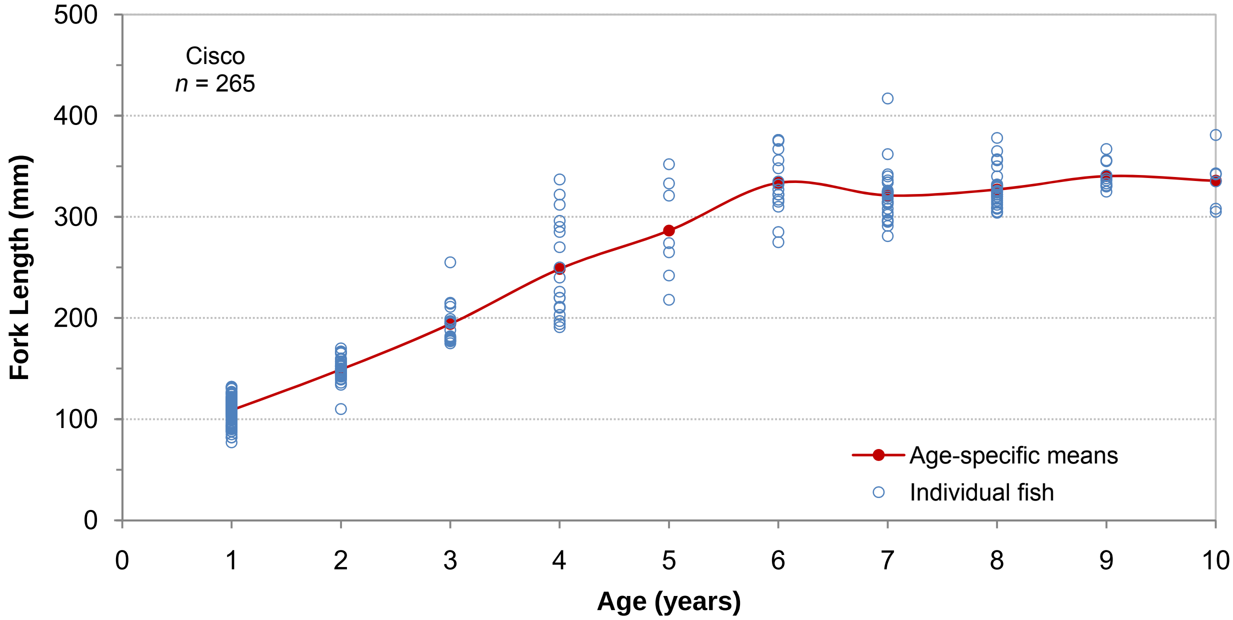


Figure 9-28: Age-length relationship for Cisco captured in the Meliadine Study Area from 1997 to 2009

9.3.5.4 Feeding Habits

Cisco feeding habits were assessed based on 108 stomachs examined during 1997 to 2000. Approximately half (51%) of the stomachs examined contained no food items; the mean fullness index was 21% (Appendix F20). The diet of Cisco consisted entirely of aquatic invertebrates including (in order of abundance): amphipods, midges, clams, snails, zooplankton and caddis flies. Diet composition of Cisco from Meliadine Lake (*n* = 51) did not differ from the diet composition of fish from all basins combined (Appendix F20).

9.3.6 Burbot

The total length of Burbot captured in the Meliadine Study Area (*n* = 75) from 1997 through 2008 ranged from 72 to 600 mm. Burbot were primarily encountered in the Peninsula Basins.

The length-weight relationship for Burbot captured in the Meliadine Study Area was:

log Weight (g) = -4.8462 + 2.8502 log Fork Length (mm) where $n = 46$ and $r^2 = 0.9765$.

The slope of the regression line (2.8502) indicated negative allometric growth (i.e., slope less than 3). Relative weight was calculated for Burbot by basin using a MFL of 120 mm. The average relative weight for all Burbot in the study area was 102 (SD $\pm$ 20.0; *n* = 39).

9.3.7 Slimy Sculpin

The length of Slimy Sculpin captured in the Meliadine Study Area (n = 200) from 1997 through 2009 ranged from 32 to 124 mm (Figure 9-29). Slimy Sculpin were encountered in all basins but were captured primarily by backpack electrofishing in the Peninsula streams.

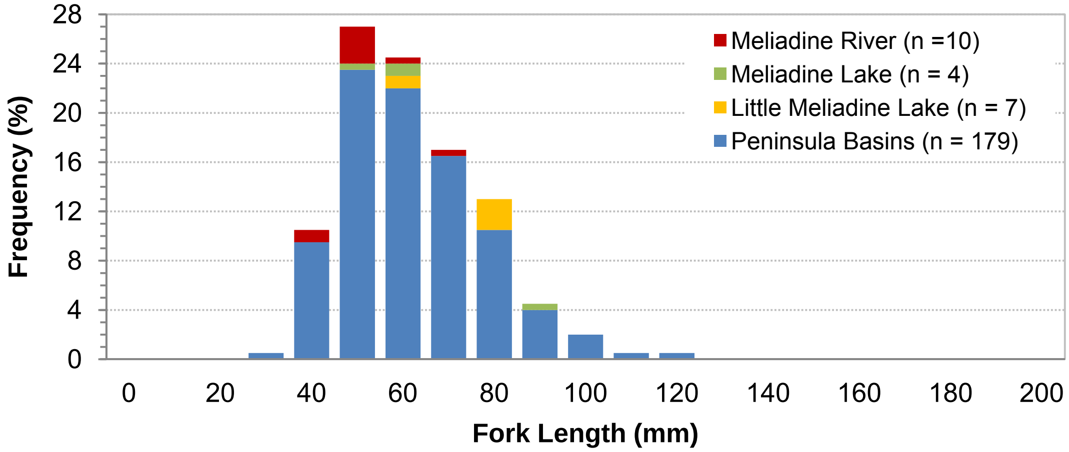


Figure 9-29: Length-frequency Distribution of Slimy Sculpin Captured in the Meliadine Study Area, 1997 to 2009

9.4 Fish Movements

Fish movements (i.e., migrations) were investigated primarily during 1997 to 2001. The methods used in these studies included:

- marking of small-bodied fish by fin clipping to determine the frequency of recaptured individuals during subsequent sampling events (used only during 1997 and 1998);
- marking of large-bodied fish with uniquely numbered Floy™ tags to determine movements between release and recapture locations; and
- surgical implantation of radio transmitters in Arctic Char, Arctic Grayling, and Lake Trout to determine their seasonal movements and identify spawning, feeding, and overwintering habitats through radio telemetry flights.

The results of these movement studies are organized by study method and discussed in the following subsections.

9.4.1 Fin Clipping

Individual sportfish that were too small to receive Floy™ tags (less than 250 mm in fork length) were marked by fin clipping (i.e., removal of a small section of their pelvic or pectoral fins). During 1997 to 1998, a total of 817 fish were marked by fin clipping (Table 9-13). Most of these individuals (71%) were caught and marked at the fyke net sites (east and south basins of Meliadine Lake) during the summer and fall sampling sessions. The remaining fish were marked during electrofishing surveys in spring (13%), summer (12%), and fall (4%) in the Peninsula streams, lakes, and the Meliadine River.

Table 9-13: Number of Fish Fin Clipped and Recaptured in the Meliadine Study Area, 1997 to 1998

Species	Number of Fin Clipped Fish per Basin[a]							Number of Recaptures			
	ML	A	B	D	LML	Other	Total	ML	A	B	Total
Arctic Char	355	3	17	8			**383**	23			**23**
Lake Trout	102	15	19	4	1	3	**144**		2	1	**3**
Arctic Grayling	38	53	85	5	2	7	**190**	1	2	1	**4**
Round Whitefish	31						**31**	1			**1**
Cisco	56		12				**68**				**0**
Burbot	1						**1**				**0**
All Species	**583**	**71**	**133**	**17**	**3**	**10**	**817**	**25**	**4**	**2**	**31**

[a] ML = Meliadine Lake; A, B, D = Peninsula Basins; LML = Little Meliadine Lake; Other = Basins F, G and the Meliadine River.

Of the 817 fish marked, only 31 individuals were recaptured (overall recapture rate of 3.8%). Most (*n*=25) were recaptured at the fyke net sites in Meliadine Lake. The low recapture rate indicated that most fish did not remain in the vicinity of the fyke net after capture but moved to other parts of the lake. The remaining fin clipped individuals (*n*=6) were recaptured in the Peninsula streams during the spring (*n*=2), summer (*n*=3), and fall (*n*=1) sampling sessions in 1997 and 1998. The low number of recaptures in the Peninsula streams was likely due to differences in seasonal sampling effort or out-migration of the marked fish.

One juvenile Arctic Char (204 mm in fork length) marked with a fin clip on 19 June 1997 in Stream A1-2 was recaptured in the fyke net in Meliadine Lake on 13 July 1997 (it was the only fin-clipped Arctic Char at large during this time). This fish had moved a minimum distance of 4 km, suggesting that it may have used the stream for feeding purposes during the spring before returning to the lake.

9.4.2 Floy Tags

During the 1997 to 2008 studies, 3460 fish were marked with Floy tags in the Meliadine Study Area (Table 9-14). The majority (76.1%) were Arctic Char, followed by Arctic Grayling (11.0%), Lake Trout (6.2%), Round Whitefish (4.6%), Cisco (1.9%), and Burbot (0.1%). Approximately 80% of the fish were marked during the fish fence operations in the lower Meliadine River. Other tagging locations included Meliadine Lake (12%), the Peninsula basins (7%) and Little Meliadine Lake (1%).

Table 9-14: Number of Fish Marked with Floy Tags in the Meliadine Study Area, 1997 to 2008

Species	Year Tagged	Number of Tagged Fish per Basin[a]						
		ML	A	B	D	LML	MR	Total
Arctic Char	1997	27	4		30	1	977	1039
	1998	5			2	6	630	643
	1999	7			1		925	933
	2000	13			5			18
	1997 to 2000	**52**	**4**		**38**	**7**	**2532**	**2633**
Lake Trout	1997	70	2	2	2	4	9	89
	1998	34		1		2	7	44
	1999	8			1	11	10	30
	2000	52				1		53
	1997 to 2000	**164**	**2**	**3**	**3**	**18**	**26**	**216**
Arctic Grayling	1997	47	17	32	14		8	118
	1998	90	35	40	2	1	20	188
	1999				10	3	42	55
	2000	1						1
	2008			19				19
	1997 to 2008	**138**	**52**	**91**	**26**	**4**	**70**	**381**
Round Whitefish	1997	7					25	32
	1998	5					44	49
	1999					8	70	78
	1997 to1999	**12**				**8**	**139**	**159**
Cisco	1997	11		14				25
	1998	22	1	8			2	33
	1999				6		3	9
	1997 to 1999	**33**	**1**	**22**	**6**		**5**	**67**
Burbot	1998	4						4
All Species	**1997 to 2008**	**403**	**59**	**116**	**73**	**37**	**2772**	**3460**

[a] ML = Meliadine Lake; A, B, D = Peninsula Basins; LML = Little Meliadine Lake; MR = Meliadine River

Following the marking program, subsequent fishing effort by the study team and tags returned by local fishermen resulted in 1740 tag recapture events (Table 9-15, Appendix F21). These recapture events involved 1380 fish (40% of all fish tagged), of which 1 081 fish were recaptured once, 240 fish were recaptured twice, 57 fish were recaptured 3 times, and two fish were recaptured 4 times during the course of the study. Most of the recapture events (n=1004) were reported by local fishermen who returned tags captured during subsistence fishing in Little Meliadine Lake and several areas of Hudson Bay.

Table 9-15: Number of Recapture Events for Floy Tagged Fish in the Meliadine Study Area, 1997 to 1999

Species	Year Tagged	Number of Recapture Events per Basin[a]										
		ML	A	B	D	LML	MR	PB	DR	HB	?	Total
Arctic Char	1997	10			6	193	477	134	3	27	14	864
	1998	2				192	222	43	2	10	6	477
	1999	4				177	33	65	6	8	22	315
	2000				1	1		2	1			5
	1997 to 2000	16			7	563	732	244	12	45	42	1661
Lake Trout	1997	4				3		1				8
	1998	1										1
	1999					1	1					2
	2000	3										3
	1997 to 2000	8				4	1	1				14
Arctic Grayling	1997	4	1	1			3					9
	1998	3	1			1	10					15
	1997 to1998	7	2	1		1	13					24
Round Whitefish	1997						13					13
	1998						27					27
	1997 to1998						40					40
Burbot	1998	1										1
All Species	**1997 to 2000**	**32**	**2**	**1**	**7**	**568**	**786**	**245**	**12**	**45**	**42**	**1740**

[a] ML = Meliadine Lake; A, B, D = Peninsula Basins; LML = Little Meliadine Lake; MR = Meliadine River ; PB = Prairie Bay; DR= Diana River; HB = Hudson Bay; ? = unknown recapture location

The following sections describe the results of the Floy tagging program for each species tagged in separate years.

9.4.2.1 Arctic Char

Arctic Char Tagged in 1997

Of 1 039 Arctic Char that were marked with Floy tags in 1997, more than half (592 fish) were recaptured (864 recapture events, including 272 fish recaptured two or more times; (Table 9-15). The majority of the recapture events (*n*=447) involved fish originally tagged during the 1997 fish fence operations in the lower Meliadine River and subsequently recorded in the fish fence catch in 1998 (*n*=290) and 1999 (*n*=157). A large number of these fish (*n*=100) were recaptured during both 1998 and 1999 runs, indicating that they migrated from the sea into Meliadine River for at least 3 consecutive years.

In addition to fish recaptured and released by the study team, a large number of the recaptured 1997 tags (*n*=401) were returned by the Rankin Inlet and Chesterfield Inlet fishermen. Returned tags were from fish captured in Prairie Bay (*n*=134) and farther out in Hudson Bay (*n*=27), as well as recaptures in Little Meliadine Lake (*n*=186), Meliadine River (*n*=28), Meliadine Lake (*n*=9), and the Diana River system (*n*=3). In addition, 14 tags were returned by local fishermen who did not provide information on their fishing locations.

The 1997 Arctic Char tagging program also included marking fish in Meliadine Lake (*n*=27), Lake D1 (*n*=30), and Lake A1 (*n*=4; Table 9-14). Of the marked fish, only 6 were recaptured; all were originally tagged in Lake D1 and recaptured at the same location during fall 1997.

Arctic Char Tagged in 1998

During 1998, 643 Arctic Char were tagged (Table 9-14). Similar to the 1997 tagging program, most fish tagged in 1998 were released in the lower Meliadine River and Little Meliadine Lake (*n*=636) and resulted in a total of 477 recaptures (including 74 fish recaptured twice). Approximately 41% of these recaptures were recorded and released during the fall 1999 fish fence operations. The remaining recaptures (*n*=274) were reported by local fishermen who harvested the fish in Little Meliadine Lake (*n*=187), lower and upper Meliadine River (*n*=25), Meliadine Lake (*n*=1), Prairie Bay (*n*=43), Hudson Bay (*n*=10), the Diana River system (*n*=2), and 6 unknown locations (Table 9-3). The farthest recapture location was Fish Bay near Chesterfield Inlet, approximately 130 km northeast of Rankin Inlet.

In addition to the fish tagged at the fish fence and in Little Meliadine Lake in 1998, 5 Arctic Char were tagged in Meliadine Lake and two in Lake D1. Of these 7 fish, two have been recaptured to date. One (originally tagged in Lake D1) was recaptured by a local fisherman in the south basin of Meliadine Lake; the other was a juvenile fish that was recaptured by the study team in the south basin of Meliadine Lake one day after its original capture.

Arctic Char Tagged in 1999

During 1999, 933 Arctic Char were tagged; most (*n*=925) were released at the fish fence site on the lower Meliadine River (Table 9-14). Of these fish, 313 recaptures were reported by local fishermen. The recapture locations included Little Meliadine Lake (*n*=177), Prairie Bay (*n*=65), Meliadine River (*n*=33), Hudson Bay (*n*=8), the east basin of Meliadine Lake (*n*=2), and the Diana River system (*n*=6). In addition to the tag returns by the local fishermen, two fish (pre-spawning male and female) were recaptured by the study team in September 2000 near the west outlet of Meliadine Lake (Appendix F21).

Arctic Char – 1997 to 1999 Fish Fence

During the entire 1997 to 1999 fish fence program in the lower Meliadine River, 2532 Arctic Char were marked with Floy tags. Flow diagrams of recapture events and harvest locations are presented separately for each year of the fish fence program in Appendices F22a to F22c. Tag return data from the domestic fishery indicates that 989 fish (39% of the marked total) were harvested to date (Table 9-16). The most recent tag return was reported in June 2008 for an Arctic Char originally tagged at the fish fence in August 1999 and recaptured in the Diana River. Most (88%) of the harvested fish were captured in the immediate vicinity of Rankin Inlet: Prairie Bay (*n*=242), lower Meliadine River (=81), and Little Meliadine Lake (=548). Other freshwater harvest locations included Meliadine Lake (*n*=13), upper Meliadine River (*n*=7), and Diana River system (*n*=11). Marine harvest locations outside of Prairie Bay (*n*=45) were widespread and ranged between Chesterfield Inlet to the north and Corbett Inlet to the south of Rankin Inlet.

Table 9-16: Recapture Locations of Arctic Char Marked with Floy Tags during 1997 to 1999 Fish Fence Operations in the Lower Meliadine River

Area	Location	Number of Recaptures		
		Harvested[a]	Released Live	Total
Meliadine River	Lower Meliadine River	81	644	725
	Little Meliadine Lake	548	11	559
	Upper Meliadine River	7		7
Meliadine Lake	Meliadine Lake (south basin)	9		9
	Meliadine Lake (east basin)	2		2
	Meliadine Lake (west basin)	2	1	3
Diana River	Lower Diana River	11		11
Hudson Bay	Prairie Bay	242		242
	Thomson Passage	10		10
	Falstaff Island	2		2
	Scarab Point	4		4
	Baker Foreland	14		14
	Chesterfield Inlet	4		4
	Melville Bay and vicinity	9		9
	Pistol Bay	1		1
	Corbett Inlet	1		1
Unknown (harvest location not reported)		42		
Total		**989**	**656**	**1645**

[a] Includes 5 fish that died after being recaptured by the study team. Many (n=241) of the harvested fish were also previously recaptured and released alive by the study team.

In addition to the harvested fish, 656 recapture events involved fish that were recaptured by the study team and released alive at least once (*n*=552), twice (*n*=101), or even 3 times (*n*=3). Most (98%) of these recaptures were recorded during fish fence operations in the lower Meliadine River in 1998 and 1999. The remaining recaptures occurred during gill netting surveys in Little Meliadine Lake in September 1998 (*n*=11) and in the west basin of Meliadine Lake in September 2000 (*n*=1).

Arctic Char Tagged in 2000

During September 2000, 13 Arctic Char were tagged and released near the west outlet of Meliadine Lake (Table 9-14). Of these fish, 4 recaptures were reported by the local fishermen. The recapture locations included Little Meliadine Lake (*n*=1), Prairie Bay (*n*=2), and the Diana River system (*n*=1); all recaptures occurred in June 2001. In addition, 5 Arctic Char were tagged and released in Lake D1 in September 2000; one of these fish was recaptured by the study team one day later at the same location.

Arctic Char - Summary

In summary, 2633 Arctic Char were marked with Floy tags during the 1997 to 2000 study period. Recapture rates for these fish are presented separately for each year of tagging in Table 9-17. Overall, half (49.9%) of the marked fish were recaptured at least once. The results also indicate that a substantial portion of the population

(998 fish or 37.9% of the marked total) had been harvested by the local fishermen. The highest harvest rate (274 fish or 42.6% of the marked total) was recorded for fish tagged in 1998.

Table 9-17: Recapture and Harvest Frequency of Arctic Char Marked with Floy Tags during 1997 to 2000 in the Meliadine Study Area

Year Tagged	Number of Fish		Frequency (%)			
	Tagged	Recaptured	Recaptured and Released	Recaptured, Released and Harvested	Harvested	Not Recaptured
1997	1039	592	17.9	16.2	22.9	43.0
1998	643	403	20.1	11.5	31.1	37.3
1999	933	314		0.1	33.5	66.3
2000	18	5	5.6		22.2	72.2
1999 to 2000	**2633**	**1314**	**12.0**	**9.2**	**28.7**	**50.1**

9.4.2.2 Lake Trout

Lake Trout Tagged in 1997

In the 1997 field effort, 89 Lake Trout were marked with Floy tags in the Meliadine Study Area (Table 9-2). The majority (78.7%) of fish were tagged in Meliadine Lake, with the remainder tagged in the Meliadine River (10.1%), Peninsula Lakes (6.7%), and Little Meliadine Lake (4.5%). Of the fish tagged in 1997, eight (9.0% recapture rate) were recaptured (Table 9-3). One Lake Trout released in the east basin of Meliadine Lake in July 1997 was recaptured by a local fisherman in Little Meliadine Lake in September 2000 (Appendix F21). The remaining 7 recaptures occurred within 2.4 km of the original release locations: 4 fish were recaptured in Meliadine Lake (including one fish tagged in Lake D1 and recaptured in the south basin of Meliadine Lake), two in Little Meliadine Lake, and one in Prairie Bay.

Lake Trout Tagged in 1998

In 1998, a total of 44 Lake Trout were tagged (Table 9-2). Most (79.5%) were tagged in Meliadine Lake, with the remainder tagged in the Meliadine River, Little Meliadine Lake, and Lake B2. Only one of these fish was recaptured (2.3% recapture rate); it was harvested in August 1999 by a local fisherman in the south basin of Meliadine Lake close to its original release location.

Lake Trout Tagged in 1999

In 1999, 30 Lake Trout were tagged (Table 9-2). The majority (66.7%) were tagged in Little Meliadine Lake and in the lower Meliadine River, with the remainder tagged in the west basin of Meliadine Lake and in Lake D1. Two individuals have been recaptured (6.6% recapture rate). Both were harvested by local fishermen near their original release locations in Little Meliadine Lake and the lower Meliadine River.

Lake Trout Tagged in 2000

In 2000, 53 Lake Trout were tagged (Table 9-2). Most (98.1%) were tagged in the west basin of Meliadine Lake in September; one fish was tagged in Little Meliadine Lake in July. Three fish have been recaptured to date (5.7% recapture rate). Two fish were recaptured by the study team in close proximity and within two days of their release in the west basin of Meliadine Lake; the third was harvested by a local fisherman in the west basin of Meliadine Lake close to its original release location.

Lake Trout - Summary

In summary, 216 Lake Trout were marked with Floy tags during the 1997-2000 study period. The overall recapture rate was low (6.5%). Among the 14 recaptured fish, only one moved more than 3 km from its release location; this fish moved from the east basin of Meliadine Lake to Little Meliadine Lake (a straight line distance of approximately 12 km).

9.4.2.3 Arctic Grayling

Arctic Grayling Tagged in 1997

In 1997, 118 Arctic Grayling were marked with Floy tags in the Meliadine Study Area (Table 9-2). The majority (53.4%) were tagged in the Peninsula streams and lakes. The remaining fish were tagged in the east basin of Meliadine Lake (39.8%) and in the Meliadine River (6.8%). Eight of the fish tagged in 1997 (6.8% recapture rate) were recaptured near their original release locations in Meliadine Lake (*n*=4), Lake B2 (*n*=1), Stream A2-3 (*n*=1), and in the lower Meliadine River fish fence site (*n*=2). One of the fish recaptured at the fish fence in 1998 was recorded again during the 1999 fish fence operations, indicating similar upstream movement pattern in the lower Meliadine River for 3 consecutive years (Appendix F21).

Arctic Grayling Tagged in 1998

An additional 188 Arctic Grayling were tagged in 1998 (Table 9-2). Approximately half (47.9%) were tagged in Meliadine Lake, 41.0% were tagged in the Peninsula streams and lakes, and the remaining 11.2% were tagged in the Meliadine River and Little Meliadine Lake. Of the fish tagged in 1998, 14 fish were recaptured (7.4% recapture rate). Ten fish were recaptured during the 1999 fish fence operations; one of these fish was subsequently harvested from Little Meliadine Lake in August 2000. The remaining 4 fish were recaptured in the south basin of Meliadine Lake (*n*=3) and in Stream A5-6 (*n*=1); all recaptures occurred near and within a few days of the original release locations.

Arctic Grayling Tagged in 1999

In 1999, 55 Arctic Grayling were marked with Floy tags (Table 9-2). Most (74.5%) were tagged in the lower Meliadine River at the fish fence site, with the remainder tagged in Lake D1, Little Meliadine Lake, and the upper Meliadine River. None of the Arctic Grayling tagged in 1999 have been recaptured.

Arctic Grayling Tagged in 2000

In 2000, only one Arctic Grayling was marked with a Floy tag (Table 9-2). It was tagged in the west basin of Meliadine Lake and has not been recaptured.

Arctic Grayling Tagged in 2008

In 2008, 19 Arctic Grayling were marked with Floy tags in Lake B7 as part of the mark-recapture program to estimate the population size in this lake (Table 9-2). None of these fish have been recaptured.

Arctic Grayling - Summary

In summary, 381 Arctic Grayling were marked with Floy tags during the 1997 to 2008 study period, resulting in 24 recapture events involving 22 fish (two fish were recaptured twice). The overall recapture rate (5.8%) was similar to that recorded for Lake Trout. The largest distance between the release and recapture locations (approximately 8 km in a straight line) was recorded for a fish tagged in the lower Meliadine River in August 1997 and recaptured two years later in Little Meliadine Lake.

9.4.2.4 Round Whitefish

During the 1997 to 1999 studies, 159 Round Whitefish were tagged within the study area (Table 9-2). The majority (87.4%) were tagged in the lower Meliadine River at the fish fence site, with the remainder tagged in Meliadine Lake and Little Meliadine Lake. In total, 39 individuals (24.5% of the marked total) have been recaptured. All of the recaptured fish had been released at the fish fence site in 1997 or 1998 and were recaptured at the same location one or two years later. One of the fish recaptured at the fish fence in 1998 was recaptured again during the 1999 fish fence operations (Appendix F21).

9.4.2.5 Cisco

In total, 67 Cisco were tagged in the Meliadine Study Area during the 1997 to 1999 period. Approximately half (49.2%) were tagged and released in Meliadine Lake, with the remainder released in the Peninsula lakes A6, B2, B7 and D1 (43.3%) and at the Meliadine River fish fence site (7.5%). None of the marked fish have been recaptured.

9.4.2.6 Burbot

Only 4 Burbot were tagged during the study; all were captured by fyke net in the south basin of Meliadine Lake in late summer 1998. One of these fish was recaptured at the same location two days after its release (Appendix F21).

9.4.3 Radio Telemetry

The radio telemetry program was implemented in two phases during the study. The first phase was carried out in 1997 to 1999 and involved tracking of 68 fish (Arctic Char, Lake Trout and Arctic Grayling) implanted with radio transmitters. The second phase was carried out in 2000 and 2001 and focused on implanting radio transmitters in 12 pre-spawning Arctic Char and tracking their movements in an attempt to determine their spawning and overwintering habitats. The results of each phase are discussed separately because the tracking flights were targeting two separate groups of fish (i.e., the radio transmitters in the first set of fish were no longer operational during the second phase).

9.4.3.1 Radio Telemetry 1997 to 1999

During 1997 and 1998, radio transmitters were surgically implanted into 68 fish that included 32 Arctic Char, 23 Arctic Grayling, and 13 Lake Trout (Appendix F23). The majority of the radio transmitters (n=57) were implanted in 1997, with an additional 9 radio transmitters (5 in Arctic Char and 4 in Arctic Grayling) implanted in 1998.

Tracking flights were initiated in summer 1997. Arctic Grayling (n=19) and Lake Trout (n=13) were the only radio tagged species at this time, and the locations of 31 fish were determined during the first 3 flights (Appendix F23). Following the implantation of radio transmitters in 27 Arctic Char in August and September 1997, the tracking flights (n=4) were continued during fall and early winter of 1997, resulting in the location of 57 individuals on at least one occasion. Tracking flights resumed in April 1998, when the locations of 51 of 57 fish were once again determined (Table 9-6). Tracking flights during June and July 1998 (n=4) located an average of 38 individuals per flight. Tracking flights during the fall and early winter of 1998 (*n*=3) located an average of only 25 fish. The lower tracking success of the later flights was likely due to limited emission times of the radio transmitters (i.e., transmitter batteries lost their charge). During the tracking flights carried out in 1999 (*n*=4), there were only 7 fish (implanted with radio transmitters in fall 1998) with functioning batteries; all these fish were located at least once in 1999.

In total, 19 tracking flights were completed between July 1997 and September 1999, resulting in the determination of 573 fish locations (Table 9-6). The movements of these fish are discussed separately for each species in the following sections. Movement maps for selected individual fish that exhibited pronounced patterns are presented in Appendix F24.

Table 9-18: Radio Tagged Fish Located during Tracking Flights in the Meliadine Study Area, July 1997 to November 1998

Tracking Flight	Number of Fish at Large[a]	Number of Fish Located			
		Arctic Char	Arctic Grayling	Lake Trout	Total
21-23 Jul-97	32		18	7	**25**
29-Jul-97	32		19	6	**25**
17-Aug-97	32		19	10	**29**
01-Sep-97	57	19	15	12	**46**
14-Sep-97	58	20	18	8	**46**
26-27 Sep-97	57	19	17	9	**45**
24-25 Oct-97	57	23	18	11	**52**
23-Apr-98	57	23	16	12	**51**
11-Jun-98	56	21	15	9	**45**
21-Jun-98	56	19	16	8	**43**
11-Jul-98	52	11	16	6	**33**
30-Jul-98	51	11	16	6	**33**
17-Aug-98	51	10	16	2	**28**
02-Oct-98	58	7	19	1	**27**
07-Nov-98	58	4	17		**21**
20-Jun-99	7	3	4		**7**
24-Jul-99	7	1	4		**5**
03-Sep-99	7	2	4		**6**
13-Sep-99	7	2	4		**6**
Jul-97 to Sep-99	**7 to 58**	**195**	**271**	**107**	**573**

[a] The number of fish at large changed due to additional implantations of radio transmitters and removal of radio tagged fish by the domestic fishery

Arctic Char

Eight pre-spawning Arctic Char that were implanted with radio transmitters in Lake D1 during 20-27 August 1997 remained in the lake until the last 1997 flight on 25 October. During tracking flights in 1998 (April to November), the radio signals were still being transmitted from Lake D1; however, individual movements were not detected.

The unusually dry weather conditions during summer and fall 1997 and the very low oxygen concentrations documented in Lake D1 during water quality sampling in April 1998 (see Section 7.6) suggested that the radio tagged fish could not leave the lake in 1997 due to lack of flow in the connecting stream and, subsequently, perished there during the winter. Several large carcasses observed on the lake bottom during a helicopter overflight in June 1998 provided further evidence of winterkill.

In total, 18 Arctic Char were implanted with radio transmitters at the lower Meliadine River fish fence between 17 August and 2 September 1997 (Appendix F23). These fish moved an average of 16 km (range of 12 to 25 km) within the area between Little Meliadine Lake and Hudson Bay (Table 9-7; Appendix F24a) during surveillance. During the April 1998 tracking flight, 15 of these fish were still located in Little Meliadine Lake, indicating that the lake provided suitable habitat for overwintering. One gravid female Arctic Char implanted with a radio transmitter in Little Meliadine Lake on 28 September 1997 was not relocated until 11 June 1998 (in Little Meliadine Lake), and may have moved outside of the surveillance zone to spawn. During tracking flights from July to November 1998, this individual remained in Little Meliadine Lake. In spring 1998, 8 Arctic Char moved downstream into Hudson Bay, likely for summer feeding purposes. Two of these 8 individuals moved back upstream in August and were recaptured at the fish fence. Eight Arctic Char radio tagged in 1997 were harvested by the domestic fishery.

Table 9-19: Summary of Arctic Char Movements in the Meliadine Study Area, 1997 to 1998

Floy Tag Number	Release Location[a]	Release Date	Distance[b] Moved (km)	Basins Visited[a]					Number of Times Tracked
				HB	MR-L	LML	ML-S	ML-W	
6310	MR-L	17-Aug-97	13.5		√	√			8
6308	MR-L	17-Aug-97	15.4		√	√			10
6307	MR-L	18-Aug-97	22.5	√	√	√			6
7491	MR-L	29-Aug-97	12.0		√	√			3
7492	MR-L	29-Aug-97	13.1		√	√			4
7016	MR-L	30-Aug-97	12.0		√	√			1
7015	MR-L	30-Aug-97	16.7		√	√			6
6863	MR-L	30-Aug-97	18.7		√	√			5
7017	MR-L	30-Aug-97	20.8	√	√	√			4
6864	MR-L	30-Aug-97	24.8	√	√	√			8
6875	MR-L	31-Aug-97	13.6		√	√			6
7115	MR-L	31-Aug-97	17.4	√	√	√			8
7103	MR-L	31-Aug-97	17.4		√	√			7
7004	MR-L	31-Aug-97	22.0	√	√	√			4
7633	MR-L	01-Sep-97	12.7	√	√	√			6
7634	MR-L	01-Sep-97	17.5	√	√	√			6
7120	MR-L	01-Sep-97	20.6		√	√			5
7601	MR-L	02-Sep-97	12.0		√	√			3
7625	LML	28-Sep-97	4.3			√			6

Table 9-19: Summary of Arctic Char Movements in the Meliadine Study Area, 1997 to 1998 (continued)

Floy Tag Number	Release Location[a]	Release Date	Distance[b] Moved (km)	Basins Visited[a]					Number of Times Tracked
				HB	MR-L	LML	ML-S	ML-W	
3126	ML-S	31-Aug-98	9.0				√	√	2
3127	LML	01-Sep-98	1.3			√			2
3130	LML	02-Sep-98	0.0			√			1
3131	LML	02-Sep-98	0.0			√			1
3128	LML	02-Sep-98	0.5			√			1

[a] HB = Hudson Bay; MR-L = lower Meliadine River; LML = Little Meliadine Lake; ML-S = South basin of Meliadine Lake ; ML-W = West basin of Meliadine Lake

[b] Total of straight line distances between individual tracking locations

In the fall of 1998, 5 additional Arctic Char were implanted with radio transmitters: 4 were released in Little Meliadine Lake and one in the south basin of Meliadine Lake (Table 9-7). Of the 4 fish released in Little Meliadine Lake, 2 were harvested by the local fishermen at the same location within one month of their release (prior to the tracking flight on 2 October 1998). Of the remaining 2 Arctic Char (mature males) released in Little Meliadine Lake, one individual remained in Little Meliadine Lake throughout the entire tracking period (October 1998 to September 1999). The second fish was located in Little Meliadine Lake during October 1998 but was not encountered during the November 1998 tracking flight, suggesting that it may have overwintered outside of the monitored area. During 1999, this fish moved into Hudson Bay and was located near the mouth of the Meliadine River on 20 June, but was outside of the tracking area during the flight on 24 July. It returned from the sea and was captured and released at the fish fence on 10 August 1999; subsequently, it was tracked in Little Meliadine Lake on 3 and 13 September 1999.

