	198.14	0.28	0.31
Wabageshik		-14	Aug 90%	5.7	1.45	4	18	18	197.83	198.07	0.21	0.24
Wabageshik		-14	Sep 90%	4.9	1.39	4	18	18	197.83	198.05	0.20	0.22
Wabageshik		-14	Oct 90%	6.9	1.54	4	19	19	197.83	198.10	0.24	0.27

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		-14	Nov 90%	14.4	1.89	8	21	21	197.83	198.25	0.36	0.42
Wabageshik		-14	Dec 90%	16.3	1.95	8	22	22	197.83	198.29	0.38	0.46
Wabageshik	111	-40	Jan 10%	38.5	0.07	521	277	278	194.78	198.65	1.88	3.87
Wabageshik	111	-40	Feb 10%	28.0	0.06	473	263	264	194.78	198.47	1.80	3.69
Wabageshik	111	-40	Mar 10%	70.3	0.11	635	292	294	194.78	199.05	2.17	4.27
Wabageshik	111	-40	Apr 10%	268.0	0.23	1177	398	400	194.78	200.52	2.96	5.74
Wabageshik	111	-40	May 10%	215.0	0.21	1041	395	397	194.78	200.18	2.63	5.40
Wabageshik	111	-40	Jun 10%	78.8	0.12	664	312	314	194.78	199.15	2.13	4.37
Wabageshik	111	-40	Jul 10%	47.7	0.09	557	280	281	194.78	198.78	1.99	4.00
Wabageshik	111	-40	Aug 10%	28.7	0.06	477	264	265	194.78	198.49	1.80	3.71
Wabageshik	111	-40	Sep 10%	32.0	0.06	493	271	272	194.78	198.55	1.82	3.77
Wabageshik	111	-40	Oct 10%	69.9	0.11	634	292	293	194.78	199.05	2.17	4.27
Wabageshik	111	-40	Nov 10%	93.5	0.13	713	340	341	194.78	199.30	2.10	4.52
Wabageshik	111	-40	Dec 10%	70.6	0.11	636	294	295	194.78	199.05	2.17	4.27
Wabageshik	111	-40	Jan 90%	11.8	0.03	385	237	237	194.78	198.12	1.63	3.34
Wabageshik	111	-40	Feb 90%	10.3	0.03	379	234	235	194.78	198.10	1.62	3.32
Wabageshik	111	-40	Mar 90%	12.4	0.03	387	237	238	194.78	198.13	1.63	3.35
Wabageshik	111	-40	Apr 90%	43.9	0.08	542	279	280	194.78	198.73	1.95	3.95
Wabageshik	111	-40	May 90%	35.3	0.07	507	275	276	194.78	198.60	1.84	3.82
Wabageshik	111	-40	Jun 90%	19.3	0.05	423	251	252	194.78	198.28	1.68	3.50
Wabageshik	111	-40	Jul 90%	8.9	0.02	374	233	233	194.78	198.07	1.61	3.29
Wabageshik	111	-40	Aug 90%	5.7	0.02	364	231	231	194.78	198.03	1.58	3.25
Wabageshik	111	-40	Sep 90%	4.9	0.01	362	230	231	194.78	198.02	1.57	3.24
Wabageshik	111	-40	Oct 90%	6.9	0.02	367	231	232	194.78	198.05	1.59	3.27
Wabageshik	111	-40	Nov 90%	14.4	0.04	397	241	242	194.78	198.17	1.65	3.39
Wabageshik	111	-40	Dec 90%	16.3	0.04	406	245	246	194.78	198.21	1.66	3.43
Wabageshik	112	-105	Jan 10%	38.5	0.03	1116	376	378	193.80	198.65	2.97	4.85
Wabageshik	112	-105	Feb 10%	28.0	0.03	1050	375	377	193.80	198.47	2.80	4.67
Wabageshik	112	-105	Mar 10%	70.3	0.06	1268	377	380	193.80	199.05	3.36	5.25
Wabageshik	112	-105	Apr 10%	268.0	0.15	1829	384	387	193.80	200.53	4.77	6.73
Wabageshik	112	-105	May 10%	215.0	0.13	1697	382	385	193.80	200.18	4.44	6.38
Wabageshik	112	-105	Jun 10%	78.8	0.06	1304	378	380	193.80	199.15	3.45	5.35
Wabageshik	112	-105	Jul 10%	47.7	0.04	1165	376	379	193.80	198.78	3.10	4.98
Wabageshik	112	-105	Aug 10%	28.7	0.03	1055	375	377	193.80	198.49	2.81	4.69
Wabageshik	112	-105	Sep 10%	32.0	0.03	1078	375	378	193.80	198.55	2.87	4.75
Wabageshik	112	-105	Oct 10%	69.9	0.06	1266	377	380	193.80	199.05	3.36	5.25
Wabageshik	112	-105	Nov 10%	93.5	0.07	1361	378	381	193.80	199.30	3.60	5.50
Wabageshik	112	-105	Dec 10%	70.6	0.06	1269	377	380	193.80	199.06	3.37	5.26

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	112	-105	Jan 90%	11.8	0.01	919	370	373	193.80	198.12	2.48	4.32
Wabageshik	112	-105	Feb 90%	10.3	0.01	909	370	372	193.80	198.10	2.46	4.30
Wabageshik	112	-105	Mar 90%	12.4	0.01	923	371	373	193.80	198.13	2.49	4.33
Wabageshik	112	-105	Apr 90%	43.9	0.04	1145	376	378	193.80	198.73	3.05	4.93
Wabageshik	112	-105	May 90%	35.3	0.03	1098	376	378	193.80	198.60	2.92	4.80
Wabageshik	112	-105	Jun 90%	19.3	0.02	976	374	376	193.80	198.28	2.61	4.48
Wabageshik	112	-105	Jul 90%	8.9	0.01	901	369	371	193.80	198.07	2.44	4.27
Wabageshik	112	-105	Aug 90%	5.7	0.01	886	367	370	193.80	198.03	2.41	4.23
Wabageshik	112	-105	Sep 90%	4.9	0.01	883	367	369	193.80	198.02	2.40	4.22
Wabageshik	112	-105	Oct 90%	6.9	0.01	891	368	370	193.80	198.05	2.42	4.25
Wabageshik	112	-105	Nov 90%	14.4	0.02	937	372	375	193.80	198.17	2.52	4.37
Wabageshik	112	-105	Dec 90%	16.3	0.02	951	374	376	193.80	198.21	2.55	4.41
Wabageshik	113	-219	Jan 10%	38.5	0.05	826	298	300	193.42	198.65	2.77	5.23
Wabageshik	113	-219	Feb 10%	28.0	0.04	774	297	299	193.42	198.47	2.61	5.05
Wabageshik	113	-219	Mar 10%	70.3	0.07	947	302	304	193.42	199.05	3.14	5.63
Wabageshik	113	-219	Apr 10%	268.0	0.19	1402	318	321	193.42	200.52	4.41	7.10
Wabageshik	113	-219	May 10%	215.0	0.17	1294	312	315	193.42	200.18	4.14	6.76
Wabageshik	113	-219	Jun 10%	78.8	0.08	976	303	305	193.42	199.15	3.23	5.73
Wabageshik	113	-219	Jul 10%	47.7	0.06	865	299	301	193.42	198.78	2.89	5.36
Wabageshik	113	-219	Aug 10%	28.7	0.04	778	297	299	193.42	198.49	2.62	5.07
Wabageshik	113	-219	Sep 10%	32.0	0.04	796	298	299	193.42	198.55	2.67	5.13
Wabageshik	113	-219	Oct 10%	69.9	0.07	946	302	304	193.42	199.05	3.13	5.63
Wabageshik	113	-219	Nov 10%	93.5	0.09	1022	304	306	193.42	199.30	3.36	5.88
Wabageshik	113	-219	Dec 10%	70.6	0.07	948	302	304	193.42	199.05	3.14	5.63
Wabageshik	113	-219	Jan 90%	11.8	0.02	671	290	292	193.42	198.12	2.31	4.70
Wabageshik	113	-219	Feb 90%	10.3	0.02	663	290	291	193.42	198.10	2.29	4.68
Wabageshik	113	-219	Mar 90%	12.4	0.02	674	291	292	193.42	198.13	2.32	4.71
Wabageshik	113	-219	Apr 90%	43.9	0.05	850	299	301	193.42	198.73	2.84	5.31
Wabageshik	113	-219	May 90%	35.3	0.04	812	298	300	193.42	198.60	2.72	5.18
Wabageshik	113	-219	Jun 90%	19.3	0.03	716	295	297	193.42	198.28	2.42	4.86
Wabageshik	113	-219	Jul 90%	8.9	0.01	656	289	291	193.42	198.07	2.27	4.65
Wabageshik	113	-219	Aug 90%	5.7	0.01	645	288	290	193.42	198.03	2.24	4.61
Wabageshik	113	-219	Sep 90%	4.9	0.01	642	288	290	193.42	198.02	2.23	4.60
Wabageshik	113	-219	Oct 90%	6.9	0.01	649	288	290	193.42	198.05	2.25	4.63
Wabageshik	113	-219	Nov 90%	14.4	0.02	685	292	293	193.42	198.17	2.35	4.75
Wabageshik	113	-219	Dec 90%	16.3	0.02	696	293	295	193.42	198.21	2.38	4.79
Wabageshik	114	-462	Jan 10%	38.5	0.04	1098	427	429	193.16	198.65	2.57	5.49
Wabageshik	114	-462	Feb 10%	28.0	0.03	1023	425	427	193.16	198.47	2.41	5.31

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	114	-462	Mar 10%	70.3	0.06	1271	430	432	193.16	199.05	2.96	5.89
Wabageshik	114	-462	Apr 10%	268.0	0.14	1914	446	449	193.16	200.52	4.29	7.36
Wabageshik	114	-462	May 10%	215.0	0.12	1762	441	443	193.16	200.18	4.00	7.02
Wabageshik	114	-462	Jun 10%	78.8	0.06	1312	431	433	193.16	199.15	3.05	5.99
Wabageshik	114	-462	Jul 10%	47.7	0.04	1154	428	430	193.16	198.78	2.70	5.62
Wabageshik	114	-462	Aug 10%	28.7	0.03	1029	425	427	193.16	198.49	2.42	5.33
Wabageshik	114	-462	Sep 10%	32.0	0.03	1054	426	428	193.16	198.55	2.48	5.39
Wabageshik	114	-462	Oct 10%	69.9	0.06	1269	430	432	193.16	199.05	2.95	5.89
Wabageshik	114	-462	Nov 10%	93.5	0.07	1377	432	434	193.16	199.30	3.19	6.14
Wabageshik	114	-462	Dec 10%	70.6	0.06	1272	430	432	193.16	199.05	2.96	5.89
Wabageshik	114	-462	Jan 90%	11.8	0.01	874	421	423	193.16	198.12	2.08	4.96
Wabageshik	114	-462	Feb 90%	10.3	0.01	864	421	423	193.16	198.10	2.05	4.94
Wabageshik	114	-462	Mar 90%	12.4	0.01	879	421	423	193.16	198.13	2.09	4.97
Wabageshik	114	-462	Apr 90%	43.9	0.04	1131	427	429	193.16	198.73	2.65	5.57
Wabageshik	114	-462	May 90%	35.3	0.03	1077	426	428	193.16	198.60	2.53	5.44
Wabageshik	114	-462	Jun 90%	19.3	0.02	940	423	425	193.16	198.28	2.22	5.12
Wabageshik	114	-462	Jul 90%	8.9	0.01	854	421	422	193.16	198.07	2.03	4.91
Wabageshik	114	-462	Aug 90%	5.7	0.01	837	420	422	193.16	198.03	1.99	4.87
Wabageshik	114	-462	Sep 90%	4.9	0.01	834	420	422	193.16	198.02	1.98	4.86
Wabageshik	114	-462	Oct 90%	6.9	0.01	843	420	422	193.16	198.05	2.00	4.89
Wabageshik	114	-462	Nov 90%	14.4	0.02	895	422	424	193.16	198.17	2.12	5.01
Wabageshik	114	-462	Dec 90%	16.3	0.02	912	422	424	193.16	198.21	2.16	5.05
Wabageshik	115	-798	Jan 10%	38.5	0.11	350	140	141	193.93	198.65	2.50	4.72
Wabageshik	115	-798	Feb 10%	28.0	0.09	326	139	140	193.93	198.47	2.35	4.54
Wabageshik	115	-798	Mar 10%	70.3	0.17	407	161	144	193.93	199.05	2.53	5.12
Wabageshik	115	-798	Apr 10%	268.0	0.41	661	426	224	193.93	200.51	1.55	6.58
Wabageshik	115	-798	May 10%	215.0	0.36	590	262	197	193.93	200.17	2.25	6.24
Wabageshik	115	-798	Jun 10%	78.8	0.19	420	165	145	193.93	199.14	2.55	5.21
Wabageshik	115	-798	Jul 10%	47.7	0.13	368	141	142	193.93	198.78	2.62	4.85
Wabageshik	115	-798	Aug 10%	28.7	0.09	328	139	140	193.93	198.49	2.36	4.56
Wabageshik	115	-798	Sep 10%	32.0	0.10	336	139	141	193.93	198.55	2.41	4.62
Wabageshik	115	-798	Oct 10%	69.9	0.17	406	161	144	193.93	199.05	2.52	5.12
Wabageshik	115	-798	Nov 10%	93.5	0.21	442	172	146	193.93	199.30	2.57	5.37
Wabageshik	115	-798	Dec 10%	70.6	0.17	407	161	144	193.93	199.05	2.53	5.12
Wabageshik	115	-798	Jan 90%	11.8	0.04	277	135	136	193.93	198.12	2.05	4.19
Wabageshik	115	-798	Feb 90%	10.3	0.04	274	135	136	193.93	198.10	2.03	4.17
Wabageshik	115	-798	Mar 90%	12.4	0.04	279	135	137	193.93	198.13	2.06	4.20
Wabageshik	115	-798	Apr 90%	43.9	0.12	361	140	142	193.93	198.73	2.57	4.80
Wabageshik	115	-798	May 90%	35.3	0.10	343	140	141	193.93	198.60	2.46	4.67

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	115	-798	Jun 90%	19.3	0.06	299	138	139	193.93	198.28	2.17	4.35
Wabageshik	115	-798	Jul 90%	8.9	0.03	271	135	136	193.93	198.07	2.01	4.14
Wabageshik	115	-798	Aug 90%	5.7	0.02	265	134	136	193.93	198.03	1.98	4.10
Wabageshik	115	-798	Sep 90%	4.9	0.02	264	134	135	193.93	198.02	1.97	4.09
Wabageshik	115	-798	Oct 90%	6.9	0.03	267	134	136	193.93	198.05	1.99	4.12
Wabageshik	115	-798	Nov 90%	14.4	0.05	284	137	138	193.93	198.17	2.08	4.24
Wabageshik	115	-798	Dec 90%	16.3	0.06	289	137	139	193.93	198.21	2.11	4.28
Wabageshik	116	-1452	Jan 10%	38.5	0.11	355	101	103	194.01	198.65	3.53	4.64
Wabageshik	116	-1452	Feb 10%	28.0	0.08	338	99	101	194.01	198.47	3.40	4.46
Wabageshik	116	-1452	Mar 10%	70.3	0.18	396	103	105	194.01	199.04	3.84	5.03
Wabageshik	116	-1452	Apr 10%	268.0	0.49	545	104	109	194.01	200.48	5.26	6.47
Wabageshik	116	-1452	May 10%	215.0	0.42	511	104	108	194.01	200.15	4.92	6.14
Wabageshik	116	-1452	Jun 10%	78.8	0.19	406	103	106	194.01	199.14	3.93	5.13
Wabageshik	116	-1452	Jul 10%	47.7	0.13	368	102	104	194.01	198.77	3.62	4.76
Wabageshik	116	-1452	Aug 10%	28.7	0.08	339	99	101	194.01	198.48	3.41	4.47
Wabageshik	116	-1452	Sep 10%	32.0	0.09	345	100	102	194.01	198.54	3.46	4.53
Wabageshik	116	-1452	Oct 10%	69.9	0.18	396	103	105	194.01	199.04	3.84	5.03
Wabageshik	116	-1452	Nov 10%	93.5	0.22	421	104	106	194.01	199.29	4.07	5.28
Wabageshik	116	-1452	Dec 10%	70.6	0.18	396	103	105	194.01	199.05	3.84	5.04
Wabageshik	116	-1452	Jan 90%	11.8	0.04	304	96	98	194.01	198.12	3.17	4.11
Wabageshik	116	-1452	Feb 90%	10.3	0.03	301	95	97	194.01	198.10	3.16	4.09
Wabageshik	116	-1452	Mar 90%	12.4	0.04	305	96	98	194.01	198.13	3.18	4.12
Wabageshik	116	-1452	Apr 90%	43.9	0.12	363	101	103	194.01	198.72	3.59	4.71
Wabageshik	116	-1452	May 90%	35.3	0.10	351	100	102	194.01	198.60	3.49	4.59
Wabageshik	116	-1452	Jun 90%	19.3	0.06	319	98	100	194.01	198.28	3.26	4.27
Wabageshik	116	-1452	Jul 90%	8.9	0.03	299	95	97	194.01	198.07	3.14	4.06
Wabageshik	116	-1452	Aug 90%	5.7	0.02	295	95	96	194.01	198.03	3.12	4.02
Wabageshik	116	-1452	Sep 90%	4.9	0.02	294	95	96	194.01	198.02	3.11	4.01
Wabageshik	116	-1452	Oct 90%	6.9	0.02	297	95	96	194.01	198.05	3.13	4.04
Wabageshik	116	-1452	Nov 90%	14.4	0.05	308	96	98	194.01	198.17	3.20	4.16
Wabageshik	116	-1452	Dec 90%	16.3	0.05	312	97	98	194.01	198.21	3.23	4.20
Wabageshik	117	-2478	Jan 10%	38.5	0.41	95	43	45	195.27	198.63	2.19	3.36
Wabageshik	117	-2478	Feb 10%	28.0	0.32	87	42	44	195.27	198.46	2.07	3.19
Wabageshik	117	-2478	Mar 10%	70.3	0.63	111	46	48	195.27	199.00	2.43	3.73
Wabageshik	117	-2478	Apr 10%	268.0	1.51	178	58	60	195.27	200.27	3.04	5.00
Wabageshik	117	-2478	May 10%	215.0	1.34	161	56	57	195.27	199.98	2.90	4.71
Wabageshik	117	-2478	Jun 10%	78.8	0.68	115	47	48	195.27	199.09	2.48	3.82
Wabageshik	117	-2478	Jul 10%	47.7	0.48	100	44	46	195.27	198.75	2.27	3.48

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	117	-2478	Aug 10%	28.7	0.33	88	42	44	195.27	198.47	2.08	3.20
Wabageshik	117	-2478	Sep 10%	32.0	0.35	90	43	44	195.27	198.53	2.12	3.26
Wabageshik	117	-2478	Oct 10%	69.9	0.63	111	46	48	195.27	199.00	2.43	3.73
Wabageshik	117	-2478	Nov 10%	93.5	0.77	122	48	50	195.27	199.23	2.55	3.96
Wabageshik	117	-2478	Dec 10%	70.6	0.63	111	46	48	195.27	199.01	2.43	3.74
Wabageshik	117	-2478	Jan 90%	11.8	0.16	73	40	42	195.27	198.12	1.81	2.85
Wabageshik	117	-2478	Feb 90%	10.3	0.14	72	40	42	195.27	198.09	1.79	2.82
Wabageshik	117	-2478	Mar 90%	12.4	0.17	74	40	42	195.27	198.13	1.82	2.86
Wabageshik	117	-2478	Apr 90%	43.9	0.45	98	44	45	195.27	198.70	2.24	3.43
Wabageshik	117	-2478	May 90%	35.3	0.38	93	43	44	195.27	198.58	2.16	3.31
Wabageshik	117	-2478	Jun 90%	19.3	0.24	79	41	43	195.27	198.27	1.93	3.00
Wabageshik	117	-2478	Jul 90%	8.9	0.12	71	40	42	195.27	198.07	1.78	2.80
Wabageshik	117	-2478	Aug 90%	5.7	0.08	70	40	41	195.27	198.03	1.75	2.76
Wabageshik	117	-2478	Sep 90%	4.9	0.07	69	40	41	195.27	198.02	1.74	2.75
Wabageshik	117	-2478	Oct 90%	6.9	0.10	70	40	41	195.27	198.04	1.76	2.77
Wabageshik	117	-2478	Nov 90%	14.4	0.19	75	41	42	195.27	198.17	1.85	2.90
Wabageshik	117	-2478	Dec 90%	16.3	0.21	77	41	42	195.27	198.20	1.88	2.93
Wabageshik		-3261	Jan 10%	38.5	0.13	289	71	74	193.01	198.63	4.05	5.62
Wabageshik		-3261	Feb 10%	28.0	0.10	277	70	72	193.01	198.46	3.95	5.45
Wabageshik		-3261	Mar 10%	70.3	0.22	315	72	75	193.01	199.00	4.39	5.99
Wabageshik		-3261	Apr 10%	268.0	0.66	405	73	78	193.01	200.23	5.56	7.22
Wabageshik		-3261	May 10%	215.0	0.56	384	73	77	193.01	199.95	5.28	6.94
Wabageshik		-3261	Jun 10%	78.8	0.24	322	72	75	193.01	199.09	4.48	6.08
Wabageshik		-3261	Jul 10%	47.7	0.16	298	72	74	193.01	198.75	4.15	5.74
Wabageshik		-3261	Aug 10%	28.7	0.10	278	70	73	193.01	198.47	3.96	5.46
Wabageshik		-3261	Sep 10%	32.0	0.11	282	71	73	193.01	198.53	3.99	5.52
Wabageshik		-3261	Oct 10%	69.9	0.22	315	72	75	193.01	199.00	4.39	5.99
Wabageshik		-3261	Nov 10%	93.5	0.28	332	72	75	193.01	199.22	4.59	6.21
Wabageshik		-3261	Dec 10%	70.6	0.22	316	72	75	193.01	199.00	4.40	5.99
Wabageshik		-3261	Jan 90%	11.8	0.05	253	69	71	193.01	198.12	3.69	5.11
Wabageshik		-3261	Feb 90%	10.3	0.04	252	69	71	193.01	198.09	3.67	5.08
Wabageshik		-3261	Mar 90%	12.4	0.05	254	69	71	193.01	198.13	3.70	5.12
Wabageshik		-3261	Apr 90%	43.9	0.15	294	72	74	193.01	198.70	4.11	5.69
Wabageshik		-3261	May 90%	35.3	0.12	286	71	73	193.01	198.58	4.02	5.57
Wabageshik		-3261	Jun 90%	19.3	0.07	264	69	71	193.01	198.27	3.82	5.26
Wabageshik		-3261	Jul 90%	8.9	0.04	250	68	70	193.01	198.07	3.65	5.06
Wabageshik		-3261	Aug 90%	5.7	0.02	247	68	70	193.01	198.03	3.62	5.02
Wabageshik		-3261	Sep 90%	4.9	0.02	247	68	70	193.01	198.02	3.61	5.01
Wabageshik		-3261	Oct 90%	6.9	0.03	248	68	70	193.01	198.04	3.63	5.03

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		-3261	Nov 90%	14.4	0.06	257	69	71	193.01	198.17	3.73	5.16
Wabageshik		-3261	Dec 90%	16.3	0.06	259	69	71	193.01	198.20	3.76	5.19
Wabageshik	118	-3343	Jan 10%	38.5	0.14	275	70	72	193.21	198.63	3.93	5.42
Wabageshik	118	-3343	Feb 10%	28.0	0.11	263	69	71	193.21	198.46	3.81	5.25
Wabageshik	118	-3343	Mar 10%	70.3	0.23	301	72	74	193.21	199.00	4.20	5.79
Wabageshik	118	-3343	Apr 10%	268.0	0.69	390	73	77	193.21	200.22	5.35	7.01
Wabageshik	118	-3343	May 10%	215.0	0.58	370	73	77	193.21	199.94	5.07	6.73
Wabageshik	118	-3343	Jun 10%	78.8	0.26	307	72	75	193.21	199.09	4.29	5.88
Wabageshik	118	-3343	Jul 10%	47.7	0.17	283	71	73	193.21	198.75	4.00	5.54
Wabageshik	118	-3343	Aug 10%	28.7	0.11	264	69	71	193.21	198.47	3.82	5.26
Wabageshik	118	-3343	Sep 10%	32.0	0.12	268	69	71	193.21	198.53	3.87	5.32
Wabageshik	118	-3343	Oct 10%	69.9	0.23	301	72	74	193.21	198.99	4.20	5.78
Wabageshik	118	-3343	Nov 10%	93.5	0.29	317	72	75	193.21	199.22	4.41	6.01
Wabageshik	118	-3343	Dec 10%	70.6	0.23	301	72	74	193.21	199.00	4.21	5.79
Wabageshik	118	-3343	Jan 90%	11.8	0.05	240	68	70	193.21	198.12	3.52	4.91
Wabageshik	118	-3343	Feb 90%	10.3	0.04	238	68	70	193.21	198.09	3.50	4.88
Wabageshik	118	-3343	Mar 90%	12.4	0.05	240	68	70	193.21	198.13	3.53	4.92
Wabageshik	118	-3343	Apr 90%	43.9	0.16	280	70	73	193.21	198.70	3.97	5.49
Wabageshik	118	-3343	May 90%	35.3	0.13	271	70	72	193.21	198.58	3.90	5.37
Wabageshik	118	-3343	Jun 90%	19.3	0.08	250	68	70	193.21	198.27	3.65	5.06
Wabageshik	118	-3343	Jul 90%	8.9	0.04	236	68	70	193.21	198.07	3.49	4.86
Wabageshik	118	-3343	Aug 90%	5.7	0.02	234	67	69	193.21	198.03	3.47	4.82
Wabageshik	118	-3343	Sep 90%	4.9	0.02	233	67	69	193.21	198.02	3.47	4.81
Wabageshik	118	-3343	Oct 90%	6.9	0.03	235	68	69	193.21	198.04	3.47	4.83
Wabageshik	118	-3343	Nov 90%	14.4	0.06	243	68	70	193.21	198.17	3.56	4.96
Wabageshik	118	-3343	Dec 90%	16.3	0.07	245	68	70	193.21	198.20	3.60	4.99
Wabageshik		-3460	Jan 10%	38.5	0.14	275	70	72	193.21	198.63	3.93	5.42
Wabageshik		-3460	Feb 10%	28.0	0.11	263	69	71	193.21	198.46	3.81	5.25
Wabageshik		-3460	Mar 10%	70.3	0.23	301	72	74	193.21	199.00	4.20	5.79
Wabageshik		-3460	Apr 10%	268.0	0.69	389	73	77	193.21	200.22	5.34	7.01
Wabageshik		-3460	May 10%	215.0	0.58	369	73	77	193.21	199.94	5.07	6.73
Wabageshik		-3460	Jun 10%	78.8	0.26	307	72	75	193.21	199.08	4.28	5.87
Wabageshik		-3460	Jul 10%	47.7	0.17	283	71	73	193.21	198.75	4.00	5.54
Wabageshik		-3460	Aug 10%	28.7	0.11	264	69	71	193.21	198.47	3.82	5.26
Wabageshik		-3460	Sep 10%	32.0	0.12	268	69	71	193.21	198.53	3.87	5.32
Wabageshik		-3460	Oct 10%	69.9	0.23	301	72	74	193.21	198.99	4.20	5.78
Wabageshik		-3460	Nov 10%	93.5	0.30	317	72	75	193.21	199.22	4.41	6.01
Wabageshik		-3460	Dec 10%	70.6	0.23	301	72	74	193.21	199.00	4.20	5.79

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		-3460	Jan 90%	11.8	0.05	240	68	70	193.21	198.12	3.52	4.91
Wabageshik		-3460	Feb 90%	10.3	0.04	238	68	70	193.21	198.09	3.50	4.88
Wabageshik		-3460	Mar 90%	12.4	0.05	240	68	70	193.21	198.13	3.53	4.92
Wabageshik		-3460	Apr 90%	43.9	0.16	280	70	73	193.21	198.70	3.97	5.49
Wabageshik		-3460	May 90%	35.3	0.13	271	70	72	193.21	198.58	3.90	5.37
Wabageshik		-3460	Jun 90%	19.3	0.08	250	68	70	193.21	198.27	3.65	5.06
Wabageshik		-3460	Jul 90%	8.9	0.04	236	68	70	193.21	198.07	3.49	4.86
Wabageshik		-3460	Aug 90%	5.7	0.02	234	67	69	193.21	198.03	3.47	4.82
Wabageshik		-3460	Sep 90%	4.9	0.02	233	67	69	193.21	198.02	3.47	4.81
Wabageshik		-3460	Oct 90%	6.9	0.03	235	68	69	193.21	198.04	3.47	4.83
Wabageshik		-3460	Nov 90%	14.4	0.06	243	68	70	193.21	198.17	3.56	4.96
Wabageshik		-3460	Dec 90%	16.3	0.07	245	68	70	193.21	198.20	3.60	4.99
Wabageshik	119	-3469	Jan 10%	38.5	1.57	25	38	39	197.43	198.49	0.65	1.06
Wabageshik	119	-3469	Feb 10%	28.0	1.45	19	33	34	197.43	198.34	0.58	0.91
Wabageshik	119	-3469	Mar 10%	70.3	1.89	37	44	46	197.43	198.80	0.84	1.37
Wabageshik	119	-3469	Apr 10%	268.0	2.51	107	76	80	197.43	199.89	1.40	2.46
Wabageshik	119	-3469	May 10%	215.0	2.50	86	71	74	197.43	199.61	1.21	2.18
Wabageshik	119	-3469	Jun 10%	78.8	1.92	41	49	51	197.43	198.88	0.84	1.45
Wabageshik	119	-3469	Jul 10%	47.7	1.67	29	40	41	197.43	198.59	0.72	1.16
Wabageshik	119	-3469	Aug 10%	28.7	1.46	20	34	35	197.43	198.35	0.58	0.92
Wabageshik	119	-3469	Sep 10%	32.0	1.49	21	36	37	197.43	198.40	0.60	0.97
Wabageshik	119	-3469	Oct 10%	69.9	1.88	37	44	46	197.43	198.80	0.84	1.37
Wabageshik	119	-3469	Nov 10%	93.5	1.96	48	55	57	197.43	199.01	0.86	1.58
Wabageshik	119	-3469	Dec 10%	70.6	1.89	37	44	46	197.43	198.80	0.84	1.37
Wabageshik	119	-3469	Jan 90%	11.8	1.05	11	23	23	197.43	198.06	0.49	0.63
Wabageshik	119	-3469	Feb 90%	10.3	0.94	11	23	23	197.43	198.04	0.48	0.61
Wabageshik	119	-3469	Mar 90%	12.4	1.09	11	23	23	197.43	198.06	0.50	0.63
Wabageshik	119	-3469	Apr 90%	43.9	1.63	27	39	40	197.43	198.55	0.69	1.12
Wabageshik	119	-3469	May 90%	35.3	1.53	23	37	38	197.43	198.45	0.63	1.02
Wabageshik	119	-3469	Jun 90%	19.3	1.41	14	27	27	197.43	198.16	0.51	0.73
Wabageshik	119	-3469	Jul 90%	8.9	0.83	11	23	23	197.43	198.03	0.47	0.60
Wabageshik	119	-3469	Aug 90%	5.7	0.56	10	22	23	197.43	198.01	0.46	0.58
Wabageshik	119	-3469	Sep 90%	4.9	0.48	10	22	23	197.43	198.01	0.46	0.58
Wabageshik	119	-3469	Oct 90%	6.9	0.66	10	22	23	197.43	198.02	0.46	0.59
Wabageshik	119	-3469	Nov 90%	14.4	1.22	12	23	24	197.43	198.08	0.51	0.65
Wabageshik	119	-3469	Dec 90%	16.3	1.31	12	25	25	197.43	198.11	0.51	0.68
Wabageshik		-3490	Jan 10%	38.5	2.33	17	30	31	197.28	198.11	0.54	0.83
Wabageshik		-3490	Feb 10%	28.0	2.24	13	25	25	197.28	197.96	0.51	0.68

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		-3490	Mar 10%	70.3	2.60	27	39	40	197.28	198.40	0.69	1.12
Wabageshik		-3490	Apr 10%	268.0	2.48	108	77	81	197.28	199.75	1.40	2.47
Wabageshik		-3490	May 10%	215.0	2.83	76	69	72	197.28	199.31	1.11	2.03
Wabageshik		-3490	Jun 10%	78.8	2.68	29	40	42	197.28	198.46	0.73	1.18
Wabageshik		-3490	Jul 10%	47.7	2.41	20	34	35	197.28	198.21	0.58	0.93
Wabageshik		-3490	Aug 10%	28.7	2.24	13	25	26	197.28	197.97	0.51	0.69
Wabageshik		-3490	Sep 10%	32.0	2.26	14	27	28	197.28	198.02	0.52	0.74
Wabageshik		-3490	Oct 10%	69.9	2.62	27	39	40	197.28	198.40	0.69	1.12
Wabageshik		-3490	Nov 10%	93.5	2.81	33	42	44	197.28	198.56	0.79	1.28
Wabageshik		-3490	Dec 10%	70.6	2.61	27	39	40	197.28	198.40	0.70	1.12
Wabageshik		-3490	Jan 90%	11.8	0.90	13	26	26	197.28	197.99	0.51	0.71
Wabageshik		-3490	Feb 90%	10.3	0.78	13	26	27	197.28	197.99	0.51	0.71
Wabageshik		-3490	Mar 90%	12.4	0.95	13	26	26	197.28	197.98	0.51	0.70
Wabageshik		-3490	Apr 90%	43.9	2.38	18	32	33	197.28	198.17	0.57	0.89
Wabageshik		-3490	May 90%	35.3	2.29	15	29	30	197.28	198.07	0.53	0.79
Wabageshik		-3490	Jun 90%	19.3	1.56	12	24	25	197.28	197.95	0.51	0.67
Wabageshik		-3490	Jul 90%	8.9	0.66	13	26	27	197.28	197.99	0.51	0.71
Wabageshik		-3490	Aug 90%	5.7	0.43	13	26	27	197.28	198.00	0.51	0.72
Wabageshik		-3490	Sep 90%	4.9	0.37	13	26	27	197.28	198.00	0.51	0.72
Wabageshik		-3490	Oct 90%	6.9	0.52	13	26	27	197.28	198.00	0.51	0.72
Wabageshik		-3490	Nov 90%	14.4	1.11	13	25	26	197.28	197.98	0.51	0.70
Wabageshik		-3490	Dec 90%	16.3	1.28	13	25	26	197.28	197.97	0.51	0.69
Wabageshik	120	-3539	Jan 10%	38.5	0.67	58	38	39	195.96	198.05	1.54	2.09
Wabageshik	120	-3539	Feb 10%	28.0	0.49	57	38	39	195.96	198.03	1.51	2.07
Wabageshik	120	-3539	Mar 10%	70.3	1.14	62	38	40	195.96	198.16	1.64	2.20
Wabageshik	120	-3539	Apr 10%	268.0	2.29	117	41	44	195.96	199.56	2.88	3.60
Wabageshik	120	-3539	May 10%	215.0	2.13	101	40	43	195.96	199.16	2.51	3.20
Wabageshik	120	-3539	Jun 10%	78.8	1.25	63	38	40	195.96	198.20	1.67	2.24
Wabageshik	120	-3539	Jul 10%	47.7	0.81	59	38	39	195.96	198.07	1.56	2.11
Wabageshik	120	-3539	Aug 10%	28.7	0.50	57	38	39	195.96	198.03	1.52	2.07
Wabageshik	120	-3539	Sep 10%	32.0	0.56	57	38	39	195.96	198.03	1.52	2.07
Wabageshik	120	-3539	Oct 10%	69.9	1.13	62	38	40	195.96	198.16	1.63	2.20
Wabageshik	120	-3539	Nov 10%	93.5	1.41	66	38	40	195.96	198.27	1.74	2.31
Wabageshik	120	-3539	Dec 10%	70.6	1.14	62	38	40	195.96	198.16	1.64	2.20
Wabageshik	120	-3539	Jan 90%	11.8	0.21	56	37	39	195.96	198.00	1.50	2.04
Wabageshik	120	-3539	Feb 90%	10.3	0.18	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	Mar 90%	12.4	0.22	56	37	39	195.96	198.01	1.50	2.05
Wabageshik	120	-3539	Apr 90%	43.9	0.75	58	38	39	195.96	198.06	1.55	2.10
Wabageshik	120	-3539	May 90%	35.3	0.61	57	38	39	195.96	198.04	1.53	2.08

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	120	-3539	Jun 90%	19.3	0.34	56	38	39	195.96	198.01	1.50	2.05
Wabageshik	120	-3539	Jul 90%	8.9	0.16	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	Aug 90%	5.7	0.10	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	Sep 90%	4.9	0.09	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	Oct 90%	6.9	0.12	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	Nov 90%	14.4	0.26	56	38	39	195.96	198.01	1.50	2.05
Wabageshik	120	-3539	Dec 90%	16.3	0.29	56	38	39	195.96	198.01	1.50	2.05
Wabageshik		-3580	Jan 10%	38.5	0.70	55	37	39	196.01	198.02	1.47	2.01
Wabageshik		-3580	Feb 10%	28.0	0.51	54	37	39	196.01	198.01	1.46	2.00
Wabageshik		-3580	Mar 10%	70.3	1.24	57	38	39	196.01	198.08	1.52	2.07
Wabageshik		-3580	Apr 10%	268.0	2.50	107	41	44	196.01	199.37	2.65	3.36
Wabageshik		-3580	May 10%	215.0	2.37	91	40	42	196.01	198.95	2.29	2.94
Wabageshik		-3580	Jun 10%	78.8	1.37	58	38	39	196.01	198.10	1.54	2.09
Wabageshik		-3580	Jul 10%	47.7	0.86	55	37	39	196.01	198.03	1.48	2.02
Wabageshik		-3580	Aug 10%	28.7	0.53	54	37	39	196.01	198.01	1.46	2.00
Wabageshik		-3580	Sep 10%	32.0	0.59	55	37	39	196.01	198.02	1.46	2.01
Wabageshik		-3580	Oct 10%	69.9	1.23	57	38	39	196.01	198.08	1.52	2.07
Wabageshik		-3580	Nov 10%	93.5	1.57	59	38	39	196.01	198.14	1.58	2.13
Wabageshik		-3580	Dec 10%	70.6	1.24	57	38	39	196.01	198.08	1.52	2.07
Wabageshik		-3580	Jan 90%	11.8	0.22	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Feb 90%	10.3	0.19	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Mar 90%	12.4	0.23	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Apr 90%	43.9	0.80	55	37	39	196.01	198.03	1.47	2.02
Wabageshik		-3580	May 90%	35.3	0.65	55	37	39	196.01	198.02	1.46	2.01
Wabageshik		-3580	Jun 90%	19.3	0.36	54	37	39	196.01	198.01	1.45	2.00
Wabageshik		-3580	Jul 90%	8.9	0.16	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Aug 90%	5.7	0.11	54	37	39	196.01	198.00	1.44	1.99
Wabageshik		-3580	Sep 90%	4.9	0.09	54	37	39	196.01	198.00	1.44	1.99
Wabageshik		-3580	Oct 90%	6.9	0.13	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Nov 90%	14.4	0.27	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Dec 90%	16.3	0.30	54	37	39	196.01	198.00	1.45	1.99
Wabageshik	121	-3625	Jan 10%	38.5	0.73	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Feb 10%	28.0	0.53	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Mar 10%	70.3	1.34	53	26	28	194.72	197.99	2.05	3.27
Wabageshik	121	-3625	Apr 10%	268.0	4.67	57	26	29	194.72	198.18	2.20	3.46
Wabageshik	121	-3625	May 10%	215.0	4.39	49	25	28	194.72	197.85	1.94	3.13
Wabageshik	121	-3625	Jun 10%	78.8	1.50	52	26	28	194.72	197.98	2.05	3.26
Wabageshik	121	-3625	Jul 10%	47.7	0.90	53	26	28	194.72	197.99	2.06	3.27

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	121	-3625	Aug 10%	28.7	0.54	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Sep 10%	32.0	0.61	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Oct 10%	69.9	1.33	53	26	28	194.72	197.99	2.05	3.27
Wabageshik	121	-3625	Nov 10%	93.5	1.79	52	26	28	194.72	197.97	2.04	3.25
Wabageshik	121	-3625	Dec 10%	70.6	1.34	53	26	28	194.72	197.99	2.05	3.27
Wabageshik	121	-3625	Jan 90%	11.8	0.22	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Feb 90%	10.3	0.19	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Mar 90%	12.4	0.23	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Apr 90%	43.9	0.83	53	26	28	194.72	197.99	2.06	3.27
Wabageshik	121	-3625	May 90%	35.3	0.67	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Jun 90%	19.3	0.37	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Jul 90%	8.9	0.17	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Aug 90%	5.7	0.11	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Sep 90%	4.9	0.09	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Oct 90%	6.9	0.13	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Nov 90%	14.4	0.27	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Dec 90%	16.3	0.31	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	122	-3730	Jan 10%	38.5	0.32	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Feb 10%	28.0	0.23	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Mar 10%	70.3	0.58	120	42	46	192.92	197.99	2.84	5.07
Wabageshik	122	-3730	Apr 10%	268.0	2.31	116	42	46	192.92	197.89	2.75	4.97
Wabageshik	122	-3730	May 10%	215.0	1.83	118	42	46	192.92	197.93	2.78	5.01
Wabageshik	122	-3730	Jun 10%	78.8	0.66	120	42	46	192.92	197.99	2.83	5.07
Wabageshik	122	-3730	Jul 10%	47.7	0.40	120	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Aug 10%	28.7	0.24	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Sep 10%	32.0	0.27	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Oct 10%	69.9	0.58	120	42	46	192.92	197.99	2.84	5.07
Wabageshik	122	-3730	Nov 10%	93.5	0.78	120	42	46	192.92	197.99	2.83	5.07
Wabageshik	122	-3730	Dec 10%	70.6	0.59	120	42	46	192.92	197.99	2.84	5.07
Wabageshik	122	-3730	Jan 90%	11.8	0.10	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Feb 90%	10.3	0.09	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Mar 90%	12.4	0.10	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Apr 90%	43.9	0.36	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	May 90%	35.3	0.29	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Jun 90%	19.3	0.16	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Jul 90%	8.9	0.07	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Aug 90%	5.7	0.05	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Sep 90%	4.9	0.04	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Oct 90%	6.9	0.06	121	42	46	192.92	198.00	2.84	5.08

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	122	-3730	Nov 90%	14.4	0.12	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Dec 90%	16.3	0.14	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	123	-3815	Jan 10%	38.5	0.17	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Feb 10%	28.0	0.12	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Mar 10%	70.3	0.31	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Apr 10%	268.0	1.20	222	63	69	191.43	197.95	3.52	6.52
Wabageshik	123	-3815	May 10%	215.0	0.96	223	63	69	191.43	197.97	3.53	6.54
Wabageshik	123	-3815	Jun 10%	78.8	0.35	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Jul 10%	47.7	0.21	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Aug 10%	28.7	0.13	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Sep 10%	32.0	0.14	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Oct 10%	69.9	0.31	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Nov 10%	93.5	0.42	225	63	69	191.43	197.99	3.56	6.56
Wabageshik	123	-3815	Dec 10%	70.6	0.31	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Jan 90%	11.8	0.05	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Feb 90%	10.3	0.05	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Mar 90%	12.4	0.06	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Apr 90%	43.9	0.19	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	May 90%	35.3	0.16	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Jun 90%	19.3	0.09	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Jul 90%	8.9	0.04	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Aug 90%	5.7	0.03	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Sep 90%	4.9	0.02	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Oct 90%	6.9	0.03	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Nov 90%	14.4	0.06	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Dec 90%	16.3	0.07	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	124	-3878	Jan 10%	38.5	0.07	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Feb 10%	28.0	0.05	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Mar 10%	70.3	0.13	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Apr 10%	268.0	0.51	530	83	90	189.06	197.99	6.37	8.93
Wabageshik	124	-3878	May 10%	215.0	0.41	531	83	90	189.06	197.99	6.37	8.93
Wabageshik	124	-3878	Jun 10%	78.8	0.15	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Jul 10%	47.7	0.09	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Aug 10%	28.7	0.05	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Sep 10%	32.0	0.06	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Oct 10%	69.9	0.13	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Nov 10%	93.5	0.18	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Dec 10%	70.6	0.13	531	83	90	189.06	198.00	6.37	8.94

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	124	-3878	Jan 90%	11.8	0.02	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Feb 90%	10.3	0.02	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Mar 90%	12.4	0.02	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Apr 90%	43.9	0.08	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	May 90%	35.3	0.07	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Jun 90%	19.3	0.04	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Jul 90%	8.9	0.02	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Aug 90%	5.7	0.01	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Sep 90%	4.9	0.01	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Oct 90%	6.9	0.01	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Nov 90%	14.4	0.03	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Dec 90%	16.3	0.03	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	125	-3927	Jan 10%	38.5	0.04	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Feb 10%	28.0	0.03	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Mar 10%	70.3	0.07	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Apr 10%	268.0	0.26	1028	125	134	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	May 10%	215.0	0.21	1029	125	134	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Jun 10%	78.8	0.08	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Jul 10%	47.7	0.05	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Aug 10%	28.7	0.03	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Sep 10%	32.0	0.03	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Oct 10%	69.9	0.07	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Nov 10%	93.5	0.09	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Dec 10%	70.6	0.07	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Jan 90%	11.8	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Feb 90%	10.3	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Mar 90%	12.4	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Apr 90%	43.9	0.04	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	May 90%	35.3	0.03	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Jun 90%	19.3	0.02	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Jul 90%	8.9	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Aug 90%	5.7	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Sep 90%	4.9	0.00	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Oct 90%	6.9	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Nov 90%	14.4	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Dec 90%	16.3	0.02	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	126	-3997	Jan 10%	38.5	0.02	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Feb 10%	28.0	0.01	2354	362	373	186.58	198.00	6.50	11.42

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m^3/s)	(m/s)	(m^2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	126	-3997	Mar 10%	70.3	0.03	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Apr 10%	268.0	0.11	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	May 10%	215.0	0.09	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Jun 10%	78.8	0.03	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Jul 10%	47.7	0.02	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Aug 10%	28.7	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Sep 10%	32.0	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Oct 10%	69.9	0.03	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Nov 10%	93.5	0.04	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Dec 10%	70.6	0.03	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Jan 90%	11.8	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Feb 90%	10.3	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Mar 90%	12.4	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Apr 90%	43.9	0.02	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	May 90%	35.3	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Jun 90%	19.3	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Jul 90%	8.9	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Aug 90%	5.7	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Sep 90%	4.9	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Oct 90%	6.9	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Nov 90%	14.4	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Dec 90%	16.3	0.01	2354	362	373	186.58	198.00	6.50	11.42

Table A-5: HEC-RAS Results for Monthly Q10 and Q90 Flows – Proposed Conditions

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		11658	Jan 10%	38.5	0.02	1787	443	443	197.35	205.10	4.04	7.75
Wabageshik		11658	Feb 10%	28.0	0.02	1767	441	442	197.35	205.06	4.00	7.71
Wabageshik		11658	Mar 10%	70.3	0.04	1868	446	447	197.35	205.28	4.19	7.93
Wabageshik		11658	Apr 10%	268.0	0.11	2453	468	469	197.35	206.56	5.24	9.21
Wabageshik		11658	May 10%	215.0	0.09	2304	463	464	197.35	206.24	4.98	8.89
Wabageshik		11658	Jun 10%	78.8	0.04	1893	447	448	197.35	205.34	4.23	7.99
Wabageshik		11658	Jul 10%	47.7	0.03	1808	444	444	197.35	205.15	4.07	7.80
Wabageshik		11658	Aug 10%	28.7	0.02	1768	441	442	197.35	205.06	4.00	7.71
Wabageshik		11658	Sep 10%	32.0	0.02	1774	442	442	197.35	205.07	4.01	7.72
Wabageshik		11658	Oct 10%	69.9	0.04	1867	446	447	197.35	205.28	4.18	7.93
Wabageshik		11658	Nov 10%	93.5	0.05	1937	449	450	197.35	205.44	4.31	8.09
Wabageshik		11658	Dec 10%	70.6	0.04	1869	446	447	197.35	205.29	4.19	7.94
Wabageshik		11658	Jan 90%	11.8	0.01	1747	440	440	197.35	205.01	3.97	7.66
Wabageshik		11658	Feb 90%	10.3	0.01	1746	440	440	197.35	205.01	3.97	7.66
Wabageshik		11658	Mar 90%	12.4	0.01	1747	440	440	197.35	205.01	3.97	7.66
Wabageshik		11658	Apr 90%	43.9	0.02	1799	443	444	197.35	205.13	4.06	7.78
Wabageshik		11658	May 90%	35.3	0.02	1780	442	443	197.35	205.09	4.02	7.74
Wabageshik		11658	Jun 90%	19.3	0.01	1754	440	441	197.35	205.03	3.98	7.68
Wabageshik		11658	Jul 90%	8.9	0.01	1745	440	440	197.35	205.01	3.97	7.66
Wabageshik		11658	Aug 90%	5.7	0.00	1743	439	440	197.35	205.00	3.97	7.65
Wabageshik		11658	Sep 90%	4.9	0.00	1743	439	440	197.35	205.00	3.97	7.65
Wabageshik		11658	Oct 90%	6.9	0.00	1744	439	440	197.35	205.00	3.97	7.65
Wabageshik		11658	Nov 90%	14.4	0.01	1749	440	440	197.35	205.02	3.98	7.67
Wabageshik		11658	Dec 90%	16.3	0.01	1751	440	441	197.35	205.02	3.98	7.67
Wabageshik	101	11566	Jan 10%	38.5	0.03	1533	328	332	196.96	205.10	4.67	8.14
Wabageshik	101	11566	Feb 10%	28.0	0.02	1518	327	331	196.96	205.06	4.64	8.10
Wabageshik	101	11566	Mar 10%	70.3	0.04	1594	332	336	196.96	205.28	4.80	8.32
Wabageshik	101	11566	Apr 10%	268.0	0.13	2031	351	355	196.96	206.56	5.79	9.60
Wabageshik	101	11566	May 10%	215.0	0.11	1920	348	352	196.96	206.24	5.52	9.28
Wabageshik	101	11566	Jun 10%	78.8	0.05	1612	333	337	196.96	205.34	4.84	8.38
Wabageshik	101	11566	Jul 10%	47.7	0.03	1549	329	333	196.96	205.15	4.70	8.19
Wabageshik	101	11566	Aug 10%	28.7	0.02	1519	327	331	196.96	205.06	4.64	8.10
Wabageshik	101	11566	Sep 10%	32.0	0.02	1524	328	332	196.96	205.07	4.65	8.11
Wabageshik	101	11566	Oct 10%	69.9	0.04	1593	332	336	196.96	205.28	4.80	8.32
Wabageshik	101	11566	Nov 10%	93.5	0.06	1645	334	339	196.96	205.44	4.92	8.48
Wabageshik	101	11566	Dec 10%	70.6	0.04	1594	332	336	196.96	205.29	4.81	8.33

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	101	11566	Jan 90%	11.8	0.01	1504	326	330	196.96	205.01	4.62	8.05
Wabageshik	101	11566	Feb 90%	10.3	0.01	1503	326	329	196.96	205.01	4.62	8.05
Wabageshik	101	11566	Mar 90%	12.4	0.01	1504	326	330	196.96	205.01	4.62	8.05
Wabageshik	101	11566	Apr 90%	43.9	0.03	1542	329	333	196.96	205.13	4.69	8.17
Wabageshik	101	11566	May 90%	35.3	0.02	1528	328	332	196.96	205.09	4.66	8.13
Wabageshik	101	11566	Jun 90%	19.3	0.01	1509	326	330	196.96	205.03	4.63	8.07
Wabageshik	101	11566	Jul 90%	8.9	0.01	1502	325	329	196.96	205.01	4.61	8.05
Wabageshik	101	11566	Aug 90%	5.7	0.00	1501	325	329	196.96	205.00	4.61	8.04
Wabageshik	101	11566	Sep 90%	4.9	0.00	1501	325	329	196.96	205.00	4.61	8.04
Wabageshik	101	11566	Oct 90%	6.9	0.00	1501	325	329	196.96	205.00	4.61	8.04
Wabageshik	101	11566	Nov 90%	14.4	0.01	1505	326	330	196.96	205.02	4.62	8.06
Wabageshik	101	11566	Dec 90%	16.3	0.01	1507	326	330	196.96	205.02	4.62	8.06
Wabageshik	102	11277	Jan 10%	38.5	0.11	343	91	93	199.69	205.10	3.76	5.41
Wabageshik	102	11277	Feb 10%	28.0	0.08	338	90	92	199.69	205.06	3.77	5.37
Wabageshik	102	11277	Mar 10%	70.3	0.20	359	93	95	199.69	205.28	3.87	5.59
Wabageshik	102	11277	Apr 10%	268.0	0.56	482	102	104	199.69	206.54	4.74	6.85
Wabageshik	102	11277	May 10%	215.0	0.48	450	99	102	199.69	206.23	4.53	6.54
Wabageshik	102	11277	Jun 10%	78.8	0.22	364	93	95	199.69	205.34	3.91	5.65
Wabageshik	102	11277	Jul 10%	47.7	0.14	347	92	93	199.69	205.15	3.79	5.46
Wabageshik	102	11277	Aug 10%	28.7	0.08	339	90	92	199.69	205.06	3.77	5.37
Wabageshik	102	11277	Sep 10%	32.0	0.09	340	90	92	199.69	205.07	3.76	5.38
Wabageshik	102	11277	Oct 10%	69.9	0.19	359	93	95	199.69	205.28	3.87	5.59
Wabageshik	102	11277	Nov 10%	93.5	0.25	373	94	96	199.69	205.43	3.97	5.74
Wabageshik	102	11277	Dec 10%	70.6	0.20	359	93	95	199.69	205.28	3.87	5.59
Wabageshik	102	11277	Jan 90%	11.8	0.04	334	88	90	199.69	205.01	3.78	5.32
Wabageshik	102	11277	Feb 90%	10.3	0.03	334	88	90	199.69	205.01	3.78	5.32
Wabageshik	102	11277	Mar 90%	12.4	0.04	335	88	90	199.69	205.01	3.78	5.32
Wabageshik	102	11277	Apr 90%	43.9	0.13	345	91	93	199.69	205.13	3.78	5.44
Wabageshik	102	11277	May 90%	35.3	0.10	341	91	93	199.69	205.09	3.76	5.40
Wabageshik	102	11277	Jun 90%	19.3	0.06	336	89	91	199.69	205.03	3.78	5.34
Wabageshik	102	11277	Jul 90%	8.9	0.03	334	88	90	199.69	205.01	3.78	5.32
Wabageshik	102	11277	Aug 90%	5.7	0.02	334	88	90	199.69	205.00	3.78	5.31
Wabageshik	102	11277	Sep 90%	4.9	0.01	334	88	90	199.69	205.00	3.78	5.31
Wabageshik	102	11277	Oct 90%	6.9	0.02	334	88	90	199.69	205.00	3.78	5.31
Wabageshik	102	11277	Nov 90%	14.4	0.04	335	89	90	199.69	205.02	3.78	5.33
Wabageshik	102	11277	Dec 90%	16.3	0.05	335	89	91	199.69	205.02	3.78	5.33
Wabageshik	103	10772	Jan 10%	38.5	0.08	509	148	150	198.50	205.10	3.44	6.60
Wabageshik	103	10772	Feb 10%	28.0	0.06	503	147	149	198.50	205.06	3.41	6.56

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	103	10772	Mar 10%	70.3	0.13	536	151	153	198.50	205.28	3.55	6.78
Wabageshik	103	10772	Apr 10%	268.0	0.35	756	217	219	198.50	206.53	3.48	8.03
Wabageshik	103	10772	May 10%	215.0	0.31	692	194	196	198.50	206.22	3.56	7.72
Wabageshik	103	10772	Jun 10%	78.8	0.14	545	152	154	198.50	205.33	3.58	6.83
Wabageshik	103	10772	Jul 10%	47.7	0.09	516	149	150	198.50	205.15	3.47	6.65
Wabageshik	103	10772	Aug 10%	28.7	0.06	503	148	149	198.50	205.06	3.41	6.56
Wabageshik	103	10772	Sep 10%	32.0	0.06	505	148	149	198.50	205.07	3.42	6.57
Wabageshik	103	10772	Oct 10%	69.9	0.13	536	151	153	198.50	205.28	3.55	6.78
Wabageshik	103	10772	Nov 10%	93.5	0.17	559	154	155	198.50	205.43	3.64	6.93
Wabageshik	103	10772	Dec 10%	70.6	0.13	537	151	153	198.50	205.28	3.55	6.78
Wabageshik	103	10772	Jan 90%	11.8	0.02	496	147	148	198.50	205.01	3.38	6.51
Wabageshik	103	10772	Feb 90%	10.3	0.02	496	147	148	198.50	205.01	3.38	6.51
Wabageshik	103	10772	Mar 90%	12.4	0.02	496	147	148	198.50	205.01	3.38	6.51
Wabageshik	103	10772	Apr 90%	43.9	0.09	513	149	150	198.50	205.13	3.46	6.63
Wabageshik	103	10772	May 90%	35.3	0.07	507	148	150	198.50	205.09	3.43	6.59
Wabageshik	103	10772	Jun 90%	19.3	0.04	499	147	149	198.50	205.03	3.39	6.53
Wabageshik	103	10772	Jul 90%	8.9	0.02	496	147	148	198.50	205.01	3.38	6.51
Wabageshik	103	10772	Aug 90%	5.7	0.01	495	147	148	198.50	205.00	3.37	6.50
Wabageshik	103	10772	Sep 90%	4.9	0.01	495	147	148	198.50	205.00	3.37	6.50
Wabageshik	103	10772	Oct 90%	6.9	0.01	495	147	148	198.50	205.00	3.37	6.50
Wabageshik	103	10772	Nov 90%	14.4	0.03	497	147	149	198.50	205.02	3.38	6.52
Wabageshik	103	10772	Dec 90%	16.3	0.03	498	147	149	198.50	205.02	3.39	6.52
Wabageshik		10686	Jan 10%	38.5	0.08	468	143	144	199.96	205.10	3.27	5.14
Wabageshik		10686	Feb 10%	28.0	0.06	462	143	143	199.96	205.06	3.24	5.10
Wabageshik		10686	Mar 10%	70.3	0.14	494	145	146	199.96	205.28	3.41	5.32
Wabageshik		10686	Apr 10%	268.0	0.39	685	167	168	199.96	206.53	4.11	6.57
Wabageshik		10686	May 10%	215.0	0.34	634	156	157	199.96	206.22	4.06	6.26
Wabageshik		10686	Jun 10%	78.8	0.16	502	145	146	199.96	205.33	3.45	5.37
Wabageshik		10686	Jul 10%	47.7	0.10	475	144	144	199.96	205.15	3.31	5.19
Wabageshik		10686	Aug 10%	28.7	0.06	462	143	143	199.96	205.06	3.24	5.10
Wabageshik		10686	Sep 10%	32.0	0.07	464	143	143	199.96	205.07	3.25	5.11
Wabageshik		10686	Oct 10%	69.9	0.14	494	145	146	199.96	205.28	3.41	5.32
Wabageshik		10686	Nov 10%	93.5	0.18	516	146	147	199.96	205.43	3.53	5.47
Wabageshik		10686	Dec 10%	70.6	0.14	495	145	146	199.96	205.28	3.41	5.32
Wabageshik		10686	Jan 90%	11.8	0.03	456	142	142	199.96	205.01	3.22	5.05
Wabageshik		10686	Feb 90%	10.3	0.02	455	142	142	199.96	205.01	3.21	5.05
Wabageshik		10686	Mar 90%	12.4	0.03	456	142	142	199.96	205.01	3.22	5.05
Wabageshik		10686	Apr 90%	43.9	0.09	472	143	144	199.96	205.13	3.29	5.17
Wabageshik		10686	May 90%	35.3	0.08	466	143	144	199.96	205.08	3.26	5.12

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		10686	Jun 90%	19.3	0.04	458	142	143	199.96	205.03	3.23	5.07
Wabageshik		10686	Jul 90%	8.9	0.02	455	142	142	199.96	205.01	3.21	5.05
Wabageshik		10686	Aug 90%	5.7	0.01	455	142	142	199.96	205.00	3.21	5.04
Wabageshik		10686	Sep 90%	4.9	0.01	455	142	142	199.96	205.00	3.21	5.04
Wabageshik		10686	Oct 90%	6.9	0.02	455	142	142	199.96	205.00	3.21	5.04
Wabageshik		10686	Nov 90%	14.4	0.03	456	142	142	199.96	205.02	3.22	5.06
Wabageshik		10686	Dec 90%	16.3	0.04	457	142	142	199.96	205.02	3.22	5.06
Wabageshik		10493	Jan 10%	38.5	0.07	535	107	109	197.90	205.10	5.01	7.20
Wabageshik		10493	Feb 10%	28.0	0.05	530	106	108	197.90	205.05	5.00	7.15
Wabageshik		10493	Mar 10%	70.3	0.13	555	113	115	197.90	205.28	4.91	7.38
Wabageshik		10493	Apr 10%	268.0	0.38	713	158	160	197.90	206.52	4.50	8.62
Wabageshik		10493	May 10%	215.0	0.32	670	130	132	197.90	206.21	5.16	8.31
Wabageshik		10493	Jun 10%	78.8	0.14	561	115	117	197.90	205.33	4.89	7.43
Wabageshik		10493	Jul 10%	47.7	0.09	540	107	109	197.90	205.15	5.03	7.25
Wabageshik		10493	Aug 10%	28.7	0.05	531	106	108	197.90	205.06	5.00	7.16
Wabageshik		10493	Sep 10%	32.0	0.06	532	106	108	197.90	205.07	5.01	7.17
Wabageshik		10493	Oct 10%	69.9	0.13	555	113	115	197.90	205.28	4.91	7.38
Wabageshik		10493	Nov 10%	93.5	0.16	572	118	119	197.90	205.43	4.87	7.53
Wabageshik		10493	Dec 10%	70.6	0.13	555	113	115	197.90	205.28	4.91	7.38
Wabageshik		10493	Jan 90%	11.8	0.02	526	105	107	197.90	205.01	4.99	7.11
Wabageshik		10493	Feb 90%	10.3	0.02	525	105	107	197.90	205.01	4.99	7.11
Wabageshik		10493	Mar 90%	12.4	0.02	526	105	107	197.90	205.01	4.99	7.11
Wabageshik		10493	Apr 90%	43.9	0.08	538	107	109	197.90	205.13	5.02	7.23
Wabageshik		10493	May 90%	35.3	0.07	534	107	108	197.90	205.08	5.01	7.18
Wabageshik		10493	Jun 90%	19.3	0.04	527	106	107	197.90	205.03	4.99	7.13
Wabageshik		10493	Jul 90%	8.9	0.02	525	105	107	197.90	205.01	4.99	7.11
Wabageshik		10493	Aug 90%	5.7	0.01	525	105	107	197.90	205.00	4.99	7.10
Wabageshik		10493	Sep 90%	4.9	0.01	525	105	107	197.90	205.00	4.99	7.10
Wabageshik		10493	Oct 90%	6.9	0.01	525	105	107	197.90	205.00	4.99	7.10
Wabageshik		10493	Nov 90%	14.4	0.03	526	105	107	197.90	205.02	4.99	7.12
Wabageshik		10493	Dec 90%	16.3	0.03	527	105	107	197.90	205.02	4.99	7.12
Wabageshik	104	10364	Jan 10%	38.5	0.08	503	107	112	198.19	205.10	4.69	6.91
Wabageshik	104	10364	Feb 10%	28.0	0.06	498	107	111	198.19	205.05	4.67	6.86
Wabageshik	104	10364	Mar 10%	70.3	0.13	522	110	115	198.19	205.28	4.76	7.09
Wabageshik	104	10364	Apr 10%	268.0	0.40	670	141	146	198.19	206.52	4.75	8.33
Wabageshik	104	10364	May 10%	215.0	0.34	630	123	128	198.19	206.21	5.13	8.02
Wabageshik	104	10364	Jun 10%	78.8	0.15	528	111	115	198.19	205.33	4.78	7.14
Wabageshik	104	10364	Jul 10%	47.7	0.09	508	108	113	198.19	205.15	4.71	6.96

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	104	10364	Aug 10%	28.7	0.06	499	107	111	198.19	205.06	4.67	6.87
Wabageshik	104	10364	Sep 10%	32.0	0.06	500	107	112	198.19	205.07	4.68	6.88
Wabageshik	104	10364	Oct 10%	69.9	0.13	522	110	115	198.19	205.28	4.76	7.09
Wabageshik	104	10364	Nov 10%	93.5	0.17	539	112	117	198.19	205.43	4.82	7.24
Wabageshik	104	10364	Dec 10%	70.6	0.14	523	110	115	198.19	205.28	4.76	7.09
Wabageshik	104	10364	Jan 90%	11.8	0.02	494	106	111	198.19	205.01	4.65	6.82
Wabageshik	104	10364	Feb 90%	10.3	0.02	493	106	111	198.19	205.01	4.65	6.82
Wabageshik	104	10364	Mar 90%	12.4	0.03	494	106	111	198.19	205.01	4.65	6.82
Wabageshik	104	10364	Apr 90%	43.9	0.09	506	108	112	198.19	205.13	4.70	6.94
Wabageshik	104	10364	May 90%	35.3	0.07	501	107	112	198.19	205.08	4.68	6.89
Wabageshik	104	10364	Jun 90%	19.3	0.04	495	106	111	198.19	205.03	4.66	6.84
Wabageshik	104	10364	Jul 90%	8.9	0.02	493	106	111	198.19	205.01	4.65	6.82
Wabageshik	104	10364	Aug 90%	5.7	0.01	493	106	111	198.19	205.00	4.65	6.81
Wabageshik	104	10364	Sep 90%	4.9	0.01	493	106	111	198.19	205.00	4.65	6.81
Wabageshik	104	10364	Oct 90%	6.9	0.01	493	106	111	198.19	205.00	4.65	6.81
Wabageshik	104	10364	Nov 90%	14.4	0.03	494	106	111	198.19	205.02	4.65	6.83
Wabageshik	104	10364	Dec 90%	16.3	0.03	494	106	111	198.19	205.02	4.65	6.83
Wabageshik		10115	Jan 10%	38.5	0.11	357	78	80	198.97	205.10	4.56	6.13
Wabageshik		10115	Feb 10%	28.0	0.08	353	78	80	198.97	205.05	4.53	6.08
Wabageshik		10115	Mar 10%	70.3	0.19	371	79	81	198.97	205.28	4.68	6.31
Wabageshik		10115	Apr 10%	268.0	0.57	472	85	87	198.97	206.50	5.56	7.53
Wabageshik		10115	May 10%	215.0	0.48	446	84	86	198.97	206.20	5.33	7.23
Wabageshik		10115	Jun 10%	78.8	0.21	375	79	82	198.97	205.33	4.72	6.36
Wabageshik		10115	Jul 10%	47.7	0.13	361	79	80	198.97	205.14	4.59	6.17
Wabageshik		10115	Aug 10%	28.7	0.08	354	78	80	198.97	205.06	4.53	6.09
Wabageshik		10115	Sep 10%	32.0	0.09	355	78	80	198.97	205.07	4.54	6.10
Wabageshik		10115	Oct 10%	69.9	0.19	371	79	81	198.97	205.27	4.68	6.30
Wabageshik		10115	Nov 10%	93.5	0.24	383	80	82	198.97	205.43	4.79	6.46
Wabageshik		10115	Dec 10%	70.6	0.19	371	79	81	198.97	205.28	4.68	6.31
Wabageshik		10115	Jan 90%	11.8	0.03	350	78	80	198.97	205.01	4.50	6.04
Wabageshik		10115	Feb 90%	10.3	0.03	350	78	80	198.97	205.01	4.49	6.04
Wabageshik		10115	Mar 90%	12.4	0.04	350	78	80	198.97	205.01	4.50	6.04
Wabageshik		10115	Apr 90%	43.9	0.12	359	78	80	198.97	205.12	4.58	6.15
Wabageshik		10115	May 90%	35.3	0.10	356	78	80	198.97	205.08	4.55	6.11
Wabageshik		10115	Jun 90%	19.3	0.05	351	78	80	198.97	205.03	4.51	6.06
Wabageshik		10115	Jul 90%	8.9	0.03	350	78	80	198.97	205.01	4.49	6.04
Wabageshik		10115	Aug 90%	5.7	0.02	349	78	80	198.97	205.00	4.49	6.03
Wabageshik		10115	Sep 90%	4.9	0.01	349	78	80	198.97	205.00	4.49	6.03
Wabageshik		10115	Oct 90%	6.9	0.02	349	78	80	198.97	205.00	4.49	6.03

