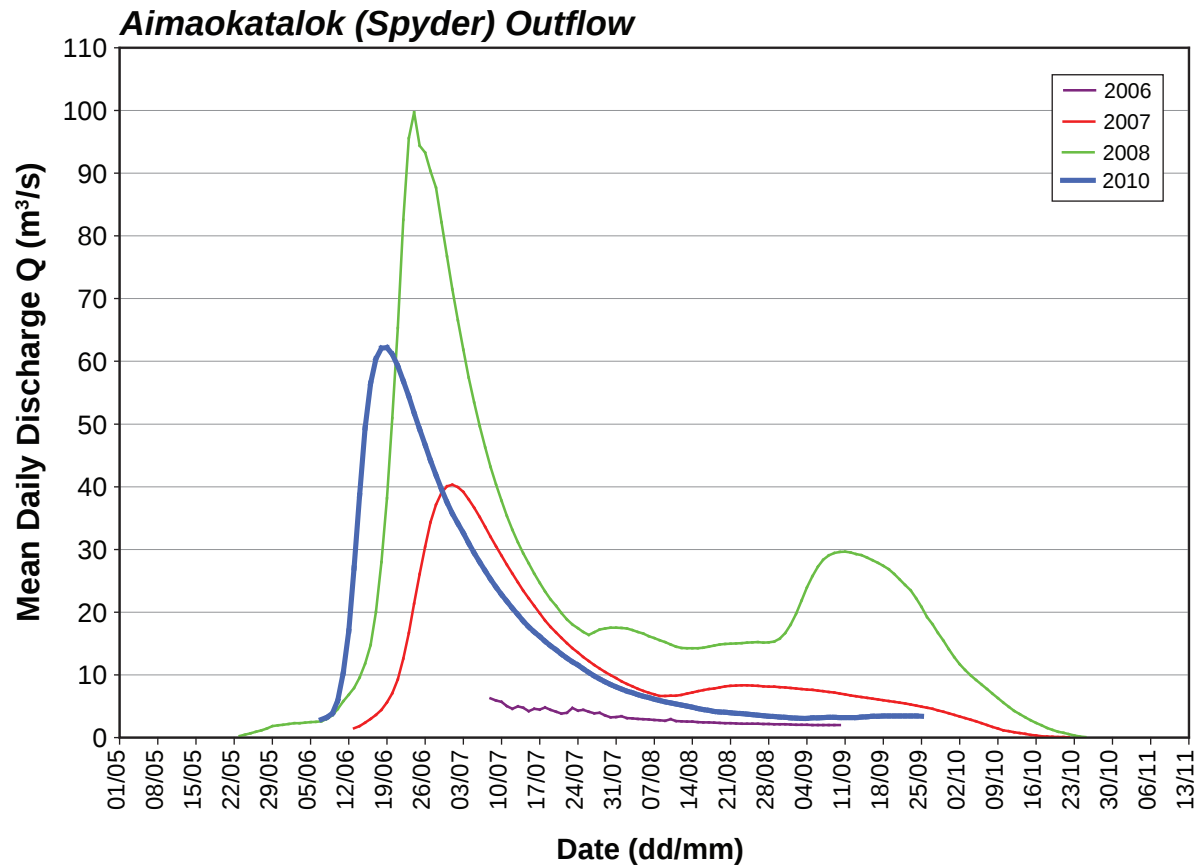
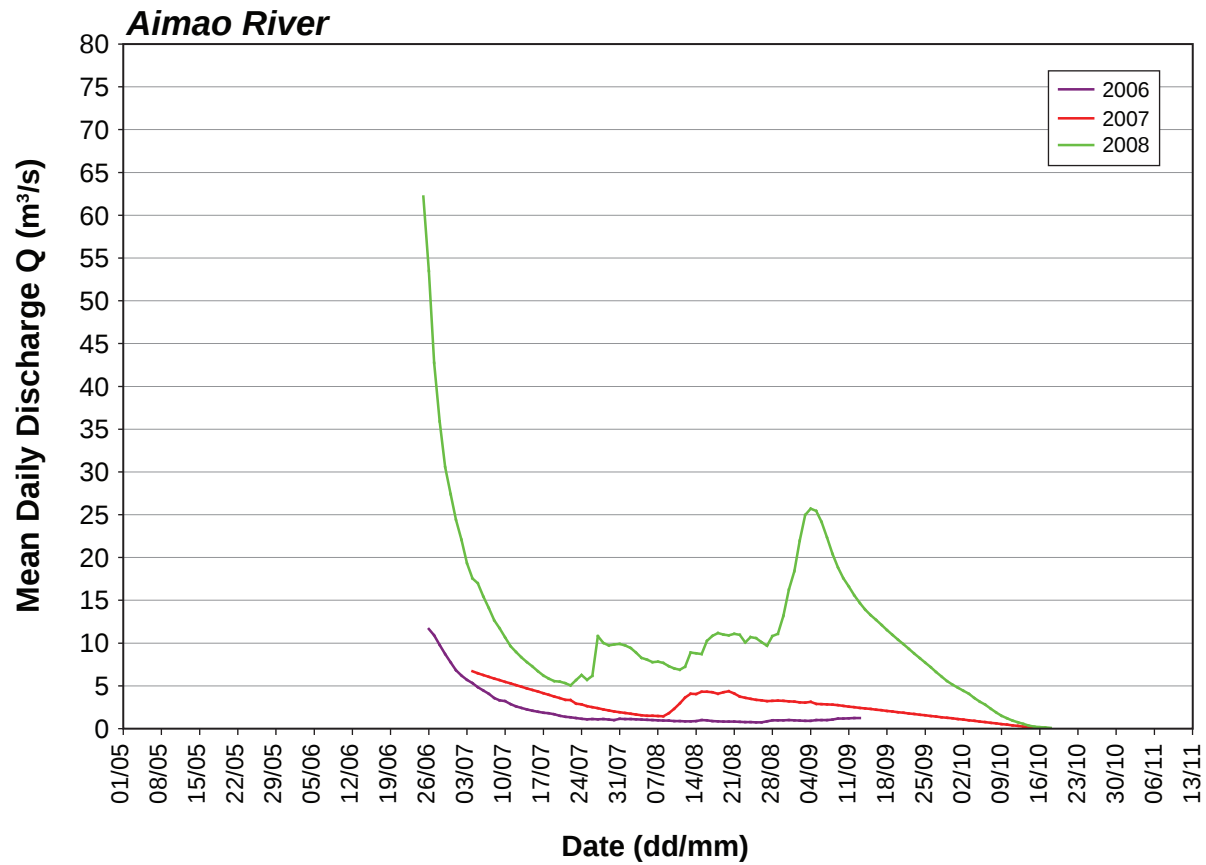
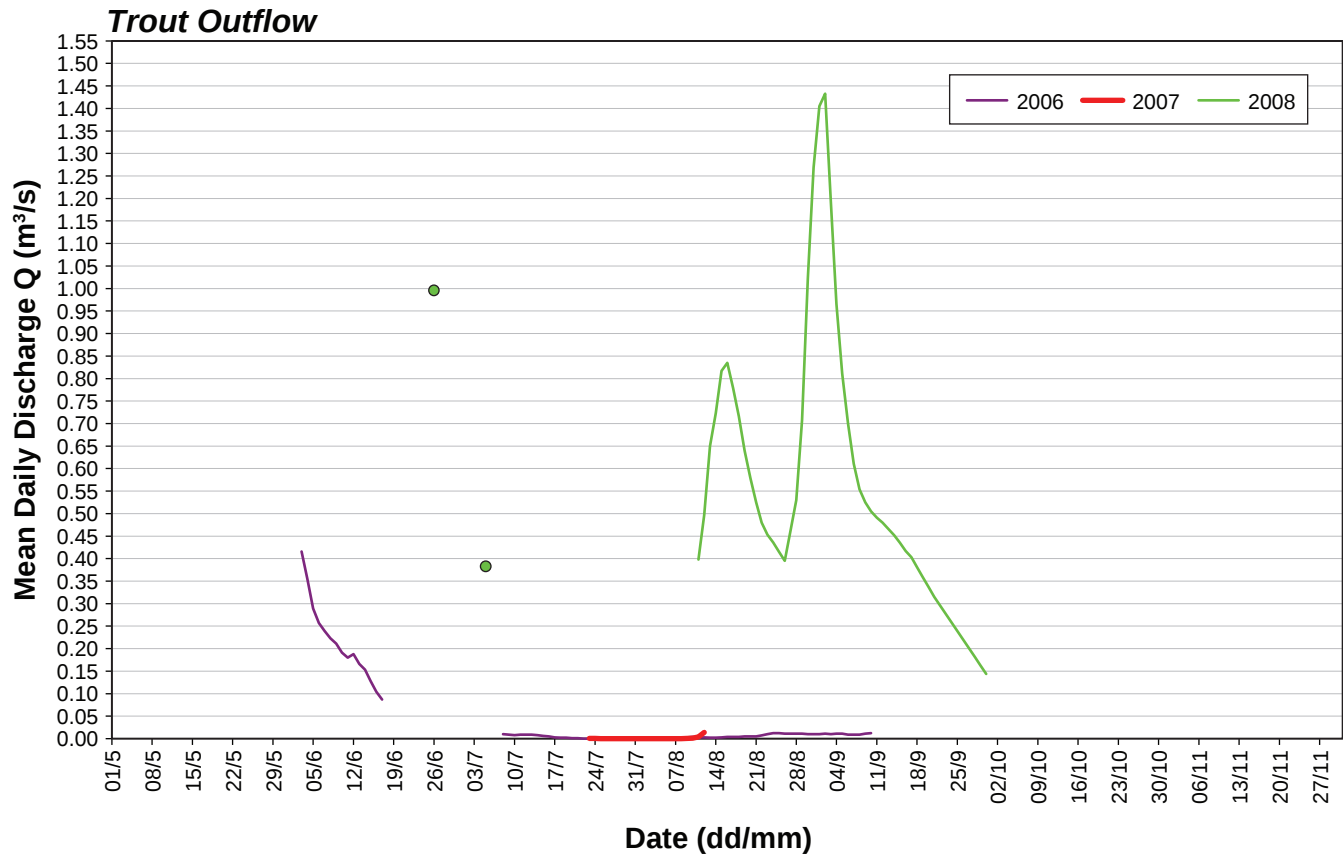








Further, basins in the Doris/Madrid and Boston areas produced similar amounts of runoff in 2010. Mean calculated runoff values were 133 mm for the Doris/Madrid area and 134 mm for the Boston area. Values of mean estimated annual runoff for 2010 were also in close agreement. The estimated mean annual runoff was 144 mm for the Doris/Madrid area and 146 mm for the Boston area (Table 5.3-1).

Table 5.3-1. 2010 Annual Runoff and Mean Annual Flow

Project Area	Mean Calculated Runoff (mm)	Estimated Mean Annual Runoff (mm)
Doris/Madrid	131	141
Boston	134	146

5.4 2010 RESULTS IN THE REGIONAL CONTEXT

In light of the similarities between the hydrologic response of the catchments in the Boston and Doris/Madrid areas, results from the frequency analyses presented by Rescan (2009) were used to evaluate how the 2010 hydrologic results compared to the available long-term datasets. Results from the frequency analysis presented in 2009 are only applicable to catchments smaller than 100 km².

Following a number of years of on-site data collection, a detailed water balance model was completed in 2008 for 10 lakes in the Doris/Madrid area (Golder, 2009). The water balance model was set up on a daily time step for the period of 1948 to 2008. Based on long-term climate records from Cambridge Bay, a synthetic precipitation record was derived for the Doris/Madrid area. The calibrated model was used to generate a daily time series for each lake outflow, and frequency analyses were performed to characterize key hydrologic parameters (Tables 5.4-1 and 5.4-2).

Table 5.4-1. Summary of Estimated Annual Runoff (mm) Values by Different Recurrence Intervals for the Lakes in the Doris/Madrid Area

Station Names	Hydrologic Condition										
	Dry					Mean	Wet				
	Recurrence Interval (years)										
	100	50	20	10	5	2	5	10	20	50	100
Patch Outflow	35	40	48	56	66	87	114	131	148	168	182
PO Outflow	54	59	66	74	84	105	131	147	162	181	194
Ogama Outflow	52	57	65	72	82	103	129	146	161	179	193
Tail Outflow	25	30	37	44	53	72	96	111	124	141	153
Doris Outflow	47	52	60	68	77	99	125	141	157	176	189
Roberts Outflow	39	44	52	60	70	92	119	136	152	171	185
Little Roberts Outflow	44	49	57	64	74	96	122	138	154	172	186
Windy Outflow	19	23	31	39	50	73	104	124	144	169	188
Glenn Outflow	41	45	51	58	67	86	111	128	143	164	179
Average Annual Runoff	40	44	52	59	69	90	117	134	149	169	183

Golder (2009)

The objective of 2009 frequency analysis was to consider the hydrologic data in terms of their magnitude and frequency of occurrence. The 2009 frequency analysis was based on a normal cumulative distribution function, using the mean and standard deviation of the annual runoff for the period of record. The mean represents a cumulative probability of 0.5 (50% of years are wetter and 50%

are drier), or associated with a 1-in-2 year recurrence interval. Dry years are represented by cumulative probabilities below 0.5. For example, a cumulative probability of 0.1 represents drier than average conditions expected to occur less than 10% of the time or associated with a 1-in-10 year recurrence interval. Conversely, wet years have a cumulative probability greater than 0.5. A cumulative probability of 0.9 represents wetter than average conditions that are expected to occur less than 90% of the time, assuming a 1-in-10 year recurrence interval.

Table 5.4-2. Summary of Estimated Daily Peak Flows by Different Recurrence Intervals for the Lakes in the Doris/Madrid Area

Station Name	Daily Peak Flow (m ³ /s)					
	Recurrence Interval (years)					
	2	5	10	20	50	100
Patch Outflow	0.693	0.995	1.22	1.45	1.78	2.06
PO Outflow	1.29	1.74	2.04	2.34	2.74	3.04
Ogama Outflow	1.41	1.88	2.18	2.48	2.85	3.12
Tail Outflow	0.122	0.171	0.211	0.256	0.326	0.389
Doris Outflow	1.68	2.21	2.55	2.87	3.27	3.56
Roberts Outflow	2.13	3	3.64	4.3	5.22	5.97
Little Roberts Outflow	3.82	5.18	6.07	6.94	8.05	8.89
Windy Outflow	0.304	0.48	0.621	0.776	1.01	1.22
Glenn Outflow	0.484	0.687	0.839	1.00	1.23	1.43

Golder (2009)

The average runoff values for different drainage basins resulting from the frequency analysis are shown in Table 5.4-1. The estimated annual runoff values for 2010 are compared against these averages. The estimated annual runoff values for 2010 were 144 mm for drainage basins located within the Doris/Madrid area and 146 mm for drainage basins located within the Boston area. These results are consistent with hydrologic wet conditions associated with a 1-in-20 year recurrence interval.

In 2010, peak flows from six of the nine drainage basins located within the Doris/Madrid area exceeded or equalled flow conditions associated with a 1-in-100 year recurrence interval (Table 5.4-2). The exceptions were the Patch-Hydro, Windy-Hydro, and Tail-Hydro hydrometric stations. The observed peak flow at Patch-Hydro (0.56 m³/s) was equivalent to the estimated magnitude of an event having a 1-in-2 year recurrence interval. At the Windy-Hydro hydrometric station, the observed peak flow (0.49 m³/s) was equivalent to the estimated magnitude of an event with a 1-in-5-year recurrence interval. At the Tail-Hydro hydrometric station the magnitude of the observed annual peak flow (0.20 m³/s) was equivalent to the estimated magnitude of an event having a 1-in-10 year recurrence interval.

Low flows registered during August 2010 from three of the nine drainage basins located in the Doris/Madrid area were near low flow conditions associated with a 1-in-5 year recurrence interval (Table 5.4-3). The exceptions were the Ogama-Hydro and Doris-Hydro drainage basins where low flows were near the mean annual low flow conditions (1-in-2 year recurrence interval); and the Patch-Hydro, Tail-Hydro, and Windy-Hydro drainage basins where the low flows were associated with hydrologic conditions wetter than the mean annual low flow conditions.

Table 5.4-3. Summary of 2010 7-Day Low-Flows and Estimated 7-Day Low-Flows by Different Recurrence Intervals for the Lakes in the Doris/Madrid Area

Station Name	August 7-day Low Flow (m ³ /s) in 2010	August 7-day Low Flow (m ³ /s)					
		Recurrence Interval (years)					
		2	5	10	20	50	100
Patch Outflow	0.195	0.138	0.085	0.068	0.056	0.046	0.041
PO Outflow	0.362	0.464	0.331	0.281	0.246	0.213	0.194
Ogama Outflow	0.344	0.502	0.352	0.295	0.255	0.218	0.196
Tail Outflow	0.031	0.007	0.001	0.001	0	0	0
Doris Outflow	0.480	0.579	0.381	0.308	0.257	0.21	0.183
Roberts Outflow	0.432	0.459	0.284	0.227	0.189	0.155	0.137
Little Roberts Outflow	n/a	1.093	0.702	0.567	0.475	0.391	0.343
Windy Outflow	0.226	0.039	0.02	0.014	0.011	0.008	0.007

For the larger drainage basins located within the Doris/Madrid and Boston areas (Koignuk-Hydro, Reference B-Hydro, Aimaokatalok-Hydro, and East-Aimao-Hydro hydrometric stations), peak flows of different recurrence intervals were estimated by combining the results of the water balance model with flood frequency analyses. Frequency analyses were performed using instantaneous maxima and minima hydrologic data available from three long-term Water Survey of Canada (WSC) regional stations: Freshwater Creek (1,490 km²), Tree River (5,810 km²), and Ellice River (16,900 km²). Instantaneous maximum and minimum discharge data for these stations were available from 1969 to 2008. Data from 2009 were not used because of their poor quality and data from 2010 were not available.

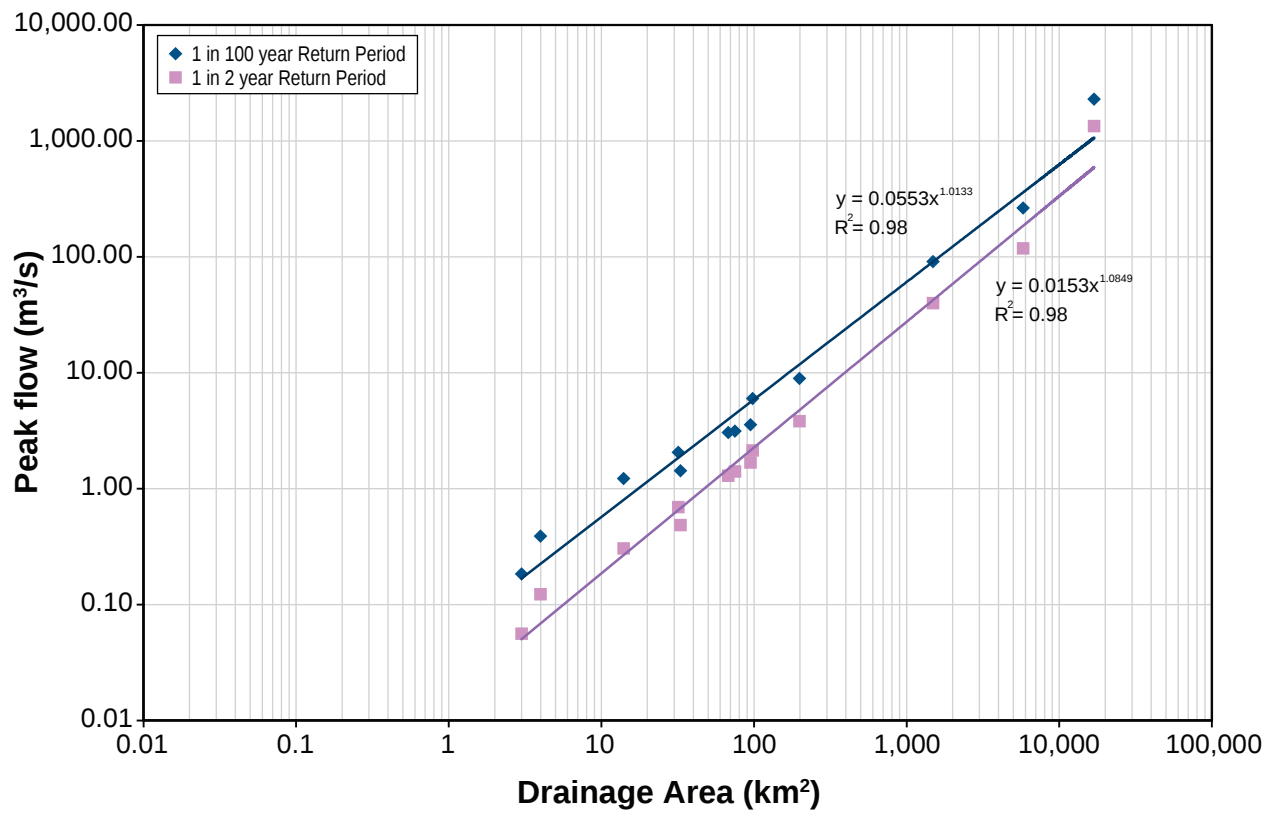
The instantaneous maximum discharge data were analyzed using the Consolidated Frequency Analysis software (Pilon et al 1993). Several probability distributions were considered in the analyses; however, the Generalized Extreme Value (GEV) distribution provided the best overall fit to the observed data. The instantaneous minimum discharge data were analyzed using the Low Flow Frequency Analysis software (Pilon 1988). The software fits the annual discharge minima to the Gumbel type III distribution.

Results from the flood frequency analyses were combined with the peak and low flows results from the water balance model and were plotted against the drainage area of each basin on graphs with a logarithmic scale. Lines of best fit were drawn through the data and equations that describe the fitted line were developed (Figure 5.4-1). These equations can be used to estimate peak flows for any drainage area of interest in the Study Area. For example, Table 5.4-4 summarizes the estimated peak flows for the hydrometric stations Koignuk-Hydro, Aimao Out-hydro, and East Aimao-Hydro.

Table 5.4-4. Peak Flow Estimates for Watersheds Larger than 100 km²

Station Name	Drainage Area (km ²)	2010 Peak Flow (m ³ /s)	1:2 Year Mean Annual Peak Flow (m ³ /s)	1:100 Year Peak Flow (m ³ /s)
Koignuk-Hydro	2,937	205.4	88.5	180.6
Aimao Out-Hydro	1,224	62.6	34.2	74.4
East Aimao-Hydro	363	66.7	9.2	21.7

The 2010 recorded peak flows for the Koignuk-Hydro and East Aimao-Hydro hydrometric stations exceeded the estimated magnitude of events associated with a with a 1-in-100 year recurrence interval. The exception was the Aimao Out-Hydro hydrometric station with a peak flow of 63 m³/s which did not exceed the estimated magnitude of an event associated with a 1-in-100 year recurrence interval.



6. Summary

6. Summary

A network of 18 hydrometric monitoring stations within the Hope Bay Belt was operated during 2010. In the Doris/Madrid area nine hydrometric monitoring stations were remobilized, one new station was installed, and two existing lake level stations were maintained. In the Boston area five new hydrometric monitoring stations were installed, and an existing lake level station was maintained.

The 2010 open water period extended from early-June until mid-November. In 2010, runoff estimates for drainage basins located within the Study Area were similar. The estimated mean annual runoff was 141 mm for basins in the Doris/Madrid area and 146 mm for basins in the Boston area (Table 6-1).

Hydrologic conditions in 2010 were wetter than in 2009; the estimated annual runoff values were approximately 22% higher than in 2009. Compared to regional estimates, the annual runoff results obtained in 2010 are consistent with hydrologic wet conditions associated with a 1-in-20 year recurrence interval (Table 6-2).

Table 6-1. 2010 Annual Runoff and Mean Annual Discharge for Drainage Basins Located within the Doris/Madrid and Boston Areas

Hydrometric Station	Drainage Area (km ²)	Percent lake coverage in watershed	Calculated Runoff (mm)	Estimated Annual Runoff ^b (mm)	Mean Annual Discharge ^a (m ³ /s)
<i>Doris/Madrid Area</i>					
Doris-Hydro	95	20	121 (June 10 to October 4)	129	0.86
Ogama-Hydro	75	19	119 (June 10 to September 29)	129	0.68
Patch-Hydro	32	27	88 (June 14 to September 29)	98	0.22
PO-Hydro	68	19	108 (June 14 to September 29)	120	0.57
Reference B Hydro	159	26	112 (June 11 to September 30)	117	1.30
Roberts-Hydro	98	17	137 (June 14 to October 2)	146	1.0
Tail-Hydro	4	19	162 (June 10 to October 3)	168	0.05
Windy-Hydro	14	39	197 (June 10 to September 24)	222	0.22
Koignuk-Hydro	2,937	18	134 (June 6 to October 4)	140	25.85
<i>Mean</i>			<i>131</i>	<i>141</i>	
<i>Boston Area</i>					
Aimao Out-Hydro	1,224	19	124 (June 7 to September 25)	144	5.59
East Aimao-Hydro	363	15	143 (June 7 to September 25)	147	4.04
East Tailings-Hydro	8	7	45 (June 10 to September 25)	46	0.03
<i>Mean</i>			<i>134</i>	<i>146</i>	

^a-Mean annual discharge (MAD) based on estimated annual runoff

^b-Estimated for the 2010 open water season.

The timing of the annual peak flows was similar for the drainage basins located in the Study Area. Peak flows occurred during the spring freshet period in mid-June to mid-July, driven by snowmelt. The observed instantaneous peak flows for the drainage basins in the Doris/Madrid area ranged from 0.2 m³/s at Tail Outflow to 205 m³/s at the Koignuk River near its discharge point into Hope Bay. Observed peak flows for the drainage basins located within the Boston area ranged from 0.6 m³/s at

East Tailings-Hydro to 66 m³/s at East Aimao-Hydro (Table 6-3). Peak flows in 2010 were higher than in 2009. Peak flows in most of the drainage basins in the Study Area equalled or exceeded the magnitude of events associated with a 1-in-100 year recurrence interval (Table 6-4).

Table 6-2. Summary of Estimated Annual Runoff (mm) values by different Recurrence Intervals for the Lakes in the Doris/Madrid Area

Station Name	Hydrologic Condition										
	Dry					Mean	Wet				
	Recurrence Interval (years)										
	100	50	20	10	5	2	5	10	20	50	100
Patch Outflow	35	40	48	56	66	87	114	131	148	168	182
PO Outflow	54	59	66	74	84	105	131	147	162	181	194
Ogama Outflow	52	57	65	72	82	103	129	146	161	179	193
Tail Outflow	25	30	37	44	53	72	96	111	124	141	153
Doris Outflow	47	52	60	68	77	99	125	141	157	176	189
Roberts Outflow	39	44	52	60	70	92	119	136	152	171	185
Little Roberts Outflow	44	49	57	64	74	96	122	138	154	172	186
Windy Outflow	19	23	31	39	50	73	104	124	144	169	188
Glenn Outflow	41	45	51	58	67	86	111	128	143	164	179
Average Annual Runoff	40	44	52	59	69	90	117	134	149	169	183

Golder (2009)

Table 6-3. 2010 Annual Peak Flows for Drainage Basins located within the Doris/Madrid and Boston Areas

Hydrometric Station	Drainage Area (km ²)	Peak Flow (m ³ /s)		
		Instantaneous	Daily	Date
Doris/ Madrid Area				
Doris-Hydro	95	4.61	4.42	June 19
Ogama-Hydro	75	3.15	3.06	June 15
Patch-Hydro	32	0.56	0.55	June 19
PO-Hydro	68	3.69	3.60	June 14
Reference B-Hydro	159	12.61	11.85	June 12
Roberts-Hydro	98	5.84	5.78	June 17
Tail-Hydro	4	0.20	0.19	June 16
Windy-Hydro	14	0.49	0.46	July 23
Koignuk-Hydro	2,937	205.36	202.95	June 19
Boston Area				
Aimao Out-Hydro	1,224	62.64	62.19	June 19
East Aimao-Hydro	363	66.69	60.30	June 13
East Tailings-Hydro	8	0.60	0.49	June 10

Table 6-4. Summary of Estimated Daily Peak Flows by Different Recurrence Intervals for the Stations in the Doris/Madrid and Boston Areas

Station Name	Peak Daily Flow (m ³ /s)	
	Recurrence Interval (years)	
	2	100
<i>Doris/Madrid Area</i>		
Patch Outflow	0.693	2.06
PO Outflow	1.29	3.04
Ogama Outflow	1.41	3.12
Tail Outflow	0.122	0.389
Doris Outflow	1.68	3.56
Roberts Outflow	2.13	5.97
Little Roberts Outflow	3.82	8.89
Windy Outflow	0.304	1.22
Koignuk-Hydro	88.5	180.6
Reference B-Hydro	3.7	9.4
<i>Boston Area</i>		
Aimao Out-Hydro	34.2	74.4
East Aimao-Hydro	9.2	21.7

Observed low flows for the drainage basins in the Doris/Madrid area occurred in early-to-late September and ranged from 0.02 m³/s at Tail-Hydro to 6.75 m³/s at Koignuk-Hydro. The observed low flows for the drainage basins in the Boston area occurred in mid-August to early-September and ranged from 0.001 m³/s at East Tailings-Hydro to 3.05 m³/s at Aimao Out-Hydro (Table 6-5).

Table 6-5. 2010 Annual Low Flows in the Doris/Madrid and Boston Areas

Hydrometric Station	Daily Low Flow (m ³ /s)	Date	Drainage Area (km ²)
<i>Doris/Madrid Area</i>			
Doris-Hydro	0.463	September 29	95
Ogama-Hydro	0.322	September 2	75
Patch-Hydro	0.136	September 29	32
PO-Hydro	0.302	September 29	68
Reference B-Hydro	0.172	September 9	159
Roberts-Hydro	0.327	September 3	98
Tail-Hydro	0.019	September 29	4
Windy-Hydro	0.159	September 24	33
Koignuk-Hydro	6.752	September 3	2,937
<i>Boston Area</i>			
Aimao Out-Hydro	3.05	September 03	1,224
East Aimao-Hydro	0.390	September 03	363
East Tailings-Hydro	0.001	August 18	8

In the Doris/Madrid area, changes in lake water levels recorded from June 1st to October 3rd ranged from 0.10 m at Windy Lake to 0.68 m at Doris Lake, respectively. In the Boston area the variation in the estimated lake water levels from June 6th to September 26th was 2.13 m.

Tide levels were measured by a hydrometric station installed near the existing jetty located in the southern part of Roberts Bay from late July 21st to October 2nd. The tides in Roberts Bay were microtidal (<2 m tidal range) and semi-diurnal (two high tides and two low tides per day). Daily tide ranges were generally between 0.20 and 0.44 m (average: 0.34 ± 0.07 m), with a maximum tidal range (the difference between high and low water in one tidal cycle) of 0.53 m on September 7, 2010 during the spring tide.

References

References

- Eaton B. and Moore, R.D. 2007. Chapter 4 – Regional Hydrology [Draft]. In *Compendium of Forest Hydrology and Geomorphology in British Columbia* [In Prep.] R.G. Pike *et al.* (editors). B.C. Ministry of Forests and Range Research Branch, Victoria, B.C. and FORREX Forest Research Extension Partnership, Kamloops, B.C. Land Management Handbook(TBD).URL: <http://www.forrex.org/program /water/ compendium.asp>. Last accessed December 2010.
- Environment Canada 2010. *Climate Trends and Variations Bulletin*. URL: <http://www.ec.gc.ca/adsc-cmda/default.asp?lang=En&n=8C03D32A-1>. Last accessed December 2010.
- Golder and Associates. 2009. *Doris Study Area 2008 Hydrology Baseline Update - Draft Report*. Report Number: 08-1373-0026
- International Organization for Standardization. 2010. *Hydrometry – Measurement of liquid flow in open channels – Part 2: Determination of the stage-discharge relationship*. ISO 1100-2:2010(E).
- Kennedy, E.J. 1984. Discharge Ratings at Gaging stations: U.S. Geological Survey Techniques of Water-Resources Investigations, book 3, chap. A10, 59 p.
- Linsley, R.K., Kohler, M.A., Paulhus, J.L. 1982. *Hydrology for Engineers*. McGraw-Hill
- Pilon, P. J. and K. D. Harvey. 1993. *Consolidated frequency analysis (CFA) Version 3.1*. N.p.: Interpretation and Applications Division, Surveys and Information Systems Branch, Ecosystem Sciences and Evaluation Directorate, Environment Canada.
- Pilon, P.P., Jackson, R.J. 1988. *Low Flow frequency Analysis (LFA) Version 1*. Water Resources Branch, Inland Waters Directorate, Environment Canada.
- Quinton, W.L. and P. Marsh. 1998. The influence of mineral earth hummocks on subsurface drainage in the continuous permafrost zone. *Permafrost and Periglacial Processes* 9.
- Rehmel, M.S., Stewart, J.A., Morlock, S.E. 2003. *Tethered acoustic Doppler current profiler platforms for measuring streamflow*. United States Geological Survey Open File Report 03-237.
- Rescan. 2009. *2009 Hydrology Baseline Report, Hope Bay Belt Project*. Prepared for Newmont Mining Corporation by Rescan Environmental Services Ltd. December 2009.
- Rescan 2010a. *2009 Freshwater Baseline Report, Hope Bay Belt Project*. Vancouver, BC: Prepared for Hope Bay Mining Ltd. by Rescan Environmental Services Ltd. February 2010.
- Rescan 2010b. *2009 Marine Baseline Report, Hope Bay Belt Project* . Vancouver, BC: Prepared for Hope Bay Mining Ltd. by Rescan Environmental Services Ltd. March 2010.
- Rescan 2010c. *2010 Freshwater Baseline Report, Hope Bay Belt Project*. In Prep. Vancouver, BC: Prepared for Hope Bay Mining Ltd. by Rescan Environmental Services Ltd.
- Roulet N.T. Woo, M.K 1988. Runoff Generation in a Low Arctic Drainage Basin. *Journal of Hydrology*, 101 (1988) 213-226.
- Terzi, R.A. 1981. *Hydrometric Field Manual - Measurement of Stream flow*. Environment Canada, Inland Waters Directorate. Ottawa.
- Water Survey of Canada 2004. *Procedures for Conducting ADCP Discharge Measurements*. Version 1.0, 2004. Environment Canada.
- Woo, M-K., 1990. Permafrost Hydrology. In: *Northern Hydrology, Canadian Perspectives* T.D. Prowse and C.S.L. Ommanney eds. NHRI Science Report No. 1, 63-76.

Appendices for Doris/Madrid Area

Appendix A1

Discharge Measurements

Table A1.1. Manual Flow Measurements at Doris-Hydro in 2010

Date Monitored:	10-Jun-10								Pressure Transducer (m):	98.891							
Time (24 hr):	13:32								Mean Discharge Q (m³/s):	0.72							
Personnel:	C. Hatt, X. Pinto								Error (+/- %)	3.1							
Method:	Velocity - area with Swoffer																
Propeller Size:	2"																
Indicator Constant:	615																

Date Monitored:	15-Jun-10								Pressure Transducer (m):		99.117								
Time (24 hr):	9:30								Mean Discharge Q (m³/s):		2.34								
Personnel:	C. Hatt, X. Pinto								Error (+/- %)		2.4								
Method:	Velocity - area with Swoffer																		
Propeller Size:	3"																		
Indicator Constant:	606																		
Measurement 1										Measurement 2									
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q		
right bank	4.40	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	16.60	0.00	0.00	0.00	0.00	0.00	0.00	0.0		
	5.00	0.14	0.60	0.08	0.06	0.09	0.01	0.3		15.40	0.15	1.20	0.12	0.04	0.06	0.01	0.3		
	5.60	0.22	0.60	0.13	0.29	0.41	0.05	2.4		15.00	0.29	0.40	0.15	0.02	0.03	0.00	0.2		
	6.20	0.34	0.60	0.20	0.46	0.65	0.13	5.8		14.40	0.34	0.60	0.20	0.05	0.07	0.01	0.6		
	6.80	0.52	0.60	0.23	0.55	0.78	0.18	7.9		13.80	0.34	0.60	0.15	0.15	0.21	0.03	1.4		
	7.10	0.67	0.30	0.20	0.55	0.78	0.16	6.8		13.50	0.32	0.30	0.10	0.17	0.24	0.02	1.0		
	7.40	0.69	0.30	0.21	0.43	0.61	0.13	5.5		13.20	0.34	0.30	0.10	0.22	0.31	0.03	1.3		
	7.70	0.65	0.30	0.20	0.54	0.77	0.15	6.5		12.90	0.38	0.30	0.11	0.17	0.24	0.03	1.2		
	8.00	0.62	0.30	0.19	0.53	0.75	0.14	6.1		12.60	0.37	0.30	0.11	0.23	0.33	0.04	1.5		
	8.30	0.64	0.30	0.19	0.52	0.74	0.14	6.1		12.30	0.40	0.30	0.12	0.20	0.28	0.03	1.4		
	8.60	0.65	0.30	0.20	0.46	0.65	0.13	5.5		12.00	0.40	0.30	0.12	0.20	0.28	0.03	1.4		
	8.90	0.67	0.30	0.20	0.47	0.67	0.13	5.8		11.70	0.40	0.30	0.12	0.26	0.37	0.04	1.9		
	9.20	0.53	0.30	0.16	0.47	0.67	0.11	4.6		11.40	0.40	0.30	0.12	0.28	0.40	0.05	2.0		
	9.50	0.61	0.30	0.18	0.50	0.71	0.13	5.6		11.10	0.40	0.30	0.12	0.28	0.40	0.05	2.0		
	9.80	0.62	0.30	0.19	0.44	0.63	0.12	5.0		10.80	0.47	0.30	0.14	0.28	0.40	0.06	2.4		
	10.10	0.61	0.30	0.18	0.33	0.47	0.09	3.7		10.50	0.52	0.30	0.16	0.30	0.43	0.07	2.8		
	10.40	0.53	0.30	0.16	0.31	0.44	0.07	3.0		10.20	0.62	0.30	0.19	0.25	0.36	0.07	2.8		
	10.70	0.45	0.30	0.14	0.23	0.33	0.04	1.9		9.90	0.62	0.30	0.19	0.43	0.61	0.11	4.8		
	11.00	0.42	0.30	0.13	0.30	0.43	0.05	2.3		9.60	0.62	0.30	0.19	0.45	0.64	0.12	5.0		
	11.30	0.40	0.30	0.12	0.17	0.24	0.03	1.3		9.30	0.54	0.30	0.16	0.51	0.73	0.12	5.0		
	11.60	0.40	0.30	0.12	0.27	0.38	0.05	2.0		9.00	0.67	0.30	0.20	0.52	0.74	0.15	6.3		
	11.90	0.40	0.30	0.12	0.22	0.31	0.04	1.6		8.70	0.65	0.30	0.20	0.51	0.73	0.14	6.0		
	12.20	0.39	0.30	0.12	0.25	0.36	0.04	1.8		8.40	0.64	0.30	0.19	0.51	0.73	0.14	5.9		
	12.50	0.39	0.30	0.12	0.25	0.36	0.04	1.8		8.10	0.63	0.30	0.19	0.52	0.74	0.14	5.9		
	12.80	0.36	0.30	0.11	0.26	0.37	0.04	1.7		7.80	0.65	0.30	0.20	0.49	0.70	0.14	5.7		
	13.10	0.36	0.30	0.11	0.21	0.30	0.03	1.4		7.50	0.58	0.30	0.17	0.54	0.77	0.13	5.6		
	13.40	0.33	0.30	0.10	0.15	0.21	0.02	0.9		7.20	0.68	0.30	0.20	0.58	0.83	0.17	7.1		
	13.70	0.37	0.30	0.11	0.15	0.21	0.02	1.0		6.90	0.57	0.30	0.17	0.49	0.70	0.12	5.0		
	14.00	0.36	0.30	0.16	0.07	0.10	0.02	0.7		6.60	0.44	0.30	0.13	0.53	0.75	0.10	4.2		
	14.60	0.29	0.60	0.17	0.05	0.07	0.01	0.5		6.30	0.38	0.30	0.11	0.42	0.60	0.07	2.9		
	15.20	0.24	0.60	0.12	0.03	0.04	0.01	0.2		6.00	0.30	0.30	0.09	0.50	0.71	0.06	2.7		
	15.60	0.16	0.40	0.11	0.03	0.04	0.00	0.2		5.70	0.24	0.30	0.11	0.43	0.61	0.07	2.8		
left bank	16.60	0.00	0.00	0.00	0.00	0.00	0.00	0.0	right bank	5.10	0.15	0.60	0.10	0.16	0.23	0.02	0.9		
										4.40	0.00	0.70	0.00	0.00	0.00	0.00	0.0		
Total Q							2.31									2.37			

Table A1.1. Manual Flow Measurements at Doris-Hydro in 2010

Date Monitored:	15-Jul-10	Pressure Transducer (m):	98.919														
Time (24 hr):	14:20	Mean Discharge Q (m³/s):	1.06														
Personnel:	C. Hatt and assistant	Error (+/- %)															
Method:	Velocity - area with Swoffer																
Propeler	3"																
Indicator constant	610																
Calibration constant	426																
Measurement 1																	
	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q		Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
Notes									Notes								
right bank	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0									
	1.25	0.10	0.25	0.03	0.10	0.14	0.00	0.3									
	1.50	0.16	0.25	0.04	0.08	0.11	0.00	0.4									
	1.75	0.24	0.25	0.06	0.24	0.34	0.02	1.9									
	2.00	0.34	0.25	0.09	0.02	0.03	0.00	0.2									
	2.25	0.40	0.25	0.10	0.40	0.57	0.06	5.4									
	2.50	0.44	0.25	0.11	0.11	0.16	0.02	1.6									
	2.75	0.46	0.25	0.12	0.13	0.19	0.02	2.0									
	3.00	0.44	0.25	0.11	0.25	0.36	0.04	3.7									
	3.25	0.44	0.25	0.11	0.31	0.44	0.05	4.6									
	3.50	0.44	0.25	0.11	0.43	0.62	0.07	6.4									
	3.75	0.45	0.25	0.11	0.53	0.76	0.09	8.1									
	4.00	0.45	0.25	0.11	0.43	0.62	0.07	6.5									
	4.25	0.45	0.25	0.11	0.47	0.67	0.08	7.2									
	4.50	0.42	0.25	0.13	0.37	0.53	0.07	6.3									
	4.85	0.40	0.35	0.10	0.48	0.69	0.07	6.5									
	5.00	0.40	0.15	0.08	0.51	0.73	0.06	5.5									
	5.25	0.40	0.25	0.10	0.53	0.76	0.08	7.2									
	5.50	0.40	0.25	0.10	0.37	0.53	0.05	5.0									
	5.75	0.41	0.25	0.10	0.43	0.62	0.06	6.0									
	6.00	0.41	0.25	0.10	0.34	0.49	0.05	4.7									
	6.25	0.37	0.25	0.09	0.41	0.59	0.05	5.1									
	6.50	0.35	0.25	0.09	0.19	0.27	0.02	2.3									
	6.75	0.27	0.25	0.07	0.16	0.23	0.02	1.5									
	7.00	0.21	0.25	0.07	0.03	0.04	0.00	0.3									
	7.40	0.20	0.40	0.11	0.05	0.07	0.01	0.7									
	8.10	0.12	0.70	0.10	0.03	0.04	0.00	0.4									
	9.00	0.09	0.90	0.09	0.00	0.00	0.00	0.0									
	10.00	0.09	1.00	0.09	0.00	0.00	0.00	0.0									
left bank	11.00	0.00	1.00	0.00	0.00	0.00	0.00	0.0									
Total Q							1.06										

Date Monitored:	19-Aug-10	Pressure Transducer (m):	98.773														
Time (24 hr):	10:30	Mean Discharge Q (m³/s):	0.51														
Personnel:	C. Hatt and assistant	Error (+/- %)	9.0														
Method:	Velocity - area with Swoffer																
Propeller Size:	3"																
Indicator Constant:	616																
Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	10.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	4.5	0	0.00	0.00	0.00	0.00	0.00	0.0
	10.20	0.04	0.30	0.01	0.06	0.09	0.00	0.2		4.65	0.18	0.15	0.04	0.00	0.00	0.00	0.0
	9.90	0.05	0.30	0.02	0.00	0.00	0.00	0.0		4.95	0.21	0.30	0.06	0.00	0.00	0.00	0.0
	9.60	0.09	0.30	0.03	0.15	0.22	0.01	1.1		5.25	0.31	0.30	0.09	0.01	0.01	0.00	0.3
	9.30	0.11	0.30	0.03	0.14	0.20	0.01	1.2		5.55	0.37	0.30	0.11	0.10	0.14	0.02	3.3
	9.00	0.17	0.30	0.05	0.29	0.42	0.02	4.0		5.85	0.34	0.30	0.10	0.40	0.58	0.06	12.1
	8.70	0.22	0.30	0.07	0.28	0.40	0.03	5.0		6.15	0.35	0.30	0.11	0.38	0.55	0.06	11.8
	8.40	0.25	0.30	0.08	0.31	0.45	0.03	6.3		6.45	0.35	0.30	0.11	0.34	0.49	0.05	10.6
	8.10	0.27	0.30	0.08	0.36	0.52	0.04	7.9		6.75	0.41	0.30	0.12	0.24	0.35	0.04	8.7
	7.80	0.30	0.30	0.09	0.33	0.48	0.04	8.0		7.05	0.38	0.30	0.11	0.29	0.42	0.05	9.8
	7.50	0.32	0.30	0.10	0.32	0.46	0.04	8.3		7.35	0.35	0.30	0.11	0.28	0.40	0.04	8.7
	7.20	0.37	0.30	0.11	0.30	0.43	0.05	9.0		7.65	0.3	0.30	0.09	0.30	0.43	0.04	8.0
	6.90	0.41	0.30	0.12	0.29	0.42	0.05	9.6		7.95	0.27	0.30	0.08	0.31	0.45	0.04	7.4
	6.60	0.36	0.30	0.11	0.29	0.42	0.05	8.5		8.25	0.25	0.30	0.08	0.29	0.42	0.03	6.4
	6.30	0.33	0.30	0.10	0.35	0.51	0.05	9.4		8.55	0.23	0.30	0.07	0.31	0.45	0.03	6.3
	6.00	0.33	0.30	0.10	0.40	0.58	0.06	10.7		8.85	0.18	0.30	0.05	0.22	0.32	0.02	3.5
	5.70	0.33	0.30	0.10	0.32	0.46	0.05	8.6		9.15	0.14	0.30	0.04	0.13	0.19	0.01	1.6
	5.40	0.36	0.30	0.11	0.08	0.12	0.01	2.3		9.45	0.09	0.30	0.03	0.12	0.17	0.00	1.0
	5.10	0.25	0.30	0.08	0.00	0.00	0.00	0.0		9.75	0.07	0.30	0.02	0.08	0.12	0.00	0.5
	4.80	0.20	0.30	0.06	0.00	0.00	0.00	0.0		10.05	0.05	0.30	0.02	0.00	0.00	0.00	0.0
left bank	4.50	0.00	0.30	0.00	0.00	0.00	0.00	0.0	right bank	10.5	0	0.45	0.00	0.00	0.00	0.00	0.0
Total Q							0.54									0.49	

Table A1.1. Manual Flow Measurements at Doris-Hydro in 2010

Date Monitored:		04-Oct-10		Pressure Transducer (m):		98.723											
Time (24 hr):		13:14		Mean Discharge Q (m³/s):		0.45											
Personnel:		C. Hatt and assistant		Error (+/- %)		1.5											
Method:		Velocity - area with Swoffer															
Propeller Size:		3"															
Indicator Constant:		599															
Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	6.70	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	6.50	0.02	0.20	0.00	0.00	0.00	0.00	0.0		0.80	0.10	0.30	0.03	0.01	0.01	0.00	0.1
	6.30	0.04	0.20	0.01	0.14	0.20	0.00	0.3		1.00	0.11	0.20	0.02	0.01	0.01	0.00	0.1
	6.10	0.05	0.20	0.01	0.18	0.25	0.00	0.6		1.20	0.15	0.20	0.03	0.20	0.28	0.01	1.9
	5.90	0.05	0.20	0.01	0.13	0.18	0.00	0.4		1.40	0.19	0.20	0.04	0.35	0.49	0.02	4.2
	5.70	0.07	0.20	0.01	0.11	0.15	0.00	0.5		1.60	0.22	0.20	0.04	0.35	0.49	0.02	4.9
	5.50	0.10	0.20	0.02	0.14	0.20	0.00	0.9		1.80	0.25	0.20	0.05	0.36	0.51	0.03	5.7
	5.30	0.11	0.20	0.02	0.24	0.34	0.01	1.6		2.00	0.24	0.20	0.05	0.40	0.56	0.03	6.1
	5.10	0.17	0.20	0.03	0.24	0.34	0.01	2.5		2.20	0.24	0.20	0.05	0.40	0.56	0.03	6.1
	4.90	0.20	0.20	0.04	0.25	0.35	0.01	3.1		2.40	0.23	0.20	0.05	0.41	0.58	0.03	5.9
	4.70	0.22	0.20	0.04	0.30	0.42	0.02	4.1		2.60	0.22	0.20	0.04	0.39	0.55	0.02	5.4
	4.50	0.25	0.20	0.05	0.31	0.44	0.02	4.8		2.80	0.23	0.20	0.05	0.36	0.51	0.02	5.2
	4.30	0.23	0.20	0.05	0.31	0.44	0.02	4.4		3.00	0.20	0.20	0.04	0.34	0.48	0.02	4.3
	4.10	0.23	0.20	0.05	0.33	0.46	0.02	4.7		3.20	0.22	0.20	0.04	0.29	0.41	0.02	4.0
	3.90	0.23	0.20	0.05	0.33	0.46	0.02	4.7		3.40	0.20	0.20	0.04	0.31	0.44	0.02	3.9
	3.70	0.24	0.20	0.05	0.33	0.46	0.02	4.9		3.60	0.22	0.20	0.04	0.32	0.45	0.02	4.4
	3.50	0.21	0.20	0.04	0.30	0.42	0.02	3.9		3.80	0.25	0.20	0.05	0.30	0.42	0.02	4.7
	3.30	0.21	0.20	0.04	0.30	0.42	0.02	3.9		4.00	0.25	0.20	0.05	0.31	0.44	0.02	4.9
	3.10	0.21	0.20	0.04	0.34	0.48	0.02	4.4		4.20	0.27	0.20	0.05	0.32	0.45	0.02	5.5
	2.90	0.21	0.20	0.04	0.37	0.52	0.02	4.8		4.40	0.25	0.20	0.05	0.26	0.37	0.02	4.1
	2.70	0.25	0.20	0.05	0.41	0.58	0.03	6.4		4.60	0.25	0.20	0.05	0.32	0.45	0.02	5.0
	2.50	0.22	0.20	0.04	0.39	0.55	0.02	5.3		4.80	0.22	0.20	0.04	0.28	0.39	0.02	3.9
	2.30	0.24	0.20	0.05	0.41	0.58	0.03	6.1		5.00	0.20	0.20	0.04	0.30	0.42	0.02	3.8
	2.10	0.25	0.20	0.05	0.40	0.56	0.03	6.2		5.20	0.14	0.20	0.03	0.24	0.34	0.01	2.1
	1.90	0.23	0.20	0.05	0.40	0.56	0.03	5.7		5.40	0.11	0.20	0.02	0.19	0.27	0.01	1.3
	1.70	0.24	0.20	0.05	0.35	0.49	0.02	5.2		5.60	0.09	0.20	0.02	0.12	0.17	0.00	0.7
	1.50	0.22	0.20	0.04	0.38	0.53	0.02	5.2		5.80	0.06	0.20	0.01	0.10	0.14	0.00	0.4
	1.30	0.17	0.20	0.03	0.29	0.41	0.01	3.1		6.00	0.05	0.20	0.01	0.21	0.30	0.00	0.7
	1.10	0.14	0.20	0.03	0.21	0.30	0.01	1.8		6.20	0.05	0.20	0.01	0.16	0.22	0.00	0.5
	0.90	0.10	0.20	0.02	0.01	0.01	0.00	0.1		6.40	0.03	0.20	0.01	0.13	0.18	0.00	0.3
	0.70	0.16	0.20	0.03	0.01	0.01	0.00	0.1	right bank	6.70	0.00	0.30	0.00	0.00	0.00	0.00	0.0
left bank	0.50	0.00	0.20	0.00	0.00	0.00	0.00	0.0									
Total Q							0.45									0.45	

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Table A1.2. Manual Flow Measurements at Tail-Hydro in 2010

Date Monitored:	06-Jun-10			Pressure Transducer (m):				Not installed									
Time (24 hr):	16:24			Mean Discharge Q (m³/s):				0.08									
Personnel:	C. Hatt, X. Pinto			Error (+/- %)				21.5									
Method:	Velocity - area with Swoffer																
Propeller Size:	2"																
Indicator Constant:	607																
Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	2.40	0.00	0.00	0.00	0.00	n/a	0.00	0.0	left bank	3.48	0.06	0.00	0.00	0.00	n/a	0.00	0.0
	2.50	0.13	0.10	0.01	0.06	n/a	0.00	0.7		3.43	0.06	0.05	0.00	0.12	n/a	0.00	0.5
	2.55	0.14	0.05	0.01	0.14	n/a	0.00	1.2		3.38	0.08	0.05	0.00	0.17	n/a	0.00	1.0
	2.60	0.15	0.05	0.01	0.16	n/a	0.00	1.4		3.33	0.08	0.05	0.00	0.36	n/a	0.00	2.1
	2.65	0.18	0.05	0.01	0.22	n/a	0.00	2.3		3.28	0.10	0.05	0.01	0.32	n/a	0.00	2.3
	2.70	0.29	0.05	0.01	0.31	n/a	0.00	5.3		3.23	0.10	0.05	0.01	0.56	n/a	0.00	4.1
	2.75	0.32	0.05	0.02	0.58	n/a	0.01	10.9		3.18	0.12	0.05	0.01	0.62	n/a	0.00	5.4
	2.80	0.33	0.05	0.02	0.67	n/a	0.01	13.0		3.13	0.12	0.05	0.01	0.57	n/a	0.00	5.0
	2.85	0.32	0.05	0.02	0.70	n/a	0.01	13.1		3.08	0.12	0.05	0.01	0.66	n/a	0.00	5.8
	2.90	0.25	0.05	0.01	0.79	n/a	0.01	11.6		3.03	0.12	0.05	0.01	0.74	n/a	0.00	6.5
	2.95	0.17	0.05	0.01	0.75	n/a	0.01	7.5		2.98	0.13	0.05	0.01	0.77	n/a	0.01	7.3
	3.00	0.15	0.05	0.01	0.78	n/a	0.01	6.9		2.93	0.16	0.05	0.01	0.82	n/a	0.01	9.6
	3.05	0.12	0.05	0.01	0.73	n/a	0.00	5.1		2.88	0.25	0.05	0.01	0.83	n/a	0.01	15.1
	3.10	0.12	0.05	0.01	0.63	n/a	0.00	4.4		2.83	0.32	0.05	0.02	0.69	n/a	0.01	16.1
	3.15	0.13	0.05	0.01	0.63	n/a	0.00	4.8		2.78	0.31	0.05	0.02	0.36	n/a	0.01	8.1
	3.20	0.13	0.05	0.01	0.64	n/a	0.00	4.9		2.73	0.16	0.05	0.01	0.23	n/a	0.00	2.7
	3.25	0.11	0.05	0.01	0.59	n/a	0.00	3.8		2.68	0.18	0.05	0.01	0.40	n/a	0.00	5.2
	3.30	0.10	0.05	0.01	0.33	n/a	0.00	1.9		2.63	0.12	0.05	0.01	0.19	n/a	0.00	1.7
	3.35	0.08	0.05	0.00	0.11	n/a	0.00	0.5		2.58	0.11	0.05	0.01	0.08	n/a	0.00	0.8
	3.40	0.08	0.05	0.00	0.08	n/a	0.00	0.4		2.50	0.11	0.08	0.01	0.09	n/a	0.00	0.8
	3.45	0.07	0.05	0.00	0.07	n/a	0.00	0.3	right bank	2.47	0.00	0.03	0.00	0.00	n/a	0.00	0.0
	3.50	0.06	0.05	0.00	0.00	n/a	0.00	0.0									
left bank	3.55	0.00	0.05	0.00	0.00	n/a	0.00	0.0									
Total Q							0.09									0.07	