One gravid female implanted with a radio transmitter in the south basin of Meliadine Lake on 31 August 1998 was located within the west basin of Meliadine Lake on both the October and November 1998 tracking flights, suggesting it may have spawned near this area. It was also located in the west basin of Meliadine Lake during spring 1999, but was not encountered again during subsequent tracking flights.

Lake Trout 1998

Most (9 of 13) radio tagged Lake Trout moved less than 15 km during the 1997 to 1999 tracking program and remained within 9 km of their release locations (Table 9-8). One of these fish (#6346 tagged in Lake D1 in June 1997) moved 3 km into the upper Meliadine River in August 1997 and then another 3 km into the south basin of Meliadine Lake in September 1997, where it remained until captured by a local fishermen in May 1998 (Appendix F23). Another Lake Trout (#6835) released in the east basin of Meliadine Lake in July 1997 moved 5 km to the central basin of Meliadine Lake in August 1997 and returned to the east basin in July 1998.

The remaining 4 Lake Trout exhibited more extensive movements. Two individuals (#6812 and #6888) travelled throughout the east basin of Meliadine Lake during the 1997 and 1998 surveys, moving a total distance of 17 and 20 km, respectively (Appendix F24b). The remaining 2 Lake Trout (#6423 and #6886 radio tagged in July in the east basin of Meliadine Lake) were tracked 18 km away in the west basin of Meliadine Lake on 17 August 1997 and 1 September 1997, respectively (Appendices F24c and F24d). One of these fish (#6423) remained within the west basin throughout the 1998 tracking surveys and was last located on 30 July 1998 near the west outlet of Meliadine Lake. The other Lake Trout (#6886) returned to the east basin of Meliadine Lake by April 1998 and was last located near the outflow from Stream A0-1 on 30 July 1998.

Table 9-20: Summary of Lake Trout Movements in the Meliadine Study Area, 1997 to 1998

Floy Tag Number	Release Location[a]	Release Date	Distance[b] Moved (km)	Basins Visited[a]					Number of Times Tracked
				ML-E	ML-C	ML-W	ML-S	MR-U	
6346	Lake D1	18-Jun-97	6.7				√	√	5
6417	ML-E	21-Jul-97	4.8	√					13
6886	ML-E	20-Jul-97	41.9	√	√	√			7
6888	ML-E	20-Jul-97	20.4	√					12
6812	ML-E	14-Jul-97	16.5	√					8
6835	ML-E	16-Jul-97	13.2	√	√				7
6887	ML-E	20-Jul-97	12.5	√					13
6878	ML-E	19-Jul-97	12.5	√					8
6420	ML-E	21-Jul-97	8.9	√					6
6822	ML-E	15-Jul-97	8.7	√					6
6423	ML-E	21-Jul-97	44.8	√	√	√	√		9
6349	MR-U	21-Jun-97	14.3					√	9
6414	MR-U	20-Jul-97	8.4					√	5

[a] MR-U = upper Meliadine River; ML-E = East basin of Meliadine Lake ; ML-S = South basin of Meliadine Lake; ML-C = Central basin of Meliadine Lake ; ML-W = West basin of Meliadine Lake

[b] Total of straight line distances between individual tracking locations.

Arctic Grayling

Most (14 of 19) Arctic Grayling that were radio tagged in 1997 exhibited limited movements; by October 1997 they were still located within the respective Peninsula lakes where they had been released (Table 9-21). This suggested that either these lakes were used for overwintering or that the fish were unable to leave in the fall due to low flows in the outlet streams. Most of these fish (13 of 14) remained within their respective lakes during the 1998 tracking program. One individual (#6359) tagged in Lake A6 in July 1997 was located in Lake A1 on 11 June 1998 and returned to Lake A6 by 21 June 1998. This movement was likely related to spawning activities.

Table 9-21: Summary of Arctic Grayling Movements in the Meliadine Study Area, 1997 to 1998

Floy Tag Number	Release Location	Release Date	Distance[a] Moved (km)	Basins Visited[b]	Number of Times Tracked
6334	Lake B2	16-Jun-97	41.2	Lakes B2, B4, K2, ML-S	13
6335	Lake B2	16-Jun-97	39.9	Lake B2, ML-S, ML-W	14
6338	Lake B7	17-Jun-97	3.7	Lake B7	15
6340	Lake B7	17-Jun-97	2.1	Lake B7	15
6339	Lake B7	17-Jun-97	3.0	Lake B7	13

Table 9-21: Summary of Arctic Grayling Movements in the Meliadine Study Area, 1997 to 1998 (continued)

Floy Tag Number	Release Location	Release Date	Distance[a] Moved (km)	Basins Visited[b]	Number of Times Tracked
6342	Lake D1	18-Jun-97	15.8	Lakes D1, D2, ML-S,	14
6341	Lake D1	18-Jun-97	4.9	Lake D1, ML-S	14
6352	Lake A8	13-Jul-97	2.1	Lake A8	15
6356	Lake A8	13-Jul-97	2.7	Lake A8	15
6354	Lake A8	13-Jul-97	1.5	Lake A8	14
6355	Lake A8	13-Jul-97	1.5	Lake A8	15
6359	Lake A6	14-Jul-97	8.6	Lakes A6, A1	15
6360	Lake A6	14-Jul-97	2.6	Lake A6	14
6376	Lake B5	15-Jul-97	1.1	Lake B5	7
6366	Lake B5	15-Jul-97	1.1	Lake B5	6
6373	Lake B5	17-Jul-97	5.0	Lake B5	15
6374	Lake D7	17 Jul 97	1.6	Lake D7	15
6407	Lake D7	19-Jul-97	2.6	Lake D7	15
6408	Lake D7	19-Jul-97	4.7	Lake D7, ML-S	4
3178	Lake B5	29-Aug-98	0.5	Lake B5	2
3181	Lake B5	29-Aug-98	0.8	Lake B5	1
3180	Lake B5	29-Aug-98	0.6	Lake B5	2
3177	Lake B5	29-Aug-98	0.3	Lake B5	2

[a] Total of straight line distances between individual tracking locations.

[b] ML-S = South basin of Meliadine Lake; ML-W = West basin of Meliadine Lake; K2 = Peninsula lake immediately southeast of Basin B

The 5 remaining Arctic Grayling tagged in 1997 had moved out of their release lakes (D1, D7, and B2) into the south basin of Meliadine Lake by July 1997. One of these fish (#6341 released in Lake D1 in June 1997) remained in the south basin of Meliadine Lake throughout the 1997 to 1998 tracking program. Another fish (#6408 released in Lake D7 in June 1997) was last located in the south basin of Meliadine Lake in October 1997. Two other individuals (#6342 and #6334 released in Lakes D1 and B2 in June 1997) moved into the south basin of Meliadine Lake by July 1997 (Appendix F24e). In June 1998, Arctic Grayling #6342 travelled into Lake D2 (likely related to spawning activities) and subsequently returned to the south basin of Meliadine Lake by July 1998, where it remained until November 1998. By June 1998, Arctic Grayling #6334 had moved into Lake K2 (in the basin adjoining and immediately southeast of Basin B), then travelled to Lake B2 by July 1998, and back into the south basin of Meliadine Lake, where it remained. The fifth Arctic Grayling (#6335 released in June 1997 in Lake B2) travelled 16 km to the west basin of Meliadine Lake by October 1997 (Appendix F24f). This individual remained within the west basin of Meliadine Lake throughout the 1998 tracking surveys, and was located in a small stream on the north side of the west basin of Meliadine Lake on 21 June 1998, where it likely spawned.

An additional 4 Arctic Grayling from Lake B5 were implanted with radio transmitters in August 1998. These 4 individuals were located within Lake B5 throughout the entire tracking period (until November 1999). In contrast to the fish that were radio tagged in the Peninsula lakes in summer 1997 and may have been unable to leave in the fall due to low flows in the outlet streams, these 4 Arctic Grayling had sufficient stream flows to leave

Lake B5 in the fall of 1998. The fact that they stayed in the same lake over the winter and throughout the open water period in 1999 suggested that some Arctic Grayling may be using the Peninsula lakes on a year-round basis (i.e., resident populations).

9.4.3.2 Radio Telemetry 2000 to 2001

Radio transmitters were surgically implanted in 12 Arctic Char during 19 to 24 September 2000 to obtain information on spawning and overwintering movements. Eleven of the implanted fish were captured and released upstream of the west outflow from Meliadine Lake into Peter Lake; the remaining fish (a gravid male) was captured and released immediately below the outflow rapids. Water discharge through this outflow was considerably lower in September 2000 than in September 1999, when it was suspected that this area may serve as a corridor for Arctic Char movements between Peter Lake and Meliadine Lake. Although the rapids area immediately below the Meliadine Lake west outflow appeared navigable to upstream fish migrants, another area of de-watered riffles farther downstream (15V 518400 6999200) formed a complete barrier to fish passage when inspected on 21 September 2000. As such, the area downstream of the west outflow appeared to be isolated from Peter Lake in late fall 2000.

Eleven of the implanted fish were in pre-spawning condition and exhibited orange colouration; the remaining fish was silver in colour and appeared typical of recently returned sea-migrants (as observed during the 1997 to 1999 fish fence operations in the lower Meliadine River). Based on the presence of kype (elongated lower jaw in males), the implanted pre-spawners included 4 males and 7 females; the sex of the silver non-spawner could not be determined. The implanted fish ranged from 587 to 777 mm in fork length (mean of 673 mm) and weighed between 2350 and 4620 g (mean of 3318 g; Appendix F25). Although milt was extruded from one of the males, the remaining fish did not expel milt or roe under pressure, indicating that the spawning period had not yet begun.

The movements were monitored through 6 radio tracking flights that were carried out on 27 September 2000, 14 October 2000, 5 November 2000, 11 April 2001, 9 June 2001, and 23 June 2001 (Appendices F25 and F26). The extensive movements and rapid dispersal of the implanted fish during late fall 2000 suggested that Arctic Char spawning may occur in several areas widely distributed throughout Meliadine Lake. Suitable spawning substrates and depth characteristics are ubiquitous along the lake shores; therefore, it is likely that large concentrations of spawning fish may not occur in any particular location. Nevertheless, movements of at least 6 fish appeared to be focussed on the north shores of the west and central basins, suggesting that spawning may have occurred there.

Subsequent tracking in April 2001 revealed that all fish were within 9 km of their early winter locations, suggesting limited movements during winter. In contrast, the two tracking flights carried out in June 2001, as well as tag return information supplied by local fishermen (i.e., 4 radio-tagged fish were harvested in June: 2 in Little Meliadine Lake, 1 in Prairie Bay, and 1 at the mouth of the Diana River), indicated that at least 6 fish left Meliadine Lake to undergo their spring migrations to Hudson Bay. Three of these migrants (all males) selected the seaward route through the south outlet of Meliadine Lake (Meliadine River), whereas the other 3 fish (2 females and 1 male) migrated downstream through the west outlet of Meliadine Lake into Peter Lake and the Diana River system. These results suggest that the west and south outlets of Meliadine Lake are equally important as migration corridors for the post-spawning fish during their spring return to the sea.

9.5 Metal Analysis of Fish Tissues

The monitoring program to assess metal concentrations in fish tissues was initiated in fall 1997 by collecting samples of muscle, liver, and kidney tissues from 18 Arctic Char captured in lower Meliadine River. Most (14) were captured as they were entering the Meliadine River from the sea between 21 August and 3 September 1997; the remaining samples were collected from 4 gravid females captured in Little Meliadine Lake on 28 September 1997.

During 1998, the tissue sampling program was expanded to include Lake Trout, Round Whitefish, Cisco, and Arctic Grayling. Muscle, liver, and kidney tissue samples were collected from 51 Lake Trout and 17 Round Whitefish captured in the south basin of Meliadine Lake (potential impact zone) and Parallel Lake, located approximately 12 km north of Meliadine Lake and selected as a control basin for long-term fish tissue monitoring. Tissue samples were also collected from 16 Cisco in the south basin of Meliadine Lake and 3 Arctic Grayling in Lake B5.

In total, 350 tissue samples (including 36 duplicate samples for QA/QC purposes) were collected from 105 fish. The sampled fish represented adult size-classes that ranged from 301 to 865 mm in fork length and represented ages 5 to 29 years. Length and age statistics for each species and sampled area are presented in Table 9-22.

Table 9-22: Sample Size, Length and Age of Fish Collected for Tissue Analyses in the Meliadine Study Area, 1997 and 1998

Species	Area	Sample Size	Fork Length (mm)				Age (years)			
			Mean	SD	Min	Max	Mean	SD	Min	Max
Arctic char	MR	18	561	40	485	648	7.3	1.1	5	9
Lake Trout	ML-S	30	606	98	450	865	18.2	3.5	14	29
Lake Trout	PAR	21	494	124	380	770	14.9	5.1	9	27
Round whitefish	ML-S	7	387	21	347	415	8.9	2.0	5	12
Round whitefish	PAR	10	385	28	344	432	9.3	2.1	6	13
Cisco	ML-S	16	321	30	302	381	8.1	1.2	6	11
Arctic Grayling	B5	3	310	14	301	326	5.0	0.0	5	5

The concentrations of 27 metals in muscle, liver, and kidney tissues of each tested fish, as well as the results of QA/QC tests for preparation blanks, duplicate samples, and reference materials are presented in Appendices F27 and F28. The QA/QC results indicated that preparation blanks were generally below analytical detection limits. There was a close agreement between concentrations for duplicate samples and the majority of laboratory values for reference materials were within a 95% confidence interval of the certified values.

Mean metal concentrations (including standard deviation, range, and number of samples below analytical detection limits) are provided for each species, sampled area and tissue type in Appendices F29 to F35. Values below detection limit were coded as one-half of detection limit to allow statistical calculations.

Selected trace metals that are potentially toxic to fish (aluminum, arsenic, cadmium, mercury, lead, nickel, copper, and zinc) are discussed separately for each species in sections 9.5.1 to 9.5.5. Where applicable, the results are compared to the existing guidelines for human consumption and to other studies of metal concentrations in Arctic fish (e.g., RL&L 1993).

9.5.1 Arctic Char

Aluminum

The availability of aluminum to aquatic organisms has been correlated with the pH of the aquatic environment (Holtze and Hutchinson 1989); however, it is unclear at what pH threshold or concentration aluminum becomes toxic to fish. Aluminum can be acutely toxic at high exposure levels, but it does not bioaccumulate in aquatic organisms (Neville 1985).

Detectable concentrations of aluminum (1 µg/g or higher) were recorded in 39% of kidney samples and 6% of muscle and liver samples (Table 9-23). Two samples had relatively high concentrations (185 and 31 µg/g in liver and kidney tissues, respectively) compared to the remaining 52 samples, which tested at 3 µg/g or less. The cause of such high concentrations in these fish is unknown. Mean aluminum concentrations in muscle and liver tissues of Arctic Char from Coronation Gulf were similar to those from the present study (2.8 and 10.2 µg/g, respectively; RL&L 1993).

Table 9-23: Mean Concentrations of Metals in Arctic Char Tissue Samples from the Meliadine River, 1997

Tissue	Parameter	Metal Concentrations (µg/g of dry weight)							
		Al	As	Cd	Cu	Pb	Hg	Ni	Zn
Muscle n=18	n < D.L.[a]	17	0	12	0	8	8	4	0
	Mean (µg/g)	0.53	3.83	0.04	2.11	0.43	0.121	0.51	12.9
	SD[b] (µg/g)	0.12	1.47	0.03	0.52	0.89	0.164	0.71	4.0
	Min. (µg/g)	0.5	2.24	0.03	1.09	0.03	0.003	0.05	6.1
	Max. (µg/g)	1.0	7.32	0.13	2.86	2.94	0.495	2.40	19.7
Liver n=18	n < D.L.[a]	17	0	0	0	10	1`	13	0
	Mean (µg/g)	10.75	3.73	0.26	19.31	0.17	0.26	0.09	72.3
	SD[b] (µg/g)	43.49	1.64	0.18	16.53	0.17	0.177	0.06	18.6
	Min. (µg/g)	0.5	1.84	0.11	3.04	0.03	0.003	0.05	42.4
	Max. (µg/g)	185	8.28	0.75	62.7	0.60	0.616	0.20	107
Kidney n=18	n < D.L.[a]	11	0	0	0	7	1	4	0
	Mean (µg/g)	2.69	3.58	1.07	6.96	0.23	0.363	0.42	124.5
	SD[b] (µg/g)	7.11	2.33	0.76	2.46	0.33	0.248	0.39	30.4
	Min. (µg/g)	0.5	0.98	0.40	3.25	0.03	0.003	0.05	86.7
	Max. (µg/g)	31	11.6	3.18	11.4	1.41	0.836	1.50	176

[a] Number of samples below detection limit (D.L.); values below D.L. were coded as one-half of D.L. to allow statistical calculations
[b] Standard deviation.
Note: µg/g: microgram per gram; < = less than; n = sample size; Min. = minimum; Max. = maximum.

Arsenic

Arsenic is more common in the earth's crust than mercury or cadmium, and is more toxic to plants than to animals (Demayo et al. 1979). It does not appear to biomagnify through trophic levels, and demersal fish species are more likely to accumulate arsenic than pelagic fish (Demayo et al. 1979). Arsenic does, however, bioaccumulate [is present at higher concentrations in animal tissue(s) than the surrounding water] and concentrates mainly in the liver and is a cumulative toxin (Falk et al. 1973).

Arsenic levels in Arctic Char tissues ranged from 0.98 to 11.6 µg/g. Mean concentrations were similar in all 3 tissue types (3.83, 3.73, and 3.58 µg/g in muscle, liver, and kidney tissues, respectively). Mean arsenic concentrations in muscle tissues of Arctic Char from Coronation Gulf (18.3 µg/g; RL&L 1993) were approximately 5 times higher than those from the Meliadine River.

Cadmium

Cadmium bioaccumulates; the highest concentrations are reported in the intestine, kidney and liver of fish (Ruangsomboon and Wongrat, 2006). The rate of cadmium uptake is generally faster in hard waters, although cadmium toxicity decreases in hard water (Reeder et al. 1979a).

Cadmium levels in Arctic Char collected from the Meliadine River were considerably higher in the kidney (mean concentration 1.07 µg/g) than in the liver and muscle tissues (0.26 and 0.04 µg/g, respectively). The liver concentrations of cadmium were much lower than those recorded in Coronation Gulf (mean of 2.3 µg/g; RL&L 1993); the maximum values recorded in muscle tissues were similarly low in both studies (0.13 and 0.08 µg/g in Meliadine River and Coronation Gulf, respectively). Maximum cadmium concentration recorded in Meliadine River Arctic Char was 3.18 µg/g in kidney tissue.

Copper

In contrast to the non-essential trace metals (e.g., arsenic, cadmium, mercury, lead), copper is an essential element with important biochemical functions at physiological concentrations. Excessive amounts of copper are toxic to freshwater fish (Forstner and Wittman 1979); toxicity varies not only with fish species, but also with ambient water characteristics such as pH and alkalinity. Copper tends not to bioconcentrate, as excretion rates generally exceed uptake from the surrounding water (Falk et al. 1973). The main areas of the body where copper accumulates are liver, muscle, and brain tissues (Demayo and Taylor 1981).

Copper levels in the liver tissue samples from the Meliadine River Arctic Char ranged from 3.04 to 62.7 µg/g; the mean value was 19.31 µg/g. Mean concentrations in the kidney and muscle tissues were substantially lower (6.96 and 2.11 µg/g, respectively). Copper levels recorded in Arctic Char in the study area were lower than those reported for the Coronation Gulf populations (e.g., mean of 46.6 µg/g in liver tissues; RL&L 1993).

Lead

Lead tends to deposit in bone as a cumulative toxin (Falk et al. 1973). It is more toxic in soft water than in hard water (Demayo et al. 1980).

Lead concentrations in the Meliadine River Arctic Char were generally low, with 44% of muscle, 56% of liver, and 39% of kidney tissue samples showing values below the 0.05 µg/g detection limit. The mean concentrations of lead in the muscle samples (0.43 µg/g) were approximately 2 times higher than those in the liver and kidney samples (0.17 and 0.23 µg/g, respectively). The maximum lead concentration recorded in Meliadine River Arctic Char was 2.94 µg/g in a muscle sample, which was higher than maximum concentrations in muscle tissue from Coronation Gulf (0.42 µg/g; RL&L 1993).

Mercury

Mercury is known to bioaccumulate in fish tissue and is most commonly present in the form of methyl mercury (Reeder et al. 1979b; Lockhart et al. 1992). Mercury also tends to biomagnify and thus higher mercury concentrations are present in predatory fish and also generally increase with the age of a fish. The maximum allowable level of mercury in muscle tissue of fish sold in Canada for human consumption is 0.5 µg/g (wet weight), which is comparable to approximately 2.5 µg/g when expressed on a "dry weight" basis (assuming 80% moisture content).

Mean mercury level in Arctic Char muscle tissue was 0.121 µg/g. Almost half (44%) of the muscle samples tested below the detection limit of 0.005 µg/g. The maximum recorded concentration in muscle (0.495 µg/g) was approximately 5 times lower than the maximum levels allowed for human consumption (>2.5 µg/g). The mean concentrations of mercury in liver and kidney tissues (0.26 and 0.363 µg/g, respectively) were higher than in the muscle tissues; however, even the maximum recorded mercury level (0.836 µg/g in kidney tissue) was well below the established consumption limit.

Nickel

The toxicity of nickel increases with decreasing water hardness and increasing acidity (CCME 1996); it also increases when nickel is present with copper, likely as a result of synergism (Taylor et al. 1979). Nickel has the greatest effect on the early life stages of fish, including fertilized eggs. Nickel does not biomagnify in the food chain (Taylor et al. 1979). Hutchinson et al. (1975) reported that nickel concentrations were highest in plants and lowest in top predators. Bowen (1966) considered 1 µg/g (dry weight) of nickel in fish tissue to be in the range of natural background levels.

Mean nickel concentrations in Arctic Char tissues ranged from 0.09 µg/g (liver) to 0.51 µg/g (muscle). Levels above 1 µg/g were recorded in only 2 muscle samples (2.3 and 2.4 µg/g) and 1 kidney sample (1.5 µg/g). Most (72%) of the liver samples had nickel concentrations that were below the detection limit of 0.1 µg/g.

Zinc

Zinc primarily affects gill epithelial tissues. In excessive amounts, it can cause outright mortality or induce stress that leads to death (Falk et al. 1973). Zinc, however, is essential for plant and animal health. Zinc toxicity increases with increasing pH and decreasing water hardness. Zinc concentrations are usually greater in omnivorous than in piscivorous species, and greater in benthic invertebrates than in fish (CCME 1996).

Mean concentrations of zinc in Arctic Char were higher in the kidney and liver tissues (124.5 and 72.3 µg/g, respectively) than in the muscle tissues (12.9 µg/g). The highest recorded value was 176 µg/g in a kidney sample. Mean zinc concentrations in muscle and liver tissues of Arctic Char from Coronation Gulf (15.8 and 96.7 µg/g, respectively; RL&L 1993) were similar to those from the present study.

9.5.2 Lake Trout

Aluminum

Detectable concentrations of aluminum were recorded in all tissue samples collected from Lake Trout in Meliadine Lake (Table 9-24). Mean concentrations were highest in the liver samples (47.4 µg/g), intermediate in the kidney samples (17.1 µg/g), and lowest in the muscle samples (2.74 µg/g). A small number of tissue samples contained notably higher concentrations. These included 3 liver samples (160, 210, and 288 μg/g) and 1 kidney sample (125 μg/g).

Table 9-24: Mean Concentrations of Metals in Lake Trout Tissue Samples from Meliadine Lake, 1998

Tissue	Parameter	Metal Concentrations (µg/g of dry weight)							
		Al	As	Cd	Cu	Pb	Hg	Ni	Zn
Muscle n=30	n < D.L.[a]	0	0	28	0	19	0	3	0
	Mean (µg/g)	2.74	1.23	0.01	1.21	0.05	1.42	0.39	13.1
	SD[b] (µg/g)	1.41	0.67	0.01	0.22	0.06	0.97	0.26	1.73
	Min. (µg/g)	1.1	0.20	< D.L.	0.79	< D.L.	0.22	< D.L.	9.70
	Max. (µg/g)	7.0	2.60	0.05	1.62	0.30	4.64	1.20	16.7
Liver n=30	n < D.L.[a]	0	0	0	0	16	0	4	0
	Mean (µg/g)	47.4	0.92	2.93	94.0	0.16	1.77	0.29	126
	SD[b] (µg/g)	67.0	0.37	8.97	86.9	0.27	1.72	0.21	36.1
	Min. (µg/g)	4.0	0.30	0.11	5.72	< D.L.	0.20	< D.L.	69.6
	Max. (µg/g)	288	1.79	49.7	346	1.16	8.13	0.80	204
Kidney n=30	n < D.L.[a]	0	0	0	0	14	0	0	0
	Mean (µg/g)	17.1	2.29	6.18	12.9	4.01	3.04	1.64	113
	SD[b] (µg/g)	24.5	1.28	9.75	15.8	7.15	1.93	1.56	31.7
	Min. (µg/g)	3.0	0.62	0.20	2.25	< D.L.	0.82	0.10	31.6
	Max. (µg/g)	125	5.11	50.5	68.9	26.1	9.30	6.70	187

[a] Number of samples below detection limit (D.L.); values below D.L. were coded as one-half of D.L. to allow statistical calculations.
[b] Standard deviation.
Note: µg/g: microgram per gram; < = less than; n = sample size; Min. = minimum; Max. = maximum.

The results for Lake Trout tissues collected from the control site, Parallel Lake, were generally similar (Table 9-25). All liver and kidney samples were above detectable limits; however, only 10% of the muscle samples contained detectable concentrations. Mean concentrations were highest in the liver samples (31.6 μg/g), intermediate in the kidney samples (16.9 μg/g), and lowest in the muscle samples (0.70 μg/g). Elevated aluminum concentrations were recorded in one liver sample (207 μg/g).

A comparison of mean aluminum concentrations in Lake Trout tissues collected from the 2 study areas indicated that background levels in all 3 tissue types were higher in Meliadine Lake; however, a statistical analyses of the liver and kidney data revealed no significant differences between these two waterbodies (P>0.30 for both comparisons). In contrast, a statistically significant difference was detected for the Lake Trout muscle tissues (P<0.001).

Table 9-25: Mean Concentrations of Metals in Lake Trout Tissue Samples from Parallel Lake, 1998

Tissue	Parameter	Metal Concentrations (µg/g of dry weight)							
		Al	As	Cd	Cu	Pb	Hg	Ni	Zn
Muscle n=20	n < D.L.[a]	18	0	20	0	18	0	4	0
	Mean (µg/g)	0.70	0.45	< D.L.	2.13	0.03	0.65	0.19	10.9
	SD[b] (µg/g)	0.64	0.33	-	0.89	0.01	0.61	0.10	1.76
	Min. (µg/g)	< D.L.	0.07	-	0.86	< D.L.	0.13	< D.L.	8.42
	Max. (µg/g)	3.0	1.02	-	4.19	0.05	2.44	0.30	14.2
Liver n=21	n < D.L.[a]	0	0	0	0	6	0	3	0
	Mean (µg/g)	31.6	0.33	1.97	90.5	0.07	1.21	0.25	115
	SD[b] (µg/g)	43.8	0.20	1.11	43.7	0.04	1.34	0.19	21.8
	Min. (µg/g)	2.0	0.16	0.82	36.8	< D.L.	0.24	< D.L.	65
	Max. (µg/g)	207	1.04	6.01	193	0.18	4.84	0.70	159
Kidney n=21	n < D.L.[a]	0	0	0	0	11	0	0	0
	Mean (µg/g)	16.9	0.64	9.32	6.25	0.06	1.91	3.72	107
	SD[b] (µg/g)	12.1	0.27	4.58	1.72	0.04	1.91	1.33	20.2
	Min. (µg/g)	6.0	0.29	4.24	4.33	< D.L.	0.41	1.90	77.0
	Max. (µg/g)	65	1.21	21.0	12.2	0.12	6.63	7.0	150

[a] Number of samples below detection limit (D.L.); values below D.L. were coded as one-half of D.L. to allow statistical calculations.
[b] Standard deviation.
Note: µg/g: microgram per gram; < = less than; n = sample size; Min. = minimum; Max. = maximum.

Arsenic

Detectable concentrations of arsenic were recorded in all muscle, liver, and kidney tissues sampled from Lake Trout collected in Meliadine Lake. Mean concentrations were highest in the kidney samples (2.29 µg/g), intermediate in the muscle samples (1.23 µg/g), and lowest in the liver samples (0.92 µg/g). Elevated arsenic concentrations were not recorded in any Lake Trout tissue samples; the highest recorded value was 5.11 µg/g in a kidney sample.

The results for Lake Trout tissues collected from Parallel Lake were similar; all samples were above detectable limits. Mean concentrations were highest in the kidney samples (0.64 µg/g), intermediate in the muscle samples (0.45 µg/g), and lowest in the liver samples (0.33 µg/g). Elevated arsenic concentrations were not recorded in any Lake Trout tissue samples collected from Parallel Lake (maximum value was 1.21 µg/g in a kidney sample).

A comparison of mean arsenic concentrations in Lake Trout tissues collected from the two study areas indicated that background levels in all 3 tissue types were higher in Meliadine Lake. A statistical comparison of these data indicated that these differences were significant for each of the 3 tissue types analysed ($P<0.001$ for all comparisons).

Cadmium

Detectable concentrations of cadmium were measured in all liver and kidney tissues sampled from Lake Trout collected from Meliadine Lake; however, only two muscle samples had detectable concentrations (Table 9-24).

Mean concentrations were highest in the kidney samples (6.18 μg/g) and intermediate in the liver samples (2.93 μg/g). The maximum concentration recorded in muscle tissues was 0.05 μg/g. The highest recorded values were 50.5 μg/g (kidney) and 49.7 μg/g (liver); both of these samples were collected from the same fish.

The results for Lake Trout tissues collected from Parallel Lake were similar; all liver and kidney samples were above the detection limit, but muscle tissue samples did not contain cadmium concentrations above the detectable level (Table 9-6). Mean concentrations were 9.32 μg/g in the kidney samples and 1.97 μg/g in the liver samples. Elevated levels of cadmium were present in some Lake Trout tissue samples collected from Parallel Lake. The maximum concentration (21.0 μg/g) was recorded from a kidney sample.

A comparison of mean cadmium concentrations in Lake Trout tissues collected in Meliadine Lake and Parallel Lake indicated that background levels in all 3 tissue types were generally similar. A statistical comparison of these data indicated that there were no significant differences for each of the 3 tissue types sampled ($P>0.1$ for all comparisons).

Copper

Detectable concentrations of copper were recorded in all muscle, liver, and kidney tissues sampled from Lake Trout collected in Meliadine Lake (Table 9-24). Mean concentrations were highest in the liver samples (94.0 μg/g), intermediate in the kidney samples (12.9 μg/g), and lowest in the muscle samples (1.21 μg/g). Four liver samples exceeded 200 μg/g.

The results for Lake Trout tissues collected from Parallel Lake were generally similar to those from Meliadine Lake. All the tissue samples were above detectable limits (Table 9-25). Mean concentrations were highest in the liver samples (90.5 μg/g), intermediate in the kidney samples (6.25 μg/g), and lowest in the muscle samples (2.13 μg/g). Elevated copper concentrations were recorded in 3 liver samples (166, 171, and 193 μg/g).

A comparison of the mean copper concentrations in Lake Trout tissues collected in the two study areas indicated that background levels recorded for all 3 tissue types were similar; however, a statistical analyses of the data indicated that the copper concentrations in the kidney samples were significantly higher in Meliadine Lake ($P<0.05$). A statistically significant difference was also detected for the Lake Trout muscle tissues ($P<0.001$), although in this case the mean copper concentration was higher in the Parallel Lake sample. No statistical difference was detected for the liver tissues ($P>0.5$).

Lead

Lead concentrations in Lake Trout collected from Meliadine Lake were generally low, with only 37% of muscle, 47% of liver, and 54% of kidney tissue samples having concentrations above the detection limit (Table 9-24). The mean concentration of lead was lower in the muscle samples (0.05 μg/g) than in the liver and kidney samples (0.16 and 4.01 μg/g, respectively). The maximum lead concentration was recorded in a kidney sample (26.1 μg/g).

Lead concentrations in Lake Trout collected from Parallel Lake were also low. Overall, 10% of muscle, 71% of liver, and 48% of kidney tissue samples contained concentrations above the detection limit (Table 9-6). Mean concentrations were very low in all 3 tissue types (0.03 μg/g in muscle, 0.07 μg/g in liver, and 0.06 μg/g in kidney samples). Elevated levels of lead were not recorded in any Lake Trout tissue samples collected from Parallel Lake, with a maximum concentration of 0.18 μg/g measured in a liver sample.

A comparison of the mean lead concentrations in Lake Trout tissues collected in the two study area lakes indicated that the levels recorded for all 3 tissue types were higher in fish from Meliadine Lake than in fish from Parallel Lake. In fact, statistical analyses indicated that the mean lead concentration in each of the 3 tissue types was significantly higher in samples collected from Meliadine Lake ($P<0.05$ for all comparisons).

Mercury

Detectable concentrations of mercury were recorded in all tissue samples collected from Lake Trout in Meliadine Lake (Table 9-24). Mean concentrations were highest in the kidney samples (3.04 µg/g), intermediate in the liver samples (1.77 µg/g), and lowest in the muscle samples (1.42 µg/g). A number of tissue samples had elevated mercury concentrations, with 17 of 30 kidney samples exceeding the human consumption guideline equivalent of 2.5 µg/g (the maximum value was 9.30 µg/g). The highest concentration recorded in the liver tissue was 8.13 µg/g, and 3 of 30 samples exceeded 2.5 µg/g. The highest recorded value in muscle tissue was 4.64 µg/g (3 of 30 samples exceeded 2.5 µg/g).

The results for Lake Trout tissues collected from Parallel Lake were similar; all tissue samples were above detectable concentrations (Table 9-25). Mean mercury concentrations were highest in the kidney samples (1.91 µg/g), intermediate in the liver samples (1.21 µg/g), and lowest in the muscle samples (0.65 µg/g). A number of tissue samples had elevated mercury concentrations. Five kidney samples exceeded the human consumption guideline equivalent of 2.5 µg/g (the maximum value was 6.63 µg/g). The highest concentration recorded in the liver tissue was 4.84 µg/g, and 3 samples exceeded 2.5 µg/g. The highest recorded value in Lake Trout muscle tissue was 2.44 µg/g.