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		10115	Nov 90%	14.4	0.04	350	78	80	198.97	205.02	4.50	6.05
Wabageshik		10115	Dec 90%	16.3	0.05	351	78	80	198.97	205.02	4.50	6.05
Wabageshik	105	9897	Jan 10%	38.5	0.08	482	102	104	197.31	205.10	4.75	7.79
Wabageshik	105	9897	Feb 10%	28.0	0.06	477	101	104	197.31	205.05	4.73	7.74
Wabageshik	105	9897	Mar 10%	70.3	0.14	500	104	107	197.31	205.28	4.79	7.97
Wabageshik	105	9897	Apr 10%	268.0	0.42	632	111	114	197.31	206.50	5.71	9.19
Wabageshik	105	9897	May 10%	215.0	0.36	598	109	112	197.31	206.20	5.48	8.89
Wabageshik	105	9897	Jun 10%	78.8	0.16	506	105	108	197.31	205.33	4.82	8.02
Wabageshik	105	9897	Jul 10%	47.7	0.10	487	102	105	197.31	205.14	4.76	7.83
Wabageshik	105	9897	Aug 10%	28.7	0.06	478	101	104	197.31	205.06	4.73	7.75
Wabageshik	105	9897	Sep 10%	32.0	0.07	479	101	104	197.31	205.07	4.73	7.76
Wabageshik	105	9897	Oct 10%	69.9	0.14	500	104	107	197.31	205.27	4.79	7.96
Wabageshik	105	9897	Nov 10%	93.5	0.18	516	105	108	197.31	205.43	4.89	8.12
Wabageshik	105	9897	Dec 10%	70.6	0.14	500	104	107	197.31	205.28	4.79	7.97
Wabageshik	105	9897	Jan 90%	11.8	0.02	473	100	103	197.31	205.01	4.71	7.70
Wabageshik	105	9897	Feb 90%	10.3	0.02	473	100	103	197.31	205.01	4.71	7.70
Wabageshik	105	9897	Mar 90%	12.4	0.03	473	100	103	197.31	205.01	4.71	7.70
Wabageshik	105	9897	Apr 90%	43.9	0.09	485	102	104	197.31	205.12	4.76	7.81
Wabageshik	105	9897	May 90%	35.3	0.07	480	101	104	197.31	205.08	4.74	7.77
Wabageshik	105	9897	Jun 90%	19.3	0.04	475	101	103	197.31	205.03	4.71	7.72
Wabageshik	105	9897	Jul 90%	8.9	0.02	472	100	103	197.31	205.01	4.71	7.70
Wabageshik	105	9897	Aug 90%	5.7	0.01	472	100	103	197.31	205.00	4.70	7.69
Wabageshik	105	9897	Sep 90%	4.9	0.01	472	100	103	197.31	205.00	4.70	7.69
Wabageshik	105	9897	Oct 90%	6.9	0.01	472	100	103	197.31	205.00	4.70	7.69
Wabageshik	105	9897	Nov 90%	14.4	0.03	473	101	103	197.31	205.01	4.71	7.70
Wabageshik	105	9897	Dec 90%	16.3	0.03	474	101	103	197.31	205.02	4.71	7.71
Wabageshik	106	9197	Jan 10%	38.5	0.07	560	114	117	194.91	205.10	4.92	10.19
Wabageshik	106	9197	Feb 10%	28.0	0.05	555	113	116	194.91	205.05	4.90	10.14
Wabageshik	106	9197	Mar 10%	70.3	0.12	580	117	120	194.91	205.27	4.97	10.36
Wabageshik	106	9197	Apr 10%	268.0	0.37	730	129	132	194.91	206.49	5.66	11.58
Wabageshik	106	9197	May 10%	215.0	0.31	691	126	130	194.91	206.19	5.47	11.28
Wabageshik	106	9197	Jun 10%	78.8	0.13	586	117	120	194.91	205.33	4.99	10.42
Wabageshik	106	9197	Jul 10%	47.7	0.08	565	114	117	194.91	205.14	4.93	10.23
Wabageshik	106	9197	Aug 10%	28.7	0.05	555	113	116	194.91	205.06	4.90	10.15
Wabageshik	106	9197	Sep 10%	32.0	0.06	556	113	116	194.91	205.07	4.91	10.16
Wabageshik	106	9197	Oct 10%	69.9	0.12	580	117	119	194.91	205.27	4.97	10.36
Wabageshik	106	9197	Nov 10%	93.5	0.16	597	119	122	194.91	205.42	5.02	10.51
Wabageshik	106	9197	Dec 10%	70.6	0.12	580	117	120	194.91	205.28	4.97	10.37

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	106	9197	Jan 90%	11.8	0.02	550	112	115	194.91	205.01	4.89	10.10
Wabageshik	106	9197	Feb 90%	10.3	0.02	549	112	115	194.91	205.01	4.89	10.10
Wabageshik	106	9197	Mar 90%	12.4	0.02	550	112	115	194.91	205.01	4.89	10.10
Wabageshik	106	9197	Apr 90%	43.9	0.08	562	114	117	194.91	205.12	4.93	10.21
Wabageshik	106	9197	May 90%	35.3	0.06	558	114	116	194.91	205.08	4.91	10.17
Wabageshik	106	9197	Jun 90%	19.3	0.04	551	113	116	194.91	205.03	4.89	10.12
Wabageshik	106	9197	Jul 90%	8.9	0.02	549	112	115	194.91	205.01	4.89	10.10
Wabageshik	106	9197	Aug 90%	5.7	0.01	549	112	115	194.91	205.00	4.89	10.09
Wabageshik	106	9197	Sep 90%	4.9	0.01	549	112	115	194.91	205.00	4.89	10.09
Wabageshik	106	9197	Oct 90%	6.9	0.01	549	112	115	194.91	205.00	4.89	10.09
Wabageshik	106	9197	Nov 90%	14.4	0.03	550	112	115	194.91	205.01	4.89	10.10
Wabageshik	106	9197	Dec 90%	16.3	0.03	551	113	115	194.91	205.02	4.89	10.11
Wabageshik		8975	Jan 10%	38.5	0.05	853	159	161	196.87	205.10	5.35	8.23
Wabageshik		8975	Feb 10%	28.0	0.03	846	159	160	196.87	205.05	5.32	8.18
Wabageshik		8975	Mar 10%	70.3	0.08	881	161	162	196.87	205.27	5.48	8.40
Wabageshik		8975	Apr 10%	268.0	0.25	1082	168	170	196.87	206.49	6.45	9.62
Wabageshik		8975	May 10%	215.0	0.21	1031	167	168	196.87	206.19	6.19	9.32
Wabageshik		8975	Jun 10%	78.8	0.09	890	161	163	196.87	205.33	5.51	8.46
Wabageshik		8975	Jul 10%	47.7	0.06	860	160	161	196.87	205.14	5.38	8.27
Wabageshik		8975	Aug 10%	28.7	0.03	846	159	160	196.87	205.06	5.32	8.19
Wabageshik		8975	Sep 10%	32.0	0.04	848	159	160	196.87	205.07	5.33	8.20
Wabageshik		8975	Oct 10%	69.9	0.08	881	161	162	196.87	205.27	5.48	8.40
Wabageshik		8975	Nov 10%	93.5	0.10	905	162	163	196.87	205.42	5.59	8.55
Wabageshik		8975	Dec 10%	70.6	0.08	881	161	162	196.87	205.28	5.48	8.41
Wabageshik		8975	Jan 90%	11.8	0.01	839	159	160	196.87	205.01	5.29	8.14
Wabageshik		8975	Feb 90%	10.3	0.01	839	159	160	196.87	205.01	5.29	8.14
Wabageshik		8975	Mar 90%	12.4	0.01	839	159	160	196.87	205.01	5.29	8.14
Wabageshik		8975	Apr 90%	43.9	0.05	857	160	161	196.87	205.12	5.37	8.25
Wabageshik		8975	May 90%	35.3	0.04	851	159	161	196.87	205.08	5.34	8.21
Wabageshik		8975	Jun 90%	19.3	0.02	842	159	160	196.87	205.03	5.30	8.16
Wabageshik		8975	Jul 90%	8.9	0.01	838	159	160	196.87	205.01	5.29	8.14
Wabageshik		8975	Aug 90%	5.7	0.01	838	159	160	196.87	205.00	5.29	8.13
Wabageshik		8975	Sep 90%	4.9	0.01	838	158	160	196.87	205.00	5.29	8.13
Wabageshik		8975	Oct 90%	6.9	0.01	838	159	160	196.87	205.00	5.29	8.13
Wabageshik		8975	Nov 90%	14.4	0.02	840	159	160	196.87	205.01	5.29	8.14
Wabageshik		8975	Dec 90%	16.3	0.02	840	159	160	196.87	205.02	5.30	8.15
Wabageshik	107	8732	Jan 10%	38.5	0.09	437	95	98	197.01	205.10	4.60	8.09
Wabageshik	107	8732	Feb 10%	28.0	0.06	432	94	97	197.01	205.05	4.61	8.04

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	107	8732	Mar 10%	70.3	0.16	454	99	102	197.01	205.27	4.57	8.26
Wabageshik	107	8732	Apr 10%	268.0	0.44	609	164	167	197.01	206.48	3.71	9.47
Wabageshik	107	8732	May 10%	215.0	0.38	565	140	143	197.01	206.18	4.03	9.17
Wabageshik	107	8732	Jun 10%	78.8	0.17	459	100	103	197.01	205.33	4.57	8.32
Wabageshik	107	8732	Jul 10%	47.7	0.11	441	96	99	197.01	205.14	4.59	8.13
Wabageshik	107	8732	Aug 10%	28.7	0.07	433	94	97	197.01	205.06	4.61	8.05
Wabageshik	107	8732	Sep 10%	32.0	0.07	434	94	97	197.01	205.07	4.61	8.06
Wabageshik	107	8732	Oct 10%	69.9	0.15	453	99	102	197.01	205.27	4.57	8.26
Wabageshik	107	8732	Nov 10%	93.5	0.20	469	107	110	197.01	205.42	4.38	8.41
Wabageshik	107	8732	Dec 10%	70.6	0.16	454	99	102	197.01	205.27	4.57	8.26
Wabageshik	107	8732	Jan 90%	11.8	0.03	428	93	96	197.01	205.01	4.60	8.00
Wabageshik	107	8732	Feb 90%	10.3	0.02	428	93	96	197.01	205.01	4.60	8.00
Wabageshik	107	8732	Mar 90%	12.4	0.03	428	93	96	197.01	205.01	4.60	8.00
Wabageshik	107	8732	Apr 90%	43.9	0.10	439	95	98	197.01	205.12	4.60	8.11
Wabageshik	107	8732	May 90%	35.3	0.08	435	95	98	197.01	205.08	4.60	8.07
Wabageshik	107	8732	Jun 90%	19.3	0.04	430	93	96	197.01	205.03	4.60	8.02
Wabageshik	107	8732	Jul 90%	8.9	0.02	428	93	96	197.01	205.01	4.60	8.00
Wabageshik	107	8732	Aug 90%	5.7	0.01	428	93	96	197.01	205.00	4.59	7.99
Wabageshik	107	8732	Sep 90%	4.9	0.01	428	93	96	197.01	205.00	4.59	7.99
Wabageshik	107	8732	Oct 90%	6.9	0.02	428	93	96	197.01	205.00	4.59	7.99
Wabageshik	107	8732	Nov 90%	14.4	0.03	429	93	96	197.01	205.01	4.60	8.00
Wabageshik	107	8732	Dec 90%	16.3	0.04	429	93	96	197.01	205.02	4.60	8.01
Wabageshik		8531	Jan 10%	38.5	0.05	830	283	283	199.83	205.10	2.94	5.27
Wabageshik		8531	Feb 10%	28.0	0.03	818	282	283	199.83	205.05	2.90	5.22
Wabageshik		8531	Mar 10%	70.3	0.08	880	285	286	199.83	205.27	3.08	5.44
Wabageshik		8531	Apr 10%	268.0	0.22	1233	298	299	199.83	206.48	4.14	6.65
Wabageshik		8531	May 10%	215.0	0.19	1143	294	295	199.83	206.18	3.88	6.35
Wabageshik		8531	Jun 10%	78.8	0.09	895	286	287	199.83	205.33	3.13	5.50
Wabageshik		8531	Jul 10%	47.7	0.06	843	283	284	199.83	205.14	2.97	5.31
Wabageshik		8531	Aug 10%	28.7	0.04	818	282	283	199.83	205.06	2.90	5.23
Wabageshik		8531	Sep 10%	32.0	0.04	822	282	283	199.83	205.07	2.91	5.24
Wabageshik		8531	Oct 10%	69.9	0.08	879	285	286	199.83	205.27	3.08	5.44
Wabageshik		8531	Nov 10%	93.5	0.10	922	287	288	199.83	205.42	3.21	5.59
Wabageshik		8531	Dec 10%	70.6	0.08	880	286	286	199.83	205.27	3.08	5.44
Wabageshik		8531	Jan 90%	11.8	0.01	805	281	282	199.83	205.01	2.86	5.18
Wabageshik		8531	Feb 90%	10.3	0.01	804	281	282	199.83	205.01	2.86	5.18
Wabageshik		8531	Mar 90%	12.4	0.02	805	281	282	199.83	205.01	2.86	5.18
Wabageshik		8531	Apr 90%	43.9	0.05	837	283	284	199.83	205.12	2.96	5.29
Wabageshik		8531	May 90%	35.3	0.04	826	282	283	199.83	205.08	2.92	5.25

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		8531	Jun 90%	19.3	0.02	810	282	282	199.83	205.03	2.88	5.20
Wabageshik		8531	Jul 90%	8.9	0.01	804	281	282	199.83	205.01	2.86	5.18
Wabageshik		8531	Aug 90%	5.7	0.01	803	281	282	199.83	205.00	2.86	5.17
Wabageshik		8531	Sep 90%	4.9	0.01	803	281	282	199.83	205.00	2.86	5.17
Wabageshik		8531	Oct 90%	6.9	0.01	803	281	282	199.83	205.00	2.86	5.17
Wabageshik		8531	Nov 90%	14.4	0.02	807	281	282	199.83	205.01	2.87	5.18
Wabageshik		8531	Dec 90%	16.3	0.02	808	281	282	199.83	205.02	2.87	5.19
Wabageshik	108	8494	Jan 10%	38.5	0.04	990	359	360	198.76	205.10	2.76	6.34
Wabageshik	108	8494	Feb 10%	28.0	0.03	975	358	359	198.76	205.05	2.72	6.29
Wabageshik	108	8494	Mar 10%	70.3	0.07	1053	360	361	198.76	205.27	2.93	6.51
Wabageshik	108	8494	Apr 10%	268.0	0.18	1495	370	372	198.76	206.48	4.04	7.72
Wabageshik	108	8494	May 10%	215.0	0.16	1384	368	370	198.76	206.18	3.76	7.42
Wabageshik	108	8494	Jun 10%	78.8	0.07	1072	360	362	198.76	205.33	2.98	6.57
Wabageshik	108	8494	Jul 10%	47.7	0.05	1006	359	360	198.76	205.14	2.80	6.38
Wabageshik	108	8494	Aug 10%	28.7	0.03	976	358	360	198.76	205.06	2.72	6.30
Wabageshik	108	8494	Sep 10%	32.0	0.03	980	358	360	198.76	205.07	2.74	6.31
Wabageshik	108	8494	Oct 10%	69.9	0.07	1052	360	361	198.76	205.27	2.92	6.51
Wabageshik	108	8494	Nov 10%	93.5	0.08	1106	361	363	198.76	205.42	3.06	6.66
Wabageshik	108	8494	Dec 10%	70.6	0.07	1054	360	361	198.76	205.27	2.93	6.51
Wabageshik	108	8494	Jan 90%	11.8	0.01	959	358	359	198.76	205.01	2.68	6.25
Wabageshik	108	8494	Feb 90%	10.3	0.01	958	358	359	198.76	205.01	2.68	6.25
Wabageshik	108	8494	Mar 90%	12.4	0.01	959	358	359	198.76	205.01	2.68	6.25
Wabageshik	108	8494	Apr 90%	43.9	0.04	1000	359	360	198.76	205.12	2.79	6.36
Wabageshik	108	8494	May 90%	35.3	0.04	985	358	360	198.76	205.08	2.75	6.32
Wabageshik	108	8494	Jun 90%	19.3	0.02	965	358	359	198.76	205.03	2.70	6.27
Wabageshik	108	8494	Jul 90%	8.9	0.01	957	358	359	198.76	205.01	2.68	6.25
Wabageshik	108	8494	Aug 90%	5.7	0.01	956	357	359	198.76	205.00	2.67	6.24
Wabageshik	108	8494	Sep 90%	4.9	0.01	956	357	359	198.76	205.00	2.67	6.24
Wabageshik	108	8494	Oct 90%	6.9	0.01	957	357	359	198.76	205.00	2.68	6.24
Wabageshik	108	8494	Nov 90%	14.4	0.01	961	358	359	198.76	205.01	2.69	6.25
Wabageshik	108	8494	Dec 90%	16.3	0.02	962	358	359	198.76	205.02	2.69	6.26
Wabageshik		6793	Jan 10%	38.5	0.01	7046	1661	1660	199.47	205.10	4.24	5.63
Wabageshik		6793	Feb 10%	28.0	0.00	6974	1660	1660	199.47	205.05	4.20	5.58
Wabageshik		6793	Mar 10%	70.3	0.01	7337	1666	1663	199.47	205.27	4.41	5.80
Wabageshik		6793	Apr 10%	268.0	0.03	9362	1708	1680	199.47	206.48	5.48	7.01
Wabageshik		6793	May 10%	215.0	0.02	8856	1700	1679	199.47	206.18	5.21	6.71
Wabageshik		6793	Jun 10%	78.8	0.01	7426	1667	1663	199.47	205.33	4.46	5.86
Wabageshik		6793	Jul 10%	47.7	0.01	7122	1662	1661	199.47	205.14	4.28	5.67

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		6793	Aug 10%	28.7	0.00	6978	1660	1660	199.47	205.06	4.20	5.59
Wabageshik		6793	Sep 10%	32.0	0.00	6999	1660	1660	199.47	205.07	4.22	5.60
Wabageshik		6793	Oct 10%	69.9	0.01	7333	1665	1662	199.47	205.27	4.40	5.80
Wabageshik		6793	Nov 10%	93.5	0.01	7583	1669	1664	199.47	205.42	4.54	5.95
Wabageshik		6793	Dec 10%	70.6	0.01	7340	1666	1663	199.47	205.27	4.41	5.80
Wabageshik		6793	Jan 90%	11.8	0.00	6901	1659	1659	199.47	205.01	4.16	5.54
Wabageshik		6793	Feb 90%	10.3	0.00	6897	1658	1659	199.47	205.01	4.16	5.54
Wabageshik		6793	Mar 90%	12.4	0.00	6902	1659	1659	199.47	205.01	4.16	5.54
Wabageshik		6793	Apr 90%	43.9	0.01	7089	1662	1661	199.47	205.12	4.27	5.65
Wabageshik		6793	May 90%	35.3	0.01	7022	1661	1660	199.47	205.08	4.23	5.61
Wabageshik		6793	Jun 90%	19.3	0.00	6928	1659	1659	199.47	205.03	4.18	5.56
Wabageshik		6793	Jul 90%	8.9	0.00	6894	1658	1659	199.47	205.01	4.16	5.54
Wabageshik		6793	Aug 90%	5.7	0.00	6888	1658	1658	199.47	205.00	4.15	5.53
Wabageshik		6793	Sep 90%	4.9	0.00	6887	1658	1658	199.47	205.00	4.15	5.53
Wabageshik		6793	Oct 90%	6.9	0.00	6890	1658	1658	199.47	205.00	4.15	5.53
Wabageshik		6793	Nov 90%	14.4	0.00	6909	1659	1659	199.47	205.01	4.17	5.54
Wabageshik		6793	Dec 90%	16.3	0.00	6916	1659	1659	199.47	205.02	4.17	5.55
Wabageshik	109	6137	Jan 10%	38.5	0.06	602	140	141	196.80	205.10	4.32	8.30
Wabageshik	109	6137	Feb 10%	28.0	0.05	596	137	139	196.80	205.05	4.35	8.25
Wabageshik	109	6137	Mar 10%	70.3	0.11	627	145	147	196.80	205.27	4.33	8.47
Wabageshik	109	6137	Apr 10%	268.0	0.33	807	153	155	196.80	206.48	5.27	9.68
Wabageshik	109	6137	May 10%	215.0	0.28	761	151	154	196.80	206.18	5.03	9.38
Wabageshik	109	6137	Jun 10%	78.8	0.12	635	145	147	196.80	205.33	4.37	8.53
Wabageshik	109	6137	Jul 10%	47.7	0.08	609	142	144	196.80	205.14	4.28	8.34
Wabageshik	109	6137	Aug 10%	28.7	0.05	597	137	139	196.80	205.06	4.35	8.26
Wabageshik	109	6137	Sep 10%	32.0	0.05	598	138	140	196.80	205.07	4.34	8.27
Wabageshik	109	6137	Oct 10%	69.9	0.11	627	145	147	196.80	205.27	4.33	8.47
Wabageshik	109	6137	Nov 10%	93.5	0.14	649	146	148	196.80	205.42	4.44	8.62
Wabageshik	109	6137	Dec 10%	70.6	0.11	628	145	147	196.80	205.27	4.33	8.47
Wabageshik	109	6137	Jan 90%	11.8	0.02	590	136	137	196.80	205.01	4.35	8.21
Wabageshik	109	6137	Feb 90%	10.3	0.02	590	136	137	196.80	205.01	4.35	8.21
Wabageshik	109	6137	Mar 90%	12.4	0.02	590	136	138	196.80	205.01	4.35	8.21
Wabageshik	109	6137	Apr 90%	43.9	0.07	606	141	143	196.80	205.12	4.30	8.32
Wabageshik	109	6137	May 90%	35.3	0.06	600	139	141	196.80	205.08	4.33	8.28
Wabageshik	109	6137	Jun 90%	19.3	0.03	593	136	138	196.80	205.03	4.35	8.23
Wabageshik	109	6137	Jul 90%	8.9	0.02	590	136	137	196.80	205.01	4.35	8.21
Wabageshik	109	6137	Aug 90%	5.7	0.01	589	135	137	196.80	205.00	4.35	8.20
Wabageshik	109	6137	Sep 90%	4.9	0.01	589	135	137	196.80	205.00	4.35	8.20
Wabageshik	109	6137	Oct 90%	6.9	0.01	589	135	137	196.80	205.00	4.35	8.20

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	109	6137	Nov 90%	14.4	0.02	591	136	138	196.80	205.01	4.35	8.21
Wabageshik	109	6137	Dec 90%	16.3	0.03	592	136	138	196.80	205.02	4.35	8.22
Wabageshik		5329	Jan 10%	38.5	0.01	6259	1520	1520	199.90	205.10	4.12	5.20
Wabageshik		5329	Feb 10%	28.0	0.00	6193	1519	1519	199.90	205.05	4.08	5.15
Wabageshik		5329	Mar 10%	70.3	0.01	6526	1522	1523	199.90	205.27	4.29	5.37
Wabageshik		5329	Apr 10%	268.0	0.03	8371	1534	1534	199.90	206.48	5.46	6.58
Wabageshik		5329	May 10%	215.0	0.03	7910	1532	1532	199.90	206.18	5.16	6.28
Wabageshik		5329	Jun 10%	78.8	0.01	6607	1523	1523	199.90	205.33	4.34	5.43
Wabageshik		5329	Jul 10%	47.7	0.01	6328	1521	1521	199.90	205.14	4.16	5.24
Wabageshik		5329	Aug 10%	28.7	0.00	6197	1519	1519	199.90	205.06	4.08	5.16
Wabageshik		5329	Sep 10%	32.0	0.01	6217	1520	1520	199.90	205.07	4.09	5.17
Wabageshik		5329	Oct 10%	69.9	0.01	6522	1522	1522	199.90	205.27	4.28	5.37
Wabageshik		5329	Nov 10%	93.5	0.01	6750	1524	1524	199.90	205.42	4.43	5.52
Wabageshik		5329	Dec 10%	70.6	0.01	6528	1522	1523	199.90	205.27	4.29	5.37
Wabageshik		5329	Jan 90%	11.8	0.00	6126	1518	1518	199.90	205.01	4.03	5.11
Wabageshik		5329	Feb 90%	10.3	0.00	6123	1518	1518	199.90	205.01	4.03	5.11
Wabageshik		5329	Mar 90%	12.4	0.00	6128	1518	1518	199.90	205.01	4.04	5.11
Wabageshik		5329	Apr 90%	43.9	0.01	6299	1521	1521	199.90	205.12	4.14	5.22
Wabageshik		5329	May 90%	35.3	0.01	6237	1520	1520	199.90	205.08	4.10	5.18
Wabageshik		5329	Jun 90%	19.3	0.00	6151	1519	1519	199.90	205.03	4.05	5.13
Wabageshik		5329	Jul 90%	8.9	0.00	6120	1518	1518	199.90	205.01	4.03	5.11
Wabageshik		5329	Aug 90%	5.7	0.00	6115	1518	1518	199.90	205.00	4.03	5.10
Wabageshik		5329	Sep 90%	4.9	0.00	6114	1518	1518	199.90	205.00	4.03	5.10
Wabageshik		5329	Oct 90%	6.9	0.00	6116	1518	1518	199.90	205.00	4.03	5.10
Wabageshik		5329	Nov 90%	14.4	0.00	6134	1518	1519	199.90	205.01	4.04	5.11
Wabageshik		5329	Dec 90%	16.3	0.00	6140	1519	1519	199.90	205.02	4.04	5.12
Wabageshik		4633	Jan 10%	38.5	0.01	3187	765	765	199.94	205.10	4.17	5.16
Wabageshik		4633	Feb 10%	28.0	0.01	3154	764	764	199.94	205.05	4.13	5.11
Wabageshik		4633	Mar 10%	70.3	0.02	3321	766	766	199.94	205.27	4.34	5.33
Wabageshik		4633	Apr 10%	268.0	0.06	4251	775	776	199.94	206.48	5.49	6.54
Wabageshik		4633	May 10%	215.0	0.05	4018	772	773	199.94	206.18	5.20	6.24
Wabageshik		4633	Jun 10%	78.8	0.02	3362	766	767	199.94	205.33	4.39	5.39
Wabageshik		4633	Jul 10%	47.7	0.01	3222	765	765	199.94	205.14	4.21	5.20
Wabageshik		4633	Aug 10%	28.7	0.01	3156	764	764	199.94	205.06	4.13	5.12
Wabageshik		4633	Sep 10%	32.0	0.01	3166	764	765	199.94	205.07	4.14	5.13
Wabageshik		4633	Oct 10%	69.9	0.02	3320	766	766	199.94	205.27	4.33	5.33
Wabageshik		4633	Nov 10%	93.5	0.03	3434	767	767	199.94	205.42	4.48	5.48
Wabageshik		4633	Dec 10%	70.6	0.02	3323	766	766	199.94	205.27	4.34	5.33

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		4633	Jan 90%	11.8	0.00	3121	764	764	199.94	205.01	4.09	5.07
Wabageshik		4633	Feb 90%	10.3	0.00	3119	764	764	199.94	205.01	4.08	5.07
Wabageshik		4633	Mar 90%	12.4	0.00	3121	764	764	199.94	205.01	4.09	5.07
Wabageshik		4633	Apr 90%	43.9	0.01	3207	765	765	199.94	205.12	4.19	5.18
Wabageshik		4633	May 90%	35.3	0.01	3177	765	765	199.94	205.08	4.15	5.14
Wabageshik		4633	Jun 90%	19.3	0.01	3133	764	764	199.94	205.03	4.10	5.09
Wabageshik		4633	Jul 90%	8.9	0.00	3117	764	764	199.94	205.01	4.08	5.07
Wabageshik		4633	Aug 90%	5.7	0.00	3115	763	764	199.94	205.00	4.08	5.06
Wabageshik		4633	Sep 90%	4.9	0.00	3114	763	764	199.94	205.00	4.08	5.06
Wabageshik		4633	Oct 90%	6.9	0.00	3116	763	764	199.94	205.00	4.08	5.06
Wabageshik		4633	Nov 90%	14.4	0.00	3124	764	764	199.94	205.01	4.09	5.07
Wabageshik		4633	Dec 90%	16.3	0.01	3127	764	764	199.94	205.02	4.10	5.08
Wabageshik		3638	Jan 10%	38.5	0.02	1837	452	452	199.95	205.10	4.07	5.15
Wabageshik		3638	Feb 10%	28.0	0.02	1817	451	452	199.95	205.05	4.02	5.10
Wabageshik		3638	Mar 10%	70.3	0.04	1916	453	453	199.95	205.27	4.23	5.32
Wabageshik		3638	Apr 10%	268.0	0.11	2467	463	464	199.95	206.48	5.32	6.53
Wabageshik		3638	May 10%	215.0	0.09	2328	460	461	199.95	206.18	5.06	6.23
Wabageshik		3638	Jun 10%	78.8	0.04	1940	453	453	199.95	205.33	4.28	5.38
Wabageshik		3638	Jul 10%	47.7	0.03	1857	452	452	199.95	205.14	4.11	5.19
Wabageshik		3638	Aug 10%	28.7	0.02	1818	451	452	199.95	205.06	4.03	5.11
Wabageshik		3638	Sep 10%	32.0	0.02	1824	452	452	199.95	205.07	4.04	5.12
Wabageshik		3638	Oct 10%	69.9	0.04	1915	453	453	199.95	205.27	4.23	5.32
Wabageshik		3638	Nov 10%	93.5	0.05	1982	454	454	199.95	205.42	4.37	5.47
Wabageshik		3638	Dec 10%	70.6	0.04	1917	453	453	199.95	205.27	4.23	5.32
Wabageshik		3638	Jan 90%	11.8	0.01	1797	451	451	199.95	205.01	3.99	5.06
Wabageshik		3638	Feb 90%	10.3	0.01	1796	451	451	199.95	205.01	3.98	5.06
Wabageshik		3638	Mar 90%	12.4	0.01	1798	451	451	199.95	205.01	3.99	5.06
Wabageshik		3638	Apr 90%	43.9	0.02	1848	452	452	199.95	205.12	4.09	5.17
Wabageshik		3638	May 90%	35.3	0.02	1830	452	452	199.95	205.08	4.05	5.13
Wabageshik		3638	Jun 90%	19.3	0.01	1805	451	452	199.95	205.03	4.00	5.08
Wabageshik		3638	Jul 90%	8.9	0.00	1795	451	451	199.95	205.01	3.98	5.06
Wabageshik		3638	Aug 90%	5.7	0.00	1794	451	451	199.95	205.00	3.98	5.05
Wabageshik		3638	Sep 90%	4.9	0.00	1793	451	451	199.95	205.00	3.98	5.05
Wabageshik		3638	Oct 90%	6.9	0.00	1794	451	451	199.95	205.00	3.98	5.05
Wabageshik		3638	Nov 90%	14.4	0.01	1799	451	451	199.95	205.01	3.99	5.06
Wabageshik		3638	Dec 90%	16.3	0.01	1801	451	451	199.95	205.02	3.99	5.07
Wabageshik		2606	Jan 10%	38.5	0.01	3354	811	811	199.72	205.10	4.14	5.38
Wabageshik		2606	Feb 10%	28.0	0.01	3319	810	811	199.72	205.05	4.09	5.33

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		2606	Mar 10%	70.3	0.02	3496	813	813	199.72	205.27	4.30	5.55
Wabageshik		2606	Apr 10%	268.0	0.06	4482	821	822	199.72	206.48	5.46	6.76
Wabageshik		2606	May 10%	215.0	0.05	4235	820	821	199.72	206.18	5.16	6.46
Wabageshik		2606	Jun 10%	78.8	0.02	3539	813	814	199.72	205.33	4.35	5.61
Wabageshik		2606	Jul 10%	47.7	0.01	3391	811	812	199.72	205.14	4.18	5.42
Wabageshik		2606	Aug 10%	28.7	0.01	3321	811	811	199.72	205.06	4.10	5.34
Wabageshik		2606	Sep 10%	32.0	0.01	3331	811	811	199.72	205.07	4.11	5.35
Wabageshik		2606	Oct 10%	69.9	0.02	3494	813	813	199.72	205.27	4.30	5.55
Wabageshik		2606	Nov 10%	93.5	0.03	3616	814	815	199.72	205.42	4.44	5.70
Wabageshik		2606	Dec 10%	70.6	0.02	3497	813	813	199.72	205.27	4.30	5.55
Wabageshik		2606	Jan 90%	11.8	0.00	3283	810	810	199.72	205.01	4.05	5.29
Wabageshik		2606	Feb 90%	10.3	0.00	3281	810	810	199.72	205.01	4.05	5.29
Wabageshik		2606	Mar 90%	12.4	0.00	3284	810	810	199.72	205.01	4.05	5.29
Wabageshik		2606	Apr 90%	43.9	0.01	3375	811	811	199.72	205.12	4.16	5.40
Wabageshik		2606	May 90%	35.3	0.01	3342	811	811	199.72	205.08	4.12	5.36
Wabageshik		2606	Jun 90%	19.3	0.01	3296	810	810	199.72	205.03	4.07	5.31
Wabageshik		2606	Jul 90%	8.9	0.00	3280	810	810	199.72	205.01	4.05	5.29
Wabageshik		2606	Aug 90%	5.7	0.00	3277	810	810	199.72	205.00	4.05	5.28
Wabageshik		2606	Sep 90%	4.9	0.00	3276	810	810	199.72	205.00	4.05	5.28
Wabageshik		2606	Oct 90%	6.9	0.00	3278	810	810	199.72	205.00	4.05	5.28
Wabageshik		2606	Nov 90%	14.4	0.00	3287	810	810	199.72	205.01	4.06	5.29
Wabageshik		2606	Dec 90%	16.3	0.00	3290	810	810	199.72	205.02	4.06	5.30
Wabageshik		1873	Jan 10%	38.5	0.02	1808	425	426	199.83	205.10	4.25	5.27
Wabageshik		1873	Feb 10%	28.0	0.02	1790	425	425	199.83	205.05	4.21	5.22
Wabageshik		1873	Mar 10%	70.3	0.04	1883	426	427	199.83	205.27	4.42	5.44
Wabageshik		1873	Apr 10%	268.0	0.11	2401	435	436	199.83	206.48	5.52	6.65
Wabageshik		1873	May 10%	215.0	0.09	2271	433	433	199.83	206.18	5.25	6.35
Wabageshik		1873	Jun 10%	78.8	0.04	1905	426	427	199.83	205.33	4.47	5.50
Wabageshik		1873	Jul 10%	47.7	0.03	1827	425	426	199.83	205.14	4.29	5.31
Wabageshik		1873	Aug 10%	28.7	0.02	1791	425	425	199.83	205.06	4.21	5.23
Wabageshik		1873	Sep 10%	32.0	0.02	1796	425	425	199.83	205.07	4.23	5.24
Wabageshik		1873	Oct 10%	69.9	0.04	1882	426	427	199.83	205.27	4.42	5.44
Wabageshik		1873	Nov 10%	93.5	0.05	1945	427	427	199.83	205.42	4.56	5.59
Wabageshik		1873	Dec 10%	70.6	0.04	1883	426	427	199.83	205.27	4.42	5.44
Wabageshik		1873	Jan 90%	11.8	0.01	1771	424	425	199.83	205.01	4.17	5.18
Wabageshik		1873	Feb 90%	10.3	0.01	1770	424	425	199.83	205.01	4.17	5.18
Wabageshik		1873	Mar 90%	12.4	0.01	1772	424	425	199.83	205.01	4.18	5.18
Wabageshik		1873	Apr 90%	43.9	0.02	1819	425	426	199.83	205.12	4.28	5.29
Wabageshik		1873	May 90%	35.3	0.02	1802	425	426	199.83	205.08	4.24	5.25

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		1873	Jun 90%	19.3	0.01	1778	425	425	199.83	205.03	4.19	5.20
Wabageshik		1873	Jul 90%	8.9	0.01	1769	424	424	199.83	205.01	4.17	5.18
Wabageshik		1873	Aug 90%	5.7	0.00	1768	424	424	199.83	205.00	4.17	5.17
Wabageshik		1873	Sep 90%	4.9	0.00	1768	424	424	199.83	205.00	4.17	5.17
Wabageshik		1873	Oct 90%	6.9	0.00	1768	424	424	199.83	205.00	4.17	5.17
Wabageshik		1873	Nov 90%	14.4	0.01	1773	424	425	199.83	205.01	4.18	5.18
Wabageshik		1873	Dec 90%	16.3	0.01	1775	424	425	199.83	205.02	4.18	5.19
Wabageshik		1183	Jan 10%	38.5	0.02	1862	511	442	199.81	205.10	3.64	5.29
Wabageshik		1183	Feb 10%	28.0	0.02	1843	511	442	199.81	205.05	3.61	5.24
Wabageshik		1183	Mar 10%	70.3	0.04	1940	513	443	199.81	205.27	3.78	5.46
Wabageshik		1183	Apr 10%	268.0	0.11	2474	530	445	199.81	206.48	4.67	6.67
Wabageshik		1183	May 10%	215.0	0.09	2341	526	445	199.81	206.18	4.45	6.37
Wabageshik		1183	Jun 10%	78.8	0.04	1963	513	443	199.81	205.33	3.82	5.52
Wabageshik		1183	Jul 10%	47.7	0.03	1882	512	442	199.81	205.14	3.68	5.33
Wabageshik		1183	Aug 10%	28.7	0.02	1844	511	442	199.81	205.06	3.61	5.25
Wabageshik		1183	Sep 10%	32.0	0.02	1850	511	442	199.81	205.07	3.62	5.26
Wabageshik		1183	Oct 10%	69.9	0.04	1939	513	443	199.81	205.27	3.78	5.46
Wabageshik		1183	Nov 10%	93.5	0.05	2005	514	443	199.81	205.42	3.90	5.61
Wabageshik		1183	Dec 10%	70.6	0.04	1940	513	443	199.81	205.27	3.78	5.46
Wabageshik		1183	Jan 90%	11.8	0.01	1824	510	442	199.81	205.01	3.58	5.20
Wabageshik		1183	Feb 90%	10.3	0.01	1823	510	442	199.81	205.01	3.57	5.20
Wabageshik		1183	Mar 90%	12.4	0.01	1824	510	442	199.81	205.01	3.58	5.20
Wabageshik		1183	Apr 90%	43.9	0.02	1874	511	442	199.81	205.12	3.66	5.31
Wabageshik		1183	May 90%	35.3	0.02	1856	511	442	199.81	205.08	3.63	5.27
Wabageshik		1183	Jun 90%	19.3	0.01	1831	510	442	199.81	205.03	3.59	5.22
Wabageshik		1183	Jul 90%	8.9	0.00	1822	510	442	199.81	205.01	3.57	5.20
Wabageshik		1183	Aug 90%	5.7	0.00	1820	510	442	199.81	205.00	3.57	5.19
Wabageshik		1183	Sep 90%	4.9	0.00	1820	510	442	199.81	205.00	3.57	5.19
Wabageshik		1183	Oct 90%	6.9	0.00	1821	510	442	199.81	205.00	3.57	5.19
Wabageshik		1183	Nov 90%	14.4	0.01	1826	510	442	199.81	205.01	3.58	5.20
Wabageshik		1183	Dec 90%	16.3	0.01	1828	510	442	199.81	205.02	3.58	5.21
Wabageshik	-4	1112	Jan 10%	38.5	0.11	336	100	101	200.00	205.10	3.35	5.10
Wabageshik	-4	1112	Feb 10%	28.0	0.08	332	100	101	200.00	205.05	3.32	5.05
Wabageshik	-4	1112	Mar 10%	70.3	0.20	354	102	102	200.00	205.27	3.48	5.27
Wabageshik	-4	1112	Apr 10%	268.0	0.56	480	111	112	200.00	206.46	4.32	6.46
Wabageshik	-4	1112	May 10%	215.0	0.48	448	108	109	200.00	206.16	4.13	6.16
Wabageshik	-4	1112	Jun 10%	78.8	0.22	359	102	103	200.00	205.32	3.52	5.32
Wabageshik	-4	1112	Jul 10%	47.7	0.14	341	101	102	200.00	205.14	3.38	5.14

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	-4	1112	Aug 10%	28.7	0.09	332	100	101	200.00	205.06	3.32	5.06
Wabageshik	-4	1112	Sep 10%	32.0	0.10	334	100	101	200.00	205.07	3.33	5.07
Wabageshik	-4	1112	Oct 10%	69.9	0.20	354	102	102	200.00	205.27	3.48	5.27
Wabageshik	-4	1112	Nov 10%	93.5	0.25	369	103	104	200.00	205.42	3.59	5.42
Wabageshik	-4	1112	Dec 10%	70.6	0.20	354	102	103	200.00	205.27	3.48	5.27
Wabageshik	-4	1112	Jan 90%	11.8	0.04	328	100	101	200.00	205.01	3.28	5.01
Wabageshik	-4	1112	Feb 90%	10.3	0.03	328	100	101	200.00	205.01	3.28	5.01
Wabageshik	-4	1112	Mar 90%	12.4	0.04	328	100	101	200.00	205.01	3.28	5.01
Wabageshik	-4	1112	Apr 90%	43.9	0.13	339	101	101	200.00	205.12	3.37	5.12
Wabageshik	-4	1112	May 90%	35.3	0.11	335	100	101	200.00	205.08	3.34	5.08
Wabageshik	-4	1112	Jun 90%	19.3	0.06	329	100	101	200.00	205.03	3.30	5.03
Wabageshik	-4	1112	Jul 90%	8.9	0.03	327	100	101	200.00	205.01	3.28	5.01
Wabageshik	-4	1112	Aug 90%	5.7	0.02	327	100	100	200.00	205.00	3.28	5.00
Wabageshik	-4	1112	Sep 90%	4.9	0.02	327	100	100	200.00	205.00	3.28	5.00
Wabageshik	-4	1112	Oct 90%	6.9	0.02	327	100	101	200.00	205.00	3.28	5.00
Wabageshik	-4	1112	Nov 90%	14.4	0.04	328	100	101	200.00	205.01	3.29	5.01
Wabageshik	-4	1112	Dec 90%	16.3	0.05	329	100	101	200.00	205.02	3.29	5.02
Wabageshik		1058	Jan 10%	38.5	0.53	73	76	76	203.89	205.08	0.96	1.19
Wabageshik		1058	Feb 10%	28.0	0.40	70	75	75	203.89	205.04	0.93	1.15
Wabageshik		1058	Mar 10%	70.3	0.84	84	77	78	203.89	205.23	1.09	1.34
Wabageshik		1058	Apr 10%	268.0	1.52	176	88	88	203.89	206.34	2.01	2.45
Wabageshik		1058	May 10%	215.0	1.42	152	86	86	203.89	206.06	1.77	2.17
Wabageshik		1058	Jun 10%	78.8	0.90	88	78	78	203.89	205.28	1.13	1.39
Wabageshik		1058	Jul 10%	47.7	0.63	76	76	76	203.89	205.12	0.99	1.23
Wabageshik		1058	Aug 10%	28.7	0.41	70	75	75	203.89	205.05	0.93	1.16
Wabageshik		1058	Sep 10%	32.0	0.45	71	75	76	203.89	205.06	0.94	1.17
Wabageshik		1058	Oct 10%	69.9	0.83	84	77	78	203.89	205.23	1.08	1.34
Wabageshik		1058	Nov 10%	93.5	0.99	94	79	79	203.89	205.36	1.20	1.47
Wabageshik		1058	Dec 10%	70.6	0.84	84	77	78	203.89	205.23	1.09	1.34
Wabageshik		1058	Jan 90%	11.8	0.18	67	75	75	203.89	205.01	0.89	1.12
Wabageshik		1058	Feb 90%	10.3	0.15	67	75	75	203.89	205.01	0.89	1.12
Wabageshik		1058	Mar 90%	12.4	0.18	67	75	75	203.89	205.01	0.90	1.12
Wabageshik		1058	Apr 90%	43.9	0.59	74	76	76	203.89	205.10	0.98	1.21
Wabageshik		1058	May 90%	35.3	0.49	72	76	76	203.89	205.07	0.95	1.18
Wabageshik		1058	Jun 90%	19.3	0.28	68	75	75	203.89	205.02	0.91	1.13
Wabageshik		1058	Jul 90%	8.9	0.13	67	75	75	203.89	205.00	0.89	1.11
Wabageshik		1058	Aug 90%	5.7	0.09	67	75	75	203.89	205.00	0.89	1.11
Wabageshik		1058	Sep 90%	4.9	0.07	67	75	75	203.89	205.00	0.89	1.11
Wabageshik		1058	Oct 90%	6.9	0.10	67	75	75	203.89	205.00	0.89	1.11

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		1058	Nov 90%	14.4	0.21	67	75	75	203.89	205.01	0.90	1.12
Wabageshik		1058	Dec 90%	16.3	0.24	68	75	75	203.89	205.02	0.90	1.13
Wabageshik		1008	Jan 10%	38.5	0.58	66	60	60	203.57	205.05	1.11	1.48
Wabageshik		1008	Feb 10%	28.0	0.43	65	59	60	203.57	205.03	1.09	1.46
Wabageshik		1008	Mar 10%	70.3	0.96	73	61	61	203.57	205.17	1.20	1.60
Wabageshik		1008	Apr 10%	268.0	1.92	140	70	71	203.57	206.18	1.99	2.61
Wabageshik		1008	May 10%	215.0	1.78	121	68	68	203.57	205.90	1.78	2.33
Wabageshik		1008	Jun 10%	78.8	1.05	75	62	62	203.57	205.20	1.22	1.63
Wabageshik		1008	Jul 10%	47.7	0.70	68	60	60	203.57	205.08	1.13	1.51
Wabageshik		1008	Aug 10%	28.7	0.44	65	59	60	203.57	205.03	1.09	1.46
Wabageshik		1008	Sep 10%	32.0	0.49	65	60	60	203.57	205.04	1.10	1.47
Wabageshik		1008	Oct 10%	69.9	0.96	73	61	61	203.57	205.16	1.20	1.59
Wabageshik		1008	Nov 10%	93.5	1.18	80	63	63	203.57	205.27	1.27	1.70
Wabageshik		1008	Dec 10%	70.6	0.97	73	61	61	203.57	205.17	1.20	1.60
Wabageshik		1008	Jan 90%	11.8	0.19	63	59	59	203.57	205.01	1.07	1.44
Wabageshik		1008	Feb 90%	10.3	0.16	63	59	59	203.57	205.00	1.07	1.43
Wabageshik		1008	Mar 90%	12.4	0.20	63	59	59	203.57	205.01	1.07	1.44
Wabageshik		1008	Apr 90%	43.9	0.65	67	60	60	203.57	205.07	1.12	1.50
Wabageshik		1008	May 90%	35.3	0.54	66	60	60	203.57	205.05	1.10	1.48
Wabageshik		1008	Jun 90%	19.3	0.30	64	59	59	203.57	205.01	1.08	1.44
Wabageshik		1008	Jul 90%	8.9	0.14	63	59	59	203.57	205.00	1.07	1.43
Wabageshik		1008	Aug 90%	5.7	0.09	63	59	59	203.57	205.00	1.07	1.43
Wabageshik		1008	Sep 90%	4.9	0.08	63	59	59	203.57	205.00	1.07	1.43
Wabageshik		1008	Oct 90%	6.9	0.11	63	59	59	203.57	205.00	1.07	1.43
Wabageshik		1008	Nov 90%	14.4	0.23	64	59	59	203.57	205.01	1.07	1.44
Wabageshik		1008	Dec 90%	16.3	0.26	64	59	59	203.57	205.01	1.07	1.44
Wabageshik	110	988	Jan 10%	38.5	0.57	68	56	62	202.51	205.04	1.22	2.53
Wabageshik	110	988	Feb 10%	28.0	0.42	67	56	61	202.51	205.02	1.20	2.51
Wabageshik	110	988	Mar 10%	70.3	0.96	73	57	63	202.51	205.14	1.28	2.63
Wabageshik	110	988	Apr 10%	268.0	2.01	133	69	78	202.51	206.09	1.95	3.58
Wabageshik	110	988	May 10%	215.0	1.87	115	66	75	202.51	205.82	1.74	3.31
Wabageshik	110	988	Jun 10%	78.8	1.05	75	57	64	202.51	205.17	1.31	2.66
Wabageshik	110	988	Jul 10%	47.7	0.69	69	56	62	202.51	205.07	1.23	2.56
Wabageshik	110	988	Aug 10%	28.7	0.43	67	56	61	202.51	205.02	1.20	2.51
Wabageshik	110	988	Sep 10%	32.0	0.48	67	56	61	202.51	205.03	1.21	2.52
Wabageshik	110	988	Oct 10%	69.9	0.96	73	57	63	202.51	205.14	1.28	2.63
Wabageshik	110	988	Nov 10%	93.5	1.19	78	58	65	202.51	205.23	1.35	2.72
Wabageshik	110	988	Dec 10%	70.6	0.96	73	57	63	202.51	205.14	1.28	2.63

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	110	988	Jan 90%	11.8	0.18	66	55	61	202.51	205.00	1.19	2.49
Wabageshik	110	988	Feb 90%	10.3	0.16	66	55	61	202.51	205.00	1.19	2.49
Wabageshik	110	988	Mar 90%	12.4	0.19	66	55	61	202.51	205.00	1.19	2.49
Wabageshik	110	988	Apr 90%	43.9	0.64	69	56	62	202.51	205.06	1.23	2.55
Wabageshik	110	988	May 90%	35.3	0.52	68	56	62	202.51	205.04	1.21	2.53
Wabageshik	110	988	Jun 90%	19.3	0.29	66	55	61	202.51	205.01	1.20	2.50
Wabageshik	110	988	Jul 90%	8.9	0.13	66	55	61	202.51	205.00	1.19	2.49
Wabageshik	110	988	Aug 90%	5.7	0.09	66	55	61	202.51	205.00	1.19	2.49
Wabageshik	110	988	Sep 90%	4.9	0.08	66	55	61	202.51	205.00	1.19	2.49
Wabageshik	110	988	Oct 90%	6.9	0.11	66	55	61	202.51	205.00	1.19	2.49
Wabageshik	110	988	Nov 90%	14.4	0.22	66	55	61	202.51	205.01	1.19	2.50
Wabageshik	110	988	Dec 90%	16.3	0.25	66	55	61	202.51	205.01	1.19	2.50
Wabageshik		973	Jan 10%	38.5	0.68	56	55	55	203.53	205.02	1.03	1.49
Wabageshik		973	Feb 10%	28.0	0.50	56	55	55	203.53	205.01	1.02	1.48
Wabageshik		973	Mar 10%	70.3	1.18	59	55	56	203.53	205.08	1.08	1.55
Wabageshik		973	Apr 10%	268.0	2.51	107	63	64	203.53	205.89	1.70	2.36
Wabageshik		973	May 10%	215.0	2.39	90	61	62	203.53	205.62	1.47	2.09
Wabageshik		973	Jun 10%	78.8	1.30	61	55	56	203.53	205.10	1.10	1.57
Wabageshik		973	Jul 10%	47.7	0.84	57	55	56	203.53	205.04	1.04	1.51
Wabageshik		973	Aug 10%	28.7	0.51	56	55	55	203.53	205.01	1.02	1.48
Wabageshik		973	Sep 10%	32.0	0.57	56	55	55	203.53	205.02	1.02	1.49
Wabageshik		973	Oct 10%	69.9	1.18	59	55	56	203.53	205.08	1.08	1.55
Wabageshik		973	Nov 10%	93.5	1.49	63	55	56	203.53	205.14	1.13	1.61
Wabageshik		973	Dec 10%	70.6	1.19	59	55	56	203.53	205.08	1.08	1.55
Wabageshik		973	Jan 90%	11.8	0.21	55	55	55	203.53	205.00	1.01	1.47
Wabageshik		973	Feb 90%	10.3	0.19	55	55	55	203.53	205.00	1.01	1.47
Wabageshik		973	Mar 90%	12.4	0.22	55	55	55	203.53	205.00	1.01	1.47
Wabageshik		973	Apr 90%	43.9	0.77	57	55	56	203.53	205.03	1.04	1.50
Wabageshik		973	May 90%	35.3	0.63	56	55	55	203.53	205.02	1.03	1.49
Wabageshik		973	Jun 90%	19.3	0.35	55	55	55	203.53	205.01	1.01	1.48
Wabageshik		973	Jul 90%	8.9	0.16	55	55	55	203.53	205.00	1.01	1.47
Wabageshik		973	Aug 90%	5.7	0.10	55	55	55	203.53	205.00	1.01	1.47
Wabageshik		973	Sep 90%	4.9	0.09	55	55	55	203.53	205.00	1.01	1.47
Wabageshik		973	Oct 90%	6.9	0.13	55	55	55	203.53	205.00	1.01	1.47
Wabageshik		973	Nov 90%	14.4	0.26	55	55	55	203.53	205.00	1.01	1.47
Wabageshik		973	Dec 90%	16.3	0.29	55	55	55	203.53	205.00	1.01	1.47
Wabageshik	-3	955	Jan 10%	38.5	0.43	90	68	69	202.93	205.03	1.32	2.10
Wabageshik	-3	955	Feb 10%	28.0	0.31	89	68	69	202.93	205.01	1.31	2.08

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	-3	955	Mar 10%	70.3	0.75	94	68	70	202.93	205.09	1.38	2.16
Wabageshik	-3	955	Apr 10%	268.0	1.75	153	71	73	202.93	205.94	2.15	3.01
Wabageshik	-3	955	May 10%	215.0	1.61	133	70	72	202.93	205.66	1.90	2.73
Wabageshik	-3	955	Jun 10%	78.8	0.83	95	68	70	202.93	205.11	1.40	2.18
Wabageshik	-3	955	Jul 10%	47.7	0.53	91	68	69	202.93	205.04	1.34	2.11
Wabageshik	-3	955	Aug 10%	28.7	0.32	89	68	69	202.93	205.02	1.31	2.09
Wabageshik	-3	955	Sep 10%	32.0	0.36	89	68	69	202.93	205.02	1.31	2.09
Wabageshik	-3	955	Oct 10%	69.9	0.74	94	68	70	202.93	205.09	1.38	2.16
Wabageshik	-3	955	Nov 10%	93.5	0.95	98	68	70	202.93	205.15	1.44	2.22
Wabageshik	-3	955	Dec 10%	70.6	0.75	94	68	70	202.93	205.09	1.38	2.16
Wabageshik	-3	955	Jan 90%	11.8	0.13	88	68	69	202.93	205.00	1.30	2.07
Wabageshik	-3	955	Feb 90%	10.3	0.12	88	68	69	202.93	205.00	1.30	2.07
Wabageshik	-3	955	Mar 90%	12.4	0.14	88	68	69	202.93	205.00	1.30	2.07
Wabageshik	-3	955	Apr 90%	43.9	0.49	90	68	69	202.93	205.03	1.33	2.10
Wabageshik	-3	955	May 90%	35.3	0.39	90	68	69	202.93	205.02	1.32	2.09
Wabageshik	-3	955	Jun 90%	19.3	0.22	88	68	69	202.93	205.01	1.30	2.08
Wabageshik	-3	955	Jul 90%	8.9	0.10	88	68	69	202.93	205.00	1.30	2.07
Wabageshik	-3	955	Aug 90%	5.7	0.06	88	68	69	202.93	205.00	1.30	2.07
Wabageshik	-3	955	Sep 90%	4.9	0.06	88	68	69	202.93	205.00	1.30	2.07
Wabageshik	-3	955	Oct 90%	6.9	0.08	88	68	69	202.93	205.00	1.30	2.07
Wabageshik	-3	955	Nov 90%	14.4	0.16	88	68	69	202.93	205.00	1.30	2.07
Wabageshik	-3	955	Dec 90%	16.3	0.18	88	68	69	202.93	205.00	1.30	2.07
Wabageshik		900	Jan 10%	38.5	0.42	91	55	56	202.91	205.01	1.65	2.10
Wabageshik		900	Feb 10%	28.0	0.31	90	55	56	202.91	205.01	1.64	2.10
Wabageshik		900	Mar 10%	70.3	0.76	93	55	56	202.91	205.05	1.68	2.14
Wabageshik		900	Apr 10%	268.0	2.04	131	57	59	202.91	205.73	2.29	2.82
Wabageshik		900	May 10%	215.0	1.84	117	56	58	202.91	205.48	2.06	2.57
Wabageshik		900	Jun 10%	78.8	0.84	93	55	56	202.91	205.06	1.69	2.15
Wabageshik		900	Jul 10%	47.7	0.52	91	55	56	202.91	205.02	1.66	2.11
Wabageshik		900	Aug 10%	28.7	0.32	90	55	56	202.91	205.01	1.64	2.10
Wabageshik		900	Sep 10%	32.0	0.35	91	55	56	202.91	205.01	1.64	2.10
Wabageshik		900	Oct 10%	69.9	0.75	93	55	56	202.91	205.05	1.68	2.14
Wabageshik		900	Nov 10%	93.5	0.99	95	55	56	202.91	205.09	1.71	2.18
Wabageshik		900	Dec 10%	70.6	0.76	93	55	56	202.91	205.05	1.68	2.14
Wabageshik		900	Jan 90%	11.8	0.13	90	55	56	202.91	205.00	1.64	2.09
Wabageshik		900	Feb 90%	10.3	0.11	90	55	56	202.91	205.00	1.64	2.09
Wabageshik		900	Mar 90%	12.4	0.14	90	55	56	202.91	205.00	1.64	2.09
Wabageshik		900	Apr 90%	43.9	0.48	91	55	56	202.91	205.02	1.65	2.11
Wabageshik		900	May 90%	35.3	0.39	91	55	56	202.91	205.01	1.65	2.10

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		900	Jun 90%	19.3	0.21	90	55	56	202.91	205.00	1.64	2.09
Wabageshik		900	Jul 90%	8.9	0.10	90	55	56	202.91	205.00	1.64	2.09
Wabageshik		900	Aug 90%	5.7	0.06	90	55	56	202.91	205.00	1.64	2.09
Wabageshik		900	Sep 90%	4.9	0.05	90	55	56	202.91	205.00	1.64	2.09
Wabageshik		900	Oct 90%	6.9	0.08	90	55	56	202.91	205.00	1.64	2.09
Wabageshik		900	Nov 90%	14.4	0.16	90	55	56	202.91	205.00	1.64	2.09
Wabageshik		900	Dec 90%	16.3	0.18	90	55	56	202.91	205.00	1.64	2.09
Wabageshik	-2	801	Jan 10%	38.5	0.50	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Feb 10%	28.0	0.36	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Mar 10%	70.3	0.91	77	28	35	197.72	205.01	2.79	7.29
Wabageshik	-2	801	Apr 10%	268.0	3.41	79	28	36	197.72	205.06	2.82	7.34
Wabageshik	-2	801	May 10%	215.0	2.75	79	28	36	197.72	205.05	2.81	7.33
Wabageshik	-2	801	Jun 10%	78.8	1.02	78	28	35	197.72	205.01	2.79	7.29
Wabageshik	-2	801	Jul 10%	47.7	0.62	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Aug 10%	28.7	0.37	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Sep 10%	32.0	0.42	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Oct 10%	69.9	0.91	77	28	35	197.72	205.01	2.79	7.29
Wabageshik	-2	801	Nov 10%	93.5	1.21	78	28	35	197.72	205.01	2.79	7.29
Wabageshik	-2	801	Dec 10%	70.6	0.92	77	28	35	197.72	205.01	2.79	7.29
Wabageshik	-2	801	Jan 90%	11.8	0.15	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Feb 90%	10.3	0.13	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Mar 90%	12.4	0.16	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Apr 90%	43.9	0.57	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	May 90%	35.3	0.46	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Jun 90%	19.3	0.25	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Jul 90%	8.9	0.12	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Aug 90%	5.7	0.07	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Sep 90%	4.9	0.06	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Oct 90%	6.9	0.09	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Nov 90%	14.4	0.19	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-2	801	Dec 90%	16.3	0.21	77	28	35	197.72	205.00	2.79	7.28
Wabageshik	-1	637	Jan 10%	38.5	0.19	205	87	89	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Feb 10%	28.0	0.14	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Mar 10%	70.3	0.34	206	88	89	201.61	205.02	2.35	3.41
Wabageshik	-1	637	Apr 10%	268.0	1.21	224	93	94	201.61	205.22	2.42	3.61
Wabageshik	-1	637	May 10%	215.0	1.00	217	91	92	201.61	205.14	2.39	3.53
Wabageshik	-1	637	Jun 10%	78.8	0.38	206	88	89	201.61	205.02	2.35	3.41
Wabageshik	-1	637	Jul 10%	47.7	0.23	205	87	89	201.61	205.01	2.35	3.40

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	-1	637	Aug 10%	28.7	0.14	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Sep 10%	32.0	0.16	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Oct 10%	69.9	0.34	206	88	89	201.61	205.01	2.35	3.40
Wabageshik	-1	637	Nov 10%	93.5	0.46	207	88	89	201.61	205.03	2.35	3.42
Wabageshik	-1	637	Dec 10%	70.6	0.35	206	88	89	201.61	205.02	2.35	3.41
Wabageshik	-1	637	Jan 90%	11.8	0.06	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Feb 90%	10.3	0.05	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Mar 90%	12.4	0.06	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Apr 90%	43.9	0.22	205	87	89	201.61	205.01	2.34	3.40
Wabageshik	-1	637	May 90%	35.3	0.17	205	87	89	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Jun 90%	19.3	0.09	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Jul 90%	8.9	0.04	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Aug 90%	5.7	0.03	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Sep 90%	4.9	0.02	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Oct 90%	6.9	0.03	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Nov 90%	14.4	0.07	205	87	88	201.61	205.00	2.34	3.39
Wabageshik	-1	637	Dec 90%	16.3	0.08	205	87	88	201.61	205.00	2.34	3.39
Wabageshik		495	Jan 10%	38.5	0.24	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Feb 10%	28.0	0.18	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Mar 10%	70.3	0.44	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Apr 10%	268.0	1.69	166	47	49	200.68	205.02	3.53	4.34
Wabageshik		495	May 10%	215.0	1.36	165	47	49	200.68	205.01	3.52	4.33
Wabageshik		495	Jun 10%	78.8	0.50	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Jul 10%	47.7	0.30	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Aug 10%	28.7	0.18	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Sep 10%	32.0	0.20	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Oct 10%	69.9	0.44	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Nov 10%	93.5	0.59	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Dec 10%	70.6	0.45	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Jan 90%	11.8	0.07	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Feb 90%	10.3	0.07	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Mar 90%	12.4	0.08	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Apr 90%	43.9	0.28	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	May 90%	35.3	0.22	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Jun 90%	19.3	0.12	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Jul 90%	8.9	0.06	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Aug 90%	5.7	0.04	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Sep 90%	4.9	0.03	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Oct 90%	6.9	0.04	165	47	49	200.68	205.00	3.51	4.32

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		495	Nov 90%	14.4	0.09	165	47	49	200.68	205.00	3.51	4.32
Wabageshik		495	Dec 90%	16.3	0.10	165	47	49	200.68	205.00	3.51	4.32
Wabageshik	0	400	Jan 10%	38.5	0.25	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Feb 10%	28.0	0.18	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Mar 10%	70.3	0.46	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Apr 10%	268.0	1.78	159	32	37	197.00	204.95	5.00	7.95
Wabageshik	0	400	May 10%	215.0	1.42	159	32	37	197.00	204.97	5.00	7.97
Wabageshik	0	400	Jun 10%	78.8	0.52	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Jul 10%	47.7	0.31	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Aug 10%	28.7	0.19	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Sep 10%	32.0	0.21	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Oct 10%	69.9	0.46	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Nov 10%	93.5	0.62	160	32	37	197.00	204.99	4.99	7.99
Wabageshik	0	400	Dec 10%	70.6	0.46	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Jan 90%	11.8	0.08	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Feb 90%	10.3	0.07	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Mar 90%	12.4	0.08	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Apr 90%	43.9	0.29	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	May 90%	35.3	0.23	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Jun 90%	19.3	0.13	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Jul 90%	8.9	0.06	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Aug 90%	5.7	0.04	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Sep 90%	4.9	0.03	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Oct 90%	6.9	0.05	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Nov 90%	14.4	0.09	160	32	37	197.00	205.00	4.99	8.00
Wabageshik	0	400	Dec 90%	16.3	0.11	160	32	37	197.00	205.00	4.99	8.00
Wabageshik		342	Jan 10%	38.5	0.16	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Feb 10%	28.0	0.12	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Mar 10%	70.3	0.29	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Apr 10%	268.0	1.12	261	56	59	199.05	205.00	4.64	5.95
Wabageshik		342	May 10%	215.0	0.90	261	56	59	199.05	205.00	4.64	5.95
Wabageshik		342	Jun 10%	78.8	0.33	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Jul 10%	47.7	0.20	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Aug 10%	28.7	0.12	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Sep 10%	32.0	0.13	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Oct 10%	69.9	0.29	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Nov 10%	93.5	0.39	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Dec 10%	70.6	0.29	261	56	59	199.05	205.00	4.65	5.95

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		342	Jan 90%	11.8	0.05	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Feb 90%	10.3	0.04	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Mar 90%	12.4	0.05	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Apr 90%	43.9	0.18	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	May 90%	35.3	0.15	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Jun 90%	19.3	0.08	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Jul 90%	8.9	0.04	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Aug 90%	5.7	0.02	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Sep 90%	4.9	0.02	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Oct 90%	6.9	0.03	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Nov 90%	14.4	0.06	261	56	59	199.05	205.00	4.65	5.95
Wabageshik		342	Dec 90%	16.3	0.07	261	56	59	199.05	205.00	4.65	5.95
Wabageshik	1	255	Jan 10%	38.5	0.13	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Feb 10%	28.0	0.09	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Mar 10%	70.3	0.24	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Apr 10%	268.0	0.91	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	May 10%	215.0	0.73	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Jun 10%	78.8	0.27	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Jul 10%	47.7	0.16	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Aug 10%	28.7	0.10	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Sep 10%	32.0	0.11	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Oct 10%	69.9	0.24	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Nov 10%	93.5	0.32	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Dec 10%	70.6	0.24	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Jan 90%	11.8	0.04	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Feb 90%	10.3	0.03	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Mar 90%	12.4	0.04	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Apr 90%	43.9	0.15	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	May 90%	35.3	0.12	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Jun 90%	19.3	0.07	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Jul 90%	8.9	0.03	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Aug 90%	5.7	0.02	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Sep 90%	4.9	0.02	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Oct 90%	6.9	0.02	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Nov 90%	14.4	0.05	314	54	61	196.78	205.00	5.82	8.22
Wabageshik	1	255	Dec 90%	16.3	0.06	314	54	61	196.78	205.00	5.82	8.22
Wabageshik		172	Jan 10%	38.5	0.20	194	94	94	196.75	199.50	2.06	2.75
Wabageshik		172	Feb 10%	28.0	0.15	182	92	92	196.75	199.37	1.98	2.62