Date Monitored:	10-Jun-10			Pressure Transducer (m):			97.985										
Time (24 hr):	10:52			Mean Discharge Q (m ³ /s):			0.10										
Personnel:	C. Hatt, X. Pinto			Error (+/- %)			5.8										
Method:	Velocity - area with Swoffer																
Propeller Size:	3"																
Indicator Constant:	613																
Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q
right bank	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	3.10	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	1.75	0.09	0.15	0.01	0.00	0.00	0.00	0.0		2.83	0.09	0.28	0.01	0.05	0.07	0.00	1.1
	1.80	0.10	0.05	0.01	0.05	0.07	0.00	0.4		2.78	0.09	0.05	0.00	0.20	0.29	0.00	1.3
	1.85	0.10	0.05	0.00	0.09	0.13	0.00	0.6		2.73	0.11	0.05	0.01	0.44	0.63	0.00	3.6
	1.90	0.11	0.05	0.01	0.07	0.10	0.00	0.5		2.68	0.13	0.05	0.01	0.47	0.68	0.00	4.5
	1.95	0.12	0.05	0.01	0.06	0.09	0.00	0.5		2.63	0.13	0.05	0.01	0.39	0.56	0.00	3.8
	2.00	0.12	0.05	0.01	0.09	0.13	0.00	0.8		2.58	0.12	0.05	0.01	0.29	0.42	0.00	2.6
	2.05	0.12	0.05	0.01	0.29	0.42	0.00	2.4		2.53	0.12	0.05	0.01	0.50	0.72	0.00	4.5
	2.10	0.12	0.05	0.01	0.22	0.32	0.00	1.9		2.48	0.13	0.05	0.01	0.67	0.96	0.01	6.5
	2.15	0.14	0.05	0.01	0.30	0.43	0.00	2.9		2.43	0.14	0.05	0.01	0.74	1.06	0.01	7.7
	2.20	0.26	0.05	0.01	0.36	0.52	0.01	6.6		2.38	0.20	0.05	0.01	0.76	1.09	0.01	11.3
	2.25	0.28	0.05	0.01	0.60	0.86	0.01	11.8		2.33	0.29	0.05	0.01	0.69	0.99	0.01	14.9
	2.30	0.29	0.05	0.01	0.71	1.02	0.01	14.4		2.28	0.30	0.05	0.02	0.68	0.98	0.01	15.2
	2.35	0.28	0.05	0.01	0.74	1.06	0.01	14.5		2.23	0.29	0.05	0.01	0.55	0.79	0.01	11.9
	2.40	0.22	0.05	0.01	0.74	1.06	0.01	11.4		2.18	0.16	0.05	0.01	0.27	0.39	0.00	3.2
	2.45	0.17	0.05	0.01	0.74	1.06	0.01	8.8		2.13	0.12	0.05	0.01	0.19	0.27	0.00	1.7
	2.50	0.14	0.05	0.01	0.59	0.85	0.01	5.8		2.08	0.11	0.05	0.01	0.10	0.14	0.00	0.8
	2.55	0.13	0.05	0.01	0.41	0.59	0.00	3.7		2.03	0.13	0.05	0.01	0.14	0.20	0.00	1.4
	2.60	0.13	0.05	0.01	0.37	0.53	0.00	3.4		1.98	0.13	0.05	0.01	0.10	0.14	0.00	1.0
	2.65	0.14	0.05	0.01	0.45	0.65	0.00	4.4		1.93	0.12	0.05	0.01	0.11	0.16	0.00	1.0
	2.70	0.12	0.05	0.01	0.39	0.56	0.00	3.3		1.88	0.11	0.05	0.01	0.09	0.13	0.00	0.7
	2.75	0.10	0.05	0.00	0.18	0.26	0.00	1.3		1.83	0.10	0.05	0.01	0.10	0.14	0.00	0.7
	2.80	0.09	0.05	0.00	0.08	0.12	0.00	0.5		1.78	0.10	0.05	0.00	0.06	0.09	0.00	0.4
	2.85	0.08	0.05	0.01	0.00	0.00	0.00	0.0		1.73	0.08	0.05	0.01	0.03	0.04	0.00	0.3
left bank	3.10	0.00	0.25	0.00	0.00	0.00	0.00	0.0	right bank	1.60	0.00	0.13	0.00	0.00	0.00	0.00	0.0
Total Q							0.10									0.10	

Table A1.2. Manual Flow Measurements at Tail-Hydro in 2010

Date Monitored:	15-Jun-10								Pressure Transducer (m):		98.023							
Time (24 hr):	14:11								Mean Discharge Q (m³/s):		0.18							
Personnel:	C. Hatt, X. Pinto								Error (+/- %)		9.9							
Method:	Velocity - area with Swoffer																	
Propeller Size:	3"																	
Indicator Constant:	607																	
Measurement 1									Measurement 2									
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	
left bank	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.0	right bank	4.70	0.00	0.00	0.00	0.00	0.00	0.00	0.0	
	1.28	0.12	0.18	0.02	0.00	0.00	0.00	0.0		2.85	0.19	1.85	0.18	0.15	0.21	0.04	20.4	
	1.36	0.11	0.08	0.01	0.00	0.00	0.00	0.0		2.80	0.19	0.05	0.01	0.16	0.23	0.00	1.1	
	1.54	0.13	0.18	0.02	0.00	0.00	0.00	0.0		2.75	0.18	0.05	0.01	0.22	0.31	0.00	1.5	
	1.72	0.16	0.18	0.02	0.24	0.34	0.01	3.7		2.70	0.18	0.05	0.01	0.16	0.23	0.00	1.1	
	1.77	0.15	0.05	0.01	0.29	0.41	0.00	1.8		2.65	0.19	0.05	0.01	0.25	0.36	0.00	1.8	
	1.82	0.14	0.05	0.01	0.58	0.83	0.01	3.4		2.60	0.21	0.05	0.01	0.34	0.48	0.01	2.7	
	1.87	0.15	0.05	0.01	0.55	0.78	0.01	3.4		2.55	0.24	0.05	0.01	0.44	0.63	0.01	4.0	
	1.92	0.15	0.05	0.01	0.58	0.83	0.01	3.6		2.50	0.25	0.05	0.01	0.50	0.71	0.01	4.7	
	1.97	0.17	0.05	0.01	0.50	0.71	0.01	3.5		2.45	0.25	0.05	0.01	0.59	0.84	0.01	5.6	
	2.02	0.19	0.05	0.01	0.60	0.85	0.01	4.7		2.40	0.22	0.05	0.01	0.53	0.76	0.01	4.4	
	2.07	0.19	0.05	0.01	0.64	0.91	0.01	5.1		2.35	0.20	0.05	0.01	0.72	1.03	0.01	5.4	
	2.12	0.21	0.05	0.01	0.72	1.03	0.01	6.3		2.30	0.20	0.05	0.01	0.63	0.90	0.01	4.7	
	2.17	0.20	0.05	0.01	0.65	0.93	0.01	5.4		2.25	0.22	0.05	0.01	0.61	0.87	0.01	5.1	
	2.22	0.20	0.05	0.01	0.72	1.03	0.01	6.0		2.20	0.20	0.05	0.01	0.64	0.91	0.01	4.8	
	2.27	0.21	0.05	0.01	0.67	0.95	0.01	5.9		2.15	0.20	0.05	0.01	0.69	0.98	0.01	5.2	
	2.32	0.21	0.05	0.01	0.63	0.90	0.01	5.5		2.10	0.20	0.05	0.01	0.62	0.88	0.01	4.7	
	2.37	0.21	0.05	0.01	0.65	0.93	0.01	5.7		2.05	0.18	0.05	0.01	0.50	0.71	0.01	3.4	
	2.42	0.24	0.05	0.01	0.62	0.88	0.01	6.2		2.00	0.16	0.05	0.01	0.41	0.58	0.00	2.5	
	2.47	0.24	0.05	0.01	0.59	0.84	0.01	5.9		1.95	0.14	0.05	0.01	0.44	0.63	0.00	2.3	
	2.52	0.24	0.05	0.01	0.47	0.67	0.01	4.7		1.90	0.14	0.05	0.02	0.59	0.84	0.02	8.7	
	2.57	0.22	0.05	0.01	0.43	0.61	0.01	3.9		1.67	0.14	0.23	0.06	0.14	0.20	0.01	5.9	
	2.62	0.20	0.05	0.01	0.25	0.36	0.00	2.1	left bank	1.10	0.00	0.57	0.00	0.00	0.00	0.00	0.0	
	2.67	0.20	0.05	0.01	0.18	0.26	0.00	1.5										
	2.72	0.17	0.05	0.02	0.18	0.26	0.01	2.9										
	2.90	0.17	0.18	0.03	0.23	0.33	0.01	5.9										
	3.08	0.12	0.18	0.02	0.00	0.00	0.00	0.0										
	3.26	0.10	0.18	0.04	0.00	0.00	0.00	0.0										
	3.80	0.09	0.54	0.03	0.00	0.00	0.00	0.0										
	4.01	0.11	0.21	0.05	0.07	0.10	0.00	2.9										
right bank	4.70	0.00	0.69	0.00	0.00	0.00	0.00	0.0										
Total Q							0.17									0.19		

Date Monitored:	15-Jul-10	Pressure Transducer (m):							97.906								
Time (24 hr):	13:30	Mean Discharge Q (m³/s):							0.02								
Personnel:	C. Hatt and assistant	Error (+/- %)							n/a								
Method:	Velocity - area with Swoffer																
Propeller size:	3"																
Indicator Constant:	618																
		Measurement 1							Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0									
	0.58	0.00	0.08	0.00	0.00	0.00	0.00	0.0									
	0.65	0.06	0.08	0.00	0.00	0.00	0.00	0.0									
	0.73	0.10	0.08	0.01	0.08	0.12	0.00	3.5									
	0.80	0.13	0.08	0.01	0.09	0.13	0.00	5.1									
	0.88	0.18	0.08	0.01	0.16	0.23	0.00	8.4									
	0.90	0.25	0.03	0.02	0.09	0.13	0.00	9.8									
	1.03	0.21	0.13	0.02	0.19	0.28	0.01	23.3									
	1.10	0.17	0.08	0.01	0.16	0.23	0.00	11.9									
	1.18	0.13	0.08	0.01	0.30	0.44	0.00	17.1									
	1.25	0.13	0.08	0.01	0.21	0.30	0.00	11.9	Only one measurement								
	1.33	0.13	0.08	0.01	0.07	0.10	0.00	4.0									
	1.40	0.13	0.08	0.01	0.06	0.09	0.00	3.4									
	1.48	0.11	0.08	0.01	0.01	0.01	0.00	0.5									
	1.55	0.12	0.08	0.01	0.01	0.01	0.00	0.5									
	1.63	0.13	0.08	0.01	0.01	0.01	0.00	0.6									
	1.70	0.12	0.08	0.01	0.00	0.00	0.00	0.0									
	1.80	0.09	0.10	0.01	0.00	0.00	0.00	0.0									
	1.90	0.08	0.10	0.01	0.00	0.00	0.00	0.0									
left bank	2.00	0.00	0.10	0.00	0.00	0.00	0.00	0.0									
Total Q							0.02										

Table A1.2. Manual Flow Measurements at Tail-Hydro in 2010

Date Monitored:	19-Aug-10	Pressure Transducer (m):	97.898
Time (24 hr):		Mean Discharge Q (m ³ /s):	0.02
Personnel:	C. Hatt and assistant	Error (+/- %)	n/a
Method:	Velocity - area with Swoffer		
Propeller Size:	3"		
Indicator Constant:	616		

Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q
right bank	2.40	0.00	0.00	0.00	0.00	0.00	0.000	0.0									
	2.50	0.06	0.10	0.00	0.05	0.07	0.000	1.7									
	2.55	0.09	0.05	0.00	0.06	0.09	0.000	2.1									
	2.60	0.12	0.05	0.01	0.13	0.19	0.001	6.0									
	2.65	0.14	0.05	0.01	0.12	0.17	0.001	6.4									
	2.70	0.19	0.05	0.01	0.14	0.20	0.002	10.2									
	2.75	0.24	0.05	0.01	0.09	0.13	0.002	8.3									
	2.80	0.22	0.05	0.01	0.11	0.16	0.002	9.2									
	2.85	0.15	0.05	0.01	0.18	0.26	0.002	10.3									
	2.90	0.15	0.05	0.01	0.18	0.26	0.002	10.3									
	2.95	0.12	0.05	0.01	0.17	0.25	0.001	7.8									
	3.00	0.11	0.05	0.01	0.18	0.26	0.001	7.6									
	3.05	0.10	0.05	0.01	0.18	0.26	0.001	6.9									
	3.10	0.11	0.05	0.01	0.16	0.23	0.001	6.7									
	3.15	0.12	0.05	0.01	0.09	0.13	0.001	4.1									
	3.20	0.13	0.05	0.01	0.05	0.07	0.000	2.5									
	3.25	0.11	0.05	0.01	0.00	0.00	0.000	0.0									
	3.30	0.11	0.05	0.01	0.00	0.00	0.000	0.0									
	3.35	0.10	0.05	0.01	0.00	0.00	0.000	0.0									
	3.40	0.09	0.05	0.00	0.00	0.00	0.000	0.0									
	3.45	0.08	0.05	0.00	0.00	0.00	0.000	0.0									
	3.50	0.06	0.05	0.00	0.00	0.00	0.000	0.0									
	3.55	0.06	0.05	0.00	0.00	0.00	0.000	0.0									
	3.60	0.07	0.05	0.00	0.00	0.00	0.000	0.0									
	3.65	0.06	0.05	0.00	0.00	0.00	0.000	0.0									
	3.70	0.05	0.05	0.00	0.00	0.00	0.000	0.0									
	3.75	0.05	0.05	0.00	0.00	0.00	0.000	0.0									
left bank	3.80	0.00	0.05	0.00	0.00	0.00	0.000	0.0									
Total Q							0.02										

Date Monitored:	04-Oct-10			Pressure Transducer (m):			97.955										
Time (24 hr):	15:43			Mean Discharge Q (m³/s):			0.02										
Personnel:	C. Hatt and assistant			Error (+/- %)			n/a										
Method:	Velocity - area with Swoffer																
Propeller Size:	3"																
Indicator Constant:	597																
Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	1.6	0.00	0.00	0.00	0.00	0.00	0.000	0.0									
	1.65	0.20	0.05	0.01	0.00	0.00	0.000	0.0									
	1.7	0.22	0.05	0.01	0.00	0.00	0.000	0.0									
	1.75	0.23	0.05	0.01	0.07	0.10	0.001	6.9									
	1.8	0.36	0.05	0.01	0.06	0.08	0.001	6.9									
	1.825	0.35	0.02	0.01	0.11	0.15	0.001	8.2									
	1.85	0.3	0.03	0.01	0.14	0.20	0.001	8.9									
	1.875	0.32	0.02	0.01	0.14	0.20	0.002	9.5									
	1.9	0.31	0.02	0.01	0.15	0.21	0.002	9.9									
	1.925	0.3	0.02	0.01	0.16	0.22	0.002	10.2									
									Only one measurement								
	1.95	0.29	0.02	0.01	0.14	0.20	0.001	8.6									
	1.975	0.27	0.02	0.01	0.13	0.18	0.001	7.5									
	2	0.28	0.02	0.01	0.14	0.20	0.001	8.3									
	2.025	0.25	0.02	0.01	0.07	0.10	0.001	3.7									
	2.05	0.26	0.02	0.01	0.08	0.11	0.001	4.4									
	2.075	0.21	0.02	0.01	0.05	0.07	0.000	2.2									
	2.1	0.24	0.02	0.01	0.09	0.13	0.001	4.6									
	2.125	0.2	0.02	0.00	0.00	0.00	0.000	0.0									
	2.15	0.2	0.02	0.01	0.00	0.00	0.000	0.0									
left bank	2.2	0.00	0.05	0.00	0.00	0.00	0.000	0.0									
Total Q							0.02										

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Table A1.3. Manual Flow Measurements at Koignuk-Hydro in 2010

Date Monitored:	13-Jun-10	Pressure Transducer (m):	99.442						
Time (24 hr):	11:00	Mean Discharge Q (m³/s):	118.62						
Personnel:	C. Hatt, X. Pinto	Error (Std dev m³/s)	6.81						
Method:	Velocity - area with ADCP								
Discharge Q (m³/s)								% Bad	
	Transect	Top	Mid	Bottom	Left	Right	Total Q	Ens	Bins
	1	7.24	87.00	10.30	1.63	18.30	124.47	1	9
	2	7.44	81.50	12.90	9.02	3.75	114.61	0	12
	3	9.59	81.50	14.10	6.10	13.00	124.29	10	5
	4	9.57	79.00	13.40	5.31	3.82	111.10	0	5

Date Monitored:	16-Jun-10	Pressure Transducer (m):	99.074					
Time (24 hr):	11:00	Mean Discharge Q (m³/s):	187.53					
Personnel:	C. Hatt, X. Pinto	Error (Std dev m³/s)	4.91					
Method:	Velocity - area with ADCP							
Discharge Q (m³/s)							% Bad	
Transect	Top	Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	13.90	142.00	21.60	6.03	-0.26	183.28	0	10
2	12.70	149.00	24.00	-0.18	6.39	191.91	0	13
3	15.10	142.00	28.70	5.07	0.78	191.65	1	10
4	14.00	131.00	25.10	1.39	11.80	183.29	0	13

Date Monitored:	22-Jul-10	Pressure Transducer (m):	97.372					
Time (24 hr):	13:30							
Personnel:	C. Hatt, X. Pinto	Mean Discharge Q (m³/s):	24.96					
Method:	Velocity - area with ADCP	Error (Std dev m³/s)	1.68					
Discharge Q (m³/s)							% Bad	
Transect	Top	Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	1.82	14.30	2.15	0.93	3.41	22.61	0	2
2	2.15	15.90	2.78	0.79	3.87	25.49	0	4
3	2.06	16.60	2.56	0.91	4.46	26.59	2	3
4	1.93	15.90	2.46	1.14	3.74	25.17	0	1

Date Monitored:	18-Aug-10	Pressure Transducer (m):	96.955						
Time (24 hr):									
Personnel:	Craig Hatt and assistant	Mean Discharge Q (m³/s):	7.82						
Method:	Velocity - area with ADCP	Error (Std dev m³/s)	0.34						
Discharge Q (m³/s)								% Bad	
Transect	Top	Mid	Bottom	Left	Right	Total Q		Ens	Bins
1	1.84	4.28	1.17	0.05	0.10	7.44		6	4
2	1.91	4.21	1.33	0.23	0.58	8.26		6	4
3	1.90	4.07	1.11	0.15	0.58	7.81		5	6
4	1.98	3.85	1.16	0.24	0.54	7.76		16	5

Date Monitored:	05-Oct-10	Pressure Transducer (m):	96.955						
Time (24 hr):	16:00	Mean Discharge Q (m³/s):	8.32						
Personnel:	Craig Hatt	Error (Std dev m³/s)	0.12						
Method:	Velocity - area with ADCP								
Discharge Q (m³/s)								% Bad	
Transect	Top	Mid	Bottom	Left	Right	Total Q		Ens	Bins
1	1.92	4.46	1.15	0.51	0.14	8.18		3	5
2	2.02	4.75	1.20	0.32	0.17	8.46		2	3
3	2.14	4.39	1.27	0.31	0.17	8.28		6	1
4	2.03	4.72	1.22	0.26	0.13	8.36		2	2

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Table A1.4. Manual Flow Measurements at Ogama-Hydro in 2010

Date Monitored:	11-Jun-10	Pressure Transducer (m):	
Time (24 hr):	16:45	Mean Discharge Q (m³/s):	
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	
Method:	Velocity - area with Swoffer		
Propeller Size:	2"		
Indicator Constant:	611		

Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	9.60	0.00	0.00	0.00	0.00	n/a	0.00	0.0	left bank	-0.10	0.16	0.00	0.04	0.06	n/a	0.00	0.1
	9.10	0.25	0.50	0.10	0.47	n/a	0.05	2.5		0.40	0.21	0.50	0.08	0.06	n/a	0.01	0.3
	8.80	0.26	0.30	0.07	0.59	n/a	0.04	2.0		0.70	0.21	0.30	0.06	0.05	n/a	0.00	0.2
	8.60	0.27	0.20	0.07	0.76	n/a	0.05	2.7		1.00	0.24	0.30	0.07	0.04	n/a	0.00	0.2
	8.30	0.29	0.30	0.07	0.76	n/a	0.06	2.9		1.30	0.23	0.30	0.08	0.02	n/a	0.00	0.1
	8.10	0.32	0.20	0.08	0.95	n/a	0.08	4.0		1.70	0.26	0.40	0.09	0.03	n/a	0.00	0.1
	7.80	0.46	0.30	0.12	1.00	n/a	0.12	6.1		2.00	0.25	0.30	0.10	0.02	n/a	0.00	0.1
	7.60	0.45	0.20	0.09	0.90	n/a	0.08	4.3		2.50	0.23	0.50	0.12	0.02	n/a	0.00	0.1
	7.40	0.50	0.20	0.10	1.17	n/a	0.12	6.2		3.00	0.25	0.50	0.13	0.03	n/a	0.00	0.2
	7.20	0.64	0.20	0.13	0.95	n/a	0.12	6.5		3.50	0.24	0.50	0.12	0.03	n/a	0.00	0.2
	7.00	0.64	0.20	0.13	0.96	n/a	0.12	6.5		4.00	0.19	0.50	0.08	0.03	n/a	0.00	0.1
	6.80	0.62	0.20	0.12	0.99	n/a	0.12	6.5		4.30	0.21	0.30	0.06	0.52	n/a	0.03	1.8
	6.60	0.58	0.20	0.12	0.85	n/a	0.10	5.2		4.60	0.18	0.30	0.05	0.62	n/a	0.03	1.8
	6.40	0.60	0.20	0.12	0.84	n/a	0.10	5.4		4.90	0.18	0.30	0.05	0.46	n/a	0.02	1.4
	6.20	0.54	0.20	0.11	0.80	n/a	0.09	4.6		5.20	0.21	0.30	0.06	0.53	n/a	0.03	1.8
	6.00	0.65	0.20	0.13	0.99	n/a	0.13	6.9		5.50	0.28	0.30	0.07	0.75	n/a	0.05	2.9
	5.80	0.66	0.20	0.13	1.16	n/a	0.15	8.2		5.70	0.64	0.20	0.13	0.85	n/a	0.11	5.9
	5.60	0.62	0.20	0.12	0.91	n/a	0.11	6.0		5.90	0.66	0.20	0.13	1.09	n/a	0.14	7.8
	5.40	0.38	0.20	0.10	0.85	n/a	0.08	4.3		6.10	0.66	0.20	0.13	0.87	n/a	0.11	6.2
	5.10	0.22	0.30	0.07	0.57	n/a	0.04	2.0		6.30	0.57	0.20	0.11	1.00	n/a	0.11	6.2
	4.80	0.18	0.30	0.05	0.49	n/a	0.03	1.4		6.50	0.56	0.20	0.11	0.90	n/a	0.10	5.5
	4.50	0.18	0.30	0.05	0.44	n/a	0.02	1.3		6.70	0.64	0.20	0.13	0.75	n/a	0.10	5.2
	4.20	0.18	0.30	0.06	0.64	n/a	0.04	2.1		6.90	0.61	0.20	0.12	0.95	n/a	0.12	6.3
	3.80	0.20	0.40	0.07	0.04	n/a	0.00	0.1		7.10	0.66	0.20	0.13	0.80	n/a	0.11	5.7
	3.50	0.21	0.30	0.06	0.07	n/a	0.00	0.2		7.30	0.65	0.20	0.13	1.04	n/a	0.14	7.3
	3.20	0.24	0.30	0.08	0.07	n/a	0.01	0.3		7.50	0.53	0.20	0.11	1.10	n/a	0.12	6.3
	2.80	0.26	0.40	0.16	0.04	n/a	0.01	0.3		7.70	0.60	0.20	0.12	0.88	n/a	0.11	5.7
	2.00	0.25	0.80	0.13	0.02	n/a	0.00	0.1		7.90	0.51	0.20	0.13	0.85	n/a	0.11	5.9
	1.80	0.26	0.20	0.07	0.03	n/a	0.00	0.1		8.20	0.35	0.30	0.09	0.82	n/a	0.07	3.9
	1.50	0.25	0.30	0.08	0.02	n/a	0.00	0.1		8.40	0.30	0.20	0.08	0.85	n/a	0.06	3.5
	1.20	0.24	0.30	0.07	0.03	n/a	0.00	0.1		8.70	0.29	0.30	0.09	0.92	n/a	0.08	4.4
	0.90	0.24	0.30	0.07	0.04	n/a	0.00	0.2		9.00	0.27	0.30	0.07	0.51	n/a	0.03	1.9
	0.60	0.20	0.30	0.09	0.07	n/a	0.01	0.3	right bank	9.20	0.29	0.20	0.03	0.53	n/a	0.02	0.8
	0.00	0.16	0.60	0.07	0.05	n/a	0.00	0.2									
left bank	-0.30	0.14	0.30	0.03	0.04	n/a	0.00	0.1									
	-0.40	0.00	0.10	0.00	0.00	n/a	0.00	0.0									
Total Q							1.88									1.84	

Table A1.4. Manual Flow Measurements at Ogama-Hydro in 2010

Date Monitored:	16-Jul-10	Pressure Transducer (m):
Time (24 hr):	11:40	Mean Discharge Q (m ³ /s):
Personnel:	C. Hatt and assistant	Error (+/- %)
Method:	Velocity - area with Swoffer	
Propeller Size:	3"	
Indicator Constant:	610	

Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q
right bank	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0									
	4.40	0.18	0.40	0.07	0.01	0.01	0.00	0.2									
	4.80	0.25	0.40	0.10	0.01	0.01	0.00	0.2									
	5.20	0.31	0.40	0.12	0.02	0.03	0.00	0.6									
	5.60	0.35	0.40	0.09	0.02	0.03	0.00	0.4									
	5.70	0.37	0.10	0.06	0.01	0.01	0.00	0.1									
	5.90	0.51	0.20	0.08	0.24	0.34	0.03	4.3									
	6.00	0.52	0.10	0.05	0.17	0.24	0.01	2.1									
	6.10	0.50	0.10	0.05	0.14	0.20	0.01	1.6									
	6.20	0.50	0.10	0.05	0.30	0.43	0.02	3.5									
	6.30	0.51	0.10	0.05	0.30	0.43	0.02	3.6									
	6.40	0.51	0.10	0.05	0.42	0.60	0.03	5.0									
	6.50	0.51	0.10	0.05	0.38	0.54	0.03	4.5									
	6.60	0.51	0.10	0.05	0.47	0.67	0.03	5.6									
	6.70	0.52	0.10	0.05	0.52	0.74	0.04	6.3									
	6.80	0.52	0.10	0.05	0.53	0.76	0.04	6.4									
	6.90	0.51	0.10	0.05	0.51	0.73	0.04	6.1									
	7.00	0.55	0.10	0.05	0.56	0.80	0.04	7.2									
	7.10	0.52	0.10	0.05	0.52	0.74	0.04	6.3									
	7.20	0.57	0.10	0.06	0.52	0.74	0.04	6.9									
	7.30	0.50	0.10	0.05	0.50	0.72	0.04	5.8									
	7.40	0.44	0.10	0.04	0.55	0.79	0.03	5.7									
	7.50	0.48	0.10	0.05	0.48	0.69	0.03	5.4									
	7.60	0.40	0.10	0.04	0.28	0.40	0.02	2.6									
	7.70	0.40	0.10	0.04	0.40	0.57	0.02	3.7									
	7.80	0.31	0.10	0.03	0.15	0.21	0.01	1.1									
	7.90	0.27	0.10	0.03	0.27	0.39	0.01	1.7									
	8.00	0.26	0.10	0.07	0.03	0.04	0.00	0.5									
	8.40	0.23	0.40	0.14	0.04	0.06	0.01	1.3									
	9.20	0.22	0.80	0.13	0.01	0.01	0.00	0.3									
	9.60	0.20	0.40	0.08	0.01	0.01	0.00	0.2									
	10.00	0.20	0.40	0.08	0.01	0.01	0.00	0.2									
	10.40	0.20	0.40	0.10	0.01	0.01	0.00	0.2									
	11.00	0.15	0.60	0.09	0.01	0.01	0.00	0.2									
	11.60	0.00	0.60	0.00	0.00	0.00	0.00	0.0									
Total Q							0.61										

Date Monitored:	18-Aug-10	Pressure Transducer (m):															
Time (24 hr):	16:30	Mean Discharge Q (m ³ /s):															
Personnel:	C. Hatt and assistant	Error (+/- %)															
Method:	Velocity - area with Swoffer																
Propeller Size:	3"																
Indicator Constant:	617																
Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q
right bank	2.80	0.00	0	0.00	0.00	0.00	0.00	0.0	left bank	5.70	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	2.95	0.30	0.15	0.05	0.02	0.03	0.00	0.3		5.60	0.15	0.10	0.02	0.00	0.00	0.00	0.0
	3.10	0.40	0.15	0.06	0.19	0.28	0.02	4.1		5.45	0.22	0.15	0.03	0.05	0.07	0.00	0.6
	3.25	0.35	0.15	0.05	0.26	0.38	0.02	4.9		5.30	0.25	0.15	0.04	0.08	0.12	0.00	1.1
	3.40	0.44	0.15	0.07	0.33	0.48	0.03	7.8		5.15	0.27	0.15	0.04	0.14	0.20	0.01	2.1
	3.55	0.32	0.15	0.05	0.32	0.46	0.02	5.5		5.00	0.30	0.15	0.05	0.19	0.28	0.01	3.1
	3.70	0.45	0.15	0.07	0.39	0.56	0.04	9.4		4.85	0.37	0.15	0.06	0.31	0.45	0.02	6.2
	3.85	0.48	0.15	0.07	0.31	0.45	0.03	8.0		4.70	0.42	0.15	0.06	0.39	0.56	0.04	8.9
	4.00	0.49	0.15	0.07	0.26	0.38	0.03	6.8		4.55	0.43	0.15	0.06	0.43	0.62	0.04	10.0
	4.15	0.50	0.15	0.08	0.30	0.43	0.03	8.0		4.40	0.44	0.15	0.07	0.45	0.65	0.04	10.7
	4.30	0.47	0.15	0.07	0.31	0.45	0.03	7.8		4.25	0.49	0.15	0.07	0.23	0.33	0.02	6.1
	4.45	0.46	0.15	0.07	0.36	0.52	0.04	8.9		4.10	0.48	0.15	0.07	0.29	0.42	0.03	7.6
	4.60	0.44	0.15	0.07	0.40	0.58	0.04	9.4		3.95	0.48	0.15	0.07	0.27	0.39	0.03	7.0
	4.75	0.41	0.15	0.06	0.38	0.55	0.03	8.3		3.80	0.45	0.15	0.07	0.37	0.54	0.04	9.0
	4.90	0.30	0.15	0.05	0.30	0.43	0.02	4.8		3.65	0.43	0.15	0.06	0.35	0.51	0.03	8.2
	5.05	0.30	0.15	0.05	0.17	0.25	0.01	2.7		3.50	0.35	0.15	0.05	0.31	0.45	0.02	5.9
	5.20	0.27	0.15	0.04	0.12	0.17	0.01	1.7		3.35	0.40	0.15	0.06	0.30	0.43	0.03	6.5
	5.35	0.25	0.15	0.04	0.04	0.06	0.00	0.5		3.20	0.35	0.15	0.05	0.22	0.32	0.02	4.2
	5.50	0.20	0.15	0.04	0.08	0.12	0.00	1.0		3.05	0.37	0.15	0.06	0.14	0.20	0.01	2.8
left bank	5.70	0.00	0.20	0.00	0.00	0.00	0.00	0.0		2.90	0.25	0.15	0.03	0.00	0.00	0.00	0.0
									right bank	2.80	0.00	0.10	0.00	0.00	0.00	0.00	0.0
Total Q							0.41									0.40	

Table A1.4. Manual Flow Measurements at Ogama-Hydro in 2010

Date Monitored:	01-Oct-10								Pressure Transducer (m):								
Time (24 hr):	14:36								Mean Discharge Q (m³/s):								
Personnel:	C. Hatt and assistant								Error (+/- %)								
Method:	Velocity - area with Swoffer																
Propeller Size:	3"																
Indicator Constant:	602																
Measurement 1									Measurement 2								
	Station	Depth	Distance	Area	Velocity	Cal. Velocity	Q	% of		Station	Depth	Distance	Area	Velocity	Cal. Velocity	Q	% of
Notes	(m)	(m)	(m)	(m²)	(m/s)	(m/s)	(m³/s)	Total Q	Notes	(m)	(m)	(m)	(m²)	(m/s)	(m/s)	(m³/s)	Total Q
right bank	3.6	0	0.00	0.00	0	0.00	0.00	0.0	left bank	6.3	0	0.00	0.00	0	0.00	0.00	0.0
	3.75	0.41	0.15	0.06	0.17	0.24	0.01	3.8		6.2	0.17	0.10	0.02	0.05	0.07	0.00	0.4
	3.9	0.44	0.15	0.07	0.19	0.27	0.02	4.5		6.05	0.21	0.15	0.03	0.08	0.11	0.00	0.9
	4.05	0.4	0.15	0.06	0.25	0.35	0.02	5.4		5.9	0.25	0.15	0.04	0.12	0.17	0.01	1.6
	4.2	0.37	0.15	0.06	0.27	0.38	0.02	5.4		5.75	0.33	0.15	0.05	0.22	0.31	0.02	3.9
	4.35	0.47	0.15	0.07	0.28	0.40	0.03	7.1		5.6	0.33	0.15	0.04	0.26	0.37	0.02	3.8
	4.5	0.45	0.15	0.07	0.27	0.38	0.03	6.6		5.5	0.4	0.10	0.05	0.25	0.35	0.02	4.4
	4.65	0.47	0.15	0.07	0.34	0.48	0.03	8.7		5.35	0.51	0.15	0.08	0.40	0.57	0.04	10.9
	4.8	0.46	0.15	0.05	0.29	0.41	0.02	5.3		5.2	0.41	0.15	0.05	0.44	0.62	0.03	8.0
	4.87	0.45	0.07	0.03	0.35	0.49	0.02	4.3		5.1	0.43	0.10	0.04	0.40	0.57	0.02	6.1
	4.95	0.43	0.08	0.03	0.41	0.58	0.02	4.1		5	0.42	0.10	0.04	0.40	0.57	0.02	6.0
	5	0.42	0.05	0.02	0.39	0.55	0.01	3.0		4.9	0.42	0.10	0.04	0.37	0.52	0.02	5.5
	5.05	0.43	0.05	0.02	0.41	0.58	0.01	3.2		4.8	0.44	0.10	0.04	0.35	0.49	0.02	5.5
	5.1	0.44	0.05	0.02	0.45	0.64	0.01	3.6		4.7	0.46	0.10	0.05	0.32	0.45	0.02	5.2
	5.15	0.43	0.05	0.03	0.43	0.61	0.02	5.0		4.6	0.45	0.10	0.04	0.30	0.42	0.02	4.8
	5.25	0.46	0.10	0.06	0.36	0.51	0.03	7.5		4.5	0.45	0.10	0.06	0.26	0.37	0.02	5.2
	5.4	0.55	0.15	0.08	0.38	0.54	0.04	11.3		4.35	0.45	0.15	0.07	0.29	0.41	0.03	7.0
	5.55	0.4	0.15	0.06	0.21	0.30	0.02	4.6		4.2	0.49	0.15	0.07	0.27	0.38	0.03	7.1
	5.7	0.32	0.15	0.05	0.21	0.30	0.01	3.6		4.05	0.46	0.15	0.07	0.25	0.35	0.02	6.1
	5.85	0.23	0.15	0.03	0.10	0.14	0.00	1.2		3.9	0.44	0.15	0.07	0.16	0.23	0.01	3.8
	6	0.2	0.15	0.03	0.10	0.14	0.00	1.1		3.75	0.45	0.15	0.07	0.16	0.23	0.02	3.8
	6.15	0.18	0.15	0.03	0.07	0.10	0.00	0.7	right bank	3.6	0	0.15	0.00	0.00	0.00	0.00	0.0
left bank	6.3	0	0.15	0.00	0.00	0.00	0.00	0.0									
Total Q							0.39									0.40	

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Table A1.4. Manual Flow Measurements at Ogama-Hydro in 2010

Date Monitored:	16-Jun-10										Pressure T:98.867										
Time (24 hr):	23:41										Mean Disch 3.41										
Personnel:	C. Hatt, X. Pinto										Error (+/- 3 n/a										
Method:	Velocity - area with Swoffer																				
Propeller Size:	3"																				
Indicator Constant:	603																				
Measurement 1											Measurement 2										
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Velocity 20% (m/s)	Velocity 80% (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q		
right bank	5.70	0.00	0.00	0.00	0.00			0.00	0.00	0.0											
	6.30	0.19	0.60	0.14	0.04			0.06	0.01	0.2											
	7.20	0.30	0.90	0.27	0.02			0.03	0.01	0.2											
	8.10	0.35	0.90	0.33	0.04			0.06	0.02	0.6											
	9.10	0.40	1.00	0.48	0.05			0.07	0.03	1.0											
	10.50	0.40	1.40	0.48	0.11			0.16	0.07	2.2											
	11.50	0.41	1.00	0.41	0.23			0.33	0.13	3.9											
	12.50	0.54	1.00	0.54	0.27			0.38	0.21	6.1											
	13.50	0.60	1.00	0.60	0.32			0.45	0.27	8.0											
	14.50	0.85	1.00	0.85	0.47	0.51	0.43	0.67	0.57	16.6											
	15.50	0.90	1.00	0.90	0.62	0.65	0.58	0.87	0.78	23.0											
	16.50	0.75	1.00	0.75	0.43	0.54	0.31	0.60	0.45	13.2											
	17.50	0.57	1.00	0.57	0.25			0.35	0.20	5.9			Only one measurement								
	18.50	0.60	1.00	0.60	0.27			0.38	0.23	6.7											
	19.50	0.59	1.00	0.59	0.29			0.41	0.24	7.1											
	20.50	0.42	1.00	0.42	0.09			0.13	0.05	1.6											
	21.50	0.44	1.00	0.51	0.01			0.01	0.01	0.2											
	22.80	0.35	1.30	0.44	0.04			0.06	0.02	0.7											
	24.00	0.30	1.20	0.33	0.05			0.07	0.02	0.7											
	25.00	0.32	1.00	0.32	0.06			0.08	0.03	0.8											
	26.00	0.31	1.00	0.28	0.05			0.07	0.02	0.6											
	26.80	0.25	0.80	0.21	0.03			0.04	0.01	0.3											
	27.70	0.26	0.90	0.20	0.01			0.01	0.00	0.1											
	28.30	0.20	0.60	0.13	0.02			0.03	0.00	0.1											
	29.00	0.22	0.70	0.17	0.02			0.03	0.00	0.1											
	29.80	0.15	0.80	0.08	0.02			0.03	0.00	0.1											
left bank	30.00	0.00	0.20	0.00	0.00			0.00	0.00	0.0											
Total Q									3.41												

Table A1.5. Manual Flow Measurements at Patch-Hydro in 2010

Date Monitored:	11-Jun-10	Pressure Transducer (m):	io PT installed
Time (24 hr):	15:49	Discharge Q (m³/s):	0.045
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	n/a
Method:	Velocity - area with Swoffer		
Propeller Size:	2"		
Indicator constant:	611		

	Measurement 1									Measurement 2							
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q		Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	0.40	0.00	0.00	0.00	0.00	n/a	0.000	0.0									
	1.70	0.09	1.30	0.08	0.00	n/a	0.000	0.0									
	2.10	0.11	0.40	0.04	0.00	n/a	0.000	0.0									
	2.40	0.15	0.30	0.06	0.00	n/a	0.000	0.0									
	2.90	0.17	0.50	0.09	0.00	n/a	0.000	0.0									
	3.40	0.17	0.50	0.09	0.00	n/a	0.000	0.0									
	3.90	0.20	0.50	0.10	0.00	n/a	0.000	0.0									
	4.40	0.18	0.50	0.09	0.00	n/a	0.000	0.0									
	4.90	0.25	0.50	0.13	0.00	n/a	0.000	0.0									
	5.40	0.29	0.50	0.15	0.00	n/a	0.000	0.0									
	5.90	0.18	0.50	0.09	0.00	n/a	0.000	0.0									
	6.40	0.41	0.50	0.14	0.01	n/a	0.001	3.2									
	6.60	0.45	0.20	0.09	0.03	n/a	0.003	6.0									
	6.80	0.43	0.20	0.09	0.05	n/a	0.004	9.5									
	7.00	0.40	0.20	0.08	0.07	n/a	0.006	12.4									
	7.20	0.37	0.20	0.07	0.08	n/a	0.006	13.1									
	7.40	0.36	0.20	0.07	0.08	n/a	0.006	12.7									
	7.60	0.35	0.20	0.07	0.07	n/a	0.005	10.8									
	7.80	0.33	0.20	0.07	0.05	n/a	0.003	7.3									
	8.00	0.32	0.20	0.06	0.05	n/a	0.003	7.1									
	8.20	0.32	0.20	0.06	0.01	n/a	0.001	1.4									
	8.40	0.30	0.20	0.06	0.01	n/a	0.001	1.3									
	8.60	0.28	0.20	0.06	0.01	n/a	0.001	1.2									
	8.80	0.23	0.20	0.05	0.02	n/a	0.001	2.0									
	9.00	0.21	0.20	0.04	0.04	n/a	0.002	3.7									
	9.20	0.19	0.20	0.04	0.05	n/a	0.002	4.2									
	9.40	0.18	0.20	0.04	0.04	n/a	0.001	3.2									
	9.60	0.17	0.20	0.03	0.01	n/a	0.000	0.8									
	9.80	0.15	0.20	0.05	0.00	n/a	0.000	0.0									
left bank	10.20	0.00	0.40	0.00	0.00	n/a	0.000	0.0									
Total Q							0.045										

Date Monitored:	16-Jun-10	Pressure Transducer (m):	99.126														
Time (24 hr):	21:14	Mean Discharge Q (m³/s):	0.53														
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	12.8														
Method:	Velocity - area with Swoffer																
Propeler	3"																
Indicator constant	604																
Calibration constant	426																
	Measurement 1								Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	13.60	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	3.70	0.06	0.70	0.04	0.00	0.00	0.00	0.0		13.35	0.15	0.25	0.04	0.02	0.03	0.00	0.2
	4.20	0.10	0.50	0.05	0.00	0.00	0.00	0.0		13.10	0.25	0.25	0.06	0.06	0.09	0.01	1.1
	4.70	0.12	0.50	0.06	0.02	0.03	0.00	0.3		12.85	0.29	0.25	0.08	0.08	0.11	0.01	1.8
	5.20	0.24	0.50	0.12	0.06	0.09	0.01	1.8		12.55	0.33	0.30	0.09	0.12	0.17	0.02	3.1
	5.70	0.28	0.50	0.14	0.08	0.11	0.02	2.8		12.30	0.34	0.25	0.09	0.13	0.18	0.02	3.2
	6.20	0.31	0.50	0.16	0.08	0.11	0.02	3.1		12.05	0.40	0.25	0.10	0.11	0.16	0.02	3.1
	6.70	0.32	0.50	0.16	0.07	0.10	0.02	2.8		11.80	0.42	0.25	0.11	0.11	0.16	0.02	3.3
	7.20	0.34	0.50	0.17	0.09	0.13	0.02	3.8		11.55	0.44	0.25	0.11	0.14	0.20	0.02	4.4
	7.70	0.32	0.50	0.13	0.06	0.09	0.01	1.9		11.30	0.41	0.25	0.10	0.13	0.18	0.02	3.8
	8.00	0.37	0.30	0.10	0.10	0.14	0.01	2.6		11.05	0.42	0.25	0.11	0.13	0.18	0.02	3.9
	8.25	0.44	0.25	0.11	0.03	0.04	0.00	0.8		10.80	0.48	0.25	0.12	0.16	0.23	0.03	5.5
	8.50	0.44	0.25	0.11	0.40	0.57	0.06	11.1		10.55	0.51	0.25	0.13	0.16	0.23	0.03	5.8
	8.75	0.47	0.25	0.12	0.11	0.16	0.02	3.3		10.30	0.55	0.25	0.14	0.17	0.24	0.03	6.7
	9.00	0.48	0.25	0.12	0.14	0.20	0.02	4.2		10.05	0.35	0.25	0.09	0.20	0.28	0.02	5.0
	9.25	0.47	0.25	0.12	0.16	0.23	0.03	4.7		9.80	0.53	0.25	0.13	0.18	0.26	0.03	6.8
	9.50	0.51	0.25	0.13	0.13	0.18	0.02	4.2		9.55	0.51	0.25	0.13	0.10	0.14	0.02	3.6
	9.75	0.52	0.25	0.13	0.16	0.23	0.03	5.2		9.30	0.47	0.25	0.12	0.14	0.20	0.02	4.7
on rock	10.00	0.34	0.25	0.09	0.21	0.30	0.03	4.5		9.05	0.48	0.25	0.12	0.14	0.20	0.02	4.8
	10.25	0.55	0.25	0.14	0.17	0.24	0.03	5.9		8.80	0.48	0.25	0.12	0.09	0.13	0.02	3.1
	10.50	0.52	0.25	0.13	0.17	0.24	0.03	5.6		8.55	0.45	0.25	0.11	0.07	0.10	0.01	2.3
	10.75	0.50	0.25	0.13	0.16	0.23	0.03	5.0		8.30	0.44	0.25	0.11	0.06	0.09	0.01	1.9
	11.00	0.43	0.25	0.11	0.12	0.17	0.02	3.2		8.05	0.39	0.25	0.16	0.13	0.18	0.03	5.8
	11.25	0.40	0.25	0.10	0.13	0.18	0.02	3.3		7.50	0.34	0.55	0.18	0.08	0.11	0.02	4.1
	11.50	0.43	0.25	0.11	0.13	0.18	0.02	3.5		7.00	0.35	0.50	0.18	0.02	0.03	0.00	1.0
	11.75	0.42	0.25	0.11	0.12	0.17	0.02	3.2		6.50	0.31	0.50	0.16	0.12	0.17	0.03	5.3
	12.00	0.42	0.25	0.11	0.11	0.16	0.02	2.9		6.00	0.31	0.50	0.16	0.05	0.07	0.01	2.2
	12.25	0.34	0.25	0.09	0.16	0.23	0.02	3.4		5.50	0.28	0.50	0.14	0.05	0.07	0.01	2.0
	12.50	0.34	0.25	0.09	0.13	0.18	0.02	2.8		5.00	0.22	0.50	0.11	0.04	0.06	0.01	1.3
	12.75	0.30	0.25	0.04	0.11	0.16	0.01	2.1		4.50	0.15	0.50	0.04	0.01	0.01	0.00	0.2
	13.00	0.26	0.25	0.03	0.09	0.13	0.01	1.5		4.00	0.10	0.50	0.05	0.00	0.00	0.00	0.0
	13.25	0.20	0.25	0.05	0.04	0.06	0.00	0.5	right bank	3.00	0.00	1.00	0.00	0.00	0.00	0.00	0.0
	13.50	0.12	0.25	0.02	0.00	0.00	0.00	0.0									
left bank	13.60	0.00	0.10	0.00	0.00	0.00	0.00	0.0									
Total Q							0.56									0.50	

Table A1.5. Manual Flow Measurements at Patch-Hydro in 2010

Date Monitored:	14-Jul-10	Pressure Transducer (m):	98.995
Time (24 hr):	14:00	Mean Discharge Q (m³/s):	1.45
Personnel:	Craig Hatt and assistant	Error (+/- %)	152.2
Method:	Velocity - area with Swoffer		
Propeler	3"		
Indicator constant	610		
Calibration constant	426		

Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	3.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	3.90	0.15	0.40	0.06	0.01	0.01	0.00	0.2		11.30	0.21	0.70	0.12	0.03	0.04	0.00	1.0
	4.30	0.17	0.40	0.07	0.01	0.01	0.00	0.2		10.90	0.22	0.40	0.09	0.01	0.01	0.00	0.3
	4.70	0.22	0.40	0.09	0.03	0.04	0.00	0.7		10.50	0.30	0.40	0.12	0.10	0.14	0.02	3.5
	5.10	0.20	0.40	0.08	0.06	0.09	0.01	1.2		10.10	0.26	0.40	0.10	0.13	0.19	0.02	3.9
	5.50	0.33	0.40	0.13	0.02	0.03	0.00	0.7		9.70	0.35	0.40	0.14	0.13	0.19	0.03	5.3
	5.90	0.25	0.40	0.10	0.05	0.07	0.01	1.3		9.30	0.38	0.40	0.15	0.20	0.29	0.04	8.8
	6.30	0.34	0.40	0.14	0.09	0.13	0.02	3.1		8.90	0.30	0.40	0.12	0.27	0.39	0.05	9.4
	6.70	0.31	0.40	0.12	0.09	0.13	0.02	2.8		8.50	0.42	0.40	0.17	0.15	0.21	0.04	7.3
	7.10	0.34	0.40	0.14	0.10	0.14	0.02	3.5		8.10	0.40	0.40	0.16	0.20	0.29	0.05	9.2
	7.50	0.36	0.40	0.14	0.08	0.11	0.02	2.9		7.70	0.40	0.40	0.16	0.14	0.20	0.03	6.5
	7.90	0.37	0.40	0.15	0.21	0.30	0.04	7.9		7.30	0.36	0.40	0.14	0.05	0.07	0.01	2.1
	8.30	0.40	0.40	0.16	0.18	0.26	0.04	7.3		6.90	0.35	0.40	0.14	0.07	0.10	0.01	2.8
	8.70	0.25	0.40	0.10	0.23	0.33	0.03	5.8		6.50	0.30	0.40	0.12	0.10	0.14	0.02	3.5
	9.10	0.40	0.40	0.16	0.22	0.32	0.05	8.9		6.10	0.25	0.40	0.10	0.07	0.10	0.01	2.0
	9.50	0.35	0.40	0.14	0.16	0.23	0.03	5.7		5.70	0.28	0.40	0.11	0.03	0.04	0.00	1.0
	9.90	0.30	0.40	0.12	0.12	0.17	0.02	3.7		5.30	0.23	0.40	0.09	0.04	0.06	0.01	1.1
	10.30	0.29	0.40	0.12	0.12	0.17	0.02	3.5		4.90	0.20	0.40	0.08	0.02	0.03	0.00	0.5
	10.70	0.27	0.40	0.11	0.05	0.07	0.01	1.4		4.50	0.20	0.40	0.08	0.02	0.03	0.00	0.5
	11.10	0.24	0.40	0.10	0.02	0.03	0.00	0.5		4.10	0.15	0.40	0.08	0.02	0.03	0.00	0.4
	11.50	0.15	0.40	0.07	0.01	0.01	0.00	0.2	right bank	3.50	0.00	0.60	0.00	0.00	0.00	0.00	0.0
left bank	12	0	0.50	0.00	0.00	0.00	0	0.0									
Total Q							0.35								2.55		

Date Monitored:	18-Jul-10	Pressure Transducer (m):	99.034
Time (24 hr):	16:00	Mean Discharge Q (m³/s):	0.33
Personnel:	Craig Hatt and assistant	Error (+/- %)	n/a
Method:	Velocity - area with Swoffer		
Propeler	3"		
Indicator constant	610		
Calibration constant	426		

Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	10.30	0.00	0.00	0.00	0.00	0.00	0.00	0.0									
	9.90	0.18	0.40	0.07	0.01	0.01	0.00	0.4		1.60	0.15	0.00	0.02	0.01	0.01	0.00	0.0
	9.50	0.21	0.40	0.08	0.04	0.06	0.00	1.7		1.90	0.17	0.30	0.06	0.01	0.01	0.00	0.0
	9.10	0.25	0.40	0.10	0.05	0.07	0.01	2.5		2.30	0.24	0.40	0.10	0.02	0.03	0.00	0.0
	8.70	0.35	0.40	0.14	0.09	0.13	0.02	6.3		2.70	0.26	0.40	0.10	0.01	0.01	0.00	0.0
	8.30	0.45	0.40	0.18	0.05	0.07	0.01	4.5		3.10	0.25	0.40	0.05	0.02	0.03	0.00	0.0
	7.90	0.31	0.40	0.12	0.13	0.19	0.02	8.0		3.50	0.28	1.00	0.11	0.01	0.01	0.00	0.0
	7.50	0.45	0.40	0.18	0.30	0.43	0.08	26.8		3.90	0.31	0.40	0.12	0.01	0.01	0.00	0.0
	7.10	0.38	0.40	0.15	0.19	0.27	0.04	14.3		4.30	0.46	0.40	0.23	0.02	0.03	0.01	0.0
	6.70	0.47	0.40	0.19	0.02	0.03	0.01	1.9		4.90	0.31	0.60	0.06	0.01	0.01	0.00	0.0
	6.30	0.45	0.40	0.18	0.03	0.04	0.01	2.7		5.30	0.35	0.40	0.14	0.06	0.09	0.01	0.0
	5.90	0.40	0.40	0.16	0.22	0.32	0.05	17.5		5.70	0.40	2.00	0.16	0.22	0.32	0.05	0.1
	5.50	0.35	0.40	0.14	0.06	0.09	0.01	4.2		6.10	0.40	0.40	0.16	0.14	0.20	0.03	0.1
	5.10	0.40	0.40	0.16	0.02	0.03	0.00	1.6		6.50	0.45	0.40	0.09	0.21	0.30	0.05	0.1
	4.70	0.35	0.40	0.14	0.03	0.04	0.01	2.1		6.90	0.27	0.40	0.11	0.21	0.30	0.03	0.1
	4.30	0.46	0.40	0.18	0.02	0.03	0.01	1.8		7.30	0.47	0.40	0.19	0.23	0.33	0.06	0.2
	3.90	0.31	0.40	0.12	0.01	0.01	0.00	0.6		7.70	0.43	3.00	0.17	0.17	0.24	0.04	0.1
	3.50	0.28	0.40	0.11	0.01	0.01	0.00	0.6		8.10	0.37	0.40	0.07	0.12	0.17	0.03	0.1
	3.10	0.25	0.40	0.10	0.02	0.03	0.00	1.0		8.50	0.38	0.40	0.15	0.07	0.10	0.02	0.0
	2.70	0.26	0.40	0.10	0.01	0.01	0.00	0.5		8.90	0.30	0.40	0.12	0.04	0.06	0.01	0.0
	2.30	0.24	0.40	0.10	0.02	0.03	0.00	1.0		9.30	0.25	0.40	0.10	0.06	0.09	0.01	0.0
	1.90	0.17	0.40	0.06	0.01	0.01	0.00	0.3		9.70	0.15	0.40	0.05	0.03	0.04	0.00	0.0
left bank	1.60	0.00	0.30	0.00	0.00	0.00	0.00	0.0		10.30	0.00	0.60	0.00	0.00	0.00	0.00	0.0
Total Q							0.29									0.37	