To assess whether the mercury concentrations measured in Lake Trout tissues collected from the two study areas were related to fish age, a correlation analyses was undertaken using fork length as an indicator of fish age. Fork length was used under the assumption that length increased with age. This comparison indicated that mercury concentrations in Lake Trout tissues were highly correlated with fish length; Pearson correlation coefficients were greater than 0.82 and statistical significance exceeded $P<0.01$ for all comparisons (Table 9-26). These results indicated that differences in fish length, as an indicator of age, could influence the analyses. A comparison of mean lengths of Lake Trout sampled from the two study area lakes indicated that fish from Meliadine Lake tended to be larger than fish collected from Parallel Lake (Table 9-23), and this difference was statistically significant (Independent Samples t-test; $P<0.01$).

Table 9-26: Correlation between Fish Length and Mercury Concentration (µg/g of dry weight) in Muscle, Liver and Kidney Tissues Collected from Fish in the Meliadine Study Area, 1998

Basin	Species	Sample Size	Pearson Correlation Coefficient by Tissue Type[a]		
			Muscle	Liver	Kidney
Meliadine Lake (South Basin)	Lake Trout	30	0.850**	0.883**	0.837**
	Round whitefish	7	0.189	0.454	0.549
	Cisco	16	0.383	0.348	0.257
Parallel Lake	Lake Trout	21	0.821***	0.891***	0.927***
	Round whitefish	10	0.486	0.691*	0.822**

[a] Assessed using Pearson correlation coefficient with statistical significance based on two-tailed test.
Correlation is significant at 0.05 level (*), 0.01 level (**), or 0.001 level (***).
Note: µg/g: microgram per gram; <= less than

Given the correlation between mercury concentration in fish tissue and differences in fish size between waterbodies, the data were adjusted using Analyses of Covariance (fish length was used as the covariate) before comparisons between Meliadine Lake and Parallel Lake were performed. After differences in fish length were accounted for, the analyses showed that mean mercury concentrations in each of kidney, liver, and muscle tissues were higher in Meliadine Lake than in Parallel Lake ($P < 0.001$ for all comparisons).

Nickel

Detectable concentrations of nickel were recorded in most tissues sampled from Lake Trout collected in Meliadine Lake (Table 9-24). Detectable levels were recorded in 90% of the muscle, 87% of the liver, and 100% of the kidney samples. Mean concentrations were highest in the kidney samples (1.64 μg/g), intermediate in the muscle samples (0.39 μg/g), and lowest in the liver samples (0.29 μg/g). The highest concentration (6.70 μg/g) was recorded in kidney tissue.

The nickel concentrations in Lake Trout tissues collected from Parallel Lake were similar. Most of the tissue samples were above detectable limits (Table 9-25). Mean concentrations were highest in the kidney samples (3.72 μg/g), intermediate in the liver samples (0.25 μg/g), and lowest in the muscle samples (0.19 μg/g). The highest copper concentration was recorded in a kidney sample (7.0 μg/g).

A comparison of the mean nickel concentrations in Lake Trout tissues collected in Meliadine Lake and Parallel Lake indicated that the levels recorded for all 3 tissue types were generally similar; however, nickel concentrations in kidney tissues was significantly higher in fish from Parallel Lake ($P<0.01$). A statistically significant difference was also detected for the Lake Trout muscle tissues ($P<0.01$), but in this case, the mean copper concentration was higher in Meliadine Lake. No statistical difference was detected for liver tissue ($P>0.5$).

Zinc

Zinc concentrations were detectable in all tissue samples collected from Lake Trout in Meliadine Lake (Table 9-24). The mean concentration of zinc in the muscle samples (13.1 μg/g) was much lower than concentrations detected in the liver and kidney samples (126 and 113 μg/g, respectively). The maximum zinc concentration in Meliadine Lake Lake Trout was 204 μg/g in a liver sample.

Zinc concentrations in Lake Trout tissues collected from Parallel Lake were generally similar. All tissue samples showed values above the detection limit and the mean concentration in muscle samples (10.9 μg/g) was much lower than mean values recorded in liver (115 μg/g) and kidney (107 μg/g) samples (Table 9-6). The maximum zinc concentration recorded in Lake Trout in Parallel Lake was 159 μg/g in a liver sample.

A comparison of the mean zinc concentrations in Lake Trout tissues collected from fish in the two study area lakes indicated that levels tended to be higher in fish from Meliadine Lake; however, statistical analyses indicated that this difference was significant only for the muscle tissues ($P<0.01$).

9.5.3 Round Whitefish

Aluminum

Detectable concentrations of aluminum were recorded in all liver and kidney samples, but in none of the muscle samples collected from Round Whitefish in Meliadine Lake (Table 9-27). Mean concentrations were 31.6 μg/g in the kidney samples and 14.3 µg/g in the liver samples. The maximum concentration of aluminum (81 µg/g) was recorded in a kidney sample.

Table 9-27: Mean Concentrations of Metals in Round Whitefish Tissue Samples from Meliadine Lake, 1998

Tissue	Parameter	Metal Concentrations (µg/g of dry weight)							
		Al	As	Cd	Cu	Pb	Hg	Ni	Zn
Muscle n=7	n < D.L.[a]	7	0	7	0	7	0	7	0
	Mean (µg/g)	< D.L.	0.23	< D.L.	1.83	< D.L.	0.14	< D.L.	16.7
	SD[b] (µg/g)	-	0.10	-	0.11	-	0.02	-	1.55
	Min. (µg/g)	-	0.15	-	1.64	-	0.12	-	14.8
	Max. (µg/g)	-	0.45	-	1.95	-	0.17	-	18.9
Liver n=7	n < D.L.[a]	0	0	0	0	3	0	3	0
	Mean (µg/g)	14.3	0.46	0.40	10.9	0.06	0.20	0.18	72.7
	SD[b] (µg/g)	3.4	0.17	0.15	1.55	0.03	0.03	0.20	13.9
	Min. (µg/g)	10	0.19	0.14	8.70	< D.L.	0.15	< D.L.	48.2
	Max. (µg/g)	20	0.66	0.6	13.5	0.1	0.25	0.6	87.5
Kidney n=7	n < D.L.[a]	0	0	0	0	0	0	0	0
	Mean (µg/g)	31.6	2.33	2.56	6.06	0.15	0.69	4.14	87.5
	SD[b] (µg/g)	22.5	0.97	1.10	1.39	0.05	0.35	1.23	18.1
	Min. (µg/g)	15	1.22	1.04	3.75	0.09	0.37	2.5	62.7
	Max. (µg/g)	81	3.67	4.32	7.68	0.22	1.41	6.5	117

[a] Number of samples below detection limit (D.L.); values below D.L. were coded as one-half of D.L. to allow statistical calculations.
[b] Standard deviation.
Note: µg/g: microgram per gram; < = less than; n = sample size; Min. = minimum; Max. = maximum.

The results for aluminum concentrations in Round Whitefish tissues collected from Parallel Lake were generally similar (Table 9-28). All liver and kidney samples were above detectable limits; however, detectable concentrations were recorded in only 40% of the muscle samples. Mean concentrations were highest in the kidney samples (35.0 µg/g), intermediate in the liver samples (12.6 µg/g), and lowest in the muscle samples (0.8 µg/g). Elevated aluminum concentrations were recorded in one kidney sample (59 µg/g).

A comparison of mean aluminum concentrations in Round Whitefish tissues collected from the two study area waterbodies indicated that background levels in all 3 tissue types were similar. Statistical analyses of the data confirmed these findings; there were no significant differences between the two waterbodies (P>0.3 for all comparisons).

Arsenic

Detectable concentrations of arsenic were recorded in all muscle, liver, and kidney tissues sampled from Round Whitefish in Meliadine Lake. Mean concentrations were highest in the kidney samples (2.33 µg/g), intermediate in the liver samples (0.46 µg/g), and lowest in the muscle samples (0.23 µg/g). No Round Whitefish tissue samples contained elevated arsenic concentrations. The highest recorded value was 3.67 µg/g in a kidney sample.

Table 9-28: Mean Concentrations of Metals in Round Whitefish Tissue Samples from Parallel Lake, 1998

Tissue	Parameter	Metal Concentrations (µg/g of dry weight)							
		Al	As	Cd	Cu	Pb	Hg	Ni	Zn
Muscle n=10	n < D.L.[a]	6	0	10	0	10	0	10	0
	Mean (µg/g)	0.8	0.27	< D.L.	1.60	< D.L.	0.21	< D.L.	15.5
	SD[b] (µg/g)	0.5	0.19	-	0.28	-	0.11	-	1.32
	Min. (µg/g)	< D.L.	0.10	-	1.27	-	0.08	-	13.2
	Max. (µg/g)	2	0.80	-	2.13	-	0.43	-	17.8
Liver n=10	n < D.L.[a]	0	0	0	0	6	0	2	0
	Mean (µg/g)	12.6	0.22	0.85	10.5	0.06	0.27	0.21	63.7
	SD[b] (µg/g)	5.2	0.14	0.68	2.33	0.05	0.13	0.14	6.65
	Min. (µg/g)	4	0.13	0.24	6.66	< D.L.	0.11	< D.L.	55.4
	Max. (µg/g)	19	0.59	2.50	13.1	0.18	0.48	0.40	73.8
Kidney n=10	n < D.L.[a]	0	0	0	0	1	0	0	0
	Mean (µg/g)	35.0	1.23	7.40	6.64	0.16	1.14	5.22	96.0
	SD[b] (µg/g)	16.0	0.70	5.44	1.91	0.18	0.66	2.11	17.5
	Min. (µg/g)	15	0.62	2.07	3.87	< D.L.	0.46	2.80	68.7
	Max. (µg/g)	59	2.74	18.3	10.7	0.66	2.63	8.80	127

[a] Number of samples below detection limit (D.L.); values below D.L. were coded as one-half of D.L. to allow statistical calculations.
[b] Standard deviation.
Note: µg/g: microgram per gram; < = less than; n = sample size; Min. = minimum; Max. = maximum.

The results for Round Whitefish tissues collected from Parallel Lake were similar; all samples were above detectable limits. Mean arsenic concentrations were highest in the kidney samples (1.23 µg/g), intermediate in the muscle samples (0.27 µg/g), and lowest in the liver samples (0.22 µg/g). Elevated arsenic concentrations were not recorded in any Round Whitefish tissue sample collected from Parallel Lake (the maximum value was 2.74 µg/g).

A comparison of mean arsenic concentrations in Round Whitefish tissues collected from the two study areas indicated that concentrations in liver and kidney tissues tended to be higher in Meliadine Lake. A statistical comparison of these data indicated that these differences were significant for each tissue type ($P<0.05$ for both comparisons). No statistical difference between lakes ($P>0.50$) existed for arsenic in muscle tissues.

Cadmium

Detectable concentrations of cadmium were recorded in all liver and kidney tissues sampled from Round Whitefish collected from Meliadine Lake; however, no muscle samples contained concentrations above the detectable level. Mean concentrations were 2.56 µg/g in the kidney samples and 0.40 µg/g in the liver samples. Few Round Whitefish tissue samples exhibited elevated cadmium concentrations. The highest recorded value was 4.32 µg/g in kidney tissue.

The results for Round Whitefish tissues collected from Parallel Lake were similar; all liver and kidney samples were above the detection limit, but no muscle tissue samples contained cadmium concentrations above the detectable level. Mean cadmium concentrations were 7.40 µg/g in the kidney samples and 0.85 µg/g in the liver samples. The maximum value (18.3 µg/g) was recorded in a kidney sample.

A comparison of mean cadmium concentrations in Round Whitefish tissues collected in the study area lakes indicated that the levels in liver and kidney tissues tended to be higher in the samples from Parallel Lake. Statistical comparisons of these data indicated that there was a significant difference for kidney tissues and a nearly significant difference for the liver tissues (P<0.05 and P<0.1, respectively).

Copper

Detectable concentrations of copper were recorded in all muscle, liver and kidney tissues sampled from Round Whitefish collected in Meliadine Lake. Mean copper concentrations were highest in the liver samples (10.9 µg/g), intermediate in the kidney samples (6.06 µg/g), and lowest in the muscle samples (1.83 µg/g). No tissue samples had elevated concentrations; the maximum concentration was recorded in a liver sample (13.5 µg/g).

The results for Round Whitefish tissues collected from Parallel Lake were generally similar. All tissue samples were above detectable limits. Mean concentrations were highest in the liver samples (10.5 µg/g), intermediate in the kidney samples (6.64 µg/g), and lowest in the muscle samples (1.60 µg/g). The maximum concentration was recorded in a liver sample (13.1 µg/g)

A comparison of Round Whitefish tissues collected in the two study area lakes indicated that mean copper concentrations in all 3 tissue types were very similar. Statistical analyses indicated that liver and kidney tissue copper concentrations were not significantly different (P>0.50 for both comparisons). The difference in means between muscle samples (1.83 µg/g for Meliadine Lake and 1.60 µg/g for Parallel Lake) was nearly significant (P<0.1).

Lead

Lead concentrations in Round Whitefish collected from Meliadine Lake were low. None of the muscle contained concentrations above the detectable level, whereas 58% of liver and 100% of kidney tissue samples had lead concentrations above the detection limit. The mean concentrations of lead in the liver and kidney samples were 0.06 and 0.15 µg/g, respectively. Elevated lead concentrations were not recorded in any of the tissues sampled.

Lead concentrations in Round Whitefish collected from Parallel Lake were also low. Overall, none of the muscle, 40% of liver, and 90% of kidney samples contained concentrations above the detection limit. Mean concentrations recorded in the liver and kidney samples were very low (0.06 and 0.16 µg/g, respectively). High concentrations of lead were not detected in any Round Whitefish tissue samples collected from Parallel Lake (the maximum value was 0.66 µg/g).

A comparison of the mean lead concentrations in Round Whitefish tissues collected in the two study area lakes indicated that the levels recorded for all 3 tissue types were very similar. Statistical analyses confirmed no difference in mean lead concentrations (P>0.8 for all comparisons).

Mercury

Detectable concentrations of mercury were recorded in all tissue samples collected from Round Whitefish in Meliadine Lake; however, values were low. Mean concentrations were highest in the kidney samples (0.69 µg/g), intermediate in the liver samples (0.20 µg/g), and lowest in the muscle samples (0.14 µg/g). None of the Round

Whitefish tissue samples from this waterbody had elevated mercury concentrations. The highest concentration recorded (1.41 µg/g in a kidney tissue sample) was below the food consumption guideline of 2.5 µg/g.

The results for Round Whitefish tissues collected from Parallel Lake were similar; all tissue samples were above detectable concentrations. Mean mercury concentrations were highest in the kidney samples (1.14 µg/g), intermediate in the liver samples (0.27 µg/g), and lowest in the muscle samples (0.21 µg/g). Only one tissue sample had an elevated mercury concentration (>2.5 µg/g); it was a kidney sample with a concentration of 2.63 µg/g.

To assess whether the mercury concentrations recorded in Round Whitefish tissues collected from the two study area lakes were related to fish age, a correlation analyses was undertaken using fork length as an indicator of fish age. Fork length was used under the assumption that length increased with age. This comparison revealed mixed results. Mercury concentrations in Round Whitefish tissues were weakly correlated with fish length (Table 9-26). Also, statistically significant correlations existed only for liver and kidney tissues collected from fish that originated from Parallel Lake ($P<0.05$ for both comparisons). These results suggest that differences in Round Whitefish length may have influenced the results, but this influence was not as strong as in Lake Trout. A comparison of mean lengths of Round Whitefish sampled from the two lakes indicated that fish collected from Meliadine Lake were similar in size to fish from Parallel Lake (Table 9-23). There was no statistical difference between the mean fork lengths of the two samples ($P>0.9$).

Given the weak correlation between mercury concentration and Round Whitefish size, and the lack of significant difference in fish lengths between the two samples, parametric statistical analyses were used to compare the samples taken from the two lakes. These analyses indicated that there were nearly significant differences for kidney and muscle tissues ($P<0.1$ for both comparisons), but no difference was noted for muscle tissues ($P>0.1$). Mean mercury concentrations in the kidney and muscle tissues were higher in the Parallel Lake samples compared to fish collected from Meliadine Lake.

Nickel

Detectable concentrations of nickel were recorded in none of the muscle tissue samples, 58% of liver, and 100% of kidney samples collected from Meliadine Lake. Mean concentrations were 4.14 µg/g in the kidney samples and 0.18 µg/g in the liver samples. The highest concentration of 6.50 µg/g was recorded in a kidney sample.

The results for nickel concentrations in Round Whitefish tissues collected from Parallel Lake were very similar. Most of the liver and kidney tissue samples were above detection limits, but none of the muscle samples contained detectable levels of nickel. Mean concentrations were 5.22 µg/g in the kidney samples and 0.21 µg/g in the liver samples. The highest concentration was recorded in a kidney sample 8.80 µg/g.

A comparison of the mean nickel concentrations in Round Whitefish tissues collected in the two study area lakes indicated that the levels recorded for liver and kidney tissue types were similar. Although mean nickel concentrations tended to be higher in fish from Parallel Lake than in fish from Meliadine Lake, these differences were not statistically significant ($P>0.2$ for both comparisons).

Zinc

Zinc concentrations were detectable in all tissue samples collected from Round Whitefish in Meliadine Lake. The mean concentration of zinc in the muscle samples (16.4 µg/g) was much lower than concentrations recorded in the liver and kidney samples (72.7 and 87.5 µg/g, respectively). The maximum zinc concentration recorded in Round Whitefish in Meliadine Lake was 117 µg/g in a kidney sample.

Zinc concentrations in Round Whitefish tissues collected from Parallel Lake were very similar. All tissue samples showed values above the detection limit and the mean concentration in muscle tissues (15.5 µg/g) was much lower than the mean values recorded in liver (63.7 µg/g) and kidney (96.0 µg/g) samples. The maximum zinc concentration recorded in Round Whitefish in Parallel Lake was 127 µg/g in a kidney sample.

A comparison of the mean zinc concentrations in Round Whitefish tissues collected from fish in the two study areas indicated that concentrations were similar, and no statistical differences between lakes were identified for any of the 3 tissue types ($P>0.1$).

9.5.4 Cisco

Aluminum

Detectable concentrations of aluminum were recorded in all liver and kidney samples and 19% of muscle samples collected from Cisco in Meliadine Lake (Table 9-29). Mean aluminum concentrations were highest in the kidney samples (18.8 µg/g), intermediate in the liver samples (8.5 µg/g), and lowest in the muscle samples (0.6 µg/g). Four kidney tissue samples contained relatively high levels of aluminum (33, 40, 43, and 69 µg/g).

Table 9-29: Mean Concentrations of Metals in Cisco Tissue Samples from Meliadine Lake, 1998

Tissue	Parameter	Metal Concentrations (µg/g of dry weight)							
		Al	As	Cd	Cu	Pb	Hg	Ni	Zn
Muscle n=16	n < D.L.[a]	13	0	16	1	8	0	15	0
	Mean (µg/g)	0.6	0.28	< D.L.	1.71	0.06	0.58	0.05	17.4
	SD[b] (µg/g)	0.2	0.13	-	1.05	0.04	0.46	0.01	4.54
	Min. (µg/g)	< D.L.	0.13	-	< D.L.	< D.L.	0.25	< D.L.	13.3
	Max. (µg/g)	1	0.56	-	3.71	0.14	2.21	0.10	32.2
Liver n=16	n < D.L.[a]	0	0	0	0	5	0	9	0
	Mean (µg/g)	8.5	1.05	0.88	20.3	0.08	1.37	0.19	299
	SD[b] (µg/g)	5.9	0.85	1.02	19.6	0.09	1.74	0.20	246
	Min. (µg/g)	1	0.47	0.16	3.16	< D.L.	0.20	< D.L.	57
	Max. (µg/g)	20	3.73	3.55	81.2	0.37	6.65	0.70	1030
Kidney n=16	n < D.L.[a]	0	0	0	0	0	0	0	0
	Mean (µg/g)	18.8	1.35	4.33	19.1	0.43	1.28	1.84	235
	SD[b] (µg/g)	18.6	0.98	6.21	21.1	0.48	1.14	1.22	101
	Min. (µg/g)	3	0.50	0.22	4.76	0.07	0.44	0.60	125
	Max. (µg/g)	69	4.58	26.4	86.0	1.83	4.93	5.10	453

[a] Number of samples below detection limit (D.L.); values below D.L. were coded as one-half of D.L. to allow statistical calculations.
[b] Standard deviation.
Note: µg/g: microgram per gram; < = less than; n = sample size; Min. = minimum; Max. = maximum.

Arsenic

Detectable concentrations of arsenic were recorded in all muscle, liver, and kidney tissues sampled from Cisco collected in Meliadine Lake. Mean concentrations were highest in the kidney samples (1.35 µg/g), intermediate in the liver samples (1.05 µg/g), and lowest in the muscle samples (0.28 µg/g). The highest recorded value was 4.58 µg/g in a kidney sample.

Cadmium

Detectable concentrations of cadmium were recorded in all liver and kidney tissues sampled from Cisco collected from Meliadine Lake; however, no muscle samples contained concentrations above the detection limit. Mean concentrations were 4.33 µg/g in the kidney samples and 0.88 µg/g in the liver samples. Only one kidney sample had an elevated cadmium concentration (26.4 µg/g).

Copper

Detectable concentrations of copper were recorded in all muscle, liver, and kidney tissues sampled from Cisco in Meliadine Lake. Mean concentrations were highest in the liver and kidney samples (20.3 and 19.1 µg/g, respectively) and lowest in the muscle samples (1.71 µg/g). Only one liver (81.2 µg/g) and one kidney (86.0 µg/g) tissue sample exhibited elevated concentrations; these samples were collected from two different fish.

Lead

Lead concentrations in Cisco tissues collected from Meliadine Lake were low. In all, 50% of the muscle samples had concentrations above the detection limit, whereas 69% of liver and 100% of kidney tissue samples had detectable concentrations. The mean concentrations of lead in the muscle, liver, and kidney samples were 0.06, 0.08, and 0.43 µg/g, respectively. Elevated lead concentrations were not recorded in any of the sampled tissues.

Mercury

Detectable concentrations of mercury were present in all tissue samples collected from Cisco in Meliadine Lake; however, values were generally low. Mean concentrations were highest in the liver samples (1.37 µg/g), intermediate in the kidney samples (1.28 µg/g), and lowest in the muscle samples (0.58 µg/g). Some of the Cisco tissue samples had elevated mercury concentrations; one kidney sample and two liver samples had mercury concentrations in the range of 4.47 µg/g and 6.65 µg/g. None of the 16 muscle tissue samples exceeded the food consumption guideline equivalent of 2.5 µg/g.

Nickel

Detectable concentrations of nickel were recorded in 6% of the muscle, 44% of liver, and 100% of kidney samples. Mean concentrations were 1.84 µg/g in the kidney samples and 0.19 µg/g in the liver samples. The highest concentration (5.10 µg/g) was recorded in a kidney sample.

Zinc

Zinc concentrations were detectable in all tissue samples collected from Cisco in Meliadine Lake. The mean concentration of zinc in the muscle sample (17.4 µg/g) was much lower than the mean concentrations recorded in the liver and kidney samples (299 and 235 µg/g, respectively). Zinc concentrations tended to be high in the liver and kidney samples collected from Cisco. Concentrations regularly exceeded 200 µg/g in kidney tissues (maximum value of 453 µg/g) and 300 µg/g in liver tissues (maximum value of 1030 µg/g).

9.5.5 Arctic Grayling

Aluminum

Detectable concentrations of aluminum were recorded in all liver and kidney samples, but in only one of 3 muscle samples collected from Arctic Grayling in Lake B5 (Table 9-30). Mean concentrations were highest in the kidney samples (13.0 µg/g), intermediate in the liver samples (7.7 µg/g), and lowest in the muscle samples (0.7 µg/g). The maximum concentrations recorded were 17 µg/g in a kidney sample and 13 µg/g in a liver sample.

Arsenic

Detectable concentrations of arsenic were recorded in all muscle, liver, and kidney tissues sampled from Arctic Grayling collected in Lake B5. Mean concentrations were highest in the kidney samples (0.81 µg/g), intermediate in the muscle samples (0.37 µg/g), and lowest in the liver samples (0.22 µg/g). No Arctic Grayling tissue samples had elevated arsenic concentrations; the maximum recorded value was 0.92 µg/g in a kidney sample.

Table 9-30: Mean Concentrations of Metals in Arctic Grayling Tissue Sample from Lake B5, 1998

Tissue	Parameter	Metal Concentrations (µg/g of dry weight)							
		Al	As	Cd	Cu	Pb	Hg	Ni	Zn
Muscle n=3	n < D.L.[a]	2	0	3	0	3	0	3	0
	Mean (µg/g)	0.7	0.37	< D.L.	1.85	< D.L.	0.20	< D.L.	17.7
	SD[b] (µg/g)	0.3	0.03	-	0.12	-	0.01	-	0.67
	Min. (µg/g)	< D.L.	0.34	-	1.72	-	0.19	-	16.9
	Max. (µg/g)	1	0.40	-	1.95	-	0.22	-	18.1
Liver n=3	n < D.L.[a]	0	0	0	0	3	0	3	0
	Mean (µg/g)	7.7	0.22	0.15	6.28	< D.L.	0.17	< D.L.	52.0
	SD[b] (µg/g)	5.0	0.08	0.04	1.66	-	0.03	-	12.0
	Min. (µg/g)	3	0.14	0.11	5.03	-	0.14	-	38.0
	Max. (µg/g)	13	0.29	0.19	8.17	-	0.21	-	66.0
Kidney n=3	n < D.L.[a]	0	0	0	0	1	0	0	0
	Mean (µg/g)	13.0	0.81	0.53	10.6	0.32	0.38	1.33	94.2
	SD[b] (µg/g)	3.6	0.13	0.11	3.13	0.26	0.09	0.15	10.4
	Min. (µg/g)	10	0.66	0.40	7.82	< D.L.	0.30	1.2	86
	Max. (µg/g)	17	0.92	0.60	14.0	0.52	0.48	1.50	106

[a] Number of samples below detection limit (D.L.); values below D.L. were coded as one-half of D.L. to allow statistical calculations.
[b] Standard deviation.
Note: µg/g: microgram per gram; < = less than; n = sample size; Min. = minimum; Max. = maximum.

Cadmium

Detectable concentrations of cadmium were recorded only in the liver and kidney tissues sampled from Arctic Grayling collected from Lake B5. Mean concentrations were 0.53 µg/g in the kidney samples and 0.15 µg/g in the liver samples. No tissue samples exhibited elevated cadmium concentrations.

Copper

Detectable concentrations of copper were present in all tissues sampled from Arctic Grayling collected from Lake B5. Mean concentrations were highest in the kidney samples (10.6 µg/g), intermediate in the liver samples (6.28 µg/g), and lowest in the muscle samples (1.85 µg/g). Maximum concentrations were 14.0 µg/g in a kidney sample and 8.17 µg/g in a liver sample.

Lead

Lead concentrations in Arctic Grayling collected from Lake B5 were low. Only two kidney samples contained concentrations above the detectable limit of 0.05 µg/g. The mean concentration of lead in the kidney samples was 0.32 µg/g.

Mercury

Detectable concentrations of mercury were recorded in all tissue samples collected from Arctic Grayling in Lake B5; however, values were low. Mean concentrations were highest in the kidney samples (0.38 µg/g), intermediate in the muscle samples (0.17 µg/g), and lowest in the liver samples (0.20 µg/g). None of the Arctic Grayling tissue samples exhibited elevated mercury concentrations.

Nickel

Detectable concentrations of nickel were recorded only in the kidney samples collected from Arctic Grayling in Lake B5. The mean concentration was 1.33 µg/g and the highest concentration was 1.50 µg/g.

Zinc

Zinc concentrations were detectable in all tissue samples collected from Arctic Grayling in Lake B5. The mean concentration of zinc in the muscle samples (17.7 µg/g) was lower than concentrations recorded in the liver and kidney samples (52.0 and 94.2 µg/g, respectively). The maximum zinc concentration in each tissue type was 18.1 µg/g (muscle), 60.0 µg/g (liver), and 106 µg/g (kidney).

9.6 Fish Populations Summary and Conclusions

Species Composition and Relative Abundance

Substantial fishing effort (over 800 sampling events) was applied between 1997 and 2009 during investigations of fish communities in the Meliadine Study Area. Field biologists used angling, backpack electrofishing, fyke nets, gill nets, minnow traps, and a fish fence to sample fish communities in 155 waterbodies, most of which (*n*=140) comprised small lakes, ponds and interconnecting streams in the Peninsula basins These sampling efforts resulted in the capture of 19 722 fish. The overall catch was comprised of 9 species, 5 of which are members of the Salmonidae family. Threespine Stickleback were most prevalent (33% of total catch) followed by Arctic Char (20%), Ninespine Stickleback (16%), Cisco (14%), Arctic Grayling (10%) and Lake Trout (4%). Round Whitefish, Slimy Sculpin, and Burbot comprised only a small portion of the catch. The large contribution of Arctic Char to the total catch resulted from a fish fence program in the lower Meliadine River during the annual fall migration of this species from Hudson Bay into freshwater systems. Similarly, the predominance of Threespine Stickleback reflected their abundance in near-shore areas of Meliadine Lake and susceptibility to capture.

The total catch in Meliadine Lake (9984 fish) was dominated by Threespine Stickleback (62%) and Cisco (25%). Arctic Char and Lake Trout were also common (5% each). Lake Trout were represented by all size classes, whereas only juvenile Arctic Char were captured during summer. Adult Arctic Char use the lake mainly in late fall (during spawning) and in winter. Arctic Grayling (2%) and Round Whitefish (1%) were mainly represented by adults. The predominance of Threespine Stickleback in the catch was due to the high numbers of this species caught by fyke nets set in the near-shore areas. It is noteworthy that Ninespine Stickleback were absent from the catch, despite the abundance of this species in adjacent streams, lakes and ponds of the Peninsula basins

The total catch in Peninsula Basins (5485 fish) was dominated by Ninespine Stickleback (56%) and Arctic Grayling (25%) and included all other species present in the study area. Ninespine Stickleback appeared to prefer the Peninsula waterbodies (especially shallow ponds and the smaller streams) over the open lake environment of Meliadine Lake. Arctic Grayling use the Peninsula streams extensively for spawning and rearing, and appear to overwinter in some of the deeper Peninsula lakes. The size of the Arctic Grayling population in Lake B7 was estimated at 1345 fish. Cisco were also common in the larger Peninsula lakes where they are likely year-round residents. Arctic Char and Lake Trout and were also captured; however, they tended to use only the lowermost sections of the basins in close proximity to Meliadine Lake and were not encountered in the upper Peninsula lakes (e.g., B7, A6). Although absent from Meliadine Lake catches in the summer, adult Arctic Char were encountered in the Peninsula lakes, but only in Lakes D1 and D7.

The total catch in Little Meliadine Lake (208 fish) was dominated by Round Whitefish (44%), followed by Lake Trout (25%), Arctic Char (13%), Cisco (10%), and Arctic Grayling (9%). The Meliadine River downstream of Little Meliadine Lake is used as a corridor for Arctic Char migrations to and from the sea. The fish fence catch (n=3761) near the estuary during late summer and fall was dominated by Arctic Char (86%), with Arctic Grayling, Round Whitefish, Lake Trout and Cisco also recorded.

Life History

Life history data were collected for 11 083 fish, including Arctic Char (n=3879), Arctic Grayling (n=1938) and Lake Trout (n=706). Analyses of length-frequency distribution, length-weight relationships, length-at-age, and diet were performed for each basin to facilitate comparisons among watersheds. The results are briefly described, for the main species, in the following sections.

Arctic Char ranged from 61 to 777 mm in fork length. Age classes between 1 and 10 years were represented in the aged sample. The fastest rate of growth (approximately 120 mm per year) occurred between ages 5 and 6 and likely corresponds to the time that smolts make their first migration to sea. The size of the Arctic Char captured by the fish fence in Meliadine River indicated significant differences between the early, middle, and late stages of the run; large fish returned from the sea earlier than the smaller fish and the final phases of the run were dominated by the first-year sea migrants.

Lake Trout ranged from 43 to 965 mm in fork length. Age classes between 1 and 30 years were represented. Approximately half of 143 Lake Trout stomachs examined contained no food items. Lake Trout diet consisted primarily of fish (71% of the total food volume) with invertebrates (primarily amphipods) accounting for the remainder.

Arctic Grayling ranged from 20 to 435 mm in fork length. Age classes between 0 and 11 years were represented. Growth increments during the first 5 years of life averaged approximately 50 mm in length per year; the older fish grew considerably slower (about 20 mm per year). In contrast to the other species examined most (84%) of

Arctic Grayling stomachs contained food. The diet consisted mainly of invertebrates (87% of the total food volume), with Ninespine Stickleback accounting for the remainder.

Fish Movements

During the 1997 to 2008 studies, 3460 fish in the study area were marked with Floy tags. The majority (76%) were Arctic Char, followed by Arctic Grayling (11%), Lake Trout (6%), Round Whitefish (5%), Cisco (29%), and Burbot (0.1%). Subsequent fishing effort by the study team and tags returned by local fishermen resulted in 1740 tag recapture events. These recapture events involved 1380 fish (40% of all fish tagged), of which 1081 fish were recaptured once and 299 fish were recaptured multiple times during the course of the study. Most of the recapture events (n=1004) were based on tag returns by local fishermen during subsistence fishing in Little Meliadine Lake and several areas of Hudson Bay.

A total of 2633 Arctic Char were marked with Floy tags. Almost half (49.9%) of the marked fish were recaptured at least once. The results indicated that a substantial portion of the population (998 fish or 37.9% of the marked total) had been harvested by the local fishermen. Most of the harvested fish were captured in the immediate vicinity of Rankin Inlet: Prairie Bay (*n*=242), lower Meliadine River (*n*=81), and Little Meliadine Lake (*n*=548). Other freshwater harvest locations included Meliadine Lake (*n*=13), upper Meliadine River (*n*=7), and Diana River system (*n*=11). Marine harvest locations outside of Prairie Bay (*n*=45) were widespread and ranged between Chesterfield Inlet to the north and Corbett Inlet to the south of Rankin Inlet.

The radio telemetry program was implemented in two phases during the study. The first phase was carried out in 1997 to 1999 and involved tracking of 68 fish (Arctic Char, Lake Trout and Arctic Grayling) implanted with radio transmitters. The second phase was carried out in 2000 and 2001 and focused on implanting radio transmitters in 12 pre-spawning Arctic Char and tracking their movements in an attempt to determine their spawning and overwintering habitats.

Radio tracking of Arctic Char demonstrated movements between Hudson Bay and Meliadine Lake, with many fish overwintering in Little Meliadine Lake. Pre-spawning fish implanted with radio transmitters in the west basin of Meliadine Lake in September 2000 demonstrated extensive movements and rapid dispersal of the implanted fish, suggesting that Arctic Char spawning may occur in several areas widely distributed throughout Meliadine Lake, but appeared to be focussed on the north shores of the west and central basins. Subsequent tracking in April 2001 revealed that all fish were within 9 km of their early winter locations, suggesting limited movements during winter. In contrast, at least half of the implanted fish left Meliadine Lake in June 2001 to undergo migrations to Hudson Bay. Some selected the seaward route through the south outlet of Meliadine Lake (Meliadine River), whereas others migrated downstream through the west outlet of Meliadine Lake into Peter Lake and the Diana River system, suggesting that both outlets of Meliadine Lake are equally important as migration corridors for post-spawning fish during their spring return to the sea.