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		172	Mar 10%	70.3	0.31	224	100	100	196.75	199.81	2.25	3.06
Wabageshik		172	Apr 10%	268.0	0.75	356	109	109	196.75	201.07	3.28	4.32
Wabageshik		172	May 10%	215.0	0.66	327	107	108	196.75	200.80	3.05	4.05
Wabageshik		172	Jun 10%	78.8	0.34	231	101	101	196.75	199.87	2.29	3.12
Wabageshik		172	Jul 10%	47.7	0.23	204	96	96	196.75	199.60	2.13	2.85
Wabageshik		172	Aug 10%	28.7	0.16	183	92	92	196.75	199.37	1.98	2.62
Wabageshik		172	Sep 10%	32.0	0.17	187	93	93	196.75	199.42	2.01	2.67
Wabageshik		172	Oct 10%	69.9	0.31	224	100	100	196.75	199.80	2.24	3.05
Wabageshik		172	Nov 10%	93.5	0.39	241	101	102	196.75	199.98	2.38	3.23
Wabageshik		172	Dec 10%	70.6	0.31	224	100	100	196.75	199.81	2.25	3.06
Wabageshik		172	Jan 90%	11.8	0.08	157	87	87	196.75	199.09	1.80	2.34
Wabageshik		172	Feb 90%	10.3	0.07	154	87	87	196.75	199.06	1.78	2.31
Wabageshik		172	Mar 90%	12.4	0.08	158	87	88	196.75	199.10	1.81	2.35
Wabageshik		172	Apr 90%	43.9	0.22	200	95	96	196.75	199.56	2.10	2.81
Wabageshik		172	May 90%	35.3	0.19	191	93	94	196.75	199.46	2.04	2.71
Wabageshik		172	Jun 90%	19.3	0.11	170	90	90	196.75	199.23	1.89	2.48
Wabageshik		172	Jul 90%	8.9	0.06	151	86	86	196.75	199.03	1.76	2.28
Wabageshik		172	Aug 90%	5.7	0.04	144	85	85	196.75	198.94	1.71	2.19
Wabageshik		172	Sep 90%	4.9	0.03	142	84	84	196.75	198.92	1.69	2.17
Wabageshik		172	Oct 90%	6.9	0.05	147	85	85	196.75	198.98	1.73	2.23
Wabageshik		172	Nov 90%	14.4	0.09	162	88	88	196.75	199.14	1.84	2.39
Wabageshik		172	Dec 90%	16.3	0.10	165	89	89	196.75	199.18	1.86	2.43
Wabageshik		91	Jan 10%	38.5	0.38	102	88	88	197.32	199.49	1.16	2.17
Wabageshik		91	Feb 10%	28.0	0.31	91	85	85	197.32	199.36	1.07	2.04
Wabageshik		91	Mar 10%	70.3	0.54	129	93	94	197.32	199.79	1.38	2.47
Wabageshik		91	Apr 10%	268.0	1.05	256	110	111	197.32	201.02	2.33	3.70
Wabageshik		91	May 10%	215.0	0.95	227	108	109	197.32	200.76	2.10	3.44
Wabageshik		91	Jun 10%	78.8	0.58	135	94	95	197.32	199.85	1.43	2.53
Wabageshik		91	Jul 10%	47.7	0.43	111	91	91	197.32	199.59	1.22	2.27
Wabageshik		91	Aug 10%	28.7	0.31	91	85	85	197.32	199.37	1.07	2.05
Wabageshik		91	Sep 10%	32.0	0.34	95	86	86	197.32	199.41	1.11	2.09
Wabageshik		91	Oct 10%	69.9	0.54	129	93	94	197.32	199.79	1.38	2.47
Wabageshik		91	Nov 10%	93.5	0.65	145	96	96	197.32	199.96	1.51	2.64
Wabageshik		91	Dec 10%	70.6	0.55	129	93	94	197.32	199.79	1.38	2.47
Wabageshik		91	Jan 90%	11.8	0.17	68	80	80	197.32	199.09	0.86	1.77
Wabageshik		91	Feb 90%	10.3	0.16	66	79	79	197.32	199.06	0.84	1.74
Wabageshik		91	Mar 90%	12.4	0.18	69	80	80	197.32	199.10	0.87	1.78
Wabageshik		91	Apr 90%	43.9	0.41	107	90	90	197.32	199.55	1.19	2.23
Wabageshik		91	May 90%	35.3	0.36	99	87	87	197.32	199.45	1.14	2.13

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		91	Jun 90%	19.3	0.24	80	82	83	197.32	199.23	0.97	1.91
Wabageshik		91	Jul 90%	8.9	0.14	63	78	78	197.32	199.02	0.81	1.70
Wabageshik		91	Aug 90%	5.7	0.10	57	77	77	197.32	198.94	0.74	1.62
Wabageshik		91	Sep 90%	4.9	0.09	55	76	76	197.32	198.92	0.72	1.60
Wabageshik		91	Oct 90%	6.9	0.12	59	77	77	197.32	198.97	0.77	1.65
Wabageshik		91	Nov 90%	14.4	0.20	73	81	81	197.32	199.14	0.90	1.82
Wabageshik		91	Dec 90%	16.3	0.22	76	81	81	197.32	199.18	0.93	1.86
Wabageshik		35	Jan 10%	38.5	2.04	19	45	45	198.67	199.24	0.42	0.57
Wabageshik		35	Feb 10%	28.0	1.89	15	41	41	198.67	199.14	0.36	0.47
Wabageshik		35	Mar 10%	70.3	2.28	31	58	58	198.67	199.47	0.53	0.80
Wabageshik		35	Apr 10%	268.0	2.08	129	85	85	198.67	200.79	1.52	2.12
Wabageshik		35	May 10%	215.0	2.01	107	82	83	198.67	200.53	1.30	1.86
Wabageshik		35	Jun 10%	78.8	2.35	34	61	61	198.67	199.52	0.55	0.85
Wabageshik		35	Jul 10%	47.7	2.14	22	48	48	198.67	199.31	0.46	0.64
Wabageshik		35	Aug 10%	28.7	1.90	15	41	41	198.67	199.15	0.37	0.48
Wabageshik		35	Sep 10%	32.0	1.95	16	42	43	198.67	199.18	0.39	0.51
Wabageshik		35	Oct 10%	69.9	2.28	31	58	58	198.67	199.47	0.53	0.80
Wabageshik		35	Nov 10%	93.5	2.44	38	63	63	198.67	199.59	0.61	0.92
Wabageshik		35	Dec 10%	70.6	2.28	31	58	59	198.67	199.47	0.53	0.80
Wabageshik		35	Jan 90%	11.8	1.52	8	33	33	198.67	198.95	0.23	0.28
Wabageshik		35	Feb 90%	10.3	1.47	7	32	32	198.67	198.93	0.22	0.26
Wabageshik		35	Mar 90%	12.4	1.54	8	34	34	198.67	198.96	0.24	0.29
Wabageshik		35	Apr 90%	43.9	2.11	21	47	47	198.67	199.28	0.45	0.61
Wabageshik		35	May 90%	35.3	2.00	18	44	44	198.67	199.21	0.40	0.54
Wabageshik		35	Jun 90%	19.3	1.73	11	37	37	198.67	199.05	0.30	0.38
Wabageshik		35	Jul 90%	8.9	1.41	6	31	31	198.67	198.91	0.20	0.24
Wabageshik		35	Aug 90%	5.7	1.25	5	29	29	198.67	198.85	0.16	0.18
Wabageshik		35	Sep 90%	4.9	1.20	4	28	28	198.67	198.83	0.14	0.16
Wabageshik		35	Oct 90%	6.9	1.31	5	30	30	198.67	198.87	0.18	0.20
Wabageshik		35	Nov 90%	14.4	1.60	9	35	35	198.67	198.99	0.26	0.32
Wabageshik		35	Dec 90%	16.3	1.66	10	36	36	198.67	199.01	0.28	0.34
Wabageshik	2	0	Jan 10%	38.5	0.98	39	28	28	196.51	198.91	1.43	2.40
Wabageshik	2	0	Feb 10%	28.0	0.81	35	26	27	196.51	198.74	1.32	2.23
Wabageshik	2	0	Mar 10%	70.3	1.38	51	33	34	196.51	199.31	1.55	2.80
Wabageshik	2	0	Apr 10%	268.0	2.03	132	85	86	196.51	200.69	1.55	4.18
Wabageshik	2	0	May 10%	215.0	1.92	112	70	71	196.51	200.44	1.60	3.93
Wabageshik	2	0	Jun 10%	78.8	1.44	55	41	42	196.51	199.41	1.34	2.90
Wabageshik	2	0	Jul 10%	47.7	1.11	43	28	29	196.51	199.04	1.51	2.53

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	2	0	Aug 10%	28.7	0.82	35	26	27	196.51	198.75	1.33	2.24
Wabageshik	2	0	Sep 10%	32.0	0.88	36	27	27	196.51	198.80	1.36	2.29
Wabageshik	2	0	Oct 10%	69.9	1.37	51	33	34	196.51	199.31	1.55	2.80
Wabageshik	2	0	Nov 10%	93.5	1.52	61	47	48	196.51	199.56	1.31	3.05
Wabageshik	2	0	Dec 10%	70.6	1.38	51	33	34	196.51	199.32	1.55	2.81
Wabageshik	2	0	Jan 90%	11.8	0.45	26	23	24	196.51	198.38	1.13	1.87
Wabageshik	2	0	Feb 90%	10.3	0.41	25	23	23	196.51	198.34	1.10	1.83
Wabageshik	2	0	Mar 90%	12.4	0.47	26	23	24	196.51	198.40	1.14	1.89
Wabageshik	2	0	Apr 90%	43.9	1.06	41	28	29	196.51	198.99	1.47	2.48
Wabageshik	2	0	May 90%	35.3	0.93	38	27	28	196.51	198.86	1.40	2.35
Wabageshik	2	0	Jun 90%	19.3	0.64	30	25	25	196.51	198.57	1.23	2.06
Wabageshik	2	0	Jul 90%	8.9	0.37	24	22	23	196.51	198.30	1.08	1.79
Wabageshik	2	0	Aug 90%	5.7	0.26	22	22	22	196.51	198.19	1.00	1.68
Wabageshik	2	0	Sep 90%	4.9	0.24	21	21	22	196.51	198.16	0.98	1.65
Wabageshik	2	0	Oct 90%	6.9	0.31	23	22	22	196.51	198.23	1.03	1.72
Wabageshik	2	0	Nov 90%	14.4	0.52	28	24	24	196.51	198.45	1.17	1.94
Wabageshik	2	0	Dec 90%	16.3	0.57	29	24	25	196.51	198.50	1.20	1.99
Wabageshik		-14	Jan 10%	38.5	2.45	16	26	26	197.83	198.59	0.60	0.76
Wabageshik		-14	Feb 10%	28.0	2.25	12	24	25	197.83	198.46	0.51	0.63
Wabageshik		-14	Mar 10%	70.3	2.86	25	30	30	197.83	198.91	0.83	1.08
Wabageshik		-14	Apr 10%	268.0	3.43	78	67	67	197.83	200.18	1.17	2.35
Wabageshik		-14	May 10%	215.0	3.64	59	44	44	197.83	199.83	1.35	2.00
Wabageshik		-14	Jun 10%	78.8	2.94	27	31	31	197.83	198.99	0.87	1.16
Wabageshik		-14	Jul 10%	47.7	2.60	18	27	27	197.83	198.69	0.68	0.86
Wabageshik		-14	Aug 10%	28.7	2.26	13	25	25	197.83	198.47	0.52	0.64
Wabageshik		-14	Sep 10%	32.0	2.33	14	25	25	197.83	198.52	0.55	0.69
Wabageshik		-14	Oct 10%	69.9	2.85	24	30	30	197.83	198.91	0.83	1.08
Wabageshik		-14	Nov 10%	93.5	3.03	31	33	33	197.83	199.11	0.93	1.28
Wabageshik		-14	Dec 10%	70.6	2.86	25	30	30	197.83	198.92	0.83	1.09
Wabageshik		-14	Jan 90%	11.8	1.79	7	20	21	197.83	198.20	0.32	0.37
Wabageshik		-14	Feb 90%	10.3	1.72	6	20	20	197.83	198.17	0.30	0.34
Wabageshik		-14	Mar 90%	12.4	1.81	7	21	21	197.83	198.22	0.33	0.39
Wabageshik		-14	Apr 90%	43.9	2.53	17	27	27	197.83	198.65	0.65	0.82
Wabageshik		-14	May 90%	35.3	2.39	15	26	26	197.83	198.56	0.58	0.73
Wabageshik		-14	Jun 90%	19.3	2.04	9	23	23	197.83	198.34	0.42	0.51
Wabageshik		-14	Jul 90%	8.9	1.64	5	20	20	197.83	198.14	0.28	0.31
Wabageshik		-14	Aug 90%	5.7	1.45	4	18	18	197.83	198.07	0.21	0.24
Wabageshik		-14	Sep 90%	4.9	1.39	4	18	18	197.83	198.05	0.20	0.22
Wabageshik		-14	Oct 90%	6.9	1.54	4	19	19	197.83	198.10	0.24	0.27

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		-14	Nov 90%	14.4	1.89	8	21	21	197.83	198.25	0.36	0.42
Wabageshik		-14	Dec 90%	16.3	1.95	8	22	22	197.83	198.29	0.38	0.46
Wabageshik	111	-40	Jan 10%	38.5	0.07	521	277	278	194.78	198.65	1.88	3.87
Wabageshik	111	-40	Feb 10%	28.0	0.06	473	263	264	194.78	198.47	1.80	3.69
Wabageshik	111	-40	Mar 10%	70.3	0.11	635	292	294	194.78	199.05	2.17	4.27
Wabageshik	111	-40	Apr 10%	268.0	0.23	1177	398	400	194.78	200.52	2.96	5.74
Wabageshik	111	-40	May 10%	215.0	0.21	1041	395	397	194.78	200.18	2.63	5.40
Wabageshik	111	-40	Jun 10%	78.8	0.12	664	312	314	194.78	199.15	2.13	4.37
Wabageshik	111	-40	Jul 10%	47.7	0.09	557	280	281	194.78	198.78	1.99	4.00
Wabageshik	111	-40	Aug 10%	28.7	0.06	477	264	265	194.78	198.49	1.80	3.71
Wabageshik	111	-40	Sep 10%	32.0	0.06	493	271	272	194.78	198.55	1.82	3.77
Wabageshik	111	-40	Oct 10%	69.9	0.11	634	292	293	194.78	199.05	2.17	4.27
Wabageshik	111	-40	Nov 10%	93.5	0.13	713	340	341	194.78	199.30	2.10	4.52
Wabageshik	111	-40	Dec 10%	70.6	0.11	636	294	295	194.78	199.05	2.17	4.27
Wabageshik	111	-40	Jan 90%	11.8	0.03	385	237	237	194.78	198.12	1.63	3.34
Wabageshik	111	-40	Feb 90%	10.3	0.03	379	234	235	194.78	198.10	1.62	3.32
Wabageshik	111	-40	Mar 90%	12.4	0.03	387	237	238	194.78	198.13	1.63	3.35
Wabageshik	111	-40	Apr 90%	43.9	0.08	542	279	280	194.78	198.73	1.95	3.95
Wabageshik	111	-40	May 90%	35.3	0.07	507	275	276	194.78	198.60	1.84	3.82
Wabageshik	111	-40	Jun 90%	19.3	0.05	423	251	252	194.78	198.28	1.68	3.50
Wabageshik	111	-40	Jul 90%	8.9	0.02	374	233	233	194.78	198.07	1.61	3.29
Wabageshik	111	-40	Aug 90%	5.7	0.02	364	231	231	194.78	198.03	1.58	3.25
Wabageshik	111	-40	Sep 90%	4.9	0.01	362	230	231	194.78	198.02	1.57	3.24
Wabageshik	111	-40	Oct 90%	6.9	0.02	367	231	232	194.78	198.05	1.59	3.27
Wabageshik	111	-40	Nov 90%	14.4	0.04	397	241	242	194.78	198.17	1.65	3.39
Wabageshik	111	-40	Dec 90%	16.3	0.04	406	245	246	194.78	198.21	1.66	3.43
Wabageshik	112	-105	Jan 10%	38.5	0.03	1116	376	378	193.80	198.65	2.97	4.85
Wabageshik	112	-105	Feb 10%	28.0	0.03	1050	375	377	193.80	198.47	2.80	4.67
Wabageshik	112	-105	Mar 10%	70.3	0.06	1268	377	380	193.80	199.05	3.36	5.25
Wabageshik	112	-105	Apr 10%	268.0	0.15	1829	384	387	193.80	200.53	4.77	6.73
Wabageshik	112	-105	May 10%	215.0	0.13	1697	382	385	193.80	200.18	4.44	6.38
Wabageshik	112	-105	Jun 10%	78.8	0.06	1304	378	380	193.80	199.15	3.45	5.35
Wabageshik	112	-105	Jul 10%	47.7	0.04	1165	376	379	193.80	198.78	3.10	4.98
Wabageshik	112	-105	Aug 10%	28.7	0.03	1055	375	377	193.80	198.49	2.81	4.69
Wabageshik	112	-105	Sep 10%	32.0	0.03	1078	375	378	193.80	198.55	2.87	4.75
Wabageshik	112	-105	Oct 10%	69.9	0.06	1266	377	380	193.80	199.05	3.36	5.25
Wabageshik	112	-105	Nov 10%	93.5	0.07	1361	378	381	193.80	199.30	3.60	5.50
Wabageshik	112	-105	Dec 10%	70.6	0.06	1269	377	380	193.80	199.06	3.37	5.26

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	112	-105	Jan 90%	11.8	0.01	919	370	373	193.80	198.12	2.48	4.32
Wabageshik	112	-105	Feb 90%	10.3	0.01	909	370	372	193.80	198.10	2.46	4.30
Wabageshik	112	-105	Mar 90%	12.4	0.01	923	371	373	193.80	198.13	2.49	4.33
Wabageshik	112	-105	Apr 90%	43.9	0.04	1145	376	378	193.80	198.73	3.05	4.93
Wabageshik	112	-105	May 90%	35.3	0.03	1098	376	378	193.80	198.60	2.92	4.80
Wabageshik	112	-105	Jun 90%	19.3	0.02	976	374	376	193.80	198.28	2.61	4.48
Wabageshik	112	-105	Jul 90%	8.9	0.01	901	369	371	193.80	198.07	2.44	4.27
Wabageshik	112	-105	Aug 90%	5.7	0.01	886	367	370	193.80	198.03	2.41	4.23
Wabageshik	112	-105	Sep 90%	4.9	0.01	883	367	369	193.80	198.02	2.40	4.22
Wabageshik	112	-105	Oct 90%	6.9	0.01	891	368	370	193.80	198.05	2.42	4.25
Wabageshik	112	-105	Nov 90%	14.4	0.02	937	372	375	193.80	198.17	2.52	4.37
Wabageshik	112	-105	Dec 90%	16.3	0.02	951	374	376	193.80	198.21	2.55	4.41
Wabageshik	113	-219	Jan 10%	38.5	0.05	826	298	300	193.42	198.65	2.77	5.23
Wabageshik	113	-219	Feb 10%	28.0	0.04	774	297	299	193.42	198.47	2.61	5.05
Wabageshik	113	-219	Mar 10%	70.3	0.07	947	302	304	193.42	199.05	3.14	5.63
Wabageshik	113	-219	Apr 10%	268.0	0.19	1402	318	321	193.42	200.52	4.41	7.10
Wabageshik	113	-219	May 10%	215.0	0.17	1294	312	315	193.42	200.18	4.14	6.76
Wabageshik	113	-219	Jun 10%	78.8	0.08	976	303	305	193.42	199.15	3.23	5.73
Wabageshik	113	-219	Jul 10%	47.7	0.06	865	299	301	193.42	198.78	2.89	5.36
Wabageshik	113	-219	Aug 10%	28.7	0.04	778	297	299	193.42	198.49	2.62	5.07
Wabageshik	113	-219	Sep 10%	32.0	0.04	796	298	299	193.42	198.55	2.67	5.13
Wabageshik	113	-219	Oct 10%	69.9	0.07	946	302	304	193.42	199.05	3.13	5.63
Wabageshik	113	-219	Nov 10%	93.5	0.09	1022	304	306	193.42	199.30	3.36	5.88
Wabageshik	113	-219	Dec 10%	70.6	0.07	948	302	304	193.42	199.05	3.14	5.63
Wabageshik	113	-219	Jan 90%	11.8	0.02	671	290	292	193.42	198.12	2.31	4.70
Wabageshik	113	-219	Feb 90%	10.3	0.02	663	290	291	193.42	198.10	2.29	4.68
Wabageshik	113	-219	Mar 90%	12.4	0.02	674	291	292	193.42	198.13	2.32	4.71
Wabageshik	113	-219	Apr 90%	43.9	0.05	850	299	301	193.42	198.73	2.84	5.31
Wabageshik	113	-219	May 90%	35.3	0.04	812	298	300	193.42	198.60	2.72	5.18
Wabageshik	113	-219	Jun 90%	19.3	0.03	716	295	297	193.42	198.28	2.42	4.86
Wabageshik	113	-219	Jul 90%	8.9	0.01	656	289	291	193.42	198.07	2.27	4.65
Wabageshik	113	-219	Aug 90%	5.7	0.01	645	288	290	193.42	198.03	2.24	4.61
Wabageshik	113	-219	Sep 90%	4.9	0.01	642	288	290	193.42	198.02	2.23	4.60
Wabageshik	113	-219	Oct 90%	6.9	0.01	649	288	290	193.42	198.05	2.25	4.63
Wabageshik	113	-219	Nov 90%	14.4	0.02	685	292	293	193.42	198.17	2.35	4.75
Wabageshik	113	-219	Dec 90%	16.3	0.02	696	293	295	193.42	198.21	2.38	4.79
Wabageshik	114	-462	Jan 10%	38.5	0.04	1098	427	429	193.16	198.65	2.57	5.49
Wabageshik	114	-462	Feb 10%	28.0	0.03	1023	425	427	193.16	198.47	2.41	5.31

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	114	-462	Mar 10%	70.3	0.06	1271	430	432	193.16	199.05	2.96	5.89
Wabageshik	114	-462	Apr 10%	268.0	0.14	1914	446	449	193.16	200.52	4.29	7.36
Wabageshik	114	-462	May 10%	215.0	0.12	1762	441	443	193.16	200.18	4.00	7.02
Wabageshik	114	-462	Jun 10%	78.8	0.06	1312	431	433	193.16	199.15	3.05	5.99
Wabageshik	114	-462	Jul 10%	47.7	0.04	1154	428	430	193.16	198.78	2.70	5.62
Wabageshik	114	-462	Aug 10%	28.7	0.03	1029	425	427	193.16	198.49	2.42	5.33
Wabageshik	114	-462	Sep 10%	32.0	0.03	1054	426	428	193.16	198.55	2.48	5.39
Wabageshik	114	-462	Oct 10%	69.9	0.06	1269	430	432	193.16	199.05	2.95	5.89
Wabageshik	114	-462	Nov 10%	93.5	0.07	1377	432	434	193.16	199.30	3.19	6.14
Wabageshik	114	-462	Dec 10%	70.6	0.06	1272	430	432	193.16	199.05	2.96	5.89
Wabageshik	114	-462	Jan 90%	11.8	0.01	874	421	423	193.16	198.12	2.08	4.96
Wabageshik	114	-462	Feb 90%	10.3	0.01	864	421	423	193.16	198.10	2.05	4.94
Wabageshik	114	-462	Mar 90%	12.4	0.01	879	421	423	193.16	198.13	2.09	4.97
Wabageshik	114	-462	Apr 90%	43.9	0.04	1131	427	429	193.16	198.73	2.65	5.57
Wabageshik	114	-462	May 90%	35.3	0.03	1077	426	428	193.16	198.60	2.53	5.44
Wabageshik	114	-462	Jun 90%	19.3	0.02	940	423	425	193.16	198.28	2.22	5.12
Wabageshik	114	-462	Jul 90%	8.9	0.01	854	421	422	193.16	198.07	2.03	4.91
Wabageshik	114	-462	Aug 90%	5.7	0.01	837	420	422	193.16	198.03	1.99	4.87
Wabageshik	114	-462	Sep 90%	4.9	0.01	834	420	422	193.16	198.02	1.98	4.86
Wabageshik	114	-462	Oct 90%	6.9	0.01	843	420	422	193.16	198.05	2.00	4.89
Wabageshik	114	-462	Nov 90%	14.4	0.02	895	422	424	193.16	198.17	2.12	5.01
Wabageshik	114	-462	Dec 90%	16.3	0.02	912	422	424	193.16	198.21	2.16	5.05
Wabageshik	115	-798	Jan 10%	38.5	0.11	350	140	141	193.93	198.65	2.50	4.72
Wabageshik	115	-798	Feb 10%	28.0	0.09	326	139	140	193.93	198.47	2.35	4.54
Wabageshik	115	-798	Mar 10%	70.3	0.17	407	161	144	193.93	199.05	2.53	5.12
Wabageshik	115	-798	Apr 10%	268.0	0.41	661	426	224	193.93	200.51	1.55	6.58
Wabageshik	115	-798	May 10%	215.0	0.36	590	262	197	193.93	200.17	2.25	6.24
Wabageshik	115	-798	Jun 10%	78.8	0.19	420	165	145	193.93	199.14	2.55	5.21
Wabageshik	115	-798	Jul 10%	47.7	0.13	368	141	142	193.93	198.78	2.62	4.85
Wabageshik	115	-798	Aug 10%	28.7	0.09	328	139	140	193.93	198.49	2.36	4.56
Wabageshik	115	-798	Sep 10%	32.0	0.10	336	139	141	193.93	198.55	2.41	4.62
Wabageshik	115	-798	Oct 10%	69.9	0.17	406	161	144	193.93	199.05	2.52	5.12
Wabageshik	115	-798	Nov 10%	93.5	0.21	442	172	146	193.93	199.30	2.57	5.37
Wabageshik	115	-798	Dec 10%	70.6	0.17	407	161	144	193.93	199.05	2.53	5.12
Wabageshik	115	-798	Jan 90%	11.8	0.04	277	135	136	193.93	198.12	2.05	4.19
Wabageshik	115	-798	Feb 90%	10.3	0.04	274	135	136	193.93	198.10	2.03	4.17
Wabageshik	115	-798	Mar 90%	12.4	0.04	279	135	137	193.93	198.13	2.06	4.20
Wabageshik	115	-798	Apr 90%	43.9	0.12	361	140	142	193.93	198.73	2.57	4.80
Wabageshik	115	-798	May 90%	35.3	0.10	343	140	141	193.93	198.60	2.46	4.67

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	115	-798	Jun 90%	19.3	0.06	299	138	139	193.93	198.28	2.17	4.35
Wabageshik	115	-798	Jul 90%	8.9	0.03	271	135	136	193.93	198.07	2.01	4.14
Wabageshik	115	-798	Aug 90%	5.7	0.02	265	134	136	193.93	198.03	1.98	4.10
Wabageshik	115	-798	Sep 90%	4.9	0.02	264	134	135	193.93	198.02	1.97	4.09
Wabageshik	115	-798	Oct 90%	6.9	0.03	267	134	136	193.93	198.05	1.99	4.12
Wabageshik	115	-798	Nov 90%	14.4	0.05	284	137	138	193.93	198.17	2.08	4.24
Wabageshik	115	-798	Dec 90%	16.3	0.06	289	137	139	193.93	198.21	2.11	4.28
Wabageshik	116	-1452	Jan 10%	38.5	0.11	355	101	103	194.01	198.65	3.53	4.64
Wabageshik	116	-1452	Feb 10%	28.0	0.08	338	99	101	194.01	198.47	3.40	4.46
Wabageshik	116	-1452	Mar 10%	70.3	0.18	396	103	105	194.01	199.04	3.84	5.03
Wabageshik	116	-1452	Apr 10%	268.0	0.49	545	104	109	194.01	200.48	5.26	6.47
Wabageshik	116	-1452	May 10%	215.0	0.42	511	104	108	194.01	200.15	4.92	6.14
Wabageshik	116	-1452	Jun 10%	78.8	0.19	406	103	106	194.01	199.14	3.93	5.13
Wabageshik	116	-1452	Jul 10%	47.7	0.13	368	102	104	194.01	198.77	3.62	4.76
Wabageshik	116	-1452	Aug 10%	28.7	0.08	339	99	101	194.01	198.48	3.41	4.47
Wabageshik	116	-1452	Sep 10%	32.0	0.09	345	100	102	194.01	198.54	3.46	4.53
Wabageshik	116	-1452	Oct 10%	69.9	0.18	396	103	105	194.01	199.04	3.84	5.03
Wabageshik	116	-1452	Nov 10%	93.5	0.22	421	104	106	194.01	199.29	4.07	5.28
Wabageshik	116	-1452	Dec 10%	70.6	0.18	396	103	105	194.01	199.05	3.84	5.04
Wabageshik	116	-1452	Jan 90%	11.8	0.04	304	96	98	194.01	198.12	3.17	4.11
Wabageshik	116	-1452	Feb 90%	10.3	0.03	301	95	97	194.01	198.10	3.16	4.09
Wabageshik	116	-1452	Mar 90%	12.4	0.04	305	96	98	194.01	198.13	3.18	4.12
Wabageshik	116	-1452	Apr 90%	43.9	0.12	363	101	103	194.01	198.72	3.59	4.71
Wabageshik	116	-1452	May 90%	35.3	0.10	351	100	102	194.01	198.60	3.49	4.59
Wabageshik	116	-1452	Jun 90%	19.3	0.06	319	98	100	194.01	198.28	3.26	4.27
Wabageshik	116	-1452	Jul 90%	8.9	0.03	299	95	97	194.01	198.07	3.14	4.06
Wabageshik	116	-1452	Aug 90%	5.7	0.02	295	95	96	194.01	198.03	3.12	4.02
Wabageshik	116	-1452	Sep 90%	4.9	0.02	294	95	96	194.01	198.02	3.11	4.01
Wabageshik	116	-1452	Oct 90%	6.9	0.02	297	95	96	194.01	198.05	3.13	4.04
Wabageshik	116	-1452	Nov 90%	14.4	0.05	308	96	98	194.01	198.17	3.20	4.16
Wabageshik	116	-1452	Dec 90%	16.3	0.05	312	97	98	194.01	198.21	3.23	4.20
Wabageshik	117	-2478	Jan 10%	38.5	0.41	95	43	45	195.27	198.63	2.19	3.36
Wabageshik	117	-2478	Feb 10%	28.0	0.32	87	42	44	195.27	198.46	2.07	3.19
Wabageshik	117	-2478	Mar 10%	70.3	0.63	111	46	48	195.27	199.00	2.43	3.73
Wabageshik	117	-2478	Apr 10%	268.0	1.51	178	58	60	195.27	200.27	3.04	5.00
Wabageshik	117	-2478	May 10%	215.0	1.34	161	56	57	195.27	199.98	2.90	4.71
Wabageshik	117	-2478	Jun 10%	78.8	0.68	115	47	48	195.27	199.09	2.48	3.82
Wabageshik	117	-2478	Jul 10%	47.7	0.48	100	44	46	195.27	198.75	2.27	3.48

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	117	-2478	Aug 10%	28.7	0.33	88	42	44	195.27	198.47	2.08	3.20
Wabageshik	117	-2478	Sep 10%	32.0	0.35	90	43	44	195.27	198.53	2.12	3.26
Wabageshik	117	-2478	Oct 10%	69.9	0.63	111	46	48	195.27	199.00	2.43	3.73
Wabageshik	117	-2478	Nov 10%	93.5	0.77	122	48	50	195.27	199.23	2.55	3.96
Wabageshik	117	-2478	Dec 10%	70.6	0.63	111	46	48	195.27	199.01	2.43	3.74
Wabageshik	117	-2478	Jan 90%	11.8	0.16	73	40	42	195.27	198.12	1.81	2.85
Wabageshik	117	-2478	Feb 90%	10.3	0.14	72	40	42	195.27	198.09	1.79	2.82
Wabageshik	117	-2478	Mar 90%	12.4	0.17	74	40	42	195.27	198.13	1.82	2.86
Wabageshik	117	-2478	Apr 90%	43.9	0.45	98	44	45	195.27	198.70	2.24	3.43
Wabageshik	117	-2478	May 90%	35.3	0.38	93	43	44	195.27	198.58	2.16	3.31
Wabageshik	117	-2478	Jun 90%	19.3	0.24	79	41	43	195.27	198.27	1.93	3.00
Wabageshik	117	-2478	Jul 90%	8.9	0.12	71	40	42	195.27	198.07	1.78	2.80
Wabageshik	117	-2478	Aug 90%	5.7	0.08	70	40	41	195.27	198.03	1.75	2.76
Wabageshik	117	-2478	Sep 90%	4.9	0.07	69	40	41	195.27	198.02	1.74	2.75
Wabageshik	117	-2478	Oct 90%	6.9	0.10	70	40	41	195.27	198.04	1.76	2.77
Wabageshik	117	-2478	Nov 90%	14.4	0.19	75	41	42	195.27	198.17	1.85	2.90
Wabageshik	117	-2478	Dec 90%	16.3	0.21	77	41	42	195.27	198.20	1.88	2.93
Wabageshik		-3261	Jan 10%	38.5	0.13	289	71	74	193.01	198.63	4.05	5.62
Wabageshik		-3261	Feb 10%	28.0	0.10	277	70	72	193.01	198.46	3.95	5.45
Wabageshik		-3261	Mar 10%	70.3	0.22	315	72	75	193.01	199.00	4.39	5.99
Wabageshik		-3261	Apr 10%	268.0	0.66	405	73	78	193.01	200.23	5.56	7.22
Wabageshik		-3261	May 10%	215.0	0.56	384	73	77	193.01	199.95	5.28	6.94
Wabageshik		-3261	Jun 10%	78.8	0.24	322	72	75	193.01	199.09	4.48	6.08
Wabageshik		-3261	Jul 10%	47.7	0.16	298	72	74	193.01	198.75	4.15	5.74
Wabageshik		-3261	Aug 10%	28.7	0.10	278	70	73	193.01	198.47	3.96	5.46
Wabageshik		-3261	Sep 10%	32.0	0.11	282	71	73	193.01	198.53	3.99	5.52
Wabageshik		-3261	Oct 10%	69.9	0.22	315	72	75	193.01	199.00	4.39	5.99
Wabageshik		-3261	Nov 10%	93.5	0.28	332	72	75	193.01	199.22	4.59	6.21
Wabageshik		-3261	Dec 10%	70.6	0.22	316	72	75	193.01	199.00	4.40	5.99
Wabageshik		-3261	Jan 90%	11.8	0.05	253	69	71	193.01	198.12	3.69	5.11
Wabageshik		-3261	Feb 90%	10.3	0.04	252	69	71	193.01	198.09	3.67	5.08
Wabageshik		-3261	Mar 90%	12.4	0.05	254	69	71	193.01	198.13	3.70	5.12
Wabageshik		-3261	Apr 90%	43.9	0.15	294	72	74	193.01	198.70	4.11	5.69
Wabageshik		-3261	May 90%	35.3	0.12	286	71	73	193.01	198.58	4.02	5.57
Wabageshik		-3261	Jun 90%	19.3	0.07	264	69	71	193.01	198.27	3.82	5.26
Wabageshik		-3261	Jul 90%	8.9	0.04	250	68	70	193.01	198.07	3.65	5.06
Wabageshik		-3261	Aug 90%	5.7	0.02	247	68	70	193.01	198.03	3.62	5.02
Wabageshik		-3261	Sep 90%	4.9	0.02	247	68	70	193.01	198.02	3.61	5.01
Wabageshik		-3261	Oct 90%	6.9	0.03	248	68	70	193.01	198.04	3.63	5.03

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		-3261	Nov 90%	14.4	0.06	257	69	71	193.01	198.17	3.73	5.16
Wabageshik		-3261	Dec 90%	16.3	0.06	259	69	71	193.01	198.20	3.76	5.19
Wabageshik	118	-3343	Jan 10%	38.5	0.14	275	70	72	193.21	198.63	3.93	5.42
Wabageshik	118	-3343	Feb 10%	28.0	0.11	263	69	71	193.21	198.46	3.81	5.25
Wabageshik	118	-3343	Mar 10%	70.3	0.23	301	72	74	193.21	199.00	4.20	5.79
Wabageshik	118	-3343	Apr 10%	268.0	0.69	390	73	77	193.21	200.22	5.35	7.01
Wabageshik	118	-3343	May 10%	215.0	0.58	370	73	77	193.21	199.94	5.07	6.73
Wabageshik	118	-3343	Jun 10%	78.8	0.26	307	72	75	193.21	199.09	4.29	5.88
Wabageshik	118	-3343	Jul 10%	47.7	0.17	283	71	73	193.21	198.75	4.00	5.54
Wabageshik	118	-3343	Aug 10%	28.7	0.11	264	69	71	193.21	198.47	3.82	5.26
Wabageshik	118	-3343	Sep 10%	32.0	0.12	268	69	71	193.21	198.53	3.87	5.32
Wabageshik	118	-3343	Oct 10%	69.9	0.23	301	72	74	193.21	198.99	4.20	5.78
Wabageshik	118	-3343	Nov 10%	93.5	0.29	317	72	75	193.21	199.22	4.41	6.01
Wabageshik	118	-3343	Dec 10%	70.6	0.23	301	72	74	193.21	199.00	4.21	5.79
Wabageshik	118	-3343	Jan 90%	11.8	0.05	240	68	70	193.21	198.12	3.52	4.91
Wabageshik	118	-3343	Feb 90%	10.3	0.04	238	68	70	193.21	198.09	3.50	4.88
Wabageshik	118	-3343	Mar 90%	12.4	0.05	240	68	70	193.21	198.13	3.53	4.92
Wabageshik	118	-3343	Apr 90%	43.9	0.16	280	70	73	193.21	198.70	3.97	5.49
Wabageshik	118	-3343	May 90%	35.3	0.13	271	70	72	193.21	198.58	3.90	5.37
Wabageshik	118	-3343	Jun 90%	19.3	0.08	250	68	70	193.21	198.27	3.65	5.06
Wabageshik	118	-3343	Jul 90%	8.9	0.04	236	68	70	193.21	198.07	3.49	4.86
Wabageshik	118	-3343	Aug 90%	5.7	0.02	234	67	69	193.21	198.03	3.47	4.82
Wabageshik	118	-3343	Sep 90%	4.9	0.02	233	67	69	193.21	198.02	3.47	4.81
Wabageshik	118	-3343	Oct 90%	6.9	0.03	235	68	69	193.21	198.04	3.47	4.83
Wabageshik	118	-3343	Nov 90%	14.4	0.06	243	68	70	193.21	198.17	3.56	4.96
Wabageshik	118	-3343	Dec 90%	16.3	0.07	245	68	70	193.21	198.20	3.60	4.99
Wabageshik		-3460	Jan 10%	38.5	0.14	275	70	72	193.21	198.63	3.93	5.42
Wabageshik		-3460	Feb 10%	28.0	0.11	263	69	71	193.21	198.46	3.81	5.25
Wabageshik		-3460	Mar 10%	70.3	0.23	301	72	74	193.21	199.00	4.20	5.79
Wabageshik		-3460	Apr 10%	268.0	0.69	389	73	77	193.21	200.22	5.34	7.01
Wabageshik		-3460	May 10%	215.0	0.58	369	73	77	193.21	199.94	5.07	6.73
Wabageshik		-3460	Jun 10%	78.8	0.26	307	72	75	193.21	199.08	4.28	5.87
Wabageshik		-3460	Jul 10%	47.7	0.17	283	71	73	193.21	198.75	4.00	5.54
Wabageshik		-3460	Aug 10%	28.7	0.11	264	69	71	193.21	198.47	3.82	5.26
Wabageshik		-3460	Sep 10%	32.0	0.12	268	69	71	193.21	198.53	3.87	5.32
Wabageshik		-3460	Oct 10%	69.9	0.23	301	72	74	193.21	198.99	4.20	5.78
Wabageshik		-3460	Nov 10%	93.5	0.30	317	72	75	193.21	199.22	4.41	6.01
Wabageshik		-3460	Dec 10%	70.6	0.23	301	72	74	193.21	199.00	4.20	5.79

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		-3460	Jan 90%	11.8	0.05	240	68	70	193.21	198.12	3.52	4.91
Wabageshik		-3460	Feb 90%	10.3	0.04	238	68	70	193.21	198.09	3.50	4.88
Wabageshik		-3460	Mar 90%	12.4	0.05	240	68	70	193.21	198.13	3.53	4.92
Wabageshik		-3460	Apr 90%	43.9	0.16	280	70	73	193.21	198.70	3.97	5.49
Wabageshik		-3460	May 90%	35.3	0.13	271	70	72	193.21	198.58	3.90	5.37
Wabageshik		-3460	Jun 90%	19.3	0.08	250	68	70	193.21	198.27	3.65	5.06
Wabageshik		-3460	Jul 90%	8.9	0.04	236	68	70	193.21	198.07	3.49	4.86
Wabageshik		-3460	Aug 90%	5.7	0.02	234	67	69	193.21	198.03	3.47	4.82
Wabageshik		-3460	Sep 90%	4.9	0.02	233	67	69	193.21	198.02	3.47	4.81
Wabageshik		-3460	Oct 90%	6.9	0.03	235	68	69	193.21	198.04	3.47	4.83
Wabageshik		-3460	Nov 90%	14.4	0.06	243	68	70	193.21	198.17	3.56	4.96
Wabageshik		-3460	Dec 90%	16.3	0.07	245	68	70	193.21	198.20	3.60	4.99
Wabageshik	119	-3469	Jan 10%	38.5	1.57	25	38	39	197.43	198.49	0.65	1.06
Wabageshik	119	-3469	Feb 10%	28.0	1.45	19	33	34	197.43	198.34	0.58	0.91
Wabageshik	119	-3469	Mar 10%	70.3	1.89	37	44	46	197.43	198.80	0.84	1.37
Wabageshik	119	-3469	Apr 10%	268.0	2.51	107	76	80	197.43	199.89	1.40	2.46
Wabageshik	119	-3469	May 10%	215.0	2.50	86	71	74	197.43	199.61	1.21	2.18
Wabageshik	119	-3469	Jun 10%	78.8	1.92	41	49	51	197.43	198.88	0.84	1.45
Wabageshik	119	-3469	Jul 10%	47.7	1.67	29	40	41	197.43	198.59	0.72	1.16
Wabageshik	119	-3469	Aug 10%	28.7	1.46	20	34	35	197.43	198.35	0.58	0.92
Wabageshik	119	-3469	Sep 10%	32.0	1.49	21	36	37	197.43	198.40	0.60	0.97
Wabageshik	119	-3469	Oct 10%	69.9	1.88	37	44	46	197.43	198.80	0.84	1.37
Wabageshik	119	-3469	Nov 10%	93.5	1.96	48	55	57	197.43	199.01	0.86	1.58
Wabageshik	119	-3469	Dec 10%	70.6	1.89	37	44	46	197.43	198.80	0.84	1.37
Wabageshik	119	-3469	Jan 90%	11.8	1.05	11	23	23	197.43	198.06	0.49	0.63
Wabageshik	119	-3469	Feb 90%	10.3	0.94	11	23	23	197.43	198.04	0.48	0.61
Wabageshik	119	-3469	Mar 90%	12.4	1.09	11	23	23	197.43	198.06	0.50	0.63
Wabageshik	119	-3469	Apr 90%	43.9	1.63	27	39	40	197.43	198.55	0.69	1.12
Wabageshik	119	-3469	May 90%	35.3	1.53	23	37	38	197.43	198.45	0.63	1.02
Wabageshik	119	-3469	Jun 90%	19.3	1.41	14	27	27	197.43	198.16	0.51	0.73
Wabageshik	119	-3469	Jul 90%	8.9	0.83	11	23	23	197.43	198.03	0.47	0.60
Wabageshik	119	-3469	Aug 90%	5.7	0.56	10	22	23	197.43	198.01	0.46	0.58
Wabageshik	119	-3469	Sep 90%	4.9	0.48	10	22	23	197.43	198.01	0.46	0.58
Wabageshik	119	-3469	Oct 90%	6.9	0.66	10	22	23	197.43	198.02	0.46	0.59
Wabageshik	119	-3469	Nov 90%	14.4	1.22	12	23	24	197.43	198.08	0.51	0.65
Wabageshik	119	-3469	Dec 90%	16.3	1.31	12	25	25	197.43	198.11	0.51	0.68
Wabageshik		-3490	Jan 10%	38.5	2.33	17	30	31	197.28	198.11	0.54	0.83
Wabageshik		-3490	Feb 10%	28.0	2.24	13	25	25	197.28	197.96	0.51	0.68

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik		-3490	Mar 10%	70.3	2.60	27	39	40	197.28	198.40	0.69	1.12
Wabageshik		-3490	Apr 10%	268.0	2.48	108	77	81	197.28	199.75	1.40	2.47
Wabageshik		-3490	May 10%	215.0	2.83	76	69	72	197.28	199.31	1.11	2.03
Wabageshik		-3490	Jun 10%	78.8	2.68	29	40	42	197.28	198.46	0.73	1.18
Wabageshik		-3490	Jul 10%	47.7	2.41	20	34	35	197.28	198.21	0.58	0.93
Wabageshik		-3490	Aug 10%	28.7	2.24	13	25	26	197.28	197.97	0.51	0.69
Wabageshik		-3490	Sep 10%	32.0	2.26	14	27	28	197.28	198.02	0.52	0.74
Wabageshik		-3490	Oct 10%	69.9	2.62	27	39	40	197.28	198.40	0.69	1.12
Wabageshik		-3490	Nov 10%	93.5	2.81	33	42	44	197.28	198.56	0.79	1.28
Wabageshik		-3490	Dec 10%	70.6	2.61	27	39	40	197.28	198.40	0.70	1.12
Wabageshik		-3490	Jan 90%	11.8	0.90	13	26	26	197.28	197.99	0.51	0.71
Wabageshik		-3490	Feb 90%	10.3	0.78	13	26	27	197.28	197.99	0.51	0.71
Wabageshik		-3490	Mar 90%	12.4	0.95	13	26	26	197.28	197.98	0.51	0.70
Wabageshik		-3490	Apr 90%	43.9	2.38	18	32	33	197.28	198.17	0.57	0.89
Wabageshik		-3490	May 90%	35.3	2.29	15	29	30	197.28	198.07	0.53	0.79
Wabageshik		-3490	Jun 90%	19.3	1.56	12	24	25	197.28	197.95	0.51	0.67
Wabageshik		-3490	Jul 90%	8.9	0.66	13	26	27	197.28	197.99	0.51	0.71
Wabageshik		-3490	Aug 90%	5.7	0.43	13	26	27	197.28	198.00	0.51	0.72
Wabageshik		-3490	Sep 90%	4.9	0.37	13	26	27	197.28	198.00	0.51	0.72
Wabageshik		-3490	Oct 90%	6.9	0.52	13	26	27	197.28	198.00	0.51	0.72
Wabageshik		-3490	Nov 90%	14.4	1.11	13	25	26	197.28	197.98	0.51	0.70
Wabageshik		-3490	Dec 90%	16.3	1.28	13	25	26	197.28	197.97	0.51	0.69
Wabageshik	120	-3539	Jan 10%	38.5	0.67	58	38	39	195.96	198.05	1.54	2.09
Wabageshik	120	-3539	Feb 10%	28.0	0.49	57	38	39	195.96	198.03	1.51	2.07
Wabageshik	120	-3539	Mar 10%	70.3	1.14	62	38	40	195.96	198.16	1.64	2.20
Wabageshik	120	-3539	Apr 10%	268.0	2.29	117	41	44	195.96	199.56	2.88	3.60
Wabageshik	120	-3539	May 10%	215.0	2.13	101	40	43	195.96	199.16	2.51	3.20
Wabageshik	120	-3539	Jun 10%	78.8	1.25	63	38	40	195.96	198.20	1.67	2.24
Wabageshik	120	-3539	Jul 10%	47.7	0.81	59	38	39	195.96	198.07	1.56	2.11
Wabageshik	120	-3539	Aug 10%	28.7	0.50	57	38	39	195.96	198.03	1.52	2.07
Wabageshik	120	-3539	Sep 10%	32.0	0.56	57	38	39	195.96	198.03	1.52	2.07
Wabageshik	120	-3539	Oct 10%	69.9	1.13	62	38	40	195.96	198.16	1.63	2.20
Wabageshik	120	-3539	Nov 10%	93.5	1.41	66	38	40	195.96	198.27	1.74	2.31
Wabageshik	120	-3539	Dec 10%	70.6	1.14	62	38	40	195.96	198.16	1.64	2.20
Wabageshik	120	-3539	Jan 90%	11.8	0.21	56	37	39	195.96	198.00	1.50	2.04
Wabageshik	120	-3539	Feb 90%	10.3	0.18	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	Mar 90%	12.4	0.22	56	37	39	195.96	198.01	1.50	2.05
Wabageshik	120	-3539	Apr 90%	43.9	0.75	58	38	39	195.96	198.06	1.55	2.10
Wabageshik	120	-3539	May 90%	35.3	0.61	57	38	39	195.96	198.04	1.53	2.08

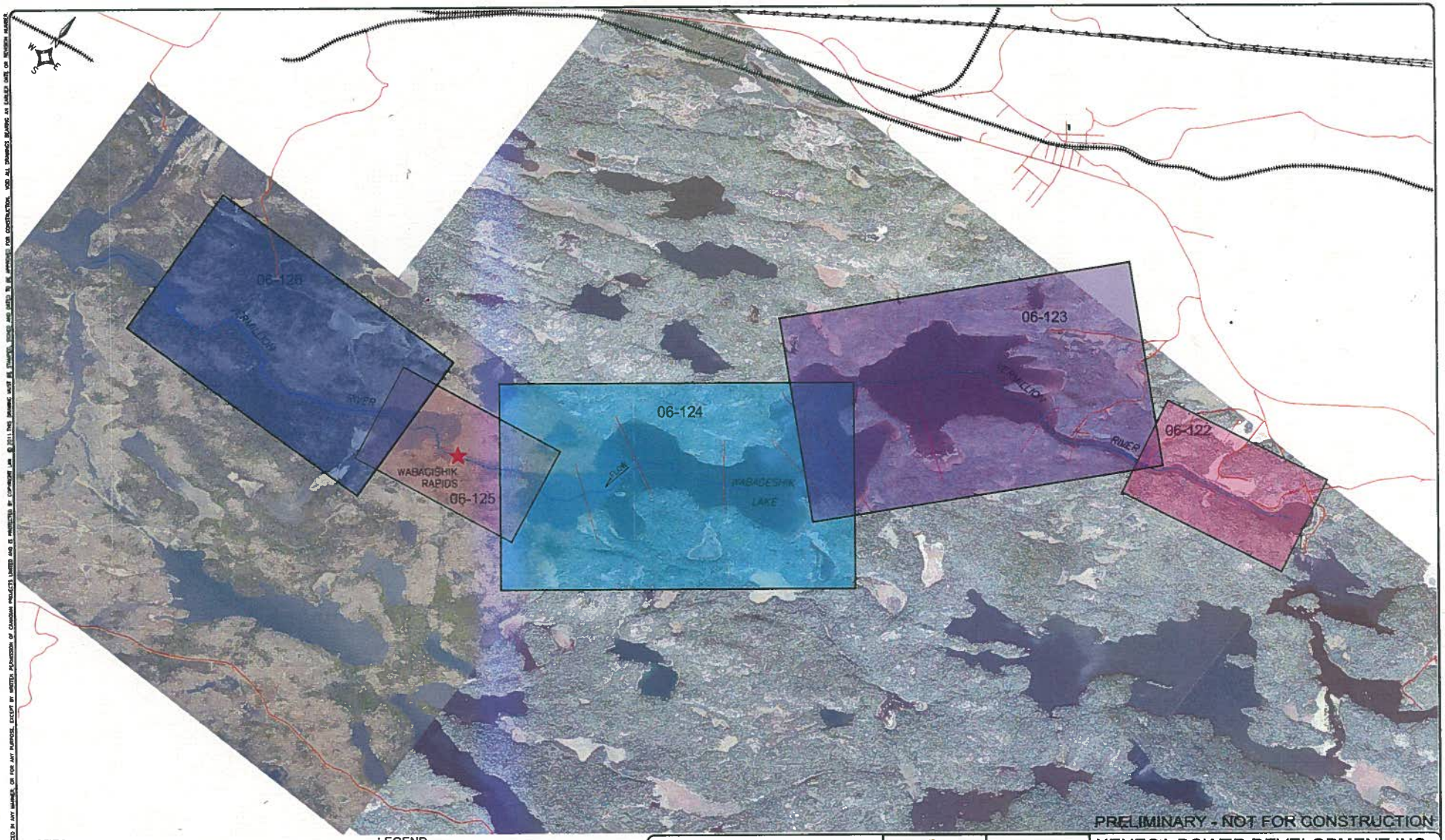
Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	120	-3539	Jun 90%	19.3	0.34	56	38	39	195.96	198.01	1.50	2.05
Wabageshik	120	-3539	Jul 90%	8.9	0.16	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	Aug 90%	5.7	0.10	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	Sep 90%	4.9	0.09	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	Oct 90%	6.9	0.12	56	37	39	195.96	198.00	1.49	2.04
Wabageshik	120	-3539	Nov 90%	14.4	0.26	56	38	39	195.96	198.01	1.50	2.05
Wabageshik	120	-3539	Dec 90%	16.3	0.29	56	38	39	195.96	198.01	1.50	2.05
Wabageshik		-3580	Jan 10%	38.5	0.70	55	37	39	196.01	198.02	1.47	2.01
Wabageshik		-3580	Feb 10%	28.0	0.51	54	37	39	196.01	198.01	1.46	2.00
Wabageshik		-3580	Mar 10%	70.3	1.24	57	38	39	196.01	198.08	1.52	2.07
Wabageshik		-3580	Apr 10%	268.0	2.50	107	41	44	196.01	199.37	2.65	3.36
Wabageshik		-3580	May 10%	215.0	2.37	91	40	42	196.01	198.95	2.29	2.94
Wabageshik		-3580	Jun 10%	78.8	1.37	58	38	39	196.01	198.10	1.54	2.09
Wabageshik		-3580	Jul 10%	47.7	0.86	55	37	39	196.01	198.03	1.48	2.02
Wabageshik		-3580	Aug 10%	28.7	0.53	54	37	39	196.01	198.01	1.46	2.00
Wabageshik		-3580	Sep 10%	32.0	0.59	55	37	39	196.01	198.02	1.46	2.01
Wabageshik		-3580	Oct 10%	69.9	1.23	57	38	39	196.01	198.08	1.52	2.07
Wabageshik		-3580	Nov 10%	93.5	1.57	59	38	39	196.01	198.14	1.58	2.13
Wabageshik		-3580	Dec 10%	70.6	1.24	57	38	39	196.01	198.08	1.52	2.07
Wabageshik		-3580	Jan 90%	11.8	0.22	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Feb 90%	10.3	0.19	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Mar 90%	12.4	0.23	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Apr 90%	43.9	0.80	55	37	39	196.01	198.03	1.47	2.02
Wabageshik		-3580	May 90%	35.3	0.65	55	37	39	196.01	198.02	1.46	2.01
Wabageshik		-3580	Jun 90%	19.3	0.36	54	37	39	196.01	198.01	1.45	2.00
Wabageshik		-3580	Jul 90%	8.9	0.16	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Aug 90%	5.7	0.11	54	37	39	196.01	198.00	1.44	1.99
Wabageshik		-3580	Sep 90%	4.9	0.09	54	37	39	196.01	198.00	1.44	1.99
Wabageshik		-3580	Oct 90%	6.9	0.13	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Nov 90%	14.4	0.27	54	37	39	196.01	198.00	1.45	1.99
Wabageshik		-3580	Dec 90%	16.3	0.30	54	37	39	196.01	198.00	1.45	1.99
Wabageshik	121	-3625	Jan 10%	38.5	0.73	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Feb 10%	28.0	0.53	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Mar 10%	70.3	1.34	53	26	28	194.72	197.99	2.05	3.27
Wabageshik	121	-3625	Apr 10%	268.0	4.67	57	26	29	194.72	198.18	2.20	3.46
Wabageshik	121	-3625	May 10%	215.0	4.39	49	25	28	194.72	197.85	1.94	3.13
Wabageshik	121	-3625	Jun 10%	78.8	1.50	52	26	28	194.72	197.98	2.05	3.26
Wabageshik	121	-3625	Jul 10%	47.7	0.90	53	26	28	194.72	197.99	2.06	3.27

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	121	-3625	Aug 10%	28.7	0.54	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Sep 10%	32.0	0.61	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Oct 10%	69.9	1.33	53	26	28	194.72	197.99	2.05	3.27
Wabageshik	121	-3625	Nov 10%	93.5	1.79	52	26	28	194.72	197.97	2.04	3.25
Wabageshik	121	-3625	Dec 10%	70.6	1.34	53	26	28	194.72	197.99	2.05	3.27
Wabageshik	121	-3625	Jan 90%	11.8	0.22	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Feb 90%	10.3	0.19	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Mar 90%	12.4	0.23	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Apr 90%	43.9	0.83	53	26	28	194.72	197.99	2.06	3.27
Wabageshik	121	-3625	May 90%	35.3	0.67	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Jun 90%	19.3	0.37	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Jul 90%	8.9	0.17	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Aug 90%	5.7	0.11	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Sep 90%	4.9	0.09	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Oct 90%	6.9	0.13	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Nov 90%	14.4	0.27	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	121	-3625	Dec 90%	16.3	0.31	53	26	28	194.72	198.00	2.06	3.28
Wabageshik	122	-3730	Jan 10%	38.5	0.32	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Feb 10%	28.0	0.23	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Mar 10%	70.3	0.58	120	42	46	192.92	197.99	2.84	5.07
Wabageshik	122	-3730	Apr 10%	268.0	2.31	116	42	46	192.92	197.89	2.75	4.97
Wabageshik	122	-3730	May 10%	215.0	1.83	118	42	46	192.92	197.93	2.78	5.01
Wabageshik	122	-3730	Jun 10%	78.8	0.66	120	42	46	192.92	197.99	2.83	5.07
Wabageshik	122	-3730	Jul 10%	47.7	0.40	120	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Aug 10%	28.7	0.24	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Sep 10%	32.0	0.27	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Oct 10%	69.9	0.58	120	42	46	192.92	197.99	2.84	5.07
Wabageshik	122	-3730	Nov 10%	93.5	0.78	120	42	46	192.92	197.99	2.83	5.07
Wabageshik	122	-3730	Dec 10%	70.6	0.59	120	42	46	192.92	197.99	2.84	5.07
Wabageshik	122	-3730	Jan 90%	11.8	0.10	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Feb 90%	10.3	0.09	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Mar 90%	12.4	0.10	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Apr 90%	43.9	0.36	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	May 90%	35.3	0.29	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Jun 90%	19.3	0.16	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Jul 90%	8.9	0.07	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Aug 90%	5.7	0.05	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Sep 90%	4.9	0.04	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Oct 90%	6.9	0.06	121	42	46	192.92	198.00	2.84	5.08

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	122	-3730	Nov 90%	14.4	0.12	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	122	-3730	Dec 90%	16.3	0.14	121	42	46	192.92	198.00	2.84	5.08
Wabageshik	123	-3815	Jan 10%	38.5	0.17	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Feb 10%	28.0	0.12	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Mar 10%	70.3	0.31	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Apr 10%	268.0	1.20	222	63	69	191.43	197.95	3.52	6.52
Wabageshik	123	-3815	May 10%	215.0	0.96	223	63	69	191.43	197.97	3.53	6.54
Wabageshik	123	-3815	Jun 10%	78.8	0.35	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Jul 10%	47.7	0.21	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Aug 10%	28.7	0.13	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Sep 10%	32.0	0.14	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Oct 10%	69.9	0.31	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Nov 10%	93.5	0.42	225	63	69	191.43	197.99	3.56	6.56
Wabageshik	123	-3815	Dec 10%	70.6	0.31	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Jan 90%	11.8	0.05	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Feb 90%	10.3	0.05	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Mar 90%	12.4	0.06	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Apr 90%	43.9	0.19	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	May 90%	35.3	0.16	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Jun 90%	19.3	0.09	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Jul 90%	8.9	0.04	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Aug 90%	5.7	0.03	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Sep 90%	4.9	0.02	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Oct 90%	6.9	0.03	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Nov 90%	14.4	0.06	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	123	-3815	Dec 90%	16.3	0.07	225	63	69	191.43	198.00	3.56	6.57
Wabageshik	124	-3878	Jan 10%	38.5	0.07	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Feb 10%	28.0	0.05	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Mar 10%	70.3	0.13	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Apr 10%	268.0	0.51	530	83	90	189.06	197.99	6.37	8.93
Wabageshik	124	-3878	May 10%	215.0	0.41	531	83	90	189.06	197.99	6.37	8.93
Wabageshik	124	-3878	Jun 10%	78.8	0.15	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Jul 10%	47.7	0.09	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Aug 10%	28.7	0.05	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Sep 10%	32.0	0.06	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Oct 10%	69.9	0.13	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Nov 10%	93.5	0.18	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Dec 10%	70.6	0.13	531	83	90	189.06	198.00	6.37	8.94

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	124	-3878	Jan 90%	11.8	0.02	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Feb 90%	10.3	0.02	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Mar 90%	12.4	0.02	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Apr 90%	43.9	0.08	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	May 90%	35.3	0.07	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Jun 90%	19.3	0.04	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Jul 90%	8.9	0.02	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Aug 90%	5.7	0.01	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Sep 90%	4.9	0.01	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Oct 90%	6.9	0.01	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Nov 90%	14.4	0.03	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	124	-3878	Dec 90%	16.3	0.03	531	83	90	189.06	198.00	6.37	8.94
Wabageshik	125	-3927	Jan 10%	38.5	0.04	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Feb 10%	28.0	0.03	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Mar 10%	70.3	0.07	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Apr 10%	268.0	0.26	1028	125	134	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	May 10%	215.0	0.21	1029	125	134	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Jun 10%	78.8	0.08	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Jul 10%	47.7	0.05	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Aug 10%	28.7	0.03	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Sep 10%	32.0	0.03	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Oct 10%	69.9	0.07	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Nov 10%	93.5	0.09	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Dec 10%	70.6	0.07	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Jan 90%	11.8	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Feb 90%	10.3	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Mar 90%	12.4	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Apr 90%	43.9	0.04	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	May 90%	35.3	0.03	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Jun 90%	19.3	0.02	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Jul 90%	8.9	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Aug 90%	5.7	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Sep 90%	4.9	0.00	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Oct 90%	6.9	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Nov 90%	14.4	0.01	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	125	-3927	Dec 90%	16.3	0.02	1029	125	135	187.07	198.00	8.23	10.93
Wabageshik	126	-3997	Jan 10%	38.5	0.02	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Feb 10%	28.0	0.01	2354	362	373	186.58	198.00	6.50	11.42

Reach	BPR - Section	River Sta	Profile	Q Total	Vel Chnl	Flow Area	Top Width	W.P. Total	Min Ch El	W.S. Elev	Ave Depth	Max Depth
				(m3/s)	(m/s)	(m2)	(m)	(m)	(m)	(m)	(m)	(m)
Wabageshik	126	-3997	Mar 10%	70.3	0.03	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Apr 10%	268.0	0.11	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	May 10%	215.0	0.09	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Jun 10%	78.8	0.03	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Jul 10%	47.7	0.02	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Aug 10%	28.7	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Sep 10%	32.0	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Oct 10%	69.9	0.03	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Nov 10%	93.5	0.04	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Dec 10%	70.6	0.03	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Jan 90%	11.8	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Feb 90%	10.3	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Mar 90%	12.4	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Apr 90%	43.9	0.02	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	May 90%	35.3	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Jun 90%	19.3	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Jul 90%	8.9	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Aug 90%	5.7	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Sep 90%	4.9	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Oct 90%	6.9	0.00	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Nov 90%	14.4	0.01	2354	362	373	186.58	198.00	6.50	11.42
Wabageshik	126	-3997	Dec 90%	16.3	0.01	2354	362	373	186.58	198.00	6.50	11.42



NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. BASE MAPPING OBTAINED FROM ONTARIO MINISTRY OF NATURAL RESOURCES DECEMBER, 2010.
3. AIR PHOTO PROVIDED BY KBM RESOURCES GROUP, THUNDER BAY ONTARIO.
4. AIR PHOTO PROVIDED BY ONTARIO MINISTRY OF NATURAL RESOURCES.