Table A1.5. Manual Flow Measurements at Patch-Hydro in 2010

Date Monitored:	14-Aug-10	Pressure Transducer (m):	98.957														
Time (24 hr):	16:00	Discharge Q (m³/s):	0.26														
Personnel:	Craig Hatt and assistant	Error (+/- %)	28.6														
Method:	Velocity - area with Swoffer																
Propeler	3"																
Indicator constant	619																
Calibration constant	426																
	Measurement 1								Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	10.30	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	1.90	0.10	0.40	0.04	0.01	0.01	0.00	0.2		10.10	0.09	0.20	0.03	0.01	0.01	0.00	0.2
	2.30	0.15	0.40	0.06	0.01	0.01	0.00	0.3		9.70	0.15	0.40	0.06	0.01	0.01	0.00	0.4
	2.70	0.30	0.40	0.12	0.01	0.01	0.00	0.6		9.30	0.20	0.40	0.08	0.01	0.01	0.00	0.5
	3.10	0.20	0.40	0.08	0.01	0.01	0.00	0.4		8.90	0.28	0.40	0.11	0.06	0.09	0.01	4.4
	3.50	0.23	0.40	0.09	0.01	0.01	0.00	0.5		8.50	0.36	0.40	0.07	0.04	0.06	0.01	3.8
	3.90	0.20	0.40	0.08	0.01	0.01	0.00	0.4		8.10	0.35	0.40	0.14	0.10	0.15	0.02	9.2
	4.30	0.30	0.40	0.12	0.01	0.01	0.00	0.6		7.70	0.37	0.40	0.15	0.26	0.38	0.06	25.4
	4.70	0.28	0.40	0.11	0.01	0.01	0.00	0.6		7.30	0.21	0.40	0.08	0.38	0.55	0.05	21.1
	5.10	0.30	0.40	0.12	0.01	0.01	0.00	0.6		6.90	0.37	0.40	0.15	0.08	0.12	0.02	7.8
	5.50	0.27	0.40	0.11	0.01	0.01	0.00	0.5		6.50	0.40	0.40	0.08	0.03	0.04	0.01	3.2
	5.90	0.32	0.40	0.13	0.17	0.25	0.03	10.8		6.10	0.32	0.40	0.13	0.18	0.26	0.03	15.2
	6.30	0.36	0.40	0.14	0.10	0.15	0.02	7.1		5.70	0.26	0.40	0.10	0.04	0.06	0.01	2.7
	6.70	0.38	0.40	0.15	0.31	0.45	0.07	23.3		5.30	0.30	0.40	0.12	0.01	0.01	0.00	0.8
	7.10	0.15	0.40	0.06	0.36	0.52	0.03	10.7		4.90	0.33	0.40	0.13	0.01	0.01	0.00	0.9
	7.50	0.38	0.40	0.15	0.25	0.36	0.06	18.8		4.50	0.27	0.40	0.05	0.01	0.01	0.00	0.7
	7.90	0.36	0.40	0.14	0.18	0.26	0.04	12.8		4.10	0.25	0.40	0.10	0.01	0.01	0.00	0.7
	8.30	0.35	0.40	0.14	0.08	0.12	0.02	5.5		3.70	0.33	1.00	0.13	0.01	0.01	0.00	0.9
	8.70	0.28	0.40	0.11	0.08	0.12	0.01	4.4		3.30	0.23	0.40	0.09	0.01	0.01	0.00	0.6
	9.10	0.23	0.40	0.09	0.03	0.04	0.00	1.4		2.90	0.26	0.40	0.10	0.01	0.01	0.00	0.7
	9.50	0.16	0.40	0.06	0.01	0.01	0.00	0.3		2.50	0.20	0.40	0.04	0.01	0.01	0.00	0.5
	9.90	0.14	0.40	0.06	0.01	0.01	0.00	0.3		2.10	0.10	0.40	0.04	0.01	0.01	0.00	0.3
left bank	10.30	0.00	0.40	0.00	0.00	0.00	0.00	0.0		1.70	0.05	0.40	0.02	0.01	0.01	0.00	0.1
									right bank	1.50	0.00	0.20	0.00	0.00	0.00	0.00	0.0
Total Q							0.29									0.22	

Date Monitored:	01-Oct-10	Pressure Transducer (m):	98.843
Time (24 hr):	15:22	Discharge Q (m³/s):	0.13
Personnel:	Hatt and assistant	Error (+/- %)	26.0
Method:	r - area with Swoffer		
Propeler	3"		
Indicator constant	602		
Calibration constant	426		

Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	0.80	0.09	0.40	0.04	0.00	0.00	0.00	0.0		7.80	0.09	0.20	0.03	0.00	0.00	0.00	0.0
	1.20	0.14	0.40	0.06	0.00	0.00	0.00	0.0		7.40	0.10	0.40	0.04	0.00	0.00	0.00	0.0
	1.60	0.15	0.40	0.06	0.00	0.00	0.00	0.0		7.00	0.22	0.40	0.09	0.00	0.00	0.00	0.0
	2.00	0.20	0.40	0.08	0.00	0.00	0.00	0.0		6.60	0.30	0.40	0.12	0.12	0.17	0.02	13.7
	2.40	0.16	0.40	0.06	0.00	0.00	0.00	0.0		6.20	0.25	0.40	0.10	0.12	0.17	0.02	11.4
	2.80	0.19	0.40	0.08	0.00	0.00	0.00	0.0		5.80	0.29	0.40	0.12	0.23	0.33	0.04	25.3
	3.20	0.26	0.40	0.10	0.00	0.00	0.00	1.2		5.40	0.32	0.40	0.06	0.18	0.25	0.03	21.9
	3.60	0.21	0.40	0.08	0.00	0.00	0.00	8.3		5.00	0.27	0.40	0.11	0.13	0.18	0.02	13.3
	4.00	0.24	0.40	0.10	0.01	0.01	0.00	15.2		4.60	0.11	0.40	0.04	0.15	0.21	0.01	6.3
	4.40	0.24	0.40	0.10	0.07	0.10	0.01	15.7		4.20	0.24	0.40	0.10	0.09	0.13	0.01	8.2
	4.80	0.28	0.40	0.11	0.11	0.16	0.02	27.5		3.80	0.20	0.40	0.08	0.00	0.00	0.00	0.0
	5.20	0.29	0.40	0.12	0.11	0.16	0.02	21.3		3.40	0.23	0.40	0.09	0.00	0.00	0.00	0.0
	5.60	0.31	0.40	0.12	0.18	0.25	0.03	10.8		3.00	0.19	0.40	0.08	0.00	0.00	0.00	0.0
	6.00	0.27	0.40	0.11	0.16	0.23	0.02	0.0		2.60	0.19	0.40	0.04	0.00	0.00	0.00	0.0
	6.40	0.20	0.40	0.08	0.11	0.16	0.01	0.0		2.20	0.15	0.40	0.06	0.00	0.00	0.00	0.0
	6.80	0.20	0.40	0.08	0.00	0.00	0.00	0.0		1.80	0.20	0.40	0.08	0.00	0.00	0.00	0.0
	7.20	0.16	0.40	0.06	0.00	0.00	0.00	0.0		1.40	0.15	0.40	0.06	0.00	0.00	0.00	0.0
	7.60	0.10	0.40	0.04	0.00	0.00	0.00	0.0		1.00	0.17	0.40	0.07	0.00	0.00	0.00	0.0
left bank	8.00	0.00	0.40	0.00	0.00	0.00	0.00	0.0		0.60	0.09	1.00	0.03	0.00	0.00	0.00	0.0
									right bank	0.40	0.00	0.20	0.00	0.00	0.00	0.00	0.0
Total Q							0.11			Total Q						0.15	

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Table A1.6. Manual Flow Measurements at Reference PO-Hydro in 2010

Date Monitored:	14-Jun-10	Pressure Transducer (m):	99.702
Time (24 hr):	17:45	Discharge Q (m³/s):	3.75
Personnel:	C. Hatt, X. Pinto	Error (+/- %):	n/a
Method:	Velocity - area with Swoffer		
Propeler	3"		
Indicator constant	614		
Calibration constant	426		

Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0									
	5.50	0.24	0.50	0.12	0.03	0.04	0.01	0.1									
	6.00	0.23	0.50	0.12	0.05	0.07	0.01	0.2									
	6.50	0.20	0.50	0.10	0.04	0.06	0.01	0.2									
	7.00	0.22	0.50	0.11	0.04	0.06	0.01	0.2									
	7.50	0.27	0.50	0.14	0.09	0.13	0.02	0.5									
	8.00	0.30	0.50	0.15	0.13	0.19	0.03	0.7									
	8.50	0.33	0.50	0.17	0.38	0.55	0.09	2.4									
	9.00	0.37	0.50	0.19	0.50	0.72	0.13	3.6									
	9.50	0.38	0.50	0.19	0.42	0.61	0.12	3.1									
	10.00	0.36	0.50	0.18	0.60	0.86	0.16	4.1									
	10.50	0.43	0.50	0.22	0.76	1.10	0.24	6.3									
	11.00	0.48	0.50	0.24	0.82	1.18	0.28	7.6									
	11.50	0.42	0.50	0.15	0.86	1.24	0.18	4.9									
	11.70	0.62	0.20	0.16	0.70	1.01	0.16	4.2									
	12.00	0.66	0.30	0.18	0.83	1.20	0.22	5.8									
	12.25	0.59	0.25	0.15	0.99	1.43	0.21	5.6									
	12.50	0.67	0.25	0.17	1.08	1.56	0.26	6.9									
	12.75	0.66	0.25	0.17	1.00	1.44	0.24	6.3									
	13.00	0.65	0.25	0.16	1.05	1.51	0.25	6.5									
	13.25	0.68	0.25	0.17	0.90	1.30	0.22	5.9									
	13.50	0.67	0.25	0.17	0.76	1.10	0.18	4.9									
	13.75	0.68	0.25	0.17	0.71	1.02	0.17	4.6									
	14.00	0.62	0.25	0.11	0.61	0.88	0.10	2.5									
	14.10	0.38	0.10	0.11	0.77	1.11	0.13	3.4									
	14.60	0.41	0.50	0.21	0.70	1.01	0.21	5.5									
	15.10	0.39	0.50	0.20	0.36	0.52	0.10	2.7									
	15.60	0.21	0.50	0.15	0.14	0.20	0.03	0.8									
	16.50	0.18	0.90	0.13	0.07	0.10	0.01	0.3									
	17.00	0.13	0.50	0.07	0.09	0.13	0.01	0.2									
left bank	17.60	0.00	0.60	0.00	0.00	0.00	0.00	0.0									
Total Q							3.75										

Date Monitored:	16-Jun-10	Pressure Transducer (m):	99.542														
Time (24 hr):	22:15	Discharge Q (m³/s):	3.37														
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	n/a														
Method:	Velocity - area with Swoffer																
Propeler	3"																
Indicator constant	606																
Calibration constant	426																
	Measurement 1	Measurement 2															
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	12.20	0.00	0.00	0.00	0.00	0.00	0.00	0.1									
	11.60	0.11	0.60	0.07	0.08	0.11	0.01	0.2									
	11.00	0.17	0.60	0.10	0.05	0.07	0.01	0.2									
	10.40	0.22	0.60	0.13	0.18	0.26	0.03	1.0									
	9.80	0.37	0.60	0.17	0.55	0.78	0.13	3.9									
	9.50	0.34	0.30	0.10	0.75	1.07	0.11	3.2									
	9.20	0.35	0.30	0.11	0.77	1.10	0.12	3.4									
	8.90	0.64	0.30	0.19	0.66	0.94	0.18	5.4									
	8.60	0.64	0.30	0.19	0.77	1.10	0.21	6.2									
	8.30	0.62	0.30	0.19	0.91	1.29	0.24	7.2									
	8.00	0.58	0.30	0.17	1.02	1.45	0.25	7.5									
	7.70	0.62	0.30	0.19	1.10	1.56	0.29	8.6									
	7.40	0.64	0.30	0.19	0.88	1.25	0.24	7.1									
	7.10	0.65	0.30	0.20	0.82	1.17	0.23	6.8									
	6.80	0.59	0.30	0.18	0.86	1.22	0.22	6.4									
	6.50	0.36	0.30	0.11	0.92	1.31	0.14	4.2									
	6.20	0.45	0.30	0.14	0.85	1.21	0.16	4.8									
	5.90	0.36	0.30	0.11	0.89	1.27	0.14	4.1									
	5.60	0.35	0.30	0.11	0.75	1.07	0.11	3.3									
	5.30	0.36	0.30	0.11	0.67	0.95	0.10	3.1									
	5.00	0.35	0.30	0.11	0.51	0.73	0.08	2.3									
	4.70	0.33	0.30	0.10	0.49	0.70	0.07	2.0									
	4.40	0.29	0.30	0.09	0.44	0.63	0.05	1.6									
	4.10	0.31	0.30	0.12	0.42	0.60	0.07	2.2									
	3.60	0.31	0.50	0.15	0.47	0.67	0.10	2.9									
	3.15	0.26	0.45	0.12	0.20	0.28	0.04	1.0									
	2.65	0.22	0.50	0.12	0.07	0.10	0.01	0.4									
	2.05	0.13	0.60	0.10	0.01	0.01	0.00	0.0									
	1.15	0.20	0.90	0.15	0.10	0.14	0.02	0.6									
	0.60	0.14	0.55	0.07	0.03	0.04	0.00	0.1									
left bank	0.20	0.00	0.40	0.00	0.00	0.00	0.00	0.0									
Total Q							3.37										

Table A1.6. Manual Flow Measurements at Reference PO-Hydro in 2010

Date Monitored:	14-Jul-10	Pressure Transducer (m):							99.355								
Time (24 hr):	14:40	Mean Discharge Q (m³/s):							0.51								
Personnel:	C. Hatt and assistant	Error (+/- %)							4.7								
Method:	Velocity - area with Swoffer																
Propeler	3"																
Indicator constant	610																
Calibration constant	426																
Measurement 1										Measurement 2							
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	8.00	0.00	0.00	0.00	0.00	0.00	0.002	0.4	left bank	15.00	0.00	0.00	0.00	0.00	0.00	0.02	4.46
	8.70	0.18	0.70	0.09	0.02	0.03	0.003	0.5		13.60	0.39	1.40	0.32	0.06	0.09	0.03	5.26
	9.00	0.24	0.30	0.07	0.11	0.16	0.011	2.3		13.35	0.40	0.25	0.06	0.08	0.11	0.01	2.40
	9.30	0.32	0.30	0.05	0.20	0.29	0.027	5.5		13.05	0.40	0.30	0.12	0.11	0.16	0.02	3.59
	9.60	0.35	0.30	0.11	0.28	0.40	0.042	8.4		12.75	0.25	0.30	0.04	0.14	0.20	0.02	2.86
	9.90	0.40	0.30	0.12	0.29	0.42	0.050	9.9		12.45	0.30	0.30	0.09	0.18	0.26	0.02	4.41
	10.20	0.32	0.30	0.05	0.29	0.42	0.040	7.9		12.15	0.33	0.30	0.05	0.22	0.32	0.03	5.93
	10.50	0.40	0.30	0.12	0.23	0.33	0.040	7.9		11.85	0.35	0.30	0.11	0.10	0.14	0.02	2.86
	10.80	0.40	0.30	0.12	0.29	0.42	0.050	9.9		11.55	0.35	0.30	0.05	0.29	0.42	0.04	8.29
	11.10	0.40	0.30	0.06	0.22	0.32	0.038	7.5		11.25	0.45	0.30	0.14	0.23	0.33	0.04	8.45
	11.40	0.40	0.30	0.12	0.23	0.33	0.040	7.9		10.95	0.39	0.30	0.06	0.31	0.44	0.05	9.87
	11.70	0.35	0.30	0.11	0.28	0.40	0.042	8.4		10.65	0.40	0.30	0.12	0.23	0.33	0.04	7.51
	12.00	0.35	0.30	0.05	0.19	0.27	0.029	5.7		10.35	0.38	0.30	0.06	0.28	0.40	0.05	8.69
	12.30	0.28	0.30	0.08	0.20	0.29	0.024	4.8		10.05	0.38	0.30	0.11	0.23	0.33	0.04	7.14
	12.60	0.25	0.30	0.08	0.09	0.13	0.010	1.9		9.75	0.35	0.30	0.05	0.27	0.39	0.04	7.72
	12.90	0.38	0.30	0.06	0.13	0.19	0.021	4.2		9.45	0.35	0.30	0.11	0.28	0.40	0.04	8.00
	13.20	0.36	0.30	0.11	0.02	0.03	0.003	0.6		9.15	0.31	0.30	0.05	0.07	0.10	0.01	1.77
	13.50	0.40	0.30	0.12	0.09	0.13	0.015	3.1		8.85	0.20	0.30	0.06	0.02	0.03	0.00	0.35
	13.80	0.40	0.30	0.06	0.07	0.10	0.012	2.4		8.50	0.24	0.35	0.06	0.01	0.01	0.00	0.28
	14.10	0.25	0.30	0.15	0.01	0.01	0.002	0.4	right bank	8.00	0.00	0.50	0.00	0.00	0.00	0.00	0.16
left bank	15.00	0.00	0.90	0.00	0.00	0.00		0.3									
Total Q							0.50									0.53	

Date Monitored:	18-Aug-10								Pressure Transducer (m):		99.393								
Time (24 hr):									Mean Discharge Q (m³/s):		0.31								
Personnel:	C. Hatt and assistant								Error (+/- %)		10.2								
Method:	Velocity - area with Swoffer																		
Propeler	3"																		
Indicator constant	619																		
Calibration constant	426																		
Measurement 1										Measurement 2									
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q		Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	
right bank	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0		left bank	8.40	0.00	0.00	0.00	0.00	0.00	0.00	0.0	
	2.70	0.09	0.20	0.02	0.00	0.00	0.00	0.0			8.25	0.11	0.15	0.02	0.00	0.00	0.00	0.0	
	3.00	0.15	0.30	0.05	0.00	0.00	0.00	0.0			7.95	0.14	0.30	0.04	0.00	0.00	0.00	0.0	
	3.30	0.18	0.30	0.03	0.01	0.01	0.00	0.3			7.65	0.25	0.30	0.04	0.05	0.07	0.01	1.7	
	3.60	0.21	0.30	0.03	0.17	0.25	0.02	5.3			7.35	0.23	0.30	0.03	0.10	0.15	0.01	3.1	
	3.90	0.30	0.30	0.05	0.15	0.22	0.02	6.6			7.05	0.27	0.30	0.04	0.15	0.22	0.02	5.4	
	4.20	0.35	0.30	0.05	0.11	0.16	0.02	5.7			6.75	0.27	0.30	0.04	0.19	0.28	0.02	6.8	
	4.50	0.33	0.30	0.05	0.14	0.20	0.02	6.8			6.45	0.20	0.30	0.03	0.21	0.31	0.02	5.6	
	4.80	0.28	0.30	0.04	0.27	0.39	0.03	11.2			6.15	0.19	0.30	0.03	0.21	0.31	0.02	5.3	
	5.10	0.30	0.30	0.05	0.27	0.39	0.04	12.0			5.85	0.25	0.30	0.04	0.26	0.38	0.03	8.7	
	5.40	0.26	0.30	0.04	0.31	0.45	0.04	11.9			5.55	0.27	0.30	0.04	0.26	0.38	0.03	9.4	
	5.70	0.21	0.30	0.03	0.26	0.38	0.02	8.1			5.25	0.29	0.30	0.04	0.30	0.44	0.04	11.6	
	6.00	0.21	0.30	0.03	0.21	0.31	0.02	6.5			4.95	0.30	0.30	0.05	0.30	0.44	0.04	12.0	
	6.30	0.24	0.30	0.04	0.20	0.29	0.02	7.1			4.65	0.32	0.30	0.05	0.21	0.31	0.03	9.0	
	6.60	0.25	0.30	0.04	0.17	0.25	0.02	6.3			4.35	0.33	0.30	0.05	0.11	0.16	0.02	4.8	
	6.90	0.23	0.30	0.03	0.20	0.29	0.02	6.8			4.05	0.33	0.30	0.05	0.17	0.25	0.02	7.5	
	7.20	0.29	0.30	0.04	0.08	0.12	0.01	3.4			3.75	0.25	0.30	0.04	0.22	0.32	0.02	7.3	
	7.50	0.29	0.30	0.04	0.05	0.07	0.01	2.1			3.45	0.20	0.30	0.03	0.07	0.10	0.01	1.9	
	7.80	0.16	0.30	0.02	0.00	0.00	0.00	0.0			3.15	0.15	0.30	0.02	0.00	0.00	0.00	0.0	
	8.10	0.11	0.30	0.02	0.00	0.00	0.00	0.0			2.85	0.12	0.30	0.02	0.00	0.00	0.00	0.0	
left bank	8.40	0.00	0.30	0.00	0.00	0.00	0.00	0.0		right bank	2.50	0.00	0.35	0.00	0.00	0.00	0.00	0.0	
Total Q							0.30										0.33		

Table A1.6. Manual Flow Measurements at Reference PO-Hydro in 2010

Date Monitored:	01-Oct-10	Pressure Transducer (m):	99.309														
Time (24 hr):	12:45	Mean Discharge Q (m³/s):	0.30														
Personnel:	C. Hatt and assistant	Error (+/- %)	0.7														
Method:	Velocity - area with Swoffer																
Propeler	3"																
Indicator constant	600																
Calibration constant	426																
Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
left bank	5.30	0.00	0.00	0.00	0.00	0.00	0.011	3.8	left bank	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	5.10	0.30	0.20	0.06	0.27	0.38	0.023	7.7		1.60	0.11	0.11	0.02	0.00	0.00	0.00	0.0
	4.90	0.32	0.20	0.06	0.21	0.30	0.019	6.4		1.80	0.12	0.01	0.02	0.18	0.25	0.01	2.1
	4.70	0.34	0.20	0.03	0.19	0.27	0.018	6.1		2.00	0.20	0.08	0.02	0.19	0.27	0.01	3.6
	4.50	0.32	0.20	0.03	0.13	0.18	0.012	3.9		2.20	0.20	0.00	0.02	0.27	0.38	0.02	5.2
	4.30	0.28	0.20	0.03	0.22	0.31	0.017	5.8		2.40	0.22	0.02	0.02	0.24	0.34	0.01	5.0
	4.10	0.25	0.20	0.03	0.28	0.39	0.020	6.6		2.60	0.20	0.02	0.02	0.29	0.41	0.02	5.5
	3.90	0.22	0.20	0.02	0.30	0.42	0.019	6.3		2.80	0.20	0.00	0.02	0.29	0.41	0.02	5.5
	3.70	0.25	0.20	0.03	0.28	0.39	0.020	6.6		3.00	0.22	0.02	0.02	0.32	0.45	0.02	6.7
	3.50	0.24	0.20	0.02	0.32	0.45	0.022	7.3		3.20	0.24	0.02	0.02	0.29	0.41	0.02	6.7
	3.30	0.20	0.20	0.02	0.30	0.42	0.017	5.7		3.40	0.25	0.01	0.03	0.28	0.39	0.02	6.7
	3.10	0.23	0.20	0.02	0.29	0.41	0.019	6.3		3.60	0.26	0.01	0.03	0.32	0.45	0.02	7.9
	2.90	0.22	0.20	0.02	0.29	0.41	0.018	6.1		3.80	0.23	0.03	0.02	0.31	0.44	0.02	6.8
	2.70	0.18	0.20	0.02	0.27	0.38	0.014	4.6		4.00	0.23	0.00	0.02	0.30	0.42	0.02	6.6
	2.50	0.22	0.20	0.02	0.25	0.35	0.015	5.2		4.20	0.27	0.04	0.03	0.27	0.38	0.02	7.0
	2.30	0.23	0.20	0.02	0.24	0.34	0.016	5.2		4.40	0.30	0.03	0.03	0.18	0.25	0.02	5.2
	2.10	0.19	0.20	0.02	0.19	0.27	0.010	3.4		4.60	0.32	0.02	0.03	0.10	0.14	0.01	3.1
	1.90	0.16	0.20	0.02	0.18	0.25	0.008	2.7		4.80	0.33	0.01	0.03	0.25	0.35	0.02	7.9
	1.70	0.11	0.20	0.02	0.00	0.00	0.000	0.0		5.00	0.31	0.02	0.03	0.23	0.32	0.02	6.8
right bank	1.40	0.00	0.30	0.00	0.00	0.00	0.000	0.0		5.20	0.18	0.13	0.02	0.10	0.14	0.00	1.3
									right bank	5.30	0.00	0.18	0.00	0.00	0.00	0.00	0.4
Total Q							0.30									0.29	

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Table A1.7. Manual Flow Measurements at Windy-Hydro in 2010

Date Monitored:	10-Jun-10	Pressure Transducer (m):	99.356
Time (24 hr):	15:28	Mean Discharge Q (m³/s):	0.005
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	n/a
Method:	Velocity - area with Swoffer		
Propeler	3"		
Indicator constant	615		
Calibration constant	426		

Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	2.10	0.00	0.00	0.00	0.00	0.00	0.000	0.0									
	2.15	0.11	0.05	0.01	0.00	0.00	0.000	0.0									
	2.20	0.12	0.05	0.01	0.00	0.00	0.000	0.0									
	2.25	0.12	0.05	0.01	0.00	0.00	0.000	0.0									
	2.30	0.14	0.05	0.01	0.00	0.00	0.000	0.0									
	2.35	0.14	0.05	0.01	0.02	0.03	0.000	4.2									
	2.40	0.15	0.05	0.01	0.03	0.04	0.000	6.8									
	2.45	0.15	0.05	0.01	0.06	0.09	0.001	13.6									
	2.50	0.15	0.05	0.01	0.07	0.10	0.001	15.9									
	2.55	0.16	0.05	0.01	0.07	0.10	0.001	16.9									
grass upstream	2.60	0.16	0.05	0.01	0.07	0.10	0.001	16.9									
	2.65	0.15	0.05	0.01	0.07	0.10	0.001	15.9									
	2.70	0.16	0.05	0.01	0.04	0.06	0.000	9.7									
	2.75	0.16	0.05	0.01	0.00	0.00	0.000	0.0									
	2.80	0.15	0.05	0.01	0.00	0.00	0.000	0.0									
	2.85	0.14	0.05	0.01	0.00	0.00	0.000	0.0									
	2.90	0.14	0.05	0.01	0.00	0.00	0.000	0.0									
	2.95	0.13	0.05	0.01	0.00	0.00	0.000	0.0									
	3.00	0.05	0.05	0.00	0.00	0.00	0.000	0.0									
left bank	3.10	0.00	0.10	0.00	0.00	0.00	0.000	0.0									
										right bank							
Total Q							0.005										

Date Monitored:	16-Jun-10	Pressure Transducer (m):	99.418
Time (24 hr):	19:46	Discharge Q (m³/s):	0.34
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	n/a
Method:	Velocity - area with Swoffer		
Propeler	3"		
Indicator constant	605		
Calibration constant	426		

Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	2.20	0.00	0.00	0.00	0.00	0.00	0.00	0.0									
	2.30	0.08	0.10	0.01	0.00	0.00	0.00	0.0									
	2.40	0.08	0.20	0.03	0.00	0.00	0.00	0.0									
	2.60	0.17	0.10	0.02	0.14	0.20	0.01	1.5									
	2.70	0.20	0.10	0.02	0.20	0.28	0.01	1.7									
	2.80	0.19	0.10	0.02	0.25	0.36	0.01	2.0									
	2.90	0.20	0.10	0.02	0.20	0.28	0.01	1.7									
	3.00	0.24	0.05	0.02	0.31	0.44	0.01	2.3									
	3.05	0.38	0.05	0.02	0.34	0.48	0.01	2.7									
	3.10	0.41	0.05	0.02	0.43	0.61	0.01	3.7									
	3.15	0.44	0.05	0.02	0.47	0.67	0.01	4.3									
	3.20	0.44	0.05	0.02	0.51	0.72	0.02	4.7									
	3.25	0.47	0.05	0.03	0.54	0.77	0.02	5.3									
	3.30	0.51	0.05	0.03	0.56	0.80	0.02	6.0									
	3.35	0.50	0.05	0.03	0.56	0.80	0.02	5.9									
	3.40	0.51	0.05	0.03	0.57	0.81	0.02	6.1									
	3.45	0.52	0.05	0.02	0.53	0.75	0.02	5.8									
	3.50	0.50	0.05	0.03	0.44	0.62	0.02	4.6									
	3.55	0.50	0.05	0.02	0.47	0.67	0.02	4.9									
	3.60	0.49	0.05	0.02	0.49	0.70	0.02	5.0									
	3.65	0.48	0.05	0.02	0.40	0.57	0.01	4.0									
	3.70	0.49	0.05	0.02	0.37	0.53	0.01	3.8									
	3.75	0.49	0.05	0.02	0.29	0.41	0.01	3.0									
	3.80	0.49	0.05	0.02	0.29	0.41	0.01	3.0									
	3.85	0.49	0.05	0.04	0.32	0.45	0.01	3.3									
	3.90	0.48	0.10	0.05	0.29	0.41	0.01	4.4									
	4.00	0.48	0.10	0.05	0.22	0.31	0.01	4.4									
	4.10	0.45	0.10	0.02	0.14	0.20	0.01	2.6									
	4.20	0.23	0.10	0.03	0.16	0.23	0.01	1.5									
	4.30	0.23	0.20	0.04	0.09	0.13	0.00	1.3									
	4.50	0.19	0.25	0.00	0.04	0.06	0.00	0.7									
left bank	4.75	0.00	4.75	0.00	0.00	0.00	0.00	0.0									
Total Q							0.34										

Table A1.7. Manual Flow Measurements at Windy-Hydro in 2010

Date Monitored:	16-Jul-10	Pressure Transducer (m):							99.461								
Time (24 hr):	9:11	Mean Discharge Q (m ³ /s):							0.20								
Personnel:	C. Hatt and assistant	Error (+/- %)							2.8								
Method:	Velocity - area with Swoffer																
Propeler	3"																
Indicator constant	610																
Calibration constant	426																
Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q
right bank	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	2.00	0.00	0.00	0.01	0.00	0.00	0.00	0.0
	0.90	0.09	0.06	0.01	0.04	0.06	0.00	0.2		1.89	0.24	0.06	0.02	0.15	0.21	0.00	2.2
	0.96	0.15	0.06	0.01	0.12	0.17	0.00	0.7		1.83	0.27	0.06	0.02	0.35	0.50	0.01	4.0
	1.02	0.18	0.06	0.01	0.25	0.36	0.00	1.9		1.77	0.30	0.06	0.02	0.23	0.33	0.01	2.9
	1.08	0.20	0.06	0.01	0.42	0.60	0.01	3.5		1.71	0.37	0.06	0.02	0.38	0.54	0.01	6.0
	1.14	0.22	0.06	0.01	0.57	0.82	0.01	5.2		1.65	0.38	0.06	0.02	0.53	0.76	0.02	8.6
	1.20	0.23	0.06	0.02	0.52	0.74	0.01	5.0		1.59	0.38	0.06	0.02	0.55	0.79	0.02	8.9
	1.26	0.39	0.06	0.02	0.47	0.67	0.02	7.6		1.53	0.38	0.06	0.02	0.58	0.83	0.02	9.4
	1.32	0.39	0.06	0.02	0.57	0.82	0.02	9.2		1.47	0.37	0.06	0.02	0.62	0.89	0.02	9.8
	1.38	0.39	0.06	0.02	0.58	0.83	0.02	9.4		1.41	0.37	0.06	0.02	0.57	0.82	0.02	9.0
	1.44	0.38	0.06	0.02	0.60	0.86	0.02	9.4		1.35	0.38	0.06	0.02	0.62	0.89	0.02	10.0
	1.50	0.39	0.06	0.02	0.58	0.83	0.02	9.4		1.29	0.40	0.06	0.02	0.53	0.76	0.02	9.0
	1.56	0.37	0.06	0.02	0.57	0.82	0.02	8.7		1.23	0.40	0.06	0.01	0.47	0.67	0.02	8.0
	1.62	0.38	0.06	0.02	0.46	0.66	0.02	7.2		1.17	0.20	0.06	0.01	0.53	0.76	0.01	4.5
	1.68	0.38	0.06	0.02	0.43	0.62	0.01	6.8		1.11	0.18	0.06	0.01	0.46	0.66	0.01	3.5
	1.74	0.37	0.06	0.02	0.34	0.49	0.01	5.2		1.05	0.17	0.06	0.01	0.31	0.44	0.00	2.2
	1.80	0.34	0.06	0.02	0.36	0.52	0.01	5.1		0.99	0.15	0.06	0.01	0.19	0.27	0.00	1.2
	1.86	0.27	0.06	0.02	0.37	0.53	0.01	4.1		0.93	0.15	0.13	0.00	0.07	0.10	0.00	0.7
	1.92	0.23	0.08	0.00	0.13	0.19	0.00	1.4	right bank	0.80	0.00	0.80	0.00	0.00	0.00	0.00	0.0
left bank	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.0									
Total Q							0.21									0.20	

Date Monitored:	14-Aug-10	Pressure Transducer (m):	99.463
Time (24 hr):	12:45	Mean Discharge Q (m³/s):	0.26
Personnel:	C. Hatt and assistant	Error (+/- %)	1.2
Method:	Velocity - area with Swoffer		
Propeler	3"		
Indicator constant	612		
Calibration constant	426		

	Measurement 1									Measurement 2							
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	2.20	0.00	0.00	0.01	0.00	0.00	0.00	0.0
	1.06	0.08	0.06	0.01	0.01	0.01	0.00	0.0		2.10	0.24	0.05	0.01	0.16	0.23	0.00	1.6
	1.12	0.13	0.06	0.01	0.06	0.09	0.00	0.3		2.05	0.23	0.06	0.01	0.31	0.45	0.01	2.2
	1.18	0.12	0.06	0.01	0.14	0.20	0.00	0.6		1.99	0.24	0.06	0.02	0.34	0.49	0.01	2.7
	1.24	0.14	0.06	0.01	0.19	0.27	0.00	0.9		1.93	0.35	0.06	0.02	0.50	0.72	0.02	5.8
	1.30	0.17	0.06	0.01	0.49	0.70	0.01	2.7		1.87	0.36	0.06	0.02	0.61	0.88	0.02	7.3
	1.36	0.21	0.06	0.02	0.63	0.91	0.01	4.3		1.81	0.37	0.06	0.02	0.67	0.96	0.02	8.2
	1.42	0.38	0.06	0.02	0.70	1.01	0.02	8.7		1.75	0.38	0.06	0.02	0.73	1.05	0.02	9.2
	1.48	0.37	0.06	0.02	0.78	1.12	0.02	9.5		1.69	0.38	0.06	0.02	0.77	1.11	0.03	9.7
	1.54	0.38	0.06	0.02	0.77	1.11	0.03	9.6		1.63	0.40	0.06	0.02	0.74	1.06	0.03	9.8
	1.60	0.38	0.06	0.02	0.78	1.12	0.03	9.7		1.57	0.38	0.06	0.02	0.77	1.11	0.03	9.7
	1.66	0.40	0.06	0.02	0.77	1.11	0.03	10.1		1.51	0.39	0.06	0.02	0.80	1.15	0.03	10.4
	1.72	0.37	0.06	0.02	0.79	1.13	0.03	9.6		1.45	0.37	0.06	0.02	0.72	1.03	0.02	8.9
	1.78	0.37	0.06	0.02	0.69	0.99	0.02	8.4		1.39	0.38	0.06	0.01	0.61	0.88	0.02	7.7
	1.84	0.37	0.06	0.02	0.65	0.93	0.02	7.9		1.33	0.15	0.06	0.01	0.62	0.89	0.01	3.1
	1.90	0.36	0.06	0.02	0.55	0.79	0.02	6.5		1.27	0.14	0.06	0.01	0.46	0.66	0.01	2.1
	1.96	0.35	0.06	0.02	0.53	0.76	0.02	6.1		1.21	0.12	0.06	0.01	0.25	0.36	0.00	1.0
	2.02	0.25	0.06	0.02	0.32	0.46	0.01	2.6		1.15	0.12	0.06	0.01	0.10	0.14	0.00	0.4
	2.08	0.21	0.12	0.00	0.23	0.33	0.01	2.4		1.09	0.12	0.09	0.00	0.01	0.01	0.00	0.0
left bank	2.20	0.00	2.20	0.00	0.00	0.00	0.00	0.0	right bank	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.0
Total Q							0.26									0.26	

Table A1.7. Manual Flow Measurements at Windy-Hydro in 2010

Date Monitored:	25-Sep-10								Pressure Transducer (m):		99.393								
Time (24 hr):	16:59								Mean Discharge Q (m ³ /s):		0.16								
Personnel:	C. Hatt and assistant								Error (+/- %)		1.5								
Method:	Velocity - area with Swoffer																		
Propeler	3"																		
Indicator constant	597																		
Calibration constant	426																		
Measurement 1										Measurement 2									
Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q		
right bank	1.30	0	0.00	0.00	0	0.00	0	0.0	left bank	2.350	0	0.00	0.00	0.00	0.00	0	0.0		
	1.35	0.04	0.05	0.00	0.00	0.00	0.00000	0.0		2.325	0.11	0.05	0.01	0.11	0.15	0.00064	0.4		
	1.40	0.04	0.05	0.00	0.00	0.00	0.00000	0.0		2.275	0.14	0.05	0.01	0.15	0.21	0.00147	0.9		
	1.45	0.05	0.05	0.01	0.17	0.24	0.00060	0.4		2.225	0.15	0.05	0.01	0.13	0.18	0.00137	0.9		
	1.50	0.1	0.05	0.01	0.19	0.27	0.00133	0.8		2.175	0.17	0.05	0.01	0.29	0.41	0.00345	2.2		
	1.55	0.12	0.05	0.01	0.39	0.55	0.00328	2.1		2.125	0.25	0.05	0.01	0.40	0.56	0.00701	4.5		
	1.60	0.13	0.05	0.02	0.52	0.73	0.00474	3.0		2.075	0.29	0.05	0.02	0.56	0.78	0.01138	7.3		
	1.65	0.31	0.05	0.02	0.65	0.91	0.01412	8.9		2.025	0.3	0.05	0.01	0.56	0.78	0.01177	7.5		
	1.70	0.31	0.05	0.02	0.71	1.00	0.01542	9.7		1.975	0.29	0.05	0.02	0.62	0.87	0.01260	8.0		
	1.75	0.3	0.05	0.02	0.72	1.01	0.01514	9.5		1.925	0.3	0.05	0.01	0.66	0.92	0.01387	8.9		
	1.80	0.31	0.05	0.02	0.63	0.88	0.01368	8.6		1.875	0.28	0.05	0.02	0.66	0.92	0.01295	8.3		
	1.85	0.3	0.05	0.02	0.63	0.88	0.01324	8.3		1.825	0.3	0.05	0.02	0.64	0.90	0.01345	8.6		
	1.90	0.3	0.05	0.02	0.64	0.90	0.01345	8.5		1.775	0.3	0.05	0.02	0.67	0.94	0.01408	9.0		
	1.95	0.3	0.05	0.01	0.63	0.88	0.01324	8.3		1.725	0.3	0.05	0.02	0.71	1.00	0.01493	9.5		
	2.00	0.3	0.05	0.01	0.61	0.85	0.01282	8.1		1.675	0.3	0.05	0.01	0.71	1.00	0.01493	9.5		
	2.05	0.29	0.05	0.01	0.57	0.80	0.01158	7.3		1.625	0.29	0.05	0.01	0.66	0.92	0.01341	8.6		
	2.10	0.28	0.05	0.01	0.53	0.74	0.01040	6.5		1.575	0.11	0.05	0.01	0.64	0.90	0.00493	3.2		
	2.15	0.27	0.05	0.01	0.49	0.69	0.00927	5.8		1.525	0.11	0.05	0.00	0.34	0.48	0.00262	1.7		
	2.20	0.19	0.05	0.01	0.26	0.36	0.00346	2.2		1.475	0.07	0.05	0.00	0.34	0.48	0.00167	1.1		
	2.25	0.15	0.05	0.01	0.21	0.29	0.00221	1.4		1.425	0.03	0.05	0.00	0.00	0.00	0.00000	0.0		
	2.30	0.19	0.05	0.00	0.07	0.10	0.00093	0.6		1.375	0.03	0.05	0.00	0.00	0.00	0.00000	0.0		
left bank	2.35	0	2.35	0.00	0.00	0.00	0	0.0		1.325	0.02	0.03	0.00	0.00	0.00	0.00000	0.0		
									right bank	1.300	0	1.30	0.00	0.00	0.00	0	0.0		
Total Q							0.16									0.16			

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Table A1.8. Manual Flow Measurements at Reference B-Hydro in 2010

Date Monitored:	11-Jun-10	Pressure Transducer (m):	98.593														
Time (24 hr):	13:45	Mean Discharge Q (m³/s):	3.79														
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	35.1														
Method:	Velocity - area with Swoffer																
Propeler	2"																
Indicator constant	611																
	Measurement 1								Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	al. Velocit (m/s)	Q (m³/s)	% of Total Q
right bank	40.40	0.00	0.00	0.33	0.00	n/a	0.00	0.0	left bank	2.00	0.00	0.00	0.04	0.00	n/a	0.00	0.0
	40.00	0.33	0.40	0.44	0.03	n/a	0.16	3.6	3.00	0.07	1.00	0.20	0.18	n/a	0.01	0.4	
	38.00	0.22	2.00	0.58	0.17	n/a	0.88	19.7	4.00	0.16	1.00	0.66	0.42	n/a	0.08	2.7	
	36.00	0.29	2.00	0.76	0.27	n/a	1.16	26.0	5.50	0.44	1.50	0.98	0.26	n/a	0.17	5.5	
	34.00	0.38	2.00	0.84	0.22	n/a	1.52	34.1	7.00	0.56	1.50	0.90	0.19	n/a	0.19	6.0	
	32.00	0.42	2.00	0.50	0.12	n/a	1.68	37.7	9.00	0.45	2.00	0.70	0.40	n/a	0.36	11.5	
	30.00	0.25	2.00	0.52	0.18	n/a	1.00	22.4	11.00	0.35	2.00	1.12	0.32	n/a	0.22	7.2	
	28.00	0.26	2.00	0.56	0.26	n/a	1.04	23.3	13.00	0.56	2.00	0.62	0.29	n/a	0.32	10.4	
	26.00	0.28	2.00	0.68	0.12	n/a	1.12	25.1	15.00	0.31	2.00	0.82	0.26	n/a	0.16	5.2	
	24.00	0.34	2.00	0.82	0.06	n/a	1.36	30.5	17.00	0.41	2.00	0.70	0.13	n/a	0.11	3.4	
boulder upstream	22.00	0.41	2.00	0.58	0.11	n/a	1.64	36.8	19.00	0.35	2.00	0.64	0.28	n/a	0.20	6.3	
	20.00	0.29	2.00	0.62	0.28	n/a	1.16	26.0	21.00	0.32	2.00	0.30	0.36	n/a	0.23	7.4	
	18.00	0.31	2.00	0.70	0.28	n/a	1.24	27.8	23.00	0.15	2.00	0.52	0.16	n/a	0.05	1.5	
boulder upstream	16.00	0.35	2.00	0.48	0.19	n/a	1.40	31.4	25.00	0.26	2.00	0.36	0.14	n/a	0.07	2.3	
	14.00	0.24	2.00	0.88	0.40	n/a	0.96	21.5	27.00	0.18	2.00	0.60	0.27	n/a	0.10	3.1	
	12.00	0.44	2.00	0.66	0.29	n/a	1.76	39.5	29.00	0.30	2.00	0.88	0.31	n/a	0.19	5.9	
	10.00	0.33	2.00	1.16	0.37	n/a	1.32	29.6	31.00	0.44	2.00	0.66	0.16	n/a	0.14	4.5	
	8.00	0.58	2.00	0.60	0.23	n/a	2.32	52.0	33.00	0.33	2.00	1.04	0.17	n/a	0.11	3.6	
	6.00	0.40	2.00	0.40	0.32	n/a	1.20	26.9	35.00	0.52	2.00	0.72	0.24	n/a	0.25	8.0	
	5.00	0.33	1.00	0.17	0.15	n/a	0.40	8.9	37.00	0.36	2.00	0.32	0.10	n/a	0.07	2.3	
	3.60	0.11	1.40	0.00	0.41	n/a	0.23	5.2	39.00	0.21	2.00	0.22	0.26	n/a	0.08	2.6	
left bank	2.00	0.00	1.60	0.00	0.00	n/a	0.00	0.0	40.00	0.32	1.00	0.00	0.04	n/a	0.01	0.3	
									right bank	40.40	0.00	0.40	0.16	0.00	n/a	0.00	0.0
Total Q							4.46									3.13	

Date Monitored:	18-Jul-10	Pressure Transducer (m):	98.317														
Time (24 hr):	14:00	Mean Discharge Q (m³/s):	2.78														
Personnel:	C. Hatt and assistant	Error (+/- %)	2.6														
Method:	Velocity - area with Swoffer																
Propeler	3"																
Indicator constant	610																
Calibration constant	426																
	Measurement 1									Measurement 2							
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	al. Velocit (m/s)	Q (m³/s)	% of Total Q
right bank	43.50	0.00	0.00	0.29	0.00	0.00	0.00	0.0	left bank	2.90	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	42.50	0.58	1.00	0.39	0.24	0.34	0.20	7.3		4.00	0.07	1.10	0.10	0.00	0.00	0.00	0.0
	41.50	0.39	1.00	0.50	0.10	0.14	0.06	2.0		5.00	0.10	1.00	0.30	0.13	0.19	0.02	0.7
	40.50	0.50	1.00	0.32	0.05	0.07	0.04	1.3		6.00	0.30	1.00	0.26	0.06	0.09	0.03	0.9
	39.50	0.32	1.00	0.40	0.01	0.01	0.00	0.2		7.00	0.26	1.00	0.20	0.20	0.29	0.07	2.6
	38.50	0.40	1.00	0.09	0.02	0.03	0.01	0.4		8.00	0.20	1.00	0.21	0.28	0.40	0.08	2.8
	37.50	0.09	1.00	0.10	0.01	0.01	0.00	0.0		9.00	0.21	1.00	0.30	0.28	0.40	0.08	3.0
	36.50	0.10	1.00	0.17	0.06	0.09	0.01	0.3		10.00	0.30	1.00	0.30	0.25	0.36	0.11	3.8
	35.50	0.17	1.00	0.20	0.07	0.10	0.02	0.6		11.00	0.30	1.00	0.34	0.24	0.34	0.10	3.7
	34.50	0.20	1.00	0.07	0.08	0.11	0.02	0.8		12.00	0.34	1.00	0.41	0.33	0.47	0.16	5.7
	33.50	0.07	1.00	0.25	0.09	0.13	0.01	0.3		13.00	0.41	1.00	0.46	0.33	0.47	0.19	6.9
	32.50	0.25	1.00	0.47	0.05	0.07	0.02	0.7		14.00	0.46	1.00	0.45	0.29	0.42	0.19	6.8
	31.50	0.47	1.00	0.36	0.01	0.01	0.01	0.2		15.00	0.45	1.00	0.50	0.21	0.30	0.14	4.8
	30.50	0.36	1.00	0.30	0.01	0.01	0.01	0.2		16.00	0.50	1.00	0.50	0.23	0.33	0.16	5.8
	29.50	0.30	1.00	0.55	0.05	0.07	0.02	0.8		17.00	0.50	1.00	0.55	0.19	0.27	0.14	4.8
	28.50	0.55	1.00	0.60	0.02	0.03	0.02	0.6		18.00	0.55	1.00	0.55	0.11	0.16	0.09	3.1
	27.50	0.60	1.00	0.61	0.08	0.11	0.07	2.5		19.00	0.55	1.00	0.60	0.13	0.19	0.10	3.6
	26.50	0.61	1.00	0.73	0.03	0.04	0.03	1.0		20.00	0.60	1.00	0.55	0.09	0.13	0.08	2.7
	25.50	0.73	1.00	0.55	0.12	0.17	0.13	4.6		21.00	0.55	1.00	0.60	0.13	0.19	0.10	3.6
	24.50	0.55	1.00	0.62	0.14	0.20	0.11	4.0		22.00	0.60	1.00	0.63	0.16	0.23	0.14	4.9
	23.50	0.62	1.00	0.61	0.16	0.23	0.14	5.2		23.00	0.63	1.00	0.63	0.14	0.20	0.13	4.5
	22.50	0.61	1.00	0.58	0.15	0.21	0.13	4.8		24.00	0.63	1.00	0.67	0.15	0.21	0.14	4.8
	21.50	0.58	1.00	0.57	0.16	0.23	0.13	4.8		25.00	0.67	1.00	0.70	0.15	0.21	0.14	5.1
	20.50	0.57	1.00	0.58	0.11	0.16	0.09	3.3		26.00	0.70	1.00	0.60	0.04	0.06	0.04	1.4
	19.50	0.58	1.00	0.50	0.12	0.17	0.10	3.6		27.00	0.60	1.00	0.55	0.03	0.04	0.03	0.9
	18.50	0.50	1.00	0.47	0.11	0.16	0.08	2.9		28.00	0.55	1.00	0.55	0.07	0.10	0.06	2.0
	17.50	0.47	1.00	0.46	0.15	0.21	0.10	3.7		29.00	0.55	1.00	0.15	0.01	0.01	0.01	0.3
	16.50	0.46	1.00	0.46	0.20	0.29	0.13	4.8		30.00	0.15	1.00	0.42	0.06	0.09	0.01	0.5
	15.50	0.46	1.00	0.42	0.23	0.33	0.15	5.5		31.00	0.42	1.00	0.45	0.04	0.06	0.02	0.9
	14.50	0.42	1.00	0.46	0.23	0.33	0.14	5.0		32.00	0.45	1.00	0.12	0.01	0.01	0.01	0.2
	13.50	0.46	1.00	0.42	0.21	0.30	0.14	5.0		33.00	0.12	1.00	0.18	0.09	0.13	0.02	0.5
	12.50	0.42	1.00	0.32	0.25	0.36	0.15	5.5		34.00	0.18	1.00	0.27	0.04	0.06	0.01	0.4
	11.50	0.32	1.00	0.33	0.23	0.33	0.11	3.8		35.00	0.27	1.00	0.29	0.03	0.04	0.01	0.4
	10.50	0.33	1.00	0.20	0.21	0.30	0.10	3.6		36.00	0.29	1.00	0.06	0.02	0.03	0.01	0.3
	9.50	0.20	1.00	0.25	0.24	0.34	0.07	2.5		37.00	0.06	1.00	0.21	0.03	0.04	0.00	0.1
	8.50	0.25	1.00	0.19	0.27	0.39	0.10	3.5		38.00	0.21	1.00	0.25	0.04	0.06	0.01	0.4
	7.50	0.19	1.00	0.17	0.18	0.26	0.05	1.8		39.00	0.25	1.00	0.08	0.11	0.16	0.04	1.4
	6.50	0.17	1.00	0.10	0.19	0.27	0.05	1.7		40.00	0.08	1.00	0.25	0.16	0.23	0.02	0.6
	5.50	0.10	1.00	0.26	0.11	0.16	0.02	0.6		41.00	0.25	1.00	0.42	0.17	0.24	0.06	2.2
	4.50	0.26	1.00	0.20	0.04	0.06	0.01	0.5		42.00	0.42	1.00	0.38	0.04	0.06	0.02	0.9
	3.50	0.25	1.00	0.00	0.01	0.01	0.00	0.1		43.00	0.50	1.00	0.00	0.11	0.16	0.06	2.1
left bank	2.90	0.00	0.60	0.00	0.00	0.00	0.00	0.0	right bank	43.50	0.00	0.50	0.00	0.00	0.00	0.00	0.0
Total Q							2.75									2.82	

Table A1.8. Manual Flow Measurements at Reference B-Hydro in 2010

Date Monitored:	17-Aug-10	Pressure Transducer (m):	98.174
Time (24 hr):	14:00	Mean Discharge Q (m ³ /s):	0.49
Personnel:	C. Hatt and assistant	Error (+/- %)	5.4
Method:	Velocity - area with Swoffer		
Propeler	3"		
Indicator constant	616		
Calibration constant	426		

Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q
right bank	43.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0		2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
20% of depth	42.50	0.98	1.00	0.49	0.00	0.00	0.00	0.0		3.00	0.10	0.50	0.11	0.00	0.00	0.00	0.0
80% of depth	42.50	0.98	0.00	0.54	0.00	0.00	0.00	0.0		4.00	0.11	1.00	0.15	0.00	0.00	0.00	0.0
	41.50	0.54	1.00	0.24	0.03	0.04	0.02	4.9		5.00	0.15	1.00	0.17	0.01	0.01	0.00	0.4
	40.50	0.24	1.00	0.24	0.03	0.04	0.01	2.2		6.00	0.17	1.00	0.20	0.01	0.01	0.00	0.5
	39.50	0.24	1.00	0.05	0.00	0.00	0.00	0.0		7.00	0.20	1.00	0.20	0.01	0.01	0.00	0.6
	38.50	0.05	1.00	0.04	0.00	0.00	0.00	0.0		8.00	0.20	1.00	0.25	0.01	0.01	0.00	0.6
	37.50	0.04	1.00	0.07	0.00	0.00	0.00	0.0		9.00	0.25	1.00	0.13	0.01	0.01	0.00	0.7
	36.50	0.07	1.00	0.24	0.00	0.00	0.00	0.0		10.00	0.13	1.00	0.20	0.03	0.04	0.01	1.1
	35.50	0.24	1.00	0.20	0.00	0.00	0.00	0.0		11.00	0.20	1.00	0.29	0.05	0.07	0.01	2.9
	34.50	0.20	1.00	0.15	0.00	0.00	0.00	0.0		12.00	0.29	1.00	0.37	0.03	0.04	0.01	2.5
	33.50	0.15	1.00	0.34	0.00	0.00	0.00	0.0		13.00	0.37	1.00	0.37	0.04	0.06	0.02	4.2
	32.50	0.34	1.00	0.45	0.00	0.00	0.00	0.0		14.00	0.37	1.00	0.40	0.03	0.04	0.02	3.2
	31.50	0.45	1.00	0.41	0.00	0.00	0.00	0.0		15.00	0.40	1.00	0.48	0.03	0.04	0.02	3.4
	30.50	0.41	1.00	0.47	0.01	0.01	0.01	1.2		16.00	0.48	1.00	0.45	0.08	0.12	0.06	11.0
	29.50	0.47	1.00	0.44	0.01	0.01	0.01	1.4		17.00	0.45	1.00	0.40	0.04	0.06	0.03	5.1
	28.50	0.44	1.00	0.49	0.01	0.01	0.01	1.3		18.00	0.40	1.00	0.41	0.03	0.04	0.02	3.4
	27.50	0.49	1.00	0.50	0.02	0.03	0.01	3.0		19.00	0.41	1.00	0.47	0.05	0.07	0.03	5.9
	26.50	0.50	1.00	0.54	0.02	0.03	0.01	3.0		20.00	0.47	1.00	0.58	0.03	0.04	0.02	4.0
	25.50	0.54	1.00	0.56	0.04	0.06	0.03	6.5		21.00	0.58	1.00	0.45	0.04	0.06	0.03	6.6
	24.50	0.56	1.00	0.48	0.02	0.03	0.02	3.4		22.00	0.45	1.00	0.42	0.05	0.07	0.03	6.4
	23.50	0.48	1.00	0.40	0.05	0.07	0.03	7.2		23.00	0.42	1.00	0.43	0.06	0.09	0.04	7.2
	22.50	0.40	1.00	0.56	0.04	0.06	0.02	4.8		24.00	0.43	1.00	0.55	0.05	0.07	0.03	6.1
	21.50	0.56	1.00	0.60	0.03	0.04	0.02	5.1		25.00	0.55	1.00	0.50	0.03	0.04	0.02	4.7
	20.50	0.60	1.00	0.45	0.06	0.09	0.05	10.9		26.00	0.50	1.00	0.54	0.04	0.06	0.03	5.7
	19.50	0.45	1.00	0.45	0.05	0.07	0.03	6.8		27.00	0.54	1.00	0.40	0.03	0.04	0.02	4.6
	18.50	0.45	1.00	0.45	0.00	0.00	0.00	0.0		28.00	0.40	1.00	0.49	0.02	0.03	0.01	2.3
	17.50	0.45	1.00	0.45	0.03	0.04	0.02	4.1		29.00	0.49	1.00	0.42	0.02	0.03	0.01	2.8
	16.50	0.45	1.00	0.40	0.07	0.10	0.05	9.5		30.00	0.42	1.00	0.45	0.01	0.01	0.01	1.2
	15.50	0.40	1.00	0.45	0.04	0.06	0.02	4.8		31.00	0.45	1.00	0.42	0.01	0.01	0.01	1.3
	14.50	0.45	1.00	0.41	0.04	0.06	0.03	5.4		32.00	0.42	1.00	0.40	0.00	0.00	0.00	0.0
	13.50	0.41	1.00	0.34	0.03	0.04	0.02	3.7		33.00	0.40	1.00	0.05	0.00	0.00	0.00	0.0
	12.50	0.34	1.00	0.27	0.04	0.06	0.02	4.1		34.00	0.05	1.00	0.14	0.00	0.00	0.00	0.0
	11.50	0.27	1.00	0.34	0.03	0.04	0.01	2.4		35.00	0.14	1.00	0.15	0.00	0.00	0.00	0.0
	10.50	0.34	1.00	0.20	0.01	0.01	0.00	1.0		36.00	0.15	1.00	0.04	0.00	0.00	0.00	0.0
	9.50	0.20	1.00	0.25	0.02	0.03	0.01	1.2		37.00	0.04	1.00	0.10	0.00	0.00	0.00	0.0
	8.50	0.25	1.00	0.23	0.01	0.01	0.00	0.8		38.00	0.10	1.00	0.03	0.00	0.00	0.00	0.0
	7.50	0.23	1.00	0.20	0.01	0.01	0.00	0.7		39.00	0.03	1.00	0.04	0.00	0.00	0.00	0.0
	6.50	0.20	1.00	0.15	0.01	0.01	0.00	0.6		40.00	0.04	1.00	0.06	0.04	0.06	0.00	0.5
	5.50	0.15	1.00	0.11	0.00	0.00	0.00	0.0		41.00	0.06	1.00	0.00	0.06	0.09	0.01	1.0
	4.50	0.11	1.00	0.12	0.00	0.00	0.00	0.0		42.00	0.00	1.00	0.01	0.00	0.00	0.00	0.0
	3.50	0.12	1.00	0.00	0.00	0.00	0.00	0.0		43.00	0.01	1.00	0.00	0.01	0.01	0.00	0.0
left bank	2.50	0.00	1.00	0.00	0.00	0.00	0.00	0.0		43.50	0.00	0.50	0.00	0.00	0.00	0.00	0.0
Total Q							0.48									0.51	

Table A1.8. Manual Flow Measurements at Reference B-Hydro in 2010

Date Monitored:	30-Sep-10	Pressure Transducer (m):	98.123														
Time (24 hr):	10:40	Mean Discharge Q (m³/s):	0.24														
Personnel:	C. Hatt and assistant	Error (+/- %)	8.4														
Method:	Velocity - area with Swoffer																
Propeler	2"																
Indicator constant	601																
Calibration constant	426																
	Measurement 1								Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	al. Velocit (m/s)	Q (m³/s)	% of Total Q
right bank	43.40	0.00	0.00	0.00	0.00	n/a	0.00	0.0	left bank	2.00	0.00	0.00	0.00	0.00	n/a	0.00	0.0
	43.00	0.28	0.40	0.25	0.00	n/a	0.00	0.0		2.50	0.15	0.50	0.27	0.00	n/a	0.00	0.0
	42.00	0.25	1.00	0.30	0.01	n/a	0.00	1.0		3.50	0.27	1.00	0.32	0.01	n/a	0.00	1.2
	41.00	0.30	1.00	0.49	0.01	n/a	0.00	1.2		4.50	0.32	1.00	0.32	0.01	n/a	0.00	1.4
	40.00	0.49	1.00	0.45	0.01	n/a	0.00	1.9		5.50	0.32	1.00	0.30	0.01	n/a	0.00	1.4
	39.00	0.45	1.00	0.17	0.01	n/a	0.00	1.8		6.50	0.30	1.00	0.35	0.01	n/a	0.00	1.3
	38.00	0.17	1.00	0.21	0.00	n/a	0.00	0.0		7.50	0.35	1.00	0.35	0.01	n/a	0.00	1.5
	37.00	0.21	1.00	0.25	0.00	n/a	0.00	0.0		8.50	0.35	1.00	0.33	0.01	n/a	0.00	1.5
	36.00	0.25	1.00	0.15	0.00	n/a	0.00	0.0		9.50	0.33	1.00	0.38	0.01	n/a	0.00	1.4
	35.00	0.15	1.00	0.23	0.00	n/a	0.00	0.0		10.50	0.38	1.00	0.33	0.01	n/a	0.00	1.6
	34.00	0.23	1.00	0.28	0.00	n/a	0.00	0.0		11.50	0.33	1.00	0.44	0.01	n/a	0.00	1.4
	33.00	0.28	1.00	0.35	0.00	n/a	0.00	0.0		12.50	0.44	1.00	0.45	0.01	n/a	0.00	1.9
	32.00	0.35	1.00	0.38	0.00	n/a	0.00	0.0		13.50	0.45	1.00	0.37	0.01	n/a	0.00	1.9
	31.00	0.38	1.00	0.35	0.01	n/a	0.00	1.5		14.50	0.37	1.00	0.37	0.01	n/a	0.00	1.6
	30.00	0.35	1.00	0.35	0.01	n/a	0.00	1.4		15.50	0.37	1.00	0.41	0.06	n/a	0.02	9.5
	29.00	0.35	1.00	0.50	0.01	n/a	0.00	1.4		16.50	0.41	1.00	0.50	0.01	n/a	0.00	1.7
	28.00	0.50	1.00	0.55	0.01	n/a	0.01	2.0		17.50	0.50	1.00	0.48	0.06	n/a	0.03	12.8
	27.00	0.55	1.00	0.44	0.01	n/a	0.01	2.2		18.50	0.48	1.00	0.41	0.01	n/a	0.00	2.0
	26.00	0.44	1.00	0.52	0.01	n/a	0.00	1.7		19.50	0.41	1.00	0.44	0.01	n/a	0.00	1.7
	25.00	0.52	1.00	0.46	0.01	n/a	0.01	2.0		20.50	0.44	1.00	0.45	0.04	n/a	0.02	7.5
	24.00	0.46	1.00	0.45	0.06	n/a	0.03	10.8		21.50	0.45	1.00	0.39	0.01	n/a	0.00	1.9
	23.00	0.45	1.00	0.40	0.05	n/a	0.02	8.8		22.50	0.39	1.00	0.45	0.06	n/a	0.02	10.0
	22.00	0.40	1.00	0.54	0.06	n/a	0.02	9.4		23.50	0.45	1.00	0.49	0.06	n/a	0.03	11.5
	21.00	0.54	1.00	0.45	0.07	n/a	0.04	14.8		24.50	0.49	1.00	0.45	0.06	n/a	0.03	12.5
	20.00	0.45	1.00	0.50	0.02	n/a	0.01	3.5		25.50	0.45	1.00	0.52	0.01	n/a	0.00	1.9
	19.00	0.50	1.00	0.52	0.02	n/a	0.01	3.9		26.50	0.52	1.00	0.36	0.02	n/a	0.01	4.4
	18.00	0.52	1.00	0.40	0.01	n/a	0.01	2.0		27.50	0.36	1.00	0.39	0.01	n/a	0.00	1.5
	17.00	0.40	1.00	0.44	0.01	n/a	0.00	1.6		28.50	0.39	1.00	0.37	0.00	n/a	0.00	0.0
	16.00	0.44	1.00	0.40	0.06	n/a	0.03	10.4		29.50	0.37	1.00	0.40	0.00	n/a	0.00	0.0
	15.00	0.40	1.00	0.38	0.01	n/a	0.00	1.6		30.50	0.40	1.00	0.24	0.00	n/a	0.00	0.0
	14.00	0.38	1.00	0.43	0.01	n/a	0.00	1.5		31.50	0.24	1.00	0.32	0.00	n/a	0.00	0.0
	13.00	0.43	1.00	0.36	0.01	n/a	0.00	1.7		32.50	0.32	1.00	0.22	0.01	n/a	0.00	1.4
	12.00	0.36	1.00	0.16	0.01	n/a	0.00	1.4		33.50	0.22	1.00	0.13	0.00	n/a	0.00	0.0
	11.00	0.16	1.00	0.36	0.01	n/a	0.00	0.6		34.50	0.13	1.00	0.18	0.00	n/a	0.00	0.0
	10.00	0.36	1.00	0.34	0.01	n/a	0.00	1.4		35.50	0.18	1.00	0.22	0.00	n/a	0.00	0.0
	9.00	0.34	1.00	0.36	0.01	n/a	0.00	1.3		36.50	0.22	1.00	0.17	0.00	n/a	0.00	0.0
	8.00	0.36	1.00	0.34	0.01	n/a	0.00	1.4		37.50	0.17	1.00	0.17	0.00	n/a	0.00	0.0
	7.00	0.34	1.00	0.32	0.01	n/a	0.00	1.3		38.50	0.17	1.00	0.27	0.00	n/a	0.00	0.0
	6.00	0.32	1.00	0.30	0.01	n/a	0.00	1.3		39.50	0.27	1.00	0.35	0.00	n/a	0.00	0.0
	5.00	0.30	1.00	0.28	0.01	n/a	0.00	1.2		40.50	0.35	1.00	0.23	0.01	n/a	0.00	1.5
	4.00	0.28	1.00	0.23	0.01	n/a	0.00	1.1		41.50	0.23	1.00	0.66	0.00	n/a	0.00	0.0
	3.00	0.23	1.00	0.00	0.01	n/a	0.00	0.9		42.50	0.70	1.00	0.00	0.00	n/a	0.00	0.0
left bank	2.00	0.00	1.00	0.00	0.00	n/a	0.00	0.0	right bank	43.40	0.00	0.90	0.00	0.00	n/a	0.00	0.0
Total Q							0.25									0.23	

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Table A1.9. Manual Flow Measurements at Roberts-Hydro in 2010

Date Monitored:	14-Jun-10	Pressure Transducer (m):	99.349
Time (24 hr):	12:15	Discharge Q (m³/s):	3.15
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	n/a
Method:	Velocity - area with Swoffer		
Propeler	2"		
Indicator constant	611		

Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	3.00	0.00	0.00	0.00	0.00	n/a	0.00	0.0									
	4.00	0.11	1.00	0.11	0.00	n/a	0.00	0.0									
	5.00	0.23	1.00	0.23	0.00	n/a	0.00	0.0									
	6.00	0.18	1.00	0.18	0.05	n/a	0.01	0.3									
	7.00	0.26	1.00	0.26	0.06	n/a	0.02	0.5									
	8.00	0.31	1.00	0.31	0.26	n/a	0.08	2.6									
	9.00	0.37	1.00	0.37	0.41	n/a	0.15	4.8									
	10.00	0.29	1.00	0.29	0.28	n/a	0.08	2.6									
	11.00	0.27	1.00	0.27	0.26	n/a	0.07	2.2									
	12.00	0.41	1.00	0.31	0.44	n/a	0.14	4.3									
	12.50	0.65	0.50	0.33	0.61	n/a	0.20	6.3									
	13.00	0.64	0.50	0.32	0.62	n/a	0.20	6.3									
	13.50	0.58	0.50	0.29	0.60	n/a	0.17	5.5									
	14.00	0.57	0.50	0.29	0.35	n/a	0.10	3.2									
	14.50	0.57	0.50	0.29	0.47	n/a	0.13	4.2									
	15.00	0.62	0.50	0.31	0.51	n/a	0.16	5.0				Only one measurement					
	15.50	0.50	0.50	0.25	0.71	n/a	0.18	5.6									
	16.00	0.42	0.50	0.21	0.63	n/a	0.13	4.2									
	16.50	0.40	0.50	0.20	0.67	n/a	0.13	4.3									
	17.00	0.42	0.50	0.21	0.60	n/a	0.13	4.0									
	17.50	0.50	0.50	0.25	0.59	n/a	0.15	4.7									
	18.00	0.60	0.50	0.30	0.56	n/a	0.17	5.3									
	18.50	0.60	0.50	0.30	0.60	n/a	0.18	5.7									
	19.00	0.55	0.50	0.28	0.54	n/a	0.15	4.7									
	19.50	0.52	0.50	0.26	0.69	n/a	0.18	5.7									
	20.00	0.53	0.50	0.53	0.33	n/a	0.17	5.5									
	21.50	0.30	1.50	0.27	0.02	n/a	0.01	0.2									
	21.80	0.25	0.30	0.23	0.15	n/a	0.03	1.1									
	23.30	0.19	1.50	0.21	0.11	n/a	0.02	0.7									
	24.00	0.12	0.70	0.10	0.01	n/a	0.00	0.0									
	25.00	0.12	1.00	0.12	0.13	n/a	0.02	0.5									
left bank	26.00	0.00	1.00	0.00	0.00	n/a	0.00	0.0									
Total Q							3.15										

Table A1.9. Manual Flow Measurements at Roberts-Hydro in 2010

Date Monitored:	15-Jul-10								Pressure Transducer 99.184									
Time (24 hr):	11:25								Mean Discharge Q (m 0.90									
Personnel:	C. Hatt and assistant								Error (+/- %) 8.9									
Method:	Velocity - area with Swoffer																	
Propeler	3"																	
Indicator constant	610																	
Calibration constant	426																	
	Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q	
left bank	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0	right bank	12.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	
	1.00	0.30	0.50	0.15	0.04	0.06	0.01	0.9		11.20	0.27	0.80	0.17	0.23	0.33	0.06	6.4	
	1.50	0.08	0.50	0.04	0.01	0.01	0.00	0.1		10.75	0.27	0.45	0.13	0.37	0.53	0.07	7.9	
	2.00	0.18	0.50	0.09	0.07	0.10	0.01	1.0		10.25	0.15	0.50	0.08	0.66	0.95	0.07	8.2	
	2.50	0.37	0.50	0.19	0.14	0.20	0.04	3.9		9.75	0.05	0.50	0.03	0.18	0.26	0.01	0.7	
	3.00	0.32	0.50	0.16	0.18	0.26	0.04	4.4		9.25	0.10	0.50	0.05	0.18	0.26	0.01	1.5	
	3.50	0.34	0.50	0.17	0.23	0.33	0.06	5.9		8.75	0.27	0.50	0.14	0.35	0.50	0.07	7.8	
	4.00	0.37	0.50	0.19	0.19	0.27	0.05	5.3		8.25	0.27	0.50	0.14	0.41	0.59	0.08	9.2	
	4.50	0.29	0.50	0.15	0.12	0.17	0.02	2.6		7.75	0.25	0.50	0.13	0.09	0.13	0.02	1.9	
	5.00	0.23	0.50	0.12	0.40	0.57	0.07	7.0		7.25	0.27	0.50	0.14	0.02	0.03	0.00	0.4	
	5.50	0.28	0.50	0.14	0.42	0.60	0.08	8.9		6.75	0.22	0.50	0.11	0.29	0.42	0.05	5.3	
	6.00	0.27	0.50	0.14	0.38	0.54	0.07	7.8		6.25	0.23	0.50	0.12	0.36	0.52	0.06	6.9	
	6.50	0.12	0.50	0.06	0.43	0.62	0.04	3.9		5.75	0.30	0.50	0.15	0.44	0.63	0.09	10.9	
	7.00	0.18	0.50	0.09	0.17	0.24	0.02	2.3		5.25	0.09	0.50	0.05	0.71	1.02	0.05	5.3	
	7.50	0.26	0.50	0.13	0.01	0.01	0.00	0.2		4.75	0.10	0.50	0.05	0.29	0.42	0.02	2.4	
	8.00	0.25	0.50	0.13	0.46	0.66	0.08	8.7		4.25	0.38	0.50	0.19	0.23	0.33	0.06	7.2	
	8.50	0.26	0.50	0.13	0.39	0.56	0.07	7.7		3.75	0.37	0.50	0.19	0.11	0.16	0.03	3.4	
	9.00	0.20	0.50	0.10	0.22	0.32	0.03	3.3		3.25	0.40	0.50	0.20	0.13	0.19	0.04	4.3	
	9.50	0.00	0.50	0.00	0.00	0.00	0.00	0.0		2.75	0.36	0.50	0.18	0.21	0.30	0.05	6.3	
	10.00	0.30	0.50	0.15	0.41	0.59	0.09	9.3		2.25	0.37	0.50	0.19	0.06	0.09	0.02	1.8	
	10.50	0.25	0.50	0.13	0.41	0.59	0.07	7.8		1.75	0.27	0.50	0.14	0.07	0.10	0.01	1.6	
	11.00	0.20	0.50	0.09	0.38	0.54	0.05	5.2		1.25	0.09	0.50	0.06	0.06	0.09	0.00	0.6	
	11.40	0.26	0.40	0.13	0.19	0.27	0.04	3.7	left bank	0.50	0.00	0.75	0.00	0.00	0.00	0.00	0.0	
right bank	12.00	0.00	0.60	0.00	0.00	0.00	0.00	0.0										
Total Q							0.94									0.86		

Date Monitored:	19-Aug-10					Pressure Transducer (m):			99.124								
Time (24 hr):	9:15					Mean Discharge Q (m ³ /s):			0.58								
Personnel:	C. Hatt and assistant					Error (+/- %)			2.0								
Method:	Velocity - area with Swoffer																
Propeler	3"																
Indicator constant	615																
Calibration constant	426																
Measurement 1									Measurement 2								
Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m ²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m ³ /s)	% of Total Q
right bank	2.70	0.00	0.00	0.00	0.00	0.00	0.00	0.0	left bank	12.8	0	0.00	0.00	0	0.00	0	0.0
	3.00	0.31	0.30	0.12	0.23	0.33	0.04	7.2		12.6	0.22	0.20	0.06	0.00	0.00	0.00000	0.0
	3.50	0.27	0.50	0.14	0.30	0.43	0.06	10.2		12.25	0.24	0.35	0.10	0.04	0.06	0.00589	1.0
	4.00	0.17	0.50	0.09	0.33	0.48	0.04	7.0		11.75	0.32	0.50	0.16	0.03	0.04	0.00693	1.2
	4.50	0.20	0.50	0.10	0.05	0.07	0.01	1.3		11.25	0.36	0.50	0.18	0.15	0.22	0.03898	6.7
	5.00	0.16	0.50	0.08	0.05	0.07	0.01	1.0		10.75	0.27	0.50	0.14	0.21	0.30	0.04093	7.0
	5.50	0.26	0.50	0.13	0.32	0.46	0.06	10.5		10.25	0.26	0.50	0.13	0.21	0.30	0.03941	6.7
	6.00	0.21	0.50	0.11	0.22	0.32	0.03	5.8		9.75	0.25	0.50	0.13	0.05	0.07	0.00902	1.5
	6.50	0.02	0.50	0.01	0.24	0.35	0.00	0.6		9.25	0.2	0.50	0.10	0.05	0.07	0.00722	1.2
	7.00	0.00	0.50	0.00		0.00	0.00	0.0		8.75	0.2	0.50	0.10	0.28	0.40	0.04042	6.9
	7.50	0.16	0.50	0.08	0.33	0.48	0.04	6.6		8.25	0.2	0.50	0.10	0.31	0.45	0.04475	7.6
	8.00	0.23	0.50	0.12	0.29	0.42	0.05	8.4		7.75	0.2	0.50	0.10	0.31	0.45	0.04475	7.6
	8.50	0.21	0.50	0.11	0.32	0.46	0.05	8.4		7.25	0.1	0.50	0.05	0.53	0.77	0.03826	6.5
	9.00	0.18	0.50	0.09	0.18	0.26	0.02	4.1		6.75	0	0.50	0.00	0.00	0.00	0.00000	0.0
	9.50	0.24	0.50	0.12	0.04	0.06	0.01	1.2		6.25	0.24	0.50	0.12	0.30	0.43	0.05197	8.9
	10.00	0.22	0.50	0.11	0.26	0.38	0.04	7.2		5.75	0.25	0.50	0.13	0.30	0.43	0.05414	9.2
	10.50	0.25	0.50	0.13	0.21	0.30	0.04	6.6		5.25	0.2	0.50	0.10	0.20	0.29	0.02887	4.9
	11.00	0.26	0.50	0.13	0.22	0.32	0.04	7.2		4.75	0.29	0.50	0.15	0.01	0.01	0.00209	0.4
	11.50	0.20	0.50	0.10	0.19	0.27	0.03	4.8		4.25	0.24	0.50	0.12	0.20	0.29	0.03465	5.9
	12.00	0.16	0.50	0.08	0.10	0.14	0.01	2.0		3.75	0.25	0.50	0.13	0.30	0.43	0.05414	9.2
	12.50	0.17	0.50	0.07	0.00	0.00	0.00	0.0		3.25	0.18	0.50	0.09	0.32	0.46	0.04366	7.4
left bank	12.80	0.00	0.30	0.00	0.00	0.00	0.00	0.0	right bank	2.7	0	0.55	0.00	0.00	0.00	0	0.0
Total Q							0.575									0.586	

Table A1.9. Manual Flow Measurements at Roberts-Hydro in 2010

Date Monitored:	01-Oct-10			Pressure Transducer (m):			99.096												
Time (24 hr):	16:20			Mean Discharge Q (m³/s):			0.41												
Personnel:	C. Hatt and assistant			Error (+/- %)			5.1												
Method:	Velocity - area with Swoffer																		
Propeler	3"																		
Indicator constant	601																		
Calibration constant	426																		
Measurement 1										Measurement 2									
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q		
right bank	11.9	0	0.00	0.00	0	0.00	0	0.0	left bank	1.4	0	0.00	0.00	0	0.00	0	0.0		
	11.5	0.29	0.40	0.12	0.29	0.41	0.04746	11.3		1.5	0.21	0.10	0.04	0.09	0.13	0.00533	1.3		
	11.1	0.22	0.40	0.09	0.33	0.47	0.04097	9.7	rock	1.8	0	0.30	0.00	0.00	0.00	0.00000	0.0		
	10.7	0.22	0.40	0.09	0.3	0.42	0.03725	8.9	rock	2	0	0.20	0.00	0	0.00	0.00000	0.0		
	10.3	0.15	0.40	0.06	0.16	0.23	0.01354	3.2		2.1	0.06	0.10	0.02	0.06	0.08	0.00127	0.3		
	9.9	0.24	0.40	0.10	0.01	0.01	0.00135	0.3		2.5	0.1	0.40	0.04	0.04	0.06	0.00226	0.6		
	9.5	0.17	0.40	0.07	0.07	0.10	0.00672	1.6		2.9	0.27	0.40	0.11	0.01	0.01	0.00152	0.4		
	9.1	0.2	0.40	0.08	0.28	0.40	0.03160	7.5		3.3	0.25	0.40	0.10	0.10	0.14	0.01411	3.5		
	8.7	0.22	0.40	0.09	0.31	0.44	0.03849	9.1		3.7	0.27	0.40	0.11	0.10	0.14	0.01524	3.8		
	8.3	0.23	0.40	0.09	0.33	0.47	0.04283	10.2		4.1	0.3	0.40	0.12	0.05	0.07	0.00846	2.1		
	7.9	0.25	0.40	0.10	0.01	0.01	0.00141	0.3		4.5	0.3	0.40	0.12	0.07	0.10	0.01185	3.0		
	7.5	0.21	0.40	0.08	0.08	0.11	0.00948	2.3		4.9	0.2	0.40	0.08	0.09	0.13	0.01016	2.5		
	7.1	0.19	0.40	0.08	0.22	0.31	0.02359	5.6		5.3	0.15	0.40	0.06	0.26	0.37	0.02201	5.5		
	6.7	0.2	0.40	0.08	0.20	0.28	0.02257	5.4		5.7	0	0.40	0.00	0.00	0.00	0.00000	0.0		
	6.3	0.17	0.40	0.07	0.23	0.32	0.02206	5.2		6.1	0.25	0.40	0.10	0.22	0.31	0.03104	7.8		
	5.9	0.07	0.40	0.03	0.21	0.30	0.00830	2.0		6.5	0.19	0.40	0.08	0.22	0.31	0.02359	5.9		
	5.5	0.08	0.40	0.03	0.28	0.40	0.01264	3.0		6.9	0.25	0.40	0.10	0.15	0.21	0.02116	5.3		
	5.1	0.09	0.40	0.04	0.19	0.27	0.00965	2.3		7.3	0.13	0.40	0.05	0.24	0.34	0.01761	4.4		
	4.7	0.22	0.40	0.09	0.07	0.10	0.00869	2.1		7.7	0.15	0.40	0.06	0.02	0.03	0.00169	0.4		
	4.3	0.33	0.40	0.13	0.04	0.06	0.00745	1.8		8.1	0.2	0.40	0.08	0.02	0.03	0.00226	0.6		
	3.9	0.31	0.40	0.12	0.05	0.07	0.00875	2.1		8.5	0.2	0.40	0.08	0.33	0.47	0.03725	9.3		
	3.5	0.23	0.40	0.05	0.09	0.13	0.01168	2.8		8.9	0.24	0.40	0.10	0.27	0.38	0.03657	9.1		
	3.1	0.27	0.40	0.05	0.02	0.03	0.00305	0.7		9.3	0.2	0.40	0.08	0.10	0.14	0.01129	2.8		
	2.7	0.26	0.40	0.05	0.01	0.01	0.00147	0.3		9.7	0.23	0.40	0.09	0.01	0.01	0.00130	0.3		
	2.3	0.11	0.40	0.02	0.03	0.04	0.00163	0.4		10.1	0.2	0.40	0.08	0.02	0.03	0.00226	0.6		
rock	2	0	0.30	0.00	0.00	0.00	0.00000	0.0		10.5	0.16	0.40	0.06	0.39	0.55	0.03521	8.8		
rock	1.8	0	0.20	0.00	0.00	0.00	0.00000	0.0		10.9	0.22	0.40	0.09	0.36	0.51	0.04469	11.2		
	1.5	0.22	0.30	0.03	0.13	0.18	0.00807	1.9		11.3	0.15	0.40	0.06	0.3	0.42	0.02539	6.4		
left bank	1.4	0	0.10	0.00	0.00	0.00	0.00000	0.0		11.7	0.24	0.40	0.07	0.16	0.23	0.01625	4.1		
									right bank	11.9	0	0.20	0.05	0	0.00	0	0.0		
Total Q							0.421									0.400			

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Table A1.9. Manual Flow Measurements at Roberts-Hydro in 2010

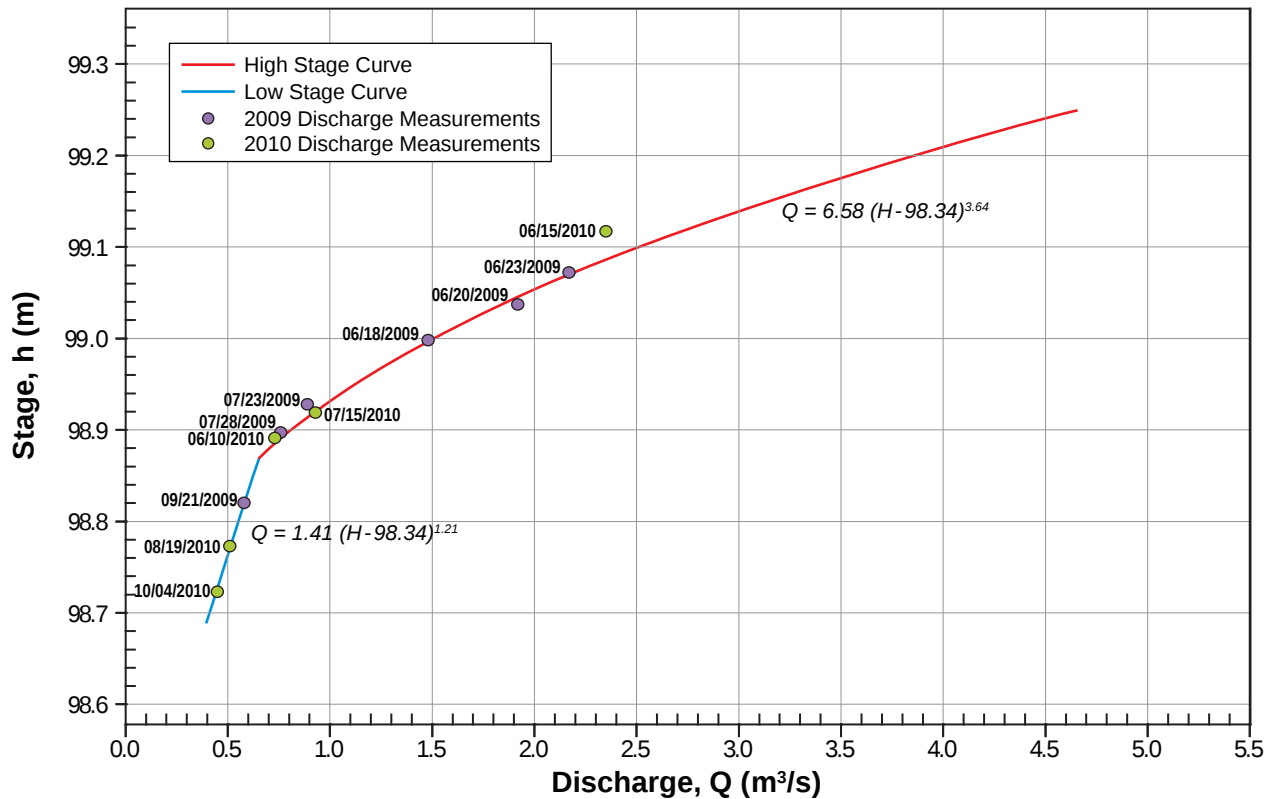
Date Monitored:	18-Jun-10	Pressure Transducer (m):	99.483																		
Time (24 hr):	10:30	Mean Discharge Q (m³/s):	5.60																		
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	5.5																		
Method:	Velocity - area with Swoffer																				
Propeler	3"																				
Indicator constant	609																				
Calibration constant	426																				
	Measurement 1										Measurement 2										
Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Velocity 20% (m/s)	Velocity 80% (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q	Notes	Station (m)	Depth (m)	Distance (m)	Area (m²)	Velocity (m/s)	Velocity 20% (m/s)	Velocity 80% (m/s)	Cal. Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	4.00	0.00	0.00	0.00	0.00			0.00	0.00	0.0	left bank	29.50	0.00	0.00	0.00	0.00			0.00	0.00	0.0
	5.00	0.14	1.00	0.14	0.00			0.00	0.00	0.0		27.50	0.20	2.00	0.35	0.43			0.61	0.22	4.0
	6.00	0.14	1.00	0.14	0.06			0.09	0.01	0.2		26.00	0.25	1.50	0.31	0.05			0.07	0.02	0.4
	7.00	0.26	1.00	0.26	0.18			0.26	0.07	1.2		25.00	0.30	1.00	0.27	0.01			0.01	0.00	0.1
	8.00	0.30	1.00	0.30	0.06			0.09	0.03	0.4		24.20	0.30	0.80	0.27	0.30			0.43	0.12	2.1
	9.00	0.34	1.00	0.34	0.27			0.39	0.13	2.3		23.20	0.36	1.00	0.35	0.32			0.46	0.16	2.9
	10.00	0.45	1.00	0.45	0.32			0.46	0.21	3.6		22.25	0.41	0.95	0.30	0.48			0.69	0.20	3.7
	11.00	0.54	1.00	0.54	0.42			0.60	0.32	5.6		21.75	0.71	0.50	0.36	0.57			0.81	0.29	5.3
	12.00	0.44	1.00	0.44	0.16			0.23	0.10	1.7		21.25	0.45	0.50	0.23	0.58			0.83	0.19	3.4
	13.00	0.40	1.00	0.40	0.45			0.64	0.26	4.5		20.75	0.78	0.50	0.39	0.37	0.64	0.10	0.53	0.20	3.8
	14.00	0.44	1.00	0.44	0.52			0.74	0.33	5.7		20.25	0.64	0.50	0.32	0.58			0.83	0.27	4.9
	15.00	0.78	1.00	0.58	0.51	0.58	0.43	0.72	0.42	7.3		19.75	0.52	0.50	0.26	0.62			0.89	0.23	4.2
	15.50	0.79	0.50	0.39	0.55	0.59	0.50	0.78	0.31	5.3		19.25	0.53	0.50	0.27	0.51			0.73	0.19	3.5
	16.00	0.72	0.50	0.36	0.48			0.69	0.25	4.3		18.75	0.42	0.50	0.21	0.65			0.93	0.20	3.6
	16.50	0.52	0.50	0.26	0.50			0.71	0.19	3.2		18.25	0.52	0.50	0.26	0.57			0.81	0.21	3.9
	17.00	0.42	0.50	0.21	0.58			0.83	0.17	3.0		17.75	0.57	0.50	0.29	0.57			0.81	0.23	4.3
	17.50	0.59	0.50	0.30	0.52			0.74	0.22	3.8		17.25	0.57	0.50	0.29	0.46			0.66	0.19	3.4
	18.00	0.54	0.50	0.27	0.57			0.81	0.22	3.8		16.75	0.58	0.50	0.29	0.55			0.79	0.23	4.2
	18.50	0.48	0.50	0.24	0.55			0.79	0.19	3.3		16.25	0.45	0.50	0.23	0.58			0.83	0.19	3.4
	19.00	0.50	0.50	0.25	0.59			0.84	0.21	3.7		15.75	0.60	0.50	0.30	0.55			0.79	0.24	4.3
	19.50	0.54	0.50	0.27	0.55			0.79	0.21	3.7		15.25	0.78	0.50	0.39	0.53	0.60	0.45	0.75	0.29	5.3
	20.00	0.60	0.50	0.30	0.63			0.90	0.27	4.7		14.75	0.70	0.50	0.35	0.53			0.76	0.27	4.9
	20.50	0.69	0.50	0.35	0.57			0.81	0.28	4.9		14.25	0.47	0.50	0.29	0.44			0.63	0.18	3.4
	21.00	0.66	0.50	0.33	0.62			0.89	0.29	5.1		13.50	0.40	0.75	0.35	0.27			0.39	0.14	2.5
	21.50	0.65	0.50	0.33	0.55			0.79	0.26	4.4		12.50	0.39	1.00	0.39	0.44			0.63	0.25	4.5
	22.00	0.48	0.50	0.24	0.68			0.97	0.23	4.1		11.50	0.47	1.00	0.47	0.32			0.46	0.22	3.9
	22.50	0.42	0.50	0.21	0.41			0.59	0.12	2.1		10.50	0.49	1.00	0.49	0.37			0.53	0.26	4.8
	23.00	0.36	0.50	0.27	0.25			0.36	0.10	1.7		9.50	0.37	1.00	0.37	0.34			0.49	0.18	3.3
	24.00	0.24	1.00	0.22	0.28			0.40	0.09	1.5		8.50	0.33	1.00	0.33	0.10			0.14	0.05	0.9
	24.80	0.18	0.80	0.14	0.30			0.43	0.06	1.1		7.50	0.25	1.00	0.25	0.13			0.19	0.05	0.9
	25.60	0.21	0.80	0.17	0.25			0.36	0.06	1.0		6.50	0.24	1.00	0.24	0.01			0.01	0.00	0.1
	26.40	0.22	0.80	0.15	0.22			0.31	0.05	0.8		5.50	0.18	1.00	0.18	0.02			0.03	0.01	0.1
	27.00	0.18	0.60	0.14	0.15			0.21	0.03	0.5		4.50	0.15	1.00	0.11	0.00			0.00	0.00	0.0
	27.90	0.18	0.90	0.16	0.30			0.43	0.07	1.2	right bank	4.00	0.00	0.50	0.00	0.00			0.00	0.00	0.0
CF	28.80	0.11	0.90	0.07	0.08			0.11	0.01	0.1											
0.1	29.10	0.10	0.30	0.04	0.11			0.16	0.01	0.1											
left bank	29.50	0.00	0.40	0.00	0.00			0.00	0.00	0.0											
Total Q									5.76											5.45	

Appendix A2

Rating Curves



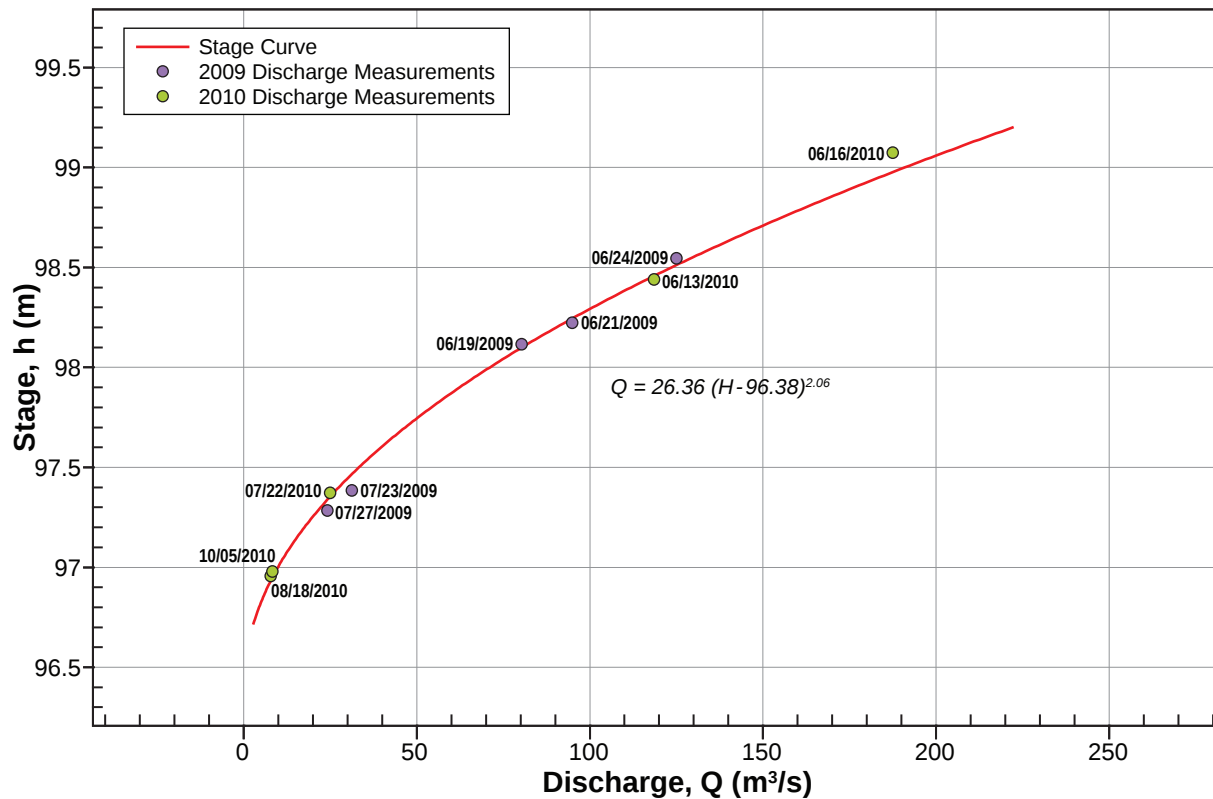
Doris Hydro, looking upstream (south) from the hydrometric station towards the outlet of Doris Lake. Lower left corner in the photograph shows the conduit housing the pressure transducer cable. Note how the flow is confined by the main channel during low and medium flow conditions. On the left bank there is a flood terrace with overgrown grasses where the channel overflows during high flow conditions, thus the difference between the slopes of the rating relationship at low stage and high stage conditions. Photograph taken on July 15th, 2010.



Note: pressure transducer stage readings are referenced to datum



Koignuk River facing upstream from the hydrometric station (south west). The flow is well confined to the channel by the banks along both sides of the stream. Photograph taken on July 23, 2010.

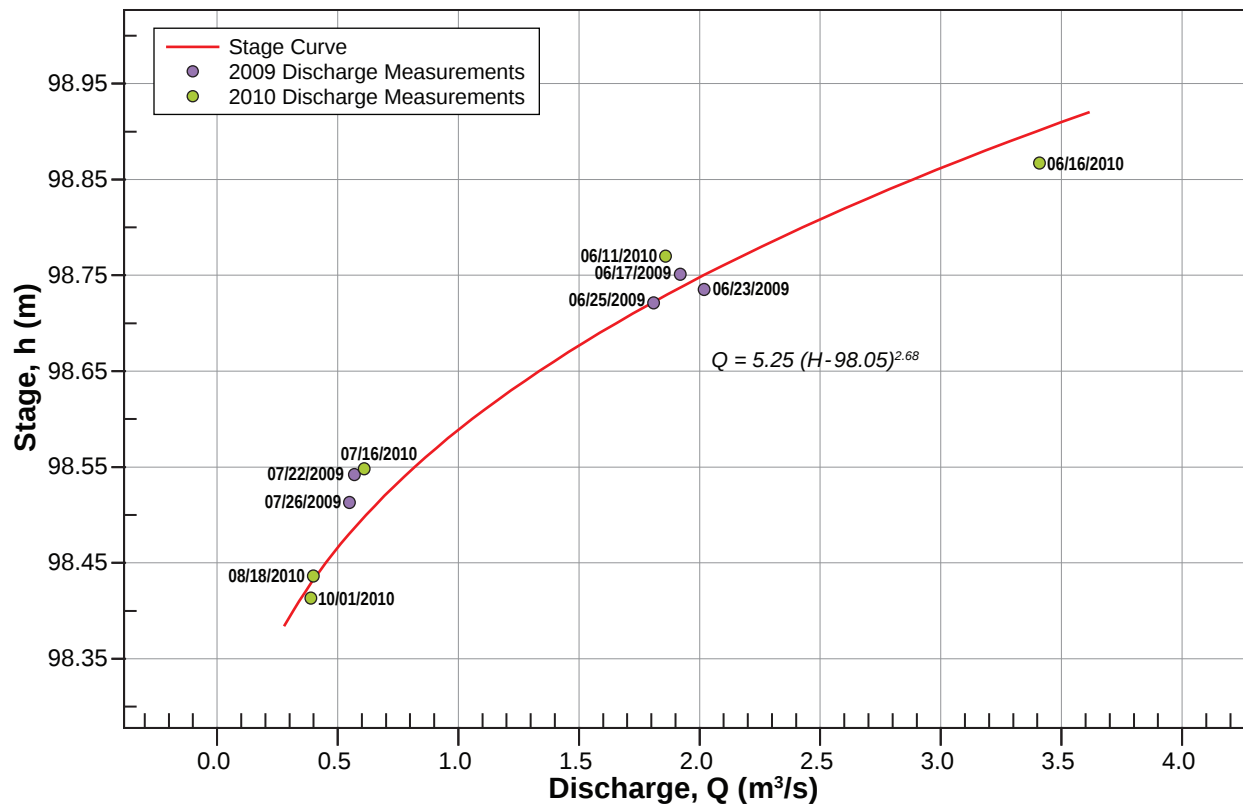


Note: pressure transducer stage readings are referenced to datum

Figure A2-2



Ogama-Hydro, looking upstream (south) from the hydrometric station toward the outlet of Ogama Lake. Note how the flow is confined to the main channel by a bedrock outcrop along the left bank. However, during high flow conditions the channel can overflow onto a flood terrace located along the right bank. Photograph taken on July 16th, 2010.

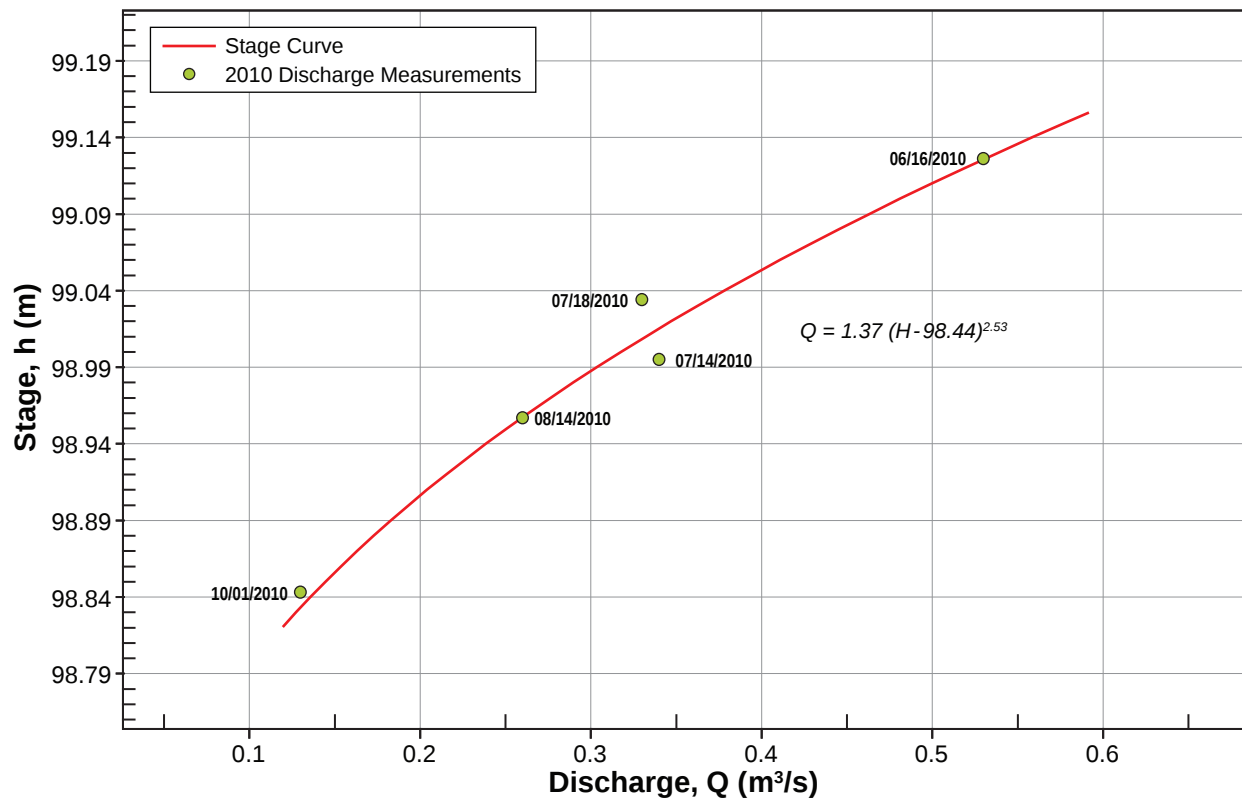


Note: pressure transducer stage readings are referenced to datum

Figure A2-3



Patch Lake outlet channel, looking upstream (west) toward the hydrometric station Patch-Hydro. The flow is confined by the channel at low and medium flow conditions. During high flow conditions the channel overflows a flood terrace overgrown with vegetation located along the left bank. Photograph taken on October 1st, 2010.

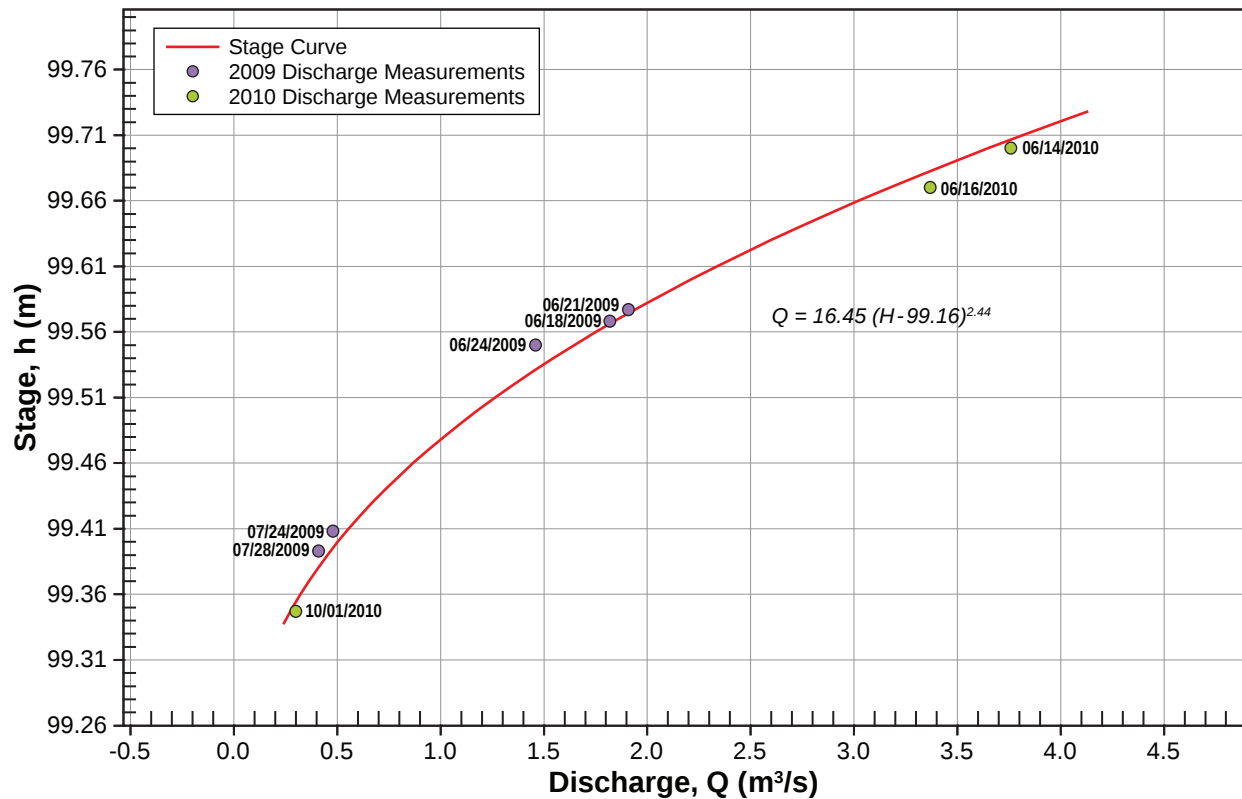


Note: pressure transducer stage readings are referenced to datum

Figure A2-4



PO Lake outlet, facing downstream (north). Note how the flow is well confined by the main channel during low and medium flow conditions. During high flow conditions the channel overflows on the terraces overgrown with grasses located along both banks. Photograph taken on July 14, 2010.



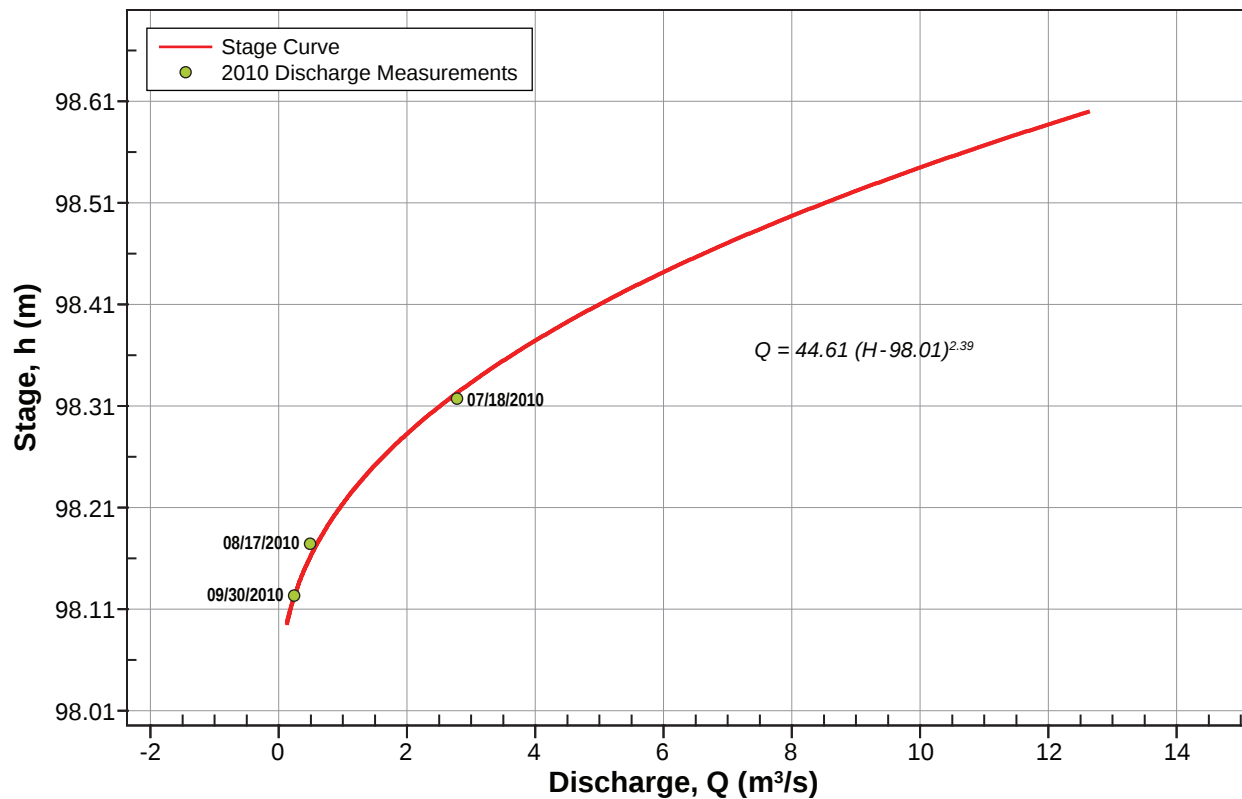
Note: pressure transducer stage readings are referenced to datum

Figure A2-5



Top: Photograph taken downstream of the hydrometric station Reference B-Hydro facing south west. The photo shows the stream cross-section where the stream current velocities were measured on June 11, 2010. Note the ice cover along the left bank of the channel. Water flowing under ice is suspect to have contributed to the underestimation of the discharge measured on this date.