Most (9 of 13) radio tagged Lake Trout moved less than 15 km during the 1997 to 1999 tracking program and remained within 9 km of their release locations. Nevertheless, they demonstrated movements between Lake D1 and the upper Meliadine River and between east and central basins of Meliadine Lake. The remaining 4 Lake Trout exhibited more extensive movements, with 2 individuals moving a total distance of 17 and 20 km throughout the east basin of Meliadine Lake and 2 others moving between the east basin and west basins of Meliadine Lake for a total distance of 41 and 45 km.

Most (14 of 19) Arctic Grayling radio tagged in 1997 exhibited limited movements and remained within the respective Peninsula lakes where they had been released. One individual tagged in Lake A6 moved to Lake A1 and back in June 1998, likely in relation to spawning activities. The 5 remaining Arctic Grayling tagged in 1997 had moved out of their release lakes (D1, D7, and B2) into the south basin of Meliadine Lake by July 1997. Three of these fish stayed in the south basin of Meliadine Lake throughout the 1997 to 1998 tracking program, while two fish exhibited extensive movements of about 40 km each, visiting other Peninsula lakes (B4, B2, K2) and the west basin of Meliadine Lake. Four Arctic Grayling radio tagged in August 1998 in Lake B5 remained within the same lake over the winter and throughout the open water period in 1999, suggesting that the upper Peninsula lakes are used by resident populations year-round.

Metal Analysis of Fish Tissues

Analyses of muscle, liver, and kidney tissues collected from Arctic Char, Lake Trout, Round Whitefish, Cisco and Arctic Grayling indicated generally low levels of metal accumulation. Concentrations of aluminium, arsenic, lead, mercury, and zinc in Lake Trout tissues were higher in Meliadine Lake than in Parallel Lake, which was selected as a control basin for long term monitoring. Mercury concentrations in Lake Trout tissues were strongly correlated with fish size. A small proportion (3 of 30) of Lake Trout muscle tissue samples from Meliadine Lake exceeded the food consumption guideline of 2.5 µg/g (dry weight). Round Whitefish tissues indicated similar concentrations between Meliadine and Parallel lakes. In contrast to Lake Trout, mercury concentrations in Round Whitefish were weakly correlated with fish size and none of the muscle tissue samples exceeded the food consumption guidelines. Analytical results for Cisco and Arctic Grayling also documented low metal concentrations in the tissue samples collected from these species.

10.0 STREAM CROSSING ASSESSMENTS

Assessments of fish and fish habitat were conducted at 14 watercourse crossings along two proposed road corridors: Meliadine and Discovery. Ten watercourse crossings were located along the primary corridor (Meliadine) extending from Rankin Inlet to the proposed Project site (Figure 10-1). Four crossings were located along the secondary corridor that extends from the primary road to the Discovery Area, located approximately 16 km southeast from the Meliadine camp. Stream crossings surveyed were assigned a unique designation that included a corridor prefix (M for Meliadine West area, D for Discovery area) followed by the distance (in kilometres) along the road alignment from south to north.

Crossing assessments were performed from 16 to 25 June 2008. During the 2008 visit, the area was free of snow but ice was present along the margins of some of the watercourses investigated, especially the Meliadine River. Most meltwater had drained from the study area; however, standing water was observed along stream margins. One of the crossing sites (D5.8b) was resurveyed on 15 July 2009. It was assigned a 'b' designation as it was located at a crossing near Site D5.8 along a section with a revised alignment.

10.1 Methods

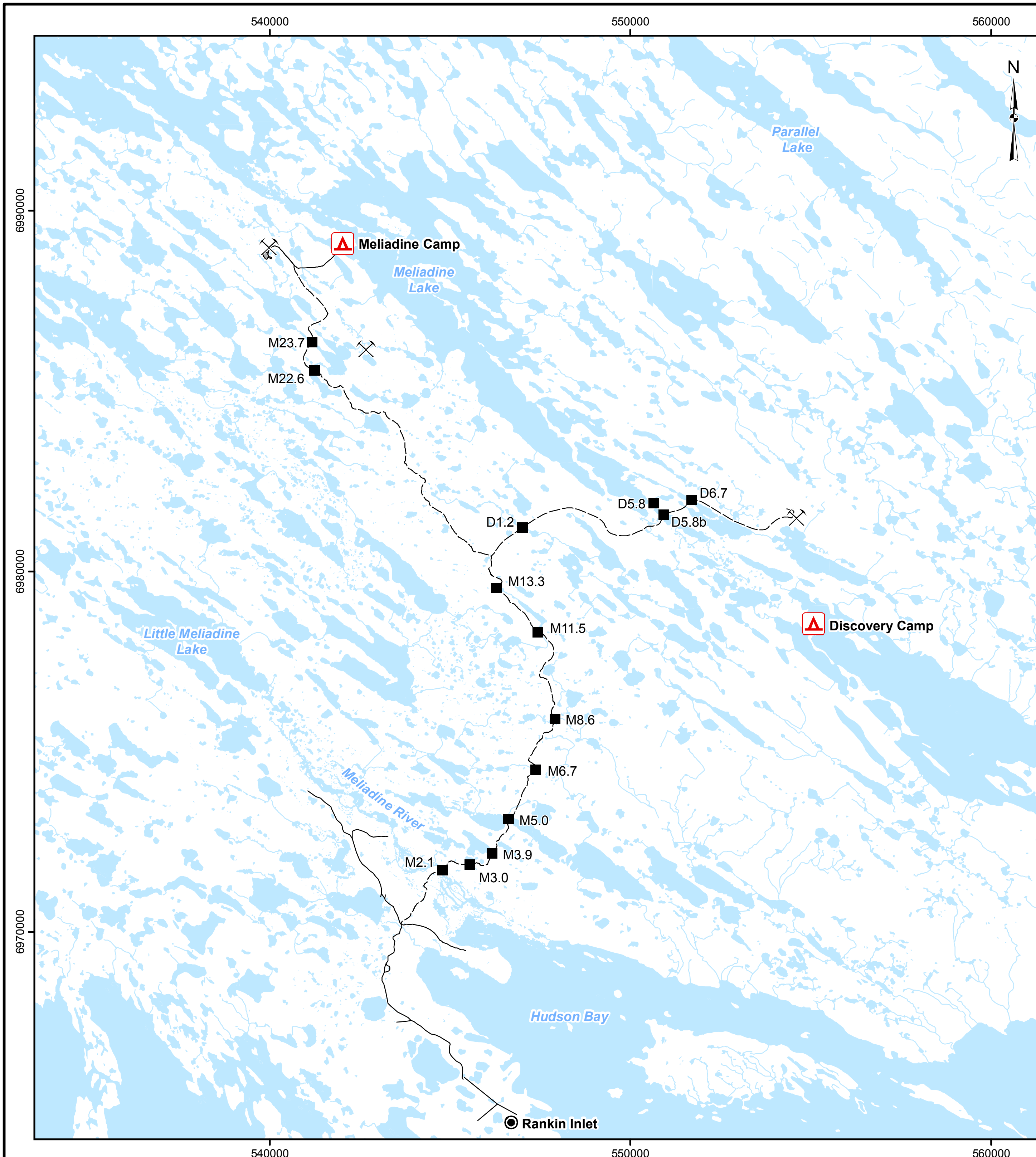
10.1.1 Habitat Assessments

Habitat was surveyed at each of the proposed crossings to assess spawning, rearing, overwintering, and movement potential for fish. Parameters surveyed included channel and flooded width (metres [m]), depth (m), habitat type (e.g., riffles, pools), substrate, as well as general observations such as channel type (e.g., single, double, braided, and dispersed) and the presence of movement barriers. Channel width was defined as the edge of the watercourse with a defined bank. On occasion, flooded sections of watercourses were observed at widths greater than that of the defined channel; therefore, some study reaches had a wetted width greater than that of the channel width. Flooded width was a measurement of wetted width beyond, and including, that of the defined channel. Substrates were assessed using a modified Wentworth scale as follows:

- Detritus (decomposed organic matter);
- Fines (<2 millimetres [mm] diameter);
- Gravel (2 to 64 mm);
- Cobble (65 to 256 mm); and
- Boulder (>256 mm).

Water quality measurements, including temperature, pH, and conductivity were taken in situ using calibrated hand-held water quality meters. Dissolved oxygen was measured using a colorimetric kit.

Because the watercourses investigated were often small and poorly defined, it was not practical to map individual habitat types as they were often less than 1 m in length. Instead, watercourses were divided into reaches of equal length (typically 50 m) with assessments of habitat parameters reflecting average conditions within each respective reach. Subsequently, mean values were calculated for each habitat parameter to describe average conditions for the stream as a whole.



LEGEND

- Watercourse Crossing
- Camp
- Proposed Mine Site
- Proposed Road
- Road - Existing
- Watercourse
- Portal Work Area
- Waterbody

NOTE

Water crossing sites investigated in June 2008.
Proposed road alignment as of September 2008.

REFERENCE

Project Infrastructure provided by Comaplex Minerals Inc. Base data obtained from the Government of Canada, Natural Resources Canada, Centre for Topographic Information (1:50,000).
Projection: UTM Zone 15 Datum: NAD 83

PROJECT

COMAPLEX MINERALS CORP

COMAPLEX MINERALS CORPORATION
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

STREAM CROSSING SITES ALONG PROPOSED MELIADINE AND DISCOVERY ROADS

Golder Associates
Edmonton, Alberta

PROJECT NO. 09-1373-0010			PHASE No. 1000	
DESIGN	RP	25 Nov. 2009	SCALE AS SHOWN	REV. 0
GIS	CDB	25 Nov. 2009	**FIGURE 10-1**	
CHECK				
REVIEW				

N:\Bur-Graphics\Projects\2007\1373\07-1373-0055\Mapping\MXD\2009\Fisheries\figure-10-01_stream-crossing-sites.mxd

Cover types were described as proportions of available cover rather than proportions of stream area surveyed. Habitat conditions within inlets and outlets were also recorded; however, they were not included in habitat calculations. Digital photos were taken to supplement site descriptions (Appendix G1).

Velocity was recorded with a direct-readout meter (Swoffer Model 2100). Readings were taken while wading along a tag line positioned perpendicular to flow. Water depth and mean column velocities (at 60% depth) were measured at a representative number of vertical stations along the cross-section. Discharge was calculated according to methods outlined by Bovee and Cochnauer (1977). Most of the sites did not have sufficient flow and/or depth to measure discharge while the Meliadine River was flowing at a rate that precluded discharge from being measured safely.

10.1.2 Fish Capture

Assessments of fish populations were conducted using a backpack electrofisher (Smith Root, POW Type 12B, settings: 100-300 V, 30-60 Hz, 4-6 ms). Field biologists waded upstream and sampled available habitats in equal proportions. A netter collected stunned fish and placed them in a holding container filled with water. Field biologists recorded sampling effort, electrofisher settings, and the number of fish captured and observed. Time constraints limited fish capture methods to backpack electrofishing; no other sampling methods were used.

Life history information collected included fork length (FL, mm) weight in grams (g), and sexual maturity (if discernible through external examination). Relative abundance of fish was calculated in terms of catch-per-unit-effort (CPUE). CPUE was based on the number of fish captured per unit of sampling effort (1 min). Efforts were made to minimize mortalities and unnecessary harm to fish.

10.1.3 Spawning Assessments

Egg sampling was conducted to assess habitat potentially used by Arctic Grayling for spawning. All suitable spawning substrates observed by field biologists were sampled. The procedure involved positioning a fine-mesh D-ring kick net on the stream bottom immediately downstream from a potential egg deposition site (e.g., section of unembedded gravel) and disturbing the substrate with a foot for approximately 30 seconds (approximate area 0.4 square metres [m^2]). The contents of each kick net were examined in the field. Recorded data included the number of areas sampled, number of areas with eggs, total number of eggs encountered, and the maximum number of eggs per sampled area. Eggs were returned to the watercourse immediately.

10.2 Habitat Assessments

With the exception of the Meliadine River, the majority of the watercourses to be crossed by the proposed roads were small, ephemeral streams, often flowing through poorly defined channels. The watercourses were comprised primarily of shallow-water habitats with occasional riffles and pools with moderate depth. Habitat potential for fish in the areas investigated was typically poor to moderate and use by fish is seasonal. However, habitat at some of the larger watercourses with perennial flow, such as the Meliadine River, had higher potential to support fish populations for longer periods of time.

The majority of stream crossings were assessed for habitat and channel characteristics along their entire length (i.e., entire channel between two lakes or ponds). Data summaries and photographs of each crossing are presented as a crossing atlas in Appendix G1 and detailed habitat data for individual sites are provided in Appendix G2. The majority of watercourses had similar characteristics so data were grouped and discussed together for each road corridor in the following sections.

10.2.1 Meliadine Road

Except for the Meliadine River crossing (discussed separately at the end of this section), surveyed stream sections ranged from 29 to 140 m in length. A variety of channel types were encountered including single, double, multiple, and braided, as well as areas of dispersed flow (i.e., without a well-defined stream channel). Generally, individual reaches consisted of more than one channel type with braided and dispersed channels as the most common types observed (Appendices G1 and G2).

Channel morphology was variable as was fish habitat observed at watercourses, even within single study reaches. Mean channel widths ranged from 3.7 to 8.9 m and mean depths were shallow ranging from 0.04 to 0.25 m; maximum depths did not exceed 0.6 m. Given the shallow conditions encountered, discharge could only be calculated for Sites M5.0 and M11.5 (0.03 and 2.60 m^3/s, respectively).

Instream cover for fish was available in a variety of forms and was abundant in each of the streams surveyed. Given the semi-flooded conditions, aquatic and terrestrial plants provided the majority of cover ranging in proportion from 5 to 100% within individual reaches. Undercut banks were observed in small portions representing 2 to 30% of cover available for fish in 4 of the streams, but were absent from the remaining 6 sites. Undercut banks were less common as relief and low water velocities in the area are not conducive to their formation. Cover provided by depth and/or turbulence was rarely observed, again, owing to shallow, low-gradient channels. Boulder gardens provided additional cover for fish, but considerably less than vegetation. Given the small size of the watercourses, instream cover mainly provided habitat for small-bodied fish, such as Ninespine Stickleback and juvenile Arctic Grayling.

It is noteworthy that Site M6.7 was dry at the time of visit. The watercourse had sections of moderately defined bed and bank and showed evidence of recent flow. Therefore, this seasonal watercourse may only provide fish habitat for short periods in the spring, and perhaps during precipitation events in summer. The channel showed damage resulting from all-terrain vehicle (ATV) activity. Damage to tundra has accelerated erosion and subsequent deposition of sediment downstream of ATV crossings.

Another crossing of special note was Site M5.0 situated at a short watercourse connecting two large ponds. Although this watercourse was short (29 m distance between ponds), it contained high quality fish habitat, especially for small-bodied forage fish. Although no sportfish species were captured or observed, habitat potential for Arctic Grayling rearing and spawning was good. Substrates were dominated by gravel, cobble, and boulders, and aquatic plants offered excellent cover for small fish. Hence, migration, rearing, and spawning potential were rated high; however, there was no overwintering potential because the watercourse likely freezes to bottom during winter. Similar to what was observed at Site M6.7, ATV activity at Site M5.0 has caused damage to portions of the streambed and bank.

Habitat and channel characteristics at the Meliadine River crossing (Site M2.1) were investigated over a length of 690 m. Within this section, the river was confined to a single channel with a few small rock piles scattered throughout. Wetted widths ranged from 34 to 134 m (based on 4 cross-sectional measurements) and the flooded width of the river ranged from 58 to over 200 m. At the time of visit, flows at the proposed crossing location precluded safe measurement of depth; however, depths were greater than 1.5 m along the periphery. Instream habitat consisted of run (72%), riffle (20%), and pool (8%) habitats. Substrate and instream habitat were difficult to gauge because the river was turbid; however, bank-side estimates suggested that substrates were dominated by boulder and cobble with gravel and fines present to lesser degrees. Aquatic plants were observed but uncommon.

10.2.2 Discovery Road

Within the Discovery road corridor, surveyed stream sections ranged in length from 140 to 530 m (Appendix G1). Mean channel widths (2.2 to 4.9 m) were less variable than those along the Meliadine road corridor. Mean flooded widths; however, ranged widely from 21.5 to 63 m. Mean depths were relatively shallow ranging from 0.03 to 0.18 m; maximum depths did not exceed 0.45 m. Multiple braids and dispersed channels were the main channel types observed along the Discovery road corridor. Given the shallow conditions encountered, discharge could only be calculated for Site D5.8b (0.032 m/s).

Instream habitats consisted primarily of shallow runs and pools. Water velocities were low as the majority of the watercourses were situated along shallow gradients. Hence, riffles were only observed occasionally and their overall contribution to the total habitat area was low. In contrast, shallow pools contributed substantially (>50%) to the total surveyed area of the streams. These pools existed in areas with terrestrial vegetation and poorly defined bed and bank, indicative of ephemeral flows.

In two of the streams surveyed (Sites D1.2 and D6.7), substrates consisted primarily of detritus, mainly because of partial flooding along stream peripheries which inflated the relative contribution of detritus to the total substrate. In sections of the watercourses bounded by defined bed and banks, cobble, boulders, and fines were more common and were present in relatively equal proportions. Small patches of gravel were observed, but were less common and their contribution to total substrate area did not exceed 5 to 10% of the total area in a given stream. Site D5.8 was dominated by coarse substrates, especially cobble as was nearby D5.8b which was dominated by gravel, cobble, and boulders.

Instream cover was available in a variety of forms. Aquatic and terrestrial plants provided the majority of cover, with boulders and undercut banks contributing to a lesser extent. Depth and/or turbulence provided little cover for fish owing to shallow, low-gradient channels. Given the small size of the watercourses, instream cover served mainly to provide habitat for small-bodied fish. Of the 3 sites evaluated, Site D5.8 was rated the highest with respect to habitat quality for fish. Habitat features including coarse substrates, undercut banks, small pools, and aquatic plants contributed to this stream's high potential to support spawning and rearing fish. Overwintering was not deemed possible, given the shallow depths of the stream. Similar ratings are applicable to nearby Site D5.8b.

10.3 Fish Populations

10.3.1 Meliadine Road

In total, 368 fish representing 3 species were captured or observed from 7 of the 10 sites surveyed (Table 10-1). Ninespine Stickleback (*n*=357) was the most abundant species captured or observed, accounting for 97% of the catch. Slimy Sculpin (*n*=3) and Arctic Grayling (*n*=8) were also captured/observed. Site M5.0 was the most productive; 60 Ninespine Stickleback were captured and over 200 were observed. CPUE values ranged considerably from 0.3 to 53.2 fish/min demonstrating the variability in the abundance of fish in small streams in the study area. With regard to Arctic Grayling, juveniles were captured at Sites M2.1 (Meliadine River) and M11.5, respectively. In addition, one Arctic Grayling was observed at Site M23.7 (inflow to Lake A6 from Lake A8).

Table 10-1: Fish Captured or Observed in Watercourses along the Proposed Meliadine Road Corridor

Site	Effort (s)	Fish Captured (Observed)			Total	CPUE (fish/min)
		ARGR	NNST	SLSC		
M2.1	557	1	0 (2)		3	0.3
M3.0	211		0 (2)		2	0.6
M3.9	185				0	
M5.0	293		60 (200)		260	53.2
M6.7	-				-	
M8.6	262				0	
M11.5	520	1 (5)	18 (20)		44	5.1
M13.3	222		0 (10)		10	2.7
M22.6	398		2 (25)		27	4.1
M23.7	409	0 (1)	18	3	22	3.2
Total	**3057**	**2 (6)**	**98 (259)**	**3**	**368**	**7.2**

Sampling for Arctic Grayling eggs was conducted at 4 streams (Sites M2.1, M8.6, M11.5, and M5.0); the remaining sites did not contain suitable spawning substrate (Appendix G3). In total, 21 individual areas were sampled; however, eggs were not found.

10.3.2 Discovery Road

Within the Discovery road corridor, fish (*n*=55) were captured or observed at Sites D1.2, D5.8, and D5.8b (Table 10-2). Site D5.8, was most productive as 7 Arctic Grayling and 12 Ninespine Stickleback were captured and another 4 Arctic Grayling and 20 Ninespine Stickleback were observed. This site was the most productive with respect to Arctic Grayling in either of the two road corridors. At Site D5.8b, electrofishing was not conducted however; 10 Ninespine Stickleback were observed during the survey. Though only 4 streams were sampled, CPUE ranged from 0.6 to 8.0 fish/min, demonstrating the variability in the abundance of fish in small streams along the Meliadine corridor.

Table 10-2: Fish Captured or Observed in Watercourses along the Proposed Discovery Road Corridor

Site	Effort (s)	Fish Captured (Observed)		Total	CPUE (fish/min)
		ARGR	NNST		
D1.2	211		0 (2)	2	0.6
D5.8	322	7 (4)	12 (20)	43	8.0
D5.8b	138		10	10	4.3
D6.7	138			0	
Total	**809**	**7 (4)**	**22 (32)**	**55**	**4.1**

Egg sampling was also conducted at Site D5.8; the remaining sites did not contain suitable spawning substrate. In total, 9 Arctic Grayling eggs were encountered in 2 of 10 areas sampled, indicating that the watercourse at Site D5.8 provides habitat for spawning and rearing Arctic Grayling.

10.4 Summary and Conclusions

Watercourses investigated along the proposed road corridors were diverse with respect to habitat potential for fish. Aquatic habitat at crossings along both road corridors was highly variable, with some streams supporting spawning and rearing, whereas others were dry or contained poor fish habitat. Habitat quality was poor to moderate at most sites with the Meliadine River crossing having the greatest potential to support multiple life stages of fish. Fish were captured or observed at 10 of 14 sites assessed; Arctic Grayling were registered at 4 sites, Ninespine Stickleback at 10 sites, and Slimy Sculpin at 1 site.

Within the Meliadine West road corridor, Site M2.1 (Meliadine River) was of particular importance. The presence of deep run and pool areas indicated high quality habitat for various life-stages of fish species known to inhabit the river. Other noteworthy watercourses within the Meliadine West road corridor include Site M23.7, where Slimy Sculpin were captured, and habitat quality for rearing and migration were rated as moderate to high. Sites M5.0, M11.5, and M22.6 also featured suitable rearing habitat for Arctic Grayling. Although not confirmed by egg sampling, Sites M5.0 and M11.5 are likely used by Arctic Grayling for spawning based on the availability of suitable habitat and/or the presence of Arctic Grayling juveniles in the catch. In contrast, Sites M3.0, M3.9, M6.7, M8.6, and M13.3 had relatively poor fish habitat potential, as evidenced by a lack of fish captures and only 12 observed fish (Ninespine Stickleback) at Sites M3.0 and M13.3. Shallow depths, dry channels (e.g., Site M6.7), poor spawning substrates (detritus), and a lack of instream cover contributed to poor habitat ratings.

Within the Discovery road corridor, Site D5.8 provided high quality spawning and rearing habitat for Arctic Grayling, as evidenced by captures of juvenile fish and collection of Arctic Grayling eggs In contrast, Sites D1.2 and D6.7 featured poor quality fish habitat because of shallow depths and an absence of well defined channels.

11.0 CLOSURE

We trust the information contained in this report is sufficient for your present needs. Should you have any questions regarding the project, please do not hesitate to contact the undersigned at (780) 483-3499.

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APPENDIX A

Hydrology

A1 - 1. MONTHLY TEMPERATURE DATA

Table A1-1: Rankin Inlet A: Monthly & Annual Mean Temperature Data (°C), 1981 to 2009

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1981	-19.8	-24.8	-20.1	-20.2	-5.9	3.6	9.9	10.1	3.7	-3.0	-13.4	-26.0	-8.8
1982	-36.2	-32.4	-28.3	-19.2	-6.1	2.1	9.7	8.7	1.9	-3.8	-22.1	-30.7	-13.0
1983	-30.2	-32.8	-26.8	-17.1	-10.8	4.5	8.9	8.8	4.3	-4.2	-15.3	-29.5	-11.7
1984	-33.8	-26.9	-25.5	-12.7	-4.0	4.7	10.2	9.6	1.3	-4.8	-18.0	-31.5	-11.0
1985	-29.3	-30.6	-28.8	-18.6	-4.8	5.5	10.1	8.3	3.9	-4.3	-18.4	-25.3	-11.0
1986	-31.7	-31.0	-27.7	-16.5	-4.6	1.8	8.2	7.9	2.2	-9.9	-23.6	-26.6	-12.6
1987	-30.2	-27.4	-24.3	-16.3	-9.7	0.8	9.7	7.7	4.6	-7.6	-17.6	-19.7	-10.8
1988	-34.8	-33.2	-25.2	-13.9	-7.7	3.7	10.5	10.4	4.6	-4.7	-17.7	-29.0	-11.4
1989	-32.9	-30.0	-30.8	-14.8	-7.0	4.5	12.1	10.5	3.0	-7.4	-21.4	-29.0	-11.9
1990	-31.7	-35.0	-21.1	-18.0	-6.3	3.4	9.6	7.7	3.0	-5.8	-17.6	-33.3	-12.1
1991	-34.8	-29.7	-26.4	-15.1	-6.5	5.5	10.6	10.3	1.7	-6.5	-19.9	-29.7	-11.7
1992	-29.8	-31.4	-23.9	-18.2	-7.5	0.1	6.9	8.2	1.7	-5.7	-18.4	-21.2	-11.6
1993*	-28.0	-32.2	-21.5	-18.5	-2.4	5.8	11.7	9.3	1.4	-7.1	-21.0	-19.4	-10.2
1994	-35.7	-35.3	-23.9	-18.3	-4.7	6.7	11.9	8.8	4.6	-3.1	-13.9	-20.8	-10.3
1995	-27.2	-30.9	-23.7	-12.8	-6.5	6.1	9.5	10.4	2.1	-3.8	-20.9	-25.0	-10.2
1996	-33.8	-26.8	-26.1	-16.6	-6.3	5.0	14.9	9.9	6.8	-5.7	-16.8	-24.9	-10.0
1997	-31.6	-31.1	-26.2	-14.2	-4.6	6.4	12.2	10.6	4.0	-6.3	-16.8	-23.4	-10.1
1998	-36.2	-28.0	-26.9	-14.6	-3.5	6.3	11.6	11.0	5.7	-1.9	-10.2	-25.3	-9.3
1999	-29.6	-24.0	-20.7	-10.4	-3.8	4.7	10.3	10.0	4.3	-4.8	-13.8	-23.0	-8.4
2000	-29.2	-27.3	-22.0	-18.3	-4.8	2.1	10.7	11.1	3.1	-5.7	-18.2	-26.6	-10.4
2001	-29.6	-30.5	-19.5	-15.0	-2.4	5.3	10.8	10.1	6.4	-3.2	-16.8	-20.6	-8.8
2002	-30.4	-32.6	-28.5	-16.8	-7.5	2.9	9.6	9.2	4.4	-4.8	-17.9	-22.8	-11.3
2003	-25.9	-35.2	-26.0	-17.1	-2.0	4.2	11.0	10.6	5.2	-3.4	-13.4	-23.7	-9.6
2004	-37.2	-30.4	-28.3	-19.9	-8.8	2.7	10.1	8.9	4.1	-7.4	-18.3	-31.0	-13.0
2005	-32.5	-31.1	-22.9	-11.5	-6.8	4.5	10.1	10.8	3.5	-1.9	-13.4	-24.8	-9.7
2006	-24.6	-27.6	-18.8	-11.5	-3.2	6.4	10.7	11.2	4.9	-0.5	-16.0	-19.8	-7.4
2007	-27.8	-26.7	-26.3	-13.9	-7.3	3.1	12.7	10.1	2.6	-2.3	-19.0	-25.4	-10.0
2008	-27.3	-32.8	-28.4	-15.2	-1.2	4.3	11.2	10.4	3.3	-2.8	-15.7	-27.9	-10.2
2009	-26.6	-29.4	-26.4	-13.6	-9.7	4.6	9.9	10.2	5.5				
Mean	**-30.7**	**-30.2**	**-25.1**	**-15.7**	**-5.9**	**4.1**	**10.5**	**9.7**	**3.8**	**-4.6**	**-17.2**	**-25.8**	**-10.5**
Minimum	**-37.2**	**-35.3**	**-30.8**	**-20.2**	**-10.8**	**0.1**	**6.9**	**7.7**	**1.3**	**-9.9**	**-23.6**	**-33.3**	**-13.0**
Maximum	**-19.8**	**-24.0**	**-18.8**	**-10.4**	**-1.2**	**6.7**	**14.9**	**11.2**	**6.8**	**-0.5**	**-10.2**	**-19.7**	**-7.4**
Std Dev	**4.0**	**3.0**	**3.1**	**2.6**	**2.4**	**1.7**	**1.5**	**1.1**	**1.4**	**2.1**	**3.0**	**3.8**	**1.4**

Note: blank= not available at the time of reporting.
* = the year of 1993 was not used in statistics. Monthly and annual data are based on incomplete daily data.

Table A1-2: Rankin Inlet A: Monthly & Annual Maximum Temperature Data (°C), 1981 to 2009

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1981	-2.6	-11.2	-3.5	-1.0	2.8	16.7	24.9	19.9	10.8	5.4	-0.8	-8.5	24.9
1982	-25.9	-8.1	-12.1	-1.4	2.8	22.7	24.5	23.8	11.5	4.0	-1.0	-7.3	24.5
1983	-15.6	-8.3	-5.2	-2.0	5.3	25.4	26.3	21.6	11.7	3.9	0.9	-6.3	26.3
1984	-13.4	-12.1	-4.5	3.4	14.1	23.4	23.8	23.2	12.5	4.3	-2.6	-8.0	23.8
1985	-6.5	-13.0	-9.1	0.2	3.6	22.8	26.1	20.6	17.3	5.3	-1.2	-10.0	26.1
1986	-13.2	-17.0	-12.4	-2.9	8.5	18.6	23.1	21.4	11.5	1.9	-6.7	-6.5	23.1
1987	-9.7	-12.9	-1.6	0.1	2.9	15.4	25.4	16.6	14.5	3.5	-1.0	-4.4	25.4
1988	-21.0	-16.7	-11.6	0.0	3.0	19.6	22.5	24.4	13.2	9.3	0.9	-12.2	24.4
1989	-16.9	-12.6	-13.7	1.5	3.8	20.6	28.5	24.4	13.1	3.2	-2.9	-15.2	28.5
1990	-14.3	-16.6	-3.4	-4.1	5.2	16.6	26.6	15.5	13.2	4.8	-1.9	-9.2	26.6
1991	-18.3	-7.6	-7.7	0.0	3.0	22.8	28.4	30.5	10.5	2.6	-3.5	-5.0	30.5
1992	-5.8	-17.2	-9.9	-2.3	3.8	8.6	18.2	23.5	11.7	3.4	-2.0	-9.9	23.5
1993*	-13.8	-19.6	-1.2	-7.1	6.8	26.1	24.6	22.2	7.1	0.0	-6.6	-8.0	26.1
1994	-21.8	-19.8	-11.2	-2.5	4.8	24.4	24.8	18.7	20.2	5.3	0.6	-7.2	24.8
1995	-15.6	-17.3	-3.9	3.2	3.3	18.8	16.6	19.1	10.2	5.3	-3.0	-9.0	19.1
1996	-15.2	-8.0	-13.8	-2.1	13.5	17.1	28.9	19.4	20.6	1.6	-1.6	-3.9	28.9
1997	-14.5	-13.6	-11.2	1.9	9.1	18.7	26.2	24.4	18.6	7.7	-0.9	-6.2	26.2
1998	-20.5	-4.4	-11.7	1.4	3.7	19.5	23.1	22.9	12.7	6.3	-1.0	-7.2	23.1
1999	-12.7	-10.8	1.3	1.9	4.5	21.2	23.2	20.0	12.0	3.0	-1.5	-2.4	23.2
2000	0.0	-9.1	-2.7	1.1	2.2	13.8	26.7	24.3	17.1	1.8	-3.9	-9.7	26.7
2001	-10.1	-13.7	-6.5	1.7	10.6	17.5	26.8	20.1	16.2	5.8	0.4	-4.9	26.8
2002	-12.6	-14.1	-5.4	0.0	3.0	15.0	24.4	21.1	15.6	3.8	-2.6	-2.0	24.4
2003	-12.0	-17.1	-8.0	-3.9	10.6	15.3	26.8	24.7	20.5	6.5	-1.2	-5.1	26.8
2004	-21.8	-13.9	0.6	-5.5	0.1	15.4	25.5	23.4	13.2	3.1	-1.9	-12.2	25.5
2005	-17.1	-15.1	-3.2	-1.0	6.6	16.6	24.7	21.7	11.4	6.0	0.2	-10.4	24.7
2006	-13.0	-9.4	-7.0	2.4	2.6	21.0	25.5	21.5	15.3	5.1	-1.4	-6.5	25.5
2007	-12.8	-11.9	1.0	-1.5	3.7	24.2	25.1	18.3	14.0	5.0	-3.4	-13.0	25.1
2008	-12.6	-22.9	-10.2	1.0	9.2	15.3	23.5	19.3	12.4	8.8	-2.7	-7.9	23.5
2009	-8.7	-15.6	-7.9	-0.8	1.5	19.8	22.7	19.0	16.3				22.7
Mean	**-13.7**	**-13.2**	**-6.9**	**-0.4**	**5.3**	**18.8**	**24.7**	**21.5**	**14.2**	**4.7**	**-1.7**	**-7.8**	**25.2**
Minimum	**-25.9**	**-22.9**	**-13.8**	**-5.5**	**0.1**	**8.6**	**16.6**	**15.5**	**10.2**	**1.6**	**-6.7**	**-15.2**	**19.1**
Maximum	**0.0**	**-4.4**	**1.3**	**3.4**	**14.1**	**25.4**	**28.9**	**30.5**	**20.6**	**9.3**	**0.9**	**-2.0**	**30.5**
Std Dev	**5.8**	**4.2**	**4.5**	**2.3**	**3.6**	**3.8**	**2.7**	**3.0**	**3.1**	**2.0**	**1.7**	**3.2**	**2.2**

Note: blank= not available at the time of reporting.
* = the year of 1993 was not used in statistics. Monthly and annual data are based on incomplete daily data.