LEGEND

- UTILITY LINE
- ROAD
- RAILWAY
- SECTION WITH ASSUMED BATHYMETRY
- SECTION WITH SURVEYED BATHYMETRY
- PROPOSED STRUCTURE LOCATION

SCALE 1:40 000

0 400 800 1200 1600 2000

METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
F	12	04	09	ADDED AIR PHOTO	GK	SWS	AB	AOF

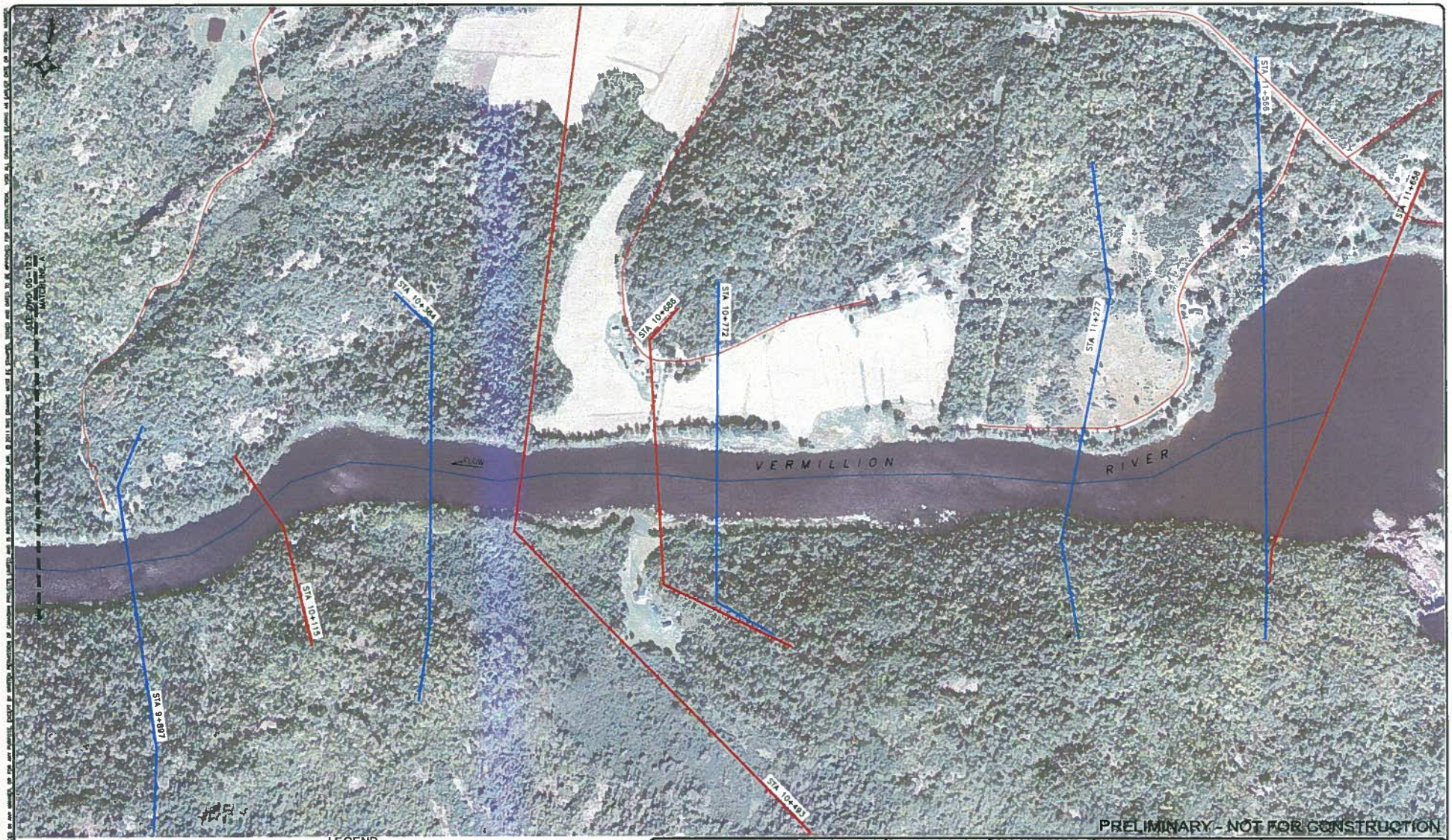
Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
HEADPOND INUNDATION MAPPING
KEY PLAN

PROJECT NUMBER	1052-001
CADD NUMBER	4.3.026
DRAWING NUMBER	06-121



PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. BASE MAPPING OBTAINED FROM ONTARIO MINISTRY OF NATURAL RESOURCES DECEMBER, 2010

LEGEND

- ROAD
- UTILITY LINE
- RAILWAY
- SECTION WITH ASSUMED BATHYMETRY
- SECTION WITH SURVEYED BATHYMETRY

SCALE 1:5 000

0 50 100 150 200 250

METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
F	12	04	08	ADDED AIR PHOTO	DK	SMS	AB	ADF

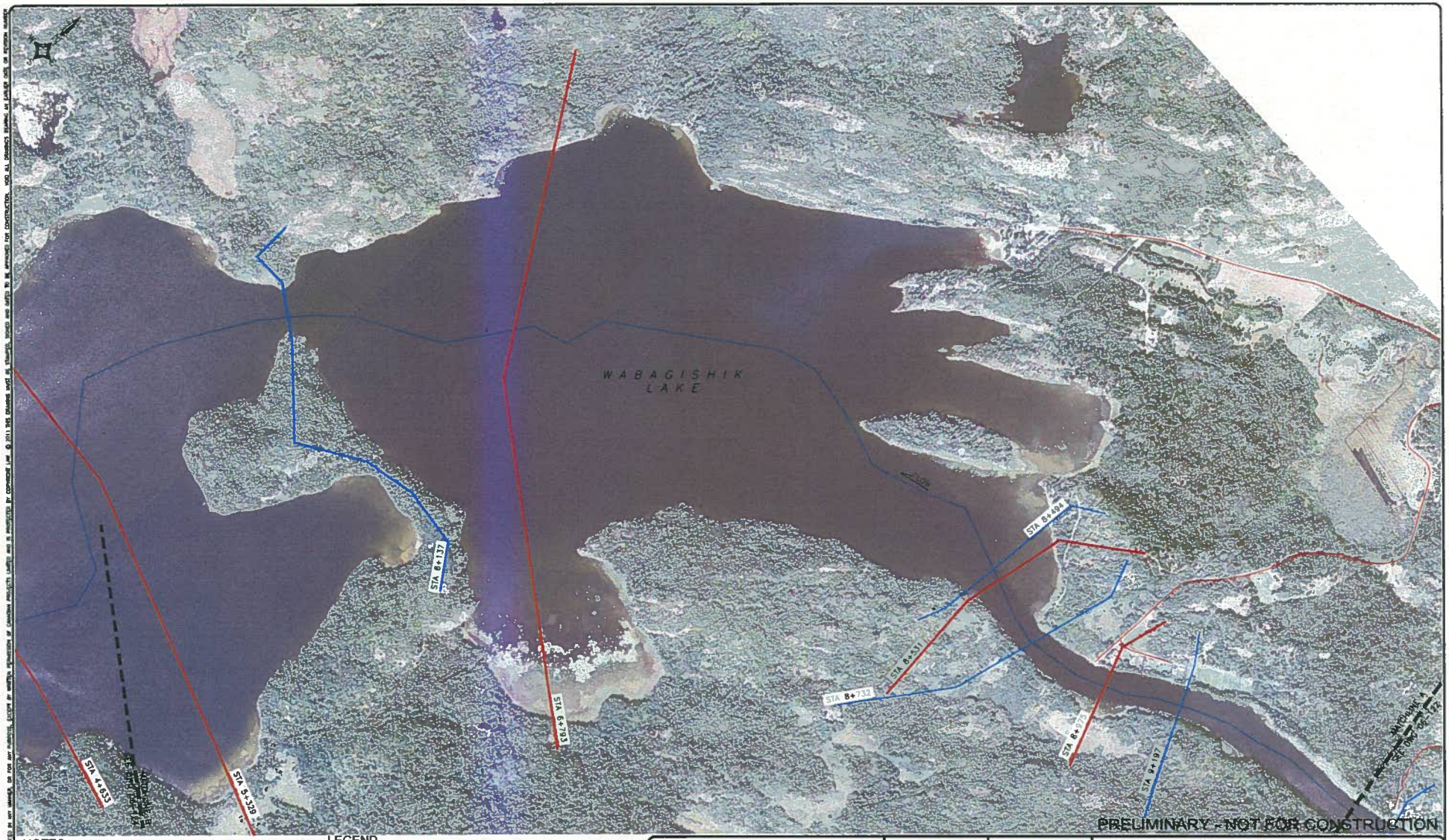
Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
HEADPOND INUNDATION MAPPING
STATION 11+658 TO 9+897

PROJECT NUMBER: 1052-001
CADD NUMBER: 4.3.026
DRAWING NUMBER: 06-122



PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. BASE MAPPING OBTAINED FROM ONTARIO MINISTRY OF NATURAL RESOURCES DECEMBER, 2010.
3. AIR PHOTO PROVIDED BY ONTARIO MINISTRY OF NATURAL RESOURCES.

LEGEND

- ROAD
- UTILITY LINE
- RAILWAY
- SECTION WITH ASSUMED BATHYMETRY
- SECTION WITH SURVEYED BATHYMETRY

SCALE 1:10 000

0 100 200 300 400 500

METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
F	12	04	09	ADDED AIR PHOTO	DK	SMS	AB	ADF

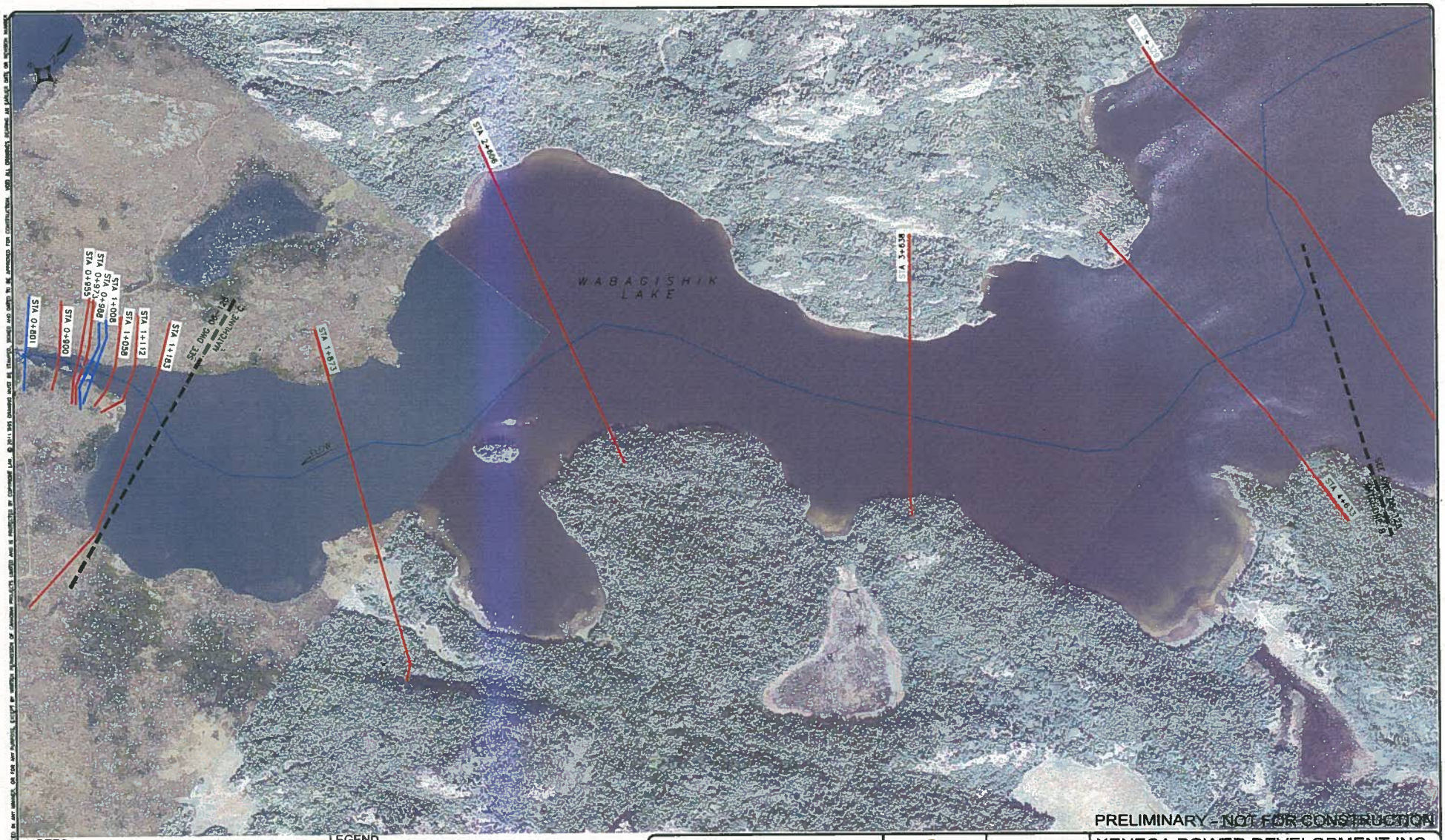
Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
HEADPOND INUNDATION MAPPING
STATION 9+197 TO 4+633

PROJECT NUMBER: 1052-001
CADD NUMBER: 4.3.026
DRAWING NUMBER: 06-123



PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. BASE MAPPING OBTAINED FROM ONTARIO MINISTRY OF NATURAL RESOURCES DECEMBER, 2010.
3. AIR PHOTO PROVIDED BY KBM RESOURCES GROUP, THUNDER BAY ONTARIO.
4. AIR PHOTO PROVIDED BY ONTARIO MINISTRY OF NATURAL RESOURCES.

LEGEND

- ROAD
- UTILITY LINE
- RAILWAY
- SECTION WITH ASSUMED BATHYMETRY
- SECTION WITH SURVEYED BATHYMETRY

SCALE 1:10 000

0 100 200 300 400 500

METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
F	12	04	05	ADDED AIR PHOTO	DK	SMS	AB	ADF

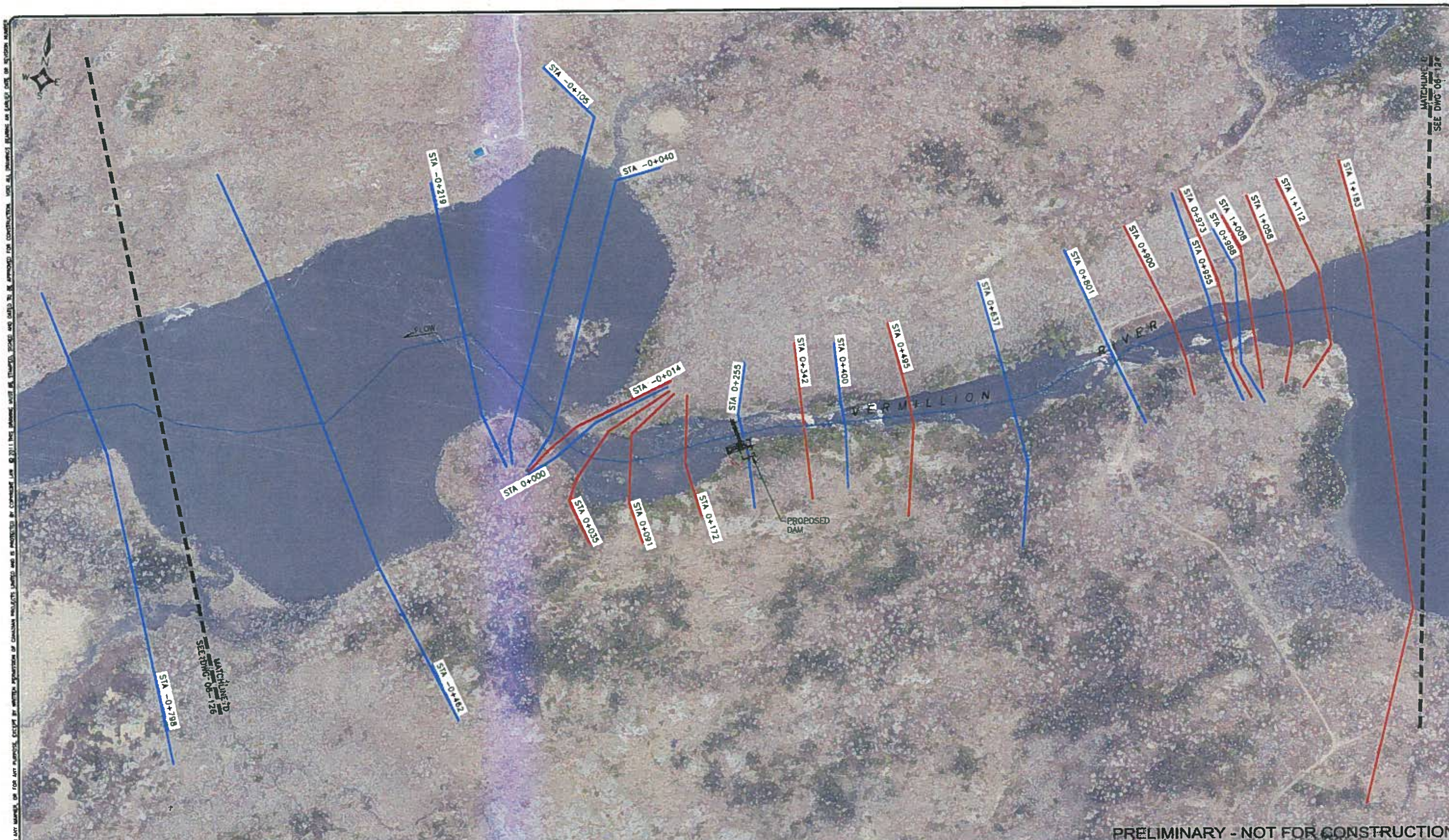
Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
HEADPOND INUNDATION MAPPING
STATION 5+329 TO 0+801

PROJECT NUMBER: 1052-001
CADD NUMBER: 4.3.026
DRAWING NUMBER: 06-124



PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. AIR PHOTO PROVIDED BY KBM RESOURCES GROUP, THUNDER BAY ONTARIO.

LEGEND

- ROAD
- UTILITY LINE
- RAILWAY
- SECTION WITH ASSUMED BATHYMETRY
- SECTION WITH SURVEYED BATHYMETRY

SCALE 1:5 000
0 50 100 150 200 250
METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
E	12	04	03	ROTATED VIEW	DK	SWS	AB	ADF

Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
HEADPOND INUNDATION MAPPING
STATION 1+183 TO -0+798

PROJECT NUMBER 1052-001
CADD NUMBER 4.3.026
DRAWING NUMBER 06-125

PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. BASE MAPPING OBTAINED FROM ONTARIO MINISTRY OF NATURAL RESOURCES DECEMBER, 2010.
3. AIR PHOTO PROVIDED BY KBM RESOURCES GROUP, THUNDER BAY ONTARIO.

LEGEND

- ROAD
- UTILITY LINE
- RAILWAY
- SECTION WITH ASSUMED BATHYMETRY
- SECTION WITH SURVEYED BATHYMETRY

SCALE 1:8 000

0 80 160 240 320 400

METRES

REV.	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
C	12	04	03	ROTATED VIEW	DK	SMS	AB	ADF

Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
HEADPOND INUNDATION MAPPING
STATION -0+798 TO -3+997

PROJECT NUMBER	1052-001
CADD NUMBER	4.3.026
DRAWING NUMBER	06-126

CANADIAN PROJECTS LIMITED
#240, 523 Woodpark Blvd SW
Calgary, Alberta T2W 4J3
Phone: (403) 508-1560 Fax: (403) 238-5460

File: 1052-001-3.1.3

July 10, 2012

Xeneca Power Development Inc.
5255 Yonge Street, Suite 1200
North York, ON, M2N 6P4

Attn: Mr. Nava Pokharel, M.Sc., P.Eng.
Senior Project Manager

Re: Vermilion River Site #6 – Wabagishik Rapids
HEC-RAS Unsteady Flow Modelling

1.0 Introduction

Canadian Projects Limited (CPL) issued the "*Ontario South Hydro – HEC-RAS Inundation Mapping – Vermilion River – Wabageshik Rapids Revision 1*" report to Xeneca Power Development Inc. (Xeneca) on March 29, 2012. Xeneca subsequently requested that CPL expand the modelling carried out to include unsteady flow modelling for various operation scenarios downstream of the Wabagishik Hydro Project (the Project). The purpose of the unsteady flow modelling is to evaluate the effect of the Project peaking operations on the fluctuation of water levels and routing of flows in the downstream reach.

This summary letter report is provided as an addendum to the March 29, 2012 CPL report and should be read in conjunction with it. The Hydraulic Engineering Centre River Analysis System (HEC-RAS) Version 4.1.0 was the hydraulic analysis program used for the river modelling. The HEC-RAS files and model provided with the March 29, 2012 report were used as the basis for the expanded analysis.

The scope of this work included:

- Addition of cross section information derived from Forest Resource Inventory Digital Surface Model (FRI DSM) beyond the LiDAR extents in the downstream reach;
- Calibration of the HEC-RAS hydraulic model in the extended downstream reach using available surveyed flow and level information;
- Creation of the unsteady HEC-RAS hydraulic model by the exclusion of certain cross sections outside the area of interest, the exclusion of cross sections causing instability in the unsteady model and the addition of interpolated cross sections; and
- Production of tables and figures based on the results of the unsteady modelling for the conditions outlined in Section 2.3.

The results of the HEC-RAS modelling presented within this letter report intend to provide a preliminary assessment of the relative effect of the Project operations on water levels and flows in the downstream reach. This report does not comment on any effects upstream of the Project.

The FRI DSM information provided by Xeneca extended approximately 13.5 km downstream of the Project. The confluence of the Spanish River and the Vermilion River is approximately 5.8 km downstream of the Project while the Espanola Generating Station (EGS) is about 13 km downstream of the Project. Based on the FRI DSM elevation information and Google Earth aerial photography, the headpond from the EGS extends to approximately 4 km downstream of the Project. The water level in the headpond is expected to fluctuate primarily as a result of operations of the EGS and secondarily from the inflows from the Spanish River, which has a drainage area about 60% larger than the Vermilion River. Further, there are other hydroelectric generating stations upstream on the Spanish River whose operations could cause fluctuations in levels and flows in the Spanish River.

The HEC-RAS input and output electronic files have been provided.

2.0 Input Information

The creation of the HEC-RAS hydraulic model requires various hydrologic, hydraulic and geometric inputs.

2.1 Geometry

The steady hydraulic model provided with CPL's March 29, 2012 report provided the base geometry for the unsteady hydraulic model. The following describes the additional information used to extend the model for the unsteady flow analysis.

LiDAR elevation data originally provided by Xeneca extends about 1.3 km downstream of the Project whereas the bathymetry information collected in 2011 extends an additional 2.7 km downstream. Due to this, some cross sections included in the steady flow model contained only bathymetry information and no survey of the river valley above the normal water surface.

The FRI DSM elevation data recently supplied by Xeneca extends approximately an additional 12.2 km downstream of the LiDAR extents. A triangulated irregular network (TIN) surface was created from the FRI DSM. The accuracy of the model results are dependent upon the accuracy of the FRI DSM, however, the accuracy of the FRI DSM is not available. The accuracy of the unsteady modelling is discussed in Section 6.

This FRI DSM TIN was then used for two purposes during the creation of the unsteady flow model:

- To extend those cross sections in the steady flow model which previously did not include elevation data above the normal water surface elevation; and
- To extract new representative cross sections of the river valley beyond the extent of the steady flow model in the EGS headpond.

Bed geometry of the EGS headpond cross sections was assumed to be a simple trapezoidal shape with the minimum channel elevation decreasing linearly from the most downstream surveyed bathymetric cross section to the FRI DSM water surface elevation downstream of the

EGS dam. A sensitivity analysis was performed on the estimated channel geometry in this reach as described in Section 5 to determine its effect on the modelling results. All cross sections upstream of the Project were deleted as they were unnecessary for the purposes of unsteady flow modelling.

The locations of the cross sections used for the unsteady hydraulic analysis of the Project are shown on Drawings 06-131 to 06-135 included in Appendix A. Different line-types and colours have been used on these Drawings to distinguish new, deleted and original cross sections.

2.2 Roughness Estimates

The roughness coefficients used for the additional cross sections were as per the coefficients used in the initial steady modelling; generally a Manning's n = 0.10 for overbank areas and n = 0.03 for the main channel areas.

2.3 Constant and Varying Flow Data

The inflows modelled at the Project are comprised of both constant and varying flow scenarios, as directed by Xeneca:

- Constant flows representing the average monthly flows for the months of August (12.7 m^3/s), November (43.1 m^3/s) and February (17.4 m^3/s); and
- Varying flows representing standard peaking operations during August, November and February at the Project as originally provided by ORTECH[i].

Figures 1 through 3 show the constant and varying inflow hydrographs used for the three months of interest. Both the constant and varying flow hydrographs have been modelled in an unsteady model so that the results can be directly compared between pre and post-project conditions.

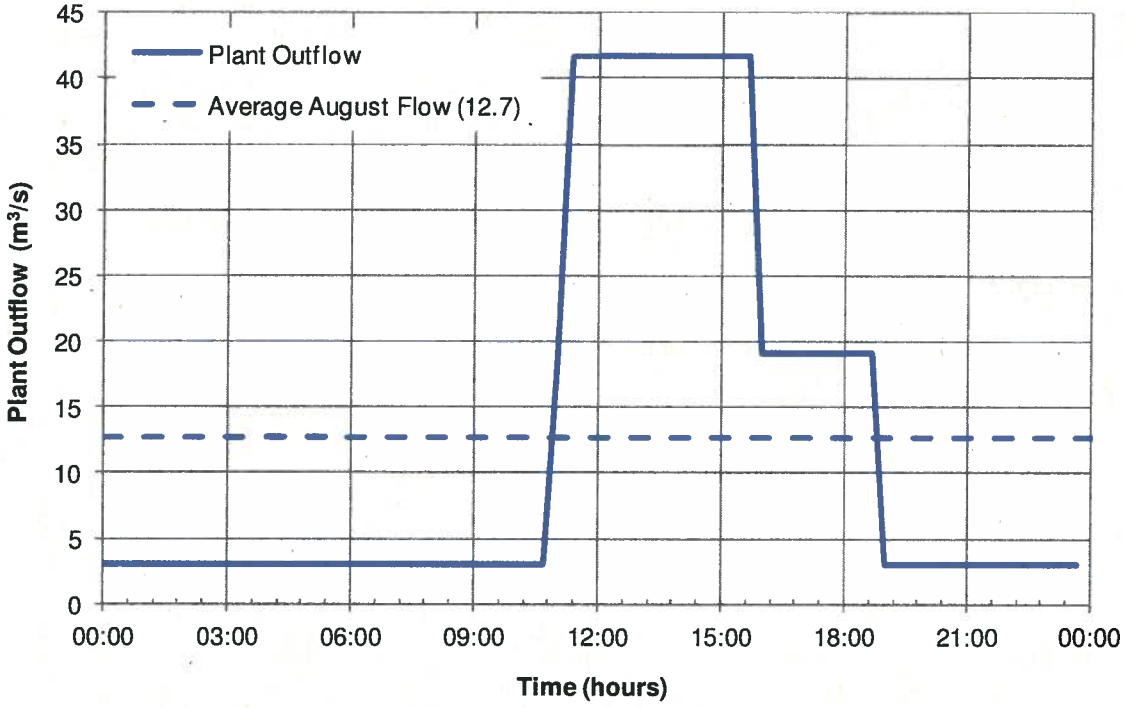


Figure 1: Typical August Daily Peaking Operating Curve

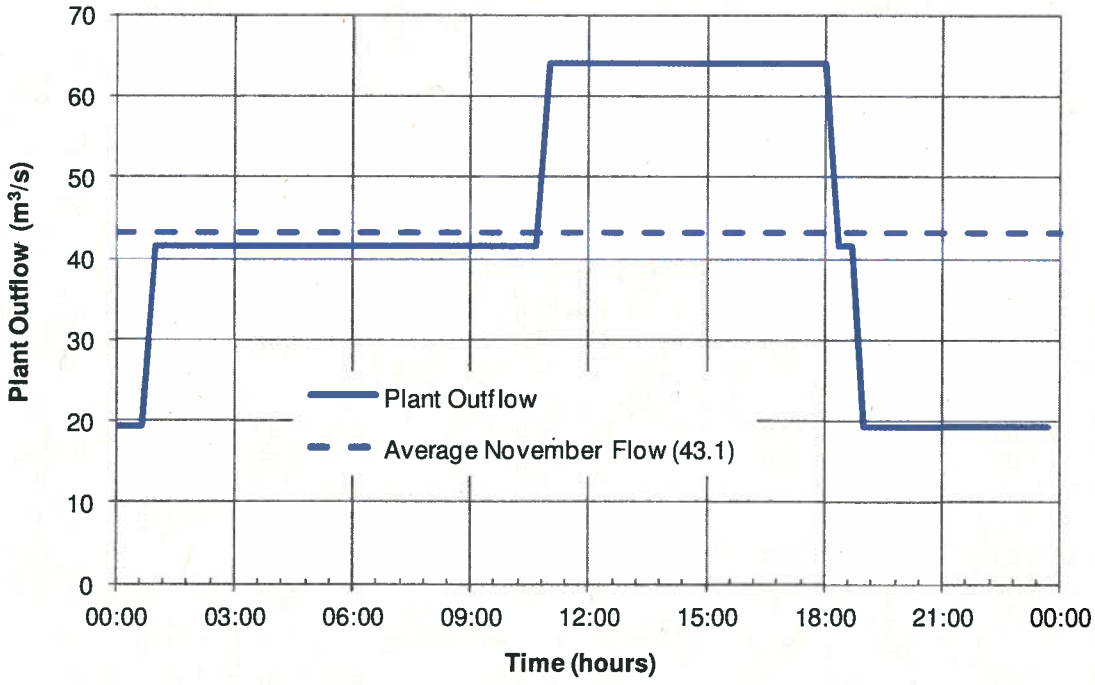


Figure 2: Typical November Daily Peaking Operating Curve

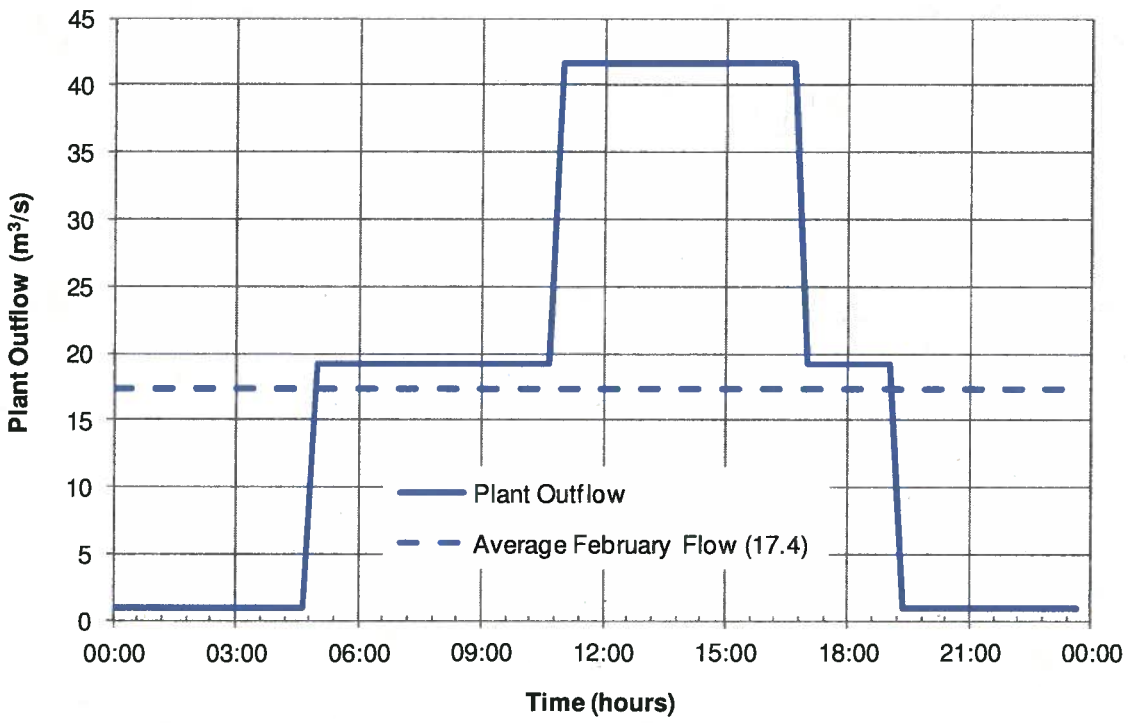


Figure 3: Typical February Daily Peaking Operating Curve

2.4 Boundary Conditions

The upstream boundary conditions were implemented at the most upstream cross section 0+255 at the Project and consist of the hydrographs presented in Section 2.3. For existing conditions, the flow hydrograph consists of the constant daily average inflow for the month modelled. For proposed conditions due to the Project peaking operations, the flow released was modelled with the respective monthly varying flow hydrograph as shown in Figures 1 through 3. The flow pattern was repeated for several days to obtain a stable solution.

Vermilion River is a major tributary of the Spanish River and the confluence of these two rivers is approximately 5 km downstream of the Project. The modelled reach therefore includes a portion of the Spanish River. The Water Survey of Canada (WSC) station 02CE001 "Spanish River at Espanola" downstream of the confluence has a drainage area of 11,400 km^2 compared to the Project drainage area of 4,393 km^2 as determined by HATCH[ii]. It was assumed that the remaining 7,007 km^2 (11,400 – 4,393) drainage area was from the Spanish River upstream of its confluence with the Vermilion River. The flow from the Spanish River was estimated as 160% of the average Vermilion River flow (7,007 / 4,393) and was modelled as a constant lateral inflow at cross section -5+771. This is a simplified assumption for the purposes of modelling; realistically, the magnitudes and timing of the flows in the Spanish River are not directly linked to those of the Vermilion River.

Two different downstream boundary conditions were imposed at cross section -12+265 for unsteady modelling. The selection of the downstream boundary conditions results in significant differences between the results as outlined in Section 4. The downstream boundary conditions imposed were:

1. A constant water surface elevation of 198 m MSL of the EGS headpond based on surveyed water levels during the 2011 bathymetry survey. The results of modelling this boundary condition describe the fluctuation in the EGS outflow required to maintain a headpond elevation of exactly 198 m.
2. A constant outflow hydrograph equal to the average inflow from the Vermilion and Spanish rivers as previously described. The results of modelling this boundary condition describe the fluctuation in the EGS headpond based on a constant outflow from the EGS.

No operational guidelines of the EGS have been provided at this time. Realistically, the operation of the EGS is likely somewhere between maintaining a constant headpond and a constant outflow. Given a constant plant flow, the presence of gated or stoplog bays would result in some headpond fluctuation and some flow fluctuation. As such, the actual depth and flow fluctuations resulting from the Project operations are expected to be between the results presented for the above two boundary conditions.

3.0 Model Calibration

3.1 Constant Flow Calibration

The extended unsteady hydraulic model was calibrated using the constant flow simulations of the LiDAR and bathymetry measured flows as presented in the March 29, 2012 report. The goal was to confirm that water levels produced by the extended unsteady model were maintained to near those estimated by the calibrated steady flow model. Original steady model cross sections were not adjusted as part of this calibration procedure.

Although a water surface profile was obtained from the FRI DSM, it was unable to be used for calibration because the DSM represents a mosaic of flight lines and dates of collection over a range of river flows. This results in:

- The water surface profile varying up to 0.7 metres in expectedly flat areas;
- An absence of a specific flow with which to calibrate the water surface; and
- Uncalibrated model cross sections from station -5+068 to -12+265.

Figure 4 shows the FRI DSM water surface profile as compared to the HEC-RAS water surface profile representing the long term average flow (LTAF) of 47.3 m^3/s. The comparison is a useful means of determining locations where control cross sections are needed. The points on the HEC-RAS profile represent cross sections which were extracted from the available elevation information.

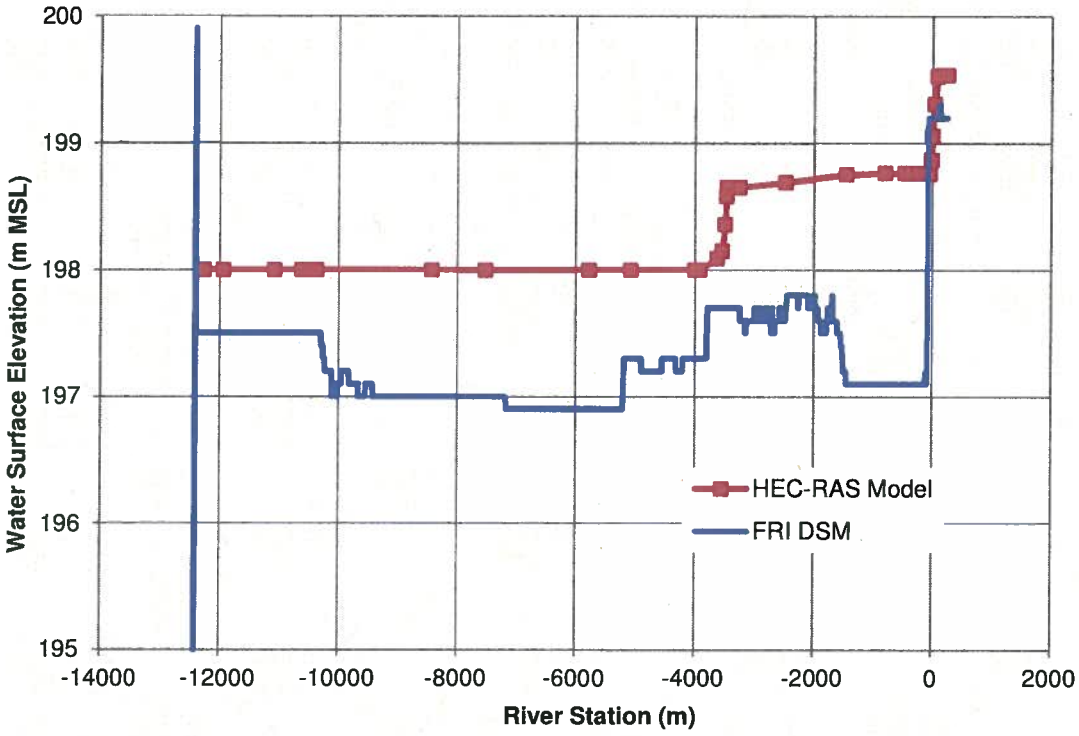


Figure 4: FRI DSM and HEC-RAS LTAF Water Surface Profile

The FRI DSM water surface profile shows some scatter due to overhanging vegetation, varying river flows and the conversion of the data points to the TIN surface.

4.0 Modelling

Cross sections were added, deleted or interpolated as necessary to stabilize the unsteady model while the average bed slope and storage characteristics of the river were maintained as required for the accuracy of the results. The distance between cross sections was selected based on the channel slope and to provide stability within the model.

The unsteady model was then used to model the monthly standard peaking operations at the Project to define water level increases and decreases and flow routing based on levels produced by the average monthly flows. Stage and flow hydrographs at select locations are presented in Appendices B through G while further details of water surface elevations, flow routing, and depths can be found in the electronic HEC-RAS files.

When the simulations were run with the hydrographs presented in Section 2.3, the model produced stable results.

In general the results show that the most significant effects of peaking operations are experienced directly downstream of the Project at cross section 0+000 due to the small pool and corresponding low attenuation potential in this vicinity combined with the relatively short distance from the Project. Downstream of this location through the deep pool reach, the effects of peaking operations decrease slightly in terms of water level and flow variation. The highest magnitude effects are in February which is due to the larger range of outflows from the plant.

Each monthly operating curve was modelled with the two downstream boundary conditions discussed in Section 2.4. The results of both are presented together in the following sections for comparison. The actual flow and depth fluctuation will be a result of operations by the EGS and are expected to be between the two results. In general the effect of the selected downstream boundary condition does not affect the results upstream of station -3+997.

4.1 August Peaking Hydraulic Effects

Tables 1, 2, and Figure 5 summarize the maximum flows, minimum flows and water level fluctuations experienced at various locations along the downstream reach typical of the month of August for the two downstream boundary conditions discussed in Section 2.4. The model estimates a maximum water level increase of 52 cm, a maximum water level decrease of 33 cm, and a maximum depth fluctuation of 85 cm, all occurring at cross section 0+000.

Flow and stage hydrographs for August flow conditions for each downstream boundary condition are presented in Appendices B and E.

4.2 November Peaking Hydraulic Effects

Tables 3, 4, and Figure 6 summarize the maximum flows, minimum flows and water level fluctuations experienced at various locations along the downstream reach typical of the month of November for the two downstream boundary conditions discussed in Section 2.4. The model estimates a maximum water level increase of 27 cm, a maximum water level decrease of 41 cm, and a maximum depth fluctuation of 68 cm, all occurring at cross section 0+000.

Flow and stage hydrographs for November flow conditions for each downstream boundary condition are presented in Appendices C and F.

4.3 February Peaking Hydraulic Effects

Tables 5, 6, and Figure 7 summarize the maximum flows, minimum flows, and water level fluctuations experienced at various locations along the downstream reach typical of the month of February for the two downstream boundary conditions discussed in Section 2.4. The model estimates a maximum water level increase of 43 cm, a maximum water level decrease of 53 cm, and a maximum depth fluctuation of 95 cm, all occurring at cross section 0+000.

Flow and stage hydrographs for February flow conditions for each downstream boundary condition are presented in Appendices D and G.

Table 1: August Relative Downstream Hydraulic Peaking Effects – Constant Elevation Boundary Condition

Station	Existing Flow (m^3/s)	Max Flow (m^3/s)	Min Flow (m^3/s)	Max Water Level Increase (cm)	Max Water Level Decrease (cm)	Depth Fluctuation (cm)
0+255	12.7	41.6	3.0	38	-18	56
0+000	12.7	41.6	3.0	52	-32	84
-0+462	12.7	40.0	3.0	44	-15	59
-1+452	12.7	38.2	3.0	44	-15	58
-2+478	12.7	37.4	3.0	40	-14	54
-3+261	12.7	37.0	3.0	38	-13	51
-5+068	43.1	36.8	3.0	0	0	0
-10+369	111.8	57.4	23.3	0	0	0
-12+265	111.8	57.4	23.3	0	0	0

Table 2: August Relative Downstream Hydraulic Peaking Effects – Constant Flow Boundary Condition

Station	Existing Flow (m^3/s)	Max Flow (m^3/s)	Min Flow (m^3/s)	Max Water Level Increase (cm)	Max Water Level Decrease (cm)	Depth Fluctuation (cm)
0+255	12.7	41.6	3.0	38	-19	56
0+000	12.7	41.6	3.0	52	-33	85
-0+462	12.7	39.7	3.4	43	-20	62
-1+452	12.7	37.6	3.9	42	-20	62
-2+478	12.7	36.7	4.1	39	-19	58
-3+261	12.7	36.2	4.3	37	-18	55
-5+068	43.1	32.6	5.5	9	-8	17
-10+369	111.8	39.8	30.6	9	-8	17
-12+265	111.8	33.0	33.0	9	-8	17

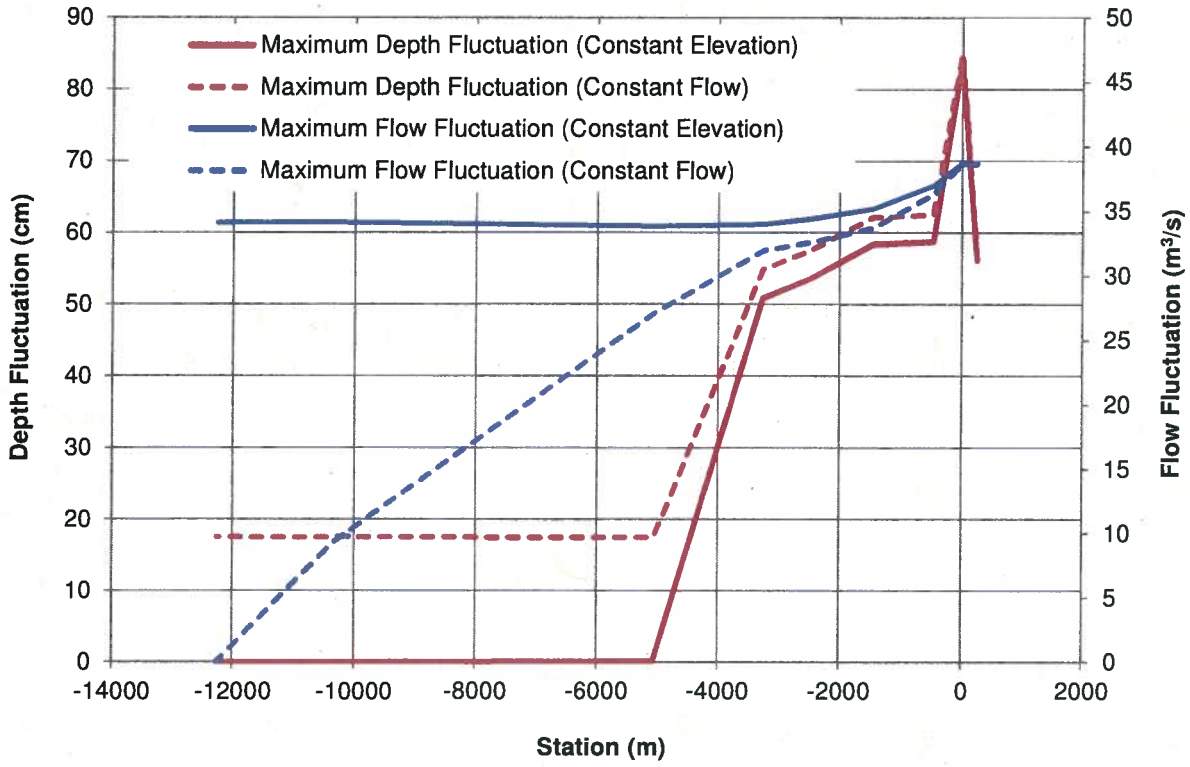


Figure 5: August Flow and Level Peaking Effects

Table 3: November Relative Downstream Hydraulic Peaking Effects – Constant Elevation Boundary Condition

Station	Existing Flow (m^3/s)	Max Flow (m^3/s)	Min Flow (m^3/s)	Max Water Level Increase (cm)	Max Water Level Decrease (cm)	Depth Fluctuation (cm)
0+255	43.1	64.0	19.2	23	-30	53
0+000	43.0	64.0	19.2	27	-41	68
-0+462	43.1	63.9	20.0	27	-38	65
-1+452	43.1	63.8	21.0	27	-38	64
-2+478	43.1	63.8	21.4	23	-34	57
-3+261	43.1	63.7	21.6	21	-32	54
-5+068	43.1	63.7	21.7	0	0	0
-10+369	111.8	132.4	90.3	0	0	0
-12+265	111.8	132.4	90.4	0	0	0

Table 4: November Relative Downstream Hydraulic Peaking Effects – Constant Flow Boundary Condition

Station	Existing Flow (m^3/s)	Max Flow (m^3/s)	Min Flow (m^3/s)	Max Water Level Increase (cm)	Max Water Level Decrease (cm)	Depth Fluctuation (cm)
0+255	43.1	64.0	19.2	23	-30	53
0+000	43.0	64.0	19.2	27	-41	68
-0+462	43.1	63.9	20.2	27	-37	64
-1+452	43.1	63.8	21.3	27	-37	64
-2+478	43.1	63.8	21.8	23	-33	57
-3+261	43.1	63.7	22.1	21	-32	53
-5+068	43.1	60.7	25.2	10	-10	20
-10+369	111.8	117.7	105.6	10	-10	20
-12+265	111.8	111.6	111.6	10	-10	20

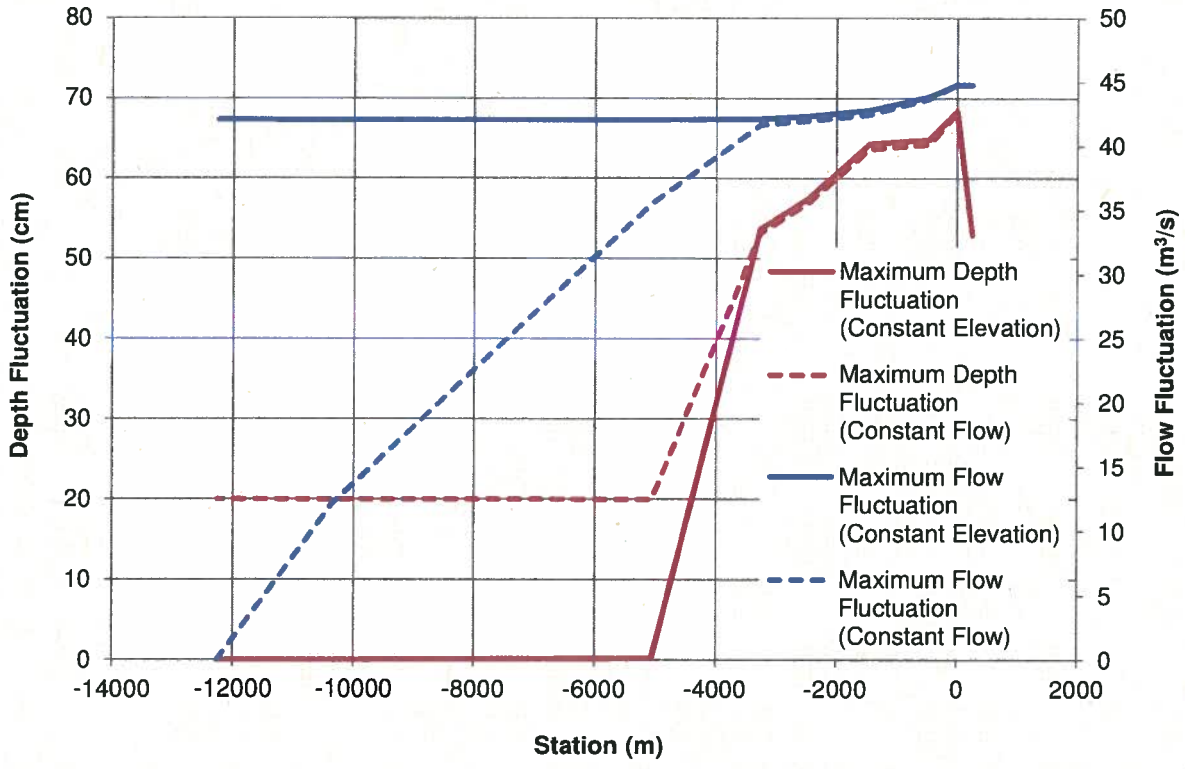


Figure 6: November Flow and Level Peaking Effects

Table 5: February Relative Downstream Hydraulic Peaking Effects– Constant Elevation Boundary Condition

Station	Existing Flow (m^3/s)	Max Flow (m^3/s)	Min Flow (m^3/s)	Max Water Level Increase (cm)	Max Water Level Decrease (cm)	Depth Fluctuation (cm)
0+255	17.4	41.6	1.0	31	-34	65
0+000	17.4	41.6	0.9	43	-51	94
-0+462	17.4	41.0	1.0	40	-25	65
-1+452	17.4	40.4	1.0	40	-25	65
-2+478	17.4	40.2	1.0	37	-23	59
-3+261	17.4	40.0	1.0	35	-22	56
-5+068	17.4	40.0	1.0	0	0	0
-10+369	45.2	67.8	28.8	0	0	0
-12+265	45.2	67.8	28.8	0	0	0

Table 6: February Relative Downstream Hydraulic Peaking Effects – Constant Flow Boundary Condition

Station	Existing Flow (m^3/s)	Max Flow (m^3/s)	Min Flow (m^3/s)	Max Water Level Increase (cm)	Max Water Level Decrease (cm)	Depth Fluctuation (cm)
0+255	17.4	41.6	1.0	31	-34	65
0+000	17.4	41.6	0.9	43	-53	95
-0+462	17.4	40.9	1.8	40	-27	67
-1+452	17.4	40.1	2.7	40	-27	67
-2+478	17.4	39.8	3.1	37	-25	62
-3+261	17.4	39.6	3.3	35	-24	59
-5+068	17.4	36.3	5.4	12	-8	19
-10+369	45.2	51.6	41.1	12	-8	20
-12+265	45.2	45.2	45.2	12	-8	20

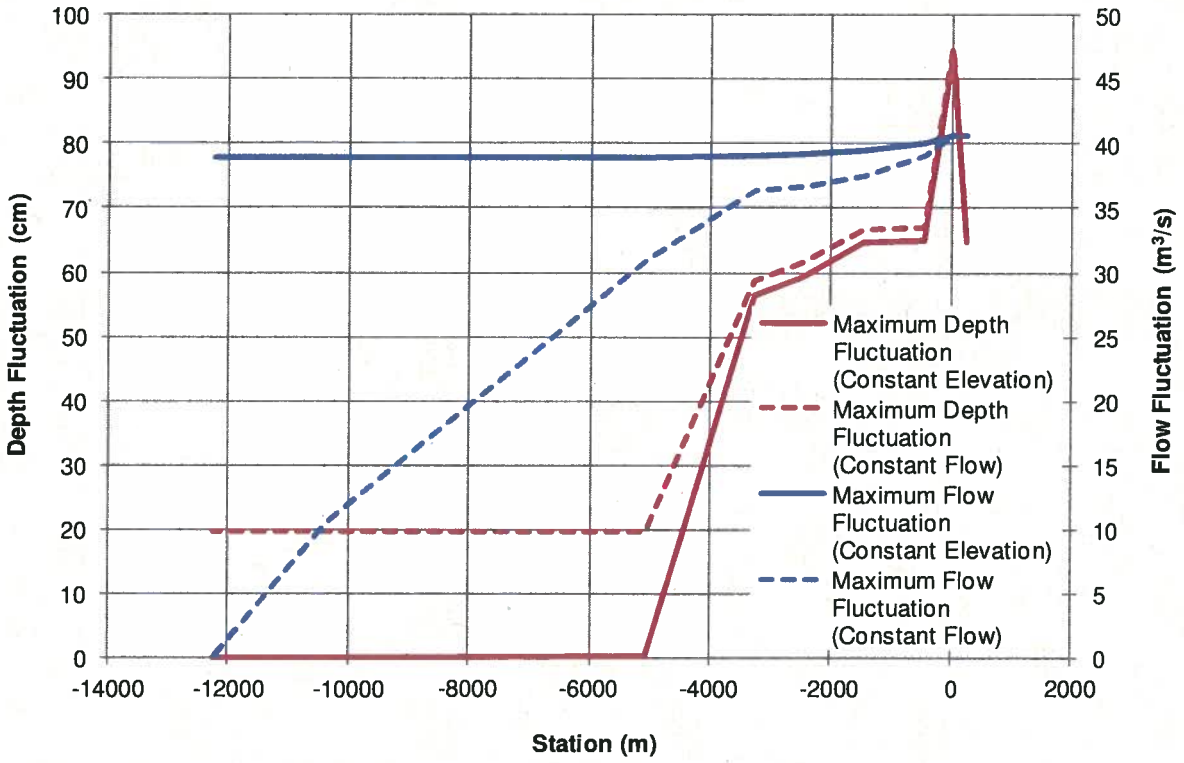


Figure 7: February Flow and Level Peaking Effects

5.0 EGS Headpond Bed Elevation Sensitivity Analysis

The assumed EGS headpond bed elevation downstream of station -3+997 was raised and possible control cross sections were added at cross sections -5+068, -10+369 and -12+265 to determine if there were any effects on the modelling results. The decrease in flow area could potentially impact the ability of the headpond to route flows. This revised geometry (raised) was modelled and compared to the original geometry (unchanged) using the typical November daily peaking operating curve shown in Figure 2.

Figure 8 compares the headpond bed profile for the raised and unchanged geometries described above.

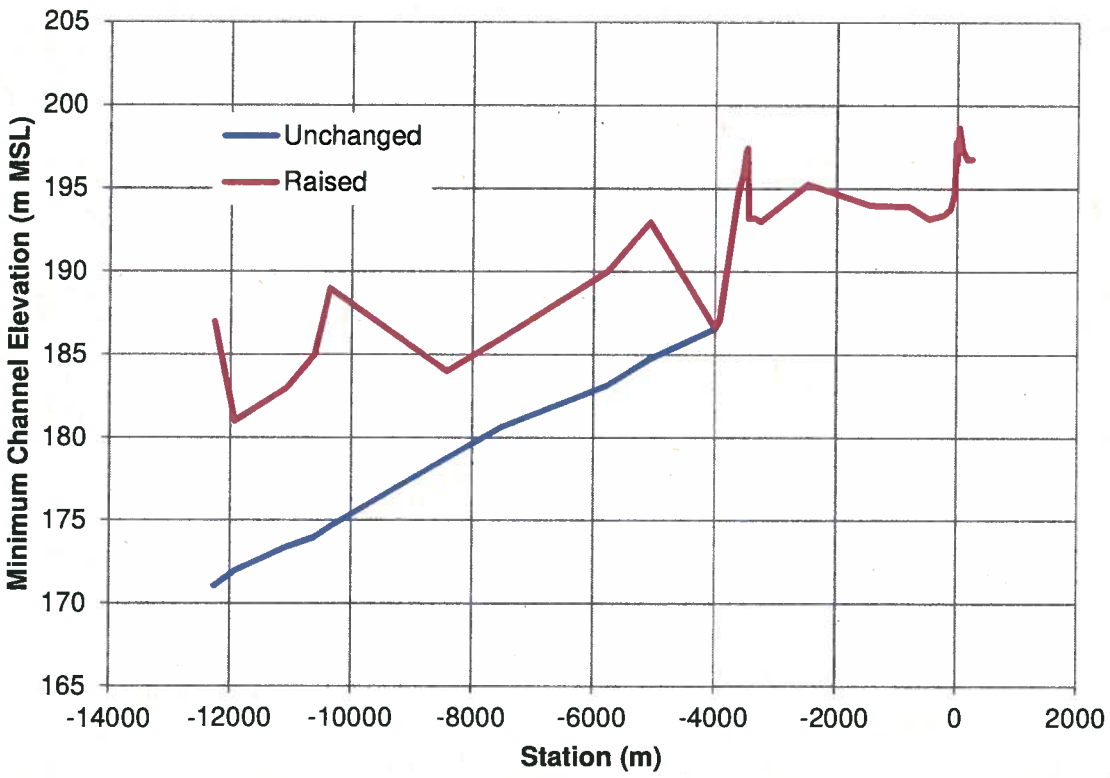


Figure 8: Comparison of Minimum Headpond Elevations

The maximum depth and flow fluctuations for each scenario are compared in Figures 9 and 10 and the results suggest that the assumed headpond bathymetry is not significantly affecting the modelling results.

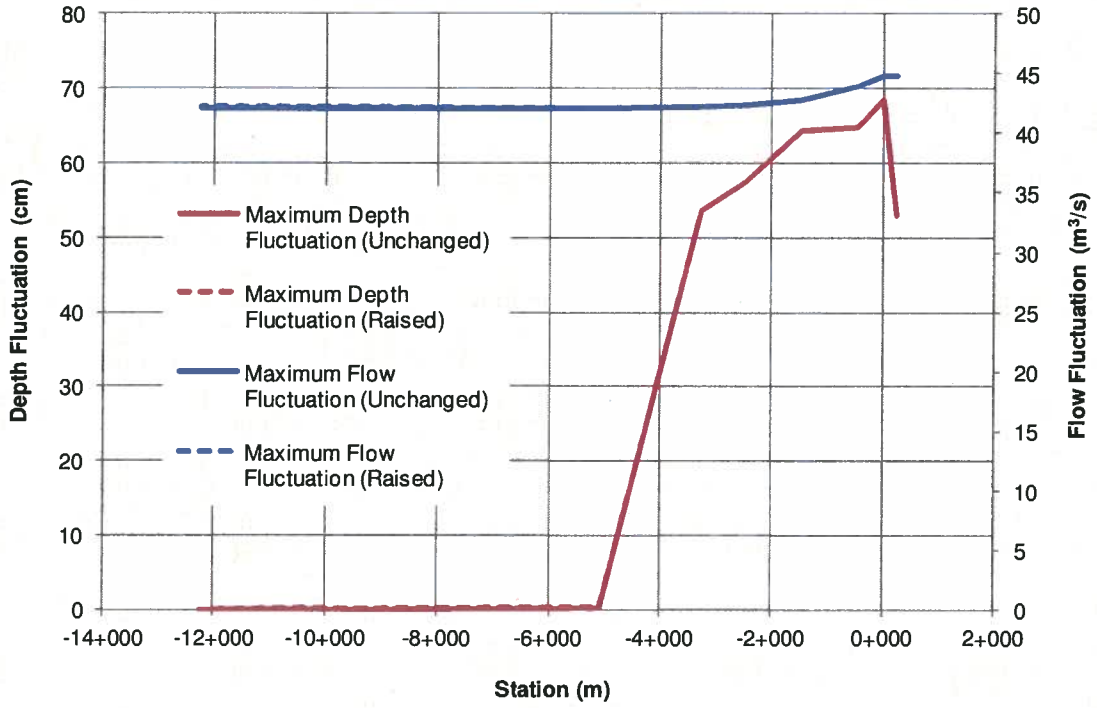


Figure 9: Comparison of Sensitivity Analysis Scenarios – Constant Elevation Boundary Condition

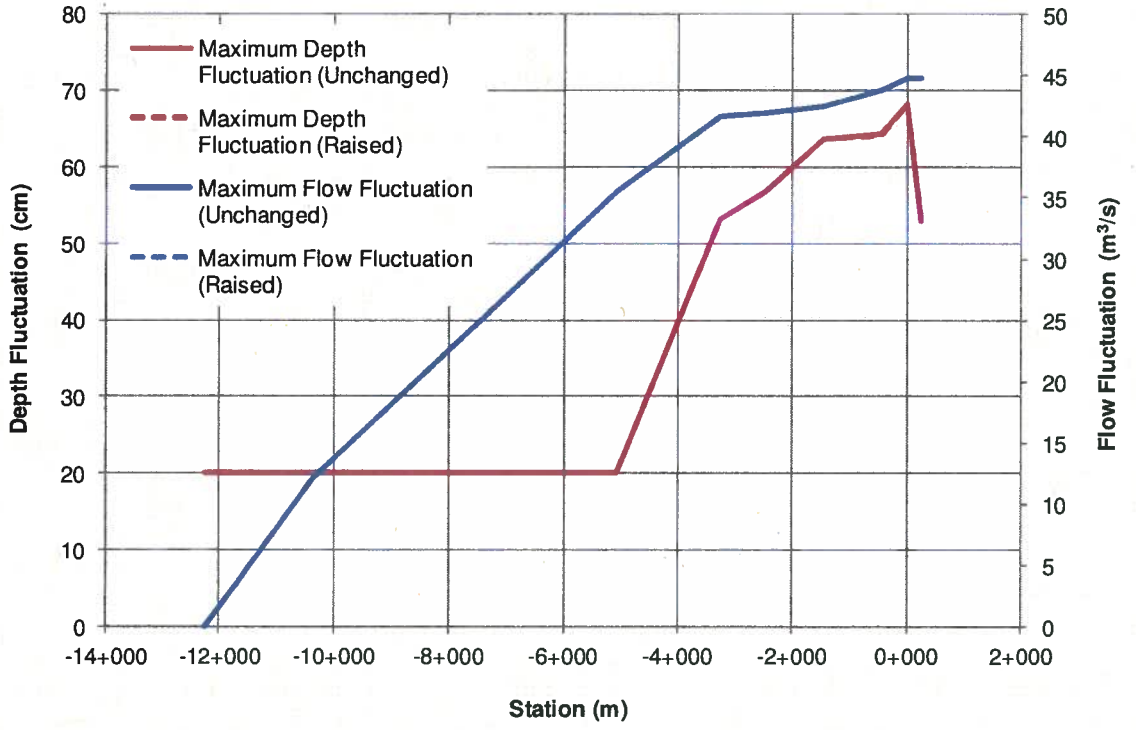


Figure 10: Comparison of Sensitivity Analysis Scenarios – Constant Flow Boundary Condition

6.0 Uncertainty

The modelling carried out was based on the best information available at the time of the assessment which is considered very limited. The following factors resulted in potential uncertainty associated with the accuracy of the model:

- The absence of information about the operation of the EGS could significantly affect the depth and flow fluctuations as well as the absolute water surface in the reach downstream of cross section -3+997.
- The accuracy of the FRI DSM data which was used to extend the mapping beyond the LiDAR was not available. Therefore, it may not have the same degree of accuracy as the LiDAR data which is considered to be ± 0.2 m in flat terrain or on hard surfaces, ± 0.3 m on soft surfaces in rolling terrain and ± 0.6 m on soft surfaces in extremely hilly terrain at the 95% confidence level. The uncertainty associated with the accuracy of the FRI DSM data can affect the absolute water levels.
- The FRI DSM data is a mosaic of multiple DSM flight lines therefore there are no dates associated with the data that can be used to estimate flows at the time that the information was collected. Therefore, calibration of the water surface profiles in areas covered only by the FRI DSM data could not be done resulting again in uncertainty relative to absolute water levels.
- The absence of at least 2 water level and flow measurements throughout the downstream reach or a detailed survey of the control cross sections prevent calibration of the water surface downstream of cross section -3+997. This can potentially affect the relative water surface elevations.

Although the absence of the above information significantly affects the ability of the model to predict absolute water surface elevations, the effect on the relative water surface elevation and flow rate is expected to be small. As the purpose of the unsteady flow modelling is to estimate the relative differences in water surface elevations and flows due to the peaking operations, most of these factors are not expected to significantly affect the conclusions of this report.

Further work would be required to verify the conclusions once more detailed calibration information is made available.

7.0 Conclusion

The results of the one-dimensional unsteady hydraulic modelling using HEC-RAS for the Wabagishik Hydro Project on the Vermilion River are presented within this letter report and are supplemented by the electronic modelling files. This letter report should be read in conjunction with the March 29, 2012 CPL report. The assumed operating plan of the EGS should be confirmed to validate the results.

The information expressed in this Report represents Canadian Projects Limited's best professional judgement and is based on Canadian Projects Limited's experience as applied to the information provided at the time of preparation within the scope of the assignment. Canadian Projects Limited does not guarantee or warrant the water surface profiles or flow hydrographs expressed herein.

We trust that this report meets with your requirements. If you require any clarification, have questions or would like to discuss the information contained within, please contact us.

Sincerely,

CANADIAN PROJECTS LIMITED

David Kushner, E.I.T.
Junior Engineer

Sean Sullivan, M.Sc., P.Eng.
Hydrotechnical Engineer

Reviewed by,

Richard Slopek, P.Eng.
Project Manager

DK/dk

Attachments:
Appendix A – Drawings 06-131 to 06-135
Appendix B – August Daily Operation – Constant WSE – Flow and Stage Hydrographs and Rating Curves
Appendix C – November Daily Operation – Constant WSE – Flow and Stage Hydrographs and Rating Curves
Appendix D – February Daily Operation – Constant WSE – Flow and Stage Hydrographs and Rating Curves
Appendix E – August Daily Operation – Constant Flow – Flow and Stage Hydrographs and Rating Curves
Appendix F – November Daily Operation – Constant Flow – Flow and Stage Hydrographs and Rating Curves
Appendix G – February Daily Operation – Constant Flow – Flow and Stage Hydrographs and Rating Curves

Electronic HEC-RAS Input and Output files

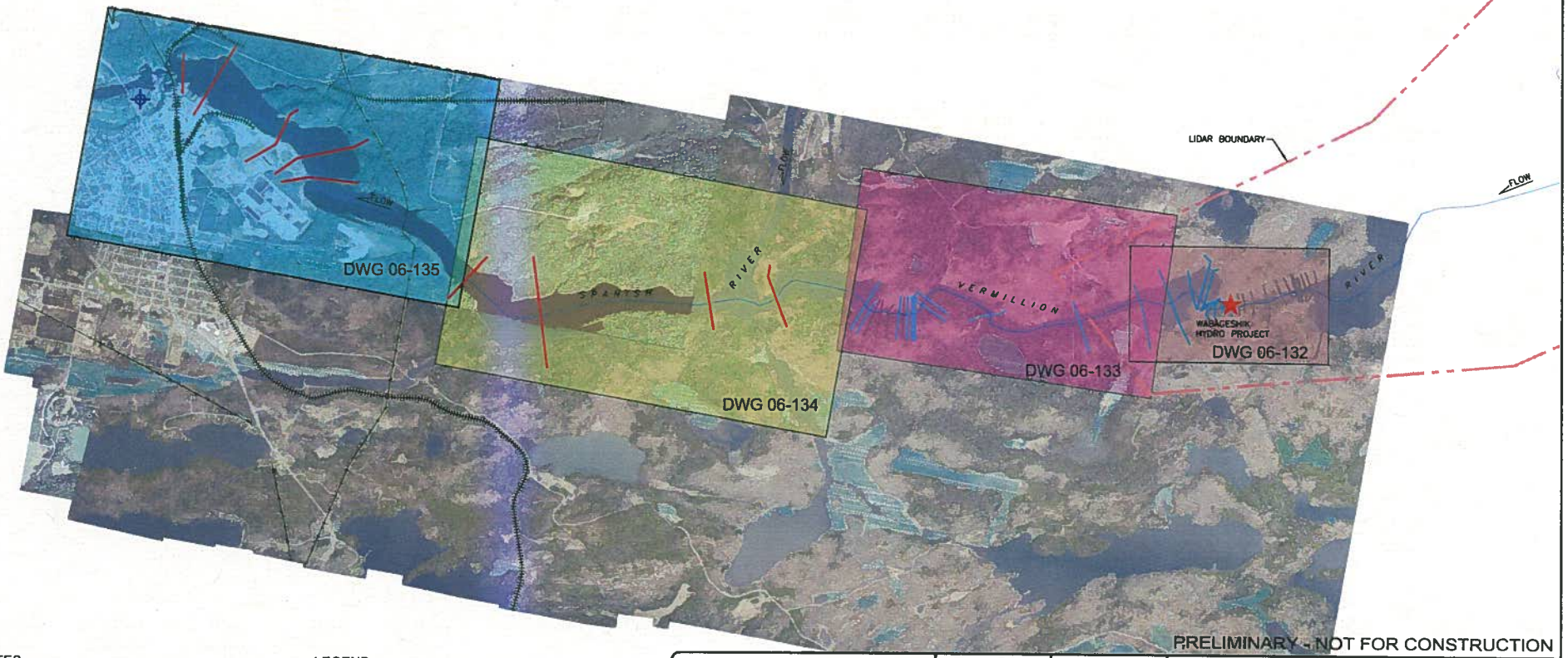
[i] Vermilion River: Wabageshik Rapid – Proposed Operating Flows and Level Charts. Ortech Environmental. May 14, 2012.
[ii] Hydrology Review for Vermilion River Hydropower Project – H3343. Hatch, October 6, 2009.

Appendix A

Drawings

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix A

Contents



PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. BASE MAPPING OBTAINED FROM ONTARIO MINISTRY OF NATURAL RESOURCES DECEMBER, 2010.
3. AIR PHOTOS PROVIDED BY KBM RESOURCES GROUP AND ONTARIO MINISTRY OF NATURAL RESOURCES.
4. ALL COORDINATES ARE IN UTM NAD83, ZONE 17.