Bottom: View from the hydrometric station, facing downstream (north). The flow is well confined by the channel during medium to high flow conditions. Photograph taken on August 17, 2010.

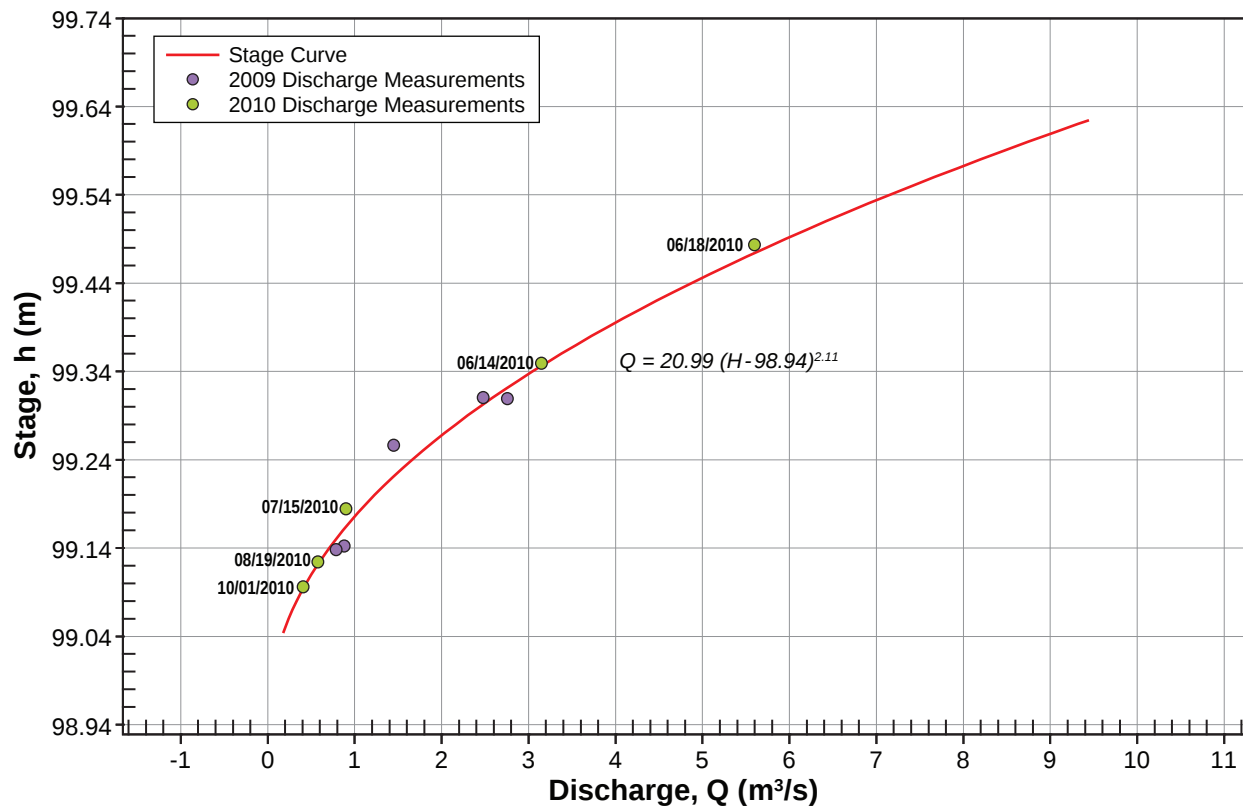


Note: pressure transducer stage readings are referenced to datum

Figure A2-6



Roberts Lake outlet, facing downstream (north west) from the hydrometric station Roberts Hydro. The flow is well confined by the channel during low and high flow conditions. Photograph taken on October 4th, 2010.

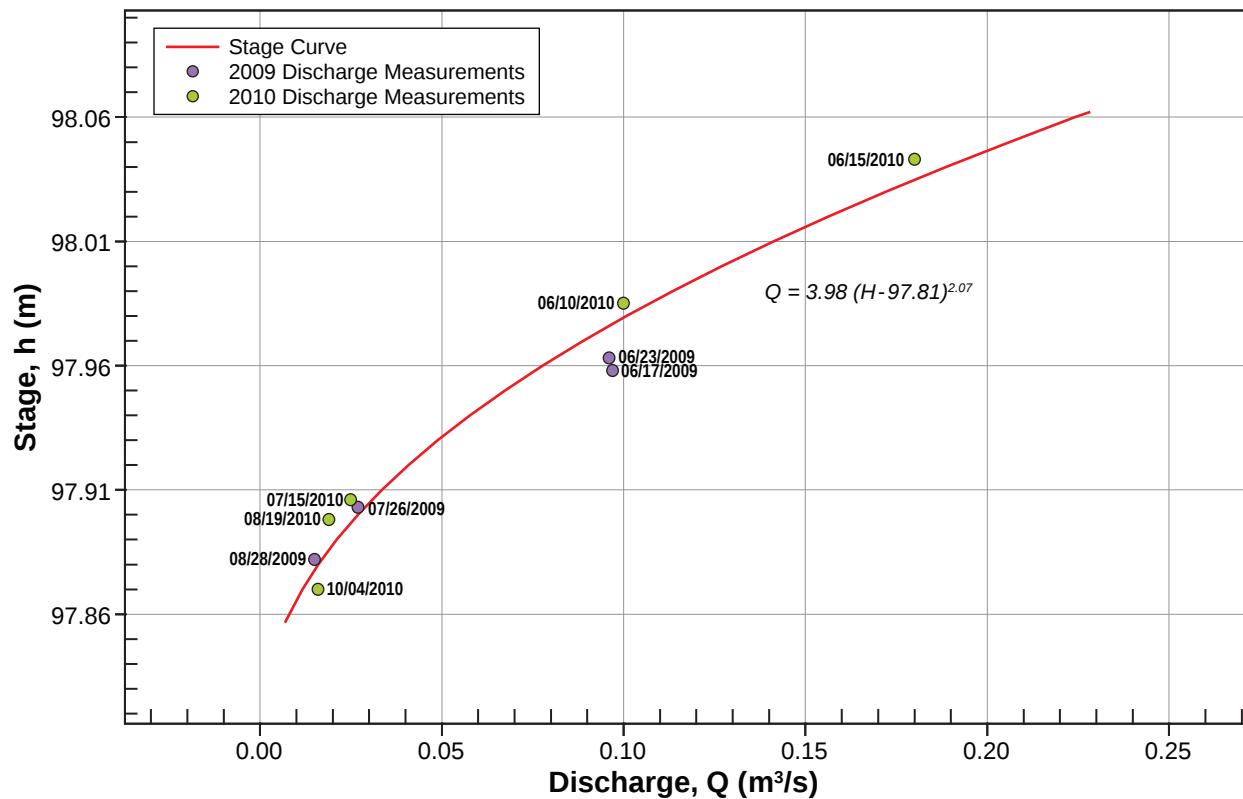


Note: pressure transducer stage readings are referenced to datum

Figure A2-7



Hydrometric station Tail-hydro, facing downstream from the Tail Lake outlet (northwest). Note how the flow is well confined to the main channel by a promontory located along the left bank and by a flood terrace located along the right bank. Photograph taken on June 6th, 2010.

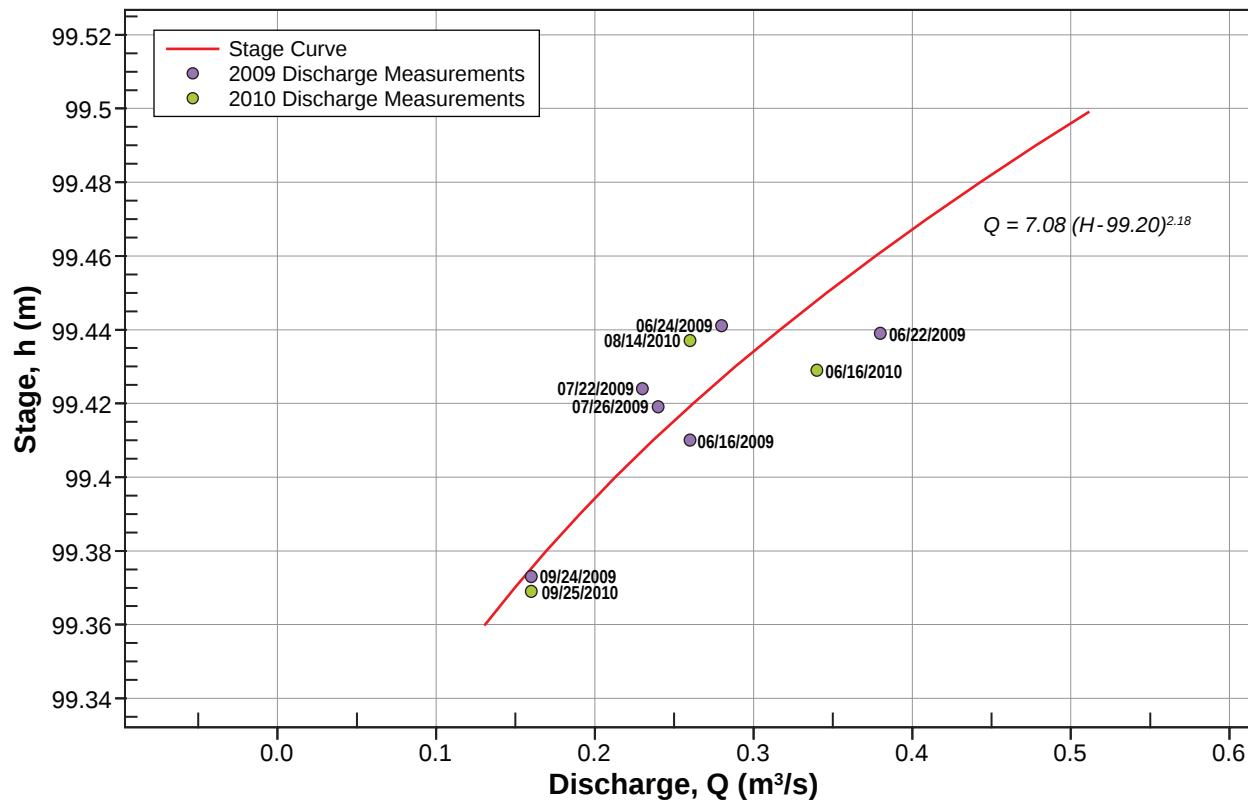


Note: pressure transducer stage readings are referenced to datum

Figure A2-8



Outlet channel from Windy Lake facing upstream (south). Note how the flow is well confined by the main channel, approximately 1.5 m wide at this section. The foreground of the photograph shows the cross-section where current velocity measurements were made, downstream from the hydrometric station Windy-Hydro. Photograph taken on August 14th, 2010.



Note: pressure transducer stage readings are referenced to datum

Figure A2-9

Appendix A3

Summary of Survey Information

Appendix A-3. Summary of Survey Control Points used at the Hydrometric Stations

Station ID	Survey Point	Elevation (m)	Date	Notes
<i>Doris-Hydro</i>	Benchmark 59	100.000		arbitrary elevation
	Benchmark 58	100.615		
	Benchmark 09	106.960		
	Pressure transducer	98.061	15-Jul-10	
<i>Ogama-Hydro</i>	Benchamrk 41	100.000		arbitrary elevation
	Benchmark 42	100.104		
	Benchmark 11	100.666		
	Pressure transducer	97.990	16-Jul-10	
<i>Patch-Hydro</i>	Benchmark 53	100.000		arbitrary elevation
	Benchmark 52	99.650		
	Benchmark 54	99.305		
	Benchmark 25	102.289		
	Pressure transducer	98.364	14-Jul-10	
<i>PO-Hydro</i>	Benchmark 40	100.000		arbitrary elevation
	Benchmark 39	100.289		
	Benchmark 38	99.355		
	Benchmark 27	103.227		
	Pressure transducer	98.600	14-Jul-10	
<i>Roberts-Hydro</i>	Benchmark 50	100.000		arbitrary elevation
	Benchmark 64	99.743		
	Benchmark 49	99.906		
	Benchmark 12	99.981		
	Pressure transducer	98.615	14-Jun-10	
<i>Tail-Hydro</i>	Benchmark 82	99.906		arbitrary elevation
	Benchmark 83	100.000		
	Benchmark 43	99.301		
	Benchmark 64	102.682		
	Pressure transducer	97.664	10-Jun-10	
<i>Wolverine-Hydro</i>	Benchmark 61	100.000		arbitrary elevation
	Benchmark 60	99.410		
	Pressure transducer	98.269	13-Jun-10	
<i>Windy-Hydro</i>	Benchmark 44	100.912		arbitrary elevation
	Benchmark 45	100.000		
	Benchmark 23	103.084		
	Benchmark 24	103.429		
	Pressure transducer	98.946	16-Jul-10	
<i>Koignuk-Hydro</i>	Benchmark 68	100.000		arbitrary elevation
	Benchmark 67	100.163		
	Benchmark 66	98.844		
	Benchmark 71	105.808		
	Pressure transducer	96.507	18-Aug-10	
<i>Reference B-Hydro</i>	Benchmark 84	98.873		arbitrary elevation
	Benchmark 85	99.641		
	Benchmark 86	100.000		
	Pressure transducer	97.552	16-Jul-10	

Appendix A4

Summary of Daily Mean Lake Water Level

Table A4.1. Summary of Daily Mean Water Level (m) at Doris Lake

Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)
1-Jan		1-Mar		1-May		1-Jul	5.96	1-Sep	5.64	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	5.96	2-Sep	5.63	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	5.94	3-Sep	5.63	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	5.93	4-Sep	5.63	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	5.92	5-Sep	5.63	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	5.91	6-Sep	5.66	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	5.90	7-Sep	5.66	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	5.88	8-Sep	5.64	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	5.89	9-Sep	5.64	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	5.87	10-Sep	5.64	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	5.85	11-Sep	5.65	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	5.84	12-Sep	5.64	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	5.85	13-Sep	5.64	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	5.81	14-Sep	5.64	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	5.82	15-Sep	5.65	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	5.82	16-Sep	5.67	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	5.83	17-Sep	5.66	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	5.85	18-Sep	5.66	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	5.86	19-Sep	5.66	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	5.85	20-Sep	5.65	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	5.86	21-Sep	5.66	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	5.85	22-Sep	5.66	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	5.83	23-Sep	5.66	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	5.83	24-Sep	5.65	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	5.84	25-Sep	5.65	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	5.83	26-Sep	5.66	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	5.81	27-Sep	5.64	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	5.81	28-Sep	5.64	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	5.79	29-Sep	5.66	29-Nov	
30-Jan		30-Mar		30-May	5.44	30-Jul	5.79	30-Sep	5.64	30-Nov	
31-Jan		31-Mar		31-May	5.48	31-Jul	5.78	1-Oct	5.63	1-Dec	
1-Feb		1-Apr		1-Jun	5.54	1-Aug	5.77	2-Oct	5.61	2-Dec	
2-Feb		2-Apr		2-Jun	5.55	2-Aug	5.78	3-Oct	5.65	3-Dec	
3-Feb		3-Apr		3-Jun	5.60	3-Aug	5.77	4-Oct	5.64	4-Dec	
4-Feb		4-Apr		4-Jun	5.63	4-Aug	5.77	5-Oct		5-Dec	
5-Feb		5-Apr		5-Jun	5.64	5-Aug	5.76	6-Oct		6-Dec	
6-Feb		6-Apr		6-Jun	5.66	6-Aug	5.75	7-Oct		7-Dec	
7-Feb		7-Apr		7-Jun	5.71	7-Aug	5.75	8-Oct		8-Dec	
8-Feb		8-Apr		8-Jun	5.74	8-Aug	5.75	9-Oct		9-Dec	
9-Feb		9-Apr		9-Jun	5.79	9-Aug	5.74	10-Oct		10-Dec	
10-Feb		10-Apr		10-Jun	5.81	10-Aug	5.73	11-Oct		11-Dec	
11-Feb		11-Apr		11-Jun	5.85	11-Aug	5.74	12-Oct		12-Dec	
12-Feb		12-Apr		12-Jun	5.89	12-Aug	5.75	13-Oct		13-Dec	
13-Feb		13-Apr		13-Jun	5.91	13-Aug	5.72	14-Oct		14-Dec	
14-Feb		14-Apr		14-Jun	5.99	14-Aug	5.71	15-Oct		15-Dec	
15-Feb		15-Apr		15-Jun	6.04	15-Aug	5.71	16-Oct		16-Dec	
16-Feb		16-Apr		16-Jun	6.07	16-Aug	5.69	17-Oct		17-Dec	
17-Feb		17-Apr		17-Jun	6.11	17-Aug	5.68	18-Oct		18-Dec	
18-Feb		18-Apr		18-Jun	6.11	18-Aug	5.68	19-Oct		19-Dec	
19-Feb		19-Apr		19-Jun	6.12	19-Aug	5.67	20-Oct		20-Dec	
20-Feb		20-Apr		20-Jun	6.12	20-Aug	5.67	21-Oct		21-Dec	
21-Feb		21-Apr		21-Jun	6.12	21-Aug	5.68	22-Oct		22-Dec	
22-Feb		22-Apr		22-Jun	6.11	22-Aug	5.67	23-Oct		23-Dec	
23-Feb		23-Apr		23-Jun	6.09	23-Aug	5.67	24-Oct		24-Dec	
24-Feb		24-Apr		24-Jun	6.06	24-Aug	5.66	25-Oct		25-Dec	
25-Feb		25-Apr		25-Jun	6.05	25-Aug	5.66	26-Oct		26-Dec	
26-Feb		26-Apr		26-Jun	6.04	26-Aug	5.66	27-Oct		27-Dec	
27-Feb		27-Apr		27-Jun	6.03	27-Aug	5.65	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	6.01	28-Aug	5.65	29-Oct		29-Dec	
		29-Apr		29-Jun	5.99	29-Aug	5.65	30-Oct		30-Dec	
		30-Apr		30-Jun	5.97	30-Aug	5.64	31-Oct		31-Dec	
						31-Aug	5.64				

Note: Stage values are referenced to pressure transducer readings

Table A4.2. Summary of Daily Mean Water Level (m) at Patch Lake

Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)
1-Jan		1-Mar		1-May		1-Jul	99.09	1-Sep	98.89	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	99.09	2-Sep	98.89	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	99.08	3-Sep	98.89	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	99.07	4-Sep	98.89	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	99.06	5-Sep	98.90	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	99.06	6-Sep	98.90	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	99.06	7-Sep	98.89	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	99.05	8-Sep	98.89	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	99.04	9-Sep	98.89	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	99.03	10-Sep	98.89	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	99.02	11-Sep	98.89	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	99.02	12-Sep	98.88	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	99.00	13-Sep	98.88	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	99.00	14-Sep	98.88	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	99.00	15-Sep	98.88	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	99.01	16-Sep	98.88	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	99.03	17-Sep	98.88	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	99.04	18-Sep	98.88	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	99.04	19-Sep	98.88	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	99.05	20-Sep	98.87	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	99.04	21-Sep	98.87	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	99.04	22-Sep	98.87	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	99.05	23-Sep	98.86	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	99.04	24-Sep	98.86	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	99.03	25-Sep	98.86	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	99.03	26-Sep	98.85	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	99.02	27-Sep	98.84	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	99.02	28-Sep	98.85	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	99.01	29-Sep	98.84	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	99.01	30-Sep		30-Nov	
31-Jan		31-Mar		31-May		31-Jul	99.00	1-Oct		1-Dec	
1-Feb		1-Apr		1-Jun		1-Aug	98.99	2-Oct		2-Dec	
2-Feb		2-Apr		2-Jun		2-Aug	98.99	3-Oct		3-Dec	
3-Feb		3-Apr		3-Jun		3-Aug	98.98	4-Oct		4-Dec	
4-Feb		4-Apr		4-Jun		4-Aug	98.98	5-Oct		5-Dec	
5-Feb		5-Apr		5-Jun		5-Aug	98.97	6-Oct		6-Dec	
6-Feb		6-Apr		6-Jun		6-Aug	98.98	7-Oct		7-Dec	
7-Feb		7-Apr		7-Jun		7-Aug	98.97	8-Oct		8-Dec	
8-Feb		8-Apr		8-Jun		8-Aug	98.98	9-Oct		9-Dec	
9-Feb		9-Apr		9-Jun		9-Aug	98.98	10-Oct		10-Dec	
10-Feb		10-Apr		10-Jun		10-Aug	98.98	11-Oct		11-Dec	
11-Feb		11-Apr		11-Jun		11-Aug	98.97	12-Oct		12-Dec	
12-Feb		12-Apr		12-Jun		12-Aug	98.96	13-Oct		13-Dec	
13-Feb		13-Apr		13-Jun		13-Aug	98.95	14-Oct		14-Dec	
14-Feb		14-Apr		14-Jun	99.10	14-Aug	98.95	15-Oct		15-Dec	
15-Feb		15-Apr		15-Jun	99.12	15-Aug	98.94	16-Oct		16-Dec	
16-Feb		16-Apr		16-Jun	99.12	16-Aug	98.93	17-Oct		17-Dec	
17-Feb		17-Apr		17-Jun	99.13	17-Aug	98.92	18-Oct		18-Dec	
18-Feb		18-Apr		18-Jun	99.14	18-Aug	98.92	19-Oct		19-Dec	
19-Feb		19-Apr		19-Jun	99.14	19-Aug	98.92	20-Oct		20-Dec	
20-Feb		20-Apr		20-Jun	99.13	20-Aug	98.92	21-Oct		21-Dec	
21-Feb		21-Apr		21-Jun	99.13	21-Aug	98.92	22-Oct		22-Dec	
22-Feb		22-Apr		22-Jun	99.13	22-Aug	98.92	23-Oct		23-Dec	
23-Feb		23-Apr		23-Jun	99.13	23-Aug	98.92	24-Oct		24-Dec	
24-Feb		24-Apr		24-Jun	99.13	24-Aug	98.92	25-Oct		25-Dec	
25-Feb		25-Apr		25-Jun	99.12	25-Aug	98.91	26-Oct		26-Dec	
26-Feb		26-Apr		26-Jun	99.11	26-Aug	98.91	27-Oct		27-Dec	
27-Feb		27-Apr		27-Jun	99.11	27-Aug	98.90	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	99.10	28-Aug	98.90	29-Oct		29-Dec	
		29-Apr		29-Jun	99.10	29-Aug	98.90	30-Oct		30-Dec	
		30-Apr		30-Jun	99.09	30-Aug	98.90	31-Oct		31-Dec	
						31-Aug	98.89				

Note: Stage values are referenced to site-specific arbitrary datum

Table A4.3. Summary of Daily Mean Water Level (m) at PO Lake

Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)
1-Jan		1-Mar		1-May		1-Jul	99.47	1-Sep	99.36	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	99.47	2-Sep	99.36	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	99.47	3-Sep	99.36	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	99.46	4-Sep	99.36	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	99.45	5-Sep	99.39	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	99.44	6-Sep	99.41	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	99.43	7-Sep	99.42	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	99.42	8-Sep	99.42	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	99.41	9-Sep	99.42	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	99.40	10-Sep	99.41	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	99.38	11-Sep	99.41	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	99.37	12-Sep	99.41	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	99.36	13-Sep	99.41	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	99.36	14-Sep	99.41	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	99.36	15-Sep	99.43	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	99.40	16-Sep	99.44	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	99.46	17-Sep	99.44	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	99.48	18-Sep	99.43	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	99.49	19-Sep	99.43	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	99.48	20-Sep	99.43	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	99.47	21-Sep	99.42	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	99.46	22-Sep	99.41	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	99.46	23-Sep	99.40	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	99.45	24-Sep	99.40	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	99.44	25-Sep	99.38	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	99.43	26-Sep	99.38	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	99.43	27-Sep	99.37	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	99.42	28-Sep	99.36	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	99.42	29-Sep	99.35	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	99.42	30-Sep		30-Nov	
31-Jan		31-Mar		31-May		31-Jul	99.41	1-Oct		1-Dec	
1-Feb		1-Apr		1-Jun		1-Aug	99.41	2-Oct		2-Dec	
2-Feb		2-Apr		2-Jun		2-Aug	99.42	3-Oct		3-Dec	
3-Feb		3-Apr		3-Jun		3-Aug	99.43	4-Oct		4-Dec	
4-Feb		4-Apr		4-Jun		4-Aug	99.44	5-Oct		5-Dec	
5-Feb		5-Apr		5-Jun		5-Aug	99.44	6-Oct		6-Dec	
6-Feb		6-Apr		6-Jun		6-Aug	99.44	7-Oct		7-Dec	
7-Feb		7-Apr		7-Jun		7-Aug	99.43	8-Oct		8-Dec	
8-Feb		8-Apr		8-Jun		8-Aug	99.42	9-Oct		9-Dec	
9-Feb		9-Apr		9-Jun		9-Aug	99.42	10-Oct		10-Dec	
10-Feb		10-Apr		10-Jun		10-Aug	99.42	11-Oct		11-Dec	
11-Feb		11-Apr		11-Jun		11-Aug	99.41	12-Oct		12-Dec	
12-Feb		12-Apr		12-Jun		12-Aug	99.41	13-Oct		13-Dec	
13-Feb		13-Apr		13-Jun		13-Aug	99.41	14-Oct		14-Dec	
14-Feb		14-Apr		14-Jun	99.70	14-Aug	99.40	15-Oct		15-Dec	
15-Feb		15-Apr		15-Jun	99.68	15-Aug	99.40	16-Oct		16-Dec	
16-Feb		16-Apr		16-Jun	99.66	16-Aug	99.39	17-Oct		17-Dec	
17-Feb		17-Apr		17-Jun	99.64	17-Aug	99.39	18-Oct		18-Dec	
18-Feb		18-Apr		18-Jun	99.62	18-Aug	99.38	19-Oct		19-Dec	
19-Feb		19-Apr		19-Jun	99.60	19-Aug	99.38	20-Oct		20-Dec	
20-Feb		20-Apr		20-Jun	99.58	20-Aug	99.38	21-Oct		21-Dec	
21-Feb		21-Apr		21-Jun	99.57	21-Aug	99.39	22-Oct		22-Dec	
22-Feb		22-Apr		22-Jun	99.55	22-Aug	99.39	23-Oct		23-Dec	
23-Feb		23-Apr		23-Jun	99.54	23-Aug	99.38	24-Oct		24-Dec	
24-Feb		24-Apr		24-Jun	99.53	24-Aug	99.38	25-Oct		25-Dec	
25-Feb		25-Apr		25-Jun	99.52	25-Aug	99.38	26-Oct		26-Dec	
26-Feb		26-Apr		26-Jun	99.51	26-Aug	99.37	27-Oct		27-Dec	
27-Feb		27-Apr		27-Jun	99.50	27-Aug	99.37	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	99.49	28-Aug	99.37	29-Oct		29-Dec	
		29-Apr		29-Jun	99.48	29-Aug	99.37	30-Oct		30-Dec	
		30-Apr		30-Jun	99.47	30-Aug	99.37	31-Oct		31-Dec	
						31-Aug	99.36				

Note: Stage values are referenced to site-specific arbitrary datum

Table A4.4. Summary of Daily Mean Water Level (m) at Reference B Lake

Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)
1-Jan		1-Mar		1-May		1-Jul	98.278	1-Sep	98.132	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	98.267	2-Sep	98.122	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	98.272	3-Sep	98.115	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	98.265	4-Sep	98.120	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	98.253	5-Sep	98.107	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	98.250	6-Sep	98.132	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	98.244	7-Sep	98.153	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	98.248	8-Sep	98.139	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	98.253	9-Sep	98.117	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	98.255	10-Sep	98.108	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	98.257	11-Sep	98.107	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	98.259	12-Sep	98.114	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	98.261	13-Sep	98.117	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	98.263	14-Sep	98.118	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	98.265	15-Sep	98.125	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	98.268	16-Sep	98.163	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	98.269	17-Sep	98.134	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	98.275	18-Sep	98.124	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	98.313	19-Sep	98.132	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	98.343	20-Sep	98.135	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	98.353	21-Sep	98.130	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	98.360	22-Sep	98.121	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	98.346	23-Sep	98.122	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	98.343	24-Sep	98.132	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	98.339	25-Sep	98.132	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	98.322	26-Sep	98.130	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	98.306	27-Sep	98.130	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	98.302	28-Sep	98.119	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	98.295	29-Sep	98.120	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	98.285	30-Sep	98.134	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	98.277	1-Oct	98.125	1-Dec	
1-Feb		1-Apr		1-Jun		1-Aug	98.274	2-Oct		2-Dec	
2-Feb		2-Apr		2-Jun		2-Aug	98.267	3-Oct		3-Dec	
3-Feb		3-Apr		3-Jun		3-Aug	98.257	4-Oct		4-Dec	
4-Feb		4-Apr		4-Jun		4-Aug	98.247	5-Oct		5-Dec	
5-Feb		5-Apr		5-Jun		5-Aug	98.235	6-Oct		6-Dec	
6-Feb		6-Apr		6-Jun		6-Aug	98.219	7-Oct		7-Dec	
7-Feb		7-Apr		7-Jun		7-Aug	98.220	8-Oct		8-Dec	
8-Feb		8-Apr		8-Jun		8-Aug	98.215	9-Oct		9-Dec	
9-Feb		9-Apr		9-Jun		9-Aug	98.222	10-Oct		10-Dec	
10-Feb		10-Apr		10-Jun		10-Aug	98.231	11-Oct		11-Dec	
11-Feb		11-Apr		11-Jun		11-Aug	98.242	12-Oct		12-Dec	
12-Feb		12-Apr		12-Jun	98.582	12-Aug	98.238	13-Oct		13-Dec	
13-Feb		13-Apr		13-Jun	98.586	13-Aug	98.228	14-Oct		14-Dec	
14-Feb		14-Apr		14-Jun	98.519	14-Aug	98.209	15-Oct		15-Dec	
15-Feb		15-Apr		15-Jun	98.499	15-Aug	98.201	16-Oct		16-Dec	
16-Feb		16-Apr		16-Jun	98.511	16-Aug	98.200	17-Oct		17-Dec	
17-Feb		17-Apr		17-Jun	98.506	17-Aug	98.186	18-Oct		18-Dec	
18-Feb		18-Apr		18-Jun	98.486	18-Aug	98.170	19-Oct		19-Dec	
19-Feb		19-Apr		19-Jun	98.465	19-Aug	98.157	20-Oct		20-Dec	
20-Feb		20-Apr		20-Jun	98.445	20-Aug	98.152	21-Oct		21-Dec	
21-Feb		21-Apr		21-Jun	98.422	21-Aug	98.155	22-Oct		22-Dec	
22-Feb		22-Apr		22-Jun	98.399	22-Aug	98.156	23-Oct		23-Dec	
23-Feb		23-Apr		23-Jun	98.379	23-Aug	98.162	24-Oct		24-Dec	
24-Feb		24-Apr		24-Jun	98.358	24-Aug	98.165	25-Oct		25-Dec	
25-Feb		25-Apr		25-Jun	98.342	25-Aug	98.164	26-Oct		26-Dec	
26-Feb		26-Apr		26-Jun	98.324	26-Aug	98.161	27-Oct		27-Dec	
27-Feb		27-Apr		27-Jun	98.313	27-Aug	98.154	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	98.305	28-Aug	98.146	29-Oct		29-Dec	
		29-Apr		29-Jun	98.294	29-Aug	98.137	30-Oct		30-Dec	
		30-Apr		30-Jun	98.286	30-Aug	98.134	31-Oct		31-Dec	
						31-Aug	98.130				

Note: Stage values are referenced to site-specific arbitrary datum

Table A4.5. Summary of Daily Mean Water Level (m) at Roberts Lake

Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)
1-Jan		1-Mar		1-May		1-Jul	99.28	1-Sep	99.09	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	99.28	2-Sep	99.08	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	99.27	3-Sep	99.08	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	99.26	4-Sep	99.08	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	99.26	5-Sep	99.09	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	99.26	6-Sep	99.09	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	99.25	7-Sep	99.10	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	99.24	8-Sep	99.10	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	99.23	9-Sep	99.11	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	99.22	10-Sep	99.10	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	99.22	11-Sep	99.10	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	99.21	12-Sep	99.10	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	99.20	13-Sep	99.11	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	99.19	14-Sep	99.11	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	99.19	15-Sep	99.12	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	99.19	16-Sep	99.13	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	99.22	17-Sep	99.13	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	99.24	18-Sep	99.14	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	99.25	19-Sep	99.13	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	99.26	20-Sep	99.14	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	99.26	21-Sep	99.13	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	99.26	22-Sep	99.13	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	99.25	23-Sep	99.12	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	99.25	24-Sep	99.12	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	99.24	25-Sep	99.11	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	99.23	26-Sep	99.11	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	99.23	27-Sep	99.11	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	99.22	28-Sep	99.10	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	99.21	29-Sep	99.10	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	99.20	30-Sep	99.09	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	99.19	1-Oct	99.09	1-Dec	
1-Feb		1-Apr		1-Jun		1-Aug	99.18	2-Oct	99.09	2-Dec	
2-Feb		2-Apr		2-Jun		2-Aug	99.18	3-Oct		3-Dec	
3-Feb		3-Apr		3-Jun		3-Aug	99.19	4-Oct		4-Dec	
4-Feb		4-Apr		4-Jun		4-Aug	99.18	5-Oct		5-Dec	
5-Feb		5-Apr		5-Jun		5-Aug	99.18	6-Oct		6-Dec	
6-Feb		6-Apr		6-Jun		6-Aug	99.18	7-Oct		7-Dec	
7-Feb		7-Apr		7-Jun		7-Aug	99.18	8-Oct		8-Dec	
8-Feb		8-Apr		8-Jun		8-Aug	99.18	9-Oct		9-Dec	
9-Feb		9-Apr		9-Jun		9-Aug	99.18	10-Oct		10-Dec	
10-Feb		10-Apr		10-Jun		10-Aug	99.17	11-Oct		11-Dec	
11-Feb		11-Apr		11-Jun		11-Aug	99.17	12-Oct		12-Dec	
12-Feb		12-Apr		12-Jun		12-Aug	99.17	13-Oct		13-Dec	
13-Feb		13-Apr		13-Jun		13-Aug	99.16	14-Oct		14-Dec	
14-Feb		14-Apr		14-Jun	99.39	14-Aug	99.16	15-Oct		15-Dec	
15-Feb		15-Apr		15-Jun	99.44	15-Aug	99.15	16-Oct		16-Dec	
16-Feb		16-Apr		16-Jun	99.47	16-Aug	99.14	17-Oct		17-Dec	
17-Feb		17-Apr		17-Jun	99.48	17-Aug	99.14	18-Oct		18-Dec	
18-Feb		18-Apr		18-Jun	99.48	18-Aug	99.13	19-Oct		19-Dec	
19-Feb		19-Apr		19-Jun	99.46	19-Aug	99.13	20-Oct		20-Dec	
20-Feb		20-Apr		20-Jun	99.44	20-Aug	99.12	21-Oct		21-Dec	
21-Feb		21-Apr		21-Jun	99.42	21-Aug	99.12	22-Oct		22-Dec	
22-Feb		22-Apr		22-Jun	99.40	22-Aug	99.12	23-Oct		23-Dec	
23-Feb		23-Apr		23-Jun	99.37	23-Aug	99.12	24-Oct		24-Dec	
24-Feb		24-Apr		24-Jun	99.35	24-Aug	99.11	25-Oct		25-Dec	
25-Feb		25-Apr		25-Jun	99.33	25-Aug	99.11	26-Oct		26-Dec	
26-Feb		26-Apr		26-Jun	99.32	26-Aug	99.11	27-Oct		27-Dec	
27-Feb		27-Apr		27-Jun	99.31	27-Aug	99.10	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	99.30	28-Aug	99.10	29-Oct		29-Dec	
		29-Apr		29-Jun	99.29	29-Aug	99.09	30-Oct		30-Dec	
		30-Apr		30-Jun	99.29	30-Aug	99.09	31-Oct		31-Dec	
						31-Aug	99.09				

Note: Stage values are referenced to site-specific arbitrary datum

Table A4.6. Summary of Daily Mean Water Level (m) at Tail Lake

Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)
1-Jan		1-Mar		1-May		1-Jul	5.06	1-Sep	4.97	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	5.06	2-Sep	4.96	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	5.06	3-Sep	4.96	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	5.05	4-Sep	4.96	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	5.05	5-Sep	4.97	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	5.04	6-Sep	4.98	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	5.04	7-Sep	4.98	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	5.04	8-Sep	4.98	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	5.03	9-Sep	4.98	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	5.03	10-Sep	4.98	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	5.03	11-Sep	4.98	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	5.02	12-Sep	4.97	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	5.01	13-Sep	4.97	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	5.01	14-Sep	4.98	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	5.01	15-Sep	4.98	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	5.01	16-Sep	4.98	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	5.03	17-Sep	4.98	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	5.05	18-Sep	4.98	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	5.05	19-Sep	4.98	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	5.05	20-Sep	4.98	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	5.05	21-Sep	4.98	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	5.04	22-Sep	4.97	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	5.04	23-Sep	4.97	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	5.04	24-Sep	4.97	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	5.03	25-Sep	4.96	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	5.02	26-Sep	4.96	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	5.02	27-Sep	4.96	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	5.01	28-Sep	4.95	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	5.01	29-Sep	4.95	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	5.00	30-Sep	4.95	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	5.00	1-Oct	4.95	1-Dec	
1-Feb		1-Apr		1-Jun		1-Aug	5.00	2-Oct	4.95	2-Dec	
2-Feb		2-Apr		2-Jun	4.98	2-Aug	5.00	3-Oct	4.95	3-Dec	
3-Feb		3-Apr		3-Jun	5.03	3-Aug	5.00	4-Oct	4.95	4-Dec	
4-Feb		4-Apr		4-Jun	5.07	4-Aug	5.01	5-Oct		5-Dec	
5-Feb		5-Apr		5-Jun	5.06	5-Aug	5.01	6-Oct		6-Dec	
6-Feb		6-Apr		6-Jun	5.05	6-Aug	5.01	7-Oct		7-Dec	
7-Feb		7-Apr		7-Jun	5.05	7-Aug	5.01	8-Oct		8-Dec	
8-Feb		8-Apr		8-Jun	5.04	8-Aug	5.01	9-Oct		9-Dec	
9-Feb		9-Apr		9-Jun	5.04	9-Aug	5.01	10-Oct		10-Dec	
10-Feb		10-Apr		10-Jun	5.05	10-Aug	5.00	11-Oct		11-Dec	
11-Feb		11-Apr		11-Jun	5.07	11-Aug	5.00	12-Oct		12-Dec	
12-Feb		12-Apr		12-Jun	5.08	12-Aug	5.00	13-Oct		13-Dec	
13-Feb		13-Apr		13-Jun	5.09	13-Aug	5.00	14-Oct		14-Dec	
14-Feb		14-Apr		14-Jun	5.11	14-Aug	4.99	15-Oct		15-Dec	
15-Feb		15-Apr		15-Jun	5.12	15-Aug	4.99	16-Oct		16-Dec	
16-Feb		16-Apr		16-Jun	5.12	16-Aug	4.98	17-Oct		17-Dec	
17-Feb		17-Apr		17-Jun	5.12	17-Aug	4.98	18-Oct		18-Dec	
18-Feb		18-Apr		18-Jun	5.12	18-Aug	4.98	19-Oct		19-Dec	
19-Feb		19-Apr		19-Jun	5.11	19-Aug	4.97	20-Oct		20-Dec	
20-Feb		20-Apr		20-Jun	5.11	20-Aug	4.98	21-Oct		21-Dec	
21-Feb		21-Apr		21-Jun	5.10	21-Aug	4.98	22-Oct		22-Dec	
22-Feb		22-Apr		22-Jun	5.10	22-Aug	4.98	23-Oct		23-Dec	
23-Feb		23-Apr		23-Jun	5.09	23-Aug	4.98	24-Oct		24-Dec	
24-Feb		24-Apr		24-Jun	5.09	24-Aug	4.98	25-Oct		25-Dec	
25-Feb		25-Apr		25-Jun	5.08	25-Aug	4.98	26-Oct		26-Dec	
26-Feb		26-Apr		26-Jun	5.08	26-Aug	4.97	27-Oct		27-Dec	
27-Feb		27-Apr		27-Jun	5.08	27-Aug	4.97	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	5.07	28-Aug	4.97	29-Oct		29-Dec	
		29-Apr		29-Jun	5.07	29-Aug	4.97	30-Oct		30-Dec	
		30-Apr		30-Jun	5.07	30-Aug	4.97	31-Oct		31-Dec	
						31-Aug	4.97				

Note: Stage values are referenced to pressure transducer readings

Table A4.7. Summary of Daily Mean Water Level (m) at Windy Lake

Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)
1-Jan		1-Mar		1-May		1-Jul	99.45	1-Sep	99.40	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	99.45	2-Sep	99.40	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	99.45	3-Sep	99.40	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	99.45	4-Sep	99.40	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	99.45	5-Sep	99.41	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	99.45	6-Sep	99.41	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	99.45	7-Sep	99.41	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	99.45	8-Sep	99.40	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	99.45	9-Sep	99.40	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	99.45	10-Sep	99.40	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	99.45	11-Sep	99.40	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	99.45	12-Sep	99.40	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	99.45	13-Sep	99.40	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	99.45	14-Sep	99.40	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	99.45	15-Sep	99.39	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	99.46	16-Sep	99.39	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	99.47	17-Sep	99.39	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	99.48	18-Sep	99.39	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	99.48	19-Sep	99.39	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	99.48	20-Sep	99.39	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	99.48	21-Sep	99.38	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	99.48	22-Sep	99.38	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	99.48	23-Sep	99.38	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	99.48	24-Sep	99.38	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	99.48	25-Sep		25-Nov	
26-Jan		26-Mar		26-May		26-Jul	99.48	26-Sep		26-Nov	
27-Jan		27-Mar		27-May		27-Jul	99.47	27-Sep		27-Nov	
28-Jan		28-Mar		28-May		28-Jul	99.47	28-Sep		28-Nov	
29-Jan		29-Mar		29-May		29-Jul	99.47	29-Sep		29-Nov	
30-Jan		30-Mar		30-May		30-Jul	99.47	30-Sep		30-Nov	
31-Jan		31-Mar		31-May		31-Jul	99.46	1-Oct		1-Dec	
1-Feb		1-Apr		1-Jun		1-Aug	99.46	2-Oct		2-Dec	
2-Feb		2-Apr		2-Jun		2-Aug	99.46	3-Oct		3-Dec	
3-Feb		3-Apr		3-Jun		3-Aug	99.46	4-Oct		4-Dec	
4-Feb		4-Apr		4-Jun		4-Aug	99.46	5-Oct		5-Dec	
5-Feb		5-Apr		5-Jun		5-Aug	99.46	6-Oct		6-Dec	
6-Feb		6-Apr		6-Jun		6-Aug	99.46	7-Oct		7-Dec	
7-Feb		7-Apr		7-Jun		7-Aug	99.46	8-Oct		8-Dec	
8-Feb		8-Apr		8-Jun		8-Aug	99.45	9-Oct		9-Dec	
9-Feb		9-Apr		9-Jun		9-Aug	99.45	10-Oct		10-Dec	
10-Feb		10-Apr		10-Jun	99.37	10-Aug	99.45	11-Oct		11-Dec	
11-Feb		11-Apr		11-Jun	99.39	11-Aug	99.45	12-Oct		12-Dec	
12-Feb		12-Apr		12-Jun	99.40	12-Aug	99.44	13-Oct		13-Dec	
13-Feb		13-Apr		13-Jun	99.41	13-Aug	99.44	14-Oct		14-Dec	
14-Feb		14-Apr		14-Jun	99.42	14-Aug	99.43	15-Oct		15-Dec	
15-Feb		15-Apr		15-Jun	99.43	15-Aug	99.43	16-Oct		16-Dec	
16-Feb		16-Apr		16-Jun	99.43	16-Aug	99.42	17-Oct		17-Dec	
17-Feb		17-Apr		17-Jun	99.44	17-Aug	99.42	18-Oct		18-Dec	
18-Feb		18-Apr		18-Jun	99.44	18-Aug	99.42	19-Oct		19-Dec	
19-Feb		19-Apr		19-Jun	99.44	19-Aug	99.42	20-Oct		20-Dec	
20-Feb		20-Apr		20-Jun	99.44	20-Aug	99.42	21-Oct		21-Dec	
21-Feb		21-Apr		21-Jun	99.44	21-Aug	99.42	22-Oct		22-Dec	
22-Feb		22-Apr		22-Jun	99.44	22-Aug	99.42	23-Oct		23-Dec	
23-Feb		23-Apr		23-Jun	99.44	23-Aug	99.42	24-Oct		24-Dec	
24-Feb		24-Apr		24-Jun	99.44	24-Aug	99.41	25-Oct		25-Dec	
25-Feb		25-Apr		25-Jun	99.44	25-Aug	99.41	26-Oct		26-Dec	
26-Feb		26-Apr		26-Jun	99.44	26-Aug	99.41	27-Oct		27-Dec	
27-Feb		27-Apr		27-Jun	99.44	27-Aug	99.41	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	99.44	28-Aug	99.40	29-Oct		29-Dec	
		29-Apr		29-Jun	99.44	29-Aug	99.40	30-Oct		30-Dec	
		30-Apr		30-Jun	99.44	30-Aug	99.40	31-Oct		31-Dec	
						31-Aug	99.40				

Note: Stage values are referenced to site-specific arbitrary datum

Table A4.8. Summary of Daily Mean Water Level (m) at Wolverine Lake

Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)	Date	Water Level (m)
1-Jan		1-Mar		1-May		1-Jul	98.85	1-Sep	98.70	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	98.85	2-Sep	98.70	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	98.85	3-Sep	98.69	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	98.84	4-Sep	98.70	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	98.84	5-Sep	98.71	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	98.83	6-Sep	98.71	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	98.83	7-Sep	98.71	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	98.83	8-Sep	98.70	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	98.82	9-Sep	98.70	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	98.81	10-Sep	98.70	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	98.81	11-Sep	98.70	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	98.80	12-Sep	98.70	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	98.80	13-Sep	98.70	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	98.80	14-Sep	98.70	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	98.80	15-Sep	98.70	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	98.82	16-Sep	98.69	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	98.82	17-Sep	98.69	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	98.82	18-Sep	98.69	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	98.82	19-Sep	98.69	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	98.82	20-Sep	98.69	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	98.82	21-Sep	98.68	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	98.81	22-Sep	98.68	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	98.81	23-Sep	98.68	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	98.80	24-Sep	98.68	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	98.79	25-Sep	98.68	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	98.79	26-Sep	98.67	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	98.78	27-Sep	98.67	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	98.78	28-Sep	98.67	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	98.78	29-Sep		29-Nov	
30-Jan		30-Mar		30-May		30-Jul	98.77	30-Sep		30-Nov	
31-Jan		31-Mar		31-May		31-Jul	98.77	1-Oct		1-Dec	
1-Feb		1-Apr		1-Jun		1-Aug	98.77	2-Oct		2-Dec	
2-Feb		2-Apr		2-Jun		2-Aug	98.76	3-Oct		3-Dec	
3-Feb		3-Apr		3-Jun		3-Aug	98.77	4-Oct		4-Dec	
4-Feb		4-Apr		4-Jun		4-Aug	98.76	5-Oct		5-Dec	
5-Feb		5-Apr		5-Jun		5-Aug	98.76	6-Oct		6-Dec	
6-Feb		6-Apr		6-Jun		6-Aug	98.76	7-Oct		7-Dec	
7-Feb		7-Apr		7-Jun		7-Aug	98.75	8-Oct		8-Dec	
8-Feb		8-Apr		8-Jun		8-Aug	98.75	9-Oct		9-Dec	
9-Feb		9-Apr		9-Jun		9-Aug	98.75	10-Oct		10-Dec	
10-Feb		10-Apr		10-Jun		10-Aug	98.75	11-Oct		11-Dec	
11-Feb		11-Apr		11-Jun		11-Aug	98.75	12-Oct		12-Dec	
12-Feb		12-Apr		12-Jun		12-Aug	98.75	13-Oct		13-Dec	
13-Feb		13-Apr		13-Jun	98.90	13-Aug	98.74	14-Oct		14-Dec	
14-Feb		14-Apr		14-Jun	98.91	14-Aug	98.74	15-Oct		15-Dec	
15-Feb		15-Apr		15-Jun	98.91	15-Aug	98.73	16-Oct		16-Dec	
16-Feb		16-Apr		16-Jun	98.91	16-Aug	98.73	17-Oct		17-Dec	
17-Feb		17-Apr		17-Jun	98.90	17-Aug	98.73	18-Oct		18-Dec	
18-Feb		18-Apr		18-Jun	98.90	18-Aug	98.72	19-Oct		19-Dec	
19-Feb		19-Apr		19-Jun	98.89	19-Aug	98.72	20-Oct		20-Dec	
20-Feb		20-Apr		20-Jun	98.88	20-Aug	98.72	21-Oct		21-Dec	
21-Feb		21-Apr		21-Jun	98.88	21-Aug	98.72	22-Oct		22-Dec	
22-Feb		22-Apr		22-Jun	98.87	22-Aug	98.72	23-Oct		23-Dec	
23-Feb		23-Apr		23-Jun	98.87	23-Aug	98.72	24-Oct		24-Dec	
24-Feb		24-Apr		24-Jun	98.86	24-Aug	98.72	25-Oct		25-Dec	
25-Feb		25-Apr		25-Jun	98.86	25-Aug	98.72	26-Oct		26-Dec	
26-Feb		26-Apr		26-Jun	98.86	26-Aug	98.71	27-Oct		27-Dec	
27-Feb		27-Apr		27-Jun	98.85	27-Aug	98.71	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	98.85	28-Aug	98.71	29-Oct		29-Dec	
		29-Apr		29-Jun	98.85	29-Aug	98.71	30-Oct		30-Dec	
		30-Apr		30-Jun	98.85	30-Aug	98.70	31-Oct		31-Dec	
						31-Aug	98.70				

Note: Stage values are referenced to site-specific arbitrary datum

Appendix A5

Hydrographs

Table A5.1. Summary of Daily Mean Discharge [Q] at Doris-Hydro

Date	Q (m ³ /s)	Date	Q (m ³ /s)	Date	Q (m ³ /s)	Date	Q (m ³ /s)	Date	Q (m ³ /s)	Date	Q (m ³ /s)
1-Jan		1-Mar		1-May		1-Jul	2.107	1-Sep	0.465	1-Nov	0.129
2-Jan		2-Mar		2-May		2-Jul	2.039	2-Sep	0.462	2-Nov	0.12
3-Jan		3-Mar		3-May		3-Jul	1.917	3-Sep	0.461	3-Nov	0.11
4-Jan		4-Mar		4-May		4-Jul	1.793	4-Sep	0.463	4-Nov	0.10
5-Jan		5-Mar		5-May		5-Jul	1.661	5-Sep	0.473	5-Nov	0.09
6-Jan		6-Mar		6-May		6-Jul	1.592	6-Sep	0.468	6-Nov	0.08
7-Jan		7-Mar		7-May		7-Jul	1.489	7-Sep	0.471	7-Nov	0.065
8-Jan		8-Mar		8-May		8-Jul	1.402	8-Sep	0.471	8-Nov	0.054
9-Jan		9-Mar		9-May		9-Jul	1.322	9-Sep	0.468	9-Nov	0.043
10-Jan		10-Mar		10-May		10-Jul	1.240	10-Sep	0.467	10-Nov	0.03
11-Jan		11-Mar		11-May		11-Jul	1.159	11-Sep	0.464	11-Nov	0.022
12-Jan		12-Mar		12-May		12-Jul	1.075	12-Sep	0.466	12-Nov	0.011
13-Jan		13-Mar		13-May		13-Jul	1.009	13-Sep	0.469	13-Nov	0.000
14-Jan		14-Mar		14-May		14-Jul	0.943	14-Sep	0.464	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	0.896	15-Sep	0.475	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	0.937	16-Sep	0.480	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	1.109	17-Sep	0.480	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	1.155	18-Sep	0.479	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	1.150	19-Sep	0.479	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	1.139	20-Sep	0.481	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	1.108	21-Sep	0.479	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	1.077	22-Sep	0.476	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	1.041	23-Sep	0.474	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	0.999	24-Sep	0.471	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	0.946	25-Sep	0.463	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	0.896	26-Sep	0.466	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	0.847	27-Sep	0.463	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	0.807	28-Sep	0.458	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	0.771	29-Sep	0.455	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	0.714	30-Sep	0.455	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	0.679	1-Oct	0.449	1-Dec	
1-Feb		1-Apr		1-Jun	0.001	1-Aug	0.661	2-Oct	0.442	2-Dec	
2-Feb		2-Apr		2-Jun	0.002	2-Aug	0.651	3-Oct	0.441	3-Dec	
3-Feb		3-Apr		3-Jun	0.004	3-Aug	0.650	4-Oct	0.430	4-Dec	
4-Feb		4-Apr		4-Jun	0.008	4-Aug	0.646	5-Oct	0.420	5-Dec	
5-Feb		5-Apr		5-Jun	0.015	5-Aug	0.639	6-Oct	0.409	6-Dec	
6-Feb		6-Apr		6-Jun	0.029	6-Aug	0.640	7-Oct	0.398	7-Dec	
7-Feb		7-Apr		7-Jun	0.057	7-Aug	0.631	8-Oct	0.387	8-Dec	
8-Feb		8-Apr		8-Jun	0.112	8-Aug	0.618	9-Oct	0.377	9-Dec	
9-Feb		9-Apr		9-Jun	0.220	9-Aug	0.610	10-Oct	0.366	10-Dec	
10-Feb		10-Apr		10-Jun	0.847	10-Aug	0.603	11-Oct	0.355	11-Dec	
11-Feb		11-Apr		11-Jun	1.130	11-Aug	0.592	12-Oct	0.344	12-Dec	
12-Feb		12-Apr		12-Jun	1.446	12-Aug	0.582	13-Oct	0.334	13-Dec	
13-Feb		13-Apr		13-Jun	1.866	13-Aug	0.573	14-Oct	0.323	14-Dec	
14-Feb		14-Apr		14-Jun	2.403	14-Aug	0.562	15-Oct	0.312	15-Dec	
15-Feb		15-Apr		15-Jun	3.304	15-Aug	0.548	16-Oct	0.301	16-Dec	
16-Feb		16-Apr		16-Jun	3.853	16-Aug	0.537	17-Oct	0.291	17-Dec	
17-Feb		17-Apr		17-Jun	4.245	17-Aug	0.530	18-Oct	0.280	18-Dec	
18-Feb		18-Apr		18-Jun	4.412	18-Aug	0.520	19-Oct	0.269	19-Dec	
19-Feb		19-Apr		19-Jun	4.439	19-Aug	0.517	20-Oct	0.258	20-Dec	
20-Feb		20-Apr		20-Jun	4.350	20-Aug	0.518	21-Oct	0.248	21-Dec	
21-Feb		21-Apr		21-Jun	4.171	21-Aug	0.514	22-Oct	0.2368	22-Dec	
22-Feb		22-Apr		22-Jun	3.918	22-Aug	0.510	23-Oct	0.2260	23-Dec	
23-Feb		23-Apr		23-Jun	3.658	23-Aug	0.505	24-Oct	0.2153	24-Dec	
24-Feb		24-Apr		24-Jun	3.399	24-Aug	0.500	25-Oct	0.2045	25-Dec	
25-Feb		25-Apr		25-Jun	3.174	25-Aug	0.494	26-Oct	0.1937	26-Dec	
26-Feb		26-Apr		26-Jun	2.950	26-Aug	0.488	27-Oct	0.1830	27-Dec	
27-Feb		27-Apr		27-Jun	2.769	27-Aug	0.482	28-Oct	0.1722	28-Dec	
28-Feb		28-Apr		28-Jun	2.558	28-Aug	0.479	29-Oct	0.1614	29-Dec	
29-Feb		29-Apr		29-Jun	2.366	29-Aug	0.477	30-Oct	0.1507	30-Dec	
		30-Apr		30-Jun	2.193	30-Aug	0.472	31-Oct	0.140	31-Dec	
						31-Aug	0.467				