Table A1-3: Rankin Inlet A: Monthly & Annual Minimum Temperature Data (°C), 1981 to 2009

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1981	-34.1	-42.1	-34.3	-35.2	-18.0	-3.5	1.5	0.1	-6.1	-15.1	-27.3	-42.8	-42.8
1982	-46.1	-43.2	-39.8	-33.3	-21.6	-8.1	0.4	1.3	-7.0	-20.0	-36.5	-42.3	-46.1
1983	-41.8	-41.7	-39.0	-30.4	-23.4	-4.1	1.1	2.6	-3.3	-17.1	-30.9	-39.7	-41.8
1984	-42.3	-42.5	-43.4	-35.7	-16.4	-2.9	0.1	1.9	-8.0	-16.8	-28.5	-40.9	-43.4
1985	-42.2	-43.4	-42.2	-35.1	-18.8	-2.7	2.6	-1.0	-3.4	-18.0	-36.1	-37.0	-43.4
1986	-40.4	-44.6	-39.8	-32.6	-22.1	-6.4	1.3	-1.4	-3.7	-27.4	-32.6	-37.0	-44.6
1987	-43.0	-40.8	-37.0	-31.1	-23.7	-5.9	-0.1	0.2	-5.8	-21.4	-32.1	-34.0	-43.0
1988	-43.6	-45.1	-36.5	-27.6	-21.4	-1.8	2.4	3.5	-0.6	-21.6	-34.8	-40.5	-45.1
1989	-42.9	-40.9	-41.5	-32.7	-22.8	-5.8	0.6	2.5	-9.0	-26.8	-35.0	-36.4	-42.9
1990	-41.6	-49.8	-37.2	-31.0	-18.9	-4.5	1.3	2.4	-3.6	-23.4	-33.3	-40.5	-49.8
1991	-41.7	-39.6	-42.4	-29.6	-23.8	-7.2	2.2	1.1	-4.4	-22.5	-31.9	-40.6	-42.4
1992	-40.9	-41.8	-37.5	-31.2	-19.1	-9.4	-1.9	1.4	-6.9	-23.0	-31.2	-37.0	-41.8
1993*	-41.7	-42.8	-37.0	-30.4	-21.9	-3.2	4.0	0.6	-6.6	-20.6	-32.6	-29.2	-42.8
1994	-41.8	-42.4	-37.5	-32.0	-15.4	-1.4	3.1	2.1	-3.2	-17.0	-31.8	-34.2	-42.4
1995	-39.7	-39.6	-43.0	-25.9	-21.4	-4.7	2.8	3.6	-4.7	-20.4	-30.2	-38.2	-43.0
1996	-44.8	-38.4	-38.3	-29.1	-20.7	-3.0	4.3	3.2	-5.5	-19.0	-30.0	-43.6	-44.8
1997	-42.7	-43.0	-41.7	-32.3	-19.9	-1.4	5.3	2.4	-5.8	-18.9	-29.0	-40.0	-43.0
1998	-42.4	-40.2	-39.5	-28.5	-15.6	-1.7	5.0	3.7	-0.9	-13.4	-26.6	-39.5	-42.4
1999	-40.0	-34.7	-41.0	-31.2	-16.7	-2.4	0.9	1.9	-3.2	-16.7	-29.2	-37.1	-41.0
2000	-40.3	-38.0	-39.7	-33.3	-14.6	-7.6	-0.3	1.2	-7.0	-21.4	-30.9	-39.1	-40.3
2001	-40.1	-40.9	-35.8	-26.4	-18.8	-2.2	0.3	0.8	-2.8	-20.6	-29.9	-35.8	-40.9
2002	-42.2	-42.0	-42.9	-31.9	-21.4	-9.3	2.3	2.6	-2.5	-19.1	-32.1	-36.4	-42.9
2003	-36.4	-47.2	-41.4	-35.0	-15.8	-3.9	0.7	3.1	-5.2	-15.0	-29.1	-38.8	-47.2
2004	-43.3	-41.4	-40.2	-31.2	-22.2	-3.5	2.6	0.1	-2.5	-20.4	-32.3	-41.1	-43.3
2005	-42.7	-41.2	-37.4	-25.2	-20.5	-2.6	1.1	3.3	-2.5	-12.0	-30.8	-33.2	-42.7
2006	-37.3	-36.4	-29.5	-27.2	-17.7	-2.6	3.7	4.7	-2.2	-8.9	-32.1	-31.5	-37.3
2007	-40.0	-37.8	-39.0	-31.2	-22.6	-6.9	1.5	4.7	-4.1	-16.0	-29.5	-36.1	-40.0
2008	-37.0	-41.4	-38.7	-33.9	-20.4	-2.8	1.7	2.5	-2.9	-20.5	-29.6	-38.7	-41.4
2009	-39.5	-41.2	-42.3	-26.1	-21.4	-2.3	2.6	2.8	-2.4				-42.3
Mean	**-41.1**	**-41.5**	**-39.2**	**-30.9**	**-19.8**	**-4.3**	**1.8**	**2.0**	**-4.3**	**-19.0**	**-31.2**	**-38.2**	**-42.9**
Minimum	**-46.1**	**-49.8**	**-43.4**	**-35.7**	**-23.8**	**-9.4**	**-1.9**	**-1.4**	**-9.0**	**-27.4**	**-36.5**	**-43.6**	**-49.8**
Maximum	**-34.1**	**-34.7**	**-29.5**	**-25.2**	**-14.6**	**-1.4**	**5.3**	**4.7**	**-0.6**	**-8.9**	**-26.6**	**-31.5**	**-37.3**
Std Dev	**2.6**	**3.1**	**3.1**	**3.0**	**2.7**	**2.4**	**1.6**	**1.5**	**2.1**	**4.2**	**2.5**	**3.0**	**2.3**

Note: blank= not available at the time of reporting.
* = the year of 1993 was not used in statistics. Monthly and annual data are based on incomplete daily data.

A1 - 2. 2009 DAILY TEMPERATURES

Table A1-4: Rankin Inlet A: Mean Daily Temperature Data (°C), 2009

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-38.2	-33.9	-29.1	-11.4	-14.1	0.7	12.1	9.7	9.4			
2	-29.9	-35.6	-28.6	-11.5	-15.8	0.2	16.0	10.4	8.3			
3	-24.6	-34.7	-22.6	-13.3	-13.9	-0.1	13.3	14.1	8.7			
4	-23.7	-25.1	-17.9	-16.8	-13.4	2.0	11.1	14.0	9.4			
5	-17.1	-22.0	-16.4	-19.6	-16.8	1.0	8.9	13.9	6.6			
6	-16.5	-28.0	-28.9	-12.1	-16.7	1.1	9.1	13.3	5.2			
7	-14.2	-27.2	-31.5	-9.4	-13.7	3.4	8.7	11.2	10.5			
8	-20.5	-31.0	-22.9	-14.4	-12.3	3.6	6.8	12.1	7.2			
9	-21.5	-27.5	-30.2	-20.3	-11.0	4.9	9.2	10.1	9.2			
10	-27.9	-21.6	-36.5	-19.7	-10.9	7.1	7.4	10.1	6.2			
11	-30.5	-22.1	-38.8	-12.7	-12.7	2.5	8.2	9.4	3.3			
12	-31.8	-24.0	-39.0	-13.4	-14.7	3.5	11.1	9.1	6.1			
13	-33.6	-26.7	-37.1	-15.7	-12.4	2.6	9.4	9.8	6.9			
14	-32.4	-31.0	-33.3	-14.0	-12.1	4.3	7.6	8.3	5.2			
15	-32.8	-30.0	-32.6	-12.9	-9.8	6.1	8.7	10.6	6.1			
16	-25.1	-25.2	-27.5	-7.5	-8.8	4.7	8.6	11.7	7.0			
17	-21.5	-28.7	-24.4	-7.9	-11.8	5.3	7.5	9.4	5.4			
18	-22.9	-27.0	-28.4	-6.2	-12.9	7.3	7.3	8.5	6.4			
19	-13.1	-22.4	-26.9	-3.9	-11.2	3.9	6.3	9.5	11.4			
20	-17.9	-23.8	-26.9	-6.0	-6.8	0.4	9.0	8.9	7.4			
21	-27.5	-25.5	-26.3	-13.8	-6.6	6.0	9.3	10.7	2.3			
22	-30.4	-31.6	-20.5	-18.2	-3.7	8.9	8.1	6.9	2.1			
23	-32.3	-37.1	-21.3	-20.6	-3.7	6.8	8.3	6.1	1.3			
24	-34.8	-39.6	-25.3	-18.5	-4.8	5.5	9.4	8.1	3.0			
25	-30.1	-39.5	-25.2	-17.2	-5.9	5.8	9.7	7.4	5.5			
26	-28.6	-36.7	-28.0	-20.6	-4.5	3.5	11.2	8.3	3.7			
27	-26.0	-35.2	-19.6	-18.0	-6.9	6.3	12.7	10.5	1.1			
28	-29.7	-30.9	-15.9	-16.4	-5.3	9.1	15.6	12.0	-1.2			
29	-30.5		-16.5	-6.2	-3.9	12.1	14.8	12.6	0.1			
30	-28.7		-20.1	-11.1	-1.0	9.2	11.1	9.7	2.5			
31	-29.3		-20.2		-1.3		10.5	10.7				
Mean	**-26.6**	**-29.4**	**-26.4**	**-13.6**	**-9.7**	**4.6**	**9.9**	**10.2**	**5.5**			
Maximum	**-13.1**	**-21.6**	**-15.9**	**-3.9**	**-1.0**	**12.1**	**16.0**	**14.1**	**11.4**			
Minimum	**-38.2**	**-39.6**	**-39.0**	**-20.6**	**-16.8**	**-0.1**	**6.3**	**6.1**	**-1.2**			
Std. Dev	**6.3**	**5.5**	**6.5**	**4.9**	**4.6**	**3.0**	**2.5**	**2.0**	**3.2**			

Note: blank= not recorded or not available at the time of reporting.

Table A1-5: Rankin Inlet A: Maximum Daily Temperature Data (°C), 2009

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-36.8	-31.9	-25.6	-5.4	-11.8	2.7	20.4	11.7	12.6			
2	-20.6	-34.2	-22.4	-7.6	-12.0	1.6	22.7	12.7	10.3			
3	-21.9	-31.7	-19.9	-9.3	-8.2	1.5	19.2	19.0	10.5			
4	-20.1	-17.0	-13.9	-10.8	-9.4	3.7	18.5	18.6	11.4			
5	-13.9	-15.6	-7.9	-13.4	-13.1	3.7	14.9	17.5	9.7			
6	-11.3	-22.2	-24.9	-8.4	-11.9	4.4	14.8	17.3	8.1			
7	-10.6	-23.1	-26.9	-7.9	-8.2	8.6	13.8	13.9	16.2			
8	-17.4	-29.5	-16.6	-9.3	-6.9	9.3	10.9	15.4	8.1			
9	-18.2	-21.1	-23.9	-16.2	-7.8	9.1	14.9	13.1	11.8			
10	-24.5	-18.6	-33.4	-13.6	-5.0	13.3	8.6	13.5	10.0			
11	-28.2	-18.1	-35.2	-7.1	-9.0	5.1	9.4	11.3	6.2			
12	-30.7	-22.0	-36.4	-9.5	-11.7	6.9	15.2	11.3	8.4			
13	-32.5	-21.6	-33.4	-12.8	-10.8	4.1	12.7	12.8	9.3			
14	-30.6	-28.5	-30.4	-11.5	-9.7	8.7	10.4	11.6	5.9			
15	-30.7	-25.9	-28.5	-8.6	-6.9	11.3	12.9	16.1	7.6			
16	-16.2	-22.3	-20.1	-6.3	-4.2	9.5	12.4	14.2	10.0			
17	-15.7	-25.5	-20.5	-7.4	-7.9	10.3	10.6	13.0	8.5			
18	-17.4	-23.0	-25.5	-4.1	-10.0	13.1	9.8	11.3	9.0			
19	-8.7	-20.1	-24.0	-2.4	-6.3	8.7	8.9	12.0	16.3			
20	-10.1	-22.1	-22.8	-3.4	-2.4	1.5	12.0	10.2	11.3			
21	-25.5	-22.8	-23.2	-8.6	-3.5	10.8	12.6	13.6	3.6			
22	-29.4	-28.0	-12.4	-13.8	-0.9	15.9	10.2	9.2	3.3			
23	-28.0	-34.8	-16.8	-15.9	-2.1	10.4	10.6	8.8	3.7			
24	-32.4	-37.9	-22.3	-14.2	-1.0	8.4	11.9	13.3	6.3			
25	-26.7	-37.7	-19.6	-12.7	-2.6	10.9	12.4	11.5	8.8			
26	-25.5	-33.2	-23.7	-15.0	-2.5	6.3	15.7	12.8	6.0			
27	-23.1	-33.0	-12.0	-13.3	-4.8	12.1	16.8	16.2	3.1			
28	-27.1	-27.8	-12.7	-9.5	-2.6	14.4	20.6	18.1	0.1			
29	-28.2		-12.9	-0.8	-2.4	19.8	17.8	18.1	2.1			
30	-25.5		-15.0	-8.8	1.5	14.7	12.5	11.3	3.9			
31	-24.9		-12.7		-0.1		13.0	13.4				
Mean	**-23.0**	**-26.0**	**-21.8**	**-9.6**	**-6.3**	**8.7**	**13.8**	**13.6**	**8.1**			
Maximum	**-8.7**	**-15.6**	**-7.9**	**-0.8**	**1.5**	**19.8**	**22.7**	**19.0**	**16.3**			
Minimum	**-36.8**	**-37.9**	**-36.4**	**-16.2**	**-13.1**	**1.5**	**8.6**	**8.8**	**0.1**			
Std. Dev	**7.5**	**6.4**	**7.4**	**4.0**	**4.1**	**4.6**	**3.7**	**2.8**	**3.9**			

Note: blank= not recorded or not available at the time of reporting.

Table A1-6: Rankin Inlet A: Minimum Daily Temperature Data (°C), 2009

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-39.5	-35.9	-32.5	-17.4	-16.4	-1.4	3.7	7.7	6.1			
2	-39.1	-37.0	-34.7	-15.3	-19.6	-1.2	9.2	8.0	6.2			
3	-27.2	-37.6	-25.2	-17.3	-19.6	-1.6	7.3	9.1	6.8			
4	-27.2	-33.1	-21.9	-22.8	-17.3	0.2	3.7	9.3	7.3			
5	-20.2	-28.4	-24.9	-25.7	-20.4	-1.8	2.8	10.3	3.5			
6	-21.7	-33.8	-32.9	-15.8	-21.4	-2.3	3.4	9.3	2.2			
7	-17.7	-31.3	-36.0	-10.8	-19.2	-1.8	3.5	8.4	4.7			
8	-23.5	-32.4	-29.2	-19.5	-17.7	-2.1	2.6	8.8	6.2			
9	-24.7	-33.9	-36.4	-24.3	-14.1	0.7	3.4	7.0	6.6			
10	-31.2	-24.5	-39.5	-25.8	-16.7	0.8	6.2	6.6	2.4			
11	-32.7	-26.0	-42.3	-18.3	-16.4	-0.2	7.0	7.4	0.3			
12	-32.9	-25.9	-41.5	-17.2	-17.7	0.1	7.0	6.9	3.8			
13	-34.6	-31.8	-40.7	-18.5	-13.9	1.1	6.0	6.8	4.5			
14	-34.2	-33.5	-36.1	-16.4	-14.4	-0.2	4.8	5.0	4.4			
15	-34.9	-34.1	-36.6	-17.1	-12.6	0.8	4.5	5.0	4.5			
16	-33.9	-28.1	-34.8	-8.7	-13.4	-0.2	4.7	9.2	3.9			
17	-27.2	-31.9	-28.3	-8.3	-15.6	0.3	4.3	5.7	2.2			
18	-28.4	-30.9	-31.2	-8.3	-15.8	1.5	4.7	5.6	3.7			
19	-17.5	-24.6	-29.8	-5.4	-16.1	-0.9	3.7	6.9	6.5			
20	-25.6	-25.5	-30.9	-8.6	-11.1	-0.7	6.0	7.6	3.5			
21	-29.4	-28.1	-29.4	-19.0	-9.6	1.1	5.9	7.8	0.9			
22	-31.4	-35.1	-28.5	-22.5	-6.4	1.8	5.9	4.6	0.8			
23	-36.6	-39.3	-25.7	-25.3	-5.2	3.1	5.9	3.4	-1.2			
24	-37.2	-41.2	-28.2	-22.8	-8.5	2.5	6.9	2.8	-0.4			
25	-33.4	-41.2	-30.7	-21.7	-9.2	0.7	7.0	3.2	2.2			
26	-31.6	-40.1	-32.2	-26.1	-6.4	0.7	6.6	3.7	1.4			
27	-28.9	-37.3	-27.2	-22.7	-9.0	0.5	8.6	4.8	-0.9			
28	-32.2	-34.0	-19.1	-23.3	-7.9	3.8	10.5	5.9	-2.4			
29	-32.7		-20.0	-11.6	-5.4	4.3	11.8	7.0	-2.0			
30	-31.8		-25.1	-13.4	-3.4	3.7	9.6	8.1	1.1			
31	-33.7		-27.7		-2.5		8.0	7.9				
Mean	**-30.1**	**-32.7**	**-30.9**	**-17.7**	**-13.0**	**0.4**	**6.0**	**6.8**	**3.0**			
Maximum	**-17.5**	**-24.5**	**-19.1**	**-5.4**	**-2.5**	**4.3**	**11.8**	**10.3**	**7.3**			
Minimum	**-39.5**	**-41.2**	**-42.3**	**-26.1**	**-21.4**	**-2.3**	**2.6**	**2.8**	**-2.4**			
Std. Dev	**5.8**	**5.0**	**6.0**	**6.1**	**5.4**	**1.8**	**2.3**	**2.0**	**2.8**			

Note: blank= not recorded or not available at the time of reporting.

A1 - 3. MONTHLY PRECIPITATION

A1 - 3.1 Calendar Year

Table A1-7: Rankin Inlet A: Monthly & Annual Rainfall Data (mm), 1981 to 2009

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1981	0.0	0.0	0.0	0.0	16.2	31.0	57.8	31.0	40.4	22.6	0.0	0.0	199.0
1982	0.0	0.0	0.0	0.0	4.9	10.7	65.7	30.7	17.9	41.1	0.0	0.0	171.0
1983	0.0	0.0	0.0	0.0	0.0	100.9	33.1	39.0	41.5	19.2	0.2	0.0	233.9
1984	0.0	0.0	0.0	3.6	0.2	35.7	12.0	95.9	24.7	2.8	0.0	0.0	174.9
1985	0.0	0.0	0.0	0.0	0.0	13.1	30.8	123.3	71.3	17.2	0.0	0.0	255.7
1986	0.0	0.0	0.0	0.2	19.3	23.6	10.4	85.1	30.0	0.2	0.0	0.0	168.8
1987	0.0	0.0	0.0	3.9	1.2	30.1	27.8	74.2	24.0	0.2	0.0	0.0	161.4
1988	0.0	0.0	0.0	0.0	0.0	14.6	22.6	32.2	29.6	10.7	0.6	0.0	110.3
1989	0.0	0.0	0.0	0.0	0.0	14.0	48.6	23.1	39.3	8.4	0.0	0.0	133.4
1990	0.0	0.0	0.0	0.0	7.9	29.7	118.6	62.9	32.7	1.6	0.0	0.0	253.4
1991	0.0	0.0	0.0	0.0	13.0	8.5	47.9	36.4	102.0	20.6	0.0	0.2	228.6
1992	0.0	0.0	0.0	0.0	4.0	11.4	3.6	75.8	45.0	0.0	0.0	0.0	139.8
1993*	0.0	0.0	0.0	0.0	11.8	1.4	48.8	56.6	19.4	0.0	0.0	0.0	138.0
1994	0.0	0.0	0.0	0.0	0.0	20.8	4.0	39.0	50.8	5.4	0.0	0.0	120.0
1995	0.0	0.0	0.0	0.2	0.0	10.2	69.8	75.2	17.0	25.4	0.0	0.0	197.8
1996	0.0	0.0	0.0	0.0	0.0	37.6	10.4	50.2	60.0	1.0	0.0	0.0	159.2
1997	0.0	0.0	0.0	0.6	4.0	47.6	17.8	11.8	13.0	45.1	0.0	0.0	139.9
1998	0.0	1.0	0.0	0.2	32.4	9.2	49.8	49.4	43.4	3.2	1.2	0.0	189.8
1999	0.0	0.0	0.0	3.4	29.2	50.4	41.6	69.8	60.8	13.2	0.0	0.0	268.4
2000	0.0	0.0	0.0	7.2	2.7	0.2	29.4	73.2	20.4	0.2	0.0	0.0	133.3
2001	0.0	0.0	0.0	0.2	5.6	26.4	58.2	82.8	34.2	22.6	0.4	0.0	230.4
2002	0.0	0.0	0.0	0.0	0.0	14.6	44.4	63.6	45.6	5.8	0.0	0.2	174.2
2003	0.0	0.0	0.0	0.0	22.4	25.8	40.8	37.0	8.8	21.8	1.8	0.0	158.4
2004	0.0	0.0	0.0	0.0	0.0	5.0	12.8	45.6	86.0	7.4	0.0	0.0	156.8
2005	0.0	0.0	0.0	7.0	19.6	28.2	32.0	22.4	40.8	13.0	0.0	0.0	163.0
2006	0.0	0.0	0.8	6.2	4.4	26.4	44.2	50.4	30.8	54.6	4.8	0.0	222.6
2007	0.0	0.0	0.0	1.0	0.8	16.0	25.3	80.5	22.3	16.0	0.0	0.0	161.9
2008	0.0	0.0	0.0	0.2	2.0	3.7	26.8	74.0	41.1	5.6	0.4	0.0	153.8
2009	0.0	0.0	0.0	0.0	0.0	8.6	97.0	43.4	47.4				196.4
Mean	**0.0**	**0.0**	**0.0**	**1.2**	**6.8**	**23.4**	**38.7**	**56.4**	**40.0**	**14.3**	**0.3**	**0.0**	**180.6**
Minimum	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.2**	**3.6**	**11.8**	**8.8**	**0.0**	**0.0**	**0.0**	**110.3**
Maximum	**0.0**	**1.0**	**0.8**	**7.2**	**32.4**	**100.9**	**118.6**	**123.3**	**102.0**	**54.6**	**4.8**	**0.2**	**268.4**
Std Dev	**0.0**	**0.2**	**0.2**	**2.3**	**9.6**	**19.9**	**26.8**	**25.8**	**21.3**	**14.4**	**1.0**	**0.1**	**42.6**

Note: blank= not available at the time of reporting.
* = the year of 1993 was not used in statistics. Monthly and annual data are based on incomplete daily data.

Table A1-8: Rankin Inlet A: Monthly & Annual Snowfall Data (cm), 1981 to 2009

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1981	9.1	21.1	10.5	12.1	8.7	1.6	0.0	0.0	0.0	18.4	26.1	2.6	110.2
1982	0.7	3.2	12.2	17.5	17.6	5.0	0.2	0.2	15.5	22.4	7.6	6.6	108.7
1983	9.8	3.1	18.9	3.1	28.5	0.4	0.0	0.0	1.6	20.4	5.2	6.2	97.2
1984	7.5	19.6	7.1	17.2	0.6	1.6	0.0	0.0	1.5	22.0	19.8	5.6	102.5
1985	4.2	10.4	17.7	24.8	6.8	1.4	0.0	4.8	10.2	52.0	71.2	6.0	209.5
1986	12.0	0.2	11.6	3.3	5.8	15.2	0.0	0.0	8.8	28.6	7.6	10.4	103.5
1987	9.8	5.4	30.2	38.1	5.2	34.4	0.0	0.0	3.6	13.1	31.6	18.0	189.4
1988	1.2	1.0	11.0	9.2	27.7	4.0	0.0	0.0	0.2	22.2	23.0	17.9	117.4
1989	6.5	1.6	4.6	3.4	24.0	0.0	0.0	0.0	11.2	10.4	4.8	2.0	68.5
1990	6.8	15.1	21.7	10.3	1.8	23.5	0.0	0.0	3.2	22.7	47.5	10.0	162.6
1991	4.5	2.8	25.0	34.6	18.8	0.0	0.0	0.0	12.0	37.7	16.2	14.2	165.8
1992	14.8	7.0	2.6	9.8	13.0	2.8	0.0	0.0	9.8	16.6	26.2	2.0	104.6
1993*	0.4	5.6	2.0	8.2	19.2	5.4	0.0	0.0	3.8	11.4	6.2	8.6	70.8
1994	1.6	0.4	6.8	26.0	6.0	0.8	0.0	0.0	0.0	18.6	30.4	20.5	111.1
1995	6.2	1.8	2.8	15.0	10.4	0.0	0.0	0.0	2.4	12.4	13.6	9.0	73.6
1996	6.2	42.4	10.0	1.8	0.8	1.0	0.0	0.0	1.0	22.2	10.8	12.6	108.8
1997	3.4	8.0	4.6	10.6	4.0	0.0	0.0	0.0	0.0	41.0	7.6	20.4	99.6
1998	4.6	12.8	5.8	9.4	5.2	0.0	0.0	0.0	1.2	25.0	24.8	13.8	102.6
1999	10.2	10.6	15.6	7.2	18.8	0.4	0.0	0.0	0.8	14.0	23.2	19.8	120.6
2000	2.8	12.6	34.8	7.2	5.2	1.2	0.0	0.0	1.8	22.4	8.2	11.8	108.0
2001	10.0	8.8	8.6	4.8	29.6	0.4	2.4	0.0	0.0	39.4	23.0	18.8	145.8
2002	7.6	7.4	2.4	26.7	11.6	2.4	0.0	0.0	2.4	31.7	11.0	11.8	115.0
2003	13.8	0.6	14.8	5.4	4.4	13.4	0.0	0.0	6.4	31.8	31.0	25.2	146.8
2004	4.2	7.2	18.0	5.8	12.0	5.6	0.0	0.0	4.2	73.4	39.0	11.0	180.4
2005	15.6	10.4	20.6	94.8	35.4	0.0	0.0	0.0	4.2	10.8	41.4	25.0	258.2
2006	33.4	5.0	9.2	27.8	22.2	0.0	0.0	0.0	0.0	15.6	16.6	22.8	152.6
2007	1.0	12.2	7.2	55.2	18.0	2.8	0.0	0.0	4.6	15.7	12.6	11.7	141.0
2008	21.2	2.6	8.3	38.7	7.6	14.4	0.0	0.0	0.0	22.8	20.6	4.2	140.4
2009	10.8	10.0	5.6	19.0	8.9	0.6	0.0	0.0	0.2				61.1
Mean	**8.6**	**8.7**	**12.4**	**19.2**	**12.8**	**4.7**	**0.1**	**0.2**	**3.8**	**25.3**	**22.2**	**12.6**	**128.8**
Minimum	**0.7**	**0.2**	**2.4**	**1.8**	**0.6**	**0.0**	**0.0**	**0.0**	**0.0**	**10.4**	**4.8**	**2.0**	**61.1**
Maximum	**33.4**	**42.4**	**34.8**	**94.8**	**35.4**	**34.4**	**2.4**	**4.8**	**15.5**	**73.4**	**71.2**	**25.2**	**258.2**
Std Dev	**6.9**	**8.7**	**8.4**	**19.8**	**9.7**	**8.2**	**0.5**	**0.9**	**4.4**	**13.9**	**15.1**	**7.0**	**43.7**

Note: blank= not available at the time of reporting.
* = the year of 1993 was not used in statistics. Monthly data are based on incomplete daily data.

Table A1-9: Rankin Inlet A: Monthly & Annual Precipitation Data (mm), 1981 to 2009

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1981	9.1	20.3	10.5	11.5	24.9	32.6	57.8	31.0	40.4	41.0	25.2	2.6	306.9
1982	0.7	3.2	11.7	17.5	22.3	15.7	65.9	30.9	33.4	63.5	7.6	4.9	277.3
1983	8.9	2.5	18.9	2.5	26.1	101.3	33.1	39.0	43.1	38.6	4.9	4.5	323.4
1984	6.9	13.3	6.5	20.2	0.8	36.9	12.0	95.9	26.0	22.5	15.8	5.4	262.2
1985	4.0	9.6	17.5	23.6	6.4	14.5	30.8	128.1	81.5	61.4	66.2	5.6	449.2
1986	11.8	0.2	11.4	3.3	24.9	37.8	10.4	85.1	38.6	28.6	7.6	10.4	270.1
1987	9.8	5.4	30.2	42.0	6.4	64.5	27.8	74.2	27.6	15.9	31.6	17.1	352.5
1988	1.2	1.0	10.6	9.0	25.9	18.6	22.6	32.2	29.8	31.5	22.1	16.9	221.4
1989	6.7	1.6	4.4	3.2	20.8	14.0	48.6	23.1	50.5	18.4	4.8	2.0	198.1
1990	6.8	14.1	20.7	9.6	9.7	50.8	118.6	62.9	35.9	23.6	37.4	9.8	399.9
1991	3.9	2.8	24.1	33.4	30.1	8.5	47.9	36.4	114.0	57.3	16.2	13.2	387.8
1992	14.8	6.8	2.6	9.8	17.0	14.2	3.6	75.8	54.8	16.6	26.1	2.0	244.1
1993*	0.4	5.6	2.0	8.2	31.0	6.8	48.8	56.6	23.2	11.4	6.2	8.6	208.8
1994	1.6	0.4	6.8	26.0	6.0	21.6	4.0	39.0	50.8	24.0	30.8	20.5	231.5
1995	6.2	1.8	2.8	15.2	10.4	10.2	69.8	75.2	19.4	37.8	13.4	9.0	271.2
1996	6.2	42.4	10.0	1.8	0.6	38.6	10.4	50.2	61.0	23.0	10.4	10.6	265.2
1997	3.2	7.6	3.6	11.1	7.8	47.6	17.8	11.8	13.0	92.7	5.8	18.6	240.6
1998	4.6	13.8	4.6	9.6	37.6	9.2	49.8	49.4	44.6	28.2	25.6	12.8	289.8
1999	10.2	10.6	15.6	10.6	48.0	50.8	41.6	69.8	61.6	26.2	23.2	19.8	388.0
2000	2.8	12.6	34.8	14.4	7.9	1.4	29.4	73.2	22.2	22.6	7.8	12.6	241.7
2001	10.0	8.8	8.6	5.0	35.6	26.8	61.2	82.8	34.2	58.0	23.4	17.4	371.8
2002	7.0	7.4	2.0	26.7	11.6	17.0	44.4	63.6	48.0	37.1	11.0	12.0	287.8
2003	13.8	0.6	14.8	4.4	26.8	39.2	40.8	37.0	15.2	53.6	32.2	25.2	303.6
2004	4.2	7.2	18.0	5.8	12.0	10.6	12.8	45.6	90.2	80.8	39.0	11.0	337.2
2005	15.6	10.4	20.6	101.8	55.0	28.2	32.0	22.4	45.0	23.8	40.2	22.4	417.4
2006	32.6	5.0	10.0	34.0	26.6	26.4	44.2	50.4	30.8	70.2	20.6	22.8	373.6
2007	1.0	12.2	7.2	50.0	17.6	18.8	25.3	80.5	26.9	30.7	12.2	11.7	294.1
2008	21.2	2.6	8.3	38.9	9.6	18.1	26.8	74.0	41.1	28.4	21.0	4.2	294.2
2009	10.8	10.0	5.6	19.0	6.2	9.2	97.0	43.4	47.6	5.6			254.4
Mean	**8.4**	**8.4**	**12.2**	**20.0**	**19.1**	**28.0**	**38.8**	**56.5**	**43.8**	**37.9**	**21.6**	**12.0**	**305.5**
Minimum	**0.7**	**0.2**	**2.0**	**1.8**	**0.6**	**1.4**	**3.6**	**11.8**	**13.0**	**5.6**	**4.8**	**2.0**	**198.1**
Maximum	**32.6**	**42.4**	**34.8**	**101.8**	**55.0**	**101.3**	**118.6**	**128.1**	**114.0**	**92.7**	**66.2**	**25.2**	**449.2**
Std Dev	**6.8**	**8.4**	**8.4**	**20.6**	**13.8**	**21.2**	**26.9**	**26.3**	**22.6**	**21.3**	**14.0**	**6.8**	**65.1**

Note: blank= not available at the time of reporting.
* = the year of 1993 was not used in statistics. Monthly and annual data are based on incomplete daily data.

A1 - 3.2 Hydrological Year

Table A1-10: Rankin Inlet A: Monthly & Annual Rainfall Data (mm), 1981 to 2009

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
1982	22.6	0.0	0.0	0.0	0.0	0.0	0.0	4.9	10.7	65.7	30.7	17.9	152.5
1983	41.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.9	33.1	39.0	41.5	255.6
1984	19.2	0.2	0.0	0.0	0.0	0.0	3.6	0.2	35.7	12.0	95.9	24.7	191.5
1985	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.1	30.8	123.3	71.3	241.3
1986	17.2	0.0	0.0	0.0	0.0	0.0	0.2	19.3	23.6	10.4	85.1	30.0	185.8
1987	0.2	0.0	0.0	0.0	0.0	0.0	3.9	1.2	30.1	27.8	74.2	24.0	161.4
1988	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.6	22.6	32.2	29.6	99.2
1989	10.7	0.6	0.0	0.0	0.0	0.0	0.0	0.0	14.0	48.6	23.1	39.3	136.3
1990	8.4	0.0	0.0	0.0	0.0	0.0	0.0	7.9	29.7	118.6	62.9	32.7	260.2
1991	1.6	0.0	0.0	0.0	0.0	0.0	0.0	13.0	8.5	47.9	36.4	102.0	209.4
1992	20.6	0.0	0.2	0.0	0.0	0.0	0.0	4.0	11.4	3.6	75.8	45.0	160.6
1993*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.8	1.4	48.8	56.6	19.4	138.0
1994*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.8	4.0	39.0	50.8	114.6
1995	5.4	0.0	0.0	0.0	0.0	0.0	0.2	0.0	10.2	69.8	75.2	17.0	177.8
1996	25.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.6	10.4	50.2	60.0	183.6
1997	1.0	0.0	0.0	0.0	0.0	0.0	0.6	4.0	47.6	17.8	11.8	13.0	95.8
1998	45.1	0.0	0.0	0.0	1.0	0.0	0.2	32.4	9.2	49.8	49.4	43.4	230.5
1999	3.2	1.2	0.0	0.0	0.0	0.0	3.4	29.2	50.4	41.6	69.8	60.8	259.6
2000	13.2	0.0	0.0	0.0	0.0	0.0	7.2	2.7	0.2	29.4	73.2	20.4	146.3
2001	0.2	0.0	0.0	0.0	0.0	0.0	0.2	5.6	26.4	58.2	82.8	34.2	207.6
2002	22.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	14.6	44.4	63.6	45.6	191.2
2003	5.8	0.0	0.2	0.0	0.0	0.0	0.0	22.4	25.8	40.8	37.0	8.8	140.8
2004	21.8	1.8	0.0	0.0	0.0	0.0	0.0	0.0	5.0	12.8	45.6	86.0	173.0
2005	7.4	0.0	0.0	0.0	0.0	0.0	7.0	19.6	28.2	32.0	22.4	40.8	157.4
2006	13.0	0.0	0.0	0.0	0.0	0.8	6.2	4.4	26.4	44.2	50.4	30.8	176.2
2007	54.6	4.8	0.0	0.0	0.0	0.0	1.0	0.8	16.0	25.3	80.5	22.3	205.3
2008	16.0	0.0	0.0	0.0	0.0	0.0	0.2	2.0	3.7	26.8	74.0	41.1	163.8
2009	5.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	8.6	97.0	43.4	47.4	202.4
Mean	**14.8**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**1.3**	**6.7**	**23.2**	**39.3**	**58.0**	**39.6**	**183.3**
Min	**0.2**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.2**	**3.6**	**11.8**	**8.8**	**95.8**
Max	**54.6**	**4.8**	**0.2**	**0.0**	**1.0**	**0.8**	**7.2**	**32.4**	**100.9**	**118.6**	**123.3**	**102.0**	**260.2**
Std Dev	**14.4**	**1.0**	**0.1**	**0.0**	**0.2**	**0.2**	**2.3**	**9.7**	**20.6**	**26.7**	**26.1**	**22.1**	**43.9**

Note: * = the year of 1993 and 1994 were not used in statistics. Monthly and annual data are based on incomplete daily data.