LEGEND

- SECTIONS–NEW
- SECTIONS–EXISTING
- SECTIONS–DELETED
- RAILWAY
- UTILITY LINE
- WETLANDS
- PROPOSED STRUCTURE LOCATION

SCALE 1:40 000

0 400 800 1200 1600 2000

METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
A	12	06	07	NEW DRAWING	SMS	RJS	AS	CPB

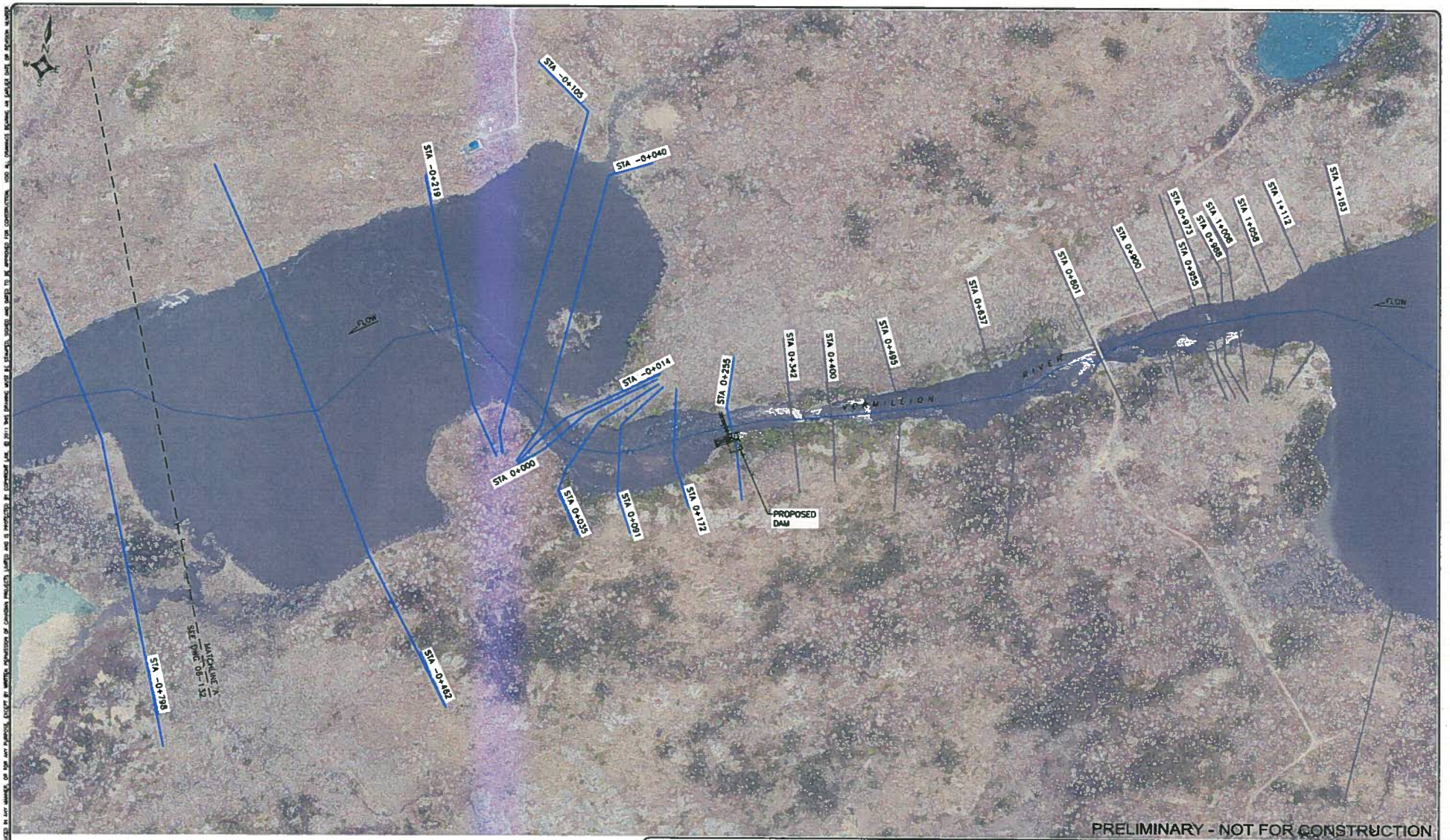
Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
UNSTEADY FLOW SECTIONS
KEY PLAN

PROJECT NUMBER	1052-001
CADD NUMBER	4.3.028
DRAWING NUMBER	06-131



PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. BASE MAPPING OBTAINED FROM ONTARIO MINISTRY OF NATURAL RESOURCES DECEMBER, 2010.
3. AIR PHOTOS PROVIDED BY KBM RESOURCES GROUP AND ONTARIO MINISTRY OF NATURAL RESOURCES.
4. ALL COORDINATES ARE IN UTM NAD83, ZONE 17.

LEGEND

- SECTIONS–NEW
- SECTIONS–EXISTING
- SECTIONS–DELETED
- RAILWAY
- UTILITY LINE
- WETLANDS

SCALE 1:5 000

0 50 100 150 200 250

METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
B	13	08	14	REMOVED CONTOURS, ADDED AIR PHOTOS	SMS	RJS	AB	CPB

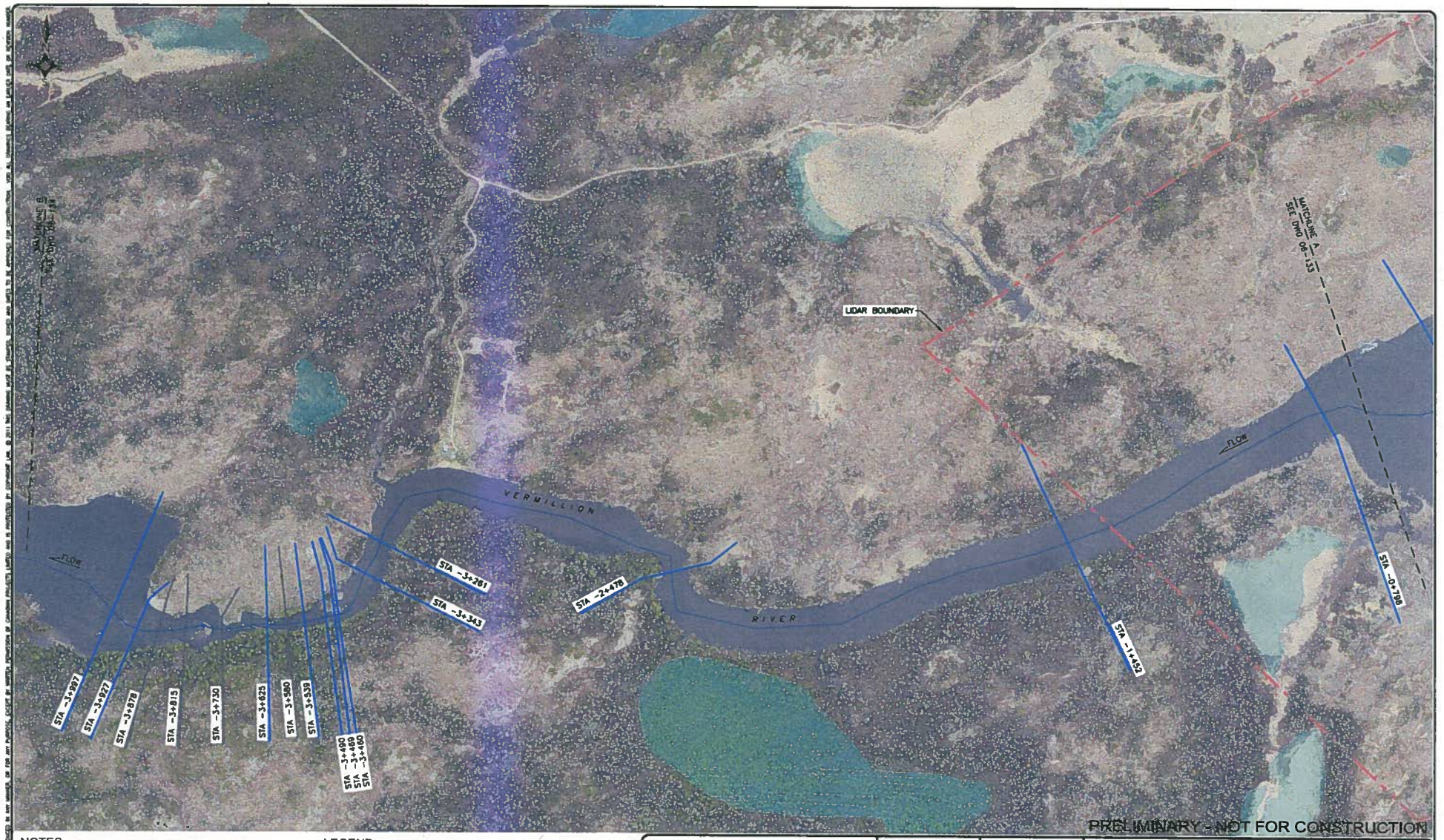
Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
UNSTEADY FLOW SECTIONS
STATION 1+183 TO -0+798

PROJECT NUMBER	1052-001
CADD NUMBER	4.3.028
DRAWING NUMBER	06-132



PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. BASE MAPPING OBTAINED FROM ONTARIO MINISTRY OF NATURAL RESOURCES DECEMBER, 2010.
3. AIR PHOTOS PROVIDED BY KBM RESOURCES GROUP AND ONTARIO MINISTRY OF NATURAL RESOURCES.
4. ALL COORDINATES ARE IN UTM NAD83, ZONE 17.

LEGEND

- SECTIONS-NEW
- SECTIONS-EXISTING
- SECTIONS-DELETED
- RAILWAY
- UTILITY LINE
- WETLANDS

SCALE 1:8 000

0 80 160 240 320 400

METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
B	12	08	14	REMOVED CONTOURS, ADDED AIR PHOTOS	SMS	RJS	AB	CPB

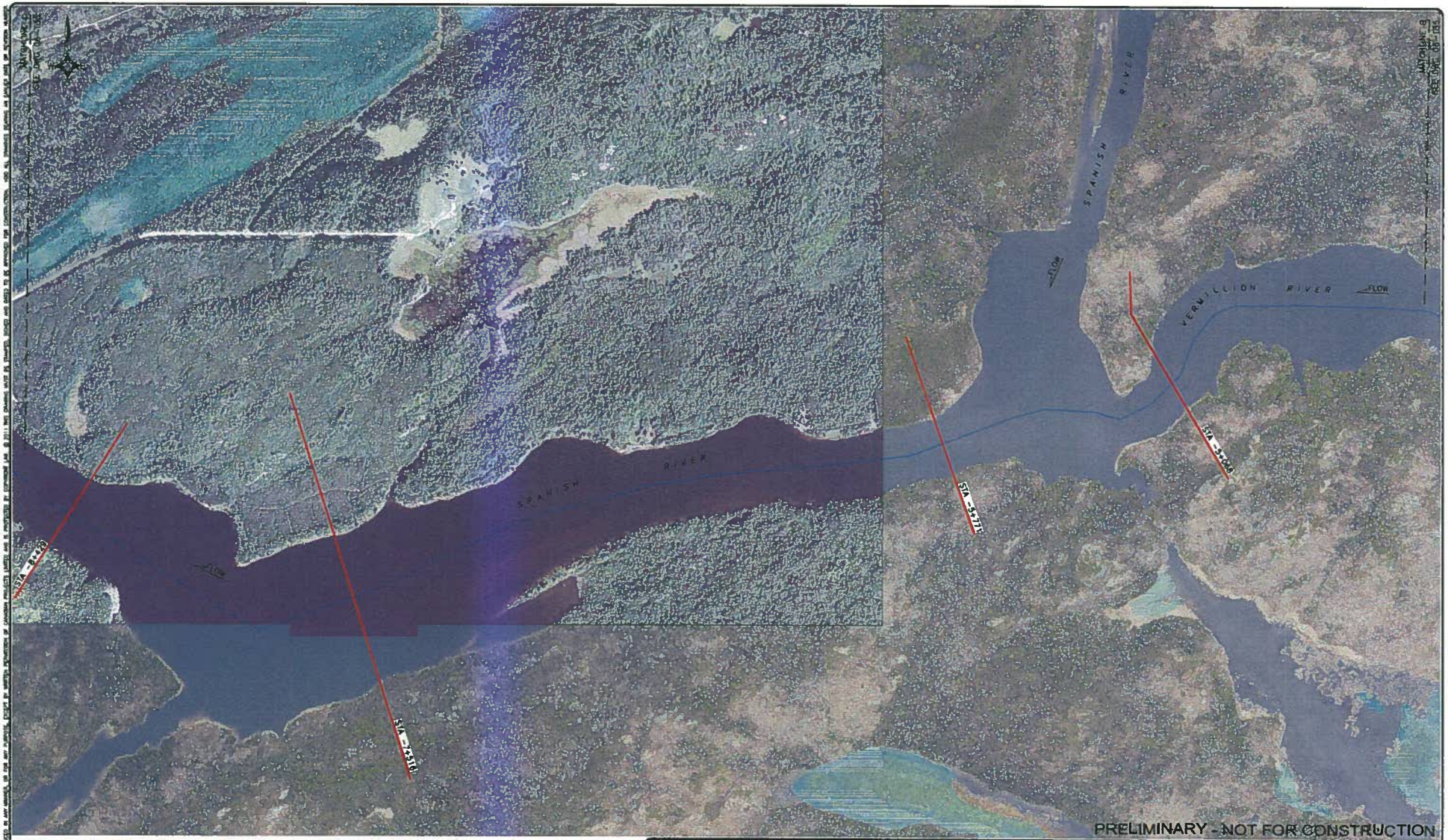
Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
UNSTEADY FLOW SECTIONS
STATION -0+798 TO -3+997

PROJECT NUMBER	1052-001
CADD NUMBER	4.3.028
DRAWING NUMBER	06-133



PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. BASE MAPPING OBTAINED FROM ONTARIO MINISTRY OF NATURAL RESOURCES DECEMBER, 2010.
3. AIR PHOTOS PROVIDED BY KBM RESOURCES GROUP AND ONTARIO MINISTRY OF NATURAL RESOURCES.
4. ALL COORDINATES ARE IN UTM NAD83, ZONE 17.

LEGEND

- SECTIONS-NEW
- SECTIONS-EXISTING
- SECTIONS-DELETED
- RAILWAY
- UTILITY LINE
- WETLANDS

SCALE 1:10 000

0 100 200 300 400 500

METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
B	12	08	14	REMOVED CONTOURS, ADDED AIR PHOTOS	SMS	RJS	AB	CPB

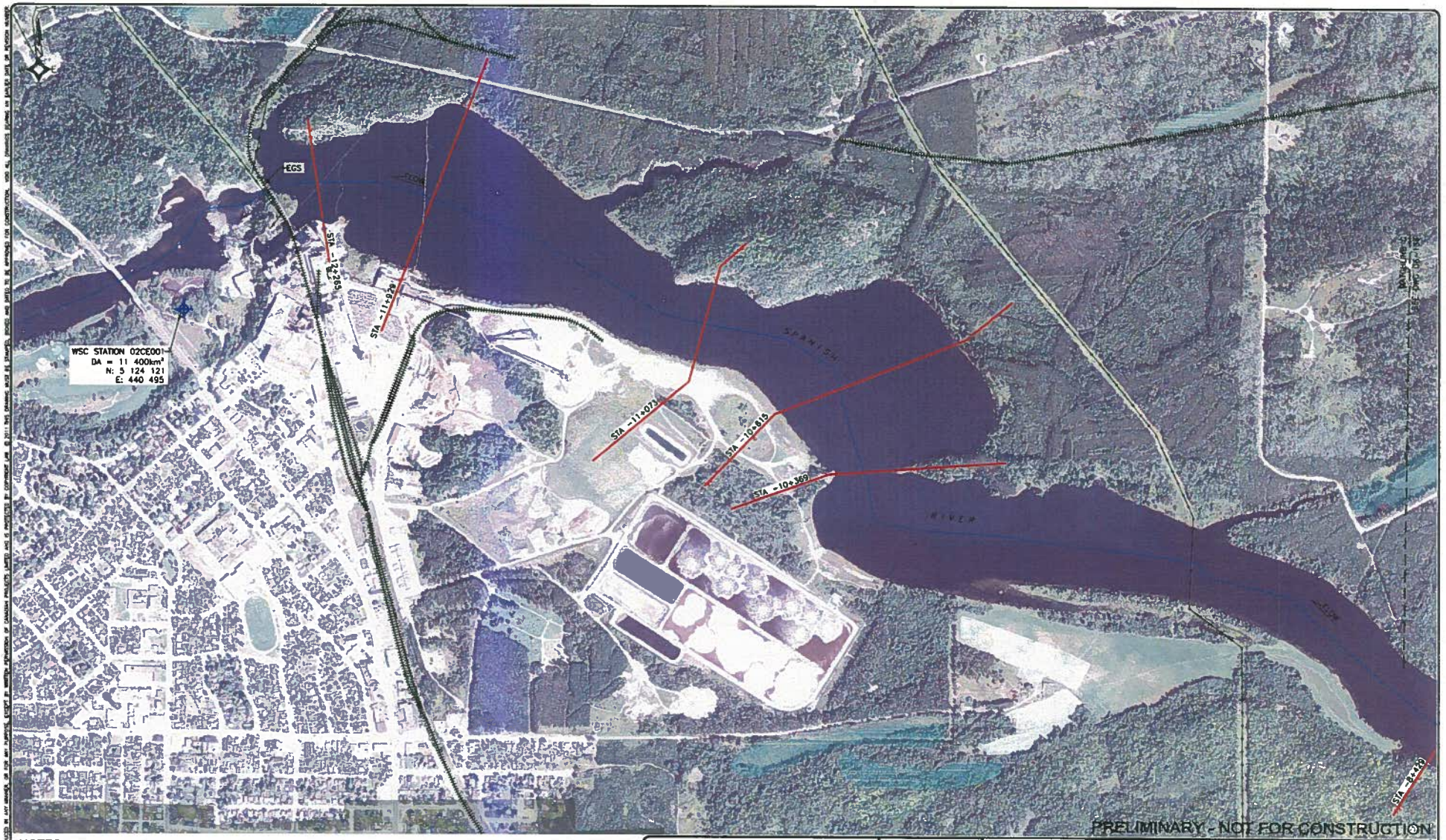
Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
UNSTEADY FLOW SECTIONS
STATION -5+068 TO -8+429

PROJECT NUMBER: 1052-001
CADD NUMBER: 4.3.028
DRAWING NUMBER: 06-134



PRELIMINARY - NOT FOR CONSTRUCTION

NOTES

1. ALL DIMENSIONS, ELEVATIONS AND STATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.
2. BASE MAPPING OBTAINED FROM ONTARIO MINISTRY OF NATURAL RESOURCES DECEMBER, 2010.
3. AIR PHOTOS PROVIDED BY KBM RESOURCES GROUP AND ONTARIO MINISTRY OF NATURAL RESOURCES.
4. ALL COORDINATES ARE IN UTM NAD83, ZONE 17.

LEGEND

- SECTIONS-NEW
- SECTIONS-EXISTING
- SECTIONS-DELETED
- RAILWAY
- UTILITY LINE
- WETLANDS

SCALE 1:10 000

0 100 200 300 400 500

METRES

REV	Y	M	D	REVISION DESCRIPTION	DES	CHK	DRN	CHK
B	12	06	14	REMOVED CONTOURS, ADDED AIR PHOTOS	SMS	KJS	AB	CPB

Canadian Projects Limited
CALGARY, ALBERTA

Xeneca Power Development Inc.

XENECA POWER DEVELOPMENT INC.

WABAGISHIK RAPIDS HYDRO PROJECT
PROJECT - GENERAL
UNSTEADY FLOW SECTIONS
STATION -8+429 TO -12+265

PROJECT NUMBER: 1052-001
CADD NUMBER: 4.3.028
DRAWING NUMBER: 06-135

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix B

Appendix B

August Daily Operation:

Downstream Boundary Condition:

Constant Water Surface Elevation

Flow and Stage Hydrographs and

Rating Curves

Canadian Projects Limited

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix B

Contents

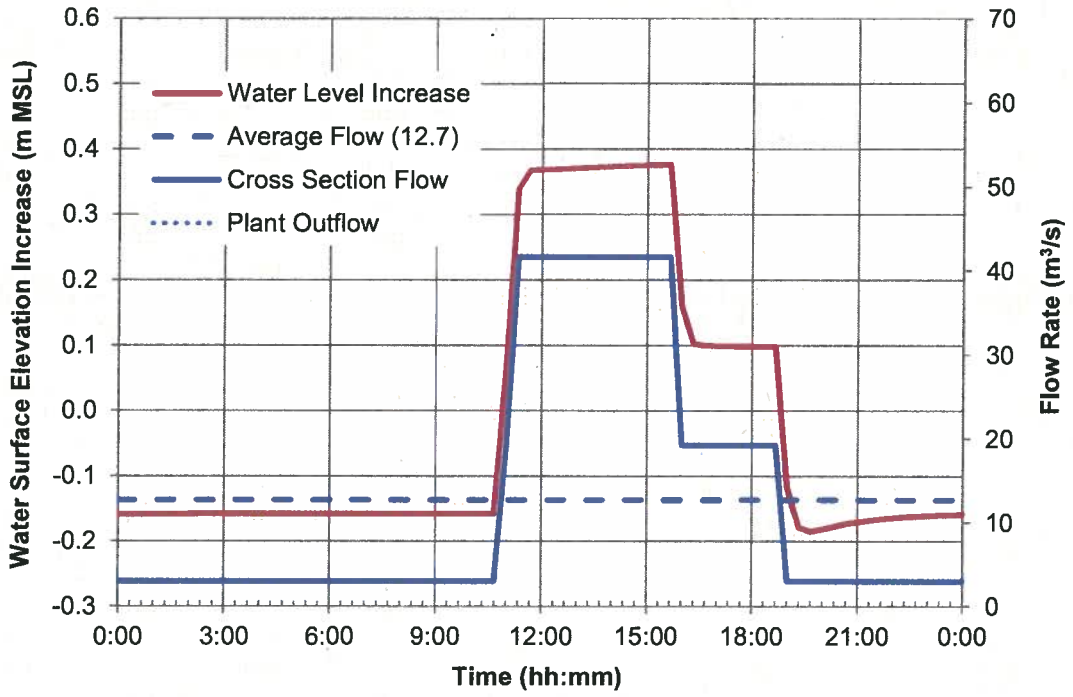


Figure 1: Sta 0+255 - August Daily Operation Flow and Stage Hydrograph

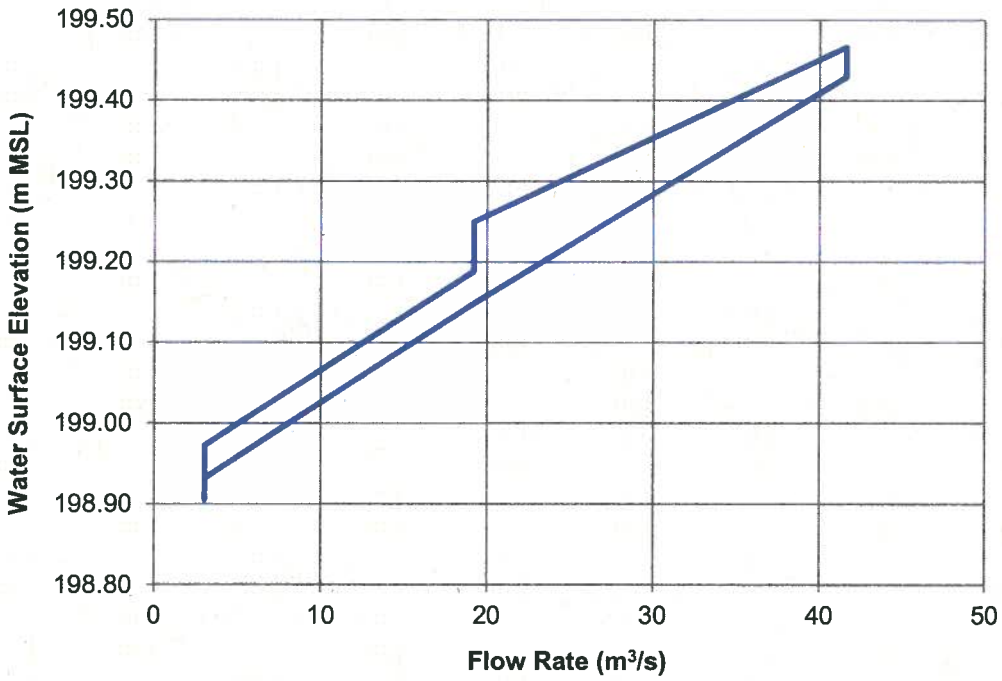


Figure 2: Sta 0+255 - August Daily Operation Rating Curve

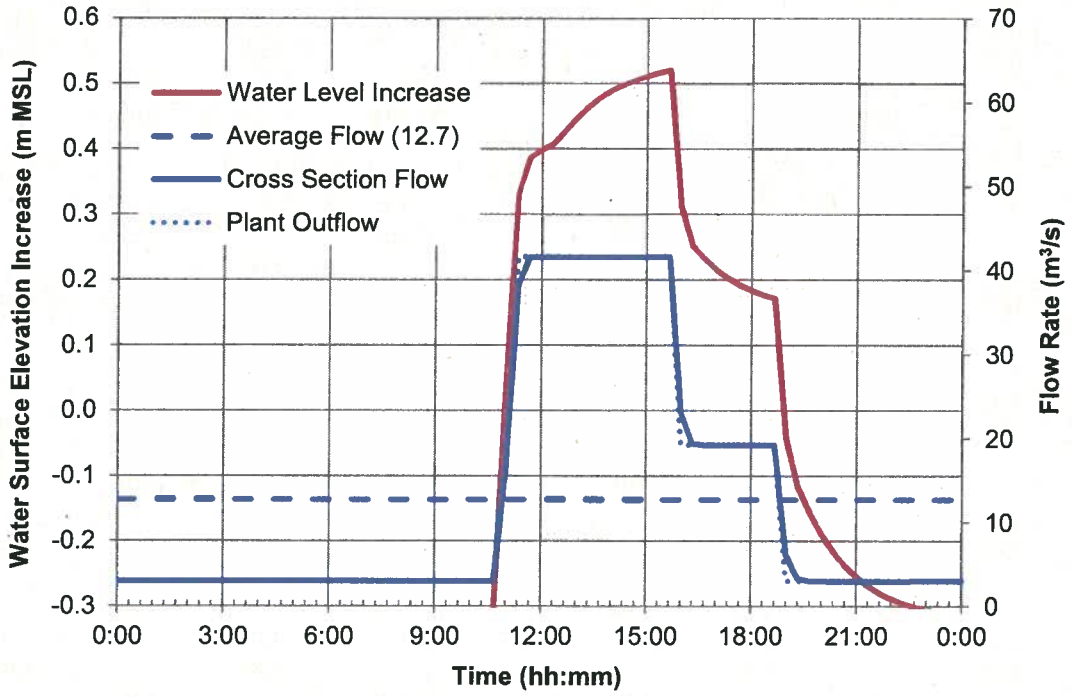


Figure 3: Sta 0+000 - August Daily Operation Flow and Stage Hydrograph

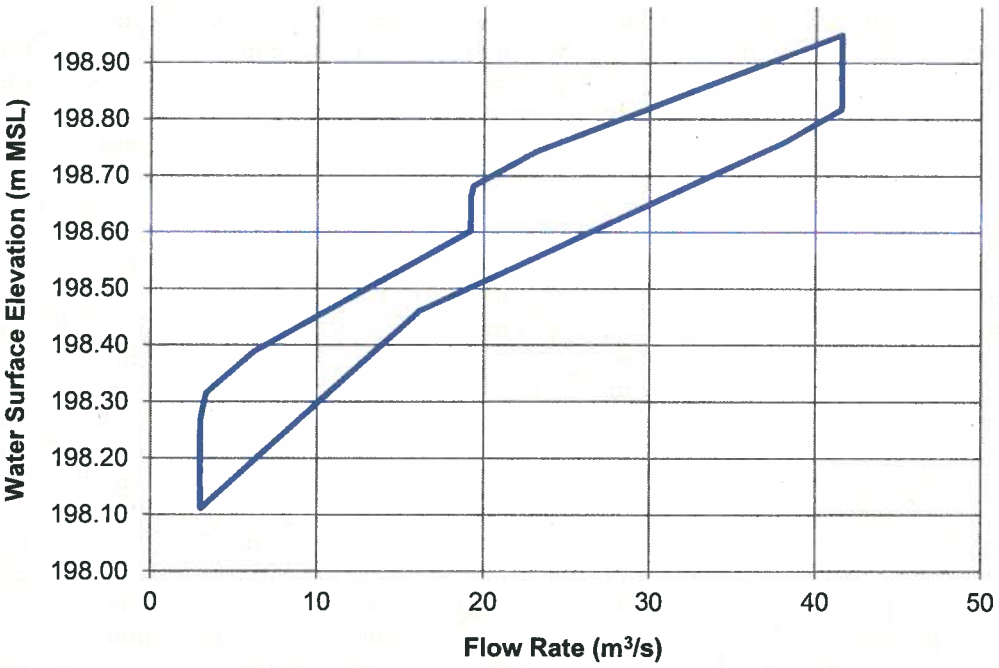


Figure 4: Sta 0+000 - August Daily Operation Rating Curve

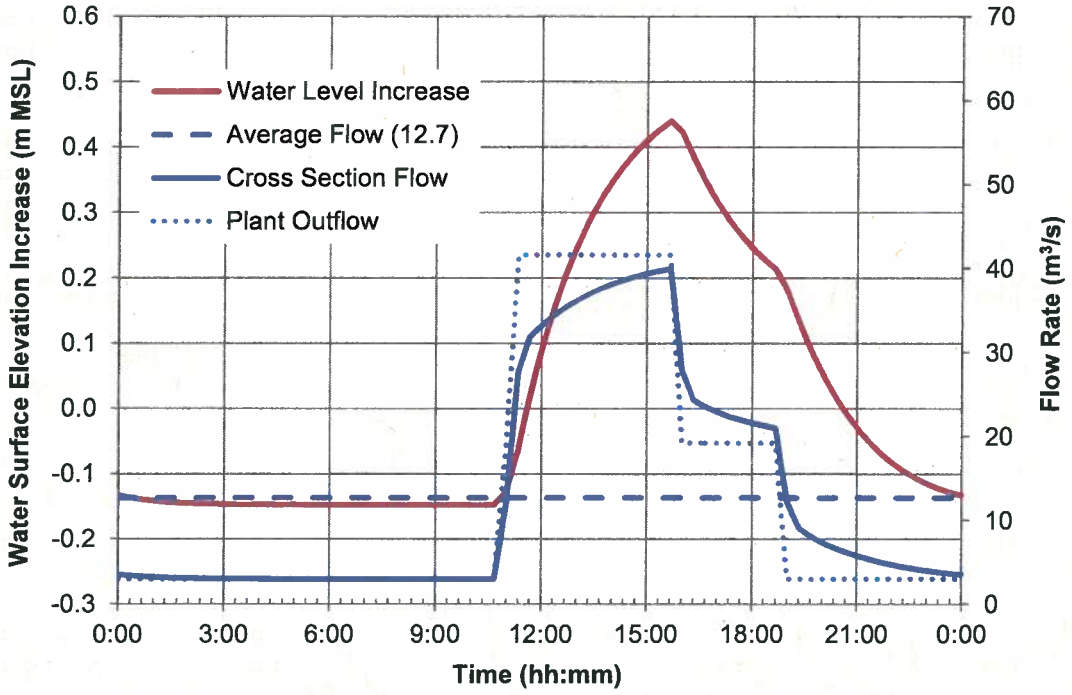


Figure 5: Sta -0+462 - August Daily Operation Flow and Stage Hydrograph

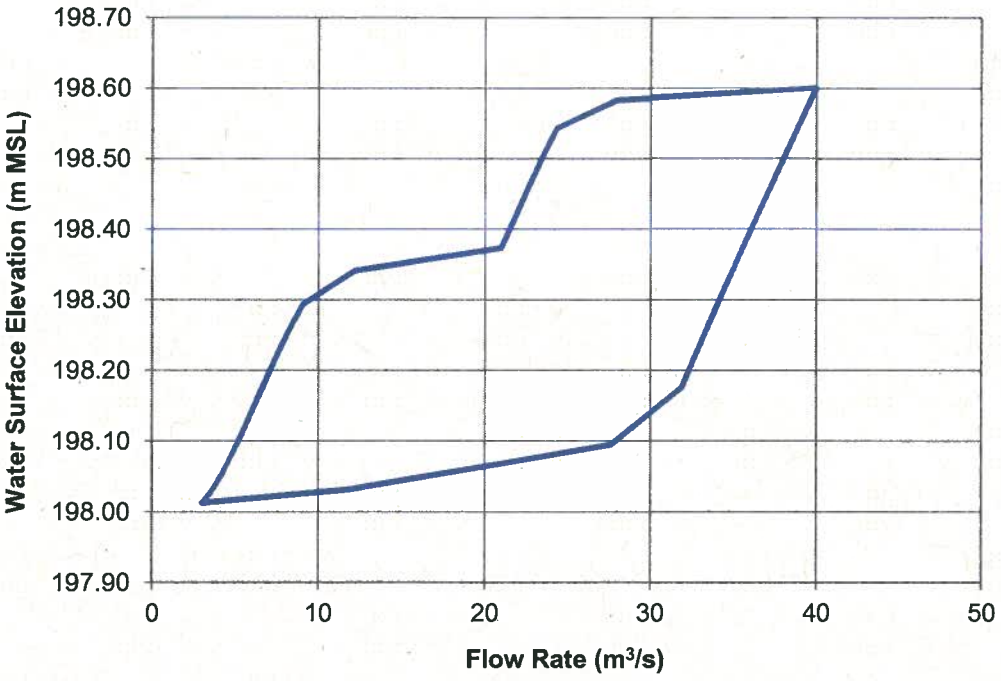


Figure 6: Sta -0+462 - August Daily Operation Rating Curve

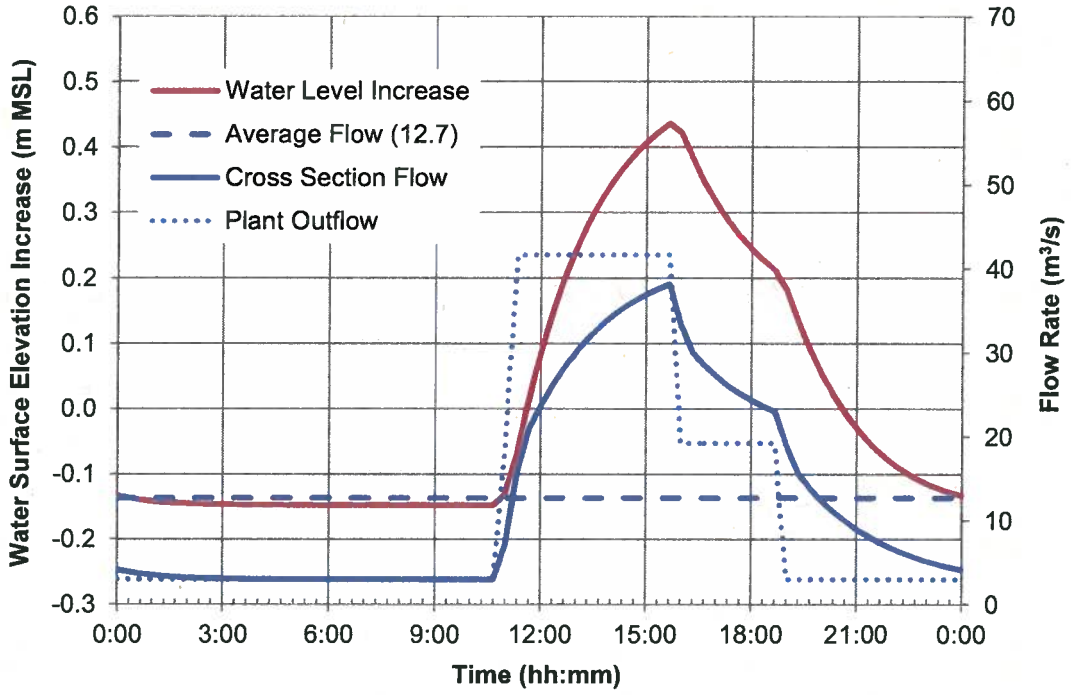


Figure 7: Sta -1+452 - August Daily Operation Flow and Stage Hydrograph

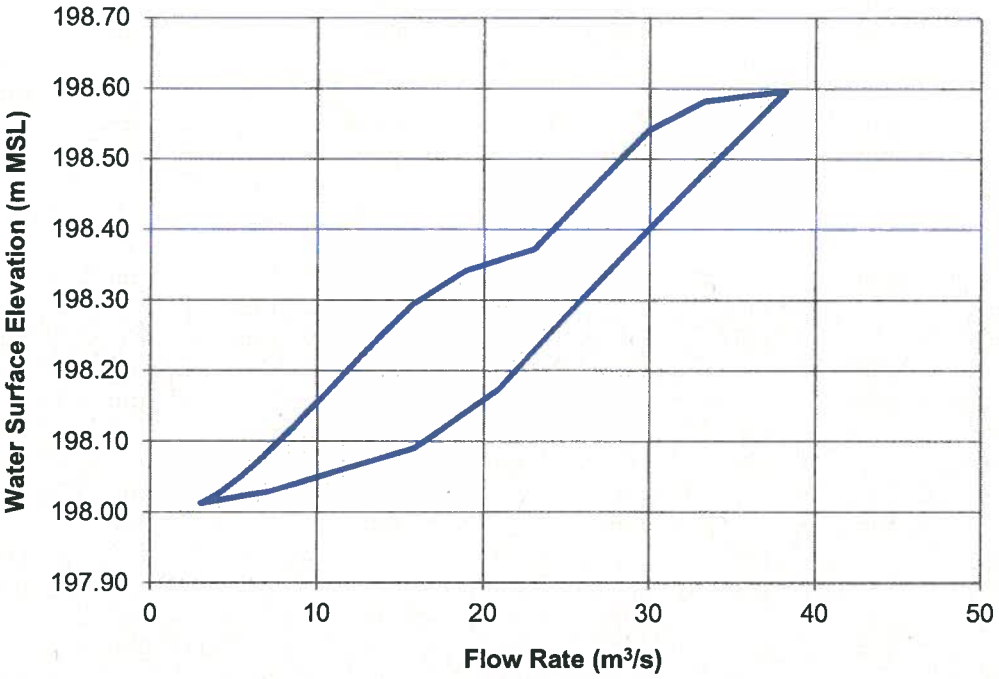


Figure 8: Sta -1+452 - August Daily Operation Rating Curve

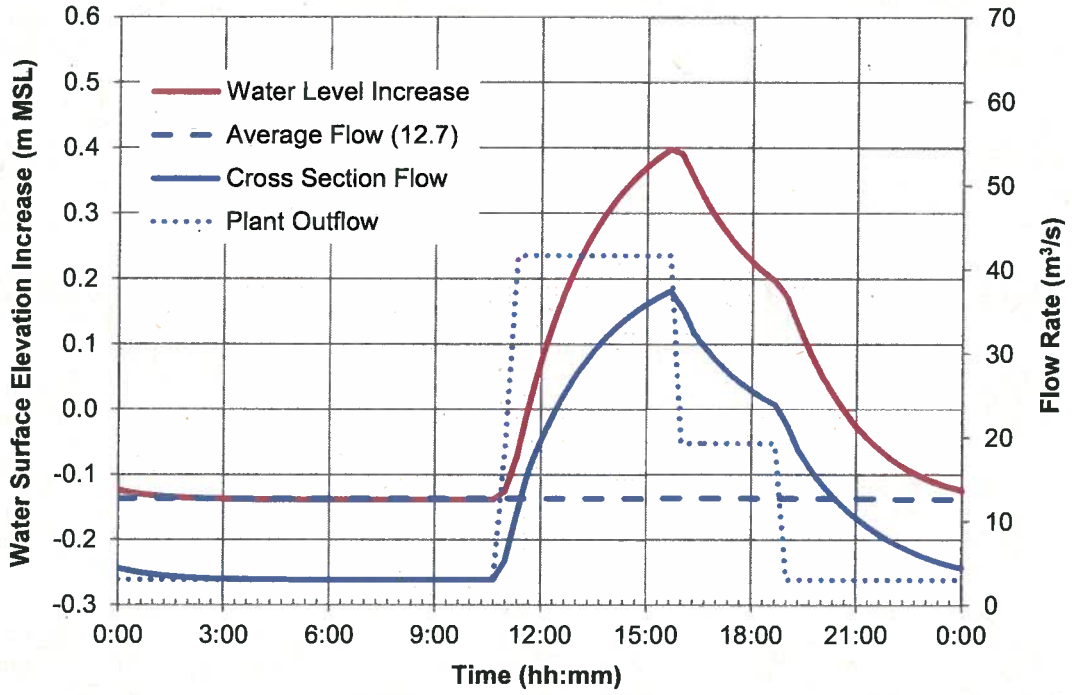


Figure 9: Sta -2+478 - August Daily Operation Flow and Stage Hydrograph

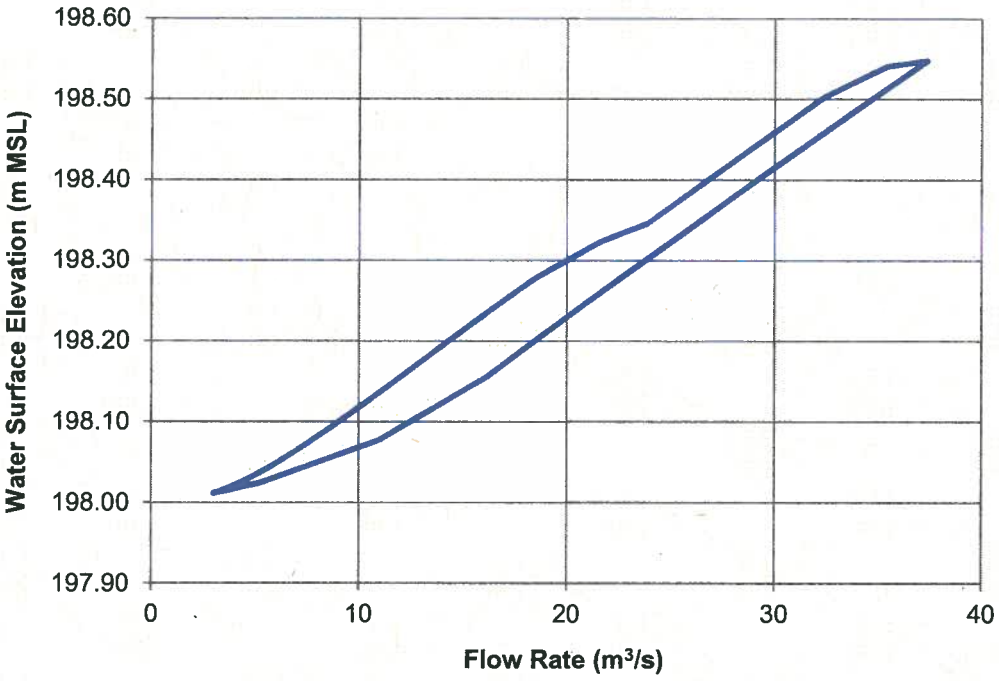


Figure 10: Sta -2+478 - August Daily Operation Rating Curve

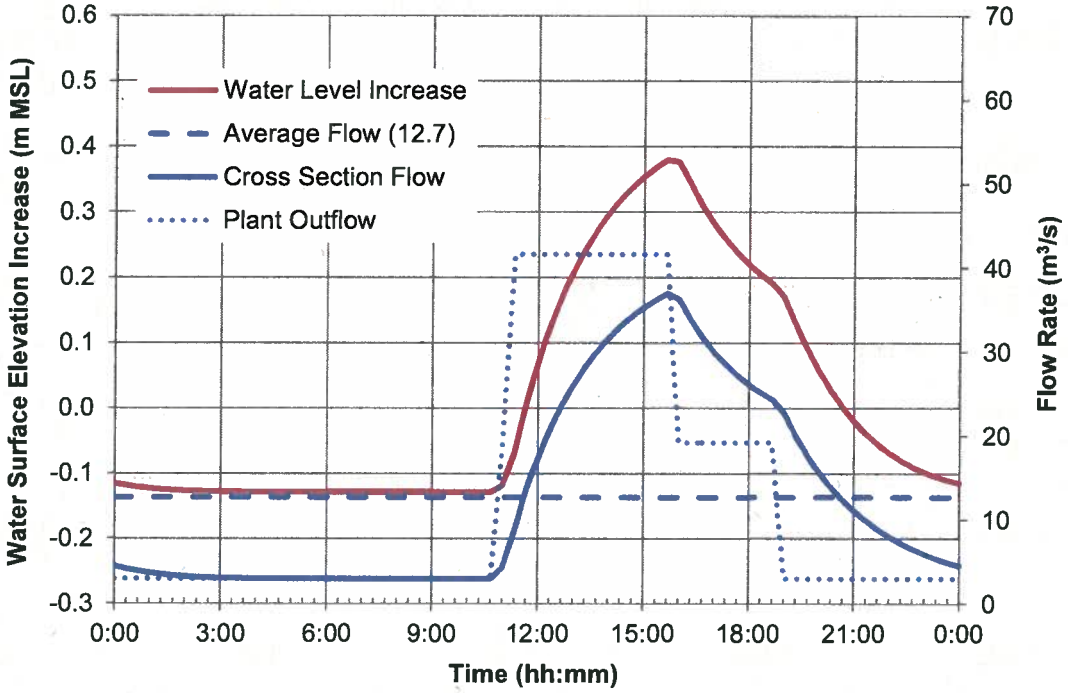


Figure 11: Sta -3+261 - August Daily Operation Flow and Stage Hydrograph

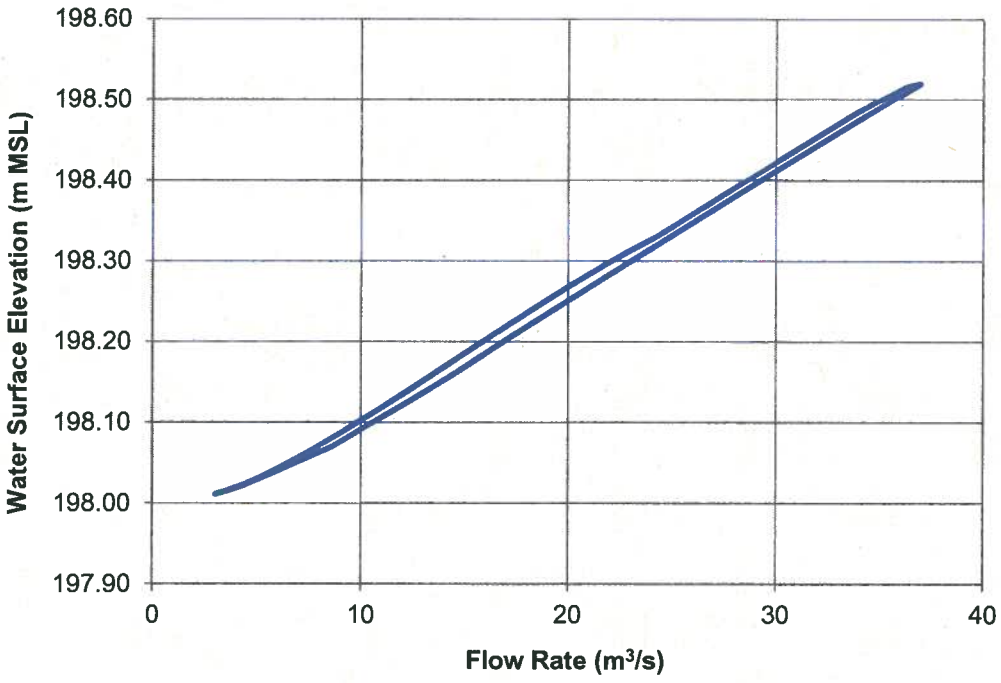


Figure 12: Sta -3+261 - August Daily Operation Rating Curve

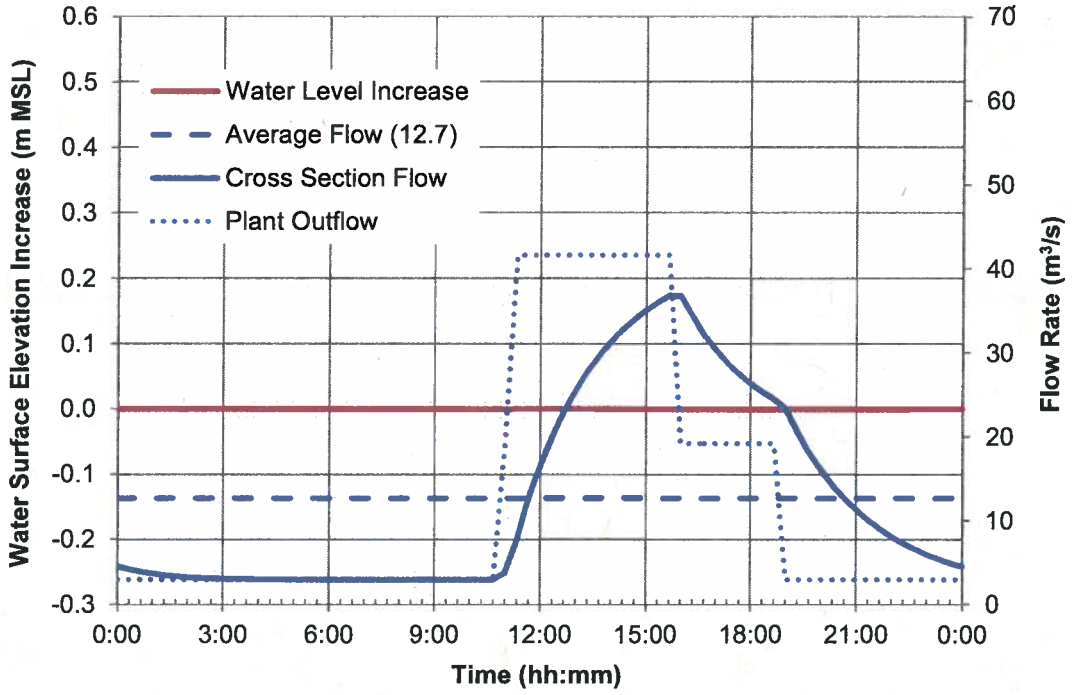


Figure 13: Sta -5+068- August Daily Operation Flow and Stage Hydrograph

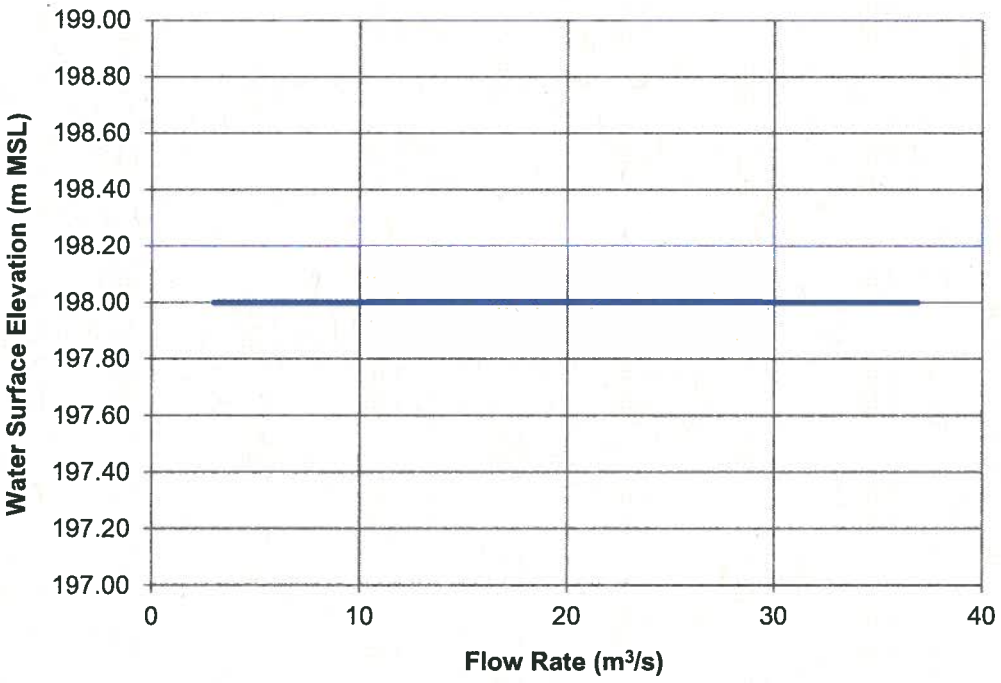


Figure 14: Sta -5+068 - August Daily Operation Rating Curve

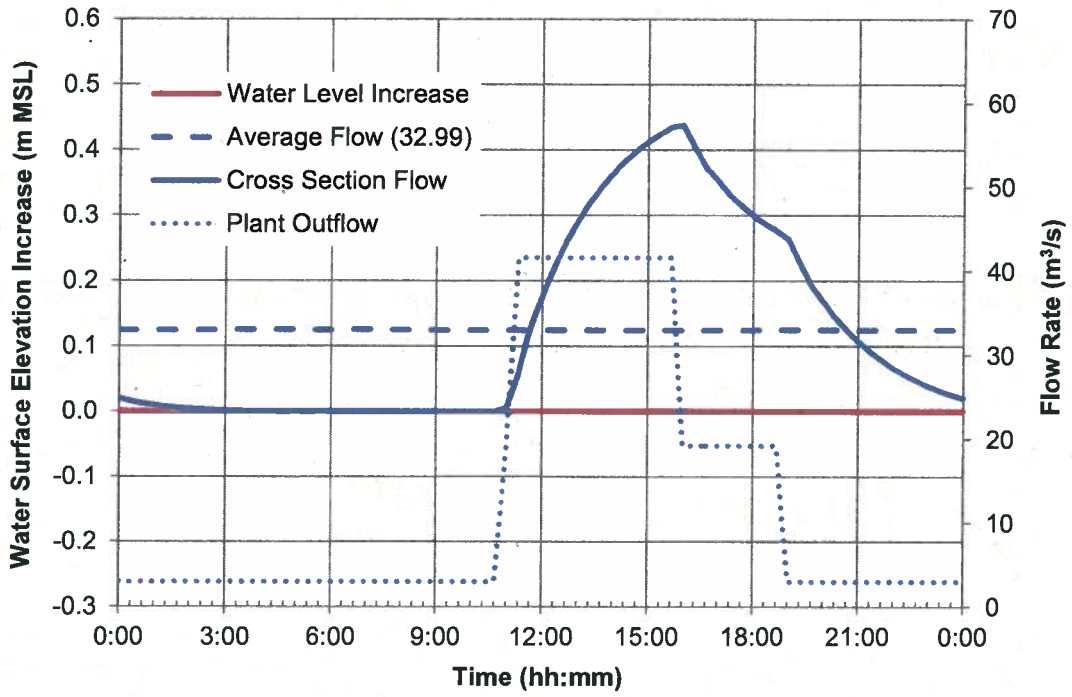


Figure 15: Sta -10+369 - August Daily Operation Flow and Stage Hydrograph

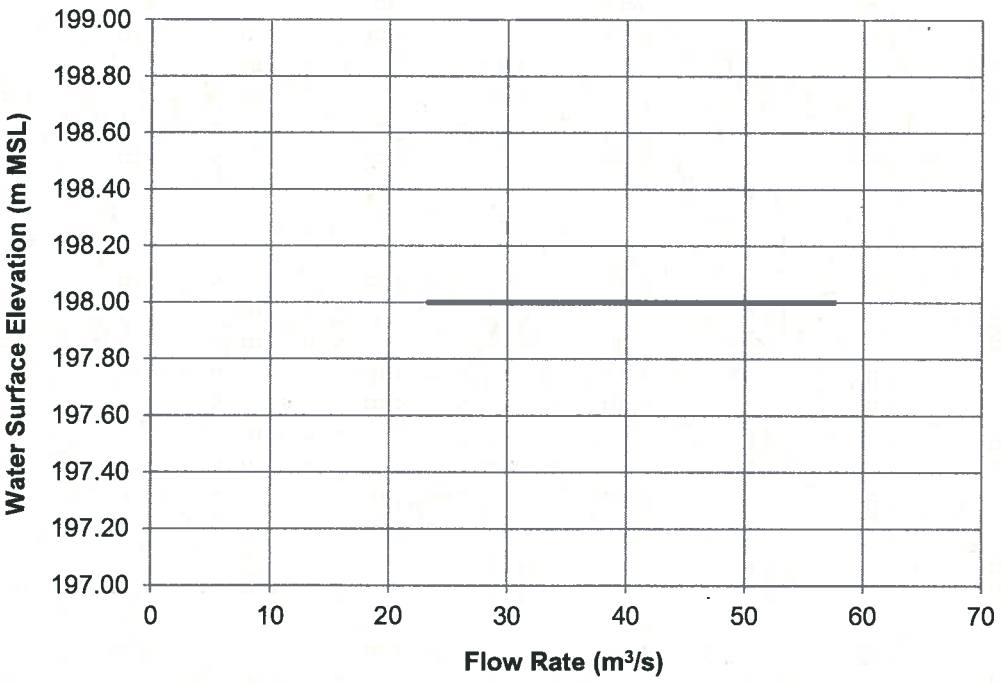


Figure 16: Sta -10+369 - August Daily Operation Rating Curve

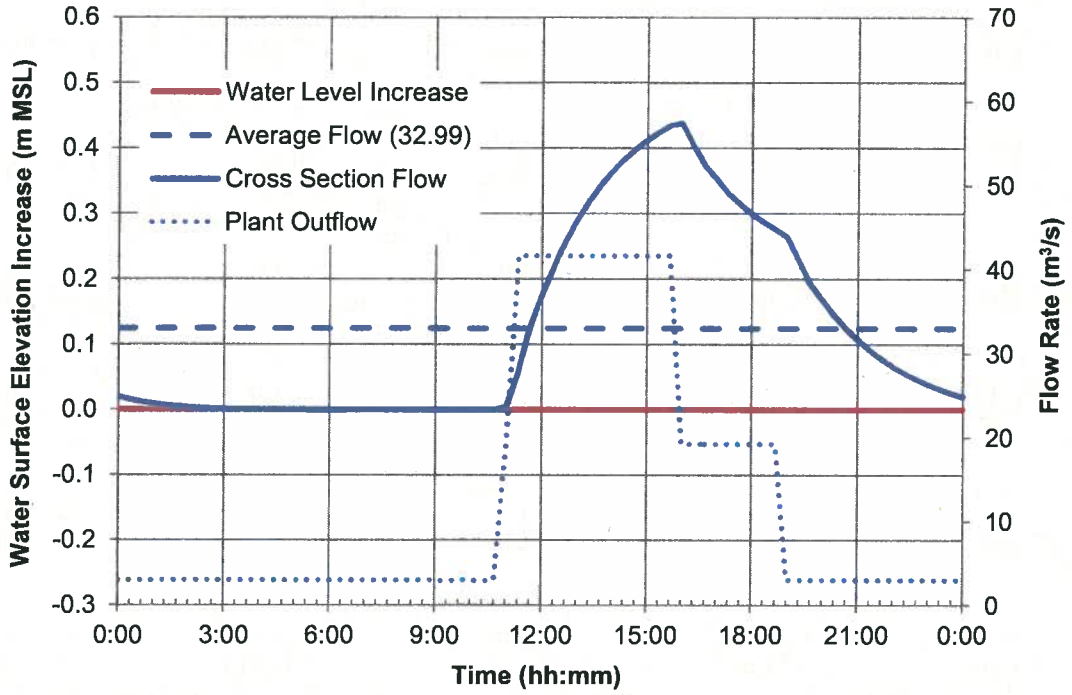


Figure 17: Sta -12+265- August Daily Operation Flow and Stage Hydrograph

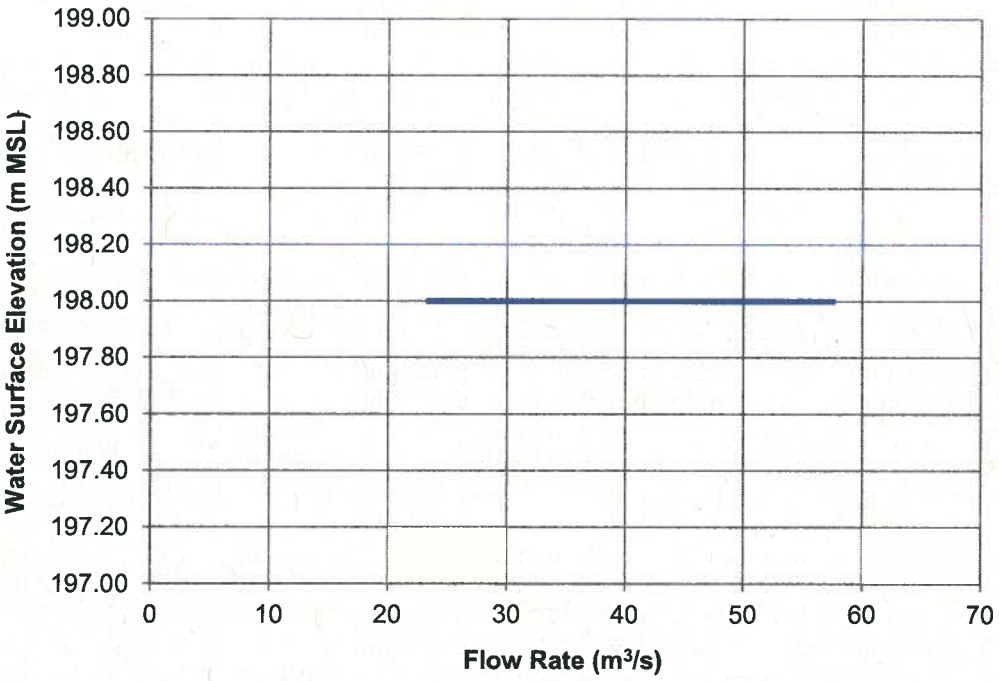


Figure 18: Sta -12+265 - August Daily Operation Rating Curve

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix B

Appendix C

November Daily Operation:

Downstream Boundary Condition:

Constant Water Surface Elevation

Flow and Stage Hydrographs and

Rating Curves

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix C

Contents

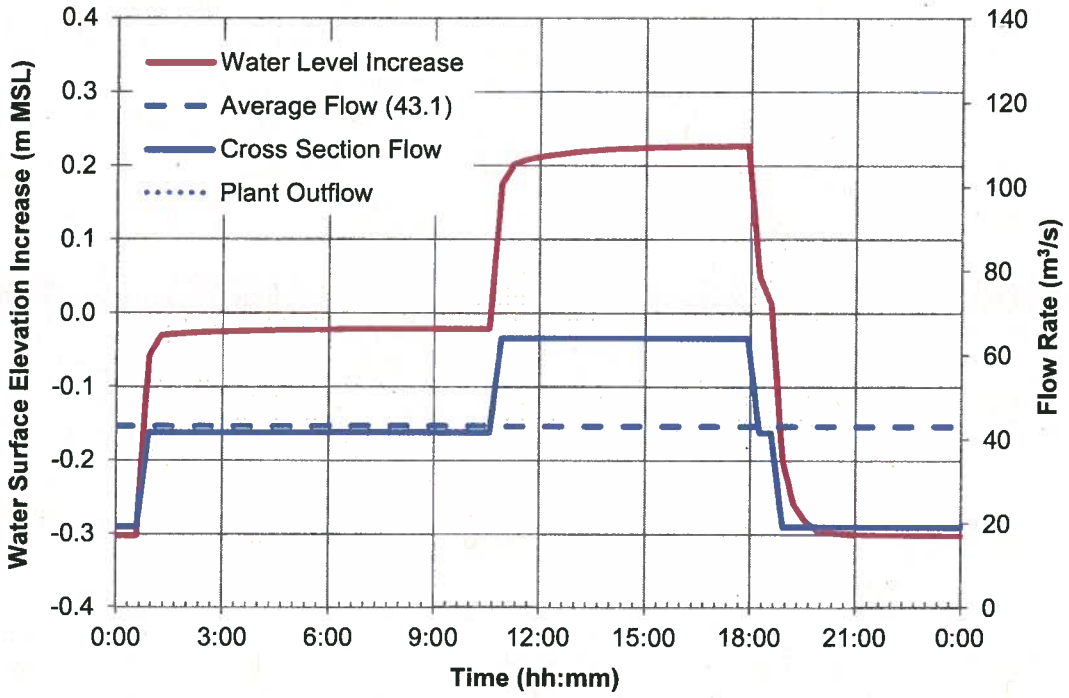


Figure 1: Sta 0+255 - November Daily Operation Flow and Stage Hydrograph

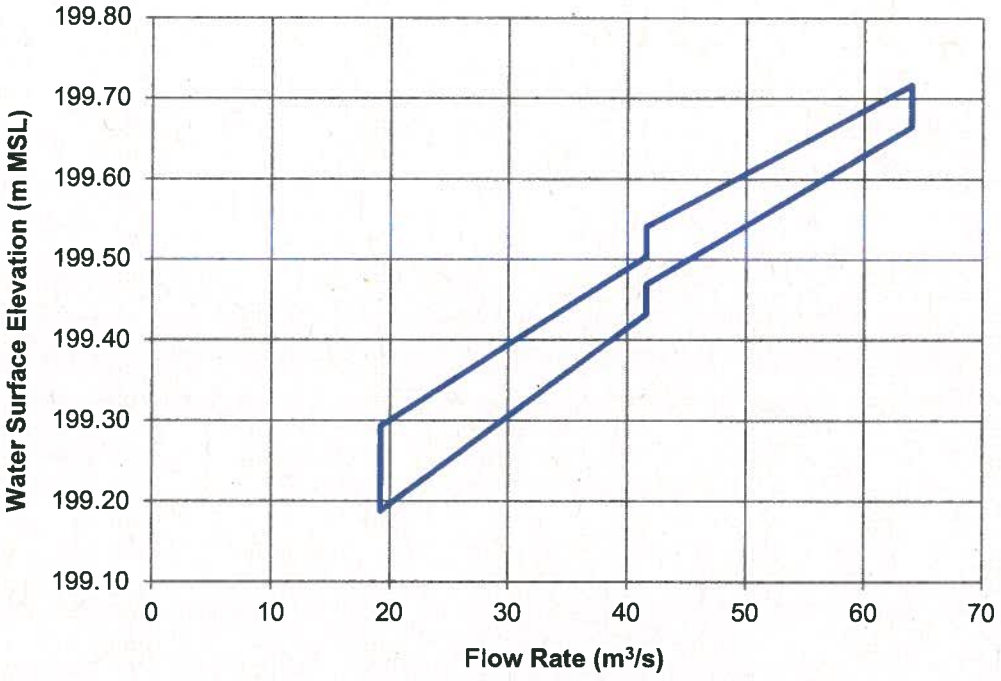


Figure 2: Sta 0+255 - November Daily Operation Rating Curve

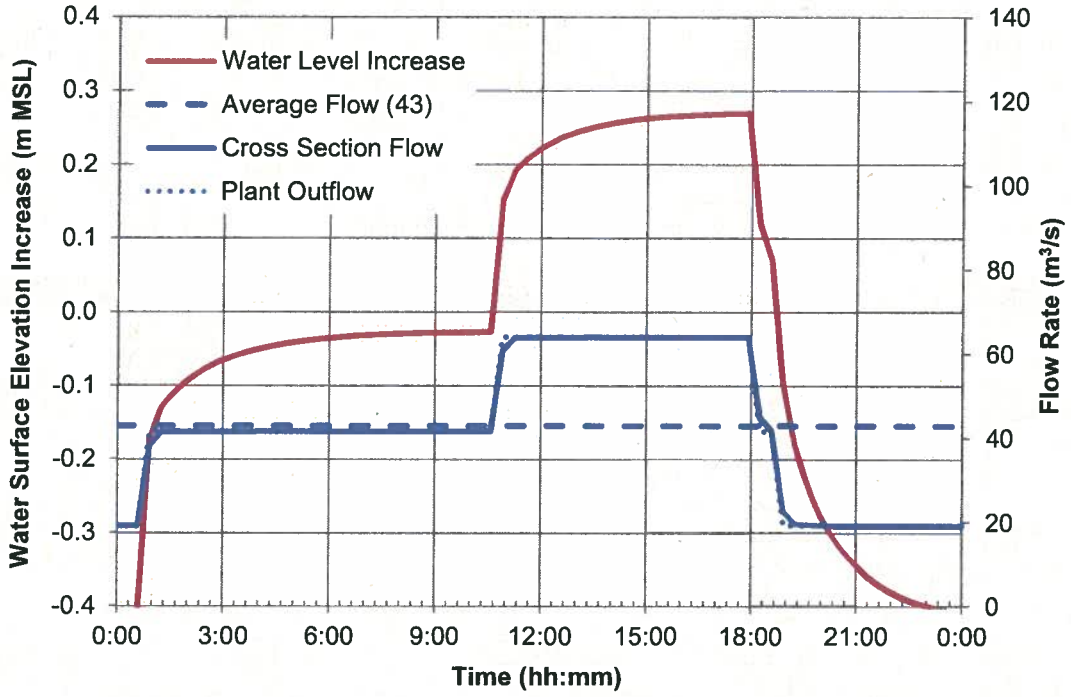


Figure 3: Sta 0+000 - November Daily Operation Flow and Stage Hydrograph

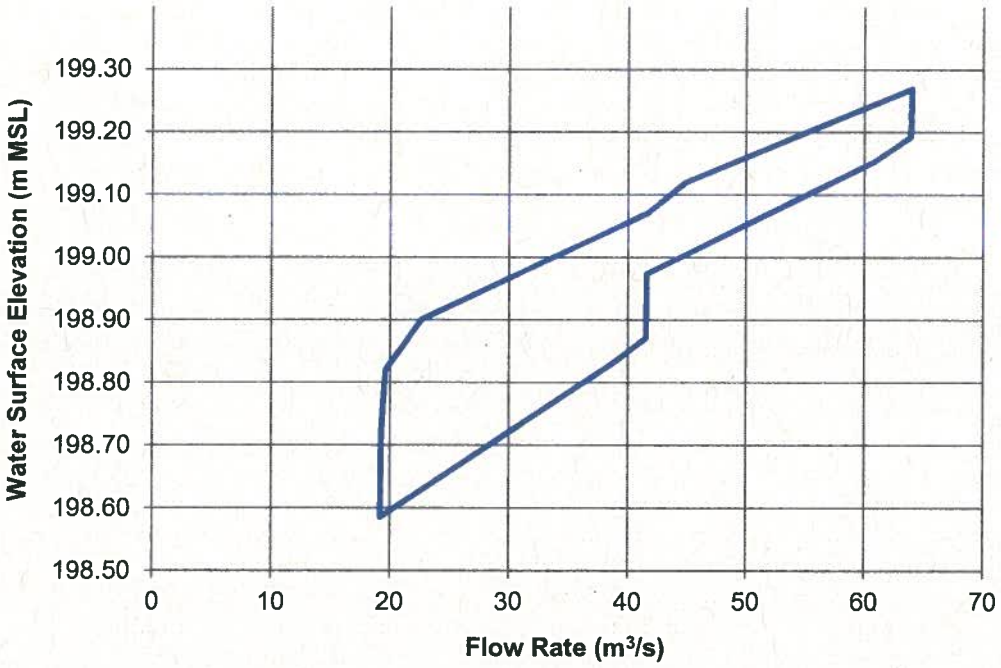


Figure 4: Sta 0+000 - November Daily Operation Rating Curve

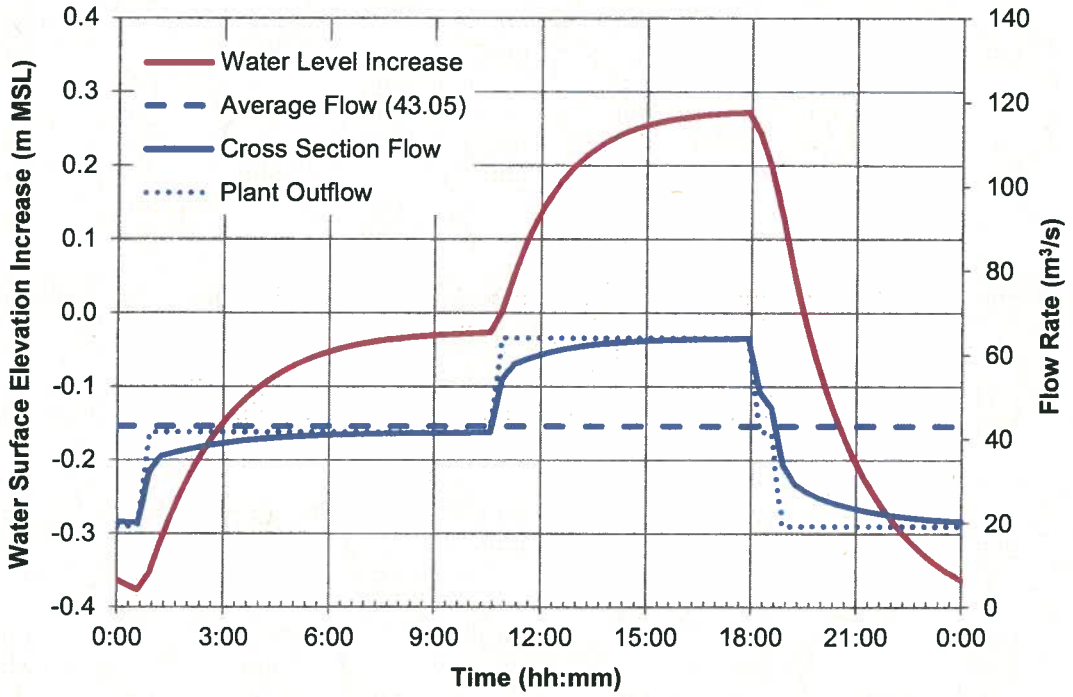


Figure 5: Sta -0+462 - November Daily Operation Flow and Stage Hydrograph

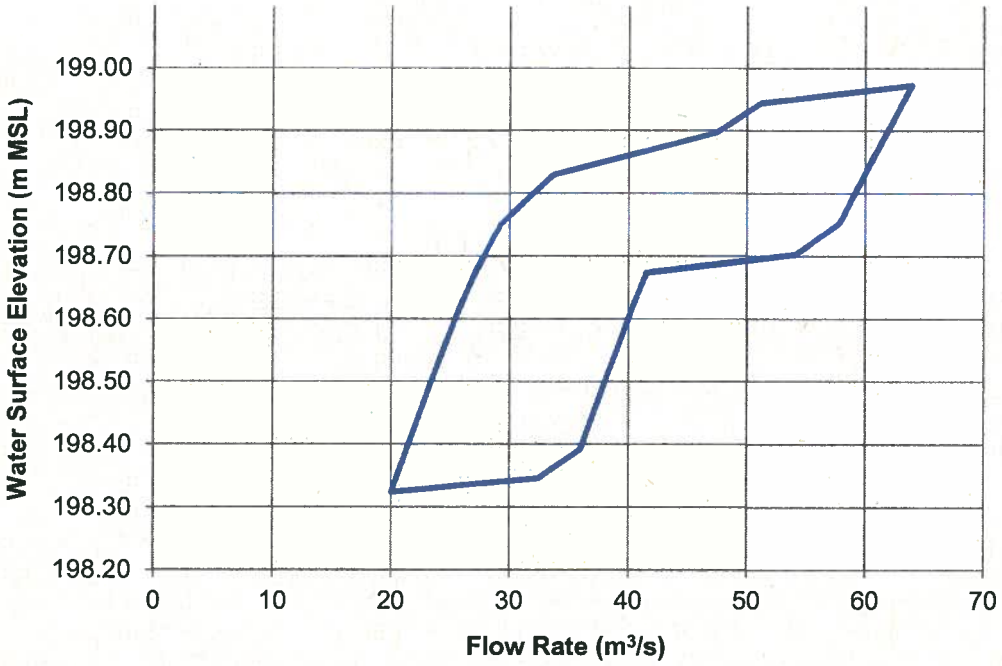


Figure 6: Sta -0+462 - November Daily Operation Rating Curve

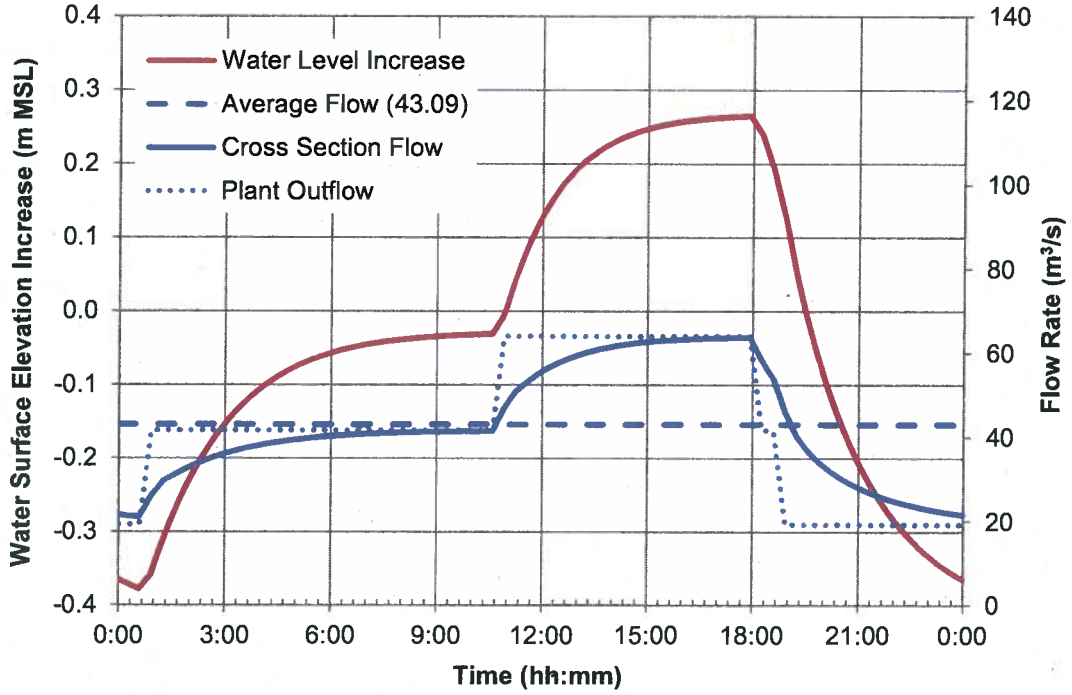


Figure 7: Sta -1+452 - November Daily Operation Flow and Stage Hydrograph

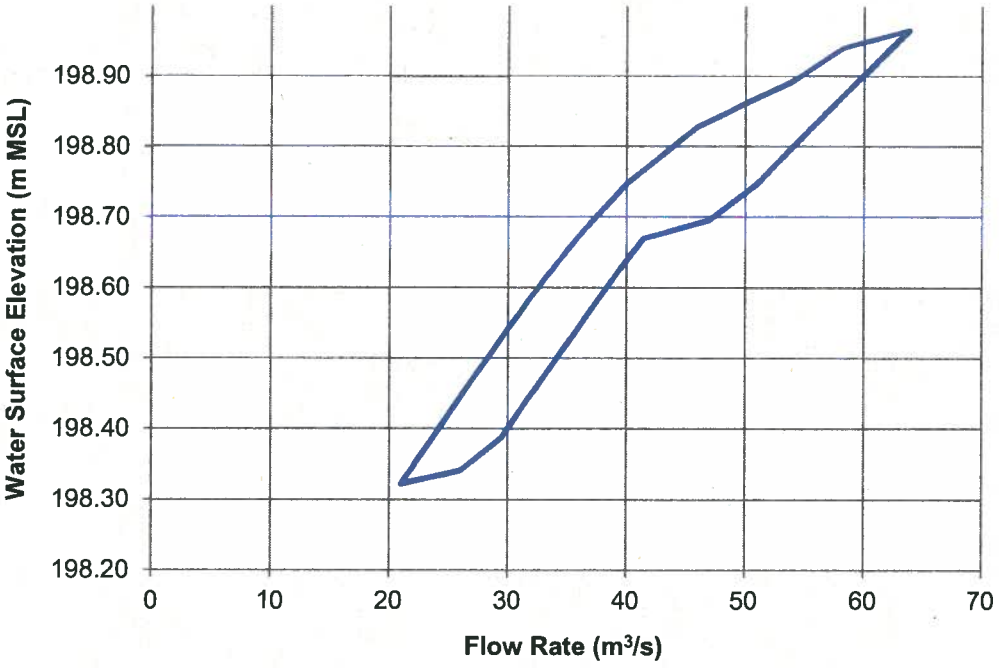


Figure 8: Sta -1+452 - November Daily Operation Rating Curve

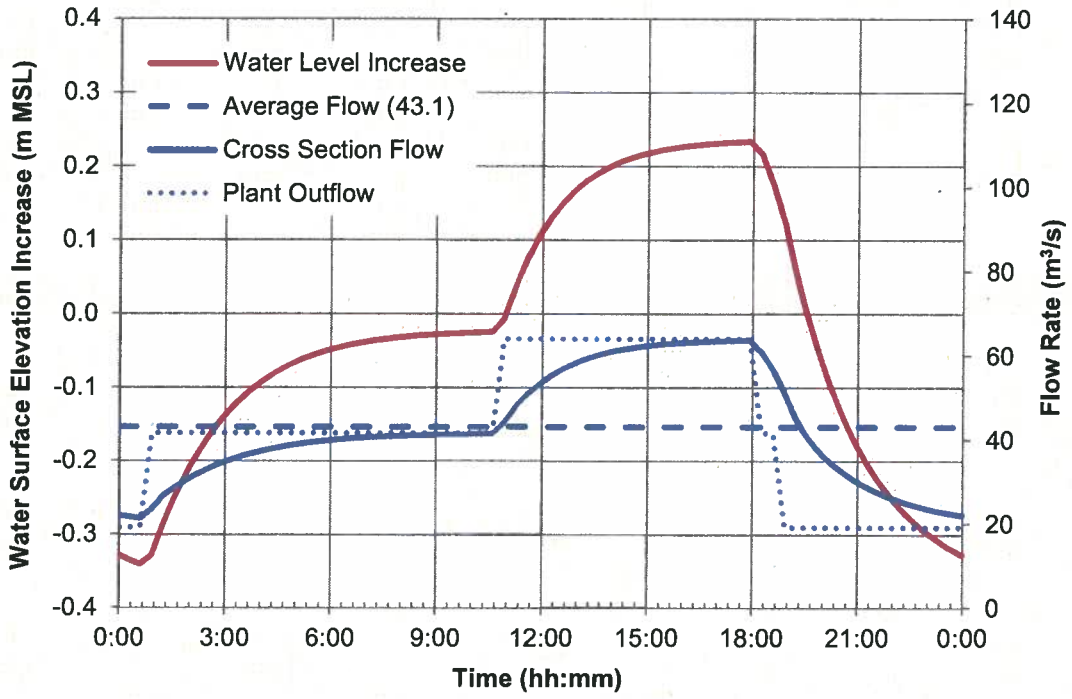


Figure 9: Sta -2+478 - November Daily Operation Flow and Stage Hydrograph

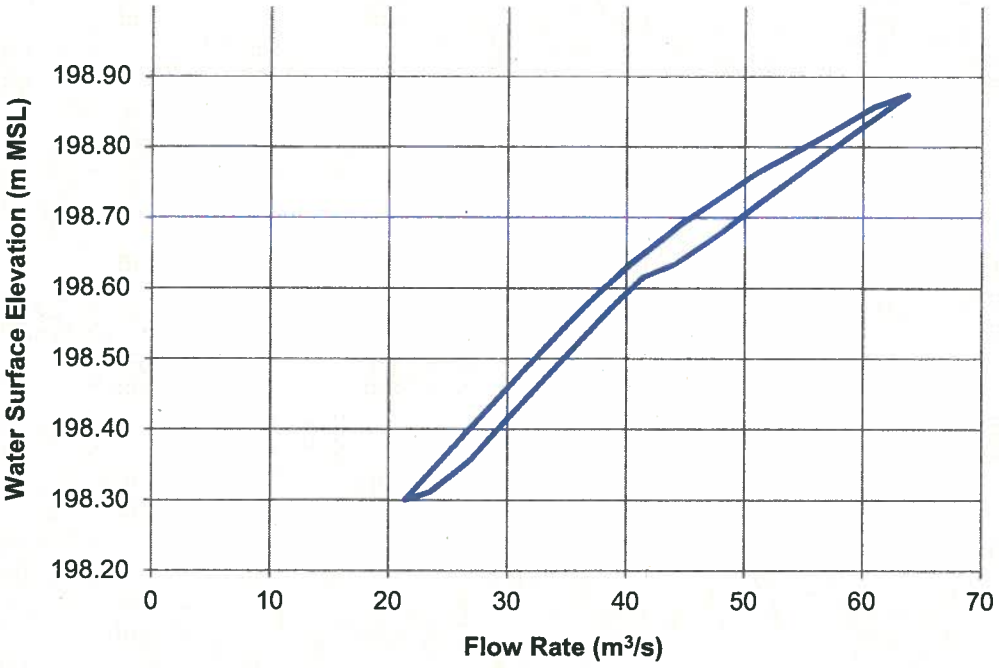


Figure 10: Sta -2+478 - November Daily Operation Rating Curve

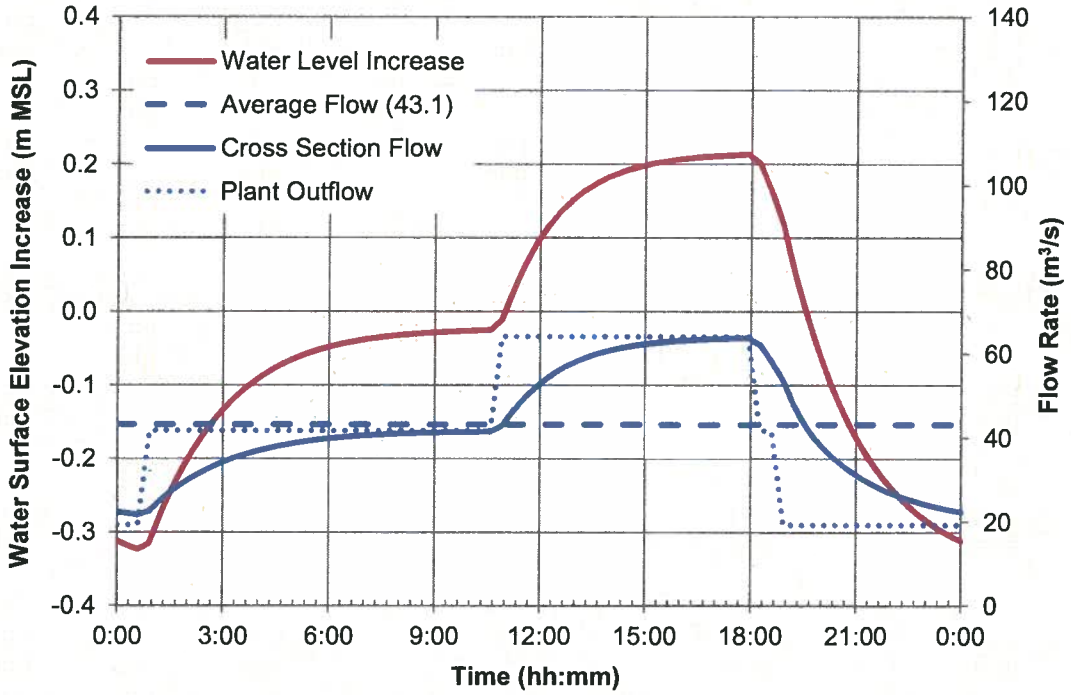


Figure 11: Sta -3+261 - November Daily Operation Flow and Stage Hydrograph

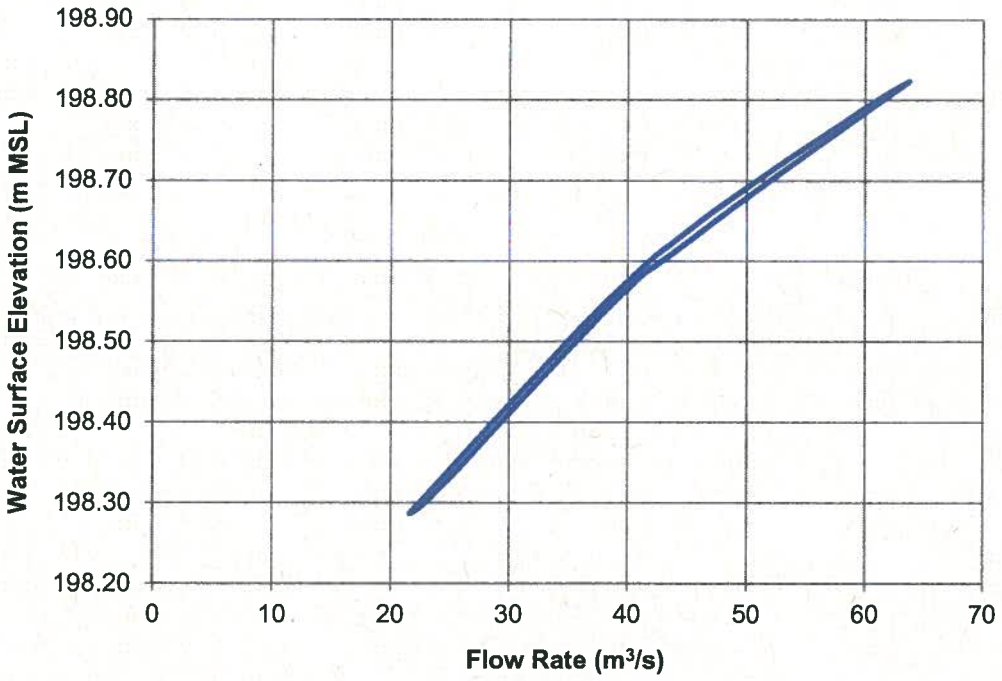


Figure 12: Sta -3+261 - November Daily Operation Rating Curve

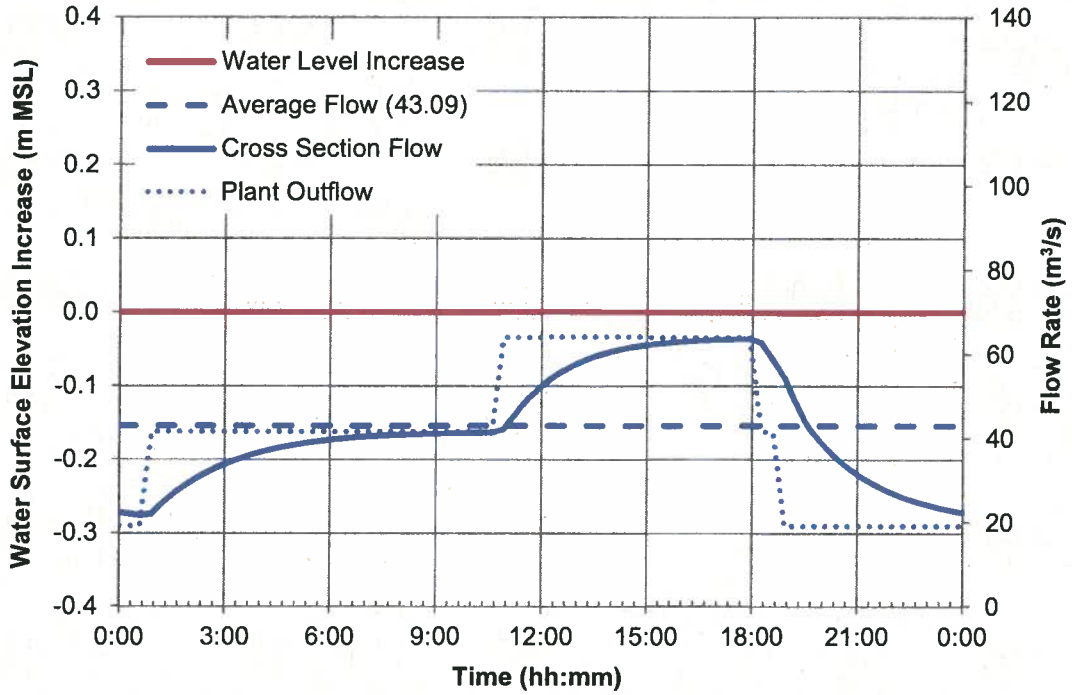


Figure 13: Sta -5+068- November Daily Operation Flow and Stage Hydrograph

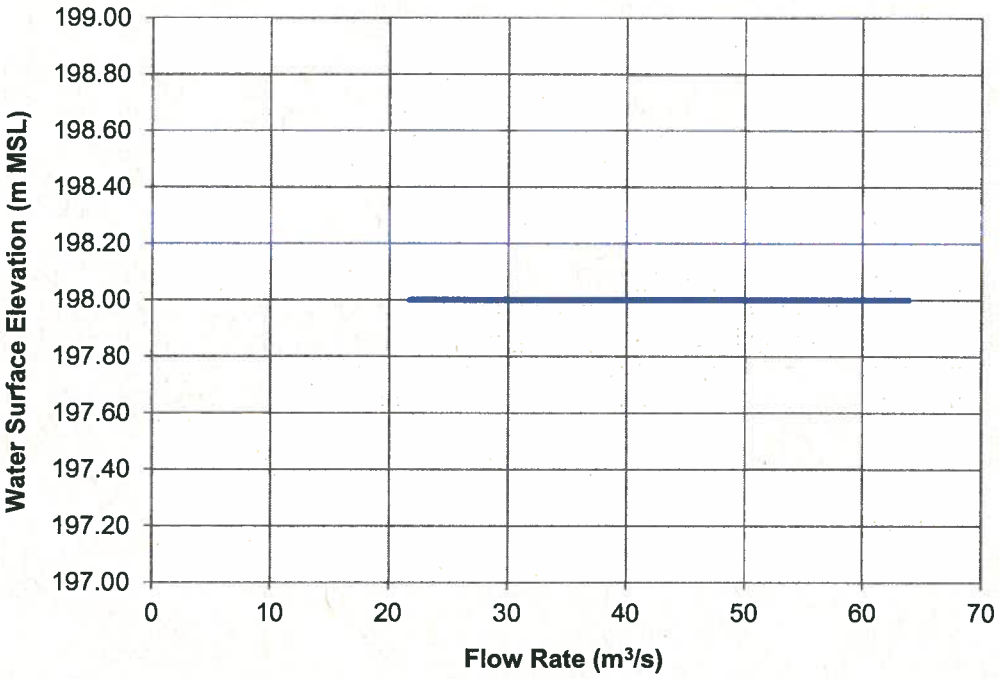


Figure 14: Sta -5+068 - November Daily Operation Rating Curve

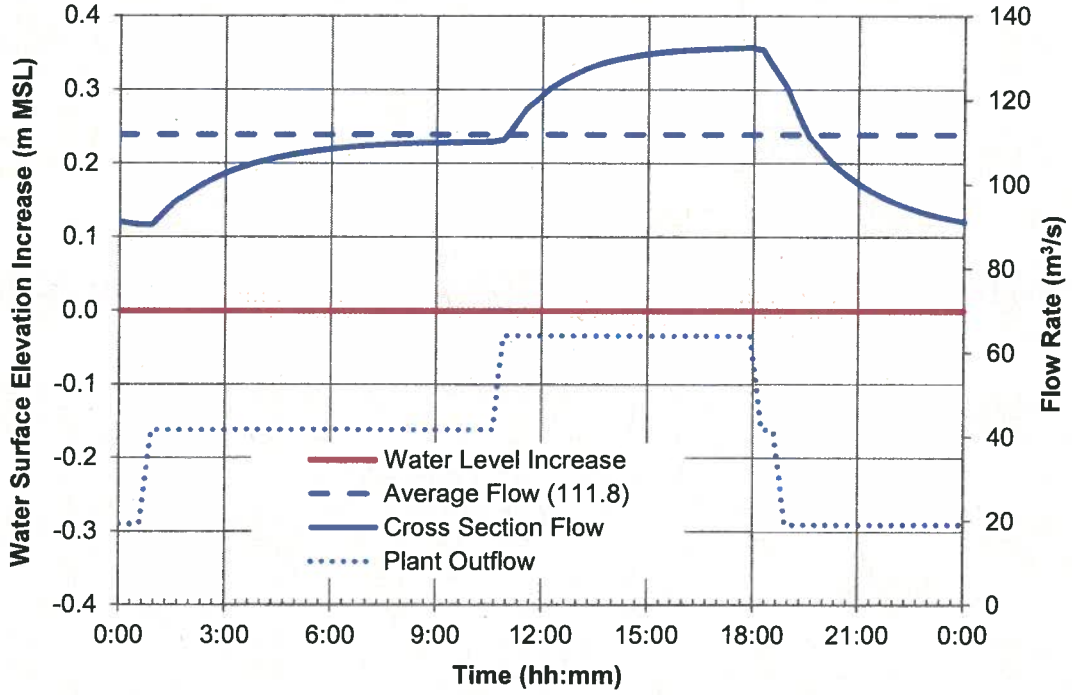


Figure 15: Sta -10+369 - November Daily Operation Flow and Stage Hydrograph

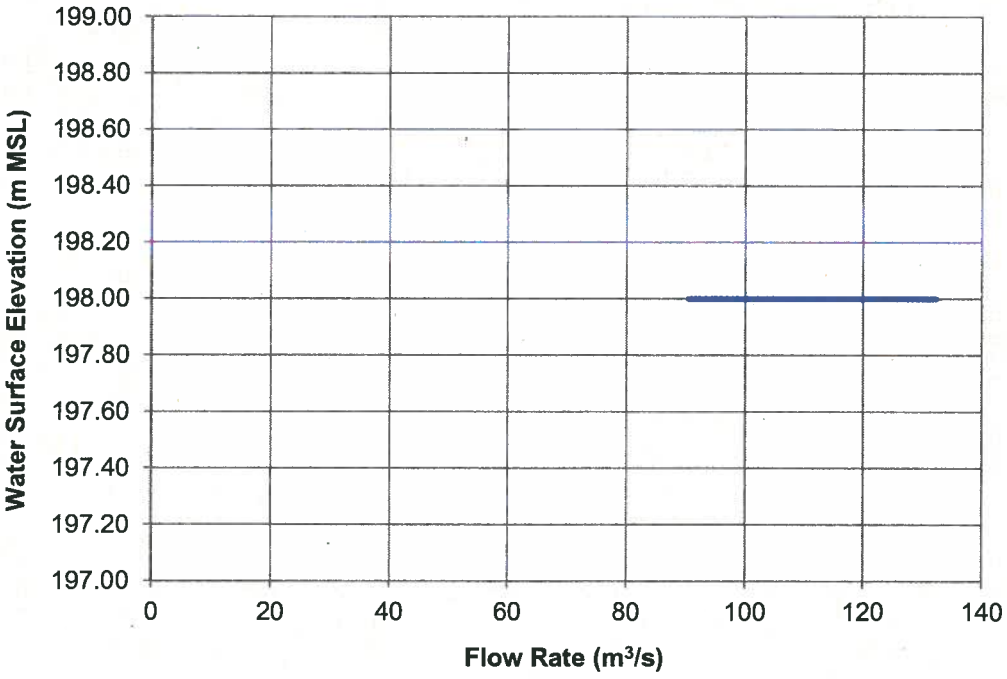


Figure 16: Sta -10+369 - November Daily Operation Rating Curve

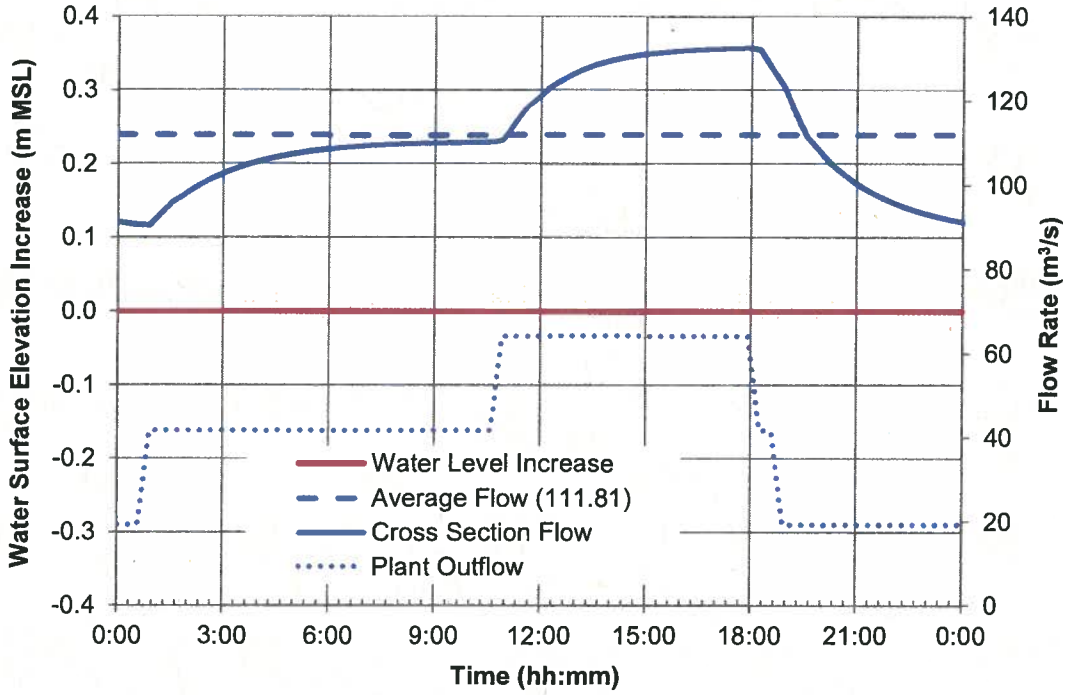


Figure 17: Sta -12+265- November Daily Operation Flow and Stage Hydrograph

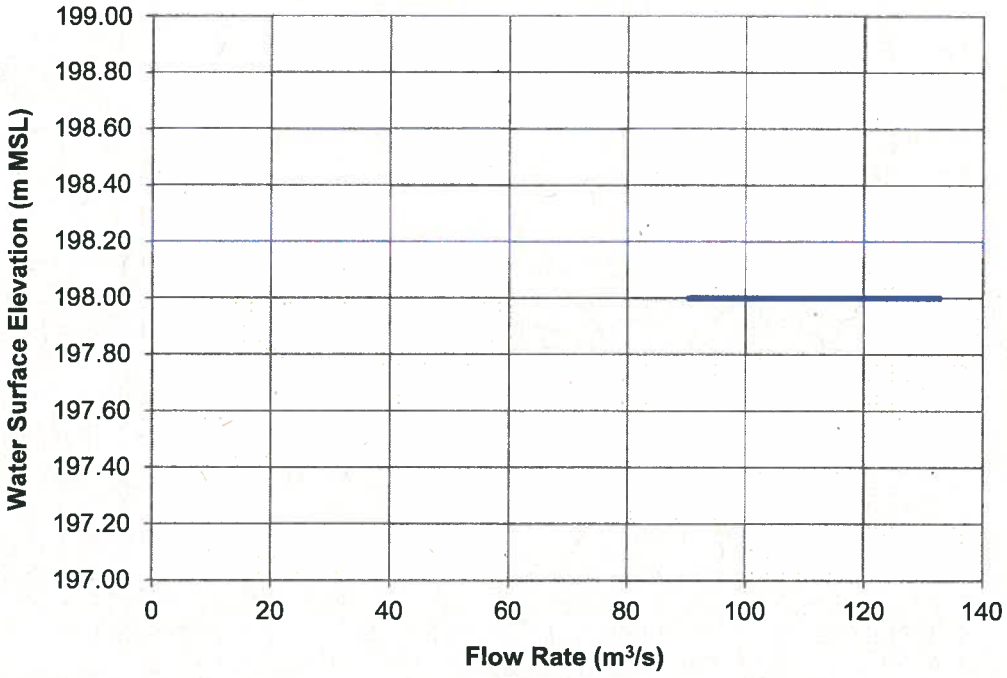


Figure 18: Sta -12+265 - November Daily Operation Rating Curve

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix D

Appendix D

February Daily Operation:

Downstream Boundary Condition:

Constant Water Surface Elevation

Flow and Stage Hydrographs and

Rating Curves

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix D

Contents

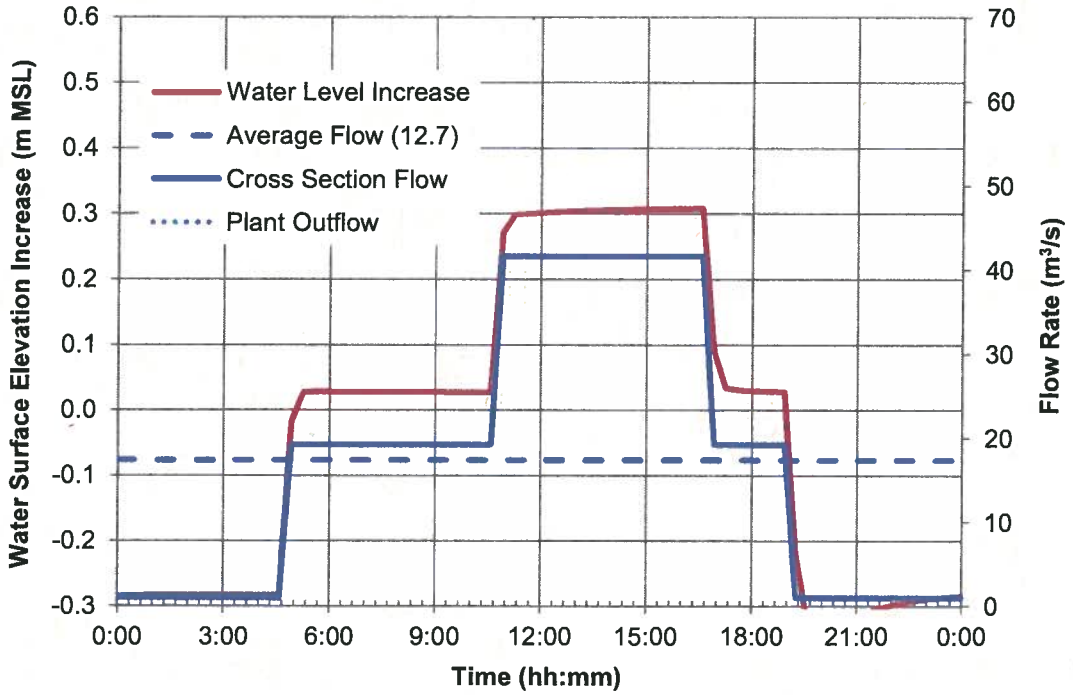


Figure 1: Sta 0+255 - February Daily Operation Flow and Stage Hydrograph

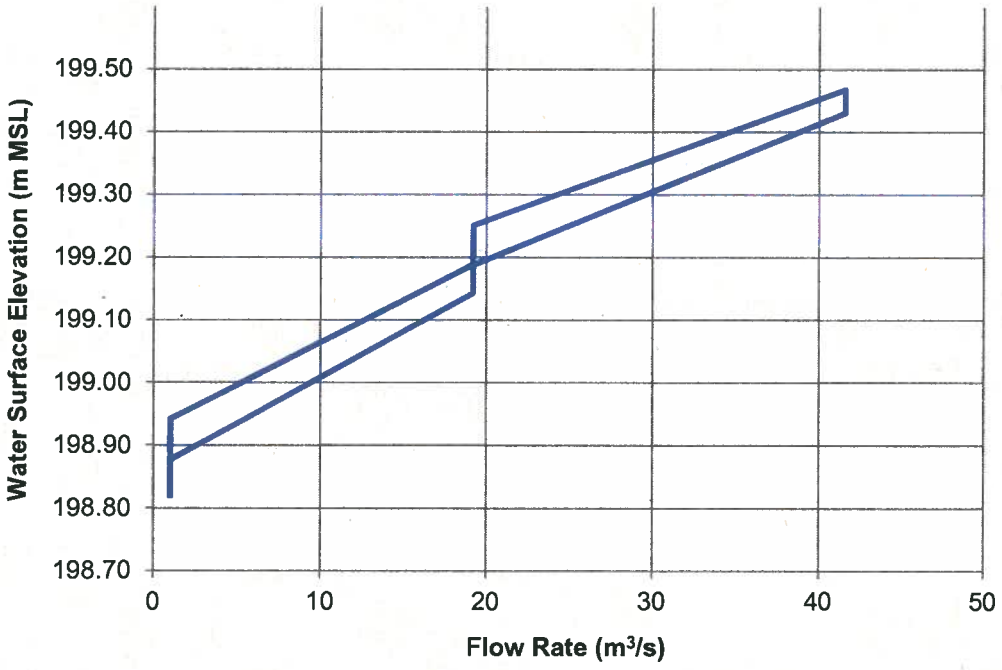


Figure 2: Sta 0+255 - February Daily Operation Rating Curve

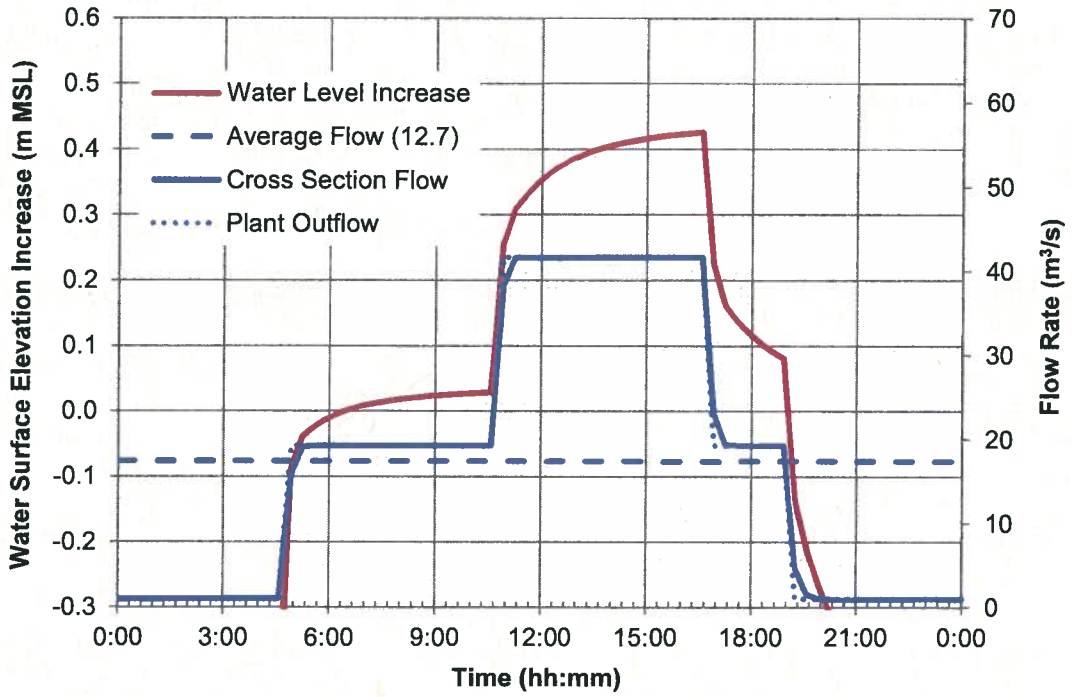


Figure 3: Sta 0+000 - February Daily Operation Flow and Stage Hydrograph

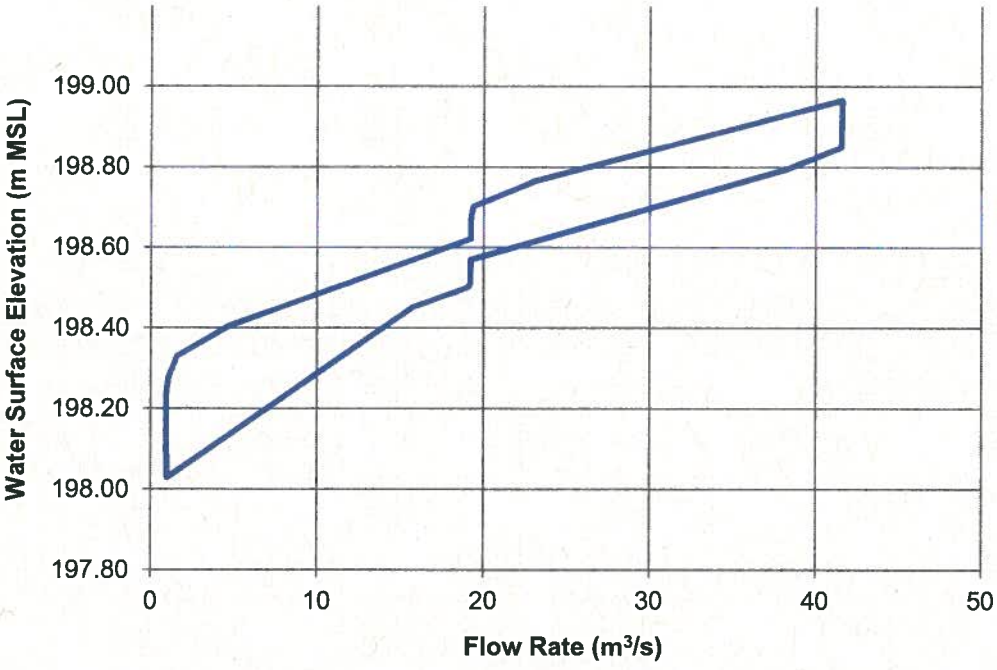


Figure 4: Sta 0+000 - February Daily Operation Rating Curve

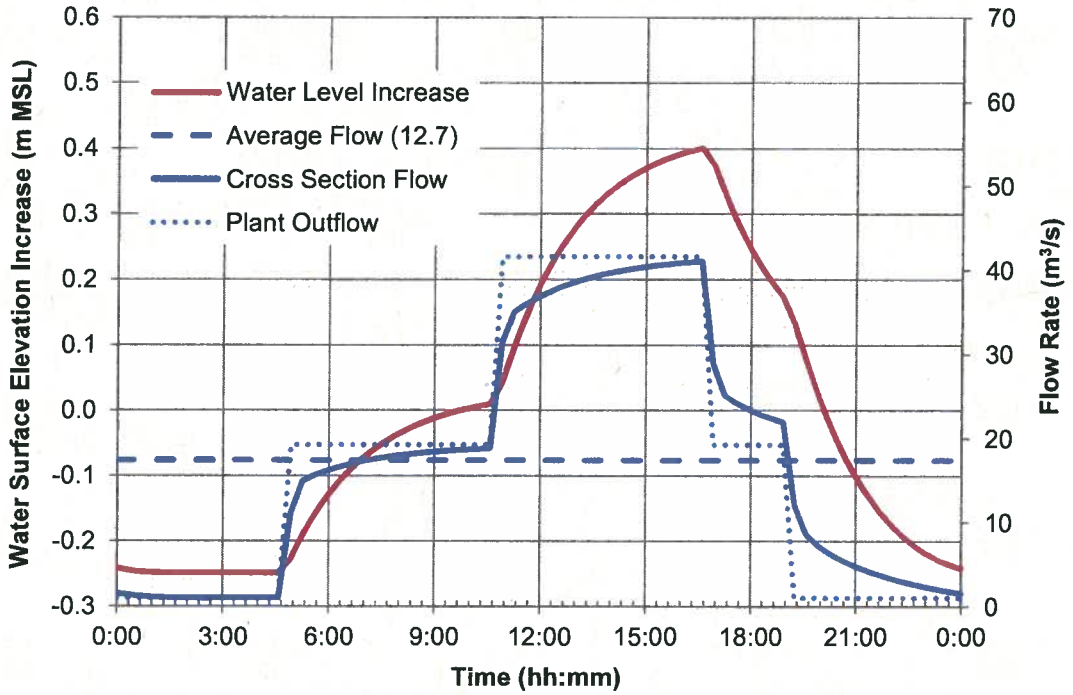


Figure 5: Sta -0+462 - February Daily Operation Flow and Stage Hydrograph

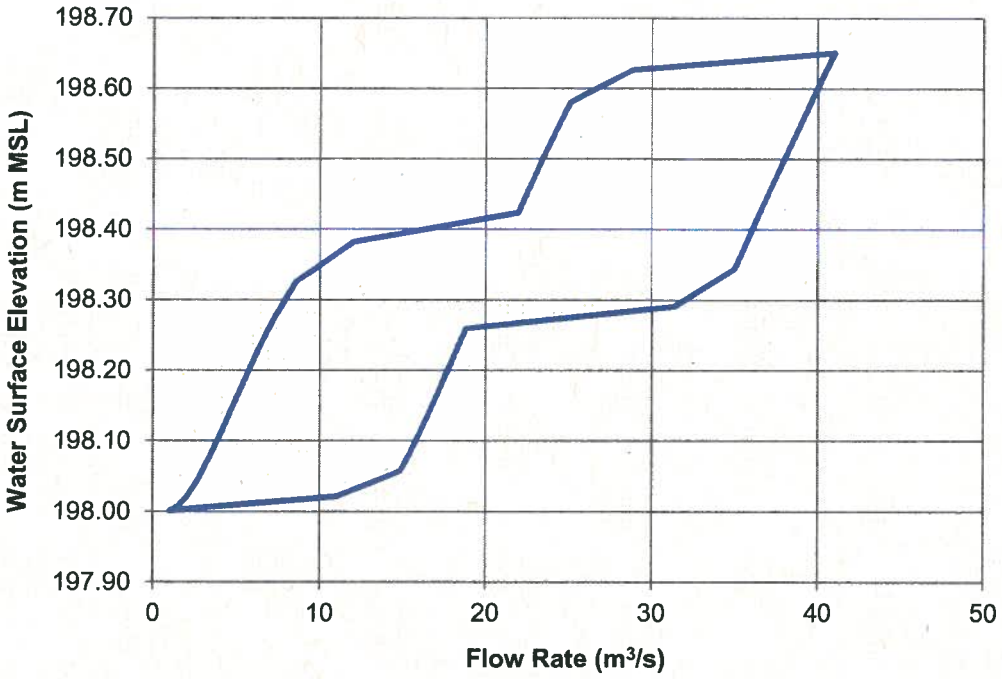


Figure 6: Sta -0+462 - February Daily Operation Rating Curve

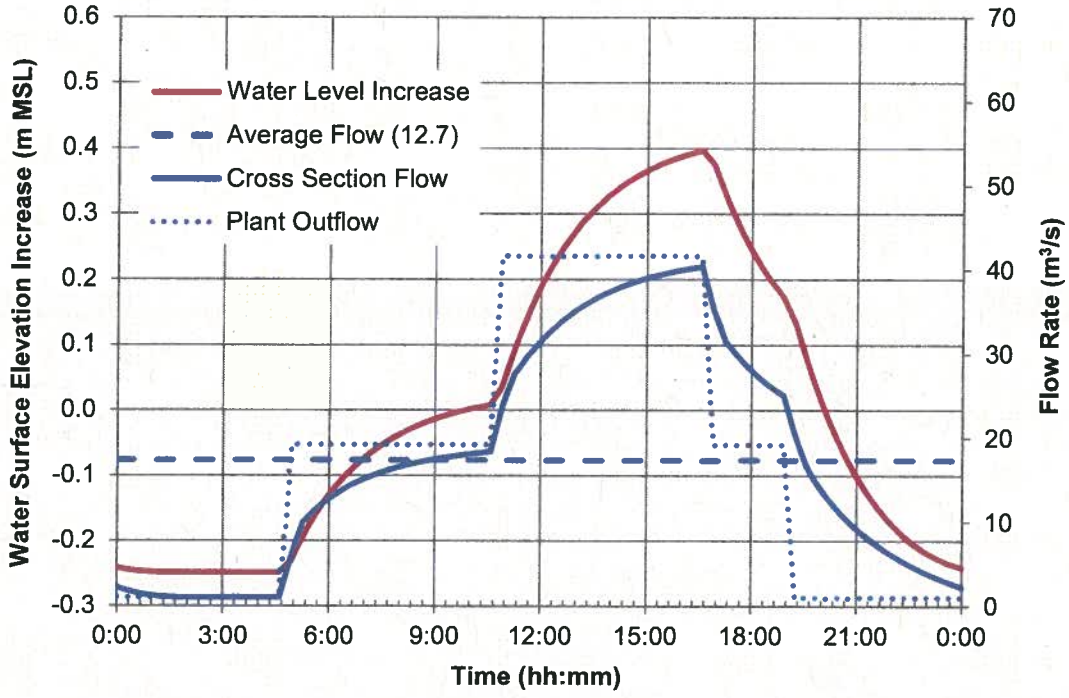


Figure 7: Sta -1+452 - February Daily Operation Flow and Stage Hydrograph

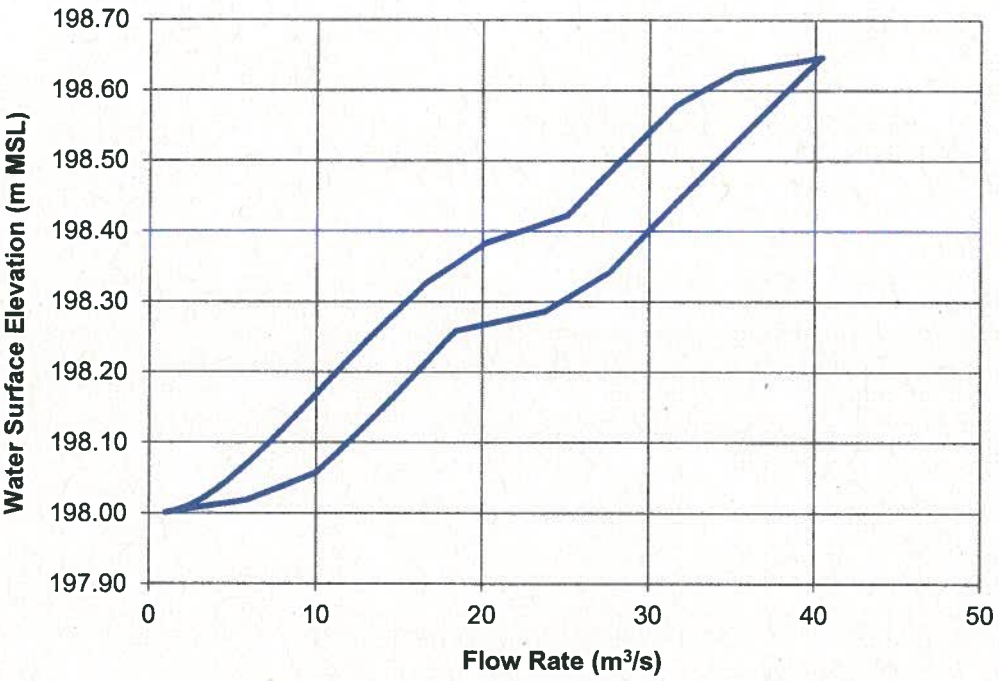


Figure 8: Sta -1+452 - February Daily Operation Rating Curve

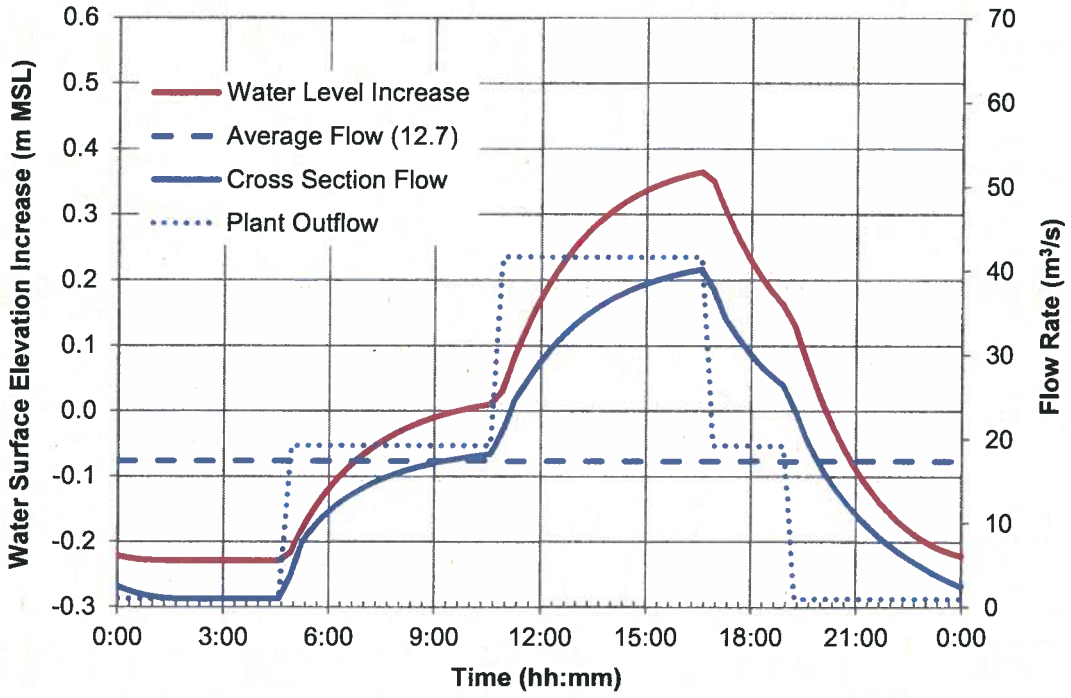


Figure 9: Sta -2+478 - February Daily Operation Flow and Stage Hydrograph

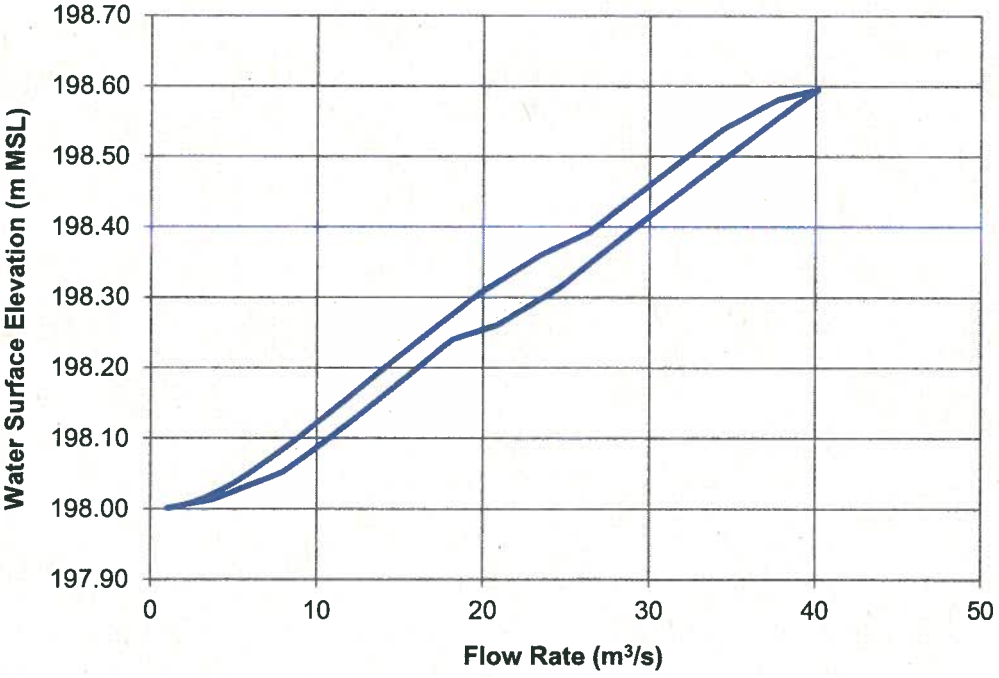


Figure 10: Sta -2+478 - February Daily Operation Rating Curve

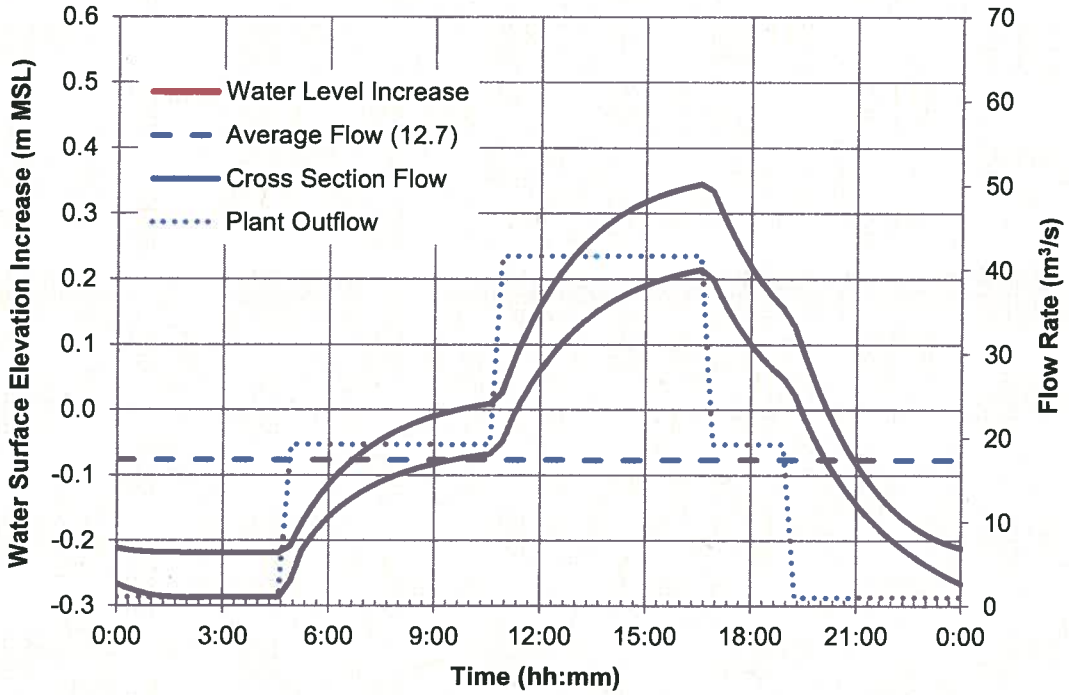


Figure 11: Sta -3+261 - February Daily Operation Flow and Stage Hydrograph

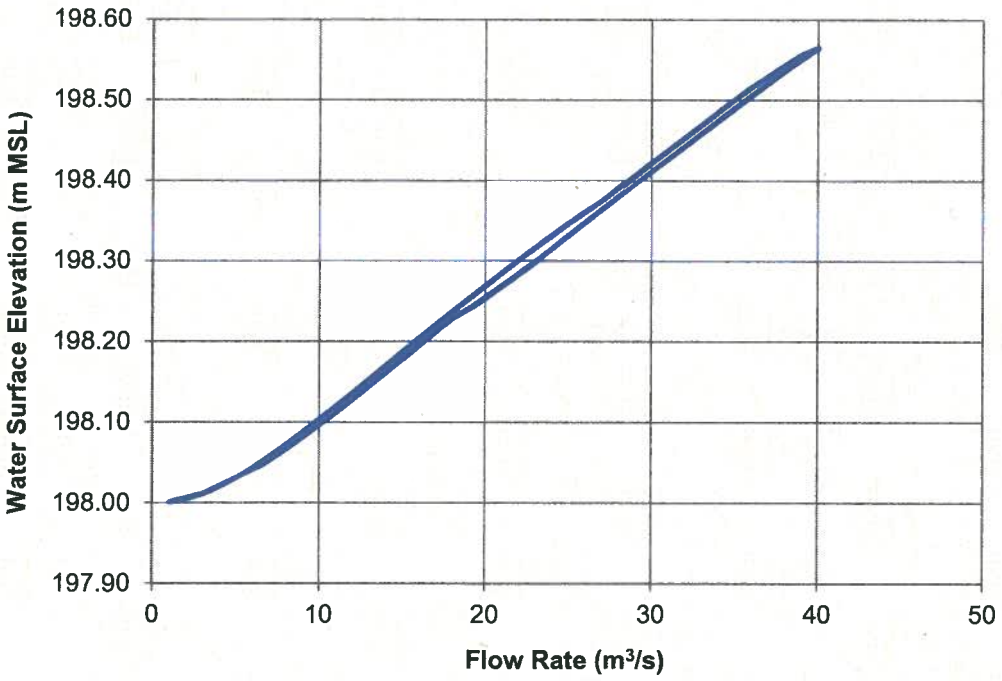


Figure 12: Sta -3+261 - February Daily Operation Rating Curve

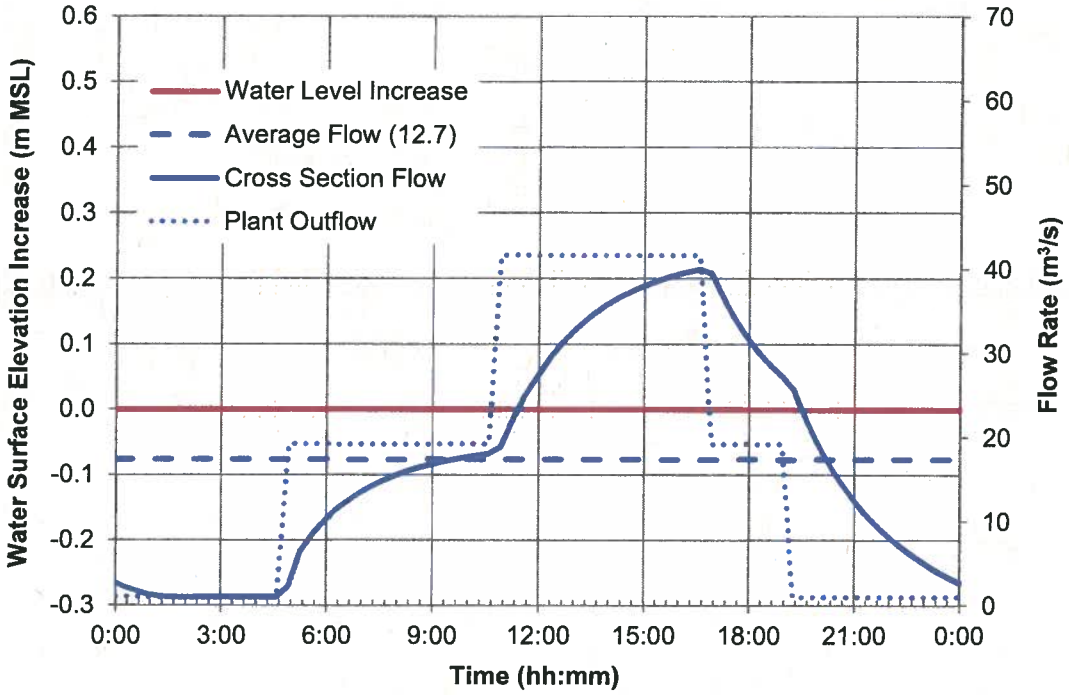


Figure 13: Sta -5+068- February Daily Operation Flow and Stage Hydrograph

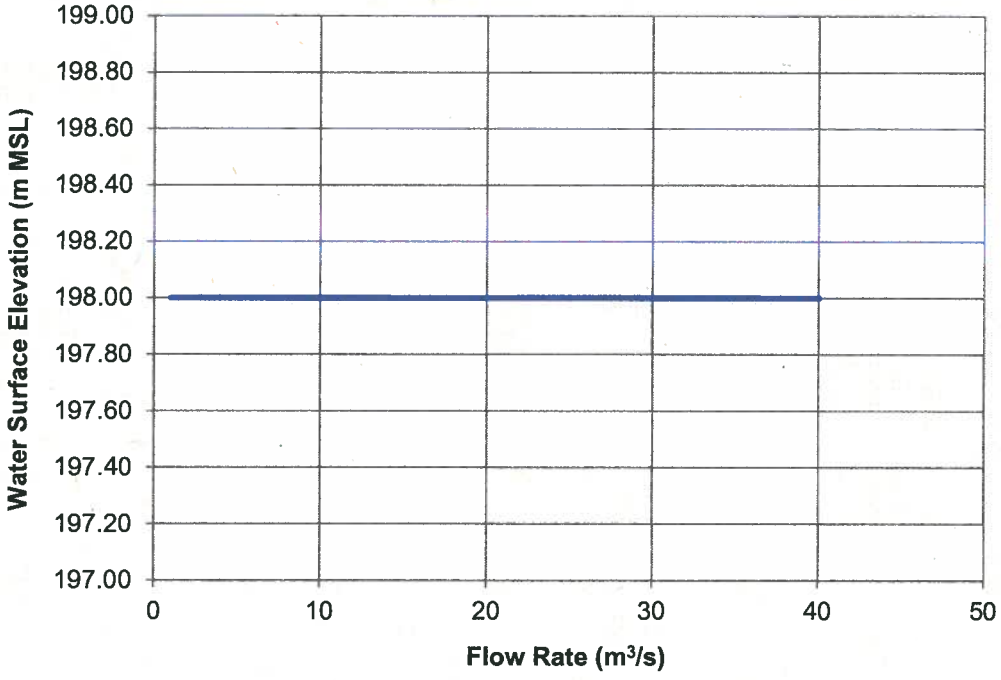


Figure 14: Sta -5+068 - February Daily Operation Rating Curve

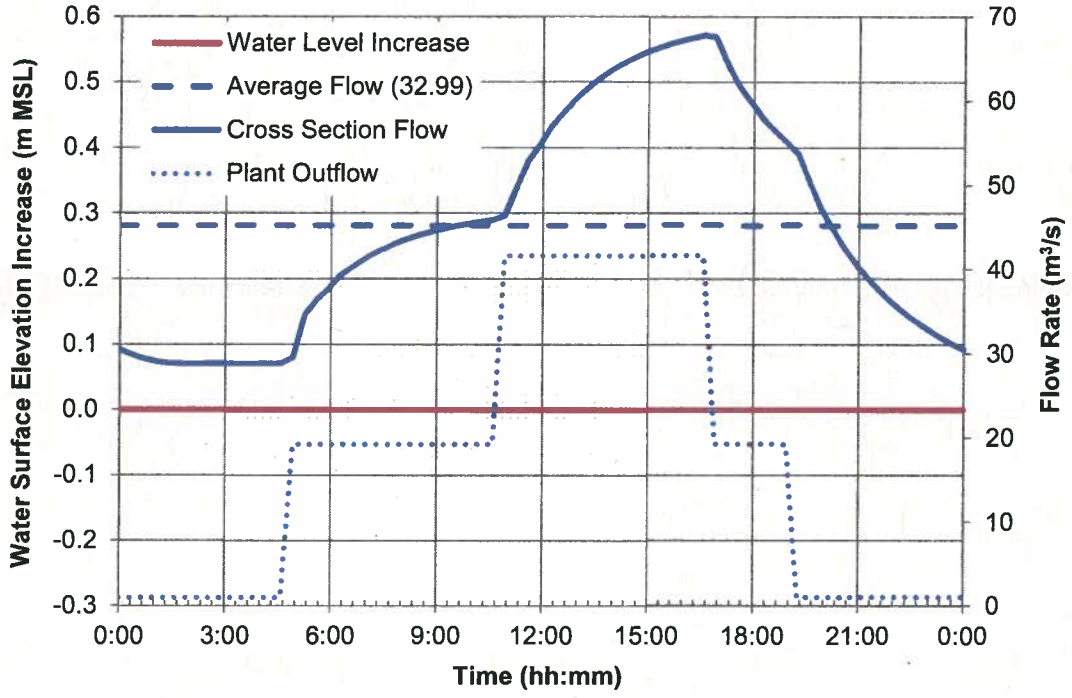


Figure 15: Sta -10+369 - February Daily Operation Flow and Stage Hydrograph

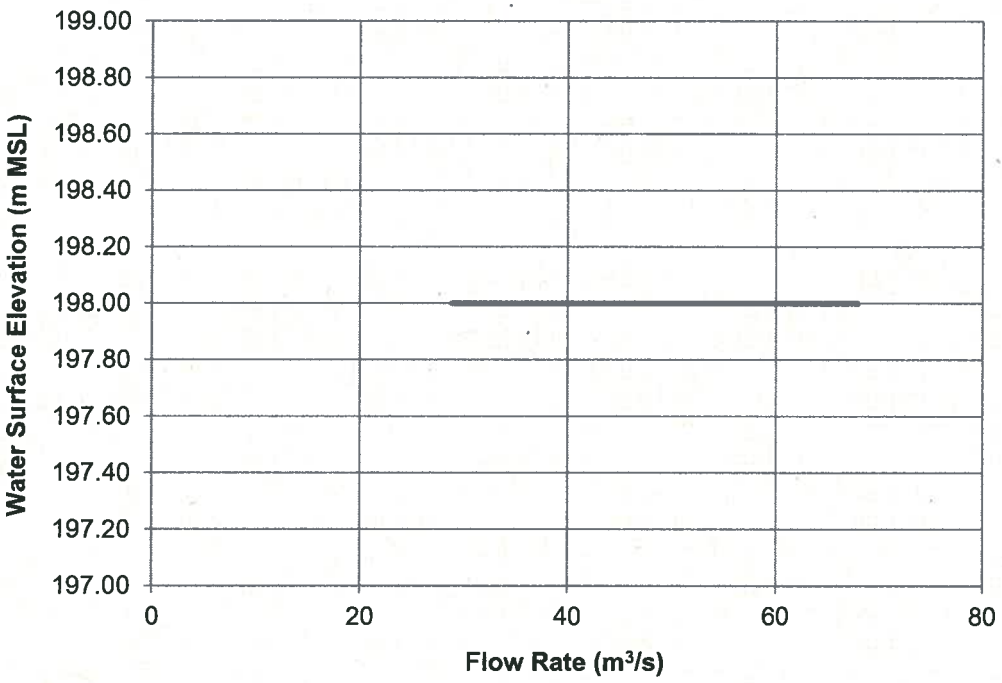


Figure 16: Sta -10+369 - February Daily Operation Rating Curve

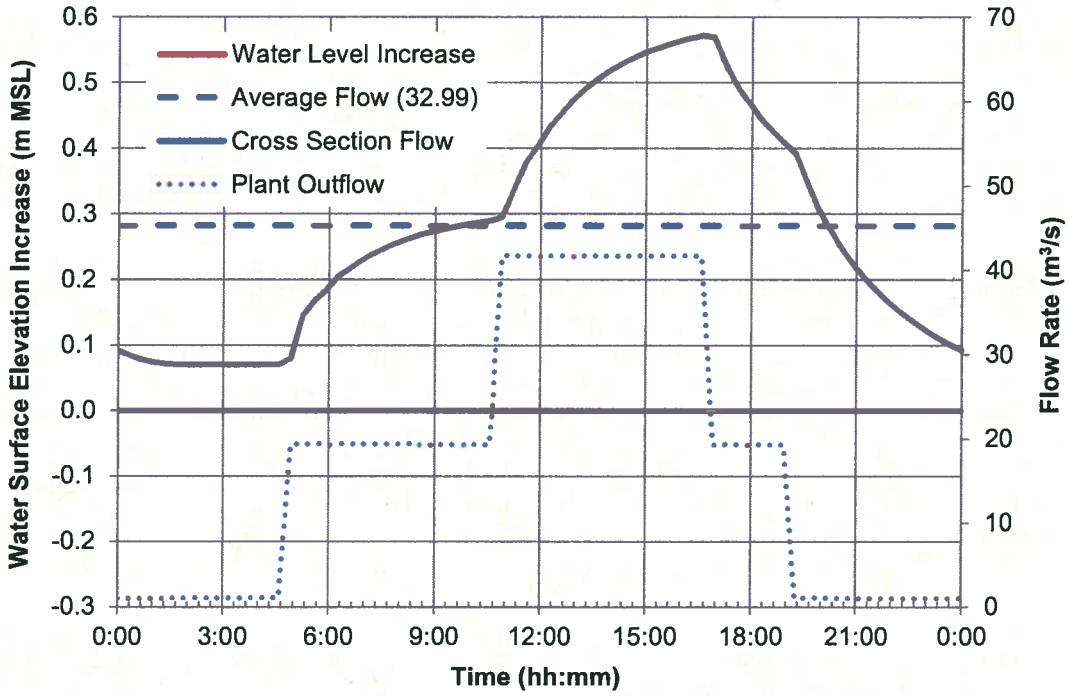


Figure 17: Sta -12+265- February Daily Operation Flow and Stage Hydrograph

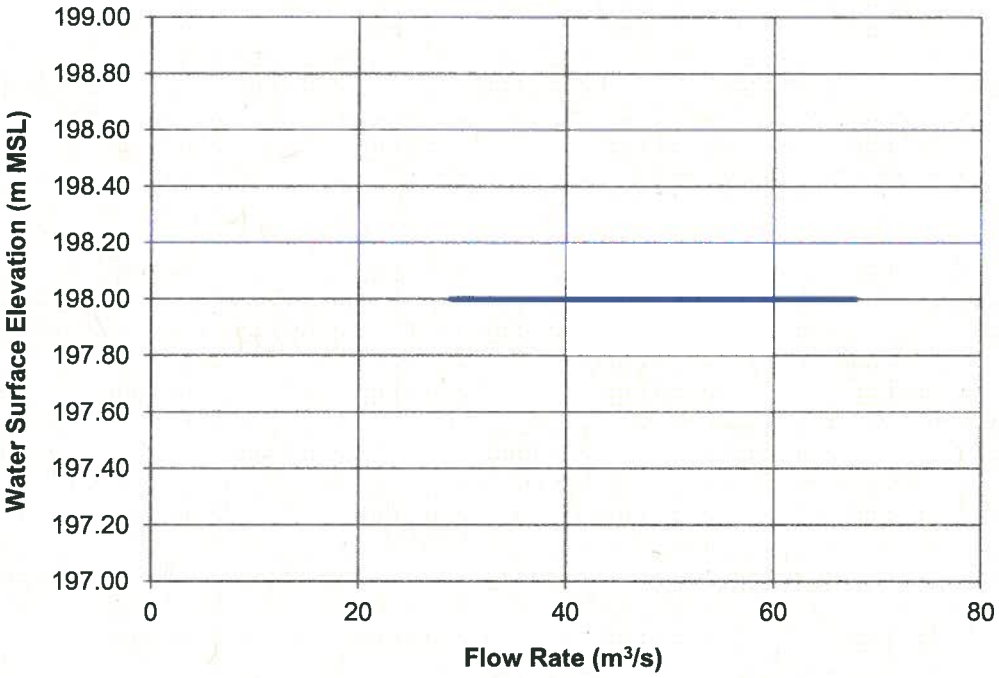


Figure 18: Sta -12+265 - February Daily Operation Rating Curve

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix E

Appendix E

August Daily Operation:

Downstream Boundary Condition:

Constant Flow Hydrograph

Flow and Stage Hydrographs and

Rating Curves

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix E

Contents

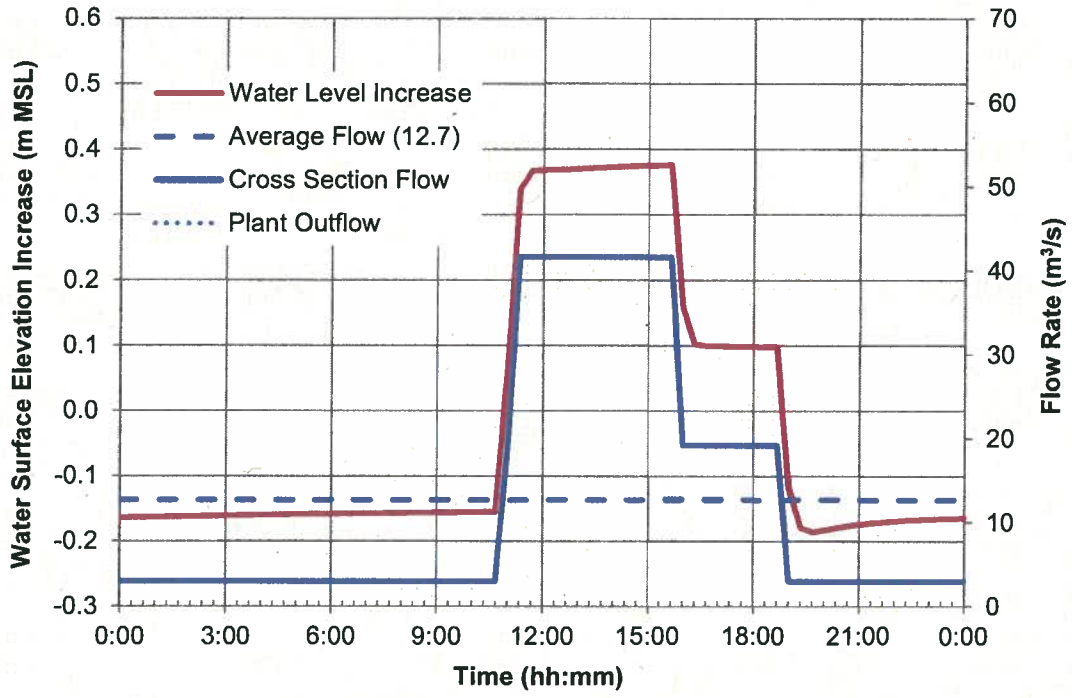


Figure 1: Sta 0+255 - August Daily Operation Flow and Stage Hydrograph

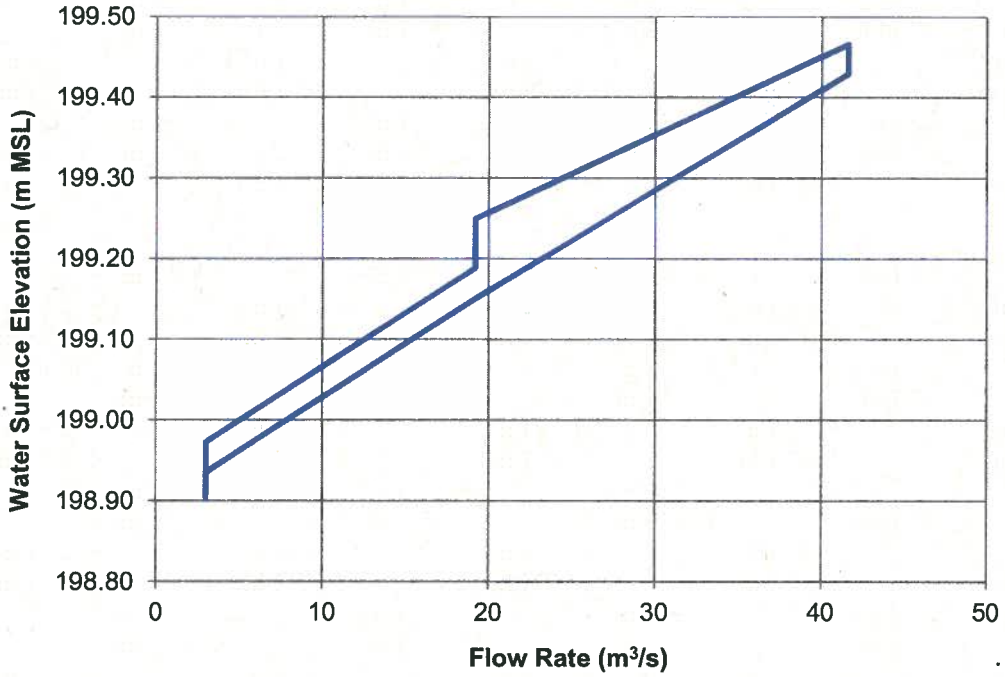


Figure 2: Sta 0+255 - August Daily Operation Rating Curve

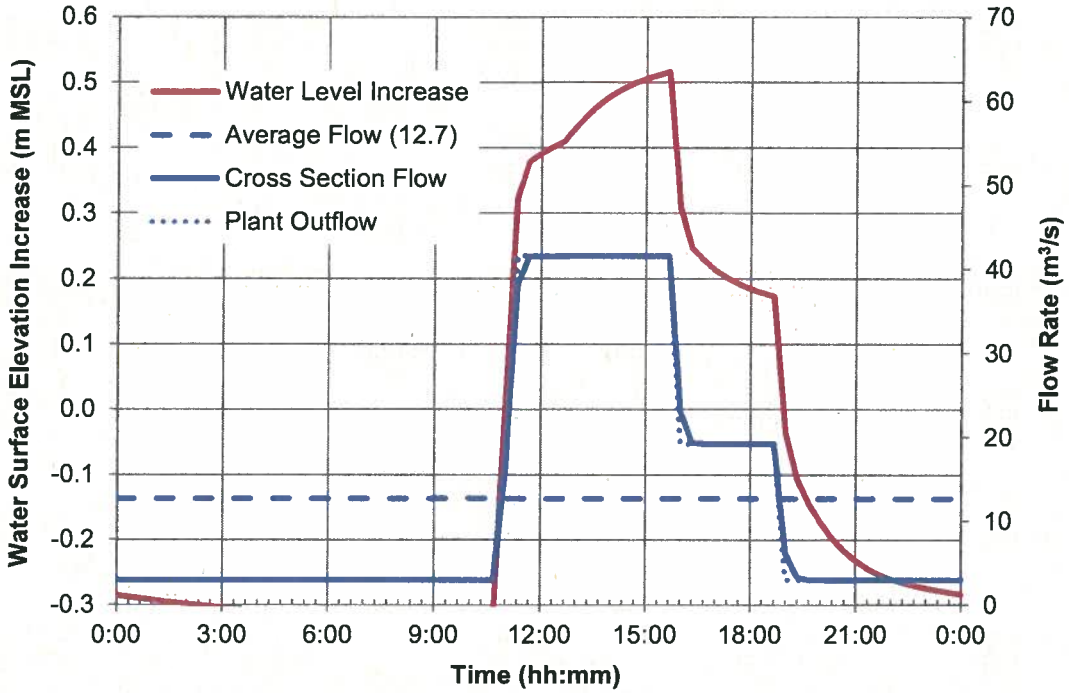


Figure 3: Sta 0+000 - August Daily Operation Flow and Stage Hydrograph

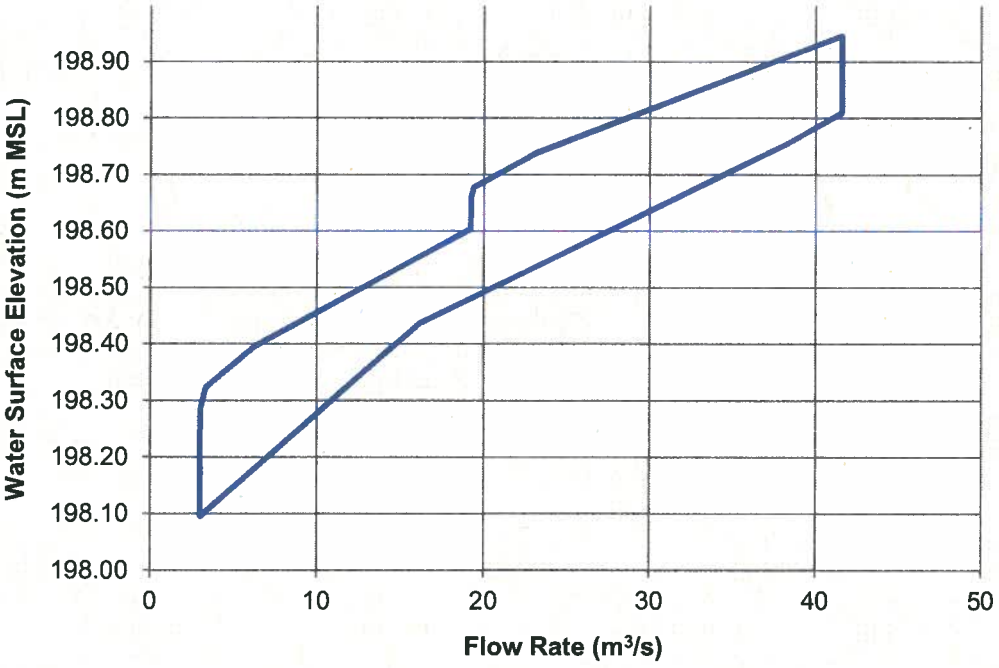


Figure 4: Sta 0+000 - August Daily Operation Rating Curve

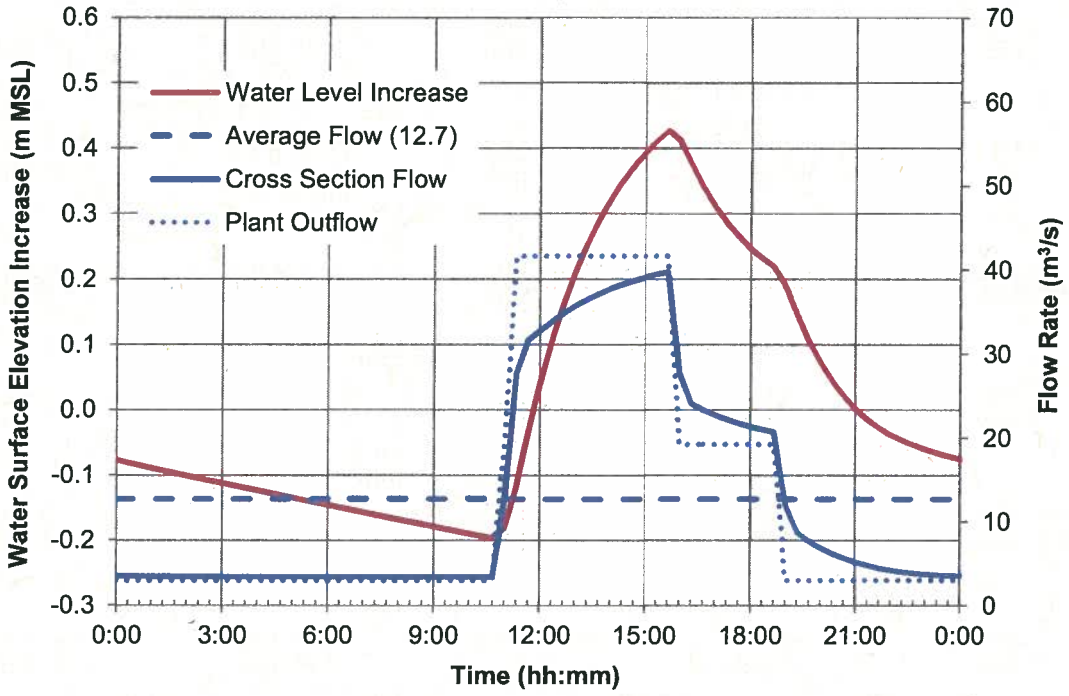


Figure 5: Sta -0+462 - August Daily Operation Flow and Stage Hydrograph

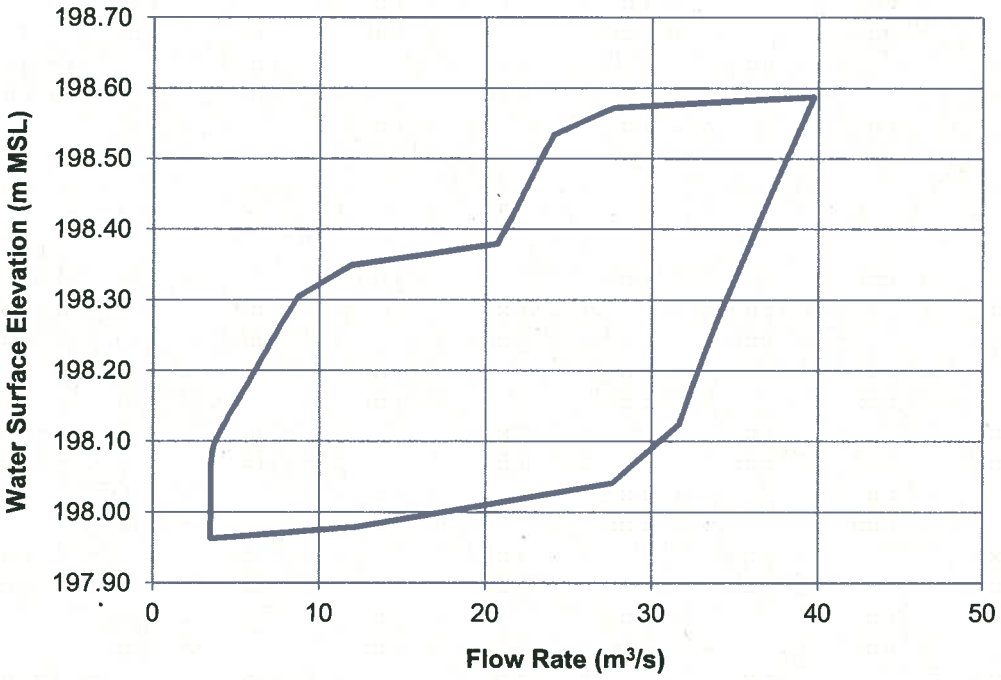


Figure 6: Sta -0+462 - August Daily Operation Rating Curve

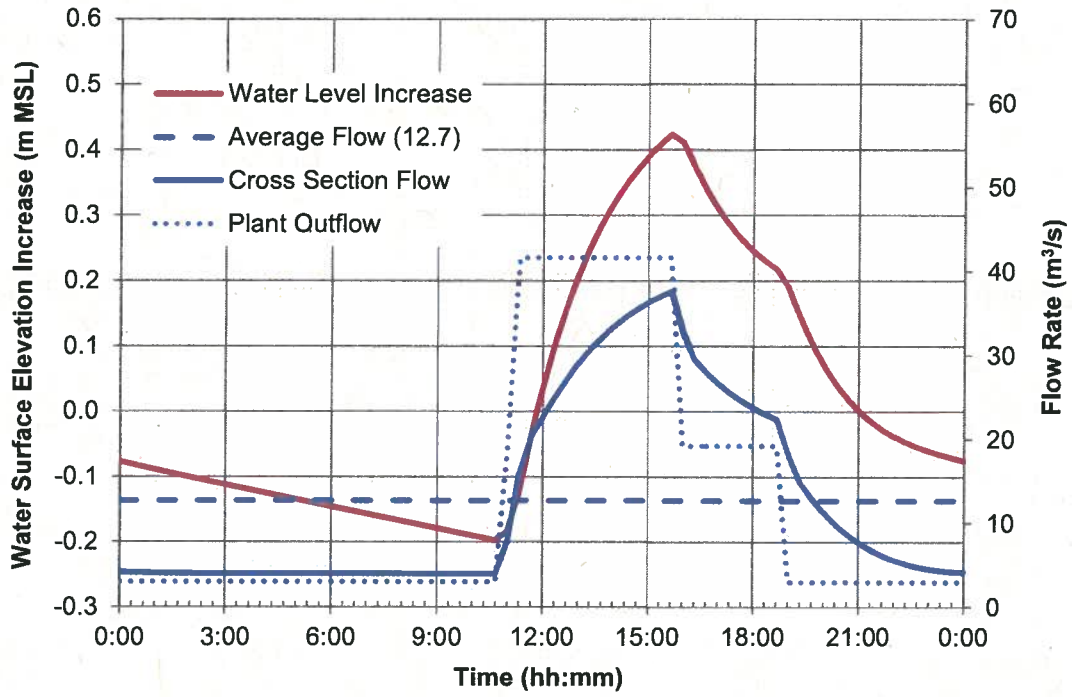


Figure 7: Sta -1+452 - August Daily Operation Flow and Stage Hydrograph

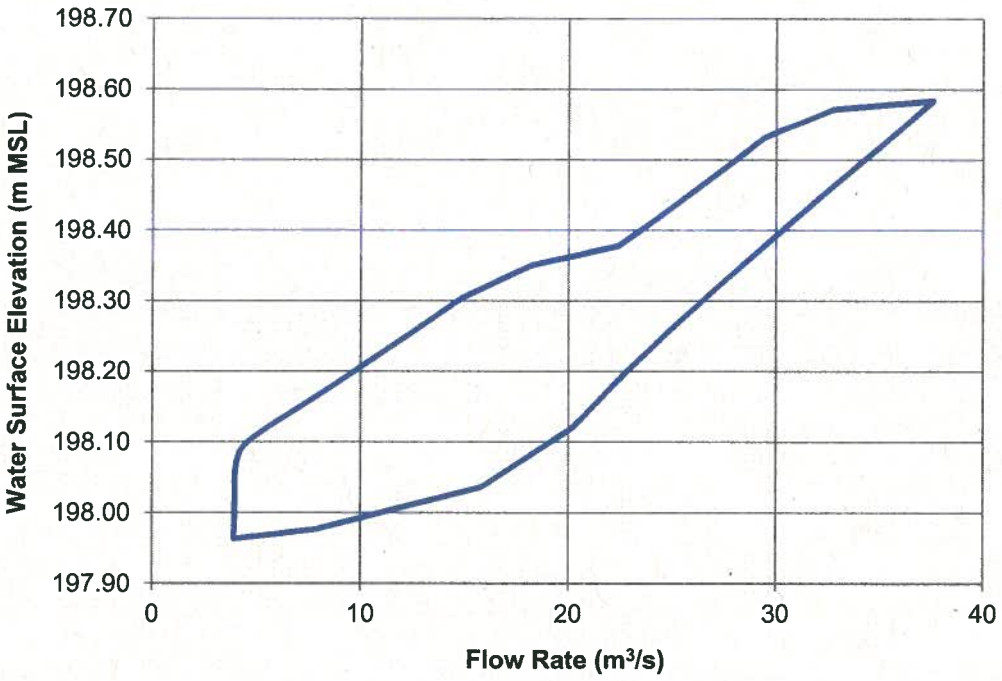


Figure 8: Sta -1+452 - August Daily Operation Rating Curve

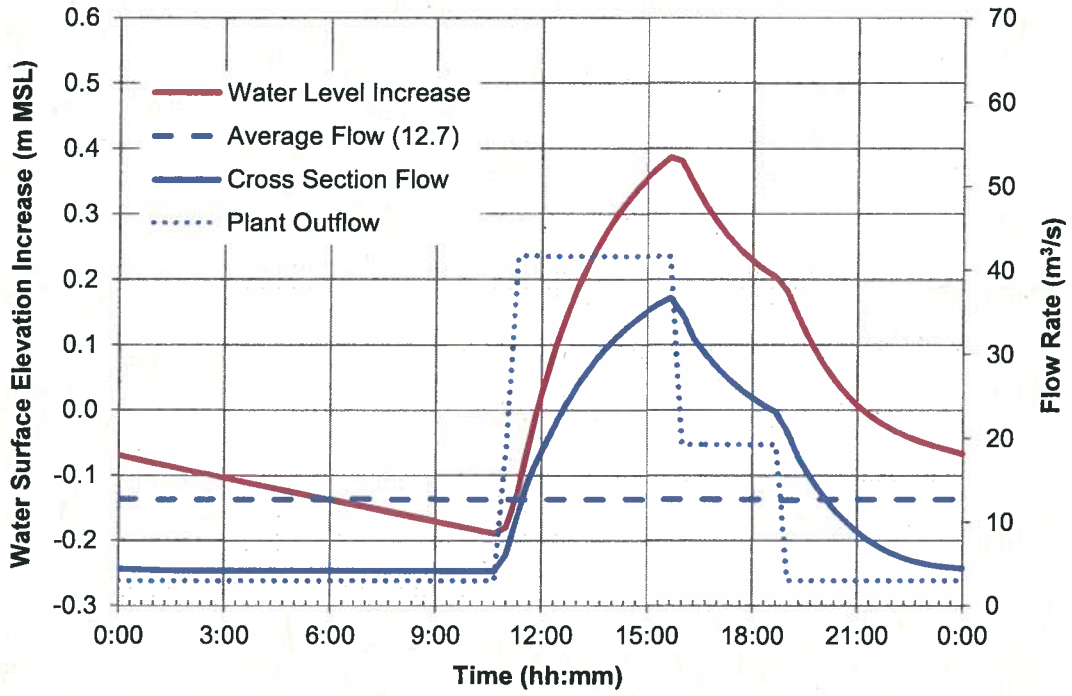


Figure 9: Sta -2+478 - August Daily Operation Flow and Stage Hydrograph

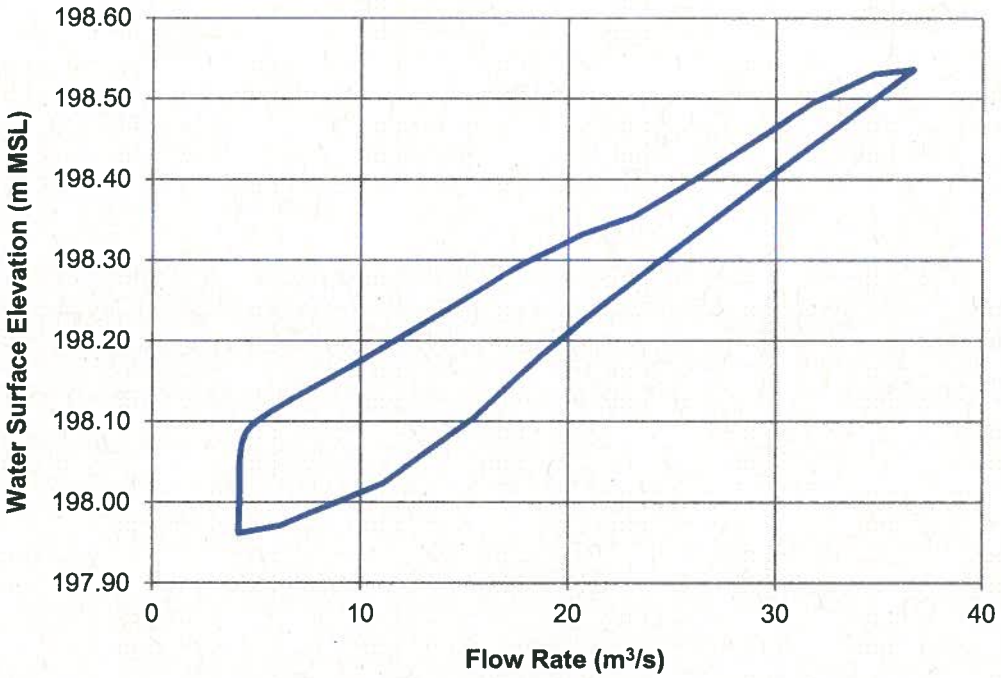


Figure 10: Sta -2+478 - August Daily Operation Rating Curve

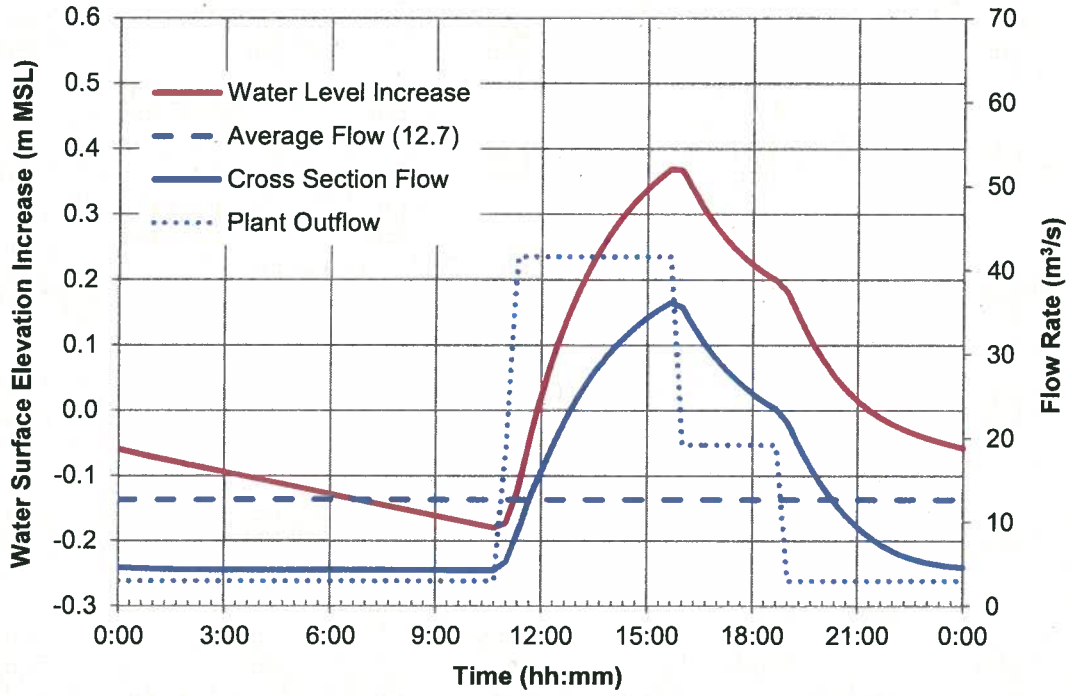


Figure 11: Sta -3+261 - August Daily Operation Flow and Stage Hydrograph

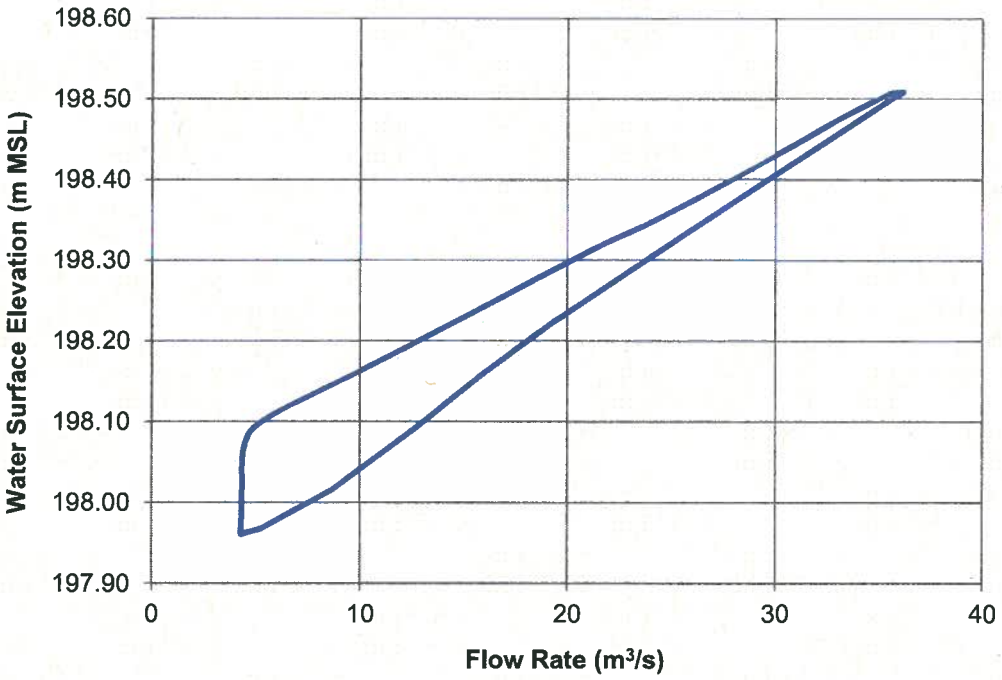


Figure 12: Sta -3+261 - August Daily Operation Rating Curve

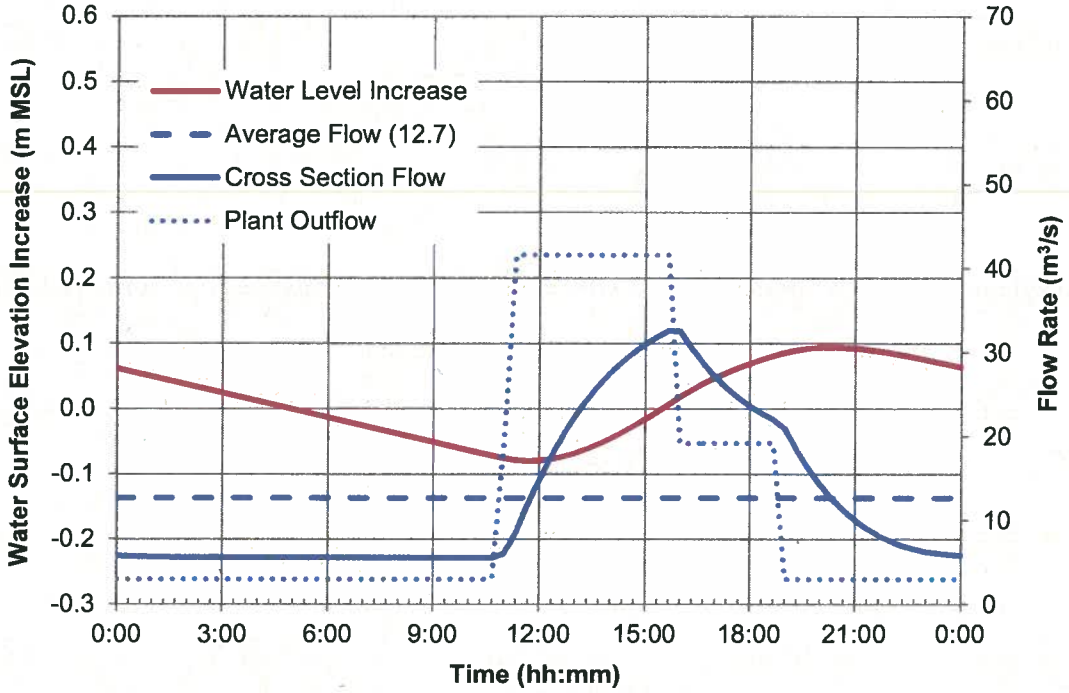


Figure 13: Sta -5+068- August Daily Operation Flow and Stage Hydrograph

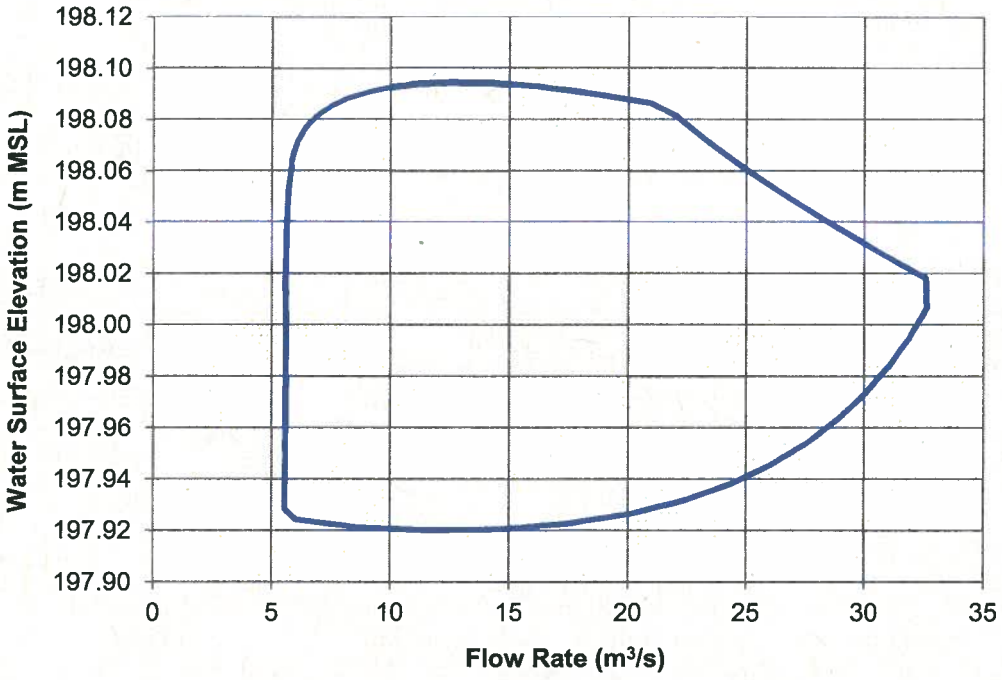


Figure 14: Sta -5+068 - August Daily Operation Rating Curve

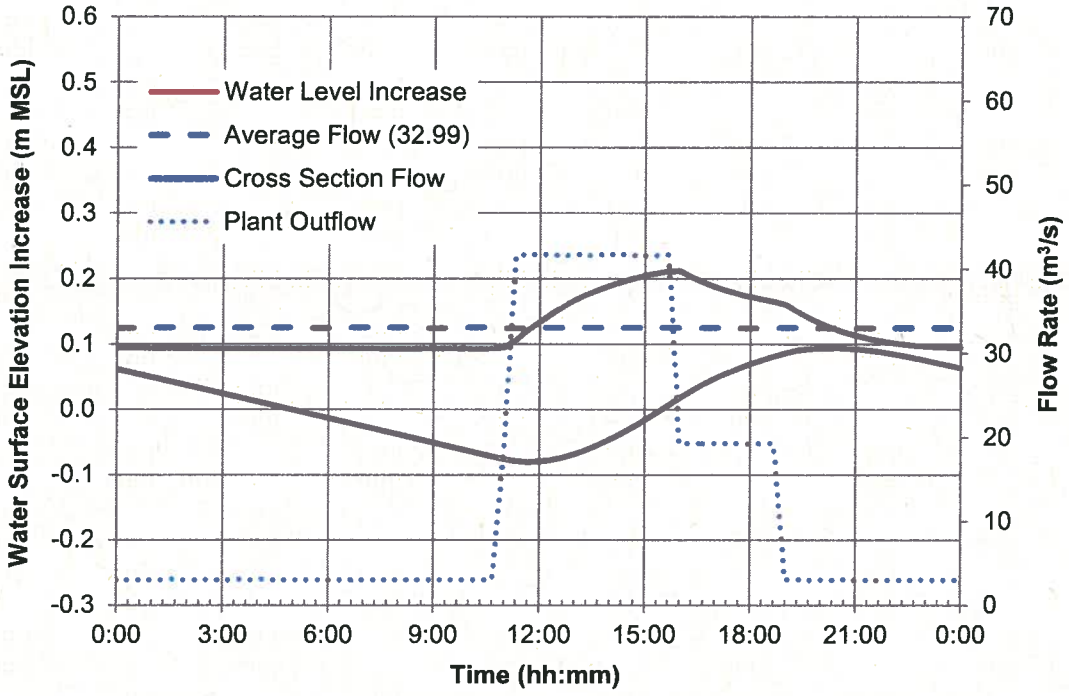


Figure 15: Sta -10+369 - August Daily Operation Flow and Stage Hydrograph

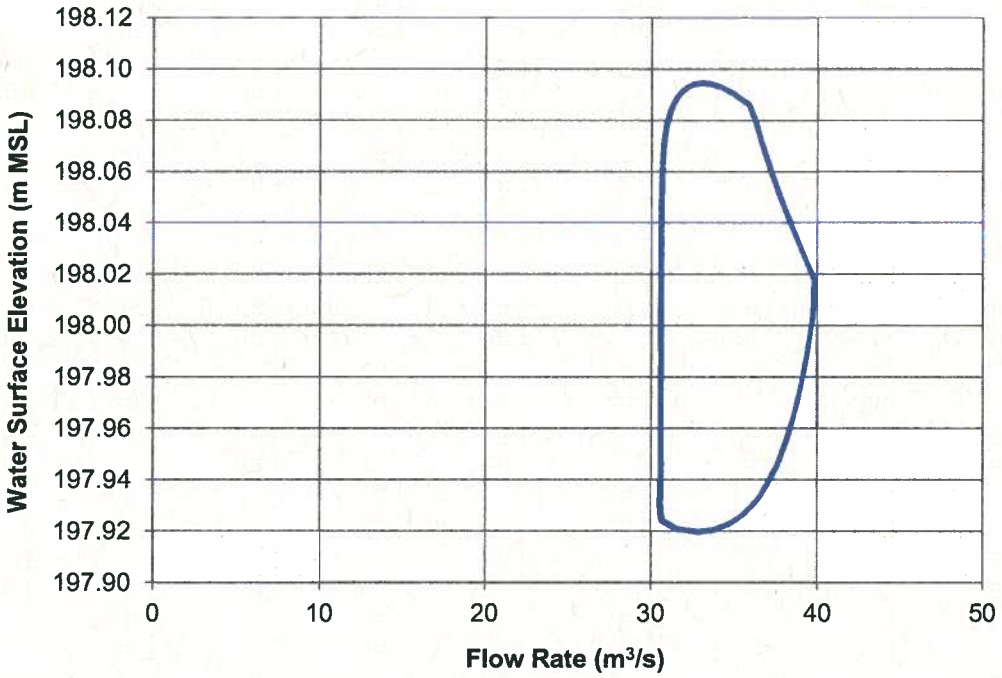


Figure 16: Sta -10+369 - August Daily Operation Rating Curve

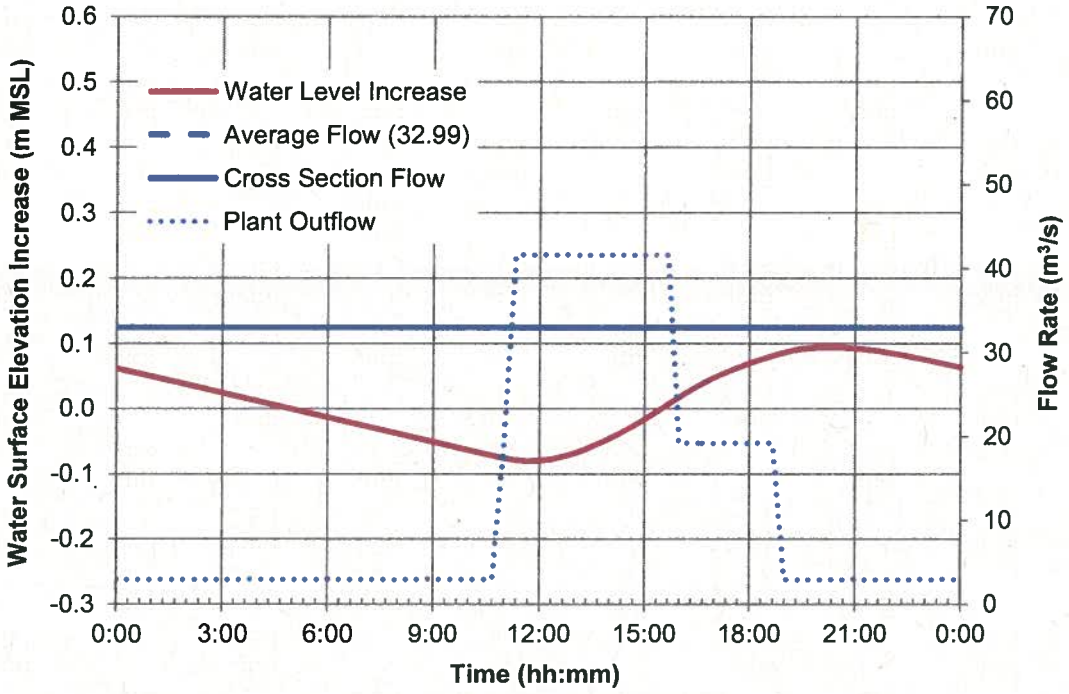


Figure 17: Sta -12+265- August Daily Operation Flow and Stage Hydrograph

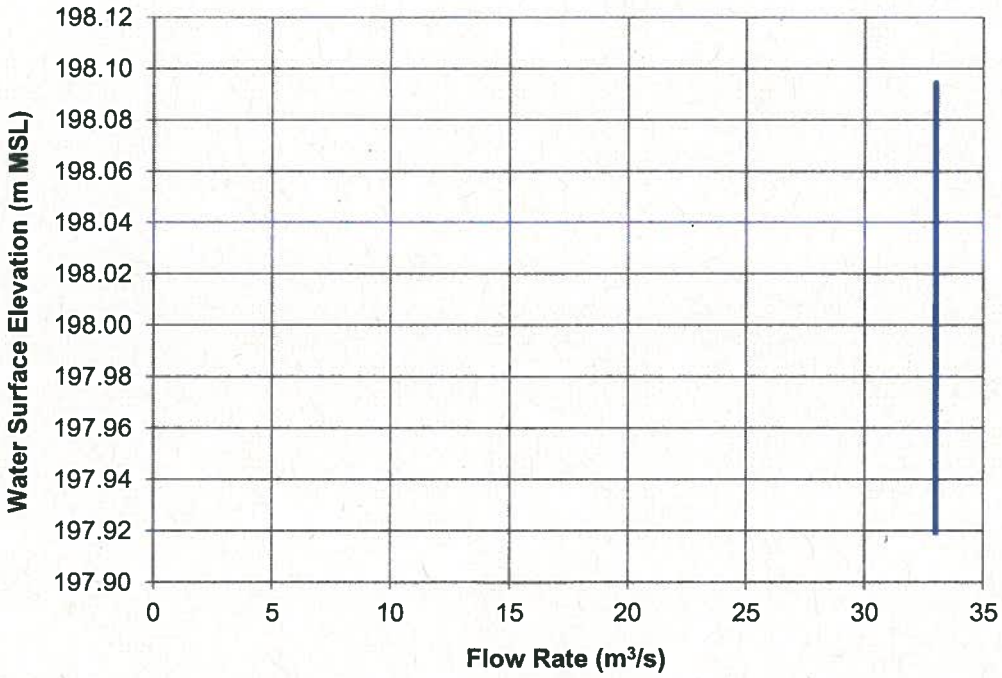


Figure 18: Sta -12+265 - August Daily Operation Rating Curve

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix F

Appendix F

November Daily Operation:

Downstream Boundary Condition:

Constant Flow Hydrograph

Flow and Stage Hydrographs and

Rating Curves

Canadian Projects Limited

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix F

Contents

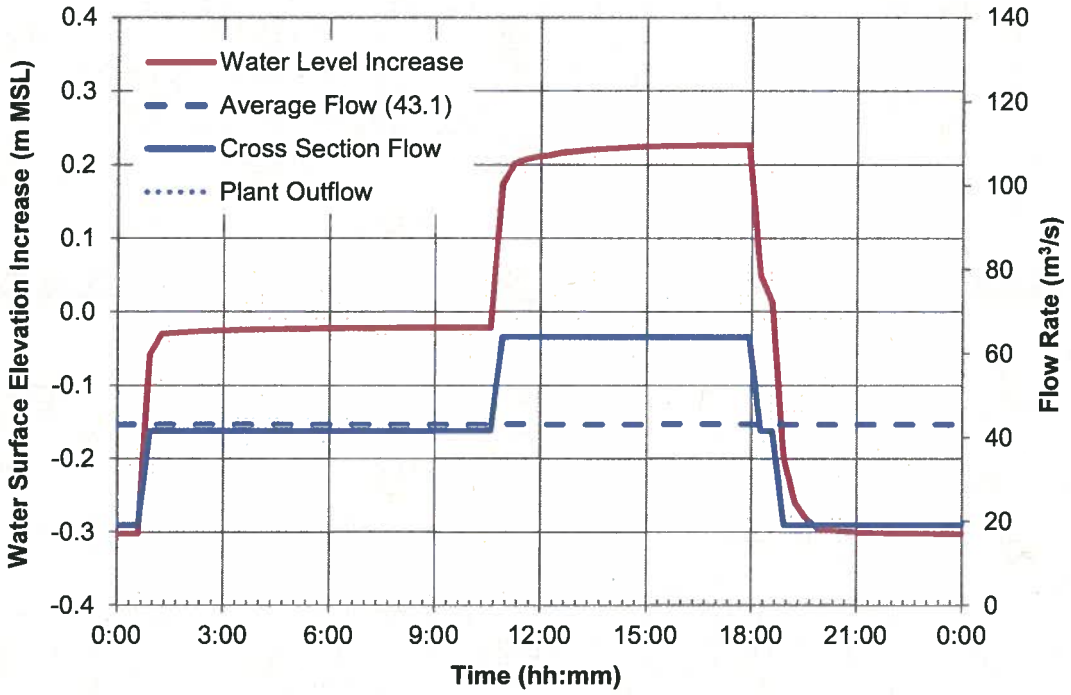


Figure 1: Sta 0+255 - November Daily Operation Flow and Stage Hydrograph

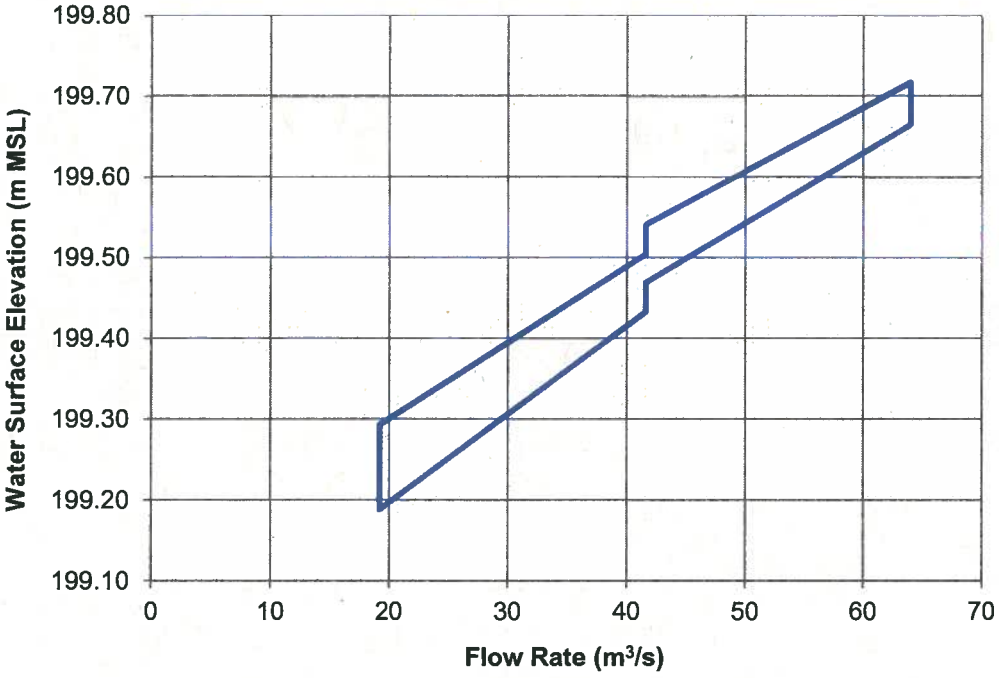


Figure 2: Sta 0+255 - November Daily Operation Rating Curve

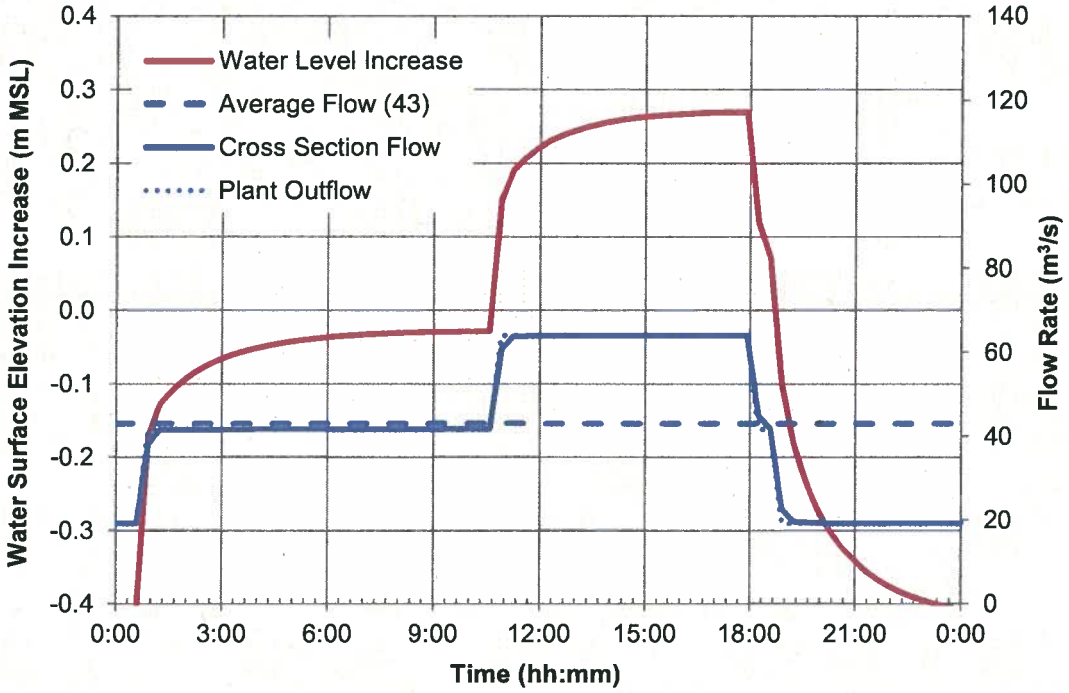


Figure 3: Sta 0+000 - November Daily Operation Flow and Stage Hydrograph

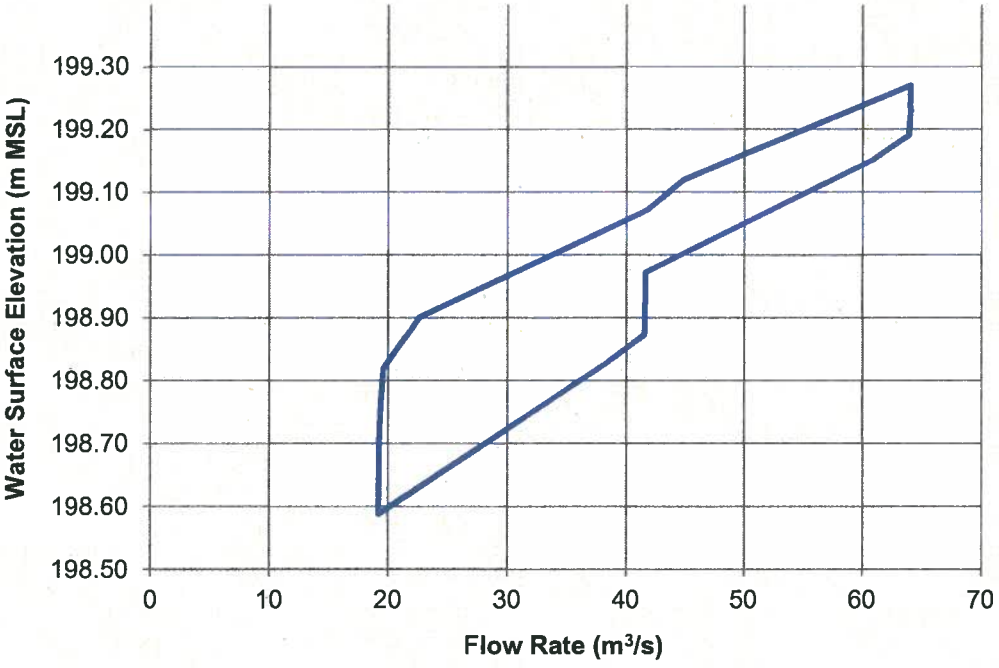


Figure 4: Sta 0+000 - November Daily Operation Rating Curve

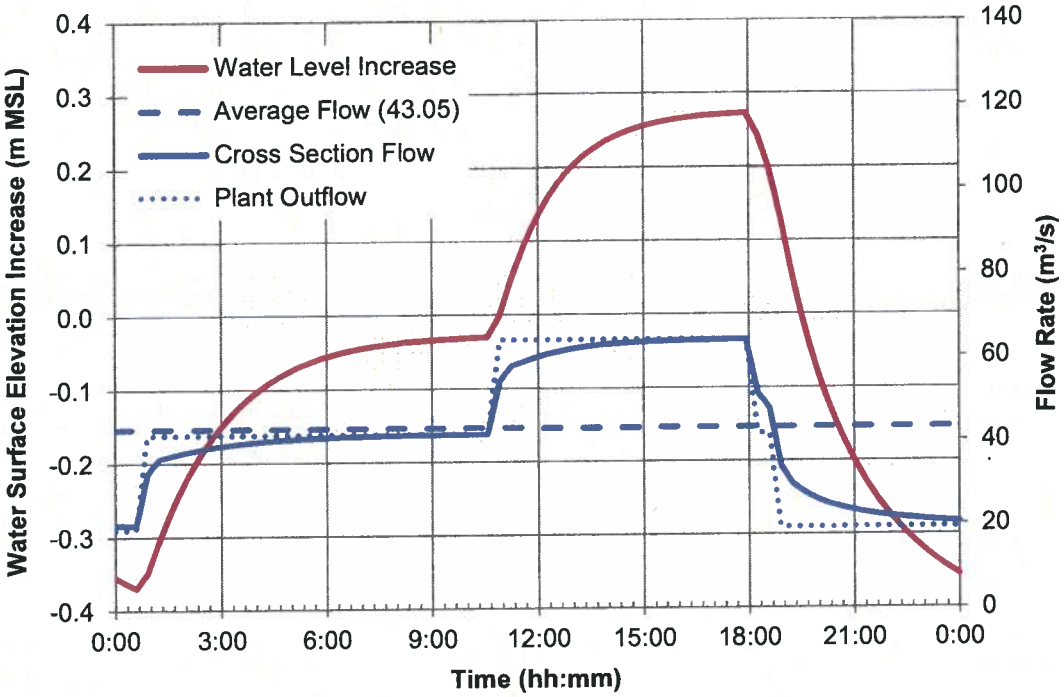


Figure 5: Sta -0+462 - November Daily Operation Flow and Stage Hydrograph

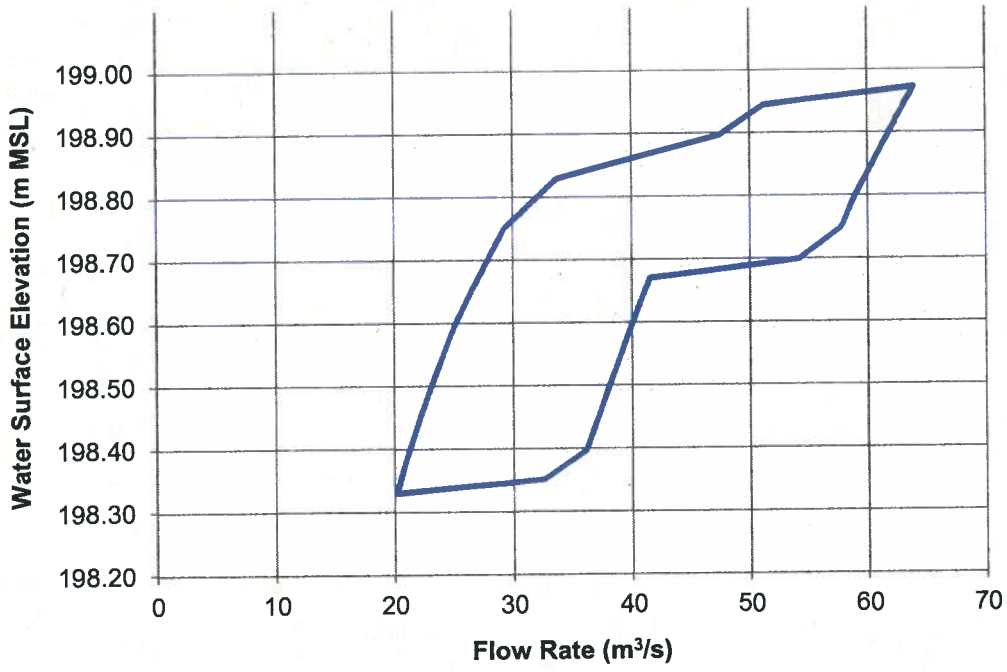


Figure 6: Sta -0+462 - November Daily Operation Rating Curve

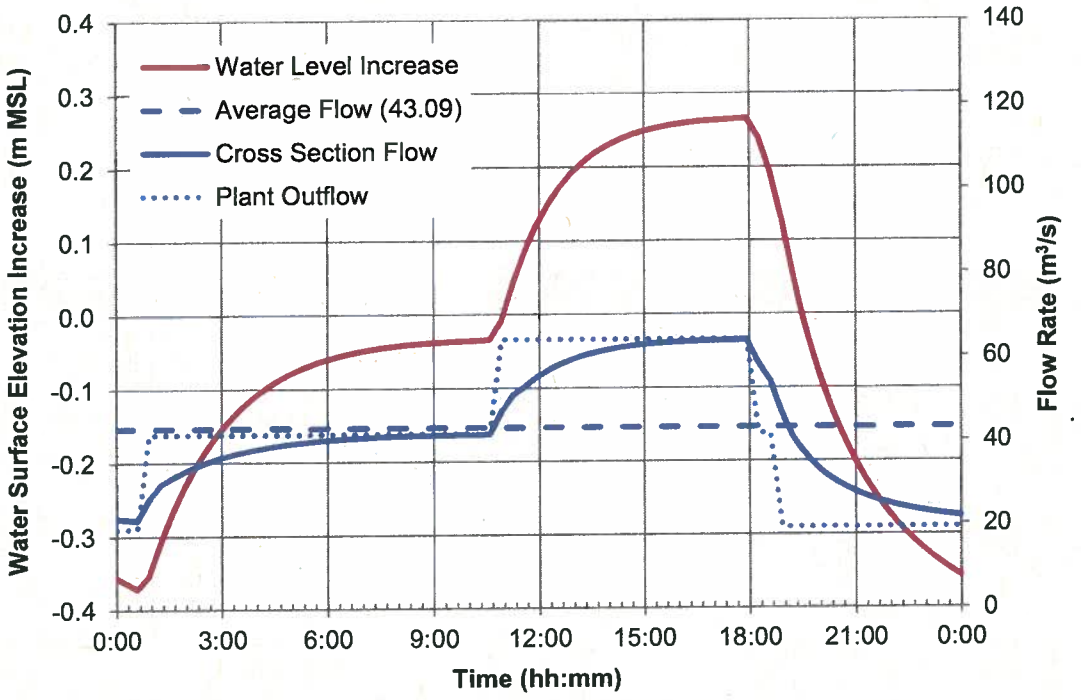


Figure 7: Sta -1+452 - November Daily Operation Flow and Stage Hydrograph

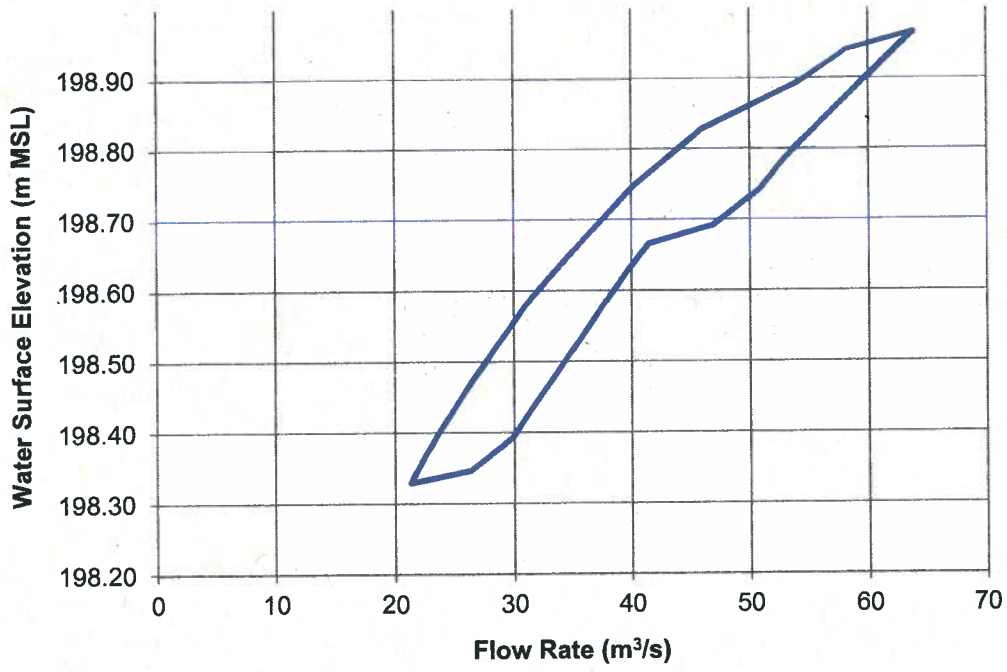


Figure 8: Sta -1+452 - November Daily Operation Rating Curve

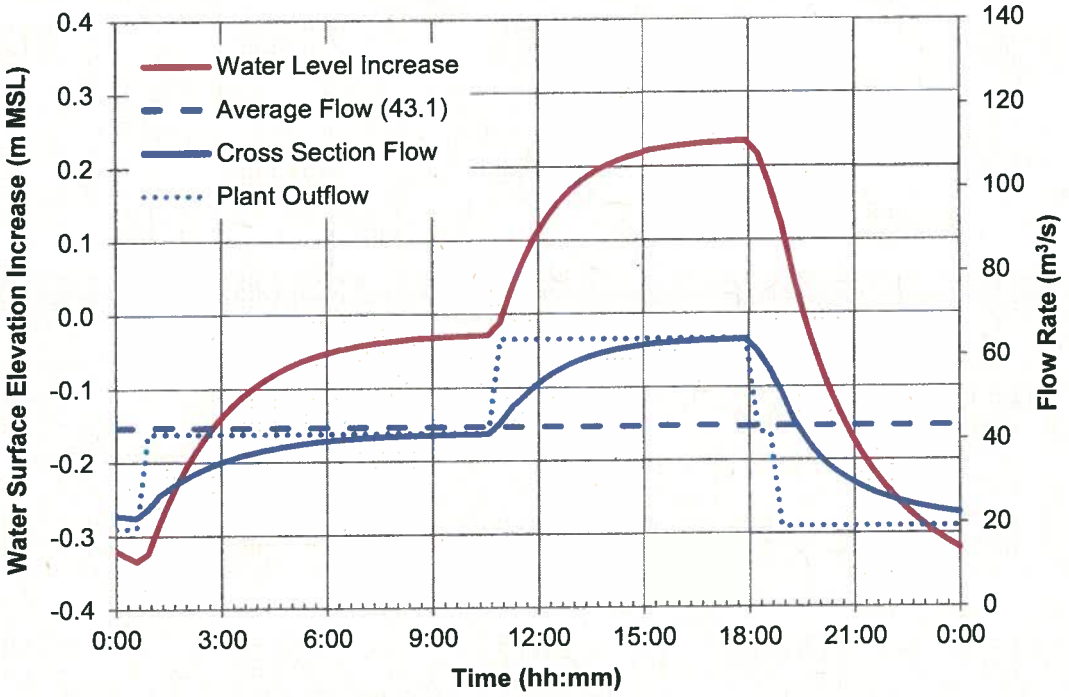


Figure 9: Sta -2+478 - November Daily Operation Flow and Stage Hydrograph

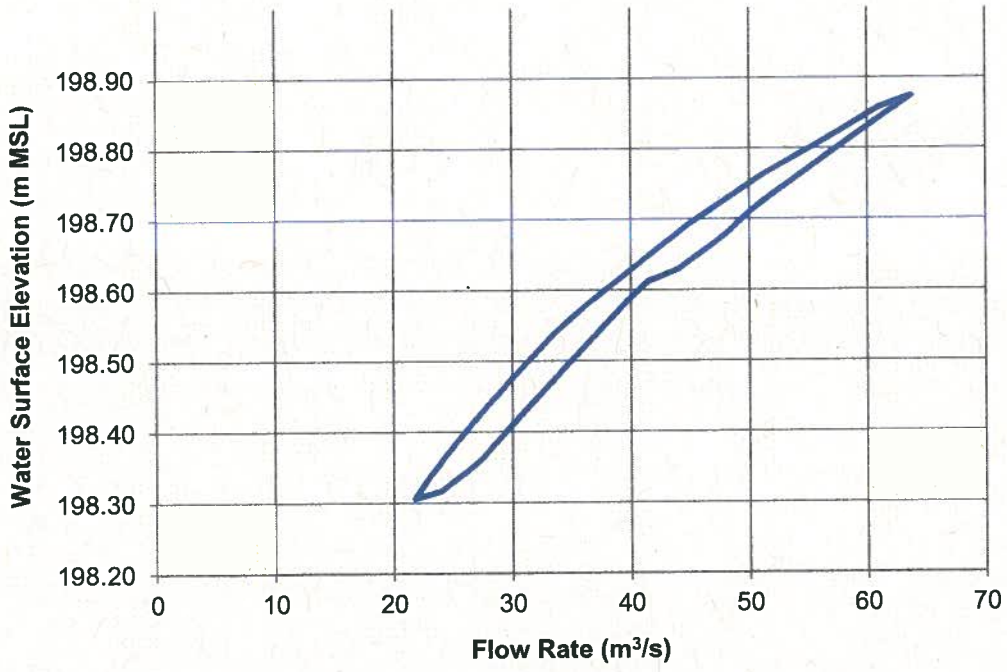


Figure 10: Sta -2+478 - November Daily Operation Rating Curve

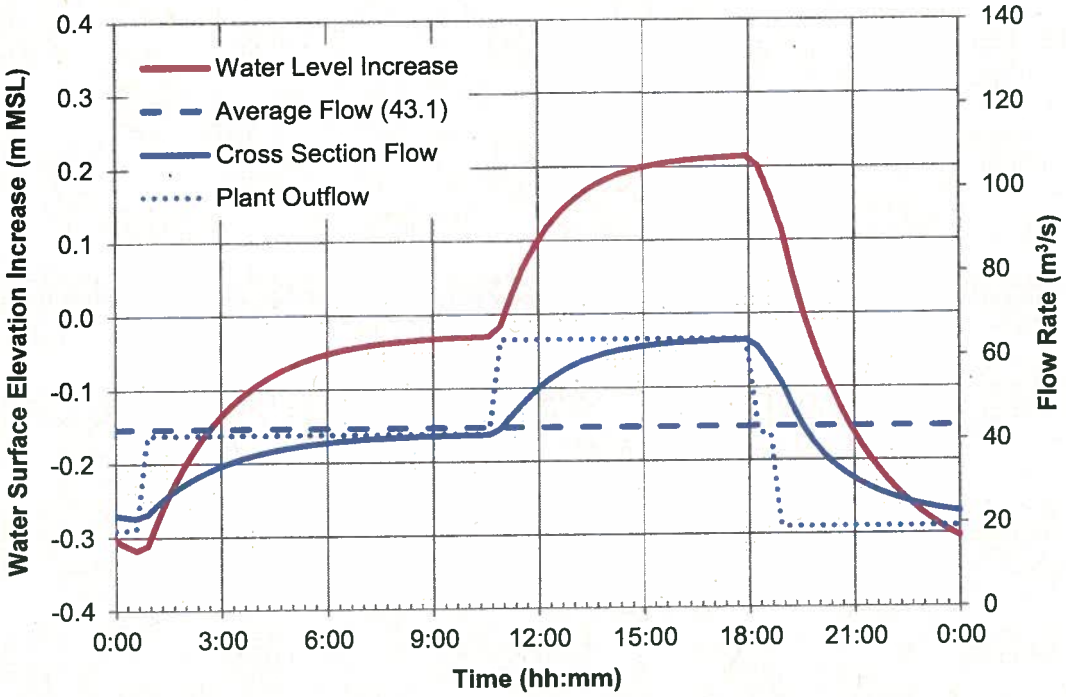


Figure 11: Sta -3+261 - November Daily Operation Flow and Stage Hydrograph

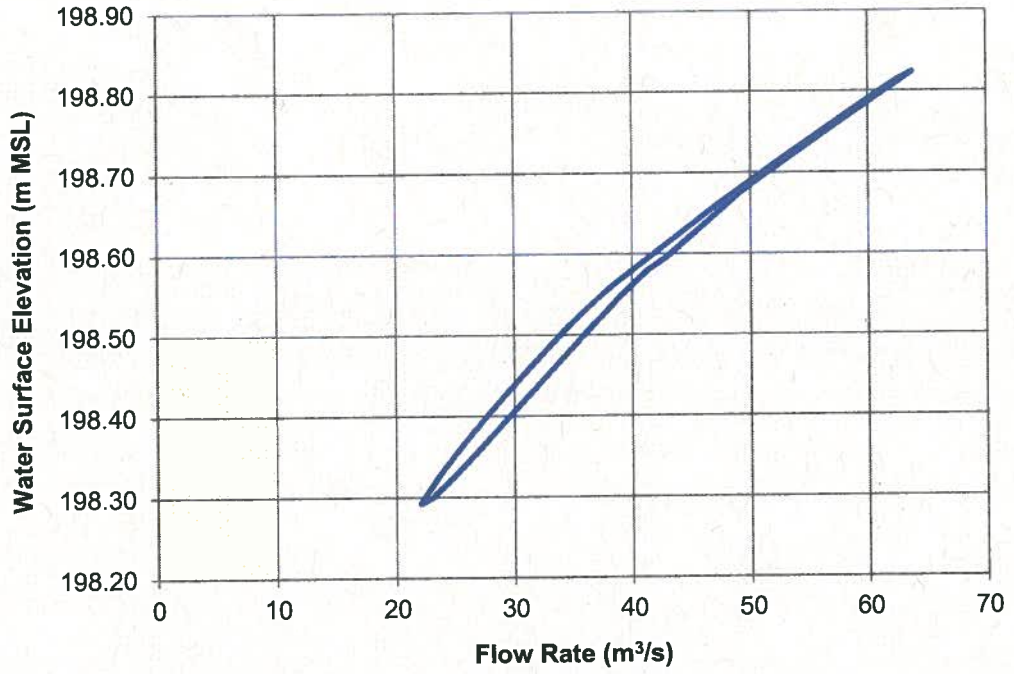


Figure 12: Sta -3+261 - November Daily Operation Rating Curve

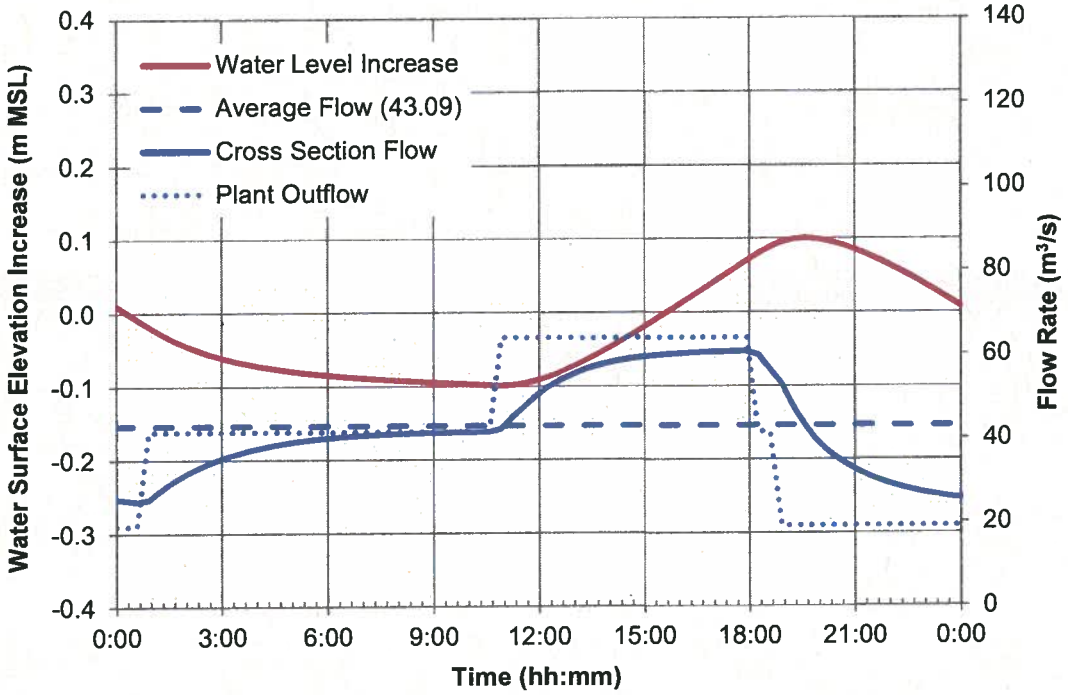


Figure 13: Sta -5+068- November Daily Operation Flow and Stage Hydrograph

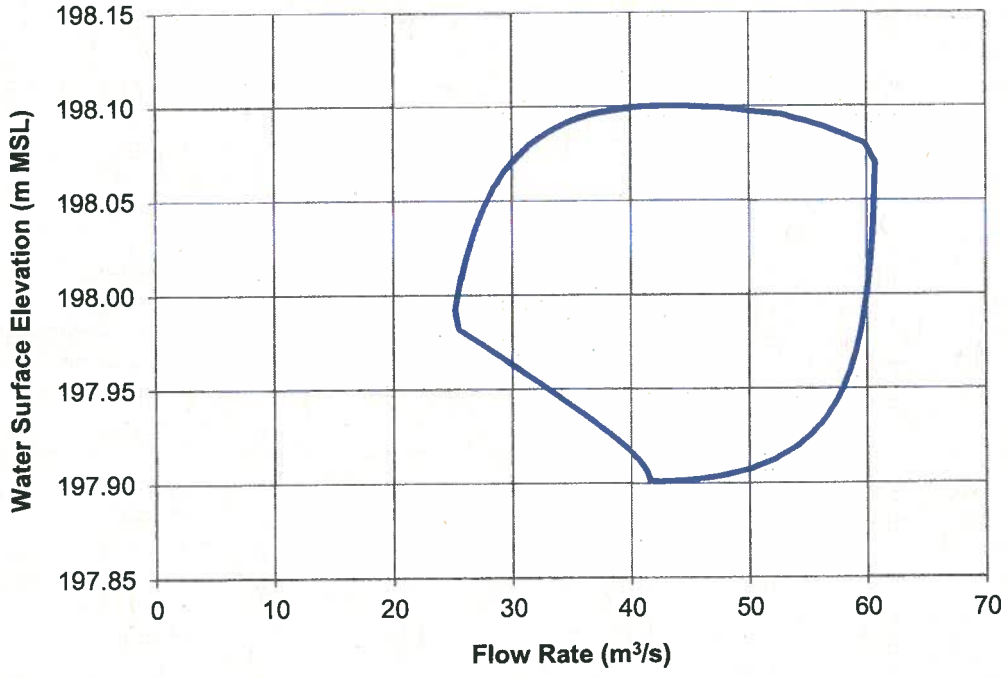


Figure 14: Sta -5+068 - November Daily Operation Rating Curve

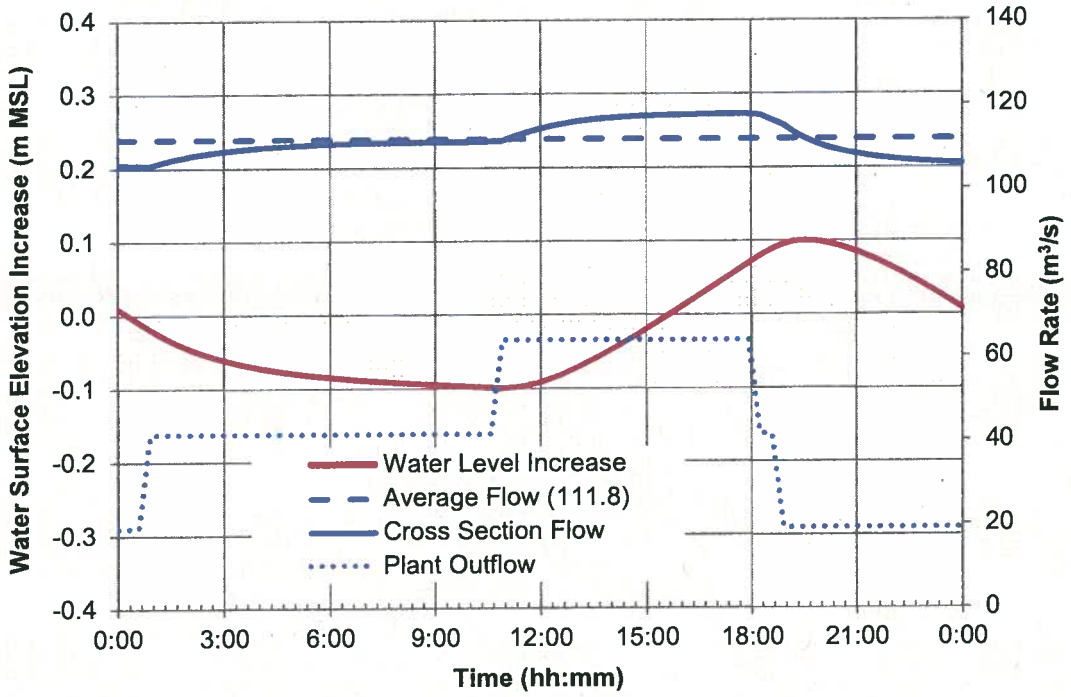


Figure 15: Sta -10+369 - November Daily Operation Flow and Stage Hydrograph

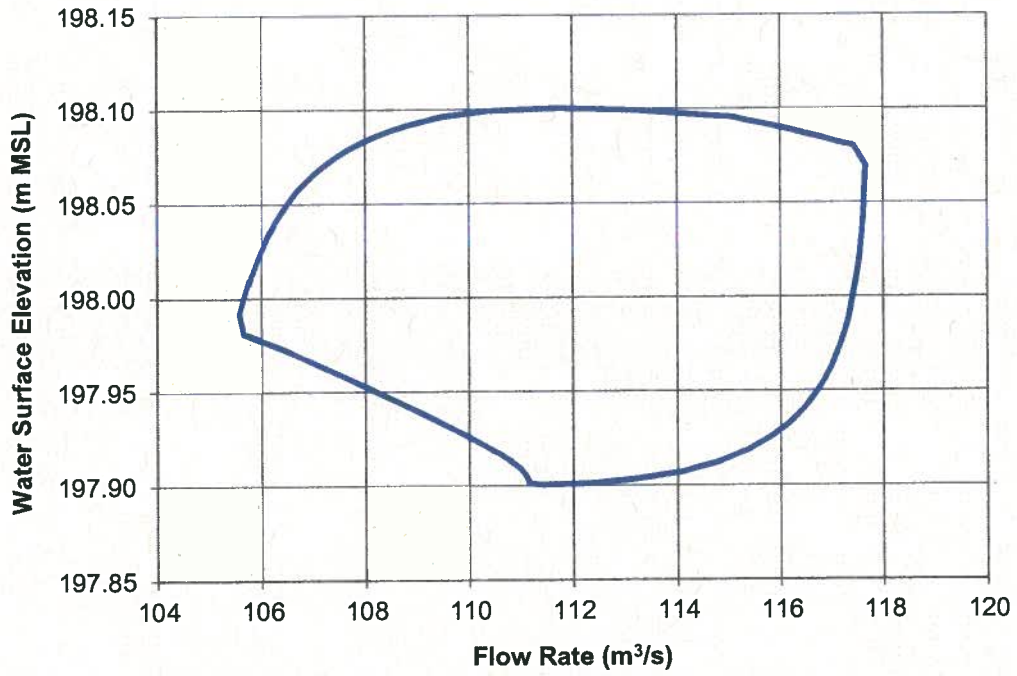


Figure 16: Sta -10+369 - November Daily Operation Rating Curve

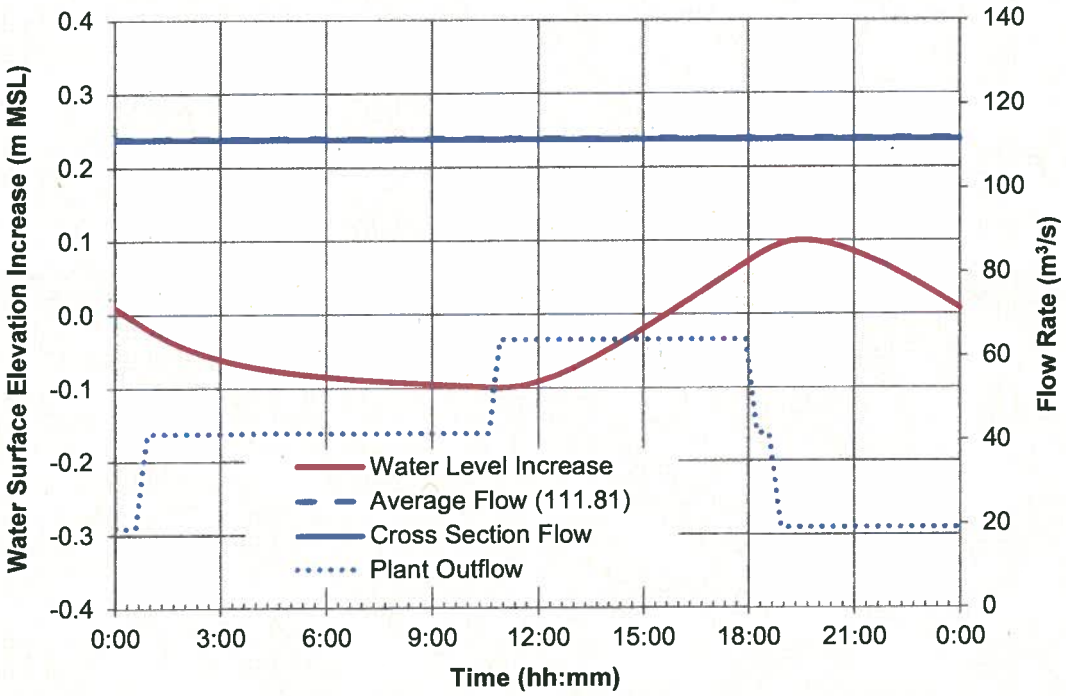


Figure 17: Sta -12+265- November Daily Operation Flow and Stage Hydrograph

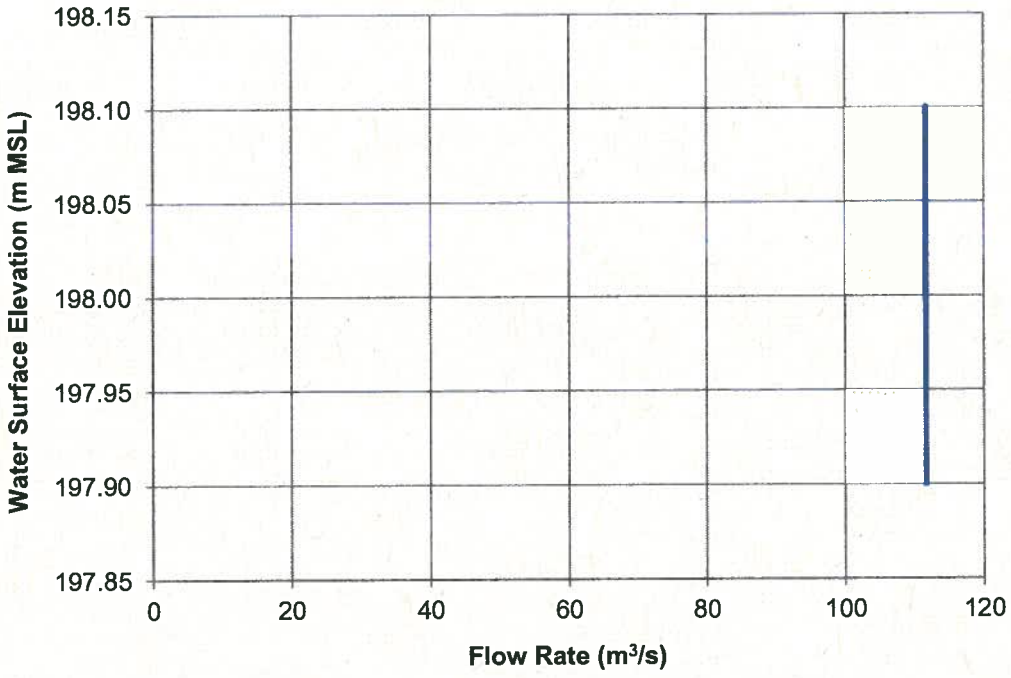


Figure 18: Sta -12+265 - November Daily Operation Rating Curve

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix G

Appendix G

February Daily Operation:

Downstream Boundary Condition:

Constant Flow Hydrograph

Flow and Stage Hydrographs and

Rating Curves

Nava Pokharel
Xeneca Power Development Inc.
July 10, 2012
Appendix G

Contents

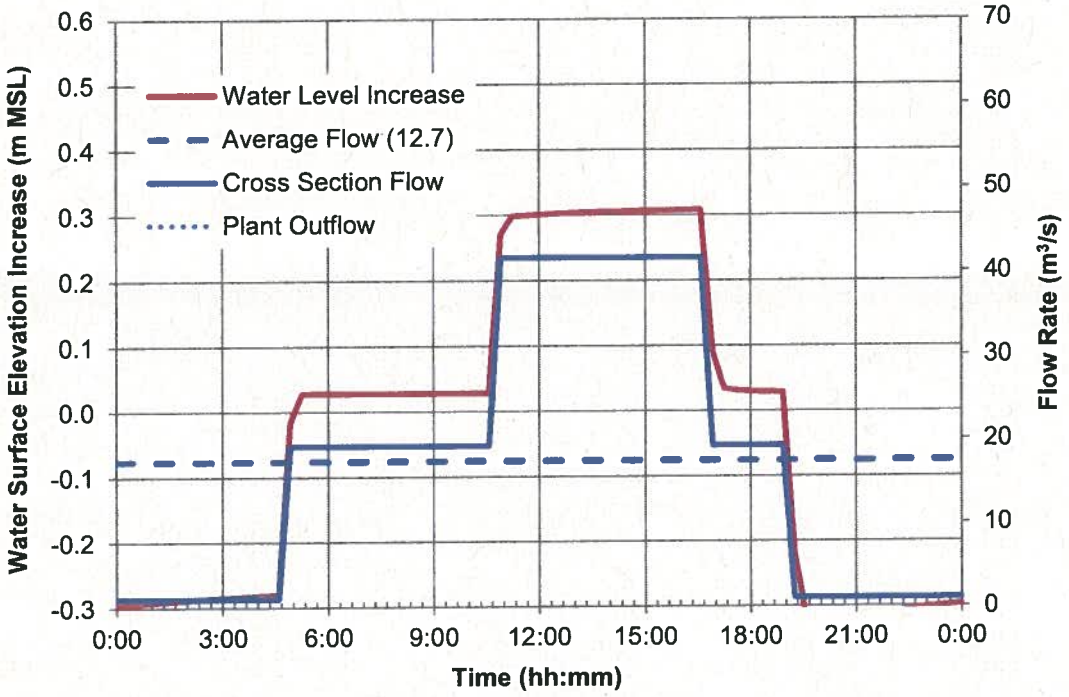


Figure 1: Sta 0+255 - February Daily Operation Flow and Stage Hydrograph

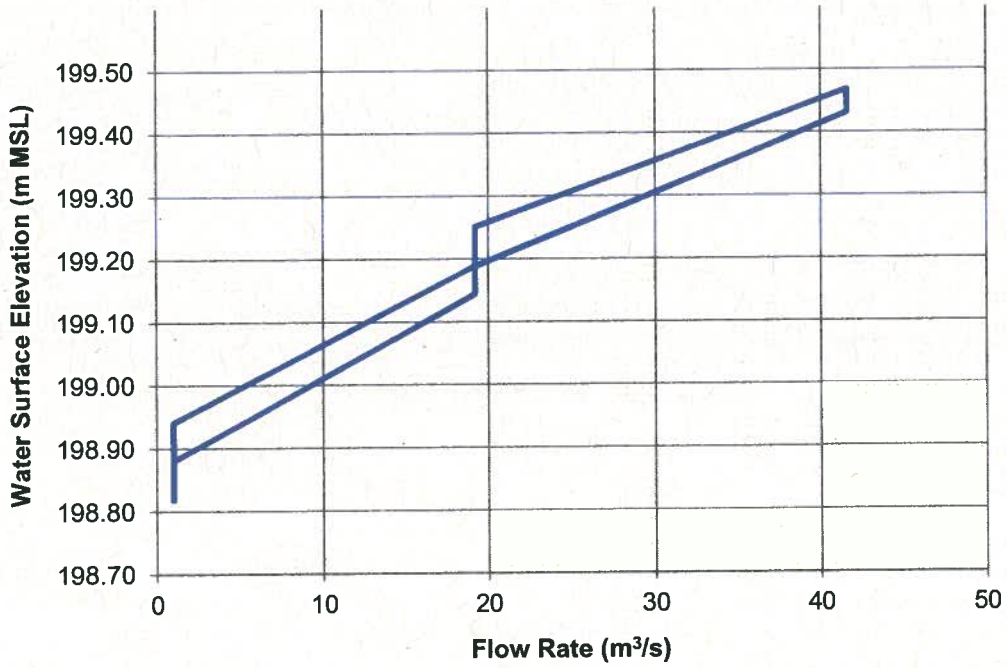


Figure 2: Sta 0+255 - February Daily Operation Rating Curve

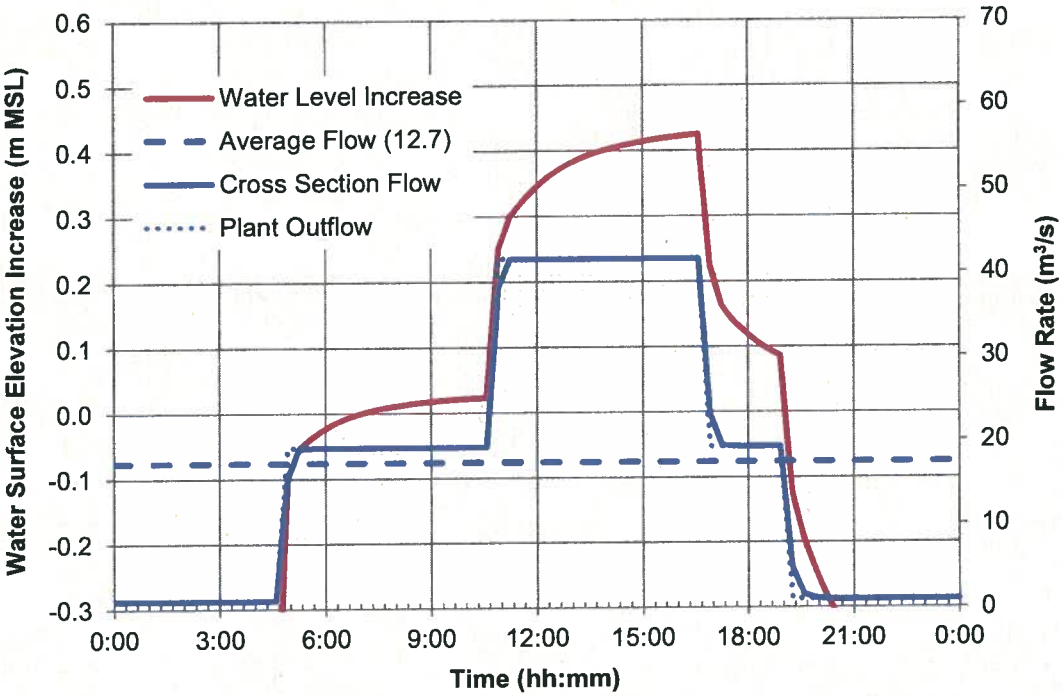


Figure 3: Sta 0+000 - February Daily Operation Flow and Stage Hydrograph

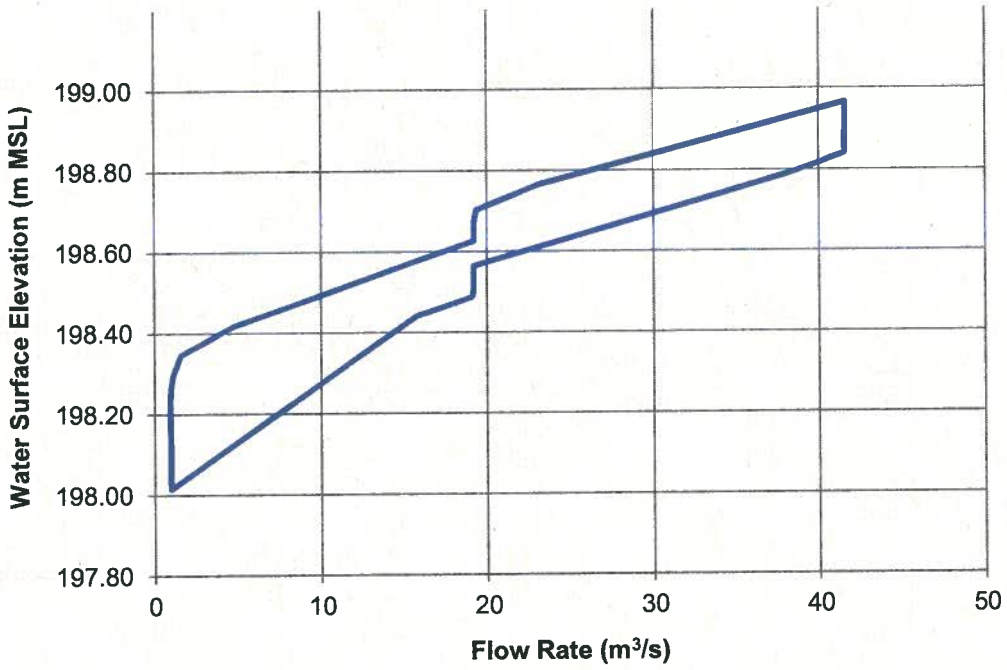


Figure 4: Sta 0+000 - February Daily Operation Rating Curve

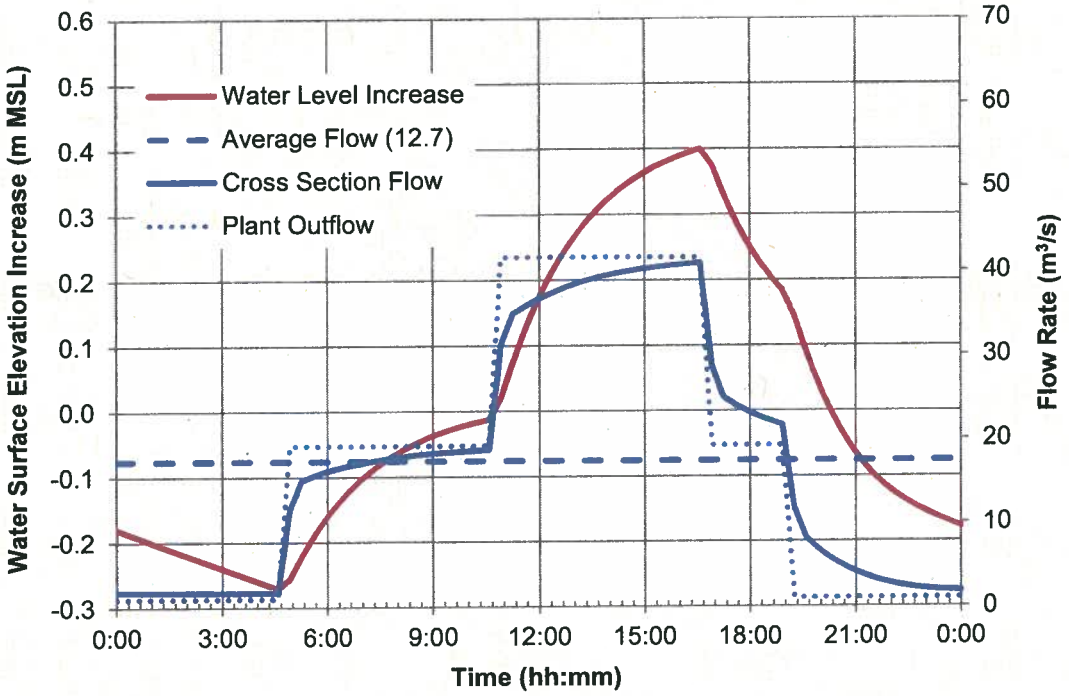


Figure 5: Sta -0+462 - February Daily Operation Flow and Stage Hydrograph

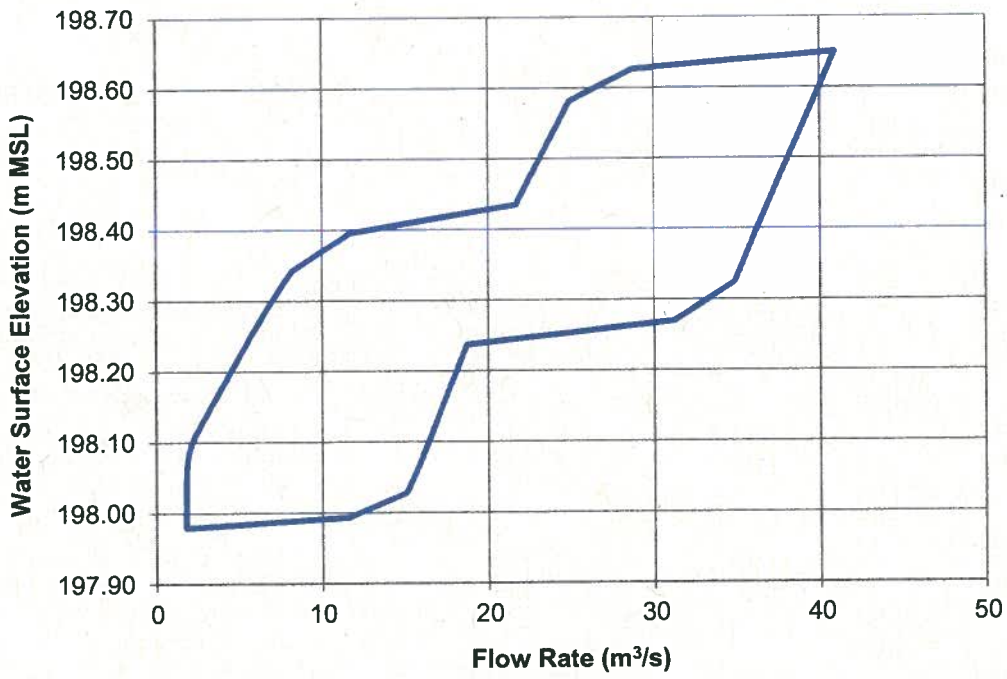


Figure 6: Sta -0+462 - February Daily Operation Rating Curve

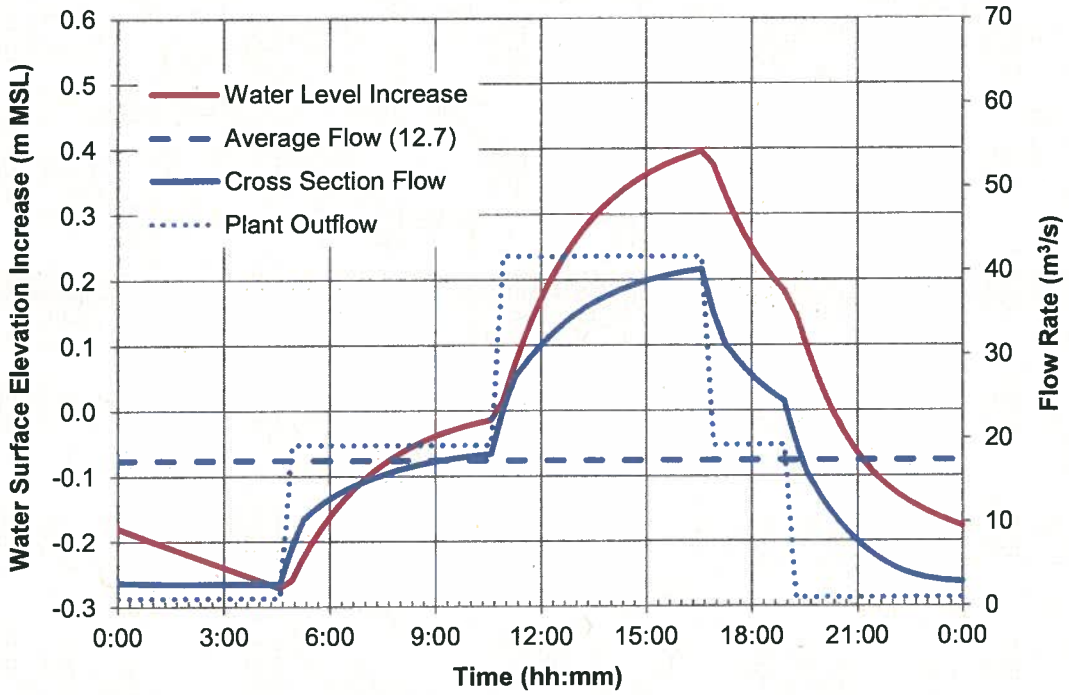


Figure 7: Sta -1+452 - February Daily Operation Flow and Stage Hydrograph

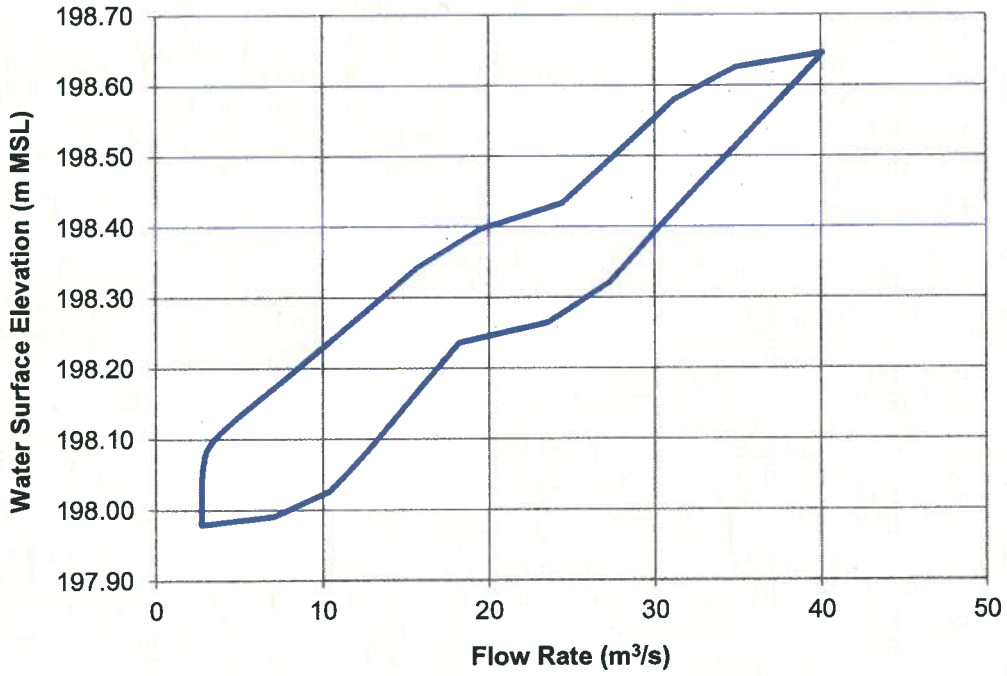


Figure 8: Sta -1+452 - February Daily Operation Rating Curve

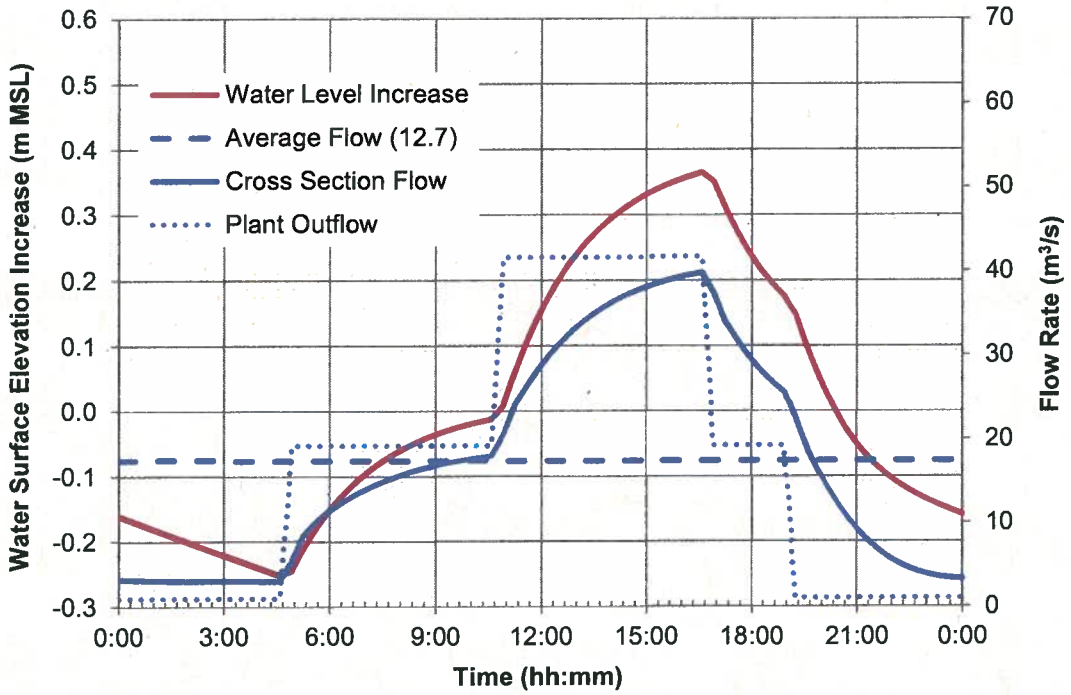


Figure 9: Sta -2+478 - February Daily Operation Flow and Stage Hydrograph

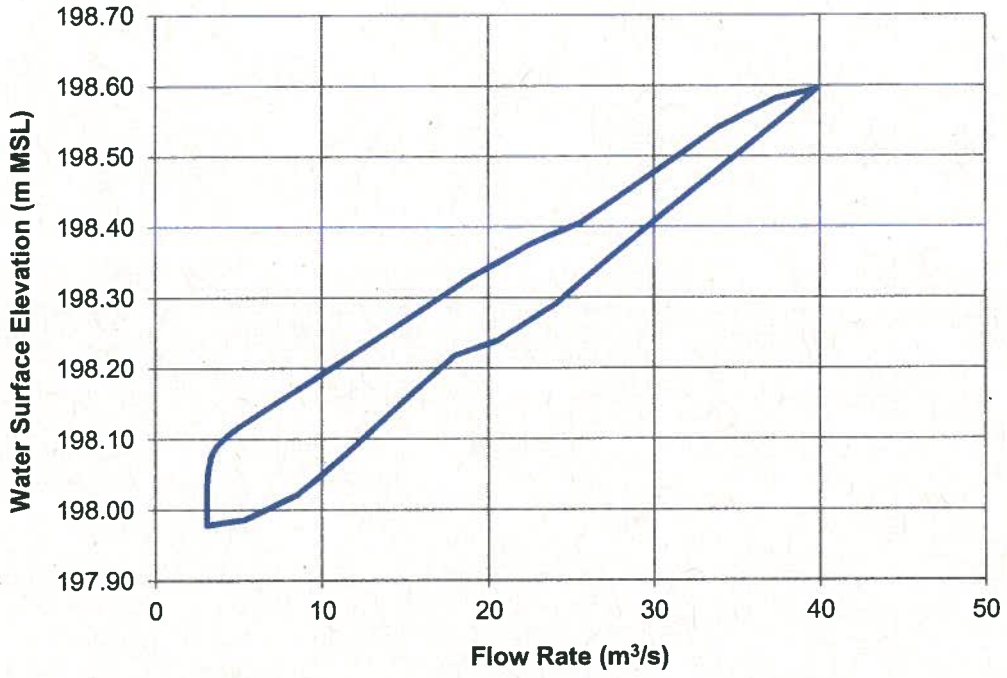


Figure 10: Sta -2+478 - February Daily Operation Rating Curve

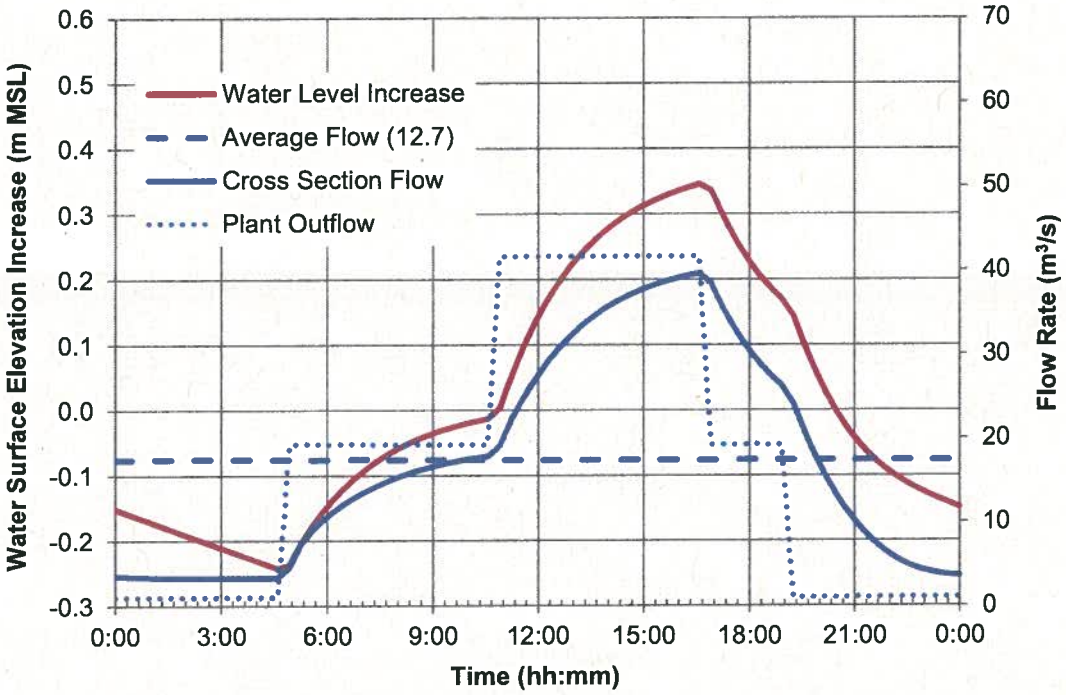


Figure 11: Sta -3+261 - February Daily Operation Flow and Stage Hydrograph

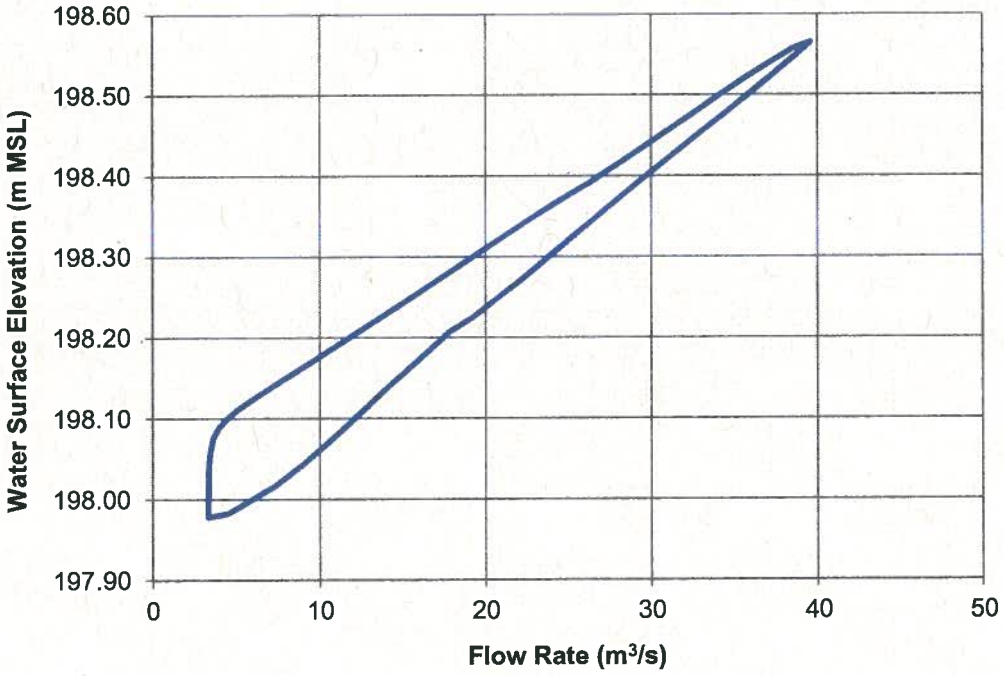


Figure 12: Sta -3+261 - February Daily Operation Rating Curve

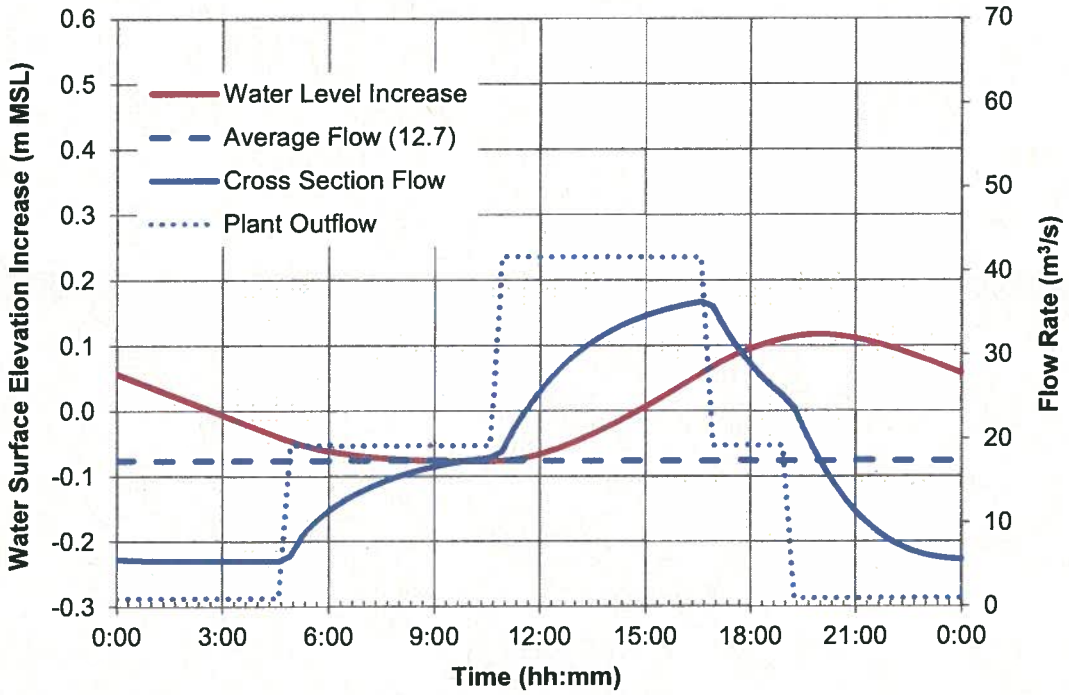


Figure 13: Sta -5+068- February Daily Operation Flow and Stage Hydrograph

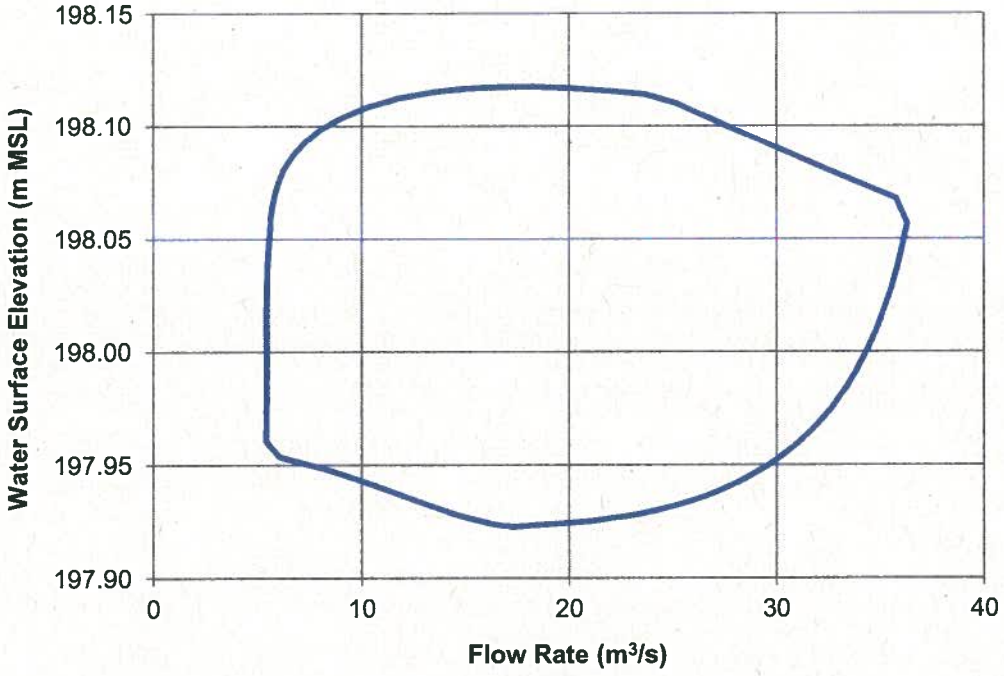


Figure 14: Sta -5+068 - February Daily Operation Rating Curve

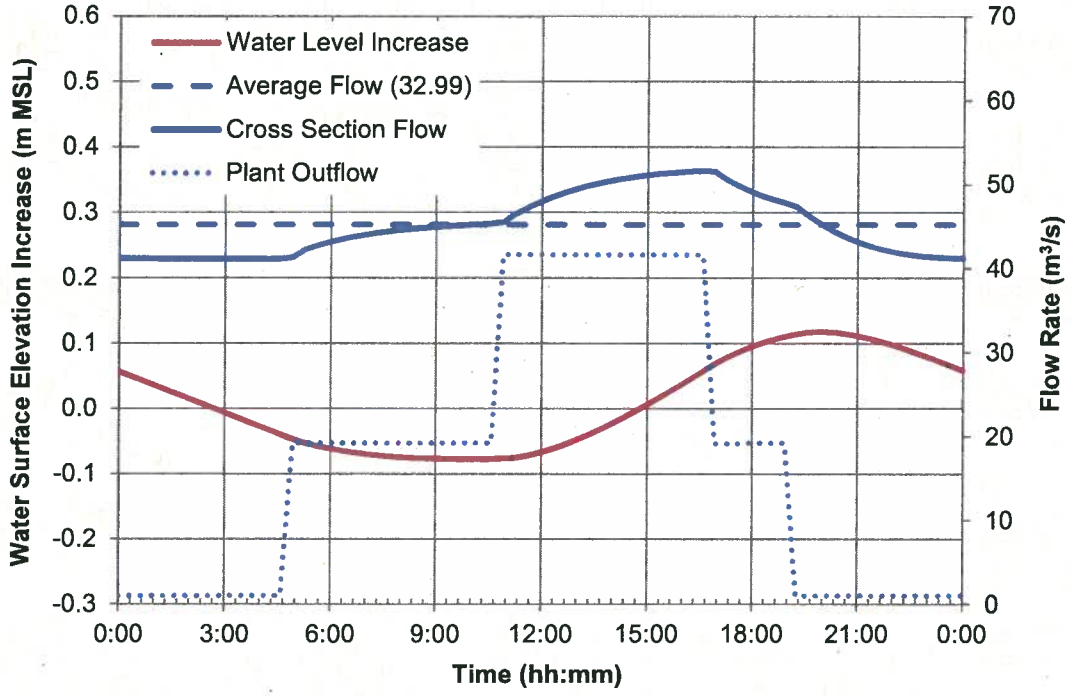


Figure 15: Sta -10+369 - February Daily Operation Flow and Stage Hydrograph

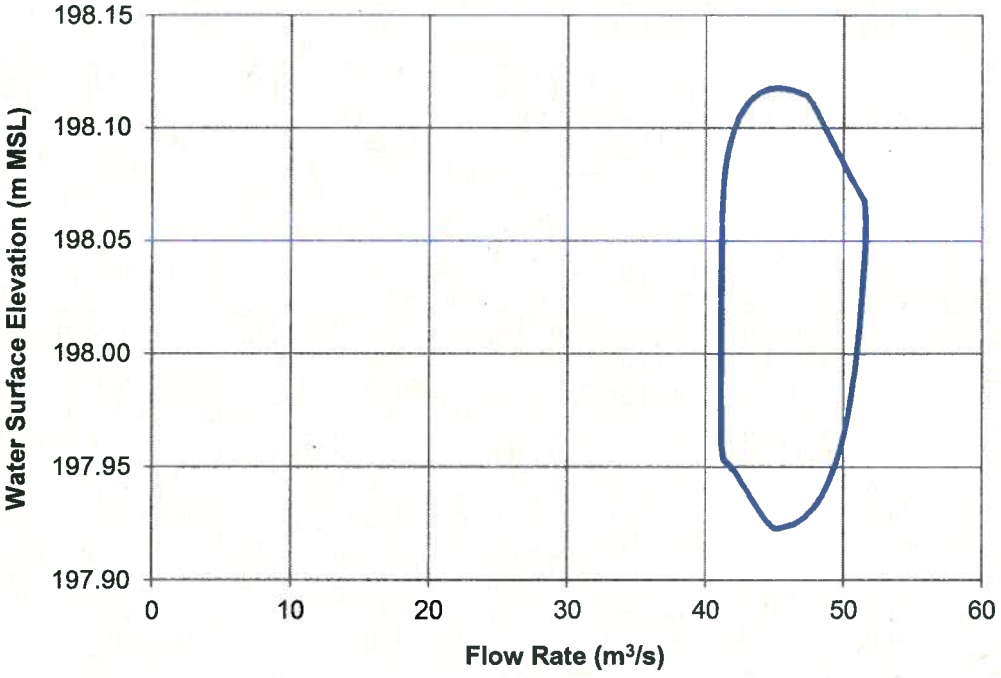


Figure 16: Sta -10+369 - February Daily Operation Rating Curve

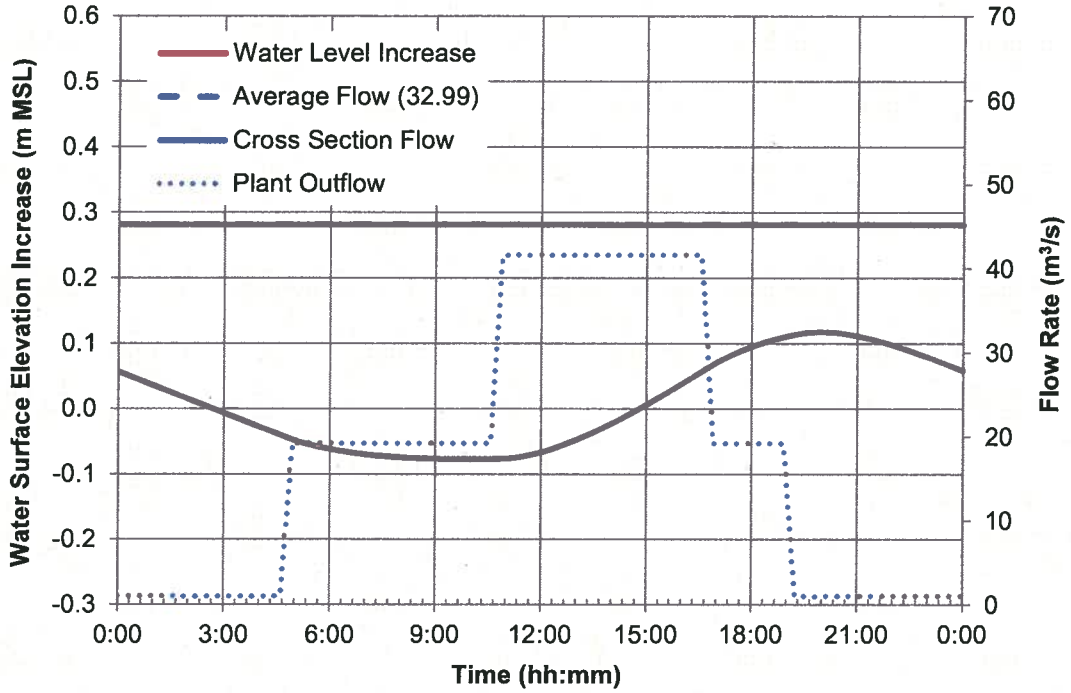


Figure 17: Sta -12+265- February Daily Operation Flow and Stage Hydrograph

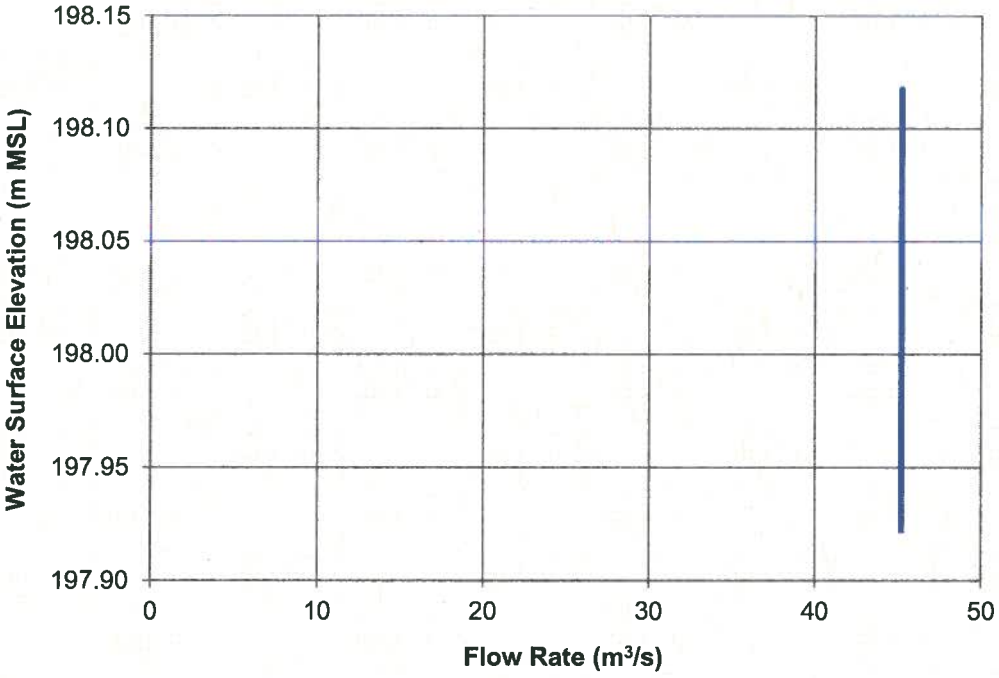


Figure 18: Sta -12+265 - February Daily Operation Rating Curve