Note: Estimated values are italicized

Table A5.2. Summary of Daily Mean Discharge [Q] at Koignuk-Hydro

Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)
1-Jan		1-Mar		1-May		1-Jul	68.00	1-Sep	6.82	1-Nov	3.786
2-Jan		2-Mar		2-May		2-Jul	64.15	2-Sep	6.83	2-Nov	3.660
3-Jan		3-Mar		3-May		3-Jul	61.22	3-Sep	6.75	3-Nov	3.533
4-Jan		4-Mar		4-May		4-Jul	56.18	4-Sep	7.06	4-Nov	3.407
5-Jan		5-Mar		5-May		5-Jul	49.96	5-Sep	7.76	5-Nov	3.281
6-Jan		6-Mar		6-May		6-Jul	46.86	6-Sep	8.32	6-Nov	3.155
7-Jan		7-Mar		7-May		7-Jul	44.31	7-Sep	8.18	7-Nov	3.029
8-Jan		8-Mar		8-May		8-Jul	41.87	8-Sep	8.81	8-Nov	2.902
9-Jan		9-Mar		9-May		9-Jul	38.51	9-Sep	9.01	9-Nov	2.776
10-Jan		10-Mar		10-May		10-Jul	36.02	10-Sep	8.64	10-Nov	2.650
11-Jan		11-Mar		11-May		11-Jul	35.15	11-Sep	8.26	11-Nov	2.524
12-Jan		12-Mar		12-May		12-Jul	32.01	12-Sep	8.10	12-Nov	2.398
13-Jan		13-Mar		13-May		13-Jul	29.01	13-Sep	8.66	13-Nov	2.271
14-Jan		14-Mar		14-May		14-Jul	29.01	14-Sep	9.48	14-Nov	2.145
15-Jan		15-Mar		15-May		15-Jul	26.28	15-Sep	8.51	15-Nov	2.019
16-Jan		16-Mar		16-May		16-Jul	27.80	16-Sep	10.60	16-Nov	1.893
17-Jan		17-Mar		17-May		17-Jul	31.61	17-Sep	10.67	17-Nov	1.767
18-Jan		18-Mar		18-May		18-Jul	30.36	18-Sep	10.18	18-Nov	1.640
19-Jan		19-Mar		19-May		19-Jul	28.63	19-Sep	9.81	19-Nov	1.514
20-Jan		20-Mar		20-May		20-Jul	27.84	20-Sep	9.89	20-Nov	1.388
21-Jan		21-Mar		21-May		21-Jul	26.21	21-Sep	9.91	21-Nov	1.262
22-Jan		22-Mar		22-May		22-Jul	25.42	22-Sep	9.36	22-Nov	1.136
23-Jan		23-Mar		23-May		23-Jul	24.19	23-Sep	8.86	23-Nov	1.010
24-Jan		24-Mar		24-May		24-Jul	22.48	24-Sep	8.70	24-Nov	0.883
25-Jan		25-Mar		25-May		25-Jul	20.43	25-Sep	8.61	25-Nov	0.757
26-Jan		26-Mar		26-May		26-Jul	18.78	26-Sep	8.01	26-Nov	0.631
27-Jan		27-Mar		27-May		27-Jul	17.86	27-Sep	9.08	27-Nov	0.505
28-Jan		28-Mar		28-May		28-Jul	16.67	28-Sep	8.69	28-Nov	0.379
29-Jan		29-Mar		29-May		29-Jul	16.05	29-Sep	8.67	29-Nov	0.252
30-Jan		30-Mar		30-May		30-Jul	15.04	30-Sep	7.86	30-Nov	0.126
31-Jan		31-Mar		31-May		31-Jul	13.94	1-Oct	7.86	1-Dec	0.000
1-Feb		1-Apr		1-Jun	0.001	1-Aug	14.32	2-Oct	7.93	2-Dec	
2-Feb		2-Apr		2-Jun	0.005	2-Aug	12.90	3-Oct	9.09	3-Dec	
3-Feb		3-Apr		3-Jun	0.030	3-Aug	13.93	4-Oct	7.32	4-Dec	
4-Feb		4-Apr		4-Jun	0.166	4-Aug	13.40	5-Oct	7.193	5-Dec	
5-Feb		5-Apr		5-Jun	0.909	5-Aug	13.31	6-Oct	7.067	6-Dec	
6-Feb		6-Apr		6-Jun	27.41	6-Aug	13.05	7-Oct	6.940	7-Dec	
7-Feb		7-Apr		7-Jun	31.40	7-Aug	12.92	8-Oct	6.814	8-Dec	
8-Feb		8-Apr		8-Jun	32.45	8-Aug	11.93	9-Oct	6.688	9-Dec	
9-Feb		9-Apr		9-Jun	39.86	9-Aug	10.79	10-Oct	6.562	10-Dec	
10-Feb		10-Apr		10-Jun	58.79	10-Aug	10.71	11-Oct	6.436	11-Dec	
11-Feb		11-Apr		11-Jun	82.95	11-Aug	10.31	12-Oct	6.310	12-Dec	
12-Feb		12-Apr		12-Jun	105.05	12-Aug	9.60	13-Oct	6.183	13-Dec	
13-Feb		13-Apr		13-Jun	137.87	13-Aug	9.33	14-Oct	6.057	14-Dec	
14-Feb		14-Apr		14-Jun	176.05	14-Aug	9.53	15-Oct	5.931	15-Dec	
15-Feb		15-Apr		15-Jun	200.94	15-Aug	8.99	16-Oct	5.805	16-Dec	
16-Feb		16-Apr		16-Jun	202.95	16-Aug	8.42	17-Oct	5.679	17-Dec	
17-Feb		17-Apr		17-Jun	197.94	17-Aug	8.31	18-Oct	5.552	18-Dec	
18-Feb		18-Apr		18-Jun	188.79	18-Aug	8.46	19-Oct	5.426	19-Dec	
19-Feb		19-Apr		19-Jun	178.37	19-Aug	8.17	20-Oct	5.300	20-Dec	
20-Feb		20-Apr		20-Jun	166.17	20-Aug	8.39	21-Oct	5.174	21-Dec	
21-Feb		21-Apr		21-Jun	152.50	21-Aug	8.35	22-Oct	5.048	22-Dec	
22-Feb		22-Apr		22-Jun	141.92	22-Aug	8.19	23-Oct	4.921	23-Dec	
23-Feb		23-Apr		23-Jun	133.16	23-Aug	7.99	24-Oct	4.795	24-Dec	
24-Feb		24-Apr		24-Jun	122.30	24-Aug	7.78	25-Oct	4.669	25-Dec	
25-Feb		25-Apr		25-Jun	112.02	25-Aug	7.59	26-Oct	4.543	26-Dec	
26-Feb		26-Apr		26-Jun	103.27	26-Aug	7.31	27-Oct	4.417	27-Dec	
27-Feb		27-Apr		27-Jun	95.94	27-Aug	7.20	28-Oct	4.290	28-Dec	
28-Feb		28-Apr		28-Jun	88.70	28-Aug	7.16	29-Oct	4.164	29-Dec	
29-Feb		29-Apr		29-Jun	81.19	29-Aug	7.27	30-Oct	4.038	30-Dec	
		30-Apr		30-Jun	73.81	30-Aug	7.37	31-Oct	3.912	31-Dec	
						31-Aug	7.03				

Note: Estimated values are italicized

Table A5.3. Summary of Daily Mean Discharge [Q] at Ogama-Hydro

Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)
1-Jan		1-Mar		1-May		1-Jul	1.396	1-Sep	0.327	1-Nov	0.095
2-Jan		2-Mar		2-May		2-Jul	1.364	2-Sep	0.322	2-Nov	0.09
3-Jan		3-Mar		3-May		3-Jul	1.309	3-Sep	0.322	3-Nov	0.08
4-Jan		4-Mar		4-May		4-Jul	1.237	4-Sep	0.326	4-Nov	0.07
5-Jan		5-Mar		5-May		5-Jul	1.177	5-Sep	0.345	5-Nov	0.06
6-Jan		6-Mar		6-May		6-Jul	1.148	6-Sep	0.344	6-Nov	0.06
7-Jan		7-Mar		7-May		7-Jul	1.110	7-Sep	0.366	7-Nov	0.047
8-Jan		8-Mar		8-May		8-Jul	1.070	8-Sep	0.380	8-Nov	0.040
9-Jan		9-Mar		9-May		9-Jul	1.031	9-Sep	0.381	9-Nov	0.032
10-Jan		10-Mar		10-May		10-Jul	1.002	10-Sep	0.378	10-Nov	0.02
11-Jan		11-Mar		11-May		11-Jul	0.972	11-Sep	0.378	11-Nov	0.016
12-Jan		12-Mar		12-May		12-Jul	0.899	12-Sep	0.383	12-Nov	0.008
13-Jan		13-Mar		13-May		13-Jul	0.877	13-Sep	0.390	13-Nov	0.000
14-Jan		14-Mar		14-May		14-Jul	0.834	14-Sep	0.374	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	0.822	15-Sep	0.406	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	0.904	16-Sep	0.417	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	0.983	17-Sep	0.420	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	1.022	18-Sep	0.423	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	1.052	19-Sep	0.427	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	1.057	20-Sep	0.434	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	1.039	21-Sep	0.427	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	1.021	22-Sep	0.417	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	0.993	23-Sep	0.409	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	0.963	24-Sep	0.406	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	0.894	25-Sep	0.388	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	0.845	26-Sep	0.390	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	0.805	27-Sep	0.380	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	0.774	28-Sep	0.361	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	0.736	29-Sep	0.355	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	0.691	30-Sep	0.347	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	0.664	1-Oct	0.339	1-Dec	
1-Feb		1-Apr		1-Jun	0.001	1-Aug	0.636	2-Oct	0.331	2-Dec	
2-Feb		2-Apr		2-Jun	0.002	2-Aug	0.622	3-Oct	0.323	3-Dec	
3-Feb		3-Apr		3-Jun	0.005	3-Aug	0.618	4-Oct	0.315	4-Dec	
4-Feb		4-Apr		4-Jun	0.010	4-Aug	0.616	5-Oct	0.307	5-Dec	
5-Feb		5-Apr		5-Jun	0.021	5-Aug	0.609	6-Oct	0.300	6-Dec	
6-Feb		6-Apr		6-Jun	0.046	6-Aug	0.609	7-Oct	0.292	7-Dec	
7-Feb		7-Apr		7-Jun	0.098	7-Aug	0.589	8-Oct	0.284	8-Dec	
8-Feb		8-Apr		8-Jun	0.211	8-Aug	0.566	9-Oct	0.276	9-Dec	
9-Feb		9-Apr		9-Jun	0.452	9-Aug	0.555	10-Oct	0.268	10-Dec	
10-Feb		10-Apr		10-Jun	2.084	10-Aug	0.533	11-Oct	0.260	11-Dec	
11-Feb		11-Apr		11-Jun	2.286	11-Aug	0.513	12-Oct	0.252	12-Dec	
12-Feb		12-Apr		12-Jun	2.448	12-Aug	0.490	13-Oct	0.244	13-Dec	
13-Feb		13-Apr		13-Jun	2.721	13-Aug	0.476	14-Oct	0.237	14-Dec	
14-Feb		14-Apr		14-Jun	2.985	14-Aug	0.458	15-Oct	0.229	15-Dec	
15-Feb		15-Apr		15-Jun	3.063	15-Aug	0.434	16-Oct	0.221	16-Dec	
16-Feb		16-Apr		16-Jun	3.004	16-Aug	0.420	17-Oct	0.213	17-Dec	
17-Feb		17-Apr		17-Jun	2.901	17-Aug	0.412	18-Oct	0.205	18-Dec	
18-Feb		18-Apr		18-Jun	2.769	18-Aug	0.397	19-Oct	0.197	19-Dec	
19-Feb		19-Apr		19-Jun	2.609	19-Aug	0.396	20-Oct	0.189	20-Dec	
20-Feb		20-Apr		20-Jun	2.441	20-Aug	0.396	21-Oct	0.181	21-Dec	
21-Feb		21-Apr		21-Jun	2.295	21-Aug	0.389	22-Oct	0.1735	22-Dec	
22-Feb		22-Apr		22-Jun	2.166	22-Aug	0.384	23-Oct	0.1656	23-Dec	
23-Feb		23-Apr		23-Jun	2.051	23-Aug	0.377	24-Oct	0.1577	24-Dec	
24-Feb		24-Apr		24-Jun	1.945	24-Aug	0.372	25-Oct	0.1498	25-Dec	
25-Feb		25-Apr		25-Jun	1.842	25-Aug	0.361	26-Oct	0.1419	26-Dec	
26-Feb		26-Apr		26-Jun	1.742	26-Aug	0.353	27-Oct	0.1341	27-Dec	
27-Feb		27-Apr		27-Jun	1.654	27-Aug	0.346	28-Oct	0.1262	28-Dec	
28-Feb		28-Apr		28-Jun	1.570	28-Aug	0.342	29-Oct	0.1183	29-Dec	
29-Feb		29-Apr		29-Jun	1.501	29-Aug	0.341	30-Oct	0.1104	30-Dec	
		30-Apr		30-Jun	1.448	30-Aug	0.333	31-Oct	0	31-Dec	
						31-Aug	0.330				

Note: Estimated values are italicized

Table A5.4. Summary of Daily Mean Discharge [Q] at Patch-Hydro

Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)
1-Jan		1-Mar		1-May		1-Jul	0.458	1-Sep	0.183	1-Nov	0.036
2-Jan		2-Mar		2-May		2-Jul	0.456	2-Sep	0.183	2-Nov	0.033
3-Jan		3-Mar		3-May		3-Jul	0.445	3-Sep	0.180	3-Nov	0.030
4-Jan		4-Mar		4-May		4-Jul	0.431	4-Sep	0.182	4-Nov	0.027
5-Jan		5-Mar		5-May		5-Jul	0.418	5-Sep	0.195	5-Nov	0.024
6-Jan		6-Mar		6-May		6-Jul	0.409	6-Sep	0.189	6-Nov	0.021
7-Jan		7-Mar		7-May		7-Jul	0.403	7-Sep	0.182	7-Nov	0.018
8-Jan		8-Mar		8-May		8-Jul	0.395	8-Sep	0.178	8-Nov	0.015
9-Jan		9-Mar		9-May		9-Jul	0.386	9-Sep	0.178	9-Nov	0.012
10-Jan		10-Mar		10-May		10-Jul	0.364	10-Sep	0.179	10-Nov	0.009
11-Jan		11-Mar		11-May		11-Jul	0.346	11-Sep	0.178	11-Nov	0.006
12-Jan		12-Mar		12-May		12-Jul	0.341	12-Sep	0.177	12-Nov	0.003
13-Jan		13-Mar		13-May		13-Jul	0.323	13-Sep	0.177	13-Nov	0.000
14-Jan		14-Mar		14-May		14-Jul	0.322	14-Sep	0.176	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	0.323	15-Sep	0.172	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	0.339	16-Sep	0.173	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	0.363	17-Sep	0.174	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	0.377	18-Sep	0.174	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	0.386	19-Sep	0.171	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	0.391	20-Sep	0.164	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	0.383	21-Sep	0.161	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	0.382	22-Sep	0.163	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	0.389	23-Sep	0.158	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	0.374	24-Sep	0.153	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	0.360	25-Sep	0.149	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	0.355	26-Sep	0.143	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	0.349	27-Sep	0.137	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	0.343	28-Sep	0.141	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	0.338	29-Sep	0.136	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	0.330	30-Sep	0.133	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	0.317	1-Oct	0.130	1-Dec	
1-Feb		1-Apr		1-Jun	0.001	1-Aug	0.307	2-Oct	0.127	2-Dec	
2-Feb		2-Apr		2-Jun	0.002	2-Aug	0.297	3-Oct	0.124	3-Dec	
3-Feb		3-Apr		3-Jun	0.002	3-Aug	0.286	4-Oct	0.121	4-Dec	
4-Feb		4-Apr		4-Jun	0.004	4-Aug	0.285	5-Oct	0.118	5-Dec	
5-Feb		5-Apr		5-Jun	0.006	5-Aug	0.278	6-Oct	0.115	6-Dec	
6-Feb		6-Apr		6-Jun	0.009	6-Aug	0.284	7-Oct	0.112	7-Dec	
7-Feb		7-Apr		7-Jun	0.014	7-Aug	0.282	8-Oct	0.109	8-Dec	
8-Feb		8-Apr		8-Jun	0.022	8-Aug	0.285	9-Oct	0.106	9-Dec	
9-Feb		9-Apr		9-Jun	0.034	9-Aug	0.285	10-Oct	0.103	10-Dec	
10-Feb		10-Apr		10-Jun	0.054	10-Aug	0.288	11-Oct	0.100	11-Dec	
11-Feb		11-Apr		11-Jun	0.083	11-Aug	0.278	12-Oct	0.097	12-Dec	
12-Feb		12-Apr		12-Jun	0.130	12-Aug	0.261	13-Oct	0.0938	13-Dec	
13-Feb		13-Apr		13-Jun	0.202	13-Aug	0.254	14-Oct	0.0908	14-Dec	
14-Feb		14-Apr		14-Jun	0.489	14-Aug	0.250	15-Oct	0.0877	15-Dec	
15-Feb		15-Apr		15-Jun	0.509	15-Aug	0.237	16-Oct	0.0847	16-Dec	
16-Feb		16-Apr		16-Jun	0.526	16-Aug	0.225	17-Oct	0.0817	17-Dec	
17-Feb		17-Apr		17-Jun	0.543	17-Aug	0.217	18-Oct	0.0787	18-Dec	
18-Feb		18-Apr		18-Jun	0.549	18-Aug	0.212	19-Oct	0.0756	19-Dec	
19-Feb		19-Apr		19-Jun	0.551	19-Aug	0.211	20-Oct	0.0726	20-Dec	
20-Feb		20-Apr		20-Jun	0.545	20-Aug	0.214	21-Oct	0.0696	21-Dec	
21-Feb		21-Apr		21-Jun	0.538	21-Aug	0.215	22-Oct	0.0666	22-Dec	
22-Feb		22-Apr		22-Jun	0.540	22-Aug	0.216	23-Oct	0.0635	23-Dec	
23-Feb		23-Apr		23-Jun	0.537	23-Aug	0.215	24-Oct	0.0605	24-Dec	
24-Feb		24-Apr		24-Jun	0.530	24-Aug	0.213	25-Oct	0.0575	25-Dec	
25-Feb		25-Apr		25-Jun	0.519	25-Aug	0.208	26-Oct	0.0545	26-Dec	
26-Feb		26-Apr		26-Jun	0.509	26-Aug	0.201	27-Oct	0.0514	27-Dec	
27-Feb		27-Apr		27-Jun	0.499	27-Aug	0.197	28-Oct	0.0484	28-Dec	
28-Feb		28-Apr		28-Jun	0.484	28-Aug	0.193	29-Oct	0.0454	29-Dec	
29-Feb		29-Apr		29-Jun	0.472	29-Aug	0.192	30-Oct	0.04236	30-Dec	
		30-Apr		30-Jun	0.460	30-Aug	0.191	31-Oct	0.0393	31-Dec	
						31-Aug	0.187				

Note: Estimated values are italicized

Table A5.5. Summary of Daily Mean Discharge [Q] at PO-Hydro

Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)
1-Jan		1-Mar		1-May		1-Jul	0.959	1-Sep	0.323	1-Nov	<i>0.081</i>
2-Jan		2-Mar		2-May		2-Jul	0.976	2-Sep	0.314	2-Nov	<i>0.074</i>
3-Jan		3-Mar		3-May		3-Jul	0.939	3-Sep	0.310	3-Nov	<i>0.067</i>
4-Jan		4-Mar		4-May		4-Jul	0.883	4-Sep	0.330	4-Nov	<i>0.060</i>
5-Jan		5-Mar		5-May		5-Jul	0.801	5-Sep	0.464	5-Nov	<i>0.054</i>
6-Jan		6-Mar		6-May		6-Jul	0.763	6-Sep	0.556	6-Nov	<i>0.047</i>
7-Jan		7-Mar		7-May		7-Jul	0.692	7-Sep	0.619	7-Nov	<i>0.040</i>
8-Jan		8-Mar		8-May		8-Jul	0.617	8-Sep	0.618	8-Nov	<i>0.034</i>
9-Jan		9-Mar		9-May		9-Jul	0.554	9-Sep	0.597	9-Nov	<i>0.027</i>
10-Jan		10-Mar		10-May		10-Jul	0.479	10-Sep	0.581	10-Nov	<i>0.020</i>
11-Jan		11-Mar		11-May		11-Jul	0.417	11-Sep	0.561	11-Nov	<i>0.013</i>
12-Jan		12-Mar		12-May		12-Jul	0.353	12-Sep	0.557	12-Nov	<i>0.007</i>
13-Jan		13-Mar		13-May		13-Jul	0.313	13-Sep	0.555	13-Nov	<i>0.000</i>
14-Jan		14-Mar		14-May		14-Jul	0.324	14-Sep	0.540	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	0.326	15-Sep	0.662	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	0.512	16-Sep	0.701	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	0.856	17-Sep	0.704	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	1.054	18-Sep	0.691	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	1.071	19-Sep	0.668	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	1.028	20-Sep	0.643	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	0.965	21-Sep	0.595	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	0.902	22-Sep	0.556	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	0.841	23-Sep	0.518	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	0.771	24-Sep	0.479	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	0.710	25-Sep	0.424	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	0.673	26-Sep	0.398	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	0.642	27-Sep	0.358	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	0.625	28-Sep	0.328	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	0.622	29-Sep	0.302	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	0.600	30-Sep	0.295	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	0.582	1-Oct	0.289	1-Dec	
1-Feb		1-Apr		1-Jun	<i>0.001</i>	1-Aug	0.575	2-Oct	0.282	2-Dec	
2-Feb		2-Apr		2-Jun	<i>0.002</i>	2-Aug	0.592	3-Oct	0.275	3-Dec	
3-Feb		3-Apr		3-Jun	<i>0.003</i>	3-Aug	0.665	4-Oct	0.268	4-Dec	
4-Feb		4-Apr		4-Jun	<i>0.006</i>	4-Aug	0.715	5-Oct	0.262	5-Dec	
5-Feb		5-Apr		5-Jun	<i>0.010</i>	5-Aug	0.711	6-Oct	0.255	6-Dec	
6-Feb		6-Apr		6-Jun	<i>0.019</i>	6-Aug	0.713	7-Oct	0.248	7-Dec	
7-Feb		7-Apr		7-Jun	<i>0.033</i>	7-Aug	0.673	8-Oct	0.242	8-Dec	
8-Feb		8-Apr		8-Jun	<i>0.060</i>	8-Aug	0.628	9-Oct	0.235	9-Dec	
9-Feb		9-Apr		9-Jun	<i>0.108</i>	9-Aug	0.606	10-Oct	0.228	10-Dec	
10-Feb		10-Apr		10-Jun	<i>0.193</i>	10-Aug	0.583	11-Oct	0.221	11-Dec	
11-Feb		11-Apr		11-Jun	<i>0.347</i>	11-Aug	0.563	12-Oct	0.215	12-Dec	
12-Feb		12-Apr		12-Jun	<i>0.623</i>	12-Aug	0.548	13-Oct	0.208	13-Dec	
13-Feb		13-Apr		13-Jun	<i>1.117</i>	13-Aug	0.543	14-Oct	0.201	14-Dec	
14-Feb		14-Apr		14-Jun	<i>3.599</i>	14-Aug	0.525	15-Oct	0.195	15-Dec	
15-Feb		15-Apr		15-Jun	<i>3.325</i>	15-Aug	0.486	16-Oct	0.188	16-Dec	
16-Feb		16-Apr		16-Jun	<i>3.009</i>	16-Aug	0.454	17-Oct	0.181	17-Dec	
17-Feb		17-Apr		17-Jun	<i>2.764</i>	17-Aug	0.439	18-Oct	0.174	18-Dec	
18-Feb		18-Apr		18-Jun	<i>2.493</i>	18-Aug	0.415	19-Oct	0.168	19-Dec	
19-Feb		19-Apr		19-Jun	<i>2.246</i>	19-Aug	0.416	20-Oct	0.161	20-Dec	
20-Feb		20-Apr		20-Jun	<i>2.017</i>	20-Aug	0.429	21-Oct	0.154	21-Dec	
21-Feb		21-Apr		21-Jun	<i>1.834</i>	21-Aug	0.433	22-Oct	0.148	22-Dec	
22-Feb		22-Apr		22-Jun	<i>1.679</i>	22-Aug	0.429	23-Oct	0.141	23-Dec	
23-Feb		23-Apr		23-Jun	<i>1.524</i>	23-Aug	0.418	24-Oct	0.134	24-Dec	
24-Feb		24-Apr		24-Jun	<i>1.402</i>	24-Aug	0.404	25-Oct	0.128	25-Dec	
25-Feb		25-Apr		25-Jun	<i>1.314</i>	25-Aug	0.390	26-Oct	0.1208	26-Dec	
26-Feb		26-Apr		26-Jun	<i>1.243</i>	26-Aug	0.379	27-Oct	0.1141	27-Dec	
27-Feb		27-Apr		27-Jun	<i>1.187</i>	27-Aug	0.367	28-Oct	0.1074	28-Dec	
28-Feb		28-Apr		28-Jun	<i>1.117</i>	28-Aug	0.364	29-Oct	0.1007	29-Dec	
29-Feb		29-Apr		29-Jun	<i>1.035</i>	29-Aug	0.359	30-Oct	0.0940	30-Dec	
		30-Apr		30-Jun	<i>0.958</i>	30-Aug	0.345	31-Oct	0.0872	31-Dec	
						31-Aug	0.333				

Note: Estimated values are italicized

Table A5.6. Summary of Daily Mean Discharge [Q] at Roberts-Hydro

Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)
1-Jan		1-Mar		1-May		1-Jul	2.197	1-Sep	0.360	1-Nov	0.105
2-Jan		2-Mar		2-May		2-Jul	2.099	2-Sep	0.344	2-Nov	0.097
3-Jan		3-Mar		3-May		3-Jul	2.001	3-Sep	0.327	3-Nov	0.088
4-Jan		4-Mar		4-May		4-Jul	1.943	4-Sep	0.337	4-Nov	0.079
5-Jan		5-Mar		5-May		5-Jul	1.898	5-Sep	0.381	5-Nov	0.070
6-Jan		6-Mar		6-May		6-Jul	1.855	6-Sep	0.395	6-Nov	0.062
7-Jan		7-Mar		7-May		7-Jul	1.772	7-Sep	0.435	7-Nov	0.053
8-Jan		8-Mar		8-May		8-Jul	1.684	8-Sep	0.472	8-Nov	0.044
9-Jan		9-Mar		9-May		9-Jul	1.560	9-Sep	0.474	9-Nov	0.035
10-Jan		10-Mar		10-May		10-Jul	1.474	10-Sep	0.461	10-Nov	0.026
11-Jan		11-Mar		11-May		11-Jul	1.442	11-Sep	0.454	11-Nov	0.018
12-Jan		12-Mar		12-May		12-Jul	1.297	12-Sep	0.457	12-Nov	0.009
13-Jan		13-Mar		13-May		13-Jul	1.232	13-Sep	0.476	13-Nov	0.000
14-Jan		14-Mar		14-May		14-Jul	1.141	14-Sep	0.532	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	1.104	15-Sep	0.570	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	1.164	16-Sep	0.649	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	1.433	17-Sep	0.662	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	1.627	18-Sep	0.672	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	1.763	19-Sep	0.669	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	1.851	20-Sep	0.671	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	1.868	21-Sep	0.641	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	1.850	22-Sep	0.615	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	1.792	23-Sep	0.584	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	1.748	24-Sep	0.562	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	1.674	25-Sep	0.528	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	1.591	26-Sep	0.496	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	1.505	27-Sep	0.474	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	1.430	28-Sep	0.436	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	1.348	29-Sep	0.419	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	1.203	30-Sep	0.405	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	1.139	1-Oct	0.393	1-Dec	
1-Feb		1-Apr		1-Jun	0.001	1-Aug	1.077	2-Oct	0.369	2-Dec	
2-Feb		2-Apr		2-Jun	0.002	2-Aug	1.040	3-Oct	0.360	3-Dec	
3-Feb		3-Apr		3-Jun	0.003	3-Aug	1.093	4-Oct	0.351	4-Dec	
4-Feb		4-Apr		4-Jun	0.006	4-Aug	1.083	5-Oct	0.343	5-Dec	
5-Feb		5-Apr		5-Jun	0.011	5-Aug	1.071	6-Oct	0.334	6-Dec	
6-Feb		6-Apr		6-Jun	0.019	6-Aug	1.059	7-Oct	0.325	7-Dec	
7-Feb		7-Apr		7-Jun	0.035	7-Aug	1.040	8-Oct	0.316	8-Dec	
8-Feb		8-Apr		8-Jun	0.063	8-Aug	1.016	9-Oct	0.308	9-Dec	
9-Feb		9-Apr		9-Jun	0.113	9-Aug	1.018	10-Oct	0.299	10-Dec	
10-Feb		10-Apr		10-Jun	0.204	10-Aug	0.982	11-Oct	0.290	11-Dec	
11-Feb		11-Apr		11-Jun	0.369	11-Aug	0.967	12-Oct	0.281	12-Dec	
12-Feb		12-Apr		12-Jun	0.667	12-Aug	0.929	13-Oct	0.272	13-Dec	
13-Feb		13-Apr		13-Jun	1.205	13-Aug	0.888	14-Oct	0.264	14-Dec	
14-Feb		14-Apr		14-Jun	3.929	14-Aug	0.846	15-Oct	0.255	15-Dec	
15-Feb		15-Apr		15-Jun	4.970	15-Aug	0.785	16-Oct	0.246	16-Dec	
16-Feb		16-Apr		16-Jun	5.546	16-Aug	0.726	17-Oct	0.237	17-Dec	
17-Feb		17-Apr		17-Jun	5.779	17-Aug	0.682	18-Oct	0.228	18-Dec	
18-Feb		18-Apr		18-Jun	5.669	18-Aug	0.630	19-Oct	0.220	19-Dec	
19-Feb		19-Apr		19-Jun	5.317	19-Aug	0.603	20-Oct	0.211	20-Dec	
20-Feb		20-Apr		20-Jun	4.886	20-Aug	0.595	21-Oct	0.202	21-Dec	
21-Feb		21-Apr		21-Jun	4.438	21-Aug	0.592	22-Oct	0.193	22-Dec	
22-Feb		22-Apr		22-Jun	4.010	22-Aug	0.581	23-Oct	0.185	23-Dec	
23-Feb		23-Apr		23-Jun	3.600	23-Aug	0.554	24-Oct	0.176	24-Dec	
24-Feb		24-Apr		24-Jun	3.260	24-Aug	0.529	25-Oct	0.1670	25-Dec	
25-Feb		25-Apr		25-Jun	2.952	25-Aug	0.502	26-Oct	0.1582	26-Dec	
26-Feb		26-Apr		26-Jun	2.701	26-Aug	0.473	27-Oct	0.1494	27-Dec	
27-Feb		27-Apr		27-Jun	2.530	27-Aug	0.446	28-Oct	0.1406	28-Dec	
28-Feb		28-Apr		28-Jun	2.395	28-Aug	0.425	29-Oct	0.1318	29-Dec	
29-Feb		29-Apr		29-Jun	2.289	29-Aug	0.410	30-Oct	0.1230	30-Dec	
		30-Apr		30-Jun	2.239	30-Aug	0.391	31-Oct	0	31-Dec	
						31-Aug	0.374				

Note: Estimated values are italicized

Table A5.7. Summary of Daily Mean Discharge [Q] at Tail-Hydro

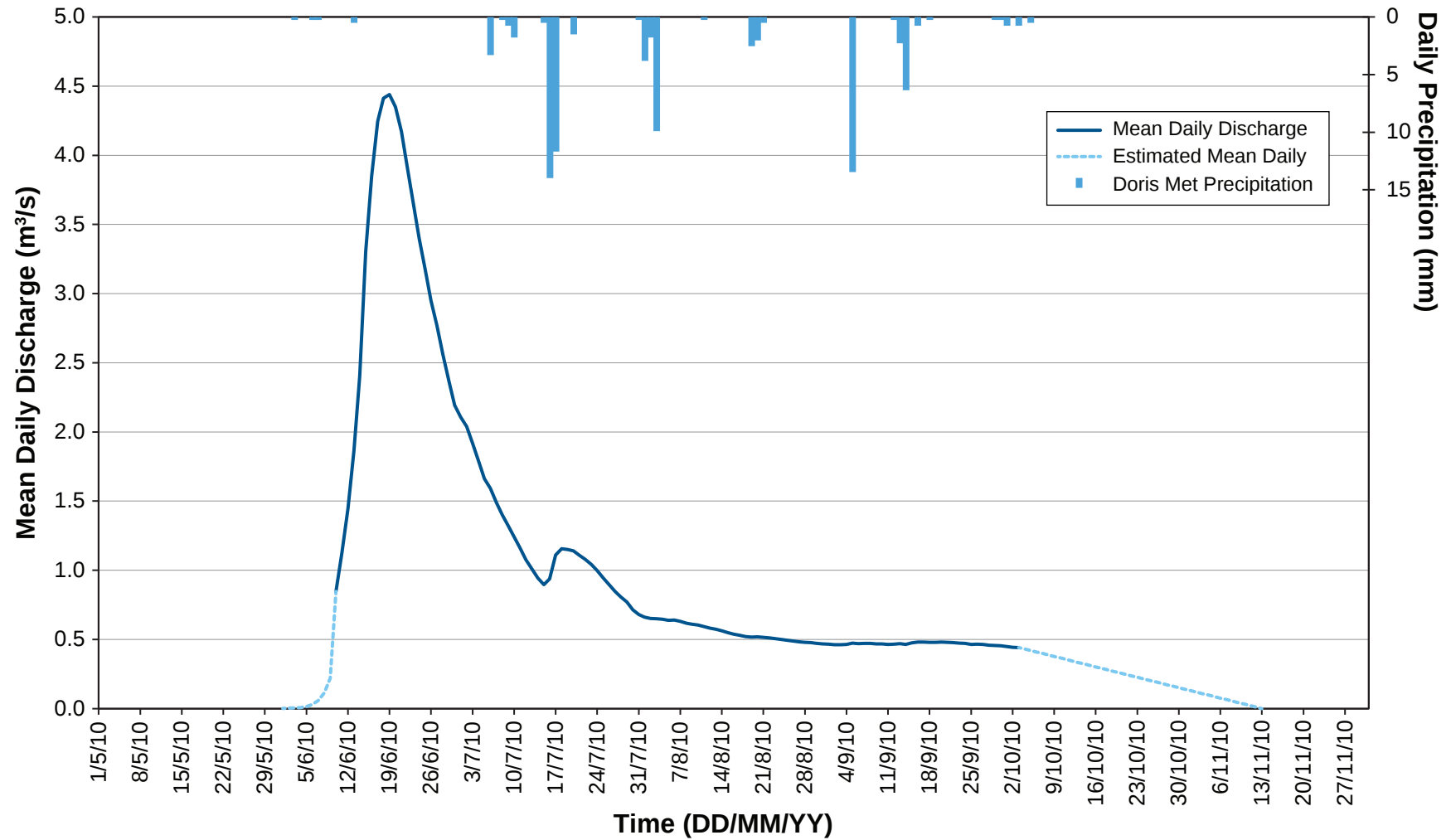
Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)
1-Jan		1-Mar		1-May		1-Jul	0.092	1-Sep	0.026	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	0.090	2-Sep	0.025	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	0.088	3-Sep	0.026	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	0.080	4-Sep	0.031	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	0.069	5-Sep	0.046	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	0.065	6-Sep	0.045	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	0.061	7-Sep	0.047	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	0.058	8-Sep	0.047	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	0.053	9-Sep	0.046	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	0.047	10-Sep	0.043	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	0.045	11-Sep	0.040	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	0.040	12-Sep	0.040	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	0.034	13-Sep	0.045	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	0.033	14-Sep	0.052	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	0.032	15-Sep	0.051	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	0.038	16-Sep	0.065	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	0.077	17-Sep	0.059	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	0.092	18-Sep	0.056	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	0.090	19-Sep	0.051	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	0.089	20-Sep	0.049	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	0.081	21-Sep	0.046	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	0.074	22-Sep	0.040	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	0.074	23-Sep	0.035	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	0.074	24-Sep	0.032	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	0.063	25-Sep	0.028	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	0.055	26-Sep	0.024	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	0.052	27-Sep	0.024	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	0.049	28-Sep	0.022	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	0.048	29-Sep	0.019	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	0.042	30-Sep	0.019	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	0.038	1-Oct	0.018	1-Dec	
1-Feb		1-Apr		1-Jun	0.001	1-Aug	0.037	2-Oct	0.017	2-Dec	
2-Feb		2-Apr		2-Jun	0.002	2-Aug	0.037	3-Oct	0.013	3-Dec	
3-Feb		3-Apr		3-Jun	0.003	3-Aug	0.049	4-Oct	0.013	4-Dec	
4-Feb		4-Apr		4-Jun	0.004	4-Aug	0.052	5-Oct	0.012	5-Dec	
5-Feb		5-Apr		5-Jun	0.007	5-Aug	0.054	6-Oct	0.012	6-Dec	
6-Feb		6-Apr		6-Jun	0.011	6-Aug	0.059	7-Oct	0.011	7-Dec	
7-Feb		7-Apr		7-Jun	0.018	7-Aug	0.062	8-Oct	0.011	8-Dec	
8-Feb		8-Apr		8-Jun	0.028	8-Aug	0.061	9-Oct	0.010	9-Dec	
9-Feb		9-Apr		9-Jun	0.046	9-Aug	0.060	10-Oct	0.009	10-Dec	
10-Feb		10-Apr		10-Jun	0.119	10-Aug	0.062	11-Oct	0.009	11-Dec	
11-Feb		11-Apr		11-Jun	0.140	11-Aug	0.056	12-Oct	0.008	12-Dec	
12-Feb		12-Apr		12-Jun	0.149	12-Aug	0.048	13-Oct	0.008	13-Dec	
13-Feb		13-Apr		13-Jun	0.166	13-Aug	0.044	14-Oct	0.007	14-Dec	
14-Feb		14-Apr		14-Jun	0.189	14-Aug	0.043	15-Oct	0.007	15-Dec	
15-Feb		15-Apr		15-Jun	0.193	15-Aug	0.036	16-Oct	0.006	16-Dec	
16-Feb		16-Apr		16-Jun	0.193	16-Aug	0.031	17-Oct	0.006	17-Dec	
17-Feb		17-Apr		17-Jun	0.192	17-Aug	0.029	18-Oct	0.005	18-Dec	
18-Feb		18-Apr		18-Jun	0.185	18-Aug	0.028	19-Oct	0.004	19-Dec	
19-Feb		19-Apr		19-Jun	0.175	19-Aug	0.029	20-Oct	0.004	20-Dec	
20-Feb		20-Apr		20-Jun	0.164	20-Aug	0.033	21-Oct	0.003	21-Dec	
21-Feb		21-Apr		21-Jun	0.154	21-Aug	0.036	22-Oct	0.003	22-Dec	
22-Feb		22-Apr		22-Jun	0.145	22-Aug	0.037	23-Oct	0.002	23-Dec	
23-Feb		23-Apr		23-Jun	0.137	23-Aug	0.037	24-Oct	0.002	24-Dec	
24-Feb		24-Apr		24-Jun	0.129	24-Aug	0.037	25-Oct	0.0011	25-Dec	
25-Feb		25-Apr		25-Jun	0.123	25-Aug	0.036	26-Oct	0.0006	26-Dec	
26-Feb		26-Apr		26-Jun	0.118	26-Aug	0.032	27-Oct	0.0000	27-Dec	
27-Feb		27-Apr		27-Jun	0.113	27-Aug	0.031	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	0.106	28-Aug	0.029	29-Oct		29-Dec	
29-Feb		29-Apr		29-Jun	0.101	29-Aug	0.029	30-Oct		30-Dec	
		30-Apr		30-Jun	0.097	30-Aug	0.029	31-Oct		31-Dec	
						31-Aug	0.027				

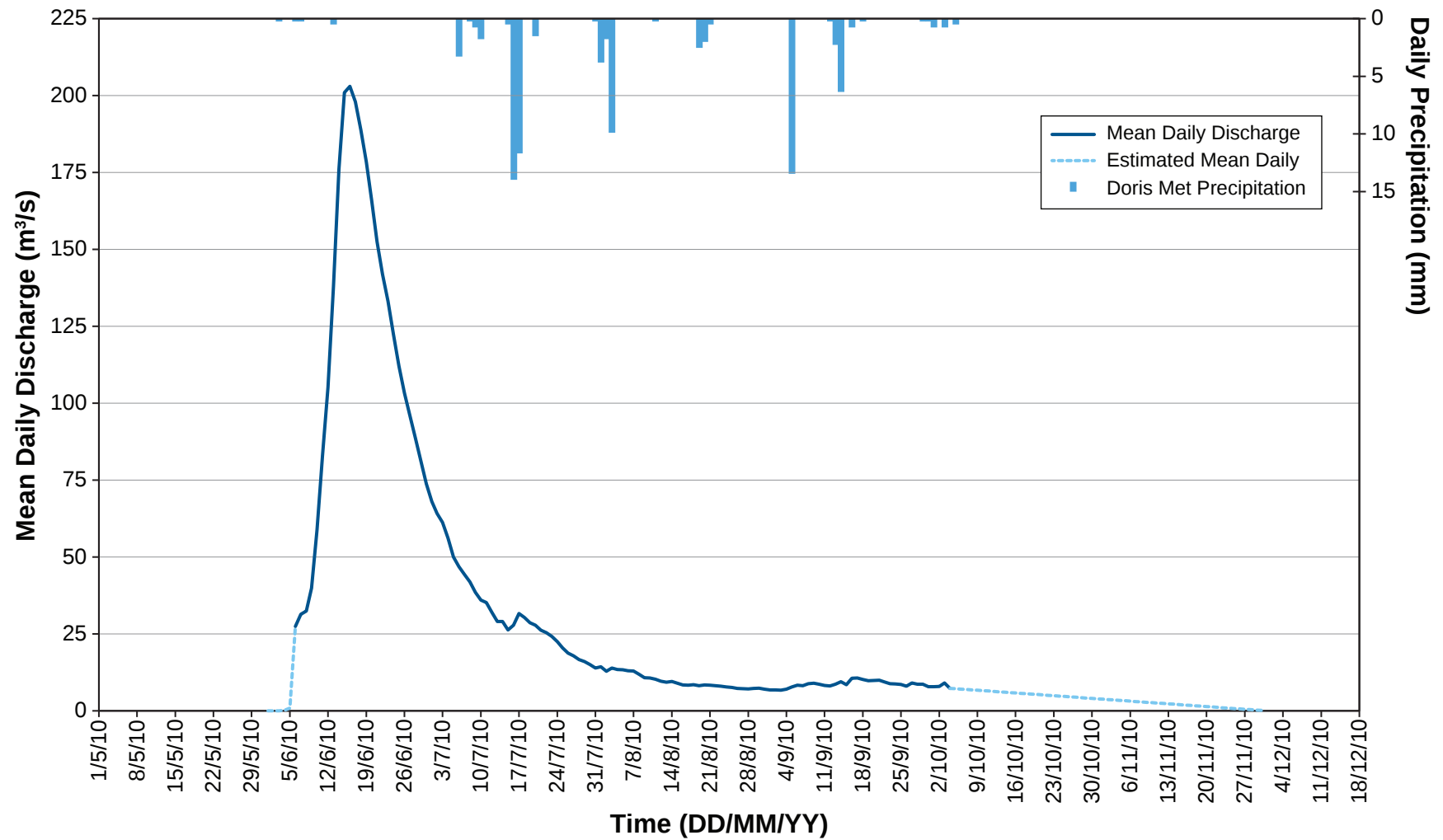
Note: Estimated values are italicized

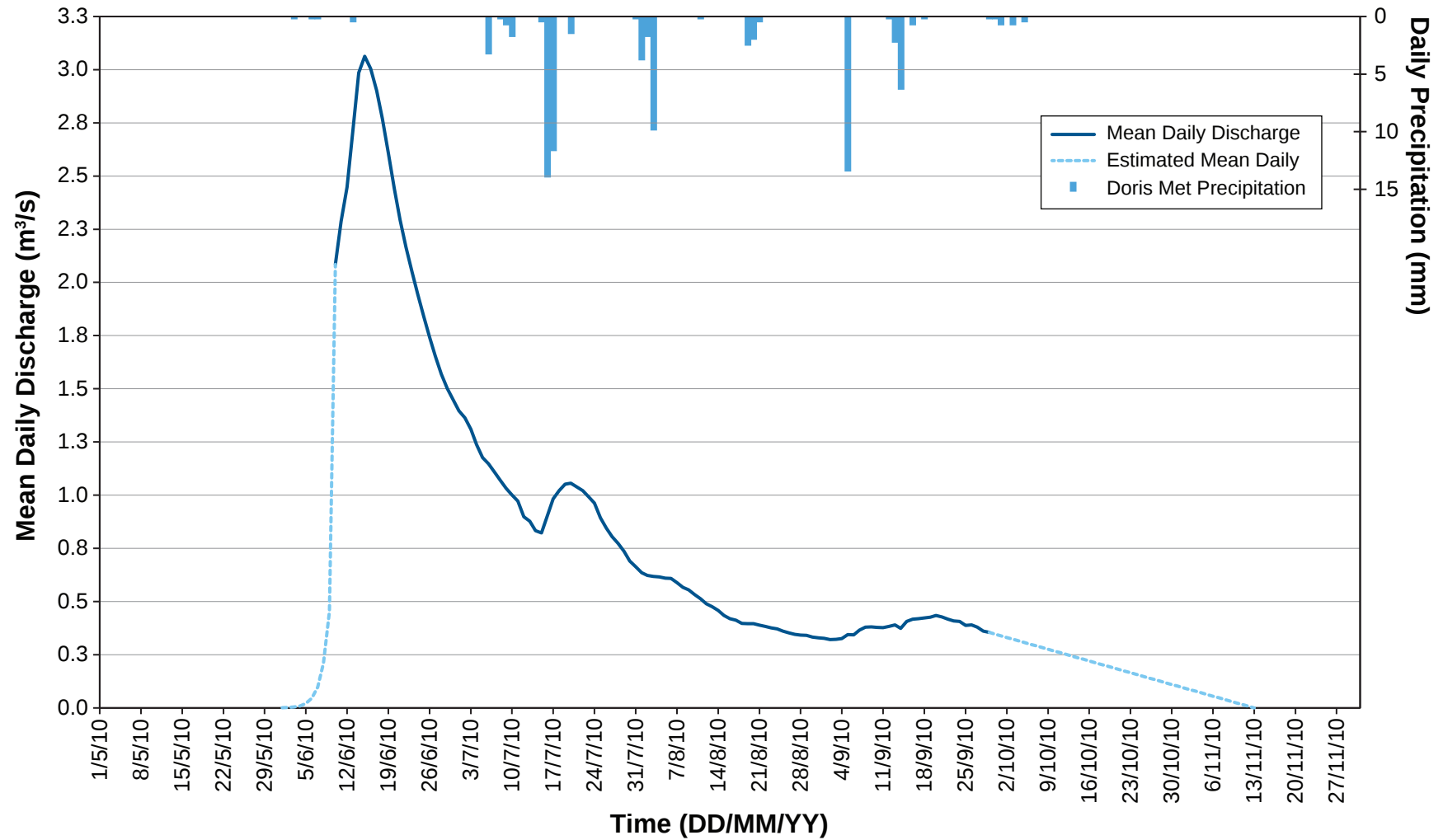
Table A5.8. Summary of Daily Mean Discharge [Q] at Windy-Hydro

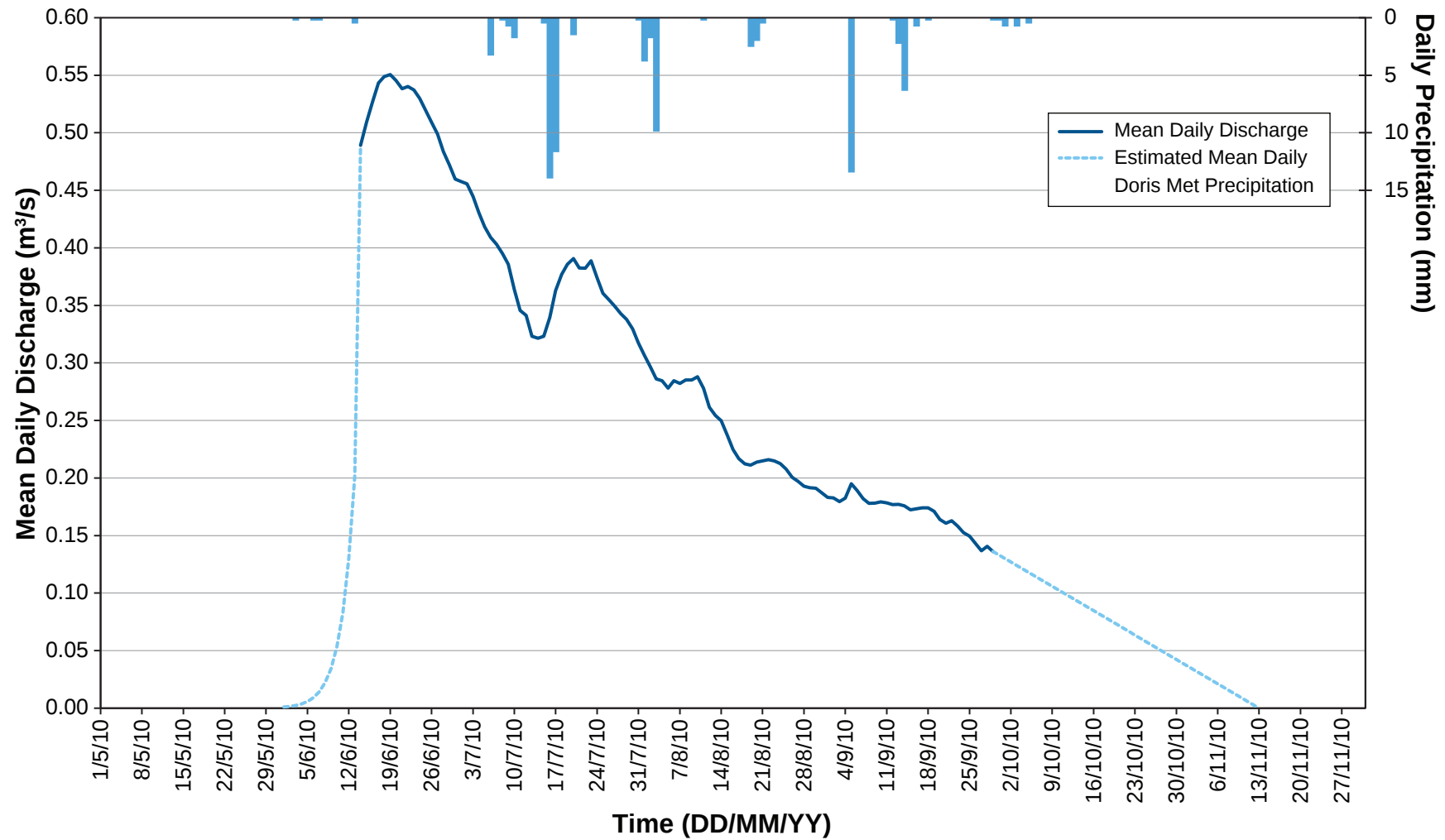
Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)
1-Jan		1-Mar		1-May		1-Jul	0.336	1-Sep	0.212	1-Nov	0.038
2-Jan		2-Mar		2-May		2-Jul	0.352	2-Sep	0.208	2-Nov	0.035
3-Jan		3-Mar		3-May		3-Jul	0.352	3-Sep	0.204	3-Nov	0.032
4-Jan		4-Mar		4-May		4-Jul	0.347	4-Sep	0.217	4-Nov	0.029
5-Jan		5-Mar		5-May		5-Jul	0.345	5-Sep	0.240	5-Nov	0.025
6-Jan		6-Mar		6-May		6-Jul	0.349	6-Sep	0.228	6-Nov	0.022
7-Jan		7-Mar		7-May		7-Jul	0.346	7-Sep	0.225	7-Nov	0.019
8-Jan		8-Mar		8-May		8-Jul	0.342	8-Sep	0.220	8-Nov	0.016
9-Jan		9-Mar		9-May		9-Jul	0.346	9-Sep	0.213	9-Nov	0.013
10-Jan		10-Mar		10-May		10-Jul	0.343	10-Sep	0.211	10-Nov	0.010
11-Jan		11-Mar		11-May		11-Jul	0.340	11-Sep	0.204	11-Nov	0.006
12-Jan		12-Mar		12-May		12-Jul	0.335	12-Sep	0.203	12-Nov	0.003
13-Jan		13-Mar		13-May		13-Jul	0.336	13-Sep	0.203	13-Nov	0.000
14-Jan		14-Mar		14-May		14-Jul	0.338	14-Sep	0.202	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	0.337	15-Sep	0.201	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	0.367	16-Sep	0.201	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	0.416	17-Sep	0.198	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	0.435	18-Sep	0.193	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	0.446	19-Sep	0.189	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	0.456	20-Sep	0.187	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	0.454	21-Sep	0.177	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	0.454	22-Sep	0.171	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	0.456	23-Sep	0.164	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	0.448	24-Sep	0.159	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	0.440	25-Sep	0.156	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	0.434	26-Sep	0.153	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	0.425	27-Sep	0.150	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	0.420	28-Sep	0.147	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	0.411	29-Sep	0.143	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	0.398	30-Sep	0.140	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	0.392	1-Oct	0.137	1-Dec	
1-Feb		1-Apr		1-Jun	0.001	1-Aug	0.387	2-Oct	0.134	2-Dec	
2-Feb		2-Apr		2-Jun	0.002	2-Aug	0.384	3-Oct	0.131	3-Dec	
3-Feb		3-Apr		3-Jun	0.003	3-Aug	0.389	4-Oct	0.127	4-Dec	
4-Feb		4-Apr		4-Jun	0.005	4-Aug	0.378	5-Oct	0.124	5-Dec	
5-Feb		5-Apr		5-Jun	0.008	5-Aug	0.369	6-Oct	0.121	6-Dec	
6-Feb		6-Apr		6-Jun	0.013	6-Aug	0.366	7-Oct	0.118	7-Dec	
7-Feb		7-Apr		7-Jun	0.021	7-Aug	0.364	8-Oct	0.115	8-Dec	
8-Feb		8-Apr		8-Jun	0.035	8-Aug	0.350	9-Oct	0.112	9-Dec	
9-Feb		9-Apr		9-Jun	0.058	9-Aug	0.347	10-Oct	0.108	10-Dec	
10-Feb		10-Apr		10-Jun	0.159	10-Aug	0.340	11-Oct	0.105	11-Dec	
11-Feb		11-Apr		11-Jun	0.184	11-Aug	0.333	12-Oct	0.102	12-Dec	
12-Feb		12-Apr		12-Jun	0.204	12-Aug	0.321	13-Oct	0.099	13-Dec	
13-Feb		13-Apr		13-Jun	0.235	13-Aug	0.312	14-Oct	0.096	14-Dec	
14-Feb		14-Apr		14-Jun	0.267	14-Aug	0.301	15-Oct	0.092	15-Dec	
15-Feb		15-Apr		15-Jun	0.279	15-Aug	0.283	16-Oct	0.089	16-Dec	
16-Feb		16-Apr		16-Jun	0.298	16-Aug	0.272	17-Oct	0.086	17-Dec	
17-Feb		17-Apr		17-Jun	0.305	17-Aug	0.265	18-Oct	0.083	18-Dec	
18-Feb		18-Apr		18-Jun	0.309	18-Aug	0.256	19-Oct	0.080	19-Dec	
19-Feb		19-Apr		19-Jun	0.312	19-Aug	0.256	20-Oct	0.076	20-Dec	
20-Feb		20-Apr		20-Jun	0.316	20-Aug	0.262	21-Oct	0.073	21-Dec	
21-Feb		21-Apr		21-Jun	0.318	21-Aug	0.258	22-Oct	0.070	22-Dec	
22-Feb		22-Apr		22-Jun	0.317	22-Aug	0.255	23-Oct	0.067	23-Dec	
23-Feb		23-Apr		23-Jun	0.314	23-Aug	0.252	24-Oct	0.064	24-Dec	
24-Feb		24-Apr		24-Jun	0.313	24-Aug	0.248	25-Oct	0.0605	25-Dec	
25-Feb		25-Apr		25-Jun	0.315	25-Aug	0.242	26-Oct	0.0574	26-Dec	
26-Feb		26-Apr		26-Jun	0.315	26-Aug	0.236	27-Oct	0.0542	27-Dec	
27-Feb		27-Apr		27-Jun	0.317	27-Aug	0.229	28-Oct	0.0510	28-Dec	
28-Feb		28-Apr		28-Jun	0.317	28-Aug	0.224	29-Oct	0.0478	29-Dec	
29-Feb		29-Apr		29-Jun	0.316	29-Aug	0.221	30-Oct	0.0446	30-Dec	
		30-Apr		30-Jun	0.317	30-Aug	0.217	31-Oct	0	31-Dec	
						31-Aug	0.215				