Table A1-11: Rankin Inlet A: Monthly & Annual Snowfall Data (cm), 1981 to 2009

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
1982	18.4	26.1	2.6	0.7	3.2	12.2	17.5	17.6	5.0	0.2	0.2	15.5	119.2
1983	22.4	7.6	6.6	9.8	3.1	18.9	3.1	28.5	0.4	0.0	0.0	1.6	102.0
1984	20.4	5.2	6.2	7.5	19.6	7.1	17.2	0.6	1.6	0.0	0.0	1.5	86.9
1985	22.0	19.8	5.6	4.2	10.4	17.7	24.8	6.8	1.4	0.0	4.8	10.2	127.7
1986	52.0	71.2	6.0	12.0	0.2	11.6	3.3	5.8	15.2	0.0	0.0	8.8	186.1
1987	28.6	7.6	10.4	9.8	5.4	30.2	38.1	5.2	34.4	0.0	0.0	3.6	173.3
1988	13.1	31.6	18.0	1.2	1.0	11.0	9.2	27.7	4.0	0.0	0.0	0.2	117.0
1989	22.2	23.0	17.9	6.5	1.6	4.6	3.4	24.0	0.0	0.0	0.0	11.2	114.4
1990	10.4	4.8	2.0	6.8	15.1	21.7	10.3	1.8	23.5	0.0	0.0	3.2	99.6
1991	22.7	47.5	10.0	4.5	2.8	25.0	34.6	18.8	0.0	0.0	0.0	12.0	177.9
1992	37.7	16.2	14.2	14.8	7.0	2.6	9.8	13.0	2.8	0.0	0.0	9.8	127.9
1993*	16.6	26.2	2.0	0.4	5.6	2.0	8.2	19.2	5.4	0.0	0.0	3.8	89.4
1994*	11.4	6.2	8.6	1.6	0.4	6.8	26.0	6.0	0.8	0.0	0.0	0.0	67.8
1995	18.6	30.4	20.5	6.2	1.8	2.8	15.0	10.4	0.0	0.0	0.0	2.4	108.1
1996	12.4	13.6	9.0	6.2	42.4	10.0	1.8	0.8	1.0	0.0	0.0	1.0	98.2
1997	22.2	10.8	12.6	3.4	8.0	4.6	10.6	4.0	0.0	0.0	0.0	0.0	76.2
1998	41.0	7.6	20.4	4.6	12.8	5.8	9.4	5.2	0.0	0.0	0.0	1.2	108.0
1999	25.0	24.8	13.8	10.2	10.6	15.6	7.2	18.8	0.4	0.0	0.0	0.8	127.2
2000	14.0	23.2	19.8	2.8	12.6	34.8	7.2	5.2	1.2	0.0	0.0	1.8	122.6
2001	22.4	8.2	11.8	10.0	8.8	8.6	4.8	29.6	0.4	2.4	0.0	0.0	107.0
2002	39.4	23.0	18.8	7.6	7.4	2.4	26.7	11.6	2.4	0.0	0.0	2.4	141.7
2003	31.7	11.0	11.8	13.8	0.6	14.8	5.4	4.4	13.4	0.0	0.0	6.4	113.3
2004	31.8	31.0	25.2	4.2	7.2	18.0	5.8	12.0	5.6	0.0	0.0	4.2	145.0
2005	73.4	39.0	11.0	15.6	10.4	20.6	94.8	35.4	0.0	0.0	0.0	4.2	304.4
2006	10.8	41.4	25.0	33.4	5.0	9.2	27.8	22.2	0.0	0.0	0.0	0.0	174.8
2007	15.6	16.6	22.8	1.0	12.2	7.2	55.2	18.0	2.8	0.0	0.0	4.6	156.0
2008	15.7	12.6	11.7	21.2	2.6	8.3	38.7	7.6	14.4	0.0	0.0	0.0	132.8
2009	22.8	20.6	4.2	10.8	10.0	5.6	19.0	8.9	0.6	0.0	0.0	0.2	102.7
Mean	**25.6**	**22.1**	**13.0**	**8.8**	**8.5**	**12.7**	**19.3**	**13.2**	**5.0**	**0.1**	**0.2**	**4.1**	**132.7**
Min	**10.4**	**4.8**	**2.0**	**0.7**	**0.2**	**2.4**	**1.8**	**0.6**	**0.0**	**0.0**	**0.0**	**0.0**	**76.2**
Max	**73.4**	**71.2**	**25.2**	**33.4**	**42.4**	**34.8**	**94.8**	**35.4**	**34.4**	**2.4**	**4.8**	**15.5**	**304.4**
Std Dev	**14.1**	**15.3**	**6.8**	**7.0**	**8.5**	**8.6**	**20.5**	**9.9**	**8.5**	**0.5**	**0.9**	**4.4**	**45.2**

Note: * = the year of 1993 and 1994 were not used in statistics. Monthly and annual data are based on incomplete daily data.

Table A1-12: Rankin Inlet A: Monthly & Annual Precipitation Data (mm), 1981 to 2009

Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual
1982	41.0	25.2	2.6	0.7	3.2	11.7	17.5	22.3	15.7	65.9	30.9	33.4	22.5
1983	63.5	7.6	4.9	8.9	2.5	18.9	2.5	26.1	101.3	33.1	39.0	43.1	29.3
1984	38.6	4.9	4.5	6.9	13.3	6.5	20.2	0.8	36.9	12.0	95.9	26.0	22.2
1985	22.5	15.8	5.4	4.0	9.6	17.5	23.6	6.4	14.5	30.8	128.1	81.5	30.0
1986	61.4	66.2	5.6	11.8	0.2	11.4	3.3	24.9	37.8	10.4	85.1	38.6	29.7
1987	28.6	7.6	10.4	9.8	5.4	30.2	42.0	6.4	64.5	27.8	74.2	27.6	27.9
1988	15.9	31.6	17.1	1.2	1.0	10.6	9.0	25.9	18.6	22.6	32.2	29.8	18.0
1989	31.5	22.1	16.9	6.7	1.6	4.4	3.2	20.8	14.0	48.6	23.1	50.5	20.3
1990	18.4	4.8	2.0	6.8	14.1	20.7	9.6	9.7	50.8	118.6	62.9	35.9	29.5
1991	23.6	37.4	9.8	3.9	2.8	24.1	33.4	30.1	8.5	47.9	36.4	114.0	31.0
1992	57.3	16.2	13.2	14.8	6.8	2.6	9.8	17.0	14.2	3.6	75.8	54.8	23.8
1993*	16.6	26.1	2.0	0.4	5.6	2.0	8.2	31.0	6.8	48.8	56.6	23.2	18.9
1994*	11.4	6.2	8.6	1.6	0.4	6.8	26.0	6.0	21.6	4.0	39.0	50.8	15.2
1995	24.0	30.8	20.5	6.2	1.8	2.8	15.2	10.4	10.2	69.8	75.2	19.4	23.9
1996	37.8	13.4	9.0	6.2	42.4	10.0	1.8	0.6	38.6	10.4	50.2	61.0	23.5
1997	23.0	10.4	10.6	3.2	7.6	3.6	11.1	7.8	47.6	17.8	11.8	13.0	14.0
1998	92.7	5.8	18.6	4.6	13.8	4.6	9.6	37.6	9.2	49.8	49.4	44.6	28.4
1999	28.2	25.6	12.8	10.2	10.6	15.6	10.6	48.0	50.8	41.6	69.8	61.6	32.1
2000	26.2	23.2	19.8	2.8	12.6	34.8	14.4	7.9	1.4	29.4	73.2	22.2	22.3
2001	22.6	7.8	12.6	10.0	8.8	8.6	5.0	35.6	26.8	61.2	82.8	34.2	26.3
2002	58.0	23.4	17.4	7.0	7.4	2.0	26.7	11.6	17.0	44.4	63.6	48.0	27.2
2003	37.1	11.0	12.0	13.8	0.6	14.8	4.4	26.8	39.2	40.8	37.0	15.2	21.1
2004	53.6	32.2	25.2	4.2	7.2	18.0	5.8	12.0	10.6	12.8	45.6	90.2	26.5
2005	80.8	39.0	11.0	15.6	10.4	20.6	101.8	55.0	28.2	32.0	22.4	45.0	38.5
2006	23.8	40.2	22.4	32.6	5.0	10.0	34.0	26.6	26.4	44.2	50.4	30.8	28.9
2007	70.2	20.6	22.8	1.0	12.2	7.2	50.0	17.6	18.8	25.3	80.5	26.9	29.4
2008	30.7	12.2	11.7	21.2	2.6	8.3	38.9	9.6	18.1	26.8	74.0	41.1	24.6
2009	28.4	21.0	4.2	10.8	10.0	5.6	19.0	6.2	9.2	97.0	43.4	47.6	302.4
Mean	**40.0**	**21.4**	**12.4**	**8.7**	**8.2**	**12.5**	**20.1**	**19.4**	**28.0**	**39.4**	**58.2**	**43.7**	**36.7**
Min	**15.9**	**4.8**	**2.0**	**0.7**	**0.2**	**2.0**	**1.8**	**0.6**	**1.4**	**3.6**	**11.8**	**13.0**	**14.0**
Max	**92.7**	**66.2**	**25.2**	**32.6**	**42.4**	**34.8**	**101.8**	**55.0**	**101.3**	**118.6**	**128.1**	**114.0**	**302.4**
Std Dev	**20.7**	**14.2**	**6.7**	**7.0**	**8.3**	**8.6**	**21.4**	**14.0**	**22.0**	**26.8**	**26.5**	**23.4**	**54.4**

Note: * = the year of 1993 and 1994 were not used in statistics. Monthly and annual data are based on incomplete daily data.

A1 - 4. 2009 DAILY PRECIPITATION DATA

Table A1-13: Rankin Inlet A: Daily Rainfall Data (mm), 2009

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.4			
2	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.8			
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2			
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	0.0			
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	5.8			
9	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	7.4			
10	0.0	0.0	0.0	0.0	0.0	0.0	25.8	0.0	0.0			
11	0.0	0.0	0.0	0.0	0.0	0.0	38.4	12.0	0.0			
12	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	8.4			
13	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0			
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0			
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
18	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	8.0			
19	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0			
20	0.0	0.0	0.0	0.0	0.0	7.8	0.0	7.6	0.6			
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
22	0.0	0.0	0.0	0.0	0.0	0.0	2.8	2.2	0.2			
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0			
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4			
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8			
27	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0			
28	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0			
29	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0			
30	0.0		0.0	0.0	0.0	0.0	12.0	0.0	0.0			
31	0.0		0.0		0.0		8.6	7.8				
Mean	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.3**	**3.1**	**1.4**	**1.6**			
Maximum	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**7.8**	**38.4**	**12.0**	**8.4**			
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**8.6**	**97.0**	**43.4**	**47.4**			

Note: blank= not recorded or not available.

Table A1-14: Rankin Inlet A: Daily Snowfall Data (cm), 2009

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
2	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0			
3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0			
4	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0			
5	2.0	6.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0			
6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
7	0.2	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0			
8	0.0	0.0	1.2	1.4	4.8	0.0	0.0	0.0	0.0			
9	1.2	0.0	0.2	0.0	2.1	0.0	0.0	0.0	0.0			
10	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0			
11	0.0	0.0	0.0	2.2	0.4	0.0	0.0	0.0	0.0			
12	0.2	0.0	0.0	0.2	0.0	0.6	0.0	0.0	0.0			
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
14	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0			
15	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0			
16	0.8	0.0	0.0	1.0	0.2	0.0	0.0	0.0	0.0			
17	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
19	1.8	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
20	1.6	0.6	0.0	1.4	0.0	0.0	0.0	0.0	0.0			
21	0.0	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0			
22	0.0	0.0	0.2	0.4	0.0	0.0	0.0	0.0	0.0			
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
25	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0			
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
29	0.0		0.4	0.0	0.0	0.0	0.0	0.0	0.0			
30	0.4		0.4	0.4	0.0	0.0	0.0	0.0	0.0			
31	0.0		0.0		0.0		0.0	0.0				
Mean	**0.3**	**0.4**	**0.2**	**0.6**	**0.3**	**0.0**	**0.0**	**0.0**	**0.0**			
Maximum	**2.0**	**6.0**	**3.0**	**8.6**	**4.8**	**0.6**	**0.0**	**0.0**	**0.2**			
Total	**10.8**	**10.0**	**5.6**	**19.0**	**8.9**	**0.6**	**0.0**	**0.0**	**0.2**			

Note: blank= not recorded or not available.

Table A1-15: Rankin Inlet A: Daily Precipitation Data (mm), 2009

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.4			
2	0.0	0.0	0.0	0.0	0.8	0.6	0.0	0.0	0.8			
3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2			
4	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0			
5	2.0	6.0	3.0	0.0	0.0	0.0	0.0	0.0	3.2			
6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
7	0.2	0.0	0.0	8.6	0.0	0.0	0.0	10.4	0.0			
8	0.0	0.0	1.2	1.4	3.4	0.0	0.0	1.8	5.8			
9	1.2	0.0	0.2	0.0	0.8	0.0	0.4	0.0	7.4			
10	0.0	0.0	0.0	0.0	0.4	0.0	25.8	0.0	0.0			
11	0.0	0.0	0.0	2.2	0.4	0.0	38.4	12.0	0.0			
12	0.2	0.0	0.0	0.2	0.0	0.6	1.4	0.0	8.4			
13	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0			
14	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0			
15	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.2			
16	0.8	0.0	0.0	1.0	0.2	0.0	0.0	0.6	0.0			
17	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
18	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	8.0			
19	1.8	3.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0			
20	1.6	0.6	0.0	1.4	0.0	7.8	0.0	7.6	0.6			
21	0.0	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0			
22	0.0	0.0	0.2	0.4	0.0	0.0	2.8	2.2	0.2			
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0			
25	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	2.4			
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0			
27	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0			
28	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0			
29	0.0		0.4	0.0	0.0	0.0	0.0	0.0	0.0			
30	0.4		0.4	0.4	0.0	0.0	12.0	0.0	0.0			
31	0.0		0.0		0.0		8.6	7.8				
Mean	**0.3**	**0.4**	**0.2**	**0.6**	**0.2**	**0.3**	**3.1**	**1.4**	**1.6**			
Maximum	**2.0**	**6.0**	**3.0**	**8.6**	**3.4**	**7.8**	**38.4**	**12.0**	**8.4**			
Total	**10.8**	**10.0**	**5.6**	**19.0**	**6.2**	**9.2**	**97.0**	**43.4**	**47.6**			

Note: blank= not recorded or not available.

A1 - 5. REGIONAL PRECIPITATION DATA

A1 - 5.1 Whale Cove A

Table A1-16: Whale Cove A: Monthly & Annual Rainfall Data (mm), 1985 to 2007

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1985			0.0	0.0	0.0	33.5	62.5	125.5	132.4	0.0	0.0	0.0	
1986	0.0	0.0	0.0	0.0	43.0	25.0	13.9	73.3	24.0	0.8	0.0	0.0	180.0
1987	0.0	0.0	0.0	0.2	0.0	62.3	25.0	66.6	11.6	0.0	0.0	0.0	165.7
1988	0.0	0.0	0.0	0.0	4.0	23.3	16.4	28.2	32.2	8.6	0.0	0.0	112.7
1989	0.0	0.0	0.0	0.0	0.0	9.2	61.0	38.2	41.6	5.8	0.0	0.0	155.8
1990	0.0	0.0	0.0	0.0	4.4	34.2	65.6	53.2	22.8	6.6		0.0	
1991	0.0	0.0	0.0	0.0	2.4	4.8	4.0	50.5	240.2	16.0	0.0	0.0	317.9
1992	0.0	0.0	0.0	0.0	0.0	31.0	7.4	38.8	45.2	0.0	0.0	0.0	122.4
1993	0.0	0.0	0.0	0.0	8.4	13.3	24.2	61.5	37.2	0.0	0.0	0.0	144.6
1994	0.0	0.0	0.0	0.0	0.0	33.3	10.2	70.8	78.2	18.8	0.2	0.0	211.5
1995	0.0	0.0	0.0	0.2	0.0	12.2	89.7	111.8	23.4	21.0	0.0	0.0	258.3
1996	0.0	0.0	0.0	0.0	0.4	31.6	17.8	85.6	40.4	0.0	0.0	0.0	175.8
1997	0.0	0.0	0.0	0.2	0.0	24.7	17.0	26.6	13.2	14.6	0.0	0.0	96.3
1998	0.0	0.0	0.0	1.0	2.0	11.2	60.8	43.0	51.8	2.8	0.0	0.0	172.6
1999	0.0	0.0	0.0	0.0	7.0	22.0	59.2	59.8	34.0	3.0	0.0	0.0	185.0
2000	0.0	0.0	0.0	0.0	2.0	3.4		92.5	38.8	0.0	0.0	0.0	
2001	0.0	0.0	0.0	0.4	7.8	22.2	60.6	86.4	9.6	17.2	0.0	0.0	204.2
2002	0.0	0.0	0.0	0.0	0.0	20.6	47.6	98.8	22.2	3.0	0.0	0.0	192.2
2003	0.0	0.0	0.0	0.0	30.6	48.6	33.8	65.0	7.2	16.4	1.0	0.0	202.6
2004	0.0	0.0	0.0	0.0	0.0	22.0	33.6	42.4	63.8	0.8	0.0	0.0	162.6
2005	0.0	0.0	0.0	6.2	14.3	22.6	43.6	8.8	17.3	11.2	0.0	0.0	124.0
2006	0.0	0.0	0.0	0.0	4.8	47.0	51.0	40.2	19.4	44.8	0.0	0.0	207.2
2007	0.0	0.0	0.0	0.0	3.0	21.8	30.4	66.6	43.4		0.0		165.2
Mean	**0.0**	**0.0**	**0.0**	**0.4**	**5.8**	**25.2**	**38.0**	**62.4**	**45.6**	**8.7**	**0.1**	**0.0**	**177.8**
Minimum	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**3.4**	**4.0**	**8.8**	**7.2**	**0.0**	**0.0**	**0.0**	**96.3**
Maximum	**0.0**	**0.0**	**0.0**	**6.2**	**43.0**	**62.3**	**89.7**	**125.5**	**240.2**	**44.8**	**1.0**	**0.0**	**317.9**
Std Dev	**0.0**	**0.0**	**0.0**	**1.3**	**10.6**	**14.2**	**23.5**	**28.6**	**50.4**	**10.9**	**0.2**	**0.0**	**50.6**

Note: blank= not recorded.

Table A1-17: Whale Cove A: Monthly & Annual Snowfall Data (cm), 1985 to 2007

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1985			60.0	23.8	2.1	6.8	0.0	2.0	14.2	113.8	201.6	111.0	
1986	14.8	1.0	10.6	2.2	5.8	1.8	0.0	0.0	16.8	100.6	16.2	35.4	205.2
1987	29.8	26.8	46.8	83.6	1.4	77.1	0.0	0.0	1.6	25.2	25.8	19.4	337.5
1988	2.6	49.0	6.0	17.6	7.4	12.8	0.0	0.0	0.0	48.5	62.5	29.8	236.2
1989	7.2	20.8	50.6	45.0	42.6	0.0	0.0	0.0	4.4	3.8	3.0	0.6	178.0
1990	26.6	22.2	61.0	21.2	28.4	26.8	0.0	0.0	1.8	27.8		16.8	
1991	41.2	44.4	33.0	46.6	18.8	0.0	0.0	0.0	19.0	62.4	15.4	33.8	314.6
1992	23.0	4.4	16.6	8.8	11.8	19.9	0.0	0.0	8.8	16.6	22.0	23.8	155.7
1993	47.8	12.2	2.8	16.6	10.8	4.6	0.0	0.0	17.0	12.6	32.8	23.2	180.4
1994	6.2	3.0	20.0	41.8	26.0	0.4	0.0	0.0	0.4	17.6	43.8	33.8	193.0
1995	25.8	10.4	9.2	31.9	16.0	0.0	0.0	0.0	30.2	19.6	21.2	22.6	186.9
1996	13.8	9.1	13.8	2.4	2.2	0.0	0.0	0.0	0.4	15.6	10.0	7.6	74.9
1997	0.4	3.2	6.0	6.0	2.8	0.0	0.0	0.0	0.0	3.0	4.2	11.4	37.0
1998	6.0	3.4	4.2	16.6	4.2	0.0	0.0	0.0	0.0	19.8	18.0	4.4	76.6
1999	10.4	9.0	14.2	7.4	0.6	0.2	0.0	0.0	0.4	15.4	33.2	19.8	110.6
2000	11.0	20.0	20.9	5.8	0.2	1.4	0.0	0.0	1.2	20.0	2.2	11.6	94.3
2001	17.4	11.4	17.3	6.4	6.8	0.0	0.0	0.0	0.0	18.4	14.4	21.6	113.7
2002	22.6	5.2	1.8	16.8	15.6	0.0	0.0	0.0	0.6	24.0	7.2	2.2	96.0
2003	17.2	3.6	13.2	2.6	3.2	2.0	0.0	0.0	13.8	27.0	42.6	26.0	151.2
2004	4.0	11.8	9.2	20.2	3.4	0.6	0.0	0.0	0.0	18.6	28.4	4.4	100.6
2005	2.4	9.8	15.0	9.8	15.0	0.0	0.0	0.0	6.6	5.4	25.4	8.8	98.2
2006	16.2	3.6	3.4	9.4	9.0	0.0	0.0	0.0	0.0	13.6	24.6	41.0	120.8
2007	31.6	21.8	10.0	19.9	15.2	15.2	0.0	0.0	0.4		18.0		132.1
Mean	**17.2**	**13.9**	**19.4**	**20.1**	**10.8**	**7.4**	**0.0**	**0.1**	**6.0**	**28.6**	**30.6**	**23.1**	**152.1**
Minimum	**0.4**	**1.0**	**1.8**	**2.2**	**0.2**	**0.0**	**0.0**	**0.0**	**0.0**	**3.0**	**2.2**	**0.6**	**37.0**
Maximum	**47.8**	**49.0**	**61.0**	**83.6**	**42.6**	**77.1**	**0.0**	**2.0**	**30.2**	**113.8**	**201.6**	**111.0**	**337.5**
Std Dev	**12.8**	**13.0**	**18.1**	**19.1**	**10.5**	**16.9**	**0.0**	**0.4**	**8.4**	**28.7**	**40.9**	**22.8**	**76.3**

Note: blank= not recorded.

Table A1-18: Whale Cove A: Monthly & Annual Precipitation Data (mm), 1985 to 2007

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1985			60.0	23.8	2.1	40.3	62.5	127.5	146.6	113.8	201.6	111.0	
1986	14.8	1.0	10.6	2.2	48.8	26.8	13.9	73.3	40.8	101.4	16.2	35.4	385.2
1987	29.8	26.8	46.8	83.8	1.4	139.4	25.0	66.6	13.2	25.2	25.8	19.4	503.2
1988	2.6	49.0	6.0	17.6	11.4	36.1	16.4	28.2	32.2	57.1	62.5	29.8	348.9
1989	7.2	20.8	50.6	45.0	42.6	9.2	61.0	38.2	46.0	9.6	3.0	0.6	333.8
1990	26.6	22.2	61.0	21.2	32.8	61.0	65.6	53.2	24.6	34.4		16.8	
1991	41.2	44.4	33.0	46.6	21.2	4.8	4.0	50.5	259.2	78.4	15.4	33.8	632.5
1992	24.0	4.4	16.6	8.8	11.8	50.9	7.4	38.8	54.0	16.6	22.0	23.8	279.1
1993	47.8	12.2	2.8	16.6	19.2	17.9	24.2	61.5	54.2	12.6	32.8	23.2	325.0
1994	6.2	3.0	20.0	41.8	26.0	33.7	10.2	70.8	78.6	36.4	44.2	33.8	404.7
1995	25.8	10.4	9.2	32.1	16.0	12.2	89.7	111.8	53.6	40.6	21.2	22.6	445.2
1996	13.8	9.1	13.8	2.4	2.6	31.6	17.8	85.6	40.8	15.6	10.0	7.6	250.7
1997	0.4	3.2	6.0	6.2	2.8	24.7	17.0	26.6	13.2	17.6	3.6	7.2	128.5
1998	5.8	4.0	4.8	13.2	6.4	11.2	60.8	43.0	51.8	22.6	18.0	3.2	244.8
1999	8.4	9.0	3.2	9.0	7.6	22.2	59.2	59.8	34.4	16.2	32.2	18.2	279.4
2000	10.6	16.8	17.3	5.8	2.2	4.0		92.5	40.0	20.0	2.2	11.6	
2001	17.4	12.0	17.5	7.4	14.6	22.2	60.6	86.4	9.6	38.6	14.4	23.6	324.3
2002	22.6	5.2	1.8	16.8	15.6	20.6	47.6	98.8	22.8	28.0	7.2	2.2	289.2
2003	17.2	3.6	13.2	2.6	33.8	50.6	33.8	65.0	21.0	38.2	30.8	24.2	334.0
2004	2.4	11.8	6.2	18.8	3.4	22.6	33.6	42.4	63.8	22.0	25.4	4.4	256.8
2005	2.4	9.8	15.0	16.8	29.3	22.6	43.6	8.8	23.9	16.6	25.4	8.8	223.0
2006	16.2	3.6	3.4	9.4	13.8	47.0	51.0	40.2	19.4	58.4	18.6	19.4	300.4
2007	14.4	21.8	10.0	18.3	18.2	37.0	30.4	66.6	43.8		18.0		278.5
Mean	**16.3**	**13.8**	**18.6**	**20.3**	**16.7**	**32.5**	**38.0**	**62.4**	**51.6**	**37.3**	**29.6**	**21.8**	**328.4**
Minimum	**0.4**	**1.0**	**1.8**	**2.2**	**1.4**	**4.0**	**4.0**	**8.8**	**9.6**	**9.6**	**2.2**	**0.6**	**128.5**
Maximum	**47.8**	**49.0**	**61.0**	**83.8**	**48.8**	**139.4**	**89.7**	**127.5**	**259.2**	**113.8**	**201.6**	**111.0**	**632.5**
Std Dev	**12.6**	**12.9**	**18.5**	**19.0**	**13.5**	**27.8**	**23.5**	**28.8**	**53.6**	**28.5**	**40.9**	**22.6**	**108.8**

Note: blank= not recorded.

A1 - 5.2 Chesterfield Inlet A

Table A1-19: Chesterfield Inlet A: Monthly & Annual Rainfall Data (mm), 1985 to 2007

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1985	0.0	0.0	0.0	0.0	0.0		41.0	72.0	26.0	0.0	0.0	0.0	
1986	0.0	0.0	0.0	0.0	21.0		0.0	32.0	47.6	0.0	0.0	0.0	
1987	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.5	16.0	0.0	0.0	0.0	113.5
1988	0.0	0.0	0.0	0.0	0.0	5.0	23.0	0.0	30.0	15.0	0.0	0.0	73.0
1989	0.0	0.0	0.0	0.0	0.0	7.0	20.0	26.0	48.8	0.0	0.0	0.0	101.8
1990	0.0	0.0	0.0	0.0	1.0	0.0	68.1	91.6	21.0	0.0	0.0	0.0	181.7
1991	0.0	0.0	0.0	0.0	4.0	1.8	97.0	35.1	0.0	0.0	0.0	0.0	137.9
1992	0.0	0.0	0.0	0.0	0.0	10.5	10.5	25.3	31.0	0.0	0.0	0.0	77.3
1993	0.0	0.0	0.0	0.0	1.0	8.6	26.2	91.0	21.6	6.0	0.0	0.0	154.4
1994	0.0	0.0	0.0	0.0	0.0	24.5	1.0	44.0	69.0	7.0	0.0	0.0	145.5
1995	0.0	0.0	0.0	0.0	0.0	14.0	35.5	35.0	23.0	25.0	0.0	0.0	132.5
1996	0.0	0.0	0.0	0.0	0.0	33.8	37.5	53.8	46.8	0.6	0.0	0.0	172.5
1997	0.0	0.0	0.0	0.0	0.0	0.0	15.8	36.9	20.0	58.3	0.0	0.0	131.0
1998	0.0	0.0	0.0	0.0	14.4	24.4	112.5	65.2	59.2	5.2	0.0	0.0	280.9
1999	0.0	0.0	0.0	1.2	14.2	68.8	25.4	75.6	42.9	9.0	0.0	0.0	237.1
2000	0.0	0.0	0.0	0.0	0.6	2.8	13.6	53.6	27.8	3.0	0.0	0.0	101.4
2001	0.0	0.0	0.0	0.0	13.4	27.2	53.0	30.6	25.6	14.4	0.0	0.0	164.2
2002	0.0	0.0	0.0	0.0	2.4	14.2	61.6	44.2	45.4	14.3	0.0	0.0	182.1
2003	0.0	0.0	0.0	0.0	12.6	27.4	26.6	49.8	31.0	22.0	0.0	0.0	169.4
2004	0.0	0.0	0.0	0.0	0.0	13.4	14.2	33.3	70.4	1.2	0.0	0.0	132.5
2005	0.0	0.0	0.0	1.6	34.6	13.2	60.4	20.4	41.4	22.4	0.0	0.0	194.0
2006	0.0	0.0	0.0	0.0		43.4	50.6	34.0	9.6	43.2	0.0	0.0	
2007	0.0	0.0	0.0	0.0	2.2	29.2	31.2	78.6	22.6		0.0		163.8
Mean	**0.0**	**0.0**	**0.0**	**0.1**	**5.5**	**17.6**	**35.9**	**48.9**	**33.8**	**11.2**	**0.0**	**0.0**	**152.3**
Minimum	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**73.0**
Maximum	**0.0**	**0.0**	**0.0**	**1.6**	**34.6**	**68.8**	**112.5**	**97.5**	**70.4**	**58.3**	**0.0**	**0.0**	**280.9**
Std Dev	**0.0**	**0.0**	**0.0**	**0.4**	**9.1**	**17.1**	**29.4**	**25.5**	**17.9**	**15.4**	**0.0**	**0.0**	**50.4**

Note: blank= not recorded.

Table A1-20: Chesterfield Inlet A: Monthly & Annual Snowfall Data (cm), 1985 to 2009

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1985	6.7	22.0	17.0	30.0	8.8		0.0	0.0	0.0	10.0	33.0	22.1	
1986	8.0	4.0	4.0	23.0	2.0		0.0	0.0	10.4	27.0	53.0	29.0	
1987	11.0	64.0	32.0	63.0	0.0	32.0	0.0	0.0	0.0	31.0	43.0	37.0	313.0
1988	12.0	15.0	8.0	10.0	2.0	0.0	0.0	0.0	4.0	16.0	28.0	11.0	106.0
1989	10.0	3.0	6.2	0.0	7.2	0.0	0.0	0.0	14.0	7.4	20.4	12.0	80.2
1990	11.0	9.0	30.0	18.0	15.6	18.8	0.0	0.0	6.0	32.4	30.0	6.6	177.4
1991	61.0	16.0	39.0	66.0	12.0	0.0	0.0	0.0	26.0	34.2	28.6	12.7	295.5
1992	34.0	3.3	12.2	18.0	5.0	3.0	0.0	0.0	4.5	19.3	15.0	14.5	128.8
1993	2.0	2.5	0.0	1.5	3.5	0.0	0.0	0.0	2.0	14.0	21.2	26.0	72.7
1994	2.0	1.0	8.0	14.0	1.0	0.0	0.0	0.0	0.0	2.5	25.0	12.0	65.5
1995	1.0	0.0	4.0	28.0	3.0	0.0	0.0	0.0	0.0	9.5	8.0	3.0	56.5
1996	1.0	1.0	5.5	0.0	0.5	0.0	0.0	0.0	0.0	9.0	6.0	11.0	34.0
1997	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	11.5	19.2	35.7
1998	3.0	9.0	6.0	4.0	2.0	0.0	0.0	0.0	0.0	15.0	13.2	5.8	58.0
1999	6.3	15.4	15.9	10.2	8.0	0.0	0.0	0.0	0.0	12.6	13.6	30.8	112.8
2000	4.6	16.6	9.0	15.0	4.0	0.0	0.0	0.0	2.6	10.0	17.6	5.0	84.4
2001	8.0	6.0	9.4	11.0	33.0	0.0	0.0	0.0	0.0	15.4	18.0	18.2	119.0
2002	6.0	0.0	3.0	12.0	11.0	0.0	0.0	0.0	0.0	11.0	18.0	6.2	67.2
2003	5.0	2.2	12.3	6.4	19.0	7.0	0.0	0.0	6.8	20.8	19.2	9.6	108.3
2004	22.0	2.8	45.2	20.0	24.2	1.4	0.0	0.0	1.8	31.2	50.6	6.8	206.0
2005	16.4	7.0	63.2	20.2	18.8	0.0	0.0	0.0	1.4	5.0	29.2	19.1	180.3
2006	16.4	16.4	3.0	29.2		3.0	0.0	0.0	0.0	9.2	12.6	21.8	
2007	0.0	10.8	3.8	22.9	9.2	5.0	0.0	0.0	1.8		21.2		74.7
Mean	**10.8**	**9.9**	**14.6**	**18.4**	**8.6**	**3.3**	**0.0**	**0.0**	**3.5**	**15.8**	**23.3**	**15.4**	**118.8**
Minimum	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2.5**	**6.0**	**3.0**	**34.0**
Maximum	**61.0**	**64.0**	**63.2**	**66.0**	**33.0**	**32.0**	**0.0**	**0.0**	**26.0**	**34.2**	**53.0**	**37.0**	**313.0**
Std Dev	**13.5**	**13.5**	**16.3**	**17.3**	**8.8**	**7.9**	**0.0**	**0.0**	**6.1**	**9.7**	**12.5**	**9.3**	**78.8**

Note: blank= not recorded.

Table A1-21: Chesterfield Inlet A: Monthly & Annual Precipitation Data (mm), 1985 to 2007

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1985	6.7	22.0	17.0	30.0	8.8		41.0	72.0	26.0	10.0	33.0	22.1	
1986	8.0	4.0	4.0	23.0	23.0		0.0	32.0	58.0	27.0	53.0	29.0	
1987	11.0	64.0	32.0	63.0	0.0	32.0	0.0	97.5	16.0	31.0	43.0	37.0	426.5
1988	12.0	15.0	8.0	10.0	2.0	5.0	23.0	0.0	34.0	31.0	28.0	11.0	179.0
1989	10.0	3.0	6.2	0.0	7.2	7.0	20.0	26.0	62.8	7.4	20.4	12.0	182.0
1990	11.0	9.0	30.0	18.0	16.6	18.8	68.1	91.6	27.0	32.4	30.0	6.6	359.1
1991	61.0	16.0	39.0	66.0	16.0	1.8	97.0	35.1	26.0	34.2	28.6	12.7	433.4
1992	34.0	3.3	12.2	14.0	5.0	12.7	10.5	25.3	35.5	15.3	12.0	14.7	194.5
1993	1.8	2.8	0.0	1.5	3.9	8.6	26.2	91.0	23.6	19.4	8.2	15.4	202.4
1994	2.0	0.8	4.6	8.5	0.5	24.5	1.0	44.0	69.0	8.5	34.0	13.3	210.7
1995	1.0	0.0	2.0	14.7	3.0	14.0	35.5	35.0	23.0	37.0	6.5	3.0	174.7
1996	2.0	1.0	4.4	0.0	0.5	33.8	37.5	53.8	46.8	9.6	6.0	11.0	206.4
1997	0.0	0.0	0.0	0.0	0.0	0.0	15.8	36.9	20.0	63.3	11.5	19.2	166.7
1998	3.0	9.0	6.0	4.0	16.4	24.4	112.5	65.2	59.2	19.8	8.2	6.4	334.1
1999	6.2	8.0	10.4	9.8	22.0	68.8	25.4	75.6	42.9	21.2	10.8	29.6	330.7
2000	4.4	15.2	5.4	13.2	5.2	2.8	13.6	53.6	30.6	12.0	16.4	4.8	177.2
2001	4.0	4.2	6.8	10.4	61.8	27.2	53.0	30.6	25.6	32.4	14.8	13.6	284.4
2002	3.2	0.0	1.6	8.2	14.6	14.2	61.6	44.2	45.4	26.5	20.4	5.0	244.9
2003	2.6	1.4	7.2	4.6	30.6	37.4	26.6	49.8	37.2	43.7	21.4	9.8	272.3
2004	22.2	2.2	45.4	20.6	10.0	14.8	14.2	33.3	72.0	31.4	60.6	7.4	334.1
2005	10.6	7.8	86.6	23.6	47.2	13.2	60.4	20.4	42.8	26.6	23.4	11.7	374.3
2006	12.6	13.4	1.4	26.0		44.4	50.6	34.0	9.6	50.8	8.4	13.2	
2007	0.0	11.2	3.0	22.9	10.4	31.8	31.2	78.6	24.4		13.6		227.1
Mean	**10.0**	**9.3**	**14.5**	**17.0**	**13.9**	**20.8**	**35.9**	**48.9**	**37.3**	**26.8**	**22.3**	**14.0**	**265.7**
Minimum	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**9.6**	**7.4**	**6.0**	**3.0**	**166.7**
Maximum	**61.0**	**64.0**	**86.6**	**66.0**	**61.8**	**68.8**	**112.5**	**97.5**	**72.0**	**63.3**	**60.6**	**37.0**	**433.4**
Std Dev	**13.6**	**13.4**	**20.3**	**17.4**	**15.7**	**16.7**	**29.4**	**25.5**	**17.3**	**14.2**	**14.9**	**8.7**	**87.8**

Note: blank= not recorded.

A1 - 5.3 Adjusted Rainfall Datasets

Table A1-22: Chesterfield Inlet: Adjusted Rainfall Data (mm), 1931 to 2007

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Winter	Spring	Summer	Autumn
1931	-	0.0	0.0	0.6	0.0	67.3	26.9	12.4	54.8	5.3	2.8	0.0	-	-10.0	0.6	106.7	63.0
1932	0.0	0.0	0.0	0.0	0.0	18.7	62.4	96.9	77.9	18.0	0.0	0.0	274.0	0.0	0.0	178.0	96.0
1933	0.0	0.0	0.0	0.0	0.0	17.7	63.6	59.0	43.8	1.9	0.0	0.0	186.0	0.0	0.0	140.4	45.6
1934	0.0	0.0	0.0	0.0	0.3	20.0	85.2	61.8	27.1	5.8	0.0	0.0	200.3	0.0	0.3	167.1	33.0
1935	-	0.0	-	0.0	0.0	18.4	33.3	56.6	54.9	0.0	-	0.0	-	-	-	108.3	-
1936	0.0	0.0	0.0	0.0	0.0	21.6	18.5	26.1	73.6	0.0	0.0	0.0	139.8	0.0	0.0	66.2	73.6
1937	0.0	0.0	0.0	0.0	14.2	20.4	160.7	52.8	23.7	4.2	0.0	0.0	276.1	0.0	14.2	234.0	27.9
1938	0.0	0.0	0.0	0.0	2.4	12.0	41.1	37.2	32.3	39.3	0.3	0.0	164.6	0.0	2.4	90.3	71.8
1939	0.0	0.0	0.0	0.7	2.1	18.4	43.8	79.9	31.7	10.1	0.0	0.0	186.8	0.0	2.8	142.1	41.8
1940	0.0	0.0	0.3	0.3	4.3	41.1	43.3	26.3	32.6	41.1	0.0	0.0	189.4	0.0	4.9	110.7	73.7
1941	0.0	0.0	0.0	0.0	20.4	16.2	41.8	54.1	17.0	-	0.0	0.0	-	0.0	20.4	112.1	-
1942	0.0	0.0	0.0	3.1	0.0	42.4	21.3	39.9	11.6	5.4	0.0	0.0	123.7	0.0	3.1	103.6	17.0
1943	0.0	0.0	0.0	0.0	0.0	1.8	52.5	-	34.3	15.6	0.3	0.0	-	0.0	0.0	-	50.2
1944	0.0	0.0	0.0	0.0	7.1	16.9	65.2	50.5	33.9	6.5	0.0	0.0	180.1	0.0	7.1	132.6	40.4
1945	0.0	0.0	0.0	0.0	-	26.6	29.8	14.1	10.2	4.7	0.0	0.0	-	0.0	-	70.5	14.9
1946	0.0	0.0	0.0	0.6	0.3	31.9	72.8	49.1	53.0	3.0	0.3	0.0	211.0	0.0	0.9	153.8	56.3
1947	0.0	0.0	0.0	0.0	0.0	24.9	58.7	60.8	61.5	48.8	5.6	0.0	260.3	0.0	0.0	144.4	115.9
1948	0.0	0.0	0.0	4.0	3.4	14.5	28.2	78.9	31.6	10.9	-	0.0	-	0.0	7.4	121.5	-
1949	0.0	0.0	0.0	0.0	0.0	77.8	-	4.2	5.5	-	0.0	0.0	-	0.0	0.0	-	-
1950	0.0	0.0	0.0	0.0	8.3	30.1	18.5	22.3	35.6	4.2	0.0	0.0	119.0	0.0	8.3	70.9	39.8
1951	0.0	0.0	0.0	0.0	0.8	24.5	40.6	22.1	20.6	16.0	0.0	0.0	124.8	0.0	0.8	87.3	36.7
1952	0.0	0.0	0.0	0.3	5.0	24.8	63.4	76.7	56.3	16.6	0.0	0.0	243.2	0.0	5.3	164.9	73.0
1953	0.0	0.0	0.0	0.3	0.0	11.9	51.8	41.3	36.2	23.4	1.8	0.0	166.7	0.0	0.3	105.0	61.4
1954	0.0	0.0	0.0	0.0	6.3	39.9	30.5	9.1	46.8	12.8	0.0	0.0	145.5	0.0	6.3	79.5	59.6
1955	0.0	0.0	0.0	0.9	7.3	49.1	59.8	79.4	51.6	25.1	0.6	0.0	274.0	0.0	8.2	188.4	77.4
1956	0.0	0.0	0.0	0.0	0.0	2.2	30.8	69.5	12.5	10.0	0.0	0.0	124.9	0.0	0.0	102.5	22.5
1957	0.0	0.0	0.0	0.0	0.6	4.2	31.7	28.0	39.3	2.8	0.0	0.0	106.6	0.0	0.6	63.9	42.1
1958	0.0	0.0	0.0	0.0	19.7	27.3	60.0	25.9	58.8	7.0	0.3	0.0	199.0	0.0	19.7	113.3	66.0
1959	0.0	0.0	0.0	0.0	0.3	61.5	31.8	83.1	68.5	1.1	0.3	0.0	246.6	0.0	0.3	176.3	70.0
1960	0.6	0.0	0.0	0.0	4.8	12.4	65.7	46.9	43.6	13.4	0.6	0.0	188.1	0.6	4.8	125.1	57.7
1961	0.0	0.0	0.0	0.3	1.4	21.3	27.7	28.1	84.3	0.3	1.0	0.0	164.4	0.0	1.7	77.1	85.7
1962	0.0	0.0	0.0	0.0	0.0	12.7	19.7	38.6	25.6	13.6	0.0	0.0	110.1	0.0	0.0	70.9	39.2
1963	0.0	0.0	0.0	2.7	0.3	7.7	59.8	42.2	11.7	20.4	0.6	0.0	145.3	0.0	3.0	109.7	32.7
1964	0.0	0.0	0.0	0.3	0.3	10.8	24.8	30.7	29.4	2.4	1.6	0.9	101.2	0.0	0.6	66.3	33.4
1965	0.0	0.0	0.0	0.3	1.2	55.9	51.9	13.9	17.5	1.2	0.6	0.0	142.5	0.9	1.5	121.7	19.3
1966	0.0	0.0	0.3	0.6	45.9	24.0	20.8	46.4	31.8	3.2	0.0	0.0	173.0	0.0	46.8	91.2	35.0
1967	0.0	0.0	0.3	0.0	3.1	26.6	59.2	34.9	35.7	3.7	0.3	0.5	164.4	0.0	3.4	120.8	39.6
1968	0.0	0.0	0.3	0.0	2.4	11.1	46.3	38.2	77.0	34.7	0.9	0.0	211.0	0.5	2.7	95.7	112.6

Table A1-22: Chesterfield Inlet: Adjusted Rainfall Data (mm), 1931 to 2007 (continued)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Winter	Spring	Summer	Autumn
1969	0.0	0.0	0.0	0.0	0.9	21.0	49.4	39.6	12.8	2.4	8.0	0.0	134.1	0.0	0.9	110.0	23.2
1970	0.0	0.0	0.0	0.0	0.3	34.3	122.7	46.8	66.9	29.1	0.0	0.0	300.1	0.0	0.3	203.8	96.0
1971	0.0	0.0	0.0	0.6	15.5	13.9	4.7	39.3	31.0	46.4	0.0	0.0	151.5	0.0	16.1	57.9	77.5
1972	0.0	0.0	0.0	0.0	1.0	2.5	77.7	31.0	18.9	1.3	0.0	0.0	132.4	0.0	1.0	111.1	20.2
1973	0.0	0.0	0.0	0.0	1.2	24.3	8.9	106.8	38.9	19.4	0.0	0.0	199.5	0.0	1.2	140.0	58.2
1974	0.0	0.0	0.0	0.3	0.0	23.4	29.1	42.4	22.5	1.0	0.3	0.0	119.0	0.0	0.3	94.9	23.8
1975	0.0	0.3	0.0	0.3	19.6	8.3	50.9	48.6	30.5	7.7	0.0	0.0	166.1	0.3	19.9	107.7	38.2
1976	0.0	0.0	0.0	0.0	12.7	19.0	41.5	26.7	36.0	3.0	0.0	0.6	139.4	0.0	12.7	87.1	39.0
1977	0.0	0.0	0.0	13.0	7.3	24.7	28.6	22.1	15.0	18.9	5.1	0.0	134.8	0.6	20.3	75.4	39.1
1978	0.0	0.3	0.0	0.0	18.2	11.1	60.3	31.4	8.6	3.4	0.3	0.0	133.5	0.3	18.2	102.8	12.3
1979	0.0	0.0	0.0	0.9	12.1	14.6	19.6	47.9	25.5	-	-	0.3	-	0.0	13.0	82.2	-
1980	0.0	0.0	0.0	2.4	5.3	7.8	92.6	78.4	55.8	0.6	0.0	0.0	243.0	0.3	7.7	178.9	56.4
1981	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1985	0.0	0.0	0.0	0.0	0.0	-	42.5	74.2	26.8	0.0	0.0	0.0	-	-	0.0	-	26.8
1986	0.0	0.0	0.0	0.0	22.0	-	0.0	33.2	49.8	0.0	0.0	0.0	-	0.0	22.0	-	49.8
1987	0.0	0.0	0.0	0.0	0.2	0.2	0.3	100.9	16.7	0.0	0.0	0.2	118.4	0.0	0.2	101.4	16.7
1988	0.0	0.0	0.0	0.0	0.0	5.3	24.0	-	32.0	15.6	0.0	0.0	-	0.2	0.0	-	47.6
1989	0.0	0.0	0.0	0.0	0.0	7.7	21.1	26.9	51.0	0.0	0.0	0.0	106.6	0.0	0.0	55.6	51.0
1990	0.0	0.0	0.0	0.0	1.1	0.3	70.7	94.8	22.3	0.2	0.0	0.0	189.4	0.0	1.1	165.8	22.5
1991	0.0	0.0	0.0	0.0	4.3	2.3	99.7	36.5	0.2	0.0	0.0	0.0	142.9	0.0	4.3	138.4	0.2
1992	0.0	0.0	0.0	0.0	0.0	11.4	11.6	27.1	32.3	0.2	0.0	0.0	82.5	0.0	0.0	50.1	32.4
1993	0.0	0.0	0.0	0.0	1.9	9.7	28.3	94.1	23.9	6.2	0.2	0.0	164.2	0.0	1.9	132.1	30.3
1994	0.0	0.0	0.0	0.0	0.0	26.1	1.4	46.9	72.5	8.0	0.0	0.0	155.0	0.0	0.0	74.5	80.5
1995	0.0	0.0	0.0	0.0	0.0	14.9	37.3	36.4	24.8	26.1	0.0	0.0	139.4	0.0	0.0	88.6	50.8
1996	0.0	0.0	0.0	0.0	0.6	35.5	39.6	56.7	49.1	0.7	0.0	0.0	182.2	0.0	0.6	131.8	49.8
1997	0.0	0.0	0.0	0.0	0.0	0.0	17.3	39.7	22.4	60.2	0.2	0.0	139.8	0.0	0.0	57.0	82.7
1998	0.0	0.0	0.0	0.0	15.7	25.8	116.4	68.5	63.0	6.1	0.2	0.0	295.5	0.0	15.7	210.6	69.2
1999	0.0	0.0	0.0	1.4	15.3	71.5	27.5	79.2	45.7	9.7	0.0	0.0	250.3	0.0	16.7	178.2	55.3
2000	0.0	0.0	0.0	0.0	0.9	3.6	14.8	56.3	29.2	3.6	0.2	0.0	108.5	0.0	0.9	74.7	33.0
2001	0.0	0.0	0.0	0.0	14.2	28.9	55.9	32.5	27.7	15.4	0.2	0.0	174.7	0.0	14.2	117.4	43.2
2002	0.0	0.0	0.0	0.0	2.7	16.2	64.6	46.9	48.1	15.5	0.0	0.3	194.3	0.0	2.7	127.7	63.6
2003	0.0	0.0	0.0	0.0	13.7	29.1	28.9	52.7	33.6	23.6	0.3	0.0	181.8	0.3	13.7	110.7	57.4
2004	0.0	0.0	0.0	0.0	0.0	15.0	15.8	35.8	74.2	2.0	0.0	0.0	142.8	0.0	0.0	66.6	76.3
2005	0.0	0.0	0.0	1.9	36.0	14.7	63.2	21.8	44.2	25.0	0.0	0.0	206.8	0.0	37.9	99.7	69.2
2006	0.0	0.0	0.0	0.2	-	45.3	54.0	36.9	12.1	46.1	0.5	0.0	-	0.0	-	136.1	58.7
2007	0.0	0.0	0.0	0.0	2.6	30.8	33.0	83.3	24.7	-	-	-	-	0.0	2.6	147.1	-

Note: " -" = missing data.

Table A1-23: Chesterfield Inlet: Adjusted Snowfall Data (cm), 1931 to 2007

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Winter	Spring	Summer	Autumn
1931	-	23.5	5.9	16.4	8.5	17	0	0	0.3	38.5	42.7	69.6	-	-10	30.9	17	81.5
1932	11.7	34.8	6.4	79	8.5	0	0	0	0	80.4	74.3	50	345.2	116.1	93.9	0	154.7
1933	5.5	12.8	17.5	29.6	28.9	0	0	0	0.9	9.4	2.9	11.7	119.2	68.3	76	0	13.2
1934	4.7	2	5.9	5.9	10.6	0	0	0	10.3	59.3	26.6	30.7	156.1	18.4	22.5	0	96.2
1935	-	20.8	-	17.6	2.9	0	0	0	2.4	36.5	-	24.6	-	-	-	0	-
1936	2.7	30.5	63.4	49.5	30.4	0.3	0	0	16.1	56.4	26	20.8	296.2	57.9	143.3	0.3	98.5
1937	36.6	59.6	28.6	41.5	22.3	0.5	0	0	8.1	41.6	16.6	56.1	311.4	117	92.4	0.5	66.3
1938	37.2	17	23.7	29.5	29.3	0	0	0.2	0	4.4	50	54.3	245.6	110.3	82.5	0.2	54.4
1939	16.7	14.3	20.8	45.7	12.6	17.8	0	0	12.4	48.5	24.6	22.6	236.2	85.3	79.2	17.8	85.5
1940	16.6	10.1	22	38.1	17.6	0.8	0	0	0.8	30	48.2	23.7	207.8	49.3	77.8	0.8	78.9
1941	28.4	9.9	18.6	15.1	24.3	0.8	0	0	17.2	-	43.8	30.6	-	62	57.9	0.8	-
1942	23.6	25.8	63.4	97.6	65.5	0.2	0	0	0.5	54.4	54.4	29.3	414.7	80	226.5	0.2	109.3
1943	9.3	1.1	12.5	15	20.5	1.1	0	-	3.7	9.1	22.7	15.7	-	39.7	48	-	35.4
1944	6.4	4.6	7	12.8	7.2	0	0	0	16	65.7	84.5	4.4	208.5	26.6	27	0	166.1
1945	31.2	14.9	50.3	29.6	-	11.8	0	0	12.3	12.5	39.4	1.7	-	50.5	-	11.8	64.1
1946	7.6	6.7	11.3	6.2	12	4.9	0	0	10	40	18.9	16.1	133.7	16	29.5	4.9	68.9
1947	2.7	21.2	9.3	13.1	37.7	1.8	0	0	13.7	21.9	38	17.9	177.3	40	60	1.8	73.6
1948	12.5	8.1	16	10.2	16.6	2.9	0.2	0	0	7.6	-	13.1	-	38.5	42.7	3	-
1949	12.6	1.8	14.3	42.7	10.2	1.7	-	0.2	0.3	-	5.3	13.4	-	27.5	67.2	-	-
1950	0.2	4	5.8	6.1	1.5	8.2	0	0	0.5	48.5	36.7	50.2	161.5	17.5	13.4	8.2	85.6
1951	14.6	12.6	16.3	27.4	24.3	0.2	0	0	2.9	25.4	19.6	17.8	161.1	77.4	68	0.2	47.9
1952	7.2	3.5	6.8	23.3	6.1	0.5	0	0	4.7	25.7	9	105.8	192.5	28.5	36.2	0.5	39.4
1953	6.8	14.5	27.2	21.4	10.3	0.6	0	0	0.6	10.9	56.1	13.4	161.9	127.1	59	0.6	67.6
1954	1.5	15.5	12.5	18.9	7.5	0.5	0	0	2.6	5.9	14.1	9.7	88.6	30.4	38.8	0.5	22.6
1955	28.1	2	11.1	19.8	9.6	2	0.2	0	21	10.5	19.6	21.3	145	39.8	40.4	2.1	51.1
1956	21.4	6.1	4.3	31.6	11.1	0.6	0	0	7.6	54.4	13.7	10.5	161.2	48.8	47	0.6	75.6
1957	2.3	8.1	8.7	13.2	15.8	4.4	0	0	1.2	10	20.8	7	91.5	20.8	37.7	4.4	32
1958	16.7	12.2	9.3	6.2	10.8	6.9	0	0	2.7	34.5	29.2	7	135.5	35.9	26.3	6.9	66.5
1959	17.8	3.2	11.6	3	22	21.9	0	0	0.5	22.6	8.8	8.2	119.6	27.9	36.7	21.9	31.9
1960	4.4	7.1	13.5	5.3	2.9	0.2	0	0	12.5	20.7	21.1	5.8	93.5	19.7	21.7	0.2	54.3
1961	5	12.9	6.4	31.6	3.5	9.9	0	7	83.4	69.9	57.9	107.2	394.8	23.7	41.5	16.9	211.3
1962	0.9	0.6	31.5	41	79.5	11.1	0	0	1.5	55.9	18.2	6.2	246.5	108.7	152	11.1	75.7
1963	7.4	3.9	6.2	8.4	24.6	2.1	0	0	18.7	76.9	49.9	12.4	210.6	17.6	39.2	2.1	145.5
1964	26.9	4.6	4.8	24.9	21.1	38.9	0	0	2.3	35.9	25.2	8.8	193.4	43.9	50.8	38.9	63.4
1965	8	3	6.4	11.8	5.2	0.6	0	0	18.1	23.6	23.5	20	120.2	19.8	23.4	0.6	65.2
1966	11.8	18.7	7.4	11.8	3.6	0.2	0	0	5.6	17.6	20.8	14.4	112.1	50.6	22.9	0.2	44
1967	10.3	2	17.6	8.5	30.6	11.1	0	0	70.5	38	29.2	41.8	259.6	26.7	56.7	11.1	137.7
1968	15.5	11.7	49.7	15.2	25.1	25.4	0	0	0.8	27.7	46.8	24.6	242.4	69	90	25.4	75.2
1969	21.6	11.1	14.6	24.3	14.4	3.5	0	0	1	13.1	40	43.8	187.4	57.3	53.3	3.5	54.1

Table A1-23: Chesterfield Inlet: Adjusted Snowfall Data (cm), 1931 to 2007 (continued)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Winter	Spring	Summer	Autumn
1970	28.4	2.4	15.8	1.9	18.1	0.2	0	0	8.2	93.3	35	4.1	207.4	74.6	35.8	0.2	136.5
1971	27.4	9.1	2.9	11	4.4	18.4	0	0.3	1.5	45.9	33.8	3.6	158.2	40.6	18.2	18.7	81.2
1972	2	4.5	14.4	5	35.6	4.6	0	0	9.4	20.4	32.1	5	132.9	10.1	55	4.6	61.9
1973	20.8	10.2	21.4	24.5	3.3	29.3	0	0	0.9	37.1	22.2	11.5	181.3	36	49.2	29.3	60.2
1974	8.8	15.5	12.1	23.7	1.5	0.5	0	0	20.4	78.3	47	43.2	250.9	35.8	37.4	0.5	145.6
1975	17.8	18.4	6.7	9.9	8.1	11.4	0	0	5.8	44.7	29.5	10.3	162.4	79.3	24.6	11.4	80
1976	14.3	6.4	7.4	26.8	14.8	0.8	0	0.5	18.1	54.4	63.1	10.5	216.9	31	49	1.2	135.6
1977	47.5	9.2	23.1	22.8	10.9	13.8	0	0	2	78.6	38.1	30.2	276.3	67.2	56.8	13.8	118.7
1978	3.3	10	12	41.9	22.5	6.2	31.3	0.3	2.7	49.8	28.5	10.4	219	43.5	76.4	37.8	81.1
1979	8.2	2.7	16.1	35.9	1.4	22.6	0	9.7	41.2	-	-	21.9	-	21.3	53.3	32.4	-
1980	5.6	7.3	21.4	11.2	24.6	3.5	0	0	37.5	29.8	31.9	43.5	216.2	34.7	57.2	3.5	99.2
1981	31.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1985	10.4	33.4	25.8	45.6	13.4	-	0	0	0	15.2	50.2	34.2	-	-	84.8	-	65.4
1986	12.6	6.2	6.3	35.5	3.1	-	0	0	16	41.8	80.6	44.2	-	52.9	45	-	138.4
1987	16.8	97.4	48.6	95.8	0.2	48.6	0	0	0.1	47.3	65.4	56.6	476.9	158.4	144.6	48.6	112.8
1988	18.4	23	12.5	15.3	3.1	0.1	0	0	6.2	24.3	43	16.8	162.8	98.1	30.9	0.1	73.6
1989	15.4	4.6	9.6	0	11.1	0.2	0	0	21.3	11.3	31.3	18.4	123.2	36.9	20.7	0.2	63.8
1990	17	13.9	45.6	27.4	23.9	28.8	0	0	9.4	49.3	45.8	10.7	271.6	49.4	96.8	28.8	104.4
1991	92.9	24.4	60	100.6	18.2	0	0	0	39.6	52.5	44	19.9	452.2	128	178.9	0	136.2
1992	52.2	5.3	18.9	27.5	7.7	4.7	0	0	7.2	30	23.8	23.2	200.5	77.4	54.1	4.7	61.1
1993	3.4	5	1.1	2.8	5.7	0.2	0	0	3.5	22.8	32.7	40.2	117.5	31.6	9.6	0.2	59
1994	4.6	3.2	13.3	22.2	1.5	0	0	0	0	4.4	38.8	19.4	107.3	48	37	0	43.2
1995	3.7	1.7	7.7	43	5.1	0	0	0	0.5	15.5	13.8	6.1	96.9	24.8	55.8	0	29.7
1996	3.4	2.7	9.6	1.3	1.3	0	0	0	0	13.7	9.1	16.7	57.8	12.2	12.2	0	22.8
1997	0	0	0	0	0	0	0	0	0.2	8.6	18.3	29.8	56.9	16.7	0	0	27.1
1998	5	13.8	9.4	6.8	3.7	0	0	0	0	23.4	20.9	9.3	92.4	48.7	19.8	0	44.4
1999	10.2	23.5	24.7	16.1	12.4	0.2	0	0	0.2	20.1	21.1	47.1	175.5	43	53.3	0.2	41.3
2000	7.4	25.9	14.2	23.3	6.6	0.2	0	0	4.1	15.8	27.1	8.1	132.6	80.3	44	0.2	47
2001	12.6	9.4	14.7	17	50.2	0	0	0	0	23.8	27.6	27.9	183.3	30.1	82	0	51.4
2002	9.5	0.1	4.8	18.6	17.4	0.2	0	0	0.6	17.8	27.8	10.2	107	37.5	40.8	0.2	46.2
2003	7.9	3.5	19	10	29	10.6	0	0	10.9	32.1	29.8	15.1	168.1	21.6	58.1	10.6	72.8
2004	33.6	4.5	69	30.5	37	2.3	0	0	3	48.3	77.3	10.6	316.2	53.2	136.6	2.3	128.7
2005	25.4	10.9	96.5	31	29	0	0	0	2.6	7.8	44.6	29	276.8	46.9	156.5	0	55
2006	25.3	25.1	5.1	44.6	-	4.6	0	0	0	15	19.4	33.4	-	79.4	-	4.6	34.4
2007	0.1	16.5	5.9	34.8	14.4	7.8	0	0	3.1	-	-	-	-	50	55	7.8	-

Note: “-“ = missing data.

Table A1-24: Chesterfield Inlet: Adjusted Precipitation Data (mm), 1931 to 2007

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Winter	Spring	Summer	Autumn
1931	-	23.5	5.9	17	8.5	84.3	26.9	12.4	55.1	43.8	45.5	69.6	-	-	31.5	123.7	144.4
1932	11.7	34.8	6.4	79	8.5	18.7	62.4	96.9	77.9	98.5	74.3	50	619.2	116.1	93.9	178	250.7
1933	5.5	12.8	17.5	29.6	28.9	17.7	63.6	59	44.7	11.3	2.9	11.7	305.1	68.3	76	140.4	58.9
1934	4.7	2	5.9	5.9	10.9	20	85.2	61.8	37.5	65.1	26.6	30.7	356.4	18.4	22.8	167.1	129.1
1935	-	20.8	-	17.6	2.9	18.4	33.3	56.6	57.4	36.5	-	24.6	-	-	-	108.3	-
1936	2.7	30.5	63.4	49.5	30.4	21.9	18.5	26.1	89.7	56.4	26	20.8	436	57.9	143.3	66.5	172.1
1937	36.6	59.6	28.6	41.5	36.6	20.9	160.7	52.8	31.8	45.8	16.6	56.1	587.5	117	106.6	234.4	94.2
1938	37.2	17	23.7	29.5	31.7	12	41.1	37.4	32.3	43.7	50.3	54.3	410.2	110.3	84.9	90.5	126.3
1939	16.7	14.3	20.8	46.5	14.7	36.2	43.8	79.9	44.1	58.6	24.6	22.6	423	85.3	82	159.9	127.4
1940	16.6	10.1	22.3	38.4	22	41.8	43.3	26.3	33.4	71.1	48.2	23.7	397.1	49.3	82.7	111.5	152.6
1941	28.4	9.9	18.6	15.1	44.8	16.9	41.8	54.1	34.2	-	43.8	30.6	-	62	78.4	112.8	-
1942	23.6	25.8	63.4	100.7	65.5	42.6	21.3	39.9	12	59.9	54.4	29.3	538.4	80	229.6	103.8	126.3
1943	9.3	1.1	12.5	15	20.5	2.8	52.5	-	38	24.7	23	15.7	-	39.7	48	-	85.6
1944	6.4	4.6	7	12.8	14.2	16.9	65.2	50.5	49.9	72.2	84.5	4.4	388.5	26.6	34	132.6	206.5
1945	31.2	14.9	50.3	29.6	-	38.5	29.8	14.1	22.5	17.1	39.4	1.7	-	50.5	-	82.4	79
1946	7.6	6.7	11.3	6.8	12.3	36.8	72.8	49.1	63	43	19.2	16.1	344.7	16	30.4	158.7	125.2
1947	2.7	21.2	9.3	13.1	37.7	26.7	58.7	60.8	75.2	70.6	43.6	17.9	437.6	40	60	146.3	189.5
1948	12.5	8.1	16	14.2	20	17.4	28.3	78.9	31.6	18.5	-	13.1	-	38.5	50.1	124.6	-
1949	12.6	1.8	14.3	42.7	10.2	79.4	-	4.3	5.8	-	5.3	13.4	-	27.5	67.2	-	-
1950	0.2	4	5.8	6.1	9.8	38.3	18.5	22.3	36	52.7	36.7	50.2	280.5	17.5	21.7	79.1	125.4
1951	14.6	12.6	16.3	27.4	25.1	24.7	40.6	22.1	23.5	41.4	19.6	17.8	285.9	77.4	68.8	87.5	84.6
1952	7.2	3.5	6.8	23.6	11.1	25.2	63.4	76.7	61.1	42.3	9	105.8	435.6	28.5	41.5	165.3	112.4
1953	6.8	14.5	27.2	21.7	10.3	12.5	51.8	41.3	36.8	34.4	57.9	13.4	328.6	127.1	59.3	105.6	129
1954	1.5	15.5	12.5	18.9	13.8	40.4	30.5	9.1	49.4	18.8	14.1	9.7	234.1	30.4	45.1	80	82.3
1955	28.1	2	11.1	20.7	16.9	51.1	60	79.4	72.6	35.6	20.2	21.3	419	39.8	48.6	190.5	128.4
1956	21.4	6.1	4.3	31.6	11.1	2.8	30.8	69.5	20	64.4	13.7	10.5	286.2	48.8	47	103.1	98.1
1957	2.3	8.1	8.7	13.2	16.4	8.6	31.7	28	40.5	12.9	20.8	7	198.2	20.8	38.3	68.3	74.2
1958	16.7	12.2	9.3	6.2	30.5	34.2	60	25.9	61.5	41.5	29.5	7	334.5	35.9	46	120.2	132.5
1959	17.8	3.2	11.6	3	22.3	83.4	31.8	83.1	69	23.8	9.1	8.2	366.2	27.9	37	198.2	101.9
1960	5	7.1	13.5	5.3	7.7	12.6	65.7	46.9	56.1	34.1	21.7	5.8	281.6	20.3	26.5	125.2	112
1961	5	12.9	6.4	31.9	4.9	31.2	27.7	35	167.8	70.2	59	107.2	559.2	23.7	43.2	93.9	296.9
1962	0.9	0.6	31.5	41	79.5	23.8	19.7	38.6	27.1	69.5	18.2	6.2	356.7	108.7	152	82	114.9
1963	7.4	3.9	6.2	11.1	24.9	9.8	59.8	42.2	30.4	97.3	50.5	12.4	356	17.6	42.2	111.8	178.2
1964	26.9	4.6	4.8	25.2	21.4	49.7	24.8	30.7	31.7	38.3	26.9	9.7	294.5	43.9	51.4	105.2	96.8
1965	8	3	6.4	12.1	6.4	56.5	51.9	13.9	35.6	24.8	24.1	20	262.7	20.7	24.9	122.3	84.5
1966	11.8	18.7	7.7	12.4	49.5	24.2	20.8	46.4	37.4	20.9	20.8	14.4	285.1	50.6	69.7	91.4	79.1
1967	10.3	2	17.9	8.5	33.7	37.7	59.2	34.9	106.2	41.7	29.5	42.3	424	26.7	60.1	131.9	177.3
1968	15.5	11.7	50	15.2	27.4	36.5	46.3	38.2	77.8	62.4	47.7	24.6	453.4	69.5	92.7	121.1	187.8
1969	21.6	11.1	14.6	24.3	15.3	24.4	49.4	39.6	13.8	15.5	48	43.8	321.5	57.3	54.2	113.5	77.3