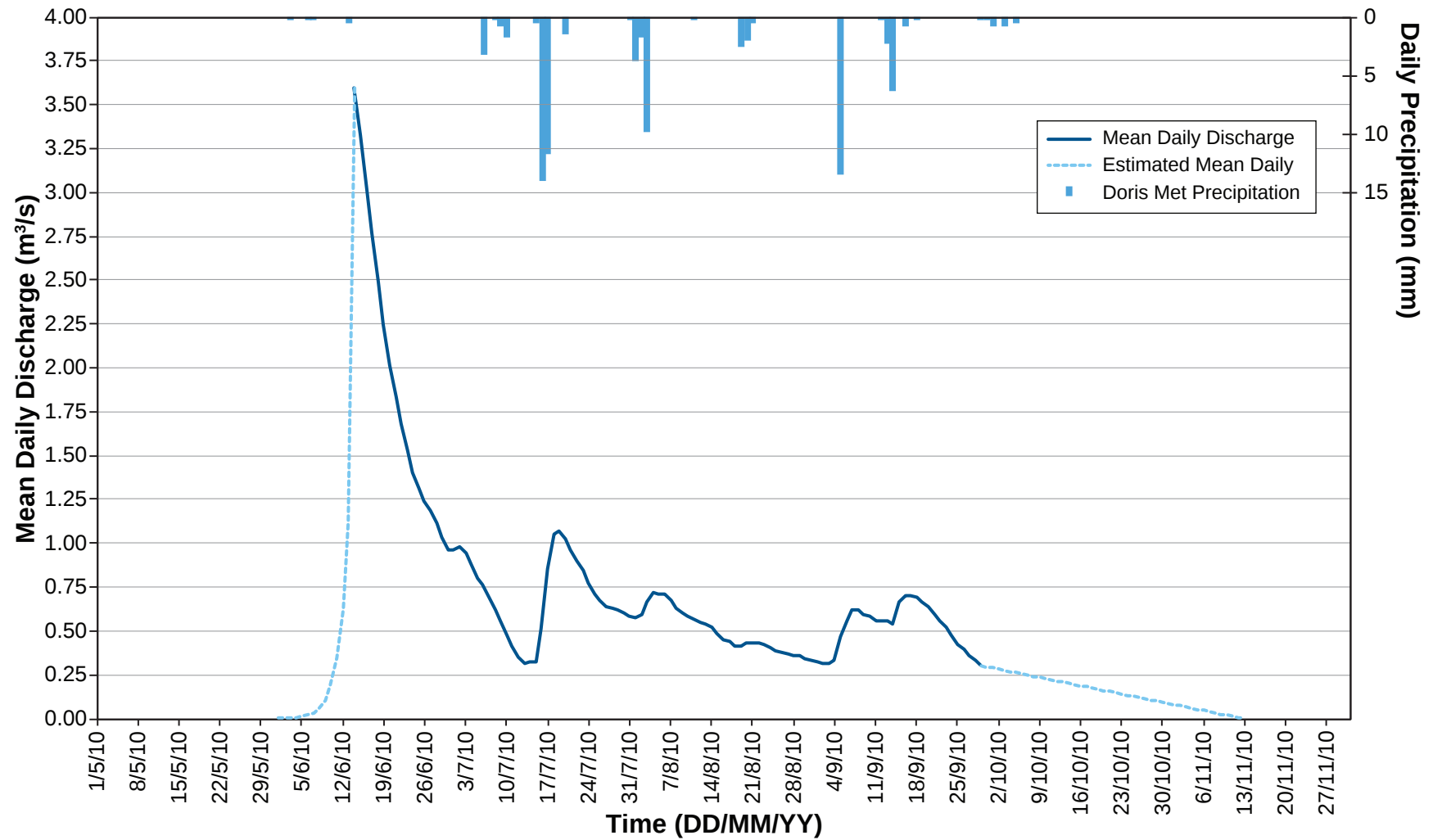
Note: Estimated values are italicized

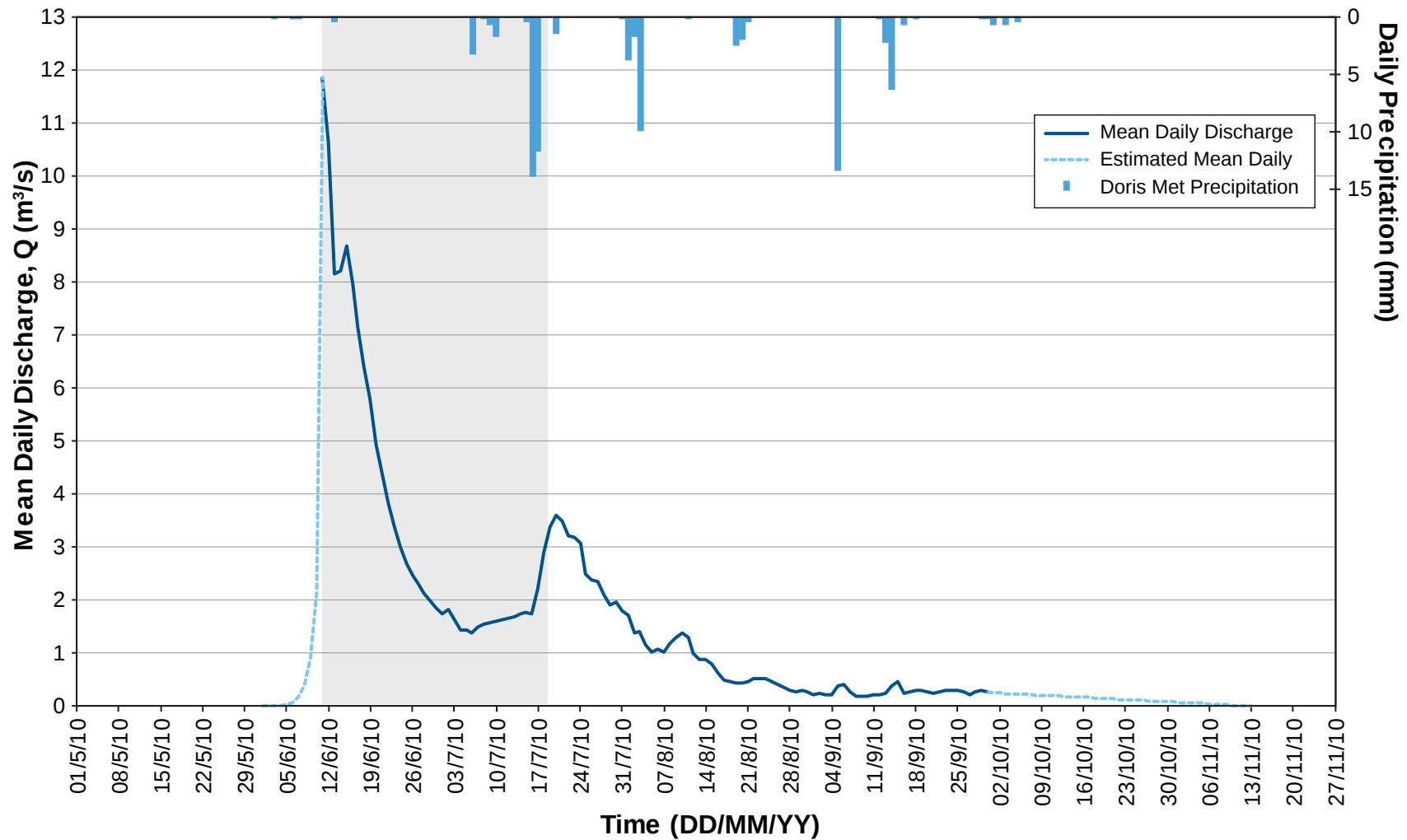




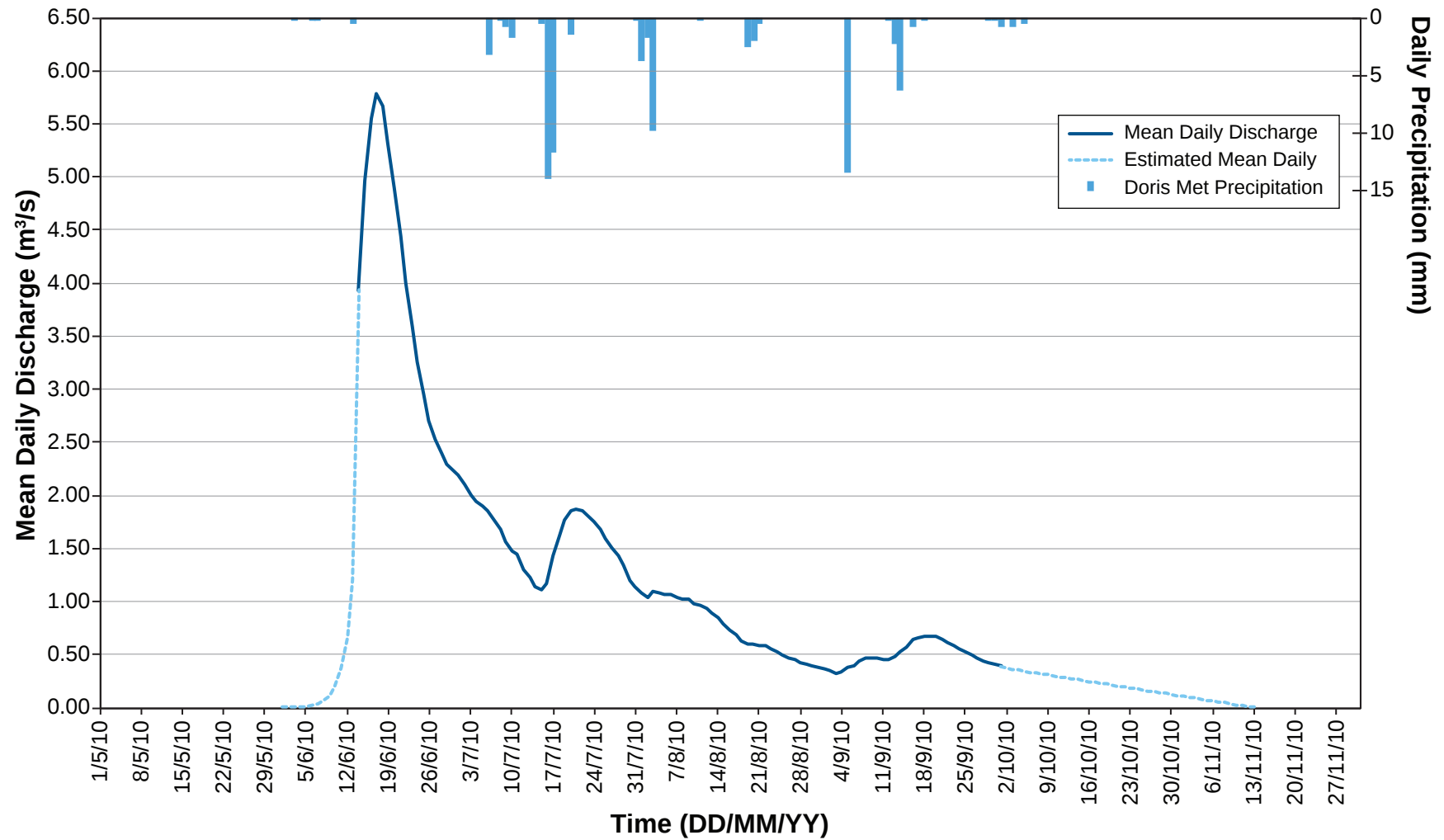


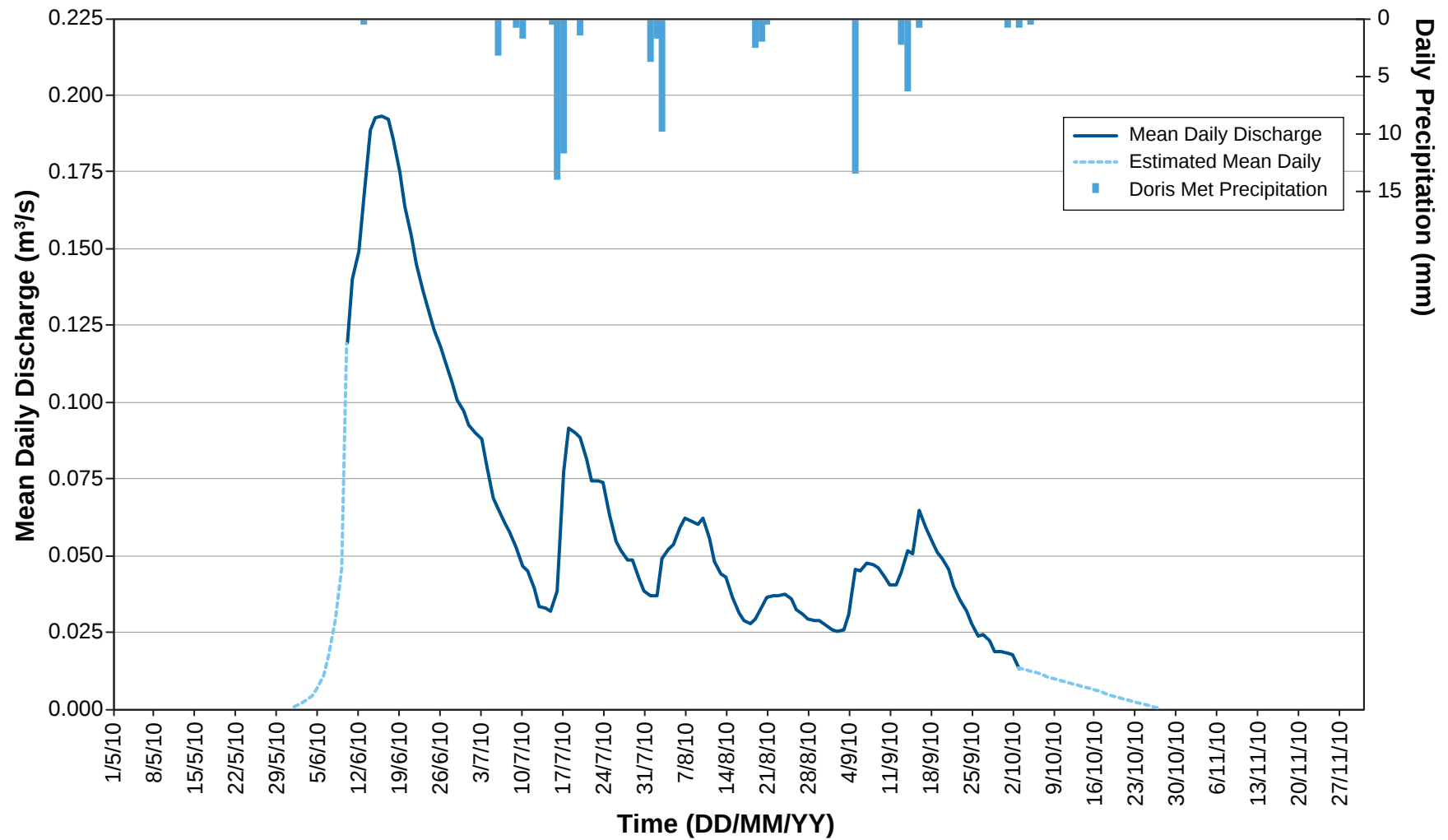






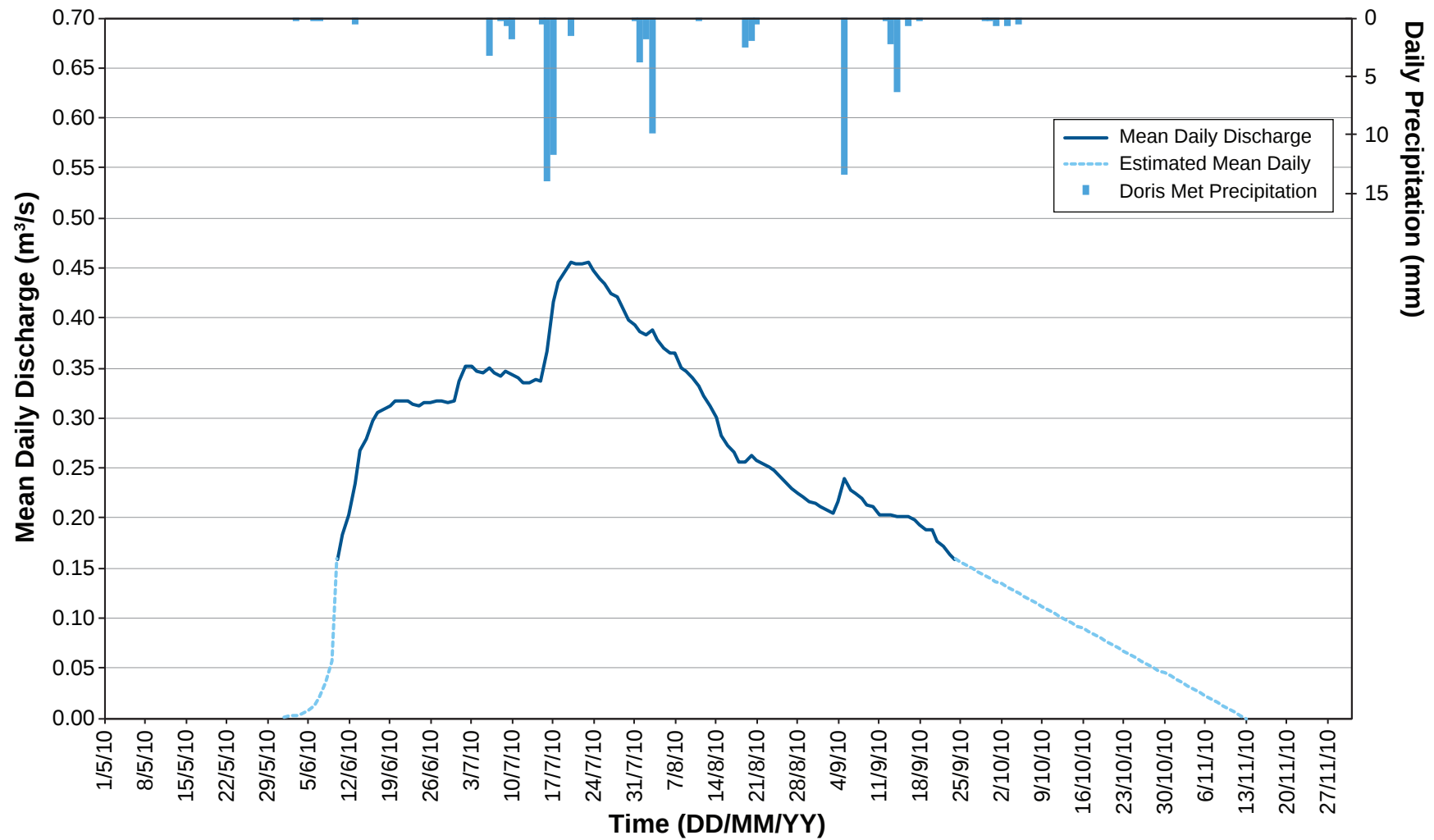
Note: the greyed area between June 11 to July 18, 2010 denotes a period of higher uncertainty in the hydrograph. Flow under ice conditions likely resulted in the underestimation of the discharge measured on June 11, 2010. This discharge measurement, associated to the highest water stage on record for 2010, was not used in the generation of the stage-discharge relationship for this hydrometric station.

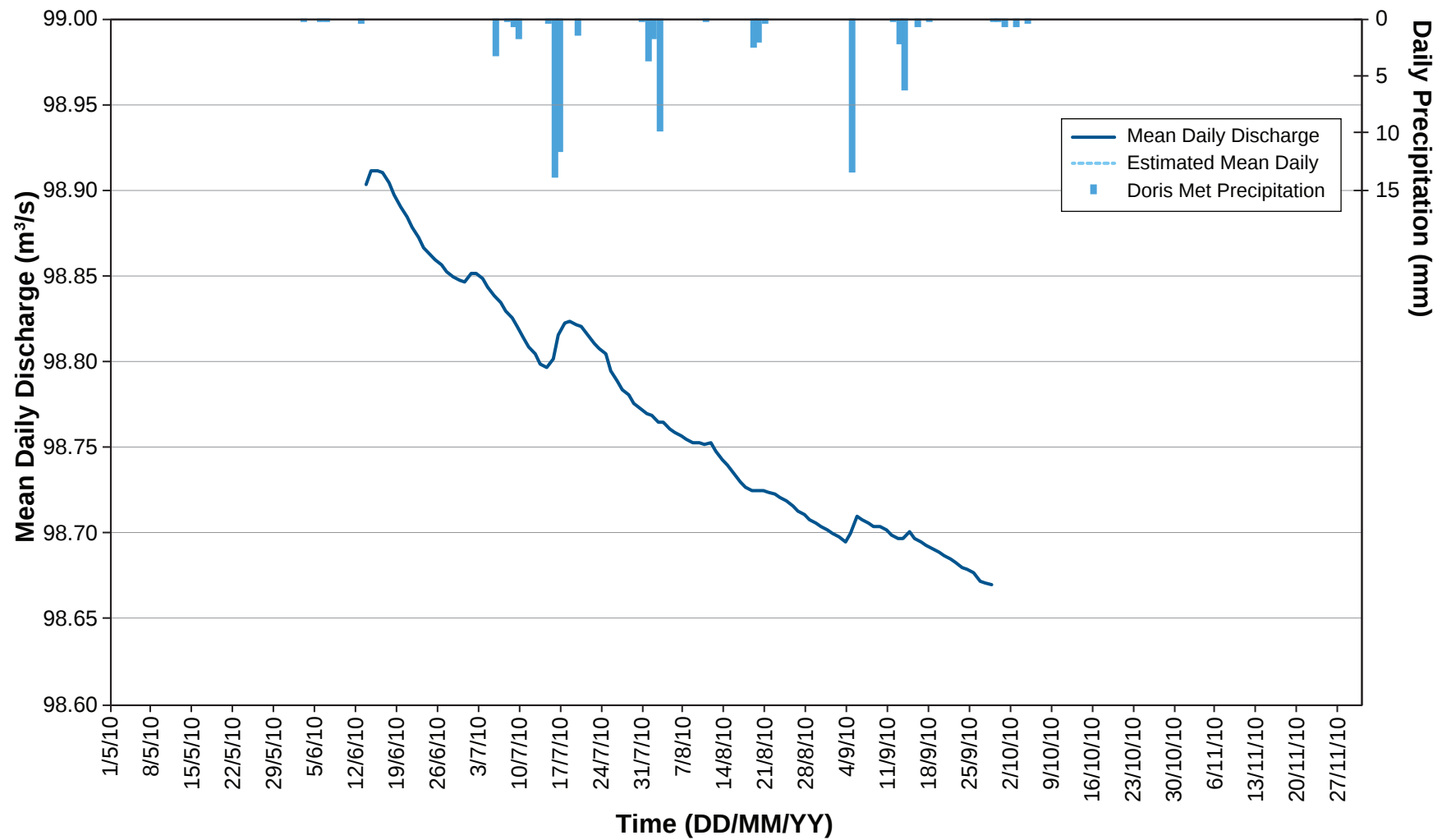




Annual hydrograph at Tail-Hydro, 2010

Figure A5-8





Appendices for Boston Area

Appendix B1

Discharge Measurements

Appendix B1.1. Discharge Measurements

Manual Flow Measurements at Amaio Out - Hydro in 2010

Date Monitored: 12-Jun-10

Time (24 hr): 12:50

Personnel: X. Pinto, C. Hatt

Method: Velocity - area with ADCP

Deployment: Cableway

Pressure Transducer (m): 98.252

Mean Discharge Q (m³/s): 12.1

Error (Std dev m³/s): 0.09

Transect	Discharge Q (m ³ /s)						% Bad	
	Top	Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	1.40	8.5	1.4	0.36	0.385	12.1	8	7
2	1.41	8.5	1.3	0.287	0.53	12.1	1	5
3	1.52	8.4	1.53	0.30	0.42	12.2	4	7
4	1.55	8.1	1.5	0.30	0.562	12.0	4	5

Date Monitored: 15-Jun-10

Time (24 hr): 11:00

Personnel: X. Pinto, C. Hatt

Method: Velocity - area with ADCP

Deployment: Cableway

Pressure Transducer (m): 99.314

Mean Discharge Q (m³/s): 42.4

Error (Std dev m³/s): 0.54

Transect	Discharge Q (m ³ /s)						% Bad	
	Top	Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	4.09	29.60	6.79	0.40	0.72	41.6	4	18
2	4.37	29.10	8.14	0.42	0.80	42.8	6	15
3	4.21	28.50	8.85	0.41	0.69	42.7	5	15
4	4.35	28.60	8.61	0.38	0.46	42.4	6	15

Date Monitored: 20-Jul-10

Time (24 hr): 15:48

Personnel: X. Pinto, C. Hatt

Method: Velocity - area with ADCP

Deployment: Cableway

Pressure Transducer (m): 98.307

Mean Discharge Q (m³/s): 15.2

Error (Std dev m³/s): 0.19

Transect	Discharge Q (m ³ /s)						% Bad	
	Top	Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	1.71	10.50	1.85	0.51	0.56	15.1	4	4
2	1.77	10.10	2.63	0.39	0.38	15.3	9	1
3	1.75	10.00	2.52	0.43	0.34	15.0	6	1
4	1.78	9.82	2.67	0.27	0.37	14.9	5	1
5	1.81	10.0	2.8	0.460	0.38	15.4	7	1

Date Monitored: 15-Aug-10

Time (24 hr): 12:40

Personnel: Craig Hatt and assistant

Method: Velocity - area with ADCP

Deployment: Cableway

Pressure Transducer (m): 97.793

Mean Discharge Q (m³/s): 4.8

Error (Std dev m³/s): 0.05

Transect	Discharge Q (m ³ /s)						% Bad	
	Top	Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	0.6	3.4	0.6	0.1	0.2	4.8	5	2
2	0.6	3.4	0.7	0.1	0.2	4.8	8	2
3	0.5	3.3	0.6	0.0	0.2	4.7	1	2
4	0.6	3.4	0.6	0.1	0.2	4.8	3	2

Date Monitored: 26-Sep-10

Time (24 hr): 13:10

Personnel: Craig Hatt and assistant

Method: Velocity - area with ADCP

Calibration: Cableway

Pressure Transducer (m): 97.688

Mean Discharge Q (m³/s): 3.2

Error (Std dev m³/s): 0.05

Transect	Discharge Q (m ³ /s)						% Bad	
	Top	Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	0.6	1.8	0.7	0.0	0.1	3.1	8	1
2	0.6	1.8	0.7	0.1	0.1	3.2	10	0
3	0.6	1.8	0.7	0.1	0.1	3.2	11	1
4	0.5	1.7	0.7	0.1	0.1	3.2	6	2

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Appendix B1.2. Discharge Measurements

Manual Flow Measurements at Amaio In - Hydro in 2010

Date Monitored: 08-Jun-10
Time (24 hr): 13:20
Personnel: X. Pinto, C. Hatt
Method: Velocity - area with ADCP
Deployment: Cableway

Pressure Transducer (m): 98.683
Mean Discharge Q (m³/s): 2.90
Error (Std dev m³/s) 0.06

Transect	Discharge Q (m³/s)							% Bad	
	Top		Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	1.20		1.2	0.5	0.07	0.077	3.0		
2	1.12		1.2	0.4	0.063	0.07	2.9		
3	1.12		1.2	0.44	0.07	0.06	2.9		

Date Monitored: 22-Jul-10
Time (24 hr): 12:45
Personnel: X. Pinto, C. Hatt
Method: Velocity - area with ADCP
Deployment: Cableway

Pressure Transducer (m): station damaged
Mean Discharge Q (m³/s): 2.84
Error (Std dev m³/s) 0.10

Transect	Discharge Q (m³/s)							% Bad	
	Top		Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	1.03		1.3	0.5	0.01	0.081	2.9	4	10
2	1.05		1.2	0.5	0.046	0.10	2.8	5	6
3	1.13		1.2	0.54	0.02	0.10	3.0	5	6
4	1.02		1.1	0.48	0.10	0.10	2.8	12	7
5	0.95		1.1	0.43	0.07	0.09	2.6	7	6

Date Monitored: 16-Aug-10
Time (24 hr): 14:00 (estimate)
Personnel: Craig Hatt and assistant
Method: Velocity - area with Swoffer
Propeller: 3"
Indicator constant: 614
Calibration constant: 426

Pressure Transducer (m): station damaged
Mean Discharge Q (m³/s): 1.42
Error (+/- %) 2.7

Measurement 1

Station (m)	Distance (m)	Depth (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q
4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
4.50	0.50	0.06	0.03	0.07	0.10	0.00	0.2
5.00	0.50	0.06	0.05	0.10	0.14	0.01	0.5
6.00	1.00	0.17	0.17	0.16	0.23	0.04	2.7
7.00	1.00	0.19	0.19	0.26	0.37	0.07	5.0
8.00	1.00	0.38	0.38	0.22	0.32	0.12	8.4
9.00	1.00	0.41	0.41	0.28	0.40	0.17	11.5
10.00	1.00	0.42	0.42	0.20	0.29	0.12	8.4
11.00	1.00	0.36	0.36	0.10	0.14	0.05	3.6
12.00	1.00	0.35	0.35	0.01	0.01	0.01	0.4
13.00	1.00	0.12	0.12	0.16	0.23	0.03	1.9
14.00	1.00	0.23	0.23	0.14	0.20	0.05	3.2
15.00	1.00	0.09	0.09	0.28	0.40	0.04	2.5
16.00	1.00	0.25	0.25	0.32	0.46	0.12	8.0
17.00	1.00	0.21	0.21	0.32	0.46	0.10	6.7
18.00	1.00	0.20	0.20	0.21	0.30	0.06	4.2
19.00	1.00	0.20	0.20	0.28	0.40	0.08	5.6
20.00	1.00	0.15	0.15	0.36	0.52	0.08	5.4
21.00	1.00	0.20	0.20	0.31	0.45	0.09	6.2
22.00	1.00	0.25	0.25	0.24	0.35	0.09	6.0
23.00	1.00	0.15	0.15	0.38	0.55	0.08	5.7
24.00	1.00	0.23	0.21	0.18	0.26	0.05	3.7
24.80	0.80	0.00	0.00	0.00	0.00	0.00	0.0

Total Q

1.44

Notes
right bank

left bank

Measurement 2

Station (m)	Distance (m)	Depth (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q
24.80	0.00	0.00	0.00	0.00	0.00	0.00	0.0
24.50	0.30	0.13	0.08	0.14	0.20	0.02	1.2
23.50	1.00	0.17	0.17	0.34	0.49	0.08	6.0
22.50	1.00	0.24	0.24	0.23	0.33	0.08	5.7
21.50	1.00	0.20	0.20	0.41	0.59	0.12	8.5
20.50	1.00	0.20	0.20	0.14	0.20	0.04	2.9
19.50	1.00	0.13	0.13	0.27	0.39	0.05	3.6
18.50	1.00	0.21	0.21	0.19	0.27	0.06	4.1
17.50	1.00	0.23	0.23	0.34	0.49	0.11	8.1
16.50	1.00	0.23	0.23	0.08	0.12	0.03	1.9
15.50	1.00	0.22	0.22	0.32	0.46	0.10	7.3
14.50	1.00	0.05	0.05	0.15	0.22	0.01	0.8
13.50	1.00	0.15	0.15	0.20	0.29	0.04	3.1
12.50	1.00	0.32	0.32	0.05	0.07	0.02	1.6
11.50	1.00	0.40	0.40	0.10	0.14	0.06	4.1
10.50	1.00	0.38	0.38	0.13	0.19	0.07	5.1
9.50	1.00	0.37	0.37	0.30	0.43	0.16	11.4
8.50	1.00	0.42	0.42	0.25	0.36	0.15	10.8
7.50	1.00	0.30	0.30	0.30	0.43	0.13	9.3
6.50	1.00	0.20	0.20	0.19	0.27	0.05	3.8
5.55	0.95	0.08	0.07	0.02	0.03	0.00	0.1
4.75	0.80	0.05	0.04	0.16	0.23	0.01	0.6
4.00	0.75	0.00	0.00	0.00	0.00	0.00	0.0

Notes
left bank

right bank

Total Q

1.40

Appendix B1.2. Discharge Measurements

Manual Flow Measurements at Amaio In - Hydro in 2010

Date Monitored:	26-Sep-10	Pressure Transducer (m):	station damaged
Time (24 hr):	15:00 (estimate)	Mean Discharge Q (m³/s):	2.09
Personnel:	Craig Hatt and assistant	Error (+/- %)	n/a
Method:	Velocity - area with Swoffer		
Propeller:	3"		
Indicator constant:	603		
Calibration constant:	426		

		Measurement 1						
Notes	Station (m)	Distance (m)	Depth (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	2.00	0.50	0.12	0.06	0.00	0.00	0.00	0.0
	2.50	0.50	0.13	0.07	0.08	0.11	0.01	0.4
	3.00	0.50	0.26	0.13	0.08	0.11	0.01	0.7
	3.50	0.50	0.27	0.14	0.22	0.31	0.04	2.0
	4.00	0.50	0.40	0.20	0.05	0.07	0.01	0.7
	4.50	0.50	0.41	0.21	0.02	0.03	0.01	0.3
	5.00	0.50	0.40	0.20	0.05	0.07	0.01	0.7
	5.50	0.50	0.40	0.20	0.31	0.44	0.09	4.2
	6.00	0.50	0.40	0.20	0.40	0.57	0.11	5.4
	6.50	0.50	0.40	0.20	0.36	0.51	0.10	4.9
	7.00	0.50	0.45	0.23	0.38	0.54	0.12	5.8
	7.50	0.50	0.49	0.25	0.36	0.51	0.12	6.0
	8.00	0.50	0.48	0.24	0.34	0.48	0.12	5.5
	8.50	0.50	0.40	0.20	0.33	0.47	0.09	4.5
	9.00	0.50	0.56	0.28	0.24	0.34	0.10	4.6
	9.50	0.50	0.57	0.29	0.10	0.14	0.04	1.9
	10.00	0.50	0.56	0.28	0.26	0.37	0.10	4.9
	10.50	0.50	0.50	0.25	0.19	0.27	0.07	3.2
	11.00	0.50	0.48	0.24	0.33	0.47	0.11	5.4
left bank	11.50	0.50	0.41	0.21	0.23	0.33	0.07	3.2
	12.00	0.50	0.47	0.24	0.34	0.48	0.11	5.4
	12.50	0.50	0.46	0.23	0.16	0.23	0.05	2.5
	13.00	0.50	0.43	0.22	0.15	0.21	0.05	2.2
	13.50	0.50	0.29	0.15	0.26	0.37	0.05	2.6
	14.00	0.50	0.27	0.14	0.27	0.38	0.05	2.5
	14.50	0.50	0.25	0.13	0.25	0.35	0.04	2.1
	15.00	0.50	0.19	0.10	0.35	0.50	0.05	2.3
	15.50	0.50	0.24	0.12	0.32	0.45	0.05	2.6
	16.00	0.50	0.25	0.13	0.27	0.38	0.05	2.3
	16.50	0.50	0.21	0.11	0.27	0.38	0.04	1.9
	17.00	0.50	0.26	0.13	0.25	0.35	0.05	2.2
	17.50	0.50	0.26	0.13	0.21	0.30	0.04	1.8
	18.00	0.50	0.25	0.13	0.21	0.30	0.04	1.8
	18.50	0.50	0.13	0.07	0.14	0.20	0.01	0.6
	19.00	0.50	0.25	0.13	0.17	0.24	0.03	1.4
	19.50	0.50	0.30	0.15	0.05	0.07	0.01	0.5
	20.00	0.50	0.24	0.12	0.12	0.17	0.02	1.0
	20.50	0.50	0.14	0.07	0.04	0.06	0.00	0.2
	21.00	0.50	0.00	0.00	0.00	0.00	0.00	0.0

Total Q 2.09

Note: Pressure transducer readings are referenced to site-specific arbitrary datum
n/a - not applicable

		Measurement 2						
Notes	Station (m)	Distance (m)	Depth (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q
Only one flow measurement taken								

Total Q

Manual Flow Measurements at Trout - Hydro in 2010

Pressure Transducer (m):	94.982
Discharge Q (m ³ /s):	0.60
Error (+/- %):	n/a

Measurement 2

Station (m)	Distance (m)	Depth (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q
10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
10.20	0.20	0.22	0.06	0.00	0.00	0.00	0.0
10.50	0.30	0.23	0.07	0.00	0.00	0.00	0.0
10.80	0.30	0.25	0.06	0.00	0.00	0.00	0.0
11.00	0.20	0.24	0.05	0.03	0.04	0.00	0.3
11.20	0.20	0.26	0.07	0.13	0.19	0.01	2.0
11.50	0.30	0.29	0.09	0.19	0.27	0.02	3.9
11.80	0.30	0.30	0.08	0.19	0.27	0.02	3.4
12.00	0.20	0.34	0.07	0.21	0.30	0.02	3.4
12.20	0.20	0.39	0.08	0.24	0.35	0.03	4.5
12.40	0.20	0.34	0.07	0.22	0.32	0.02	3.6
12.60	0.20	0.34	0.07	0.26	0.37	0.03	4.2
12.80	0.20	0.38	0.08	0.26	0.37	0.03	4.7
13.00	0.20	0.35	0.07	0.29	0.42	0.03	4.8
13.20	0.20	0.34	0.07	0.27	0.39	0.03	4.4
13.40	0.20	0.40	0.08	0.29	0.42	0.03	5.5
13.60	0.20	0.39	0.08	0.26	0.37	0.03	4.8
13.80	0.20	0.38	0.08	0.27	0.39	0.03	4.9
14.00	0.20	0.37	0.07	0.26	0.37	0.03	4.6
14.20	0.20	0.38	0.08	0.26	0.37	0.03	4.7
14.40	0.20	0.38	0.08	0.21	0.30	0.02	3.8
14.60	0.20	0.36	0.09	0.29	0.42	0.04	6.2
14.90	0.30	0.34	0.10	0.25	0.36	0.04	6.1
15.20	0.30	0.32	0.10	0.24	0.35	0.03	5.5
15.50	0.30	0.31	0.09	0.25	0.36	0.03	5.5
15.80	0.30	0.27	0.08	0.17	0.24	0.02	3.3
16.10	0.30	0.24	0.07	0.19	0.27	0.02	3.3
16.40	0.30	0.20	0.09	0.11	0.16	0.01	2.4
17.00	0.60	0.00	0.00	0.00	0.00	0.00	0.0

Total Q

0.60

— Total Q

Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated velocity (m/s)	Q (m ³ /s)	% of Total Q
Only one flow measurement taken							

Appendix B1.3. Discharge Measurements

Manual Flow Measurements at Trout - Hydro in 2010

Date Monitored:	17-Jun-10	Pressure Transducer (m):	94.815
Time (24 hr):	15:00	Discharge Q (m³/s):	0.77
Personnel:	C. Hatt, X. Pinto	Error (+/- %):	n/a
Method:	Velocity - area with Swoffer		
Propeller:	3"		
Indicator constant:	610		
Calibration constant:	426		

Notes
left bank

Measurement 1									
Station (m)	Distance (m)	Depth (m)	Area (m²)	Velocity (m/s)	20% Velocity (m/s)	80% Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q
5.00	0.00	0.00	0.00	0.00			0.00	0.00	0.0
5.50	0.50	0.15	0.06	0.06			0.09	0.01	0.7
5.80	0.30	0.17	0.04	0.10			0.14	0.01	0.8
6.00	0.20	0.17	0.03	0.16			0.23	0.01	1.0
6.20	0.20	0.20	0.04	0.13			0.19	0.01	1.0
6.40	0.20	0.24	0.05	0.19			0.27	0.01	1.7
6.60	0.20	0.25	0.05	0.19			0.27	0.01	1.8
6.80	0.20	0.28	0.06	0.27			0.39	0.02	2.8
7.00	0.20	0.31	0.06	0.32			0.46	0.03	3.7
7.20	0.20	0.35	0.07	0.34			0.49	0.03	4.5
7.40	0.20	0.41	0.08	0.39			0.56	0.05	6.0
7.60	0.20	0.49	0.10	0.38			0.54	0.05	7.0
7.80	0.20	0.54	0.11	0.40			0.57	0.06	8.1
8.00	0.20	0.58	0.12	0.40			0.57	0.07	8.7
8.20	0.20	0.77	0.15	0.33	0.40	0.26	0.47	0.07	9.5
8.40	0.20	0.82	0.16	0.32	0.36	0.27	0.45	0.07	9.7
8.60	0.20	0.88	0.18	0.30	0.38	0.22	0.43	0.08	9.9
8.80	0.20	0.86	0.17	0.31	0.35	0.26	0.44	0.08	9.8
9.00	0.20	0.80	0.16	0.27	0.33	0.21	0.39	0.06	8.1
9.20	0.20	0.24	0.05	0.24			0.34	0.02	2.2
9.40	0.20	0.20	0.04	0.20			0.29	0.01	1.5
9.60	0.20	0.19	0.03	0.19			0.27	0.01	1.2
9.75	0.15	0.12	0.02	0.12			0.17	0.00	0.5
10.00	0.25	0.00	0.00	0.00			0.00	0.00	0.0
Total Q								0.77	

Only one flow measurement taken

Manual Flow Measurements at Trout - Hvdro in 2010

Pressure Transducer (m):	94.741
Discharge Q (m ³ /s):	0.07
Error (+/- %):	n/a

Measurement 2							
Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m ³ /s)	% of Total Q
Only one flow measurement taken							

Manual Flow Measurements at Trout - Hydro in 2010

Pressure Transducer (m):	94.786
Discharge Q (m ³ /s):	0.08
Error (+/- %)	n/a

Notes
right bank

left bank

Only one flow measurement taken

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Appendix B1.3. Discharge Measurements

Manual Flow Measurements at Trout - Hydro in 2010

Date Monitored:	29-Sep-10	Pressure Transducer (m):	94.762
Time (24 hr):	13:15	Discharge Q (m ³ /s):	0.04
Personnel:	C. Hatt and assistant	Error (+/- %)	11.5
Method:	Velocity - area with Swoffer		
Propeller:	2"		
Indicator constant:	599		
Calibration constant:	426		

Measurement 1									
Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	
1.00	0.00	0.00	0.00	0.00	n/a	0.00	0.0	left bank	
1.20	0.20	0.03	0.01	0.00	n/a	0.00	0.0		
1.40	0.20	0.22	0.04	0.03	n/a	0.00	3.4		
1.60	0.20	0.12	0.02	0.13	n/a	0.00	8.1		
1.80	1.00	0.12	0.02	0.01	n/a	0.00	0.6		
2.00	0.20	0.06	0.01	0.01	n/a	0.00	0.3		
2.20	0.20	0.09	0.02	0.01	n/a	0.00	0.5		
2.40	0.20	0.10	0.02	0.15	n/a	0.00	7.8		
2.60	2.00	0.07	0.01	0.01	n/a	0.00	0.4		
2.80	0.20	0.10	0.02	0.18	n/a	0.00	9.3		
3.00	0.20	0.10	0.02	0.15	n/a	0.00	7.8		
3.20	0.20	0.10	0.02	0.18	n/a	0.00	9.3		
3.40	3.00	0.11	0.02	0.41	n/a	0.01	23.4		
3.60	0.20	0.12	0.02	0.17	n/a	0.00	10.6		
3.80	0.20	0.13	0.03	0.25	n/a	0.01	16.9		
4.00	0.20	0.10	0.02	0.01	n/a	0.00	0.5	right bank	
4.20	0.20	0.08	0.02	0.01	n/a	0.00	0.4		
4.40	0.20	0.07	0.01	0.01	n/a	0.00	0.4		
4.60	0.20	0.07	0.01	0.01	n/a	0.00	0.4		
4.80	0.20	0.07	0.01	0.00	n/a	0.00	0.0		
5.00	0.20	0.00	0.00	0.00	n/a	0.00	0.0		
Total Q						0.04	Total Q		

Note: Pressure transducer readings are referenced to site-specific arbitrary datum
n/a - not applicable

Measurement 2									
Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated velocity (m/s)	Q (m ³ /s)	% of Total Q	Notes	
5.00	0.00	0.00	0.00	0.00	n/a	0.00	0.0		
4.90	0.10	0.07	0.01	0.00	n/a	0.00	0.0		
4.70	0.20	0.04	0.01	0.00	n/a	0.00	0.0		
4.50	0.20	0.05	0.01	0.01	n/a	0.00	0.2		
4.30	0.20	0.08	0.02	0.01	n/a	0.00	0.4		
4.10	0.20	0.10	0.02	0.01	n/a	0.00	0.5		
3.90	0.20	0.11	0.02	0.13	n/a	0.00	6.6		
3.70	0.20	0.13	0.03	0.41	n/a	0.01	24.6		
3.50	0.20	0.11	0.02	0.22	n/a	0.00	11.2		
3.30	0.20	0.10	0.02	0.07	n/a	0.00	3.2		
3.10	0.20	0.09	0.02	0.35	n/a	0.01	14.6		
2.90	0.20	0.08	0.02	0.04	n/a	0.00	1.5		
2.70	0.20	0.09	0.02	0.05	n/a	0.00	2.1		
2.50	0.20	0.09	0.02	0.09	n/a	0.00	3.7		
2.30	0.20	0.10	0.02	0.04	n/a	0.00	1.8		
2.10	0.20	0.07	0.01	0.11	n/a	0.00	3.6		
1.90	0.20	0.10	0.02	0.01	n/a	0.00	0.5		
1.70	0.20	0.14	0.03	0.11	n/a	0.00	7.1		
1.50	0.20	0.11	0.02	0.15	n/a	0.00	7.6		
1.30	0.20	0.26	0.05	0.09	n/a	0.00	10.8		
1.10	0.20	0.04	0.01	0.00	n/a	0.00	0.0		
1.00	0.10	0.00	0.00	0.00	n/a	0.00	0.0		
Total Q						0.04	Total Q		

Appendix B1.4. Discharge Measurements

Manual Flow Measurements at East Amaio - Hydro in 2010

Date Monitored:	08-Jun-10	Pressure Transducer (m):	98.347
Time (24 hr):	8:00	Mean Discharge Q (m³/s):	3.5
Personnel:	X. Pinto, C. Hatt	Error (Std dev m³/s)	0.27
Method:	Velocity - area with ADCP		
Deployment:	Cableway		

Transect	Discharge Q (m³/s)						% Bad	
	Top	Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	1.47	1.2	0.6	0.08	0.066	3.4	28	5
2	1.45	1.2	0.6	0.082	0.08	3.3	27	0
3	1.56	1.2	0.58	0.07	0.08	3.5	25	0
4	1.72	1.4	0.6	0.08	0.066	3.9	25	2

Date Monitored:	17-Jun-10	Pressure Transducer (m):	98.800
Time (24 hr):	14:30	Mean Discharge Q (m³/s):	20.5
Personnel:	X. Pinto, C. Hatt	Error (Std dev m³/s):	5.69
Method:	Velocity - area with ADCP		
Deployment:	Cableway		

Transect	Discharge Q (m³/s)						% Bad	
	Top	Mid	Bottom	Left	Right	Total Q	Ens	Bins
1	4.84	15.7	3.1	6.37	3.420	33.4	18	11
2	5.34	17.2	3.0	5.330	3.29	34.2	14	7
3	5.26	16.8	3.45	4.85	3.65	34.0	27	10
4	5.72	16.8	3.2	3.99	2.960	32.7	23	5

Date Monitored:	21-Jul-10	Pressure Transducer (m):	98.209
Time (24 hr):	14:20	Mean Discharge Q (m³/s):	1.44
Personnel:	X. Pinto, C. Hatt	Error (+/- %)	10.4
Method:	Velocity - area with Swoffer		
Propeller:	3"		
Indicator constant:	610		
Calibration constant:	426	Measurement 1	

Notes	Station (m)	Distance (m)	Depth (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	1.70	0.80	0.05	0.04	0.12	0.17	0.01	0.5
	2.50	0.80	0.31	0.25	0.17	0.24	0.06	4.0
	3.30	0.80	0.33	0.26	0.20	0.29	0.08	5.0
	4.10	0.80	0.40	0.32	0.26	0.37	0.12	7.9
	4.90	0.80	0.49	0.39	0.27	0.39	0.15	10.0
	5.70	0.80	0.21	0.17	0.35	0.50	0.08	5.6
	6.50	0.80	0.53	0.42	0.17	0.24	0.10	6.8
	7.30	0.80	0.37	0.30	0.31	0.44	0.13	8.7
	8.10	0.80	0.32	0.26	0.34	0.49	0.12	8.2
	8.90	0.80	0.33	0.26	0.37	0.53	0.14	9.3
	9.70	0.80	0.28	0.22	0.31	0.44	0.10	6.6
	10.50	0.80	0.25	0.20	0.24	0.34	0.07	4.5
	11.30	0.80	0.30	0.24	0.30	0.43	0.10	6.8
	12.10	0.80	0.16	0.13	0.25	0.36	0.05	3.0
	12.90	0.80	0.12	0.10	0.20	0.29	0.03	1.8
	13.70	0.80	0.21	0.17	0.22	0.32	0.05	3.5
	14.50	0.80	0.17	0.14	0.21	0.30	0.04	2.7
	15.30	0.80	0.17	0.14	0.13	0.19	0.03	1.7
	16.10	0.80	0.24	0.19	0.08	0.11	0.02	1.5
	16.90	0.80	0.15	0.12	0.09	0.13	0.02	1.0
	17.70	0.80	0.27	0.22	0.04	0.06	0.01	0.8
	18.50	0.80	0.18	0.12	0.01	0.01	0.00	0.1
left bank	19.00	0.50	0.00	0.00	0.00	0.00	0.00	0.0
Total Q							1.51	

Notes	Station (m)	Distance (m)	Depth (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q
left bank	19.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	18.10	0.90	0.16	0.14	0.05	0.07	0.01	0.7
	17.30	0.80	0.20	0.16	0.08	0.11	0.02	1.3
	16.50	0.80	0.30	0.24	0.09	0.13	0.03	2.3
	15.70	0.80	0.25	0.20	0.14	0.20	0.04	2.9
	14.90	0.80	0.21	0.17	0.20	0.29	0.05	3.5
	14.10	0.80	0.22	0.18	0.17	0.24	0.04	3.1
	13.30	0.80	0.14	0.11	0.26	0.37	0.04	3.1
	12.50	0.80	0.28	0.22	0.16	0.23	0.05	3.8
	11.70	0.80	0.27	0.22	0.19	0.27	0.06	4.3
	10.90	0.80	0.27	0.22	0.26	0.37	0.08	5.9
	10.10	0.80	0.20	0.16	0.35	0.50	0.08	5.9
	9.30	0.80	0.33	0.26	0.37	0.53	0.14	10.3
	8.50	0.80	0.31	0.25	0.22	0.32	0.08	5.7
	7.70	0.80	0.25	0.20	0.34	0.49	0.10	7.1
	6.90	0.80	0.32	0.26	0.34	0.49	0.12	9.1
	6.10	0.80	0.60	0.48	0.04	0.06	0.03	2.0
	5.30	0.80	0.29	0.23	0.32	0.46	0.11	7.8
	4.50	0.80	0.45	0.36	0.17	0.24	0.09	6.4
	3.70	0.80	0.37	0.30	0.24	0.34	0.10	7.5
	2.90	0.80	0.30	0.24	0.14	0.20	0.05	3.5
	2.10	0.80	0.33	0.26	0.06	0.09	0.02	1.7
	1.30	0.80	0.34	0.20	0.09	0.13	0.03	1.9
right bank	0.90	0.40	0.00	0.00	0.00	0.00	0.00	0.0
Total Q							1.36	

Appendix B1.4. Discharge Measurements

Manual Flow Measurements at East Amaio - Hydro in 2010

Date Monitored:	15-Aug-10	Pressure Transducer (m):	98.143
Time (24 hr):	14:20	Mean Discharge Q (m³/s):	0.89
Personnel:	Craig Hatt and assistant	Error (+/- %):	16.6
Method:	Velocity - area with Swoffer		
Propeller:	3"		
Indicator constant:	618		
Calibration constant:	426		

		Measurement 1						
Notes	Station (m)	Distance (m)	Depth (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q
right bank	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	2.90	0.90	0.29	0.26	0.01	0.01	0.00	0.4
	3.80	0.90	0.42	0.38	0.05	0.07	0.03	2.8
	4.70	0.90	0.44	0.40	0.09	0.13	0.05	5.4
	5.60	0.90	0.50	0.45	0.10	0.15	0.07	6.8
	6.50	0.90	0.44	0.40	0.15	0.22	0.09	9.0
	7.40	0.90	0.37	0.33	0.18	0.26	0.09	9.0
	8.30	0.90	0.47	0.42	0.27	0.39	0.17	17.2
	9.20	0.90	0.55	0.50	0.14	0.20	0.10	10.4
	10.10	0.90	0.55	0.50	0.30	0.44	0.22	22.4
	11.00	0.90	0.54	0.49	0.07	0.10	0.05	5.1
	11.90	0.90	0.35	0.32	0.04	0.06	0.02	1.9
	12.80	0.90	0.17	0.15	0.14	0.20	0.03	3.2
	13.70	0.90	0.40	0.36	0.06	0.09	0.03	3.3
	14.60	0.90	0.36	0.32	0.02	0.03	0.01	1.0
	15.50	0.90	0.25	0.23	0.01	0.01	0.00	0.3
	16.40	0.90	0.42	0.38	0.01	0.01	0.01	0.6
	17.30	0.90	0.30	0.27	0.01	0.01	0.00	0.4
	18.20	1.00	0.30	0.27	0.01	0.01	0.00	0.4
	19.10	0.90	0.26	0.23	0.01	0.01	0.00	0.4
left bank	20.00	0.90	0.00	0.00	0.00	0.00	0.00	0.0
Total Q		0.96						

		Measurement 2						
Notes	Station (m)	Distance (m)	Depth (m)	Area (m²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m³/s)	% of Total Q
left bank	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	19.55	0.45	0.13	0.09	0.01	0.01	0.00	0.2
	18.65	0.90	0.23	0.21	0.01	0.01	0.00	0.4
	17.75	0.90	0.30	0.27	0.01	0.01	0.00	0.5
	16.85	0.90	0.26	0.23	0.01	0.01	0.00	0.4
	15.95	0.90	0.42	0.38	0.01	0.01	0.01	0.7
	15.05	0.90	0.38	0.34	0.01	0.01	0.00	0.6
	14.15	0.90	0.30	0.27	0.03	0.04	0.01	1.4
	13.25	0.90	0.25	0.23	0.11	0.16	0.04	4.4
	12.35	0.90	0.35	0.32	0.11	0.16	0.05	6.2
	11.45	0.90	0.33	0.30	0.16	0.23	0.07	8.5
	10.55	0.90	0.34	0.31	0.27	0.39	0.12	14.7
	9.65	0.90	0.58	0.52	0.18	0.26	0.14	16.7
	8.75	0.90	0.52	0.47	0.12	0.17	0.08	10.0
	7.85	0.90	0.40	0.36	0.22	0.32	0.11	14.1
	6.95	0.90	0.38	0.34	0.21	0.30	0.10	12.8
	6.05	0.90	0.48	0.43	0.04	0.06	0.03	3.1
	5.15	0.90	0.46	0.41	0.02	0.03	0.01	1.5
	4.25	1.00	0.45	0.41	0.02	0.03	0.01	1.4
	3.35	0.90	0.35	0.32	0.04	0.06	0.02	2.2
right bank	2.45	0.90	0.18	0.12	0.01	0.01	0.00	0.2
	2.00	0.45	0.00	0.00	0.00	0.00	0.00	0.0
Total Q		0.81						

Appendix B1.4. Discharge Measurements

Manual Flow Measurements at East Amaio - Hydro in 2010

Date Monitored: 29-Sep-10 Pressure Transducer (m): 98.163
 Time (24 hr): 11:55 Mean Discharge Q (m³/s): 0.74
 Personnel: Craig Hatt and assistant Error (+/- %): 6.9
 Method: Velocity - area with Swoffer
 Propeller: 2"
 Indicator constant: 602
 Calibration constant: 426

Measurement 1

Notes
right bank

Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m ³ /s)	% of Total Q
21.40	0.00	0.00	0.00	0.00	n/a	0.00	0.0
20.80	0.60	0.32	0.19	0.01	n/a	0.00	0.3
20.20	0.60	0.32	0.19	0.01	n/a	0.00	0.3
19.60	0.60	0.35	0.21	0.09	n/a	0.02	2.6
19.00	0.60	0.40	0.24	0.10	n/a	0.02	3.4
18.40	0.60	0.41	0.25	0.10	n/a	0.02	3.4
17.80	0.60	0.37	0.22	0.20	n/a	0.04	6.2
17.20	0.60	0.50	0.32	0.22	n/a	0.07	10.0
16.50	0.70	0.20	0.12	0.35	n/a	0.04	5.9
16.00	0.50	0.15	0.08	0.39	n/a	0.03	4.5
15.40	0.60	0.45	0.27	0.26	n/a	0.07	9.8
14.80	0.60	0.32	0.19	0.24	n/a	0.05	6.4
14.20	0.60	0.27	0.16	0.24	n/a	0.04	5.4
13.60	0.60	0.28	0.17	0.32	n/a	0.05	7.5
13.00	0.60	0.27	0.16	0.36	n/a	0.06	8.1
12.40	0.60	0.22	0.13	0.28	n/a	0.04	5.2
11.80	0.60	0.19	0.11	0.22	n/a	0.03	3.5
11.20	0.60	0.23	0.14	0.25	n/a	0.03	4.8
10.60	1.00	0.21	0.13	0.12	n/a	0.02	2.1
10.00	0.60	0.13	0.08	0.19	n/a	0.01	2.1
9.40	0.60	0.23	0.14	0.13	n/a	0.02	2.5
8.80	0.60	0.20	0.12	0.11	n/a	0.01	1.8
8.20	0.60	0.20	0.12	0.09	n/a	0.01	1.5
7.60	0.60	0.21	0.13	0.08	n/a	0.01	1.4
7.00	0.60	0.10	0.06	0.09	n/a	0.01	0.8
6.40	0.60	0.18	0.11	0.03	n/a	0.00	0.5
5.80	0.60	0.25	0.15	0.00	n/a	0.00	0.0
5.20	0.60	0.17	0.10	0.00	n/a	0.00	0.0
4.60	0.60	0.24	0.17	0.00	n/a	0.00	0.0
3.80	0.80	0.11	0.08	0.00	n/a	0.00	0.0
3.20	0.60	0.00	0.00	0.00	n/a	0.00	0.0

left bank

Total Q

0.72

Note: Pressure transducer readings are referenced to site-specific arbitrary datum

Measurement 2

Notes
left bank

Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m ³ /s)	% of Total Q
3.20	0.00	0.00	0.00	0.00	n/a	0.00	0.0
3.50	0.30	0.07	0.03	0.00	n/a	0.00	0.0
4.10	0.60	0.19	0.11	0.00	n/a	0.00	0.0
4.70	0.60	0.22	0.13	0.01	n/a	0.00	0.2
5.30	0.60	0.34	0.20	0.00	n/a	0.00	0.0
5.90	0.60	0.30	0.18	0.01	n/a	0.00	0.2
6.50	0.60	0.12	0.07	0.09	n/a	0.01	0.8
7.10	0.60	0.15	0.09	0.12	n/a	0.01	1.4
7.70	0.60	0.20	0.12	0.04	n/a	0.00	0.6
8.30	0.60	0.24	0.14	0.04	n/a	0.01	0.8
8.90	0.60	0.20	0.12	0.02	n/a	0.00	0.3
9.50	0.60	0.22	0.13	0.10	n/a	0.01	1.7
10.10	0.60	0.24	0.14	0.05	n/a	0.01	0.9
10.70	0.60	0.27	0.16	0.17	n/a	0.03	3.6
11.30	0.60	0.25	0.15	0.21	n/a	0.03	4.1
11.90	0.60	0.20	0.12	0.22	n/a	0.03	3.4
12.50	0.60	0.20	0.12	0.35	n/a	0.04	5.5
13.10	0.60	0.28	0.17	0.44	n/a	0.07	9.6
13.70	1.00	0.30	0.18	0.36	n/a	0.06	8.4
14.30	0.60	0.25	0.15	0.36	n/a	0.05	7.0
14.90	0.60	0.32	0.19	0.35	n/a	0.07	8.8
15.50	0.60	0.41	0.25	0.15	n/a	0.04	4.8
16.10	0.60	0.15	0.09	0.36	n/a	0.03	4.2
16.70	0.60	0.20	0.12	0.35	n/a	0.04	5.5
17.30	0.60	0.35	0.21	0.26	n/a	0.05	7.1
17.90	0.60	0.40	0.24	0.25	n/a	0.06	7.8
18.50	0.60	0.40	0.24	0.17	n/a	0.04	5.3
19.10	0.60	0.39	0.23	0.14	n/a	0.03	4.3
19.70	0.60	0.37	0.22	0.06	n/a	0.01	1.7
20.30	0.60	0.19	0.11	0.10	n/a	0.01	1.5
20.90	0.60	0.33	0.18	0.01	n/a	0.00	0.2
21.40	0.50	0.00	0.00	0.00	n/a	0.00	0.0

right bank

Total Q

0.77

Appendix B1.5. Discharge Measurements

Manual Flow Measurements at East Tail - Hydro in 2010

Date Monitored:	09-Jun-10	Pressure Transducer (m):	99.666
Time (24 hr):	11:00	Mean Discharge Q (m ³ /s):	0.35
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	13.8
Method:	Velocity - area with Swoffer		
Propeller:	2"		
Indicator constant:	614		
Calibration constant:	426		

Notes
right bank

Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m ³ /s)	% of Total Q
1.80	0.00	0.00	0.00	0.00	n/a	0.00	0.0
1.95	0.15	0.21	0.03	0.06	n/a	0.00	0.6
2.10	0.15	0.23	0.03	0.15	n/a	0.01	1.6
2.25	0.15	0.23	0.03	0.19	n/a	0.01	2.0
2.40	0.15	0.26	0.04	0.36	n/a	0.01	4.3
2.55	0.15	0.27	0.04	0.32	n/a	0.01	4.0
2.70	0.15	0.25	0.04	0.37	n/a	0.01	4.2
2.85	0.15	0.28	0.04	0.64	n/a	0.03	8.2
3.00	0.15	0.29	0.04	1.00	n/a	0.04	13.3
3.15	0.15	0.29	0.04	1.00	n/a	0.04	13.3
3.30	0.15	0.31	0.05	0.92	n/a	0.04	13.7
3.45	0.15	0.27	0.04	0.79	n/a	0.03	9.8
3.60	0.15	0.26	0.04	0.52	n/a	0.02	6.2
3.75	0.15	0.26	0.04	0.47	n/a	0.02	5.2
3.90	0.15	0.24	0.04	0.36	n/a	0.01	4.1
4.05	0.15	0.25	0.04	0.38	n/a	0.01	4.2
4.20	0.15	0.24	0.04	0.13	n/a	0.00	1.4
4.35	0.15	0.24	0.04	0.20	n/a	0.01	2.1
4.50	0.15	0.23	0.03	0.15	n/a	0.00	1.5
4.65	0.15	0.22	0.03	0.11	n/a	0.00	1.1
4.80	0.15	0.21	0.04	0.02	n/a	0.00	0.0
5.00	0.20	0.00	0.00	0.00	n/a	0.00	0.0

Total Q

0.33

Date Monitored:	17-Jun-10	Pressure Transducer (m):	99.627
Time (24 hr):	15:43	Discharge Q (m ³ /s):	0.22
Personnel:	C. Hatt, X. Pinto	Error (+/- %)	n/a
Method:	Velocity - area with Swoffer		
Propeller:	3"		
Indicator constant:	611		
Calibration constant:	426		

Notes
right bank
CF
0.1

Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m ³ /s)	% of Total Q
3.40	0.00	0.00	0.00	0.00	0.00	0.00	0.0
3.60	0.20	0.11	0.02	0.02	0.03	0.00	0.3
3.80	0.20	0.20	0.04	0.04	0.06	0.00	1.1
4.00	0.20	0.24	0.05	0.03	0.04	0.00	1.0
4.20	0.20	0.28	0.06	0.04	0.06	0.00	1.5
4.40	0.20	0.30	0.06	0.03	0.04	0.00	1.2
4.60	0.20	0.33	0.07	0.06	0.09	0.01	2.6
4.80	0.20	0.37	0.07	0.07	0.10	0.01	3.5
5.00	0.20	0.42	0.08	0.11	0.16	0.01	6.2
5.20	0.20	0.46	0.09	0.11	0.16	0.01	6.7
5.40	0.20	0.52	0.10	0.13	0.19	0.02	9.0
5.60	0.20	0.50	0.10	0.15	0.22	0.02	10.0
5.80	0.20	0.52	0.10	0.13	0.19	0.02	9.0
6.00	0.20	0.43	0.09	0.17	0.24	0.02	9.7
6.20	0.20	0.39	0.08	0.21	0.30	0.02	10.9
6.40	0.20	0.25	0.05	0.23	0.33	0.02	7.7
6.60	0.20	0.25	0.05	0.22	0.32	0.02	7.3
6.80	0.20	0.21	0.04	0.17	0.24	0.01	4.8
7.00	0.20	0.20	0.04	0.09	0.13	0.01	2.4
7.20	0.20	0.15	0.03	0.16	0.23	0.01	3.2
7.40	0.20	0.12	0.02	0.12	0.17	0.00	1.9
7.60	0.20	0.00	0.00	0.00	0.00	0.00	0.0

Total Q

0.22

Measurement 2

Notes
left bank

Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m ³ /s)	% of Total Q
5.00	0.00	0.00	0.00	0.00	n/a	0.00	0.0
4.90	0.10	0.20	0.03	0.05	n/a	0.00	0.3
4.75	0.15	0.20	0.03	0.09	n/a	0.00	0.7
4.60	0.15	0.22	0.03	0.15	n/a	0.00	1.3
4.45	0.15	0.23	0.03	0.25	n/a	0.01	2.3
4.30	0.15	0.24	0.04	0.17	n/a	0.01	1.6
4.15	0.15	0.26	0.04	0.27	n/a	0.01	2.8
4.00	0.15	0.27	0.04	0.48	n/a	0.02	5.2
3.85	0.15	0.25	0.04	0.49	n/a	0.02	4.9
3.70	0.15	0.26	0.04	0.51	n/a	0.02	5.3
3.55	0.15	0.27	0.04	0.67	n/a	0.03	7.2
3.40	0.15	0.29	0.04	0.86	n/a	0.04	9.9
3.25	0.15	0.32	0.05	0.89	n/a	0.04	11.4
3.10	0.15	0.30	0.05	1.02	n/a	0.05	12.2
2.95	0.15	0.28	0.04	0.99	n/a	0.04	11.1
2.80	0.15	0.28	0.04	0.67	n/a	0.03	7.5
2.65	0.15	0.26	0.04	0.47	n/a	0.02	4.9
2.50	0.15	0.26	0.04	0.53	n/a	0.02	5.5
2.35	0.15	0.26	0.04	0.44	n/a	0.02	4.6
2.20	0.15	0.22	0.03	0.05	n/a	0.00	0.4
2.05	0.15	0.19	0.03	0.11	n/a	0.00	0.8
1.90	0.15	0.20	0.03	0.02	n/a	0.00	0.1
1.80	0.10	0.00	0.00	0.00	n/a	0.00	0.0

Total Q

0.38

Measurement 2

Only one measurement taken

Appendix B1.5. Discharge Measurements

Manual Flow Measurements at East Tail - Hydro in 2010

Date Monitored: 19-Jul-10
 Time (24 hr): 13:30
 Personnel: C. Hatt and assistant
 Method: Velocity - area with Swoffer
 Propeller: 3"
 Indicator constant: 610
 Calibration constant: 426

Pressure Transducer (m): 99.500
 Discharge Q (m³/s): 0.02
 Error (+/- %): n/a

		Measurement 1						
Notes	Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m ³ /s)	% of Total Q
right bank	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.0
	0.70	0.10	0.05	0.01	0.36	0.52	0.00	13.3
	0.80	0.10	0.04	0.00	0.12	0.17	0.00	3.5
	0.90	0.10	0.04	0.00	0.32	0.46	0.00	9.5
	1.00	0.10	0.05	0.01	0.55	0.79	0.00	20.3
	1.10	0.10	0.04	0.00	0.54	0.77	0.00	16.0
	1.20	0.10	0.05	0.01	0.62	0.89	0.00	22.9
	1.30	0.10	0.04	0.00	0.28	0.40	0.00	8.3
	1.40	0.10	0.04	0.00	0.28	0.40	0.00	6.2
	1.45	0.05	0.00	0.00	0.00	0.00	0.00	0.0
left bank								
Total Q		0.02						

Date Monitored: 17-Aug-10
 Time (24 hr): 15:30 (estimate)
 Personnel: C. Hatt and assistant
 Method: Velocity - area with Swoffer
 Propeller: 2"
 Indicator constant: 614
 Calibration constant: 426

Pressure Transducer (m): 99.416
 Discharge Q (m³/s): 0.0024
 Error (+/- %): n/a

		Measurement 1						
Notes	Station (m)	Distance (m)	Depth (m)	Area (m ²)	Velocity (m/s)	Calibrated Velocity (m/s)	Q (m ³ /s)	% of Total Q
right bank	2.2	0.00	0	0.000	0	n/a	0.0000	0.0
	2.24	0.04	0.03	0.001	0.00	n/a	0.0000	0.0
	2.28	0.04	0.04	0.002	0.00	n/a	0.0000	0.0
	2.32	0.04	0.05	0.002	0.00	n/a	0.0000	0.0
	2.36	0.04	0.05	0.002	0.00	n/a	0.0000	0.0
	2.4	0.04	0.05	0.002	0.00	n/a	0.0000	0.0
	2.44	0.04	0.05	0.002	0.00	n/a	0.0000	0.0
	2.48	0.04	0.06	0.002	0.00	n/a	0.0000	0.0
	2.52	0.04	0.05	0.002	0.29	n/a	0.0006	23.7
	2.56	0.04	0.05	0.002	0.28	n/a	0.0006	22.9
left bank	2.6	0.04	0.04	0.002	0.20	n/a	0.0003	13.1
	2.64	0.04	0.05	0.002	0.35	n/a	0.0007	28.6
	2.68	0.04	0.04	0.002	0.18	n/a	0.0003	11.8
	2.72	0.04	0.03	0.001	0.00	n/a	0.0000	0.0
	2.76	0.04	0.04	0.002	0.00	n/a	0.0000	0.0
	2.8	0.04	0.04	0.002	0.00	n/a	0.0000	0.0
	2.84	0.04	0.04	0.002	0.00	n/a	0.0000	0.0
	2.9	0.06	0	0.000	0.00	n/a	0.0000	0.0
Total Q		0.002						

Note: Pressure transducer readings are referenced to site-specific arbitrary datum
 n/a - not applicable

Measurement 2

Only one measurement taken

Measurement 2

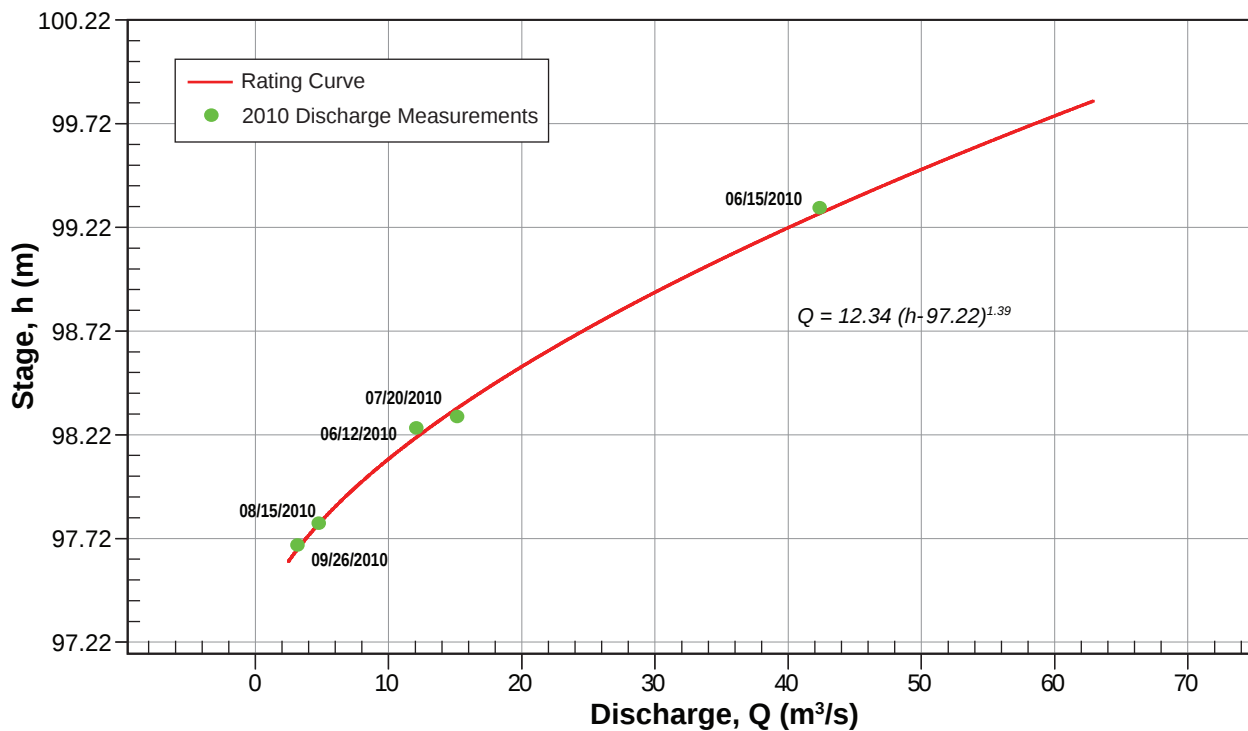
Only one measurement taken

Appendix B2

Rating Curves



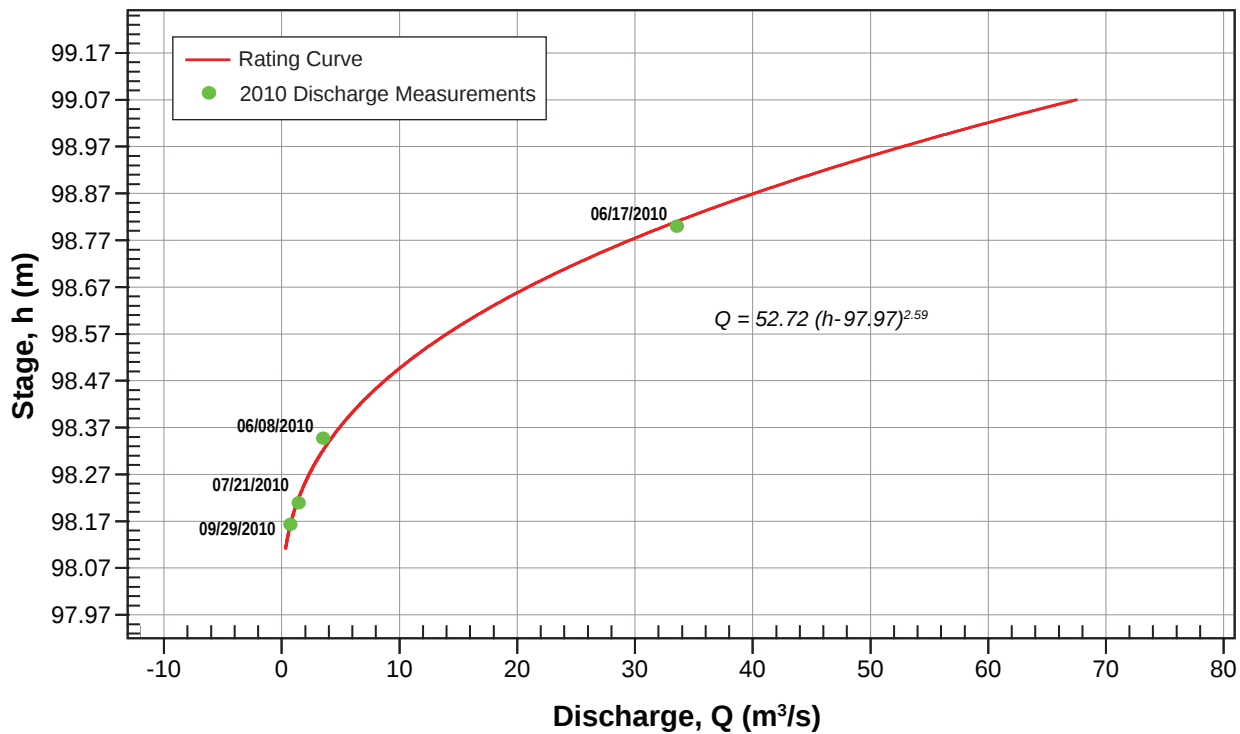
Photograph taken facing downstream (west) from the hydrometric station Aimao Out-Hydro, located at the outflow from Aimaokatalok Lake. Note how the flow is confined to the main channel by bedrock outcrops located along both banks. Further downstream, the control section can be observed where water becomes more turbulent. The lake outflow flows into the Koignuk River shown on the background of the photograph. Photograph taken on July 20, 2010.



Note: Pressure transducer stage readings are referenced to datum.



Photograph taken facing upstream (south east) from the hydrometric station East Aimao Hydro, located on a relatively narrow section along the banks of the eastern tributary of Aimaokatalok Lake. Note how the flow is confined to the main channel during low to medium flow conditions. During high flow conditions the channel overflows into grass-covered flood terraces that can be observed alongside the right bank on the background in the photograph. Photograph taken on July 20, 2010.

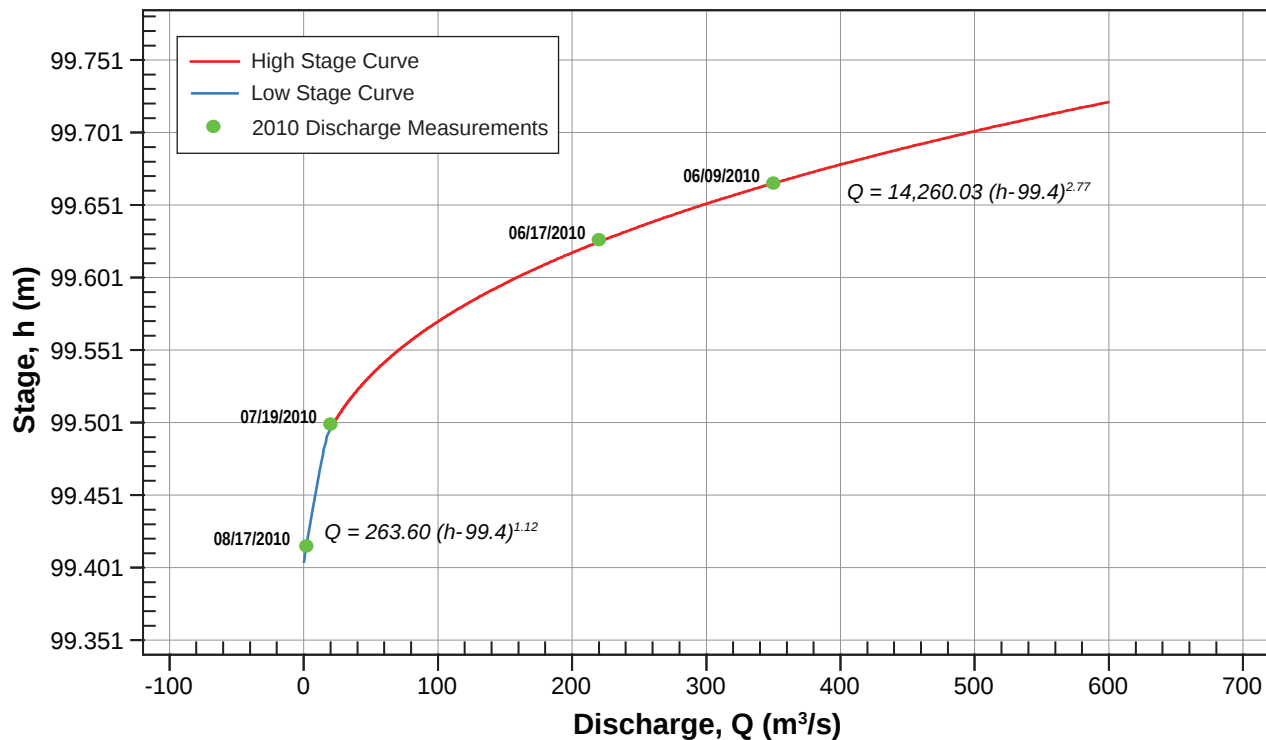


Note: pressure transducer stage readings are referenced to datum.



On the left: aerial oblique view of the hydrometric station East Tail-Hydro, facing downstream (north west). Note on the foreground of the photograph the hydrometric station located alongside the right bank. The area is strewn by a series of small pools interconnected by a common stream that ultimately drains into the eastern tributary of Aimaokatalok Lake. The tributary is shown in the background of the photograph. Photograph taken on July 21, 2010.

On the right: photograph taken facing downstream (north west) from the hydrometric station East Tail - Hydro. Note how the flow is well confined by the main channel. During low flow conditions the flow between the pools almost ceases. Photograph taken on June 9, 2010.



Note: pressure transducer stage readings are referenced to datum.

Appendix B3

Summary of Survey Information

Appendix B-3. Summary of Survey Control Points Used at the Hydrometric Stations

Station ID	Survey Point	Elevation (m)	Date	Notes
<i>Aimao Out - Hydro</i>	Benchmark 71	100.000		site-specific arbitrary elevation
	Benchmark 70	100.073		
	Pressure transducer	97.027	20-Jul-10	
<i>Aimao In - Hydro</i>	Benchmark 72	100.000		site-specific arbitrary elevation
	Benchmark 73	100.197		
	Benchmark 74	101.105		
	Pressure transducer	98.683	08-Jun-10	
<i>Trout - Hydro</i>	Benchmark 81	100.000		site-specific arbitrary elevation
	Benchmark 80	99.511		
	Benchmark 10	102.782		
	Pressure transducer	94.025	19-Jul-10	
<i>East Aimao - Hydro</i>	Benchmark 75	100.000		site-specific arbitrary elevation
	Benchmark 76	99.959		
	Benchmark 21	102.760		
	Pressure transducer	97.661	21-Jul-10	
<i>East Tail - Hydro</i>	Benchmark 77	100.000		site-specific arbitrary elevation
	Benchmark 78	100.876		
	Benchmark 79	101.574		
	Pressure transducer	97.858	23-Jul-10	

Appendix B4

Lake Water Levels

Table B4. Summary of Daily Mean Water Level H [m] at Aimaokatalok Lake

Date	H	Date	H	Date	H	Date	H	Date	H	Date	H
1-Jan		1-Mar		1-May		1-Jul	4.64	1-Sep	3.26	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	4.60	2-Sep	3.26	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	4.55	3-Sep	3.25	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	4.50	4-Sep	3.25	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	4.45	5-Sep	3.25	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	4.40	6-Sep	3.26	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	4.36	7-Sep	3.26	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	4.31	8-Sep	3.26	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	4.27	9-Sep	3.26	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	4.22	10-Sep	3.26	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	4.18	11-Sep	3.26	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	4.14	12-Sep	3.26	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	4.10	13-Sep	3.26	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	4.07	14-Sep	3.26	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	4.03	15-Sep	3.27	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	3.99	16-Sep	3.27	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	3.96	17-Sep	3.28	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	3.93	18-Sep	3.28	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	3.90	19-Sep	3.28	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	3.87	20-Sep	3.28	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	3.85	21-Sep	3.28	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	3.82	22-Sep	3.28	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	3.79	23-Sep	3.28	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	3.76	24-Sep	3.28	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	3.74	25-Sep	3.28	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	3.71	26-Sep	3.28	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	3.68	27-Sep		27-Nov	
28-Jan		28-Mar		28-May		28-Jul	3.65	28-Sep		28-Nov	
29-Jan		29-Mar		29-May		29-Jul	3.63	29-Sep		29-Nov	
30-Jan		30-Mar		30-May		30-Jul	3.61	30-Sep		30-Nov	
31-Jan		31-Mar		31-May		31-Jul	3.59	1-Oct		1-Dec	
1-Feb		1-Apr		1-Jun	2.835	1-Aug	3.57	2-Oct		2-Dec	
2-Feb		2-Apr		2-Jun	2.838	2-Aug	3.55	3-Oct		3-Dec	
3-Feb		3-Apr		3-Jun	2.869	3-Aug	3.53	4-Oct		4-Dec	
4-Feb		4-Apr		4-Jun	2.977	4-Aug	3.51	5-Oct		5-Dec	
5-Feb		5-Apr		5-Jun	3.064	5-Aug	3.50	6-Oct		6-Dec	
6-Feb		6-Apr		6-Jun	3.128	6-Aug	3.48	7-Oct		7-Dec	
7-Feb		7-Apr		7-Jun	3.170	7-Aug	3.47	8-Oct		8-Dec	
8-Feb		8-Apr		8-Jun	3.196	8-Aug	3.46	9-Oct		9-Dec	
9-Feb		9-Apr		9-Jun	3.230	9-Aug	3.44	10-Oct		10-Dec	
10-Feb		10-Apr		10-Jun	3.315	10-Aug	3.43	11-Oct		11-Dec	
11-Feb		11-Apr		11-Jun	3.515	11-Aug	3.42	12-Oct		12-Dec	
12-Feb		12-Apr		12-Jun	3.798	12-Aug	3.41	13-Oct		13-Dec	
13-Feb		13-Apr		13-Jun	4.137	13-Aug	3.40	14-Oct		14-Dec	
14-Feb		14-Apr		14-Jun	4.538	14-Aug	3.39	15-Oct		15-Dec	
15-Feb		15-Apr		15-Jun	4.841	15-Aug	3.38	16-Oct		16-Dec	
16-Feb		16-Apr		16-Jun	5.07	16-Aug	3.36	17-Oct		17-Dec	
17-Feb		17-Apr		17-Jun	5.21	17-Aug	3.35	18-Oct		18-Dec	
18-Feb		18-Apr		18-Jun	5.28	18-Aug	3.34	19-Oct		19-Dec	
19-Feb		19-Apr		19-Jun	5.31	19-Aug	3.33	20-Oct		20-Dec	
20-Feb		20-Apr		20-Jun	5.29	20-Aug	3.33	21-Oct		21-Dec	
21-Feb		21-Apr		21-Jun	5.26	21-Aug	3.32	22-Oct		22-Dec	
22-Feb		22-Apr		22-Jun	5.21	22-Aug	3.32	23-Oct		23-Dec	
23-Feb		23-Apr		23-Jun	5.15	23-Aug	3.31	24-Oct		24-Dec	
24-Feb		24-Apr		24-Jun	5.09	24-Aug	3.31	25-Oct		25-Dec	
25-Feb		25-Apr		25-Jun	5.02	25-Aug	3.30	26-Oct		26-Dec	
26-Feb		26-Apr		26-Jun	4.96	26-Aug	3.29	27-Oct		27-Dec	
27-Feb		27-Apr		27-Jun	4.89	27-Aug	3.29	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	4.82	28-Aug	3.28	29-Oct		29-Dec	
		29-Apr		29-Jun	4.76	29-Aug	3.28	30-Oct		30-Dec	
		30-Apr		30-Jun	4.70	30-Aug	3.27	31-Oct		31-Dec	
						31-Aug	3.27				

Note: Water level is referenced to pressure transducer readings (m)
Italicized values were estimated

Appendix B5

Hydrographs

Table B5.1. Summary of Daily Mean Discharge [Q] at Aimao Out - Hydro

Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)
1-Jan		1-Mar		1-May	0.766	1-Jul	35.741	1-Sep	3.168	1-Nov	1.771
2-Jan		2-Mar		2-May	0.794	2-Jul	34.177	2-Sep	3.109	2-Nov	1.740
3-Jan		3-Mar		3-May	0.822	3-Jul	32.617	3-Sep	3.049	3-Nov	1.709
4-Jan		4-Mar		4-May	0.851	4-Jul	31.022	4-Sep	3.071	4-Nov	1.679
5-Jan		5-Mar		5-May	0.882	5-Jul	29.425	5-Sep	3.156	5-Nov	1.650
6-Jan		6-Mar		6-May	0.913	6-Jul	27.973	6-Sep	3.159	6-Nov	1.621
7-Jan		7-Mar		7-May	0.945	7-Jul	26.576	7-Sep	3.196	7-Nov	1.592
8-Jan		8-Mar		8-May	0.979	8-Jul	25.263	8-Sep	3.223	8-Nov	1.564
9-Jan		9-Mar		9-May	1.014	9-Jul	23.983	9-Sep	3.214	9-Nov	1.537
10-Jan		10-Mar		10-May	1.050	10-Jul	22.815	10-Sep	3.199	10-Nov	1.510
11-Jan		11-Mar		11-May	1.087	11-Jul	21.715	11-Sep	3.189	11-Nov	1.483
12-Jan		12-Mar		12-May	1.126	12-Jul	20.630	12-Sep	3.191	12-Nov	1.457
13-Jan		13-Mar		13-May	1.166	13-Jul	19.603	13-Sep	3.206	13-Nov	1.431
14-Jan		14-Mar		14-May	1.208	14-Jul	18.574	14-Sep	3.274	14-Nov	1.406
15-Jan		15-Mar		15-May	1.251	15-Jul	17.667	15-Sep	3.323	15-Nov	1.382
16-Jan		16-Mar		16-May	1.295	16-Jul	16.844	16-Sep	3.394	16-Nov	1.357
17-Jan		17-Mar		17-May	1.341	17-Jul	16.123	17-Sep	3.413	17-Nov	1.333
18-Jan		18-Mar		18-May	1.389	18-Jul	15.374	18-Sep	3.433	18-Nov	1.310
19-Jan		19-Mar		19-May	1.438	19-Jul	14.654	19-Sep	3.446	19-Nov	1.287
20-Jan		20-Mar		20-May	1.490	20-Jul	13.997	20-Sep	3.461	20-Nov	1.264
21-Jan		21-Mar		21-May	1.543	21-Jul	13.308	21-Sep	3.459	21-Nov	1.242
22-Jan		22-Mar		22-May	1.598	22-Jul	12.674	22-Sep	3.438	22-Nov	1.220
23-Jan		23-Mar		23-May	1.654	23-Jul	12.062	23-Sep	3.427	23-Nov	1.199
24-Jan		24-Mar		24-May	1.713	24-Jul	11.563	24-Sep	3.435	24-Nov	1.178
25-Jan		25-Mar		25-May	1.774	25-Jul	10.962	25-Sep	3.415	25-Nov	1.157
26-Jan		26-Mar		26-May	1.837	26-Jul	10.363	26-Sep	3.355	26-Nov	1.137
27-Jan		27-Mar		27-May	1.903	27-Jul	9.834	27-Sep	3.296	27-Nov	1.117
28-Jan		28-Mar		28-May	1.971	28-Jul	9.344	28-Sep	3.238	28-Nov	1.097
29-Jan		29-Mar		29-May	2.041	29-Jul	8.887	29-Sep	3.181	29-Nov	1.078
30-Jan		30-Mar		30-May	2.113	30-Jul	8.467	30-Sep	3.125	30-Nov	1.059
31-Jan		31-Mar		31-May	2.189	31-Jul	8.090	1-Oct	3.070	1-Dec	1.040
1-Feb		1-Apr		1-Jun	2.266	1-Aug	7.722	2-Oct	3.016	2-Dec	1.022
2-Feb		2-Apr		2-Jun	2.347	2-Aug	7.398	3-Oct	2.963	3-Dec	1.004
3-Feb		3-Apr		3-Jun	2.431	3-Aug	7.138	4-Oct	2.911	4-Dec	0.986
4-Feb		4-Apr		4-Jun	2.517	4-Aug	6.853	5-Oct	2.860	5-Dec	0.969
5-Feb		5-Apr		5-Jun	2.607	5-Aug	6.588	6-Oct	2.809	6-Dec	0.952
6-Feb		6-Apr		6-Jun	2.700	6-Aug	6.361	7-Oct	2.760	7-Dec	0.935
7-Feb		7-Apr		7-Jun	2.895	7-Aug	6.125	8-Oct	2.711	8-Dec	0.919
8-Feb		8-Apr		8-Jun	3.217	8-Aug	5.906	9-Oct	2.664	9-Dec	0.902
9-Feb		9-Apr		9-Jun	3.885	9-Aug	5.714	10-Oct	2.617	10-Dec	0.887
10-Feb		10-Apr		10-Jun	5.908	10-Aug	5.514	11-Oct	2.571	11-Dec	0.871
11-Feb		11-Apr		11-Jun	10.341	11-Aug	5.365	12-Oct	2.526	12-Dec	0.856
12-Feb		12-Apr		12-Jun	16.975	12-Aug	5.181	13-Oct	2.481	13-Dec	0.841
13-Feb		13-Apr		13-Jun	27.068	13-Aug	5.001	14-Oct	2.438	14-Dec	0.826
14-Feb		14-Apr		14-Jun	38.630	14-Aug	4.843	15-Oct	2.395	15-Dec	0.811
15-Feb		15-Apr		15-Jun	49.385	15-Aug	4.652	16-Oct	2.353	16-Dec	0.797
16-Feb		16-Apr		16-Jun	56.477	16-Aug	4.466	17-Oct	2.311	17-Dec	0.783
17-Feb		17-Apr		17-Jun	60.389	17-Aug	4.322	18-Oct	2.271	18-Dec	0.769
18-Feb		18-Apr		18-Jun	62.096	18-Aug	4.177	19-Oct	2.231	19-Dec	0.756
19-Feb		19-Apr		19-Jun	62.188	19-Aug	4.087	20-Oct	2.191	20-Dec	0.742
20-Feb		20-Apr		20-Jun	61.119	20-Aug	4.042	21-Oct	2.153	21-Dec	0.729
21-Feb		21-Apr		21-Jun	59.240	21-Aug	3.961	22-Oct	2.115	22-Dec	0.716
22-Feb		22-Apr		22-Jun	56.888	22-Aug	3.887	23-Oct	2.078	23-Dec	0.704
23-Feb		23-Apr		23-Jun	54.384	23-Aug	3.812	24-Oct	2.041	24-Dec	0.692
24-Feb		24-Apr	0.600	24-Jun	51.778	24-Aug	3.731	25-Oct	2.005	25-Dec	0.679
25-Feb		25-Apr	0.621	25-Jun	49.159	25-Aug	3.653	26-Oct	1.970	26-Dec	0.667
26-Feb		26-Apr	0.643	26-Jun	46.649	26-Aug	3.560	27-Oct	1.935	27-Dec	0.656
27-Feb		27-Apr	0.666	27-Jun	44.189	27-Aug	3.482	28-Oct	1.901	28-Dec	0.644
28-Feb		28-Apr	0.690	28-Jun	41.868	28-Aug	3.409	29-Oct	1.868	29-Dec	0.633
29-Feb		29-Apr	0.715	29-Jun	39.615	29-Aug	3.349	30-Oct	1.835	30-Dec	0.622
		30-Apr	0.740	30-Jun	37.518	30-Aug	3.287	31-Oct	1.803	31-Dec	0.600
						31-Aug	3.229				

Note: Estimated values are italicized

Table B5.2. Summary of Daily Mean Discharge [Q] at East Aimag - Hydro

Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)
1-Jan		1-Mar		1-May		1-Jul	4.750	1-Sep	0.397	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	4.315	2-Sep	0.390	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	3.861	3-Sep	0.494	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	3.521	4-Sep	0.940	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	3.175	5-Sep	1.267	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	2.880	6-Sep	1.170	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	2.647	7-Sep	1.058	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	2.465	8-Sep	0.991	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	2.281	9-Sep	0.945	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	2.041	10-Sep	0.917	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	1.947	11-Sep	0.902	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	1.821	12-Sep	0.936	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	1.644	13-Sep	1.305	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	1.525	14-Sep	1.700	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	1.489	15-Sep	1.462	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	1.710	16-Sep	1.308	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	1.687	17-Sep	1.230	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	1.477	18-Sep	1.153	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	1.317	19-Sep	1.076	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	1.206	20-Sep	1.004	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	1.103	21-Sep	0.957	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	1.022	22-Sep	0.924	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	0.992	23-Sep	0.894	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	0.841	24-Sep	0.870	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	0.813	25-Sep	0.838	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	0.780	26-Sep	0.812	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	0.715	27-Sep	0.785	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	0.673	28-Sep	0.759	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	0.617	29-Sep	0.733	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	0.677	30-Sep	0.707	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	0.697	1-Oct	0.681	1-Dec	
1-Feb		1-Apr		1-Jun	0.000	1-Aug	0.759	2-Oct	0.655	2-Dec	
2-Feb		2-Apr		2-Jun	0.000	2-Aug	0.890	3-Oct	0.628	3-Dec	
3-Feb		3-Apr		3-Jun	0.000	3-Aug	0.886	4-Oct	0.602	4-Dec	
4-Feb		4-Apr		4-Jun	0.001	4-Aug	0.786	5-Oct	0.576	5-Dec	
5-Feb		5-Apr		5-Jun	0.008	5-Aug	0.695	6-Oct	0.550	6-Dec	
6-Feb		6-Apr		6-Jun	0.073	6-Aug	0.634	7-Oct	0.524	7-Dec	
7-Feb		7-Apr		7-Jun	6.396	7-Aug	0.583	8-Oct	0.497	8-Dec	
8-Feb		8-Apr		8-Jun	10.357	8-Aug	0.544	9-Oct	0.471	9-Dec	
9-Feb		9-Apr		9-Jun	20.181	9-Aug	0.537	10-Oct	0.445	10-Dec	
10-Feb		10-Apr		10-Jun	35.870	10-Aug	0.536	11-Oct	0.419	11-Dec	
11-Feb		11-Apr		11-Jun	47.825	11-Aug	0.589	12-Oct	0.393	12-Dec	
12-Feb		12-Apr		12-Jun	60.297	12-Aug	0.590	13-Oct	0.367	13-Dec	
13-Feb		13-Apr		13-Jun	55.501	13-Aug	0.554	14-Oct	0.340	14-Dec	
14-Feb		14-Apr		14-Jun	43.838	14-Aug	0.497	15-Oct	0.314	15-Dec	
15-Feb		15-Apr		15-Jun	35.029	15-Aug	0.456	16-Oct	0.288	16-Dec	
16-Feb		16-Apr		16-Jun	27.046	16-Aug	0.428	17-Oct	0.262	17-Dec	
17-Feb		17-Apr		17-Jun	23.907	17-Aug	0.398	18-Oct	0.236	18-Dec	
18-Feb		18-Apr		18-Jun	20.482	18-Aug	0.420	19-Oct	0.209	19-Dec	
19-Feb		19-Apr		19-Jun	18.278	19-Aug	0.515	20-Oct	0.183	20-Dec	
20-Feb		20-Apr		20-Jun	14.594	20-Aug	0.565	21-Oct	0.157	21-Dec	
21-Feb		21-Apr		21-Jun	13.666	21-Aug	0.550	22-Oct	0.131	22-Dec	
22-Feb		22-Apr		22-Jun	12.303	22-Aug	0.523	23-Oct	0.105	23-Dec	
23-Feb		23-Apr		23-Jun	10.194	23-Aug	0.504	24-Oct	0.079	24-Dec	
24-Feb		24-Apr		24-Jun	8.834	24-Aug	0.500	25-Oct	0.052	25-Dec	
25-Feb		25-Apr		25-Jun	7.766	25-Aug	0.493	26-Oct	0.026	26-Dec	
26-Feb		26-Apr		26-Jun	6.832	26-Aug	0.492	27-Oct	0.000	27-Dec	
27-Feb		27-Apr		27-Jun	6.011	27-Aug	0.476	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	5.354	28-Aug	0.464	29-Oct		29-Dec	
29-Feb		29-Apr		29-Jun	4.819	29-Aug	0.452	30-Oct		30-Dec	
		30-Apr		30-Jun	4.591	30-Aug	0.431	31-Oct		31-Dec	
						31-Aug	0.420				

Note: Estimated values are italicized

Table B5.3. Summary of Daily Mean Discharge [Q] at East Tail - Hydro

Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)	Date	Q (m3/s)
1-Jan		1-Mar		1-May		1-Jul	0.016	1-Sep	0.004	1-Nov	
2-Jan		2-Mar		2-May		2-Jul	0.023	2-Sep	0.004	2-Nov	
3-Jan		3-Mar		3-May		3-Jul	0.022	3-Sep	0.004	3-Nov	
4-Jan		4-Mar		4-May		4-Jul	0.017	4-Sep	0.008	4-Nov	
5-Jan		5-Mar		5-May		5-Jul	0.015	5-Sep	0.019	5-Nov	
6-Jan		6-Mar		6-May		6-Jul	0.014	6-Sep	0.019	6-Nov	
7-Jan		7-Mar		7-May		7-Jul	0.012	7-Sep	0.015	7-Nov	
8-Jan		8-Mar		8-May		8-Jul	0.011	8-Sep	0.014	8-Nov	
9-Jan		9-Mar		9-May		9-Jul	0.010	9-Sep	0.013	9-Nov	
10-Jan		10-Mar		10-May		10-Jul	0.009	10-Sep	0.011	10-Nov	
11-Jan		11-Mar		11-May		11-Jul	0.009	11-Sep	0.010	11-Nov	
12-Jan		12-Mar		12-May		12-Jul	0.009	12-Sep	0.010	12-Nov	
13-Jan		13-Mar		13-May		13-Jul	0.008	13-Sep	0.010	13-Nov	
14-Jan		14-Mar		14-May		14-Jul	0.007	14-Sep	0.019	14-Nov	
15-Jan		15-Mar		15-May		15-Jul	0.006	15-Sep	0.019	15-Nov	
16-Jan		16-Mar		16-May		16-Jul	0.008	16-Sep	0.017	16-Nov	
17-Jan		17-Mar		17-May		17-Jul	0.028	17-Sep	0.015	17-Nov	
18-Jan		18-Mar		18-May		18-Jul	0.026	18-Sep	0.013	18-Nov	
19-Jan		19-Mar		19-May		19-Jul	0.018	19-Sep	0.011	19-Nov	
20-Jan		20-Mar		20-May		20-Jul	0.016	20-Sep	0.010	20-Nov	
21-Jan		21-Mar		21-May		21-Jul	0.014	21-Sep	0.009	21-Nov	
22-Jan		22-Mar		22-May		22-Jul	0.012	22-Sep	0.007	22-Nov	
23-Jan		23-Mar		23-May		23-Jul	0.011	23-Sep	0.006	23-Nov	
24-Jan		24-Mar		24-May		24-Jul	0.011	24-Sep	0.005	24-Nov	
25-Jan		25-Mar		25-May		25-Jul	0.009	25-Sep	0.004	25-Nov	
26-Jan		26-Mar		26-May		26-Jul	0.008	26-Sep	0.003	26-Nov	
27-Jan		27-Mar		27-May		27-Jul	0.006	27-Sep	0.003	27-Nov	
28-Jan		28-Mar		28-May		28-Jul	0.005	28-Sep	0.003	28-Nov	
29-Jan		29-Mar		29-May		29-Jul	0.004	29-Sep	0.003	29-Nov	
30-Jan		30-Mar		30-May		30-Jul	0.005	30-Sep	0.003	30-Nov	
31-Jan		31-Mar		31-May		31-Jul	0.006	1-Oct	0.003	1-Dec	
1-Feb		1-Apr		1-Jun	0.000	1-Aug	0.008	2-Oct	0.003	2-Dec	
2-Feb		2-Apr		2-Jun	0.000	2-Aug	0.010	3-Oct	0.003	3-Dec	
3-Feb		3-Apr		3-Jun	0.000	3-Aug	0.015	4-Oct	0.002	4-Dec	
4-Feb		4-Apr		4-Jun	0.000	4-Aug	0.014	5-Oct	0.002	5-Dec	
5-Feb		5-Apr		5-Jun	0.000	5-Aug	0.012	6-Oct	0.002	6-Dec	
6-Feb		6-Apr		6-Jun	0.001	6-Aug	0.010	7-Oct	0.002	7-Dec	
7-Feb		7-Apr		7-Jun	0.003	7-Aug	0.008	8-Oct	0.002	8-Dec	
8-Feb		8-Apr		8-Jun	0.010	8-Aug	0.006	9-Oct	0.002	9-Dec	
9-Feb		9-Apr		9-Jun	0.036	9-Aug	0.005	10-Oct	0.002	10-Dec	
10-Feb		10-Apr		10-Jun	0.489	10-Aug	0.004	11-Oct	0.002	11-Dec	
11-Feb		11-Apr		11-Jun	0.466	11-Aug	0.005	12-Oct	0.002	12-Dec	
12-Feb		12-Apr		12-Jun	0.370	12-Aug	0.006	13-Oct	0.002	13-Dec	
13-Feb		13-Apr		13-Jun	0.396	13-Aug	0.005	14-Oct	0.001	14-Dec	
14-Feb		14-Apr		14-Jun	0.339	14-Aug	0.004	15-Oct	0.001	15-Dec	
15-Feb		15-Apr		15-Jun	0.263	15-Aug	0.003	16-Oct	0.001	16-Dec	
16-Feb		16-Apr		16-Jun	0.222	16-Aug	0.002	17-Oct	0.001	17-Dec	
17-Feb		17-Apr		17-Jun	0.193	17-Aug	0.000	18-Oct	0.001	18-Dec	
18-Feb		18-Apr		18-Jun	0.142	18-Aug	0.000	19-Oct	0.001	19-Dec	
19-Feb		19-Apr		19-Jun	0.107	19-Aug	0.002	20-Oct	0.001	20-Dec	
20-Feb		20-Apr		20-Jun	0.083	20-Aug	0.006	21-Oct	0.001	21-Dec	
21-Feb		21-Apr		21-Jun	0.066	21-Aug	0.008	22-Oct	0.001	22-Dec	
22-Feb		22-Apr		22-Jun	0.054	22-Aug	0.008	23-Oct	0.000	23-Dec	
23-Feb		23-Apr		23-Jun	0.044	23-Aug	0.007	24-Oct	0.000	24-Dec	
24-Feb		24-Apr		24-Jun	0.036	24-Aug	0.006	25-Oct	0.000	25-Dec	
25-Feb		25-Apr		25-Jun	0.029	25-Aug	0.006	26-Oct	0.000	26-Dec	
26-Feb		26-Apr		26-Jun	0.024	26-Aug	0.006	27-Oct	0.000	27-Dec	
27-Feb		27-Apr		27-Jun	0.018	27-Aug	0.006	28-Oct		28-Dec	
28-Feb		28-Apr		28-Jun	0.015	28-Aug	0.006	29-Oct		29-Dec	
29-Feb		29-Apr		29-Jun	0.013	29-Aug	0.006	30-Oct		30-Dec	
		30-Apr		30-Jun	0.012	30-Aug	0.005	31-Oct		31-Dec	
						31-Aug	0.005				

Note: Estimated values are italicized