Table A1-24: Chesterfield Inlet: Adjusted Precipitation Data (mm), 1931 to 2007 (continued)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	Winter	Spring	Summer	Autumn
1970	28.4	2.4	15.8	1.9	18.4	34.5	122.7	46.8	75.1	122.4	35	4.1	507.6	74.6	36.1	204	232.5
1971	27.4	9.1	2.9	11.6	19.9	32.3	4.7	39.6	32.5	92.3	33.8	3.6	309.7	40.6	34.3	76.6	158.6
1972	2	4.5	14.4	5	36.6	7.1	77.7	31	28.3	21.7	32.1	5	265.3	10.1	56	115.7	82.1
1973	20.8	10.2	21.4	24.5	4.5	53.7	8.9	106.8	39.8	56.5	22.2	11.5	380.8	36	50.4	169.4	118.4
1974	8.8	15.5	12.1	24	1.5	23.9	29.1	42.4	42.9	79.3	47.3	43.2	370	35.8	37.7	95.4	169.5
1975	17.8	18.7	6.7	10.2	27.7	19.7	50.9	48.6	36.3	52.4	29.5	10.3	328.6	79.6	44.5	119.1	118.2
1976	14.3	6.4	7.4	26.8	27.4	19.7	41.5	27.1	54.1	57.4	63.1	11.1	356.2	31	61.6	88.3	174.6
1977	47.5	9.2	23.1	35.8	18.2	38.5	28.6	22.1	17	97.5	43.2	30.2	411.1	67.8	77.1	89.3	157.8
1978	3.3	10.3	12	41.9	40.7	17.3	91.6	31.7	11.3	53.2	28.8	10.4	352.6	43.8	94.6	140.6	93.4
1979	8.2	2.7	16.1	36.8	13.5	37.3	19.6	57.7	66.7	-	-	22.1	-	21.3	66.3	114.6	-
1980	5.6	7.3	21.4	13.6	29.9	11.3	92.6	78.4	93.3	30.4	31.9	43.5	459.2	35	64.9	182.4	155.6
1981	31.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1985	10.4	33.4	25.8	45.6	13.4	-	42.5	74.2	26.8	15.2	50.2	34.2	-	-	84.8	-	92.1
1986	12.6	6.2	6.3	35.5	25.2	-	0	33.2	65.9	41.8	80.6	44.2	-	52.9	67	-	188.2
1987	16.8	97.4	48.6	95.8	0.3	48.8	0.3	100.9	16.8	47.3	65.4	56.8	595.3	158.4	144.7	150	129.5
1988	18.4	23	12.5	15.3	3.1	5.4	24	-	38.3	39.9	43	16.8	-	98.2	30.9	-	121.2
1989	15.4	4.6	9.6	0	11.1	7.9	21.1	26.9	72.3	11.3	31.3	18.4	229.8	36.9	20.7	55.9	114.8
1990	17	13.9	45.6	27.4	25	29.1	70.7	94.8	31.7	49.4	45.8	10.7	461	49.4	98	194.6	126.8
1991	92.9	24.4	60	100.6	22.6	2.3	99.7	36.5	39.8	52.5	44	19.9	595	128	183.2	138.4	136.3
1992	52.2	5.3	18.9	27.5	7.7	16.1	11.6	27.1	39.5	30.1	23.8	23.2	283	77.4	54.1	54.8	93.5
1993	3.4	5	1.1	2.8	7.6	9.9	28.3	94.1	27.4	29	32.9	40.2	281.7	31.6	11.5	132.2	89.3
1994	4.6	3.2	13.3	22.2	1.5	26.1	1.4	46.9	72.5	12.3	38.8	19.4	262.3	48	37	74.5	123.6
1995	3.7	1.7	7.7	43	5.1	14.9	37.3	36.4	25.2	41.6	13.8	6.1	236.3	24.8	55.8	88.6	80.6
1996	3.4	2.7	9.6	1.3	1.9	35.5	39.6	56.7	49.1	14.4	9.1	16.7	240.1	12.2	12.8	131.8	72.6
1997	0	0	0	0	0	0	17.3	39.7	22.6	68.8	18.4	29.8	196.7	16.7	0	57	109.8
1998	5	13.8	9.4	6.8	19.4	25.8	116.4	68.5	63	29.5	21.1	9.3	387.9	48.7	35.5	210.6	113.6
1999	10.2	23.5	24.7	17.5	27.7	71.7	27.5	79.2	45.8	29.8	21.1	47.1	425.8	43	69.9	178.4	96.7
2000	7.4	25.9	14.2	23.3	7.4	3.9	14.8	56.3	33.3	19.4	27.2	8.1	241.1	80.3	44.9	75	80
2001	12.6	9.4	14.7	17	64.4	28.9	55.9	32.5	27.7	39.2	27.7	27.9	358	30.1	96.2	117.4	94.6
2002	9.5	0.1	4.8	18.6	20.1	16.4	64.6	46.9	48.7	33.3	27.8	10.5	301.4	37.5	43.5	127.8	109.9
2003	7.9	3.5	19	10	42.7	39.7	28.9	52.7	44.5	55.7	30.1	15.1	349.9	21.9	71.8	121.3	130.2
2004	33.6	4.5	69	30.5	37	17.2	15.8	35.8	77.3	50.3	77.3	10.6	459	53.2	136.6	68.9	204.9
2005	25.4	10.9	96.5	32.9	65	14.7	63.2	21.8	46.8	32.9	44.6	29	483.6	46.9	194.4	99.7	124.2
2006	25.3	25.1	5.1	44.8	-	49.9	54	36.9	12.1	61.1	19.8	33.4	-	79.4	-	140.7	93.1
2007	0.1	16.5	5.9	34.8	17	38.6	33	83.3	27.7	-	-	-	-	50	57.7	154.9	-

Note: "-" = missing data

A1 - 6. RAIN GAUGE DATA

Table A1-25: Meliadine Camp: Rain Gauge Data (mm), 1997 to 1999

Day	1997				1998				1999				
	Jun	Jul	Aug	Sep	Jun	Jul	Aug	Sep	Jun	Jul	Aug	Sep	Oct
1		0.0		0.0	0.0	1.7		1.3		0.0	0.0	0.1	0.0
2		0.0		0.0	0.0	0.0		0.0		0.0	0.6	0.0	0.0
3		0.0		0.0	0.0	0.0		0.0		0.0	0.0	11.3	0.0
4		0.0		7.4	0.0	0.0		3.7		0.0	0.0	0.0	0.0
5		4.4		0.0	0.0	0.0		0.2	0.0	0.0	0.1	0.1	0.0
6		0.0		0.2	0.0	4.5		2.4	0.0	0.0	0.2	0.0	0.0
7		4.0		0.0	0.0			0.0	0.0	0.0	7.8	0.0	
8		1.1		0.0	0.0		0.0	1.5	0.0	0.8	0.0	0.0	
9		3.4		0.0	0.7		0.0	3.6	0.0	0.0	0.0	0.0	
10		0.0		0.0	2.2		0.0	0.0	0.8	2.1	1.0	0.0	
11		0.0		0.0	0.0		0.1	0.0	0.0	5.1	8.8	0.0	
12		0.0			3.2		0.9	0.8	0.1	0.0	0.0	0.0	
13		0.0	0.0	0.2	2.5		0.0	0.1	0.0	7.3	0.0	2.0	
14		0.0		0.1	0.0		0.0	16.3	0.0	4.9	0.1	0.2	
15		0.6	0.0	0.0	0.0		0.0	0.7	0.0	0.0	0.0	10.2	
16		0.0	0.0		0.0		0.0	0.0	0.0	0.2	2.5	0.0	
17		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	
18		0.0			0.0		0.0	0.0	0.0	0.0	4.6	0.0	
19		0.0	1.4		0.4		1.8	0.0	0.0	0.3	4.3	0.0	
20		0.0	0.0	0.3	0.0		6.3	0.3	0.1	0.1	1.2	6.1	
21		0.0	0.0	0.0	0.0		0.0	0.1	0.0	0.0	0.0	10.4	
22		2.5			2.2		0.0	0.1	0.8	0.0	0.0	0.0	
23	0.0	0.0	5.0		0.0		0.0	0.2	56.1	0.0	1.1	0.0	
24	0.3	0.0			0.0		0.0	0.0	1.3	0.0	5.7	2.8	
25	1.4	0.0			0.0		0.0	0.0	0.0	3.3	0.0	5.0	
26	6.2	0.0			0.0		0.0	0.0	0.0	23.8	31.4	0.0	
27	2.8	0.0			0.0		0.9	0.2	0.7	1.6	1.3	0.0	
28	17.4	0.0	0.0		0.0		3.8	0.5	0.0	0.6	0.0	0.3	
29	0.6	0.0	0.0		0.0		0.3	1.4	0.0	0.1	1.3	0.7	
30			4.0	8.5	0.3		0.2	2.8	0.0	0.0	0.0	0.0	
31			0.0				7.2			0.0	6.1		

Note: blank= not recorded or not available.

Table A1-26: Meliadine Camp: Rain Gauge Data (mm), 2000, 2008 & 2009

Day	2000				2008				2009			
	Jun	Jul	Aug	Sep	Jun	Jul	Aug	Sep	Jun	Jul	Aug	Sep
1	0.0	0.0	0.0	0.1		0.0	0.0	0.0		0.0	0.1	6.5
2	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.4
3	0.0	0.0	0.0	0.0		0.1	2.9	0.0		0.0	0.0	0.0
4	0.3	0.0	0.0	0.0		0.0	1.3	0.1		0.0	0.0	0.1
5	0.0	0.0	0.0	1.7		0.2	0.0	0.5		0.0	0.0	7.9
6	0.0	0.0	0.0	0.0		0.6	0.1	0.5		0.0	0.0	0.0
7	0.0	0.0	1.3	2.8		0.0	0.0	0.0		0.0	13.8	0.0
8	0.0	0.0	0.0	0.0		0.2	0.0	0.2		0.0	3.4	2.8
9	0.0	0.0	0.0	0.0		0.1	0.3	2.4		0.6	0.0	6.4
10	0.0	0.0	0.3	0.5		0.0	0.0	0.7	0.0	19.2	0.0	0.0
11	0.0	0.0	6.2	0.0		0.0	0.0	1.6	0.0	17.7	6.6	0.0
12	0.0	0.0	0.0	0.0		0.0	0.7	0.0	6.2	0.0	0.7	7.3
13	0.0	0.0	0.0	3.4		0.0	1.7	0.0	0.3	0.0	0.0	0.0
14	0.0	0.5	0.0	0.5		6.4	16.5	2.2	0.0	0.0	0.0	0.0
15	0.0	2.7	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	
17	0.0	0.0	7.0	0.0	0.0	3.1	0.0		0.0	0.0	0.0	
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	
19	0.0	0.0	0.2	0.0	0.0	0.0	0.4		0.0	0.1	0.0	
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0		5.9	0.0	6.1	
21	0.0	0.0	2.7	0.0	0.0	0.0	0.0		0.0	0.0	0.4	
22	0.0	0.0	0.4	0.0	0.0	2.4	0.0		0.0	2.8	3.4	
23	0.0	0.0	0.0	1.7	0.0	0.0	0.0		0.0	0.2	0.0	
24	0.1	0.0	9.0	0.4	1.6	3.0	0.2		0.0	0.0	0.0	
25	0.1	0.0	6.5	0.0	0.0	7.2	0.9		0.0	0.0	0.0	
26	0.0	0.0	0.0	0.0	4.5	2.2	1.9		0.0	0.0	0.0	
27	0.0	0.0	3.7	0.0	0.0	0.0	3.4		0.0	3.6	0.0	
28	0.0	0.0	4.1	0.0	0.0	0.0	0.9		0.0	0.0	0.0	
29	0.0	0.2	6.0	0.0	3.1	16.1	0.2		0.0	0.0	0.0	
30	0.1	8.4	0.0	0.0	0.0	0.0	0.1		0.0	12.9	0.0	
31	0.0	0.0	0.0			0.0	11.0			5.4	7.2	

Note: blank= not recorded or not available.

A1 - 7. EVAPORATION DATA

A1 - 7.1 Meliadine Camp: Evaporation Data, 1997

Table A1-27: Pan Evaporation Data, 1997

DATE (1997)	Water (mm)				Water Temperature (°C)		Time Of Observation
	Added	Removed	Rain	Net Loss	Max.	Min.	
01-Jun							
02-Jun							
03-Jun							
04-Jun							
05-Jun							
06-Jun							
07-Jun							
08-Jun							
09-Jun							
10-Jun							
11-Jun							
12-Jun							
13-Jun							
14-Jun							
15-Jun							
16-Jun							
17-Jun							
18-Jun							
19-Jun							
20-Jun							
21-Jun							
22-Jun							
23-Jun	2.55		0.00	2.55	29	15	7:00 PM
24-Jun	6.60		0.30	6.90	21	11	9:00 PM
25-Jun	1.57		1.40	2.97			
26-Jun		3.40	6.20	2.80	25	10	11:00 PM
27-Jun		2.00	2.80	0.80	21	12	11:00 AM
28-Jun		9.90	17.40	7.50	24	12	2:30 PM
29-Jun	1.80		0.60	2.40	23	14	7:00 PM
30-Jun							
01-Jul	4.75		0.00	4.75	19	5	1:30 PM
02-Jul	10.80		0.00	10.80	22	9	11:00 AM
03-Jul	8.80		0.00	8.80	22	8	7:00 PM
04-Jul	6.50		0.00	6.50	15	5	7:00 PM
05-Jul	2.40		4.40	6.80	20	5	7:00 PM
06-Jul	3.50		0.00	3.50	26	6	7:00 PM
07-Jul	4.70		4.00	8.70	23	10	7:00 PM
08-Jul	5.00		1.10	6.10	23	12	7:00 PM
09-Jul	0.00		3.40	3.40	20	9	7:00 PM
10-Jul	5.00		0.00	5.00	25	9	7:00 PM

Table A1-27: Pan Evaporation Data, 1997 (continued)

DATE (1997)	Water (mm)				Water Temperature (°C)		Time Of Observation
	Added	Removed	Rain	Net Loss	Max.	Min.	
11-Jul	7.20		0.00	7.20	24	7	7:00 PM
12-Jul	5.40		0.00	5.40	22	9	7:00 PM
13-Jul	7.20		0.00	7.20	22	7	7:00 PM
14-Jul	6.70		0.00	6.70	12	7	7:00 PM
15-Jul	4.80		0.60	5.40	12	7	7:00 PM
16-Jul	7.70		0.00	7.70	19	7	7:00 PM
17-Jul	7.20		0.00	7.20	22	11	7:00 PM
18-Jul	7.00		0.00	7.00	24	10	11:00 AM
19-Jul	13.60		0.00	13.60	24	10	11:00 AM
20-Jul			0.00				
21-Jul			0.00				
22-Jul	9.40		2.50	11.90	26	7	7:00 PM
23-Jul	3.60		0.00	3.60	29	15	7:00 PM
24-Jul	10.40		0.00	10.40	21	11	9:00 PM
25-Jul			0.00				
26-Jul	14.60		0.00	14.60	25	10	11:00 PM
27-Jul	1.90		0.00	1.90	21	12	11:00 AM
28-Jul	11.40		0.00	11.40	24	12	2:30 PM
29-Jul	7.20		0.00	7.20	23	14	7:00 PM
30-Jul							
31-Jul							
01-Aug							
02-Aug							
03-Aug							
04-Aug							
05-Aug							
06-Aug							
07-Aug							
08-Aug							
09-Aug							
10-Aug							
11-Aug							
12-Aug							
13-Aug	8.50		0.00	8.50	15	5	6:30 PM
14-Aug							
15-Aug	5.50		0.00	5.50	20	5	11:30 AM
16-Aug	6.20		0.00	6.20	22	9	6:30 PM
17-Aug							
18-Aug							
19-Aug	11.20		1.40	12.60	22	10	8:00 PM
20-Aug	4.80		0.00	4.80	22	12	6:30 PM
21-Aug	3.60		0.00	3.60	11	12	9:00 PM
22-Aug							
23-Aug	3.60		5.00	8.60	19	8	9:00 PM
24-Aug							
25-Aug	4.70			4.70	14	8	9:00 PM
26-Aug							

Table A1-27: Pan Evaporation Data, 1997 (continued)

DATE (1997)	Water (mm)				Water Temperature (°C)		Time Of Observation
	Added	Removed	Rain	Net Loss	Max.	Min.	
27-Aug							
28-Aug	10.10		0.00	10.10	26	8	9:00 PM
29-Aug	1.70		0.00	1.70	17	8	8:30 PM
30-Aug	1.50		4.00	5.50	20	10	8:30 PM
31-Aug	3.20		0.00	3.20	10	8	7:15 PM
01-Sep	6.20		0.00	6.20	10	0	8:30 PM
02-Sep	3.80		0.00	3.80	15	5	9:00 PM
03-Sep	3.80		0.00	3.80	20	8	5:00 PM
04-Sep		6.00	7.40	1.40	10	5	6:50 PM
05-Sep	4.80		0.00	4.80	10	5	9:00 PM
06-Sep	1.40		0.20	1.60	12	2	8:10 PM
07-Sep	3.60		0.00	3.60	10	4	8:20 PM
08-Sep			0.00	0.00	8	3	8:35 PM
09-Sep	3.80		0.00	3.80	6	3	8:30 PM
10-Sep	1.00		0.00	1.00	10	3	8:30 PM
11-Sep	4.00		0.00	4.00	9	4	6:45 PM
12-Sep							
13-Sep	3.80		0.20	4.00	9	1	8:00 PM
14-Sep	0.00		0.10	0.10	6	0	6:45 PM
15-Sep	4.20		0.00	4.20	7	0	7:45 PM
16-Sep							
17-Sep							
18-Sep							
19-Sep							
20-Sep	11.20		0.25	11.45	5	0	6:25 PM
21-Sep		3.00	0.00	-3.00	5	0	8:00 PM
22-Sep							
23-Sep							
24-Sep							
25-Sep							
26-Sep							
27-Sep							
28-Sep							
29-Sep							
30-Sep	iced	iced	8.50				7:30 PM
Totals	**305.47**	**24.30**	**71.75**	**352.92**			

A1 - 7.2 Meliadine Camp: Evaporation Data, 1998

Table A1-28: Meliadine Camp: Evaporation Data, 1998

Date (1998)	Pan Evap. (mm)	Water Temperature *Tw* (°C)			Mean Air Temp *Ta* (°C)	Wind Speed (km/h)	*Up* (km)	*Alpha*	*T*	Lake Evap. (mm)	Pan Coefficient
		Max.	Min.	Average							
16-Jun	3.6	11.0	1.0	6.0	5.3	9.5	226.8	0.51	0.69	2.7	0.74
17-Jun	5.2	18.0	11.0	14.5	5.8	9.1	217.6	0.60	6.69	5.3	1.02
18-Jun	3.3	18.0	5.0	11.5	5.5	9.5	229.1	0.57	4.81	3.5	1.06
19-Jun	2.2	11.0	6.0	8.5	5.9	6.5	155.9	0.53	2.29	2.0	0.89
20-Jun	3.6	19.0	2.0	10.5	8.0	7.4	177.8	0.54	2.22	3.0	0.82
21-Jun	4.2	18.0	3.0	10.5	7.0	7.4	178.3	0.54	3.03	3.6	0.85
22-Jun	2.6	15.0	8.0	11.5	6.6	13.8	330.4	0.59	4.05	3.1	1.20
23-Jun	4.9	16.0	5.0	10.5	7.2	15.7	377.2	0.59	2.85	4.4	0.91
24-Jun	2.9	15.0	8.0	11.5	8.6	13.0	312.6	0.59	2.53	2.8	0.97
26-Jun	4.2	17.0	7.0	12.0	10.9	16.5	395.6	0.60	1.06	3.3	0.80
27-Jun	8.4	17.0	6.0	11.5	9.9	18.3	438.1	0.60	1.50	6.5	0.77
29-Jun	5.7	21.0	3.0	12.0	12.2	11.5	276.3	0.58	-0.26	3.9	0.69
30-Jun	7.0	16.0	8.0	12.0	10.6	25.1	602.9	0.62	1.31	5.6	0.80
1-Jul	3.6	13.0	3.0	8.0	10.5	41.1	985.6	0.60	-2.23	0.8	0.21
2-Jul	3.6	13.0	3.0	8.0	12.0	27.3	655.5	0.58	-3.36	0.7	0.20
9-Aug	2.4	17.0	7.0	12.0	12.2	12.8	306.0	0.59	-0.28	1.6	0.66
10-Aug	5.1	18.0	12.0	15.0	12.3	17.8	427.8	0.64	2.40	4.6	0.90
11-Aug	2.4	14.0	7.0	10.5	13.5	19.7	473.6	0.60	-2.60	0.6	0.24
12-Aug	4.5	16.0	11.0	13.5	12.8	28.9	694.3	0.64	0.74	3.6	0.80
15-Aug	9.7	18.0	11.0	14.5	10.9	15.6	375.5	0.63	3.07	7.9	0.82
16-Aug	3.6	17.0	12.0	14.5	12.7	9.6	231.5	0.60	1.68	3.0	0.82
17-Aug	3.6	22.0	9.0	15.5	14.7	13.4	321.4	0.63	0.82	2.8	0.78
18-Aug	3.6	22.0	9.0	15.5	17.8	19.6	469.4	0.65	-2.11	1.5	0.43
19-Aug	5.6	22.0	9.0	15.5	14.3	27.0	649.0	0.66	1.22	4.7	0.83
20-Aug	5.3	17.0	5.0	11.0	7.5	55.6	1334.1	0.66	3.04	7.1	1.34
21-Aug	5.3	17.0	5.0	11.0	9.3	39.6	951.4	0.63	1.57	5.0	0.94
22-Aug	3.0	15.0	7.0	11.0	11.1	5.6	135.1	0.54	-0.14	2.1	0.69
23-Aug	1.1	10.0	10.0	10.0	7.9	13.3	320.0	0.57	1.92	1.4	1.24
24-Aug	2.1	11.0	11.0	11.0	6.9	10.9	261.3	0.57	3.45	2.4	1.14
25-Aug	1.8	9.0	7.5	8.25	4.9	12.1	290.3	0.55	2.93	2.1	1.15
26-Aug	0.9	16.0	5.0	10.5	6.3	10.3	248.0	0.56	3.55	1.5	1.70
27-Aug	2.0	11.0	11.0	11.0	7.9	22.3	535.7	0.61	2.72	2.7	1.35
28-Aug	-2.0	8.0	8.0	8.0	7.6	25.6	614.5	0.58	0.49	-1.2	0.58
29-Aug	0.0	9.0	9.0	9.0	7.9	15.1	363.1	0.57	1.05	0.3	
30-Aug	4.2	13.0	7.0	10.0	8.4	10.0	240.2	0.55	1.47	3.3	0.79
31-Aug	0.5	12.0	8.0	10.0	8.0	27.5	658.9	0.61	1.83	1.4	2.75
1-Sep	0.4	12.0	6.0	9.0	7.9	13.4	322.4	0.56	1.12	0.6	1.55
2-Sep	3.9	14.0	5.0	9.5	8.9	7.2	172.0	0.53	0.60	2.8	0.73
3-Sep	-0.9	14.0	5.0	9.5	7.1	16.1	387.0	0.58	2.12	0.1	-0.14
4-Sep	3.0	14.0	5.0	9.5	7.7	16.4	392.5	0.58	1.69	2.7	0.90
5-Sep	-0.2	14.0	5.0	9.5	9.4	11.9	286.3	0.56	0.14	-0.1	0.51
6-Sep	0.4	14.0	5.0	9.5	9.4	15.4	369.7	0.58	0.14	0.3	0.82
7-Sep	0.9	14.0	5.0	9.5	6.5	10.8	258.6	0.55	2.60	1.3	1.44
8-Sep	1.6	5.6	5.2	5.4	6.8	22.5	540.3	0.55	-1.34	0.5	0.34

Table A1-28: Meliadine Camp: Evaporation Data, 1998 (continued)

Date (1998)	Pan Evap. (mm)	Water Temperature *Tw* (°C)			Mean Air Temp *Ta* (°C)	Wind Speed (km/h)	*Up* (km)	*Alpha*	*T*	Lake Evap. (mm)	Pan Coefficient
		Max.	Min.	Average							
9-Sep	2.1	10.8	5.6	8.2	10.8	19.5	467.8	0.57	-2.34	0.5	0.25
11-Sep	5.0	10.6	9.8	10.2	10.0	19.8	474.5	0.60	0.25	3.6	0.72
12-Sep	1.0	10.2	0.8	5.5	8.7	14.3	342.1	0.53	-2.76	-0.1	-0.12
13-Sep	5.4	10.4	5.2	7.8	8.6	15.3	367.3	0.56	-0.78	3.5	0.65
Sum	**152.3**									**125.4**	**0.82**

Notes: Elake=0.7*(Epan+0.00642*P*Alpha*(0.37+0.00255*Up)*T)
P=station pressure (kilopascal), P=101.325*(1-0.00002257*Z)^5.25, Z=station elevation, Z=58 m here, P=100.6306 kpa
Alpha=fraction of advected energy (Class A Pan) used for evaporation.
Alpha=0.35+0.01044*Tw+0.000559*Up; when 0<=Up<161
Alpha=0.35+0.01044*Tw+0.08+0.000249*(Up-161); when 161<=Up<322.
Alpha=0.35+0.01044*Tw+0.12+0.000124*(Up-322); when 322<=Up<483
Alpha=0.35+0.01044*Tw+0.14+0.000062*(Up-483); when Up>=483
Up=daily wind run across pan (km). Up=average wind speed*24
T=mean water and air temperature difference function.
T=(Tw-Ta)^0.88, when Tw>Ta; T=-[(Ta-Tw)^0.88], when Tw<Ta; T=0, when Tw=Ta
Tw=mean water temperature; Ta=mean air temperature.

A1 - 7.3 Meliadine Camp: Evaporation Data, 1999

Table A1-29: Meliadine Camp: Evaporation Data, 1999

Date (1999)	Pan Evap. (mm)	Water Temperature *Tw* (°C)			Mean Air Temp *Ta* (°C)	Wind Speed (km/h)	*Up* (km)	*Alpha*	*T*	Lake Evap. (mm)	Pan Coefficient
		Max.	Min.	Average							
13-Jul	1.6	16.0	9.0	12.5	11.7	9.8	234.0	0.58	0.84	1.3	0.83
14-Jul	11.2	10.0	13.0	11.5	10.7	9.3	223.7	0.57	0.79	8.0	0.72
17-Jul	1.2	15.0	5.0	10.0	8.1	28.6	687.1	0.61	1.72	1.8	1.53
18-Jul	5.6	15.0	5.0	10.0	8.9	27.2	653.0	0.60	1.12	4.5	0.81
10-Aug	3.9	20.0	11.0	15.5	13.3	5.8	138.7	0.59	1.99	3.1	0.80
11-Aug	3.7	19.0	7.0	13.0	13.0	10.1	242.2	0.59	0.00	2.6	0.70
12-Aug	3.8	17.0	10.0	13.5	12.3	13.4	322.6	0.61	1.20	3.1	0.80
13-Aug	3.1	15.0	9.0	12.0	11.1	20.8	499.6	0.62	0.89	2.6	0.83
14-Aug	3.6	16.0	8.0	12.0	11.2	16.0	383.6	0.60	0.85	2.8	0.79
15-Aug	3.4	17.0	8.0	12.5	11.8	16.9	405.9	0.61	0.78	2.7	0.79
16-Aug	3.6	19.0	9.0	14.0	12.8	14.0	337.1	0.62	1.19	2.9	0.81
17-Aug	4.4	19.0	11.0	15.0	11.0	18.2	436.2	0.64	3.35	4.5	1.03
18-Aug	1.9	18.0	7.0	12.5	9.1	16.1	386.0	0.61	2.92	2.4	1.27
19-Aug	4.9	17.0	9.0	13.0	13.1	22.1	530.2	0.63	-0.10	3.4	0.69
20-Aug	2.8	17.0	11.0	14.0	11.1	34.1	819.0	0.66	2.54	3.8	1.36
21-Aug	4.7	13.0	7.0	10.0	8.9	33.7	808.2	0.61	1.05	4.0	0.85
22-Aug	3.2	12.0	5.0	8.5	7.1	21.5	516.6	0.58	1.33	2.8	0.88
23-Aug	1.8	10.0	6.0	8.0	7.3	13.5	323.0	0.55	0.74	1.5	0.82
24-Aug	1.7	9.0	5.0	7.0	6.9	22.4	537.0	0.57	0.18	1.3	0.75
25-Aug	2.0	14.0	4.0	9.0	8.4	11.2	269.9	0.55	0.66	1.6	0.79
26-Aug	9.2	14.0	7.0	10.5	7.5	36.3	871.0	0.62	2.60	8.3	0.91
27-Aug	3.2	8.0	7.0	7.5	7.4	27.9	669.1	0.58	0.16	2.3	0.73
28-Aug	3.5	10.0	3.0	6.5	7.5	30.3	728.2	0.57	-1.03	1.9	0.53
29-Aug	-1.0	11.0	5.5	8.25	9.1	16.7	401.8	0.57	-0.89	-1.0	1.02
30-Aug	-1.0	10.0	7.0	8.5	7.9	15.1	363.5	0.56	0.60	-0.5	0.50
2-Sep	7.8	20.0	11.0	15.5	5.1	15.8	378.1	0.64	7.87	8.5	1.09
3-Sep	2.9	6.0	0.0	3.0	6.3	27.5	661.0	0.53	-2.86	0.6	0.21
5-Sep	3.7	15.0	5.0	10.0	9.3	21.2	509.2	0.60	0.77	2.9	0.79
7-Sep	6.4	13.0	5.0	9.0	8.4	6.9	166.5	0.53	0.61	4.6	0.72
8-Sep	6.4	13.0	5.0	9.0	9.4	10.5	250.9	0.55	-0.48	4.4	0.68
Sum	**113.2**									**92.8**	**0.82**

Notes:
Elake=0.7*(Epan+0.00642*P*Alpha*(0.37+0.00255*Up)*T)
P=station pressure (kilopascal), P=101.325*(1-0.00002257*Z)^5.25, Z=station elevation, Z=58 m here, P=100.6306 kpa
Alpha=fraction of advected energy (Class A Pan) used for evaporation.
Alpha=0.35+0.01044*Tw+0.000559*Up; when 0<=Up<161
Alpha=0.35+0.01044*Tw+0.08+0.000249*(Up-161); when 161<=Up<322.
Alpha=0.35+0.01044*Tw+0.12+0.000124*(Up-322); when 322<=Up<483
Alpha=0.35+0.01044*Tw+0.14+0.000062*(Up-483); when Up>=483
Up=daily wind run across pan (km). Up=average wind speed*24
T=mean water and air temperature difference function.
T=(Tw-Ta)^0.88, when Tw>Ta; T=-[(Ta-Tw)^0.88], when Tw<Ta; T=0, when Tw=Ta
Tw=mean water temperature; Ta=mean air temperature.

A1 - 7.4 Meliadine Camp: Evaporation Data, 2000

Table A1-30: Meliadine Camp: Evaporation Data, 2000

Date (2000)	Pan Evap. (mm)	Water Temperature *Tw* (°C)			Mean Air Temp *Ta* (°C)	Wind Speed (km/h)	*Up* (km)	*Alpha*	*T*	Lake Evap. (mm)	Pan Coefficient
		Max.	Min.	Average							
23-Jul	5.8	25.0	11.0	18.0	14.2	15.9	381.6	0.67	3.24	5.40	0.93
25-Jul	4.4	25.0	11.0	18.0	14.5	8.9	213.6	0.63	3.01	3.9	0.88
28-Jul	5.5	28.0	11.0	19.5	12.5	15.9	381.6	0.68	5.54	6.1	1.12
29-Jul	2.8	24.0	11.0	17.5	15.5	12.6	302.4	0.65	1.84	2.6	0.92
7-Aug	4.8	25.0	13.0	19.0	17.7	14.7	352.8	0.67	1.26	3.8	0.80
9-Aug	5.4	24.0	8.0	16.0	14.9	15.5	372.0	0.64	1.09	4.2	0.78
21-Aug	1.8	14.0	8.0	11.0	11.3	10.5	252.0	0.57	-0.35	1.2	0.65
22-Aug	2.5	13.0	10.0	11.5	11.0	18.9	453.6	0.61	0.54	2.0	0.79
23-Aug	0.0	13.0	8.0	10.5	10.3	9.6	230.4	0.56	0.24	0.1	
24-Aug	3.0	14.0	10.0	12.0	10.7	8.3	199.2	0.56	1.26	2.4	0.79
30-Aug	4.2	13.0	3.0	8.0	2.9	34.6	830.4	0.60	4.19	5.7	1.37
31-Aug	4.2	6.0	1.0	3.5	3.8	33.4	801.6	0.55	-0.35	2.7	0.65
2-Sep	2.3	9.0	0.0	4.5	3.7	31.8	762.5	0.55	0.78	2.1	0.90
3-Sep	5.6	18.0	4.0	11.0	8.3	20.9	501.4	0.61	2.43	5.0	0.90
4-Sep	2.0	17.0	2.0	9.5	9.4	15.5	372.0	0.58	0.19	1.5	0.73
5-Sep	2.6	12.0	5.0	8.5	8.6	15.0	359.4	0.56	-0.16	1.8	0.68
6-Sep	2.5	13.0	2.0	7.5	9.3	13.4	321.6	0.55	-1.71	1.2	0.50
7-Sep	0.0	12.0	2.0	7.0	6.1	23.5	563.4	0.57	0.91	0.4	
8-Sep	0.1	13.0	1.0	7.0	4.9	13.8	330.9	0.54	1.93	0.6	6.47
9-Sep	-0.9	10.0	2.0	6.0	6.8	26.9	646.0	0.56	-0.86	-1.1	1.19
10-Sep	0.2	10.0	2.0	6.0	6.9	19.0	455.8	0.55	-0.91	-0.2	-1.03
11-Sep	3.4	11.0	1.0	6.0	8.3	26.3	632.2	0.56	-2.06	1.3	0.39
12-Sep	0.2	11.0	1.0	6.0	8.0	26.8	644.1	0.56	-1.81	-0.8	-3.94
13-Sep	4.0	11.0	1.0	6.0	6.9	18.9	454.8	0.55	-0.93	2.4	0.61
14-Sep	3.8	12.0	3.0	7.5	4.9	21.8	523.6	0.57	2.33	3.7	0.97
15-Sep	0.2	11.0	5.0	8.0	3.4	21.9	525.2	0.58	3.82	1.8	9.21
16-Sep	3.6	10.0	1.0	5.5	6.3	22.9	548.7	0.55	-0.82	2.2	0.60
17-Sep	2.1	11.0	1.0	6.0	3.7	43.3	1040.3	0.59	2.12	3.2	1.51
18-Sep	2.8	2.0	0.0	1.0	2.7	29.1	699.5	0.51	-1.61	1.2	0.41
19-Sep	7.0	2.0	0.0	1.0	1.8	11.0	263.0	0.47	-0.80	4.7	0.67
Sum	85.9									71.1	0.83

Notes: Elake=0.7*(Epan+0.00642*P*Alpha*(0.37+0.00255*Up)*T)
P=station pressure (kilopascal), P=101.325*(1-0.00002257*Z)^5.25, Z=station elevation, Z=58 m here, P=100.6306 kpa
Alpha=fraction of advected energy (Class A Pan) used for evaporation.
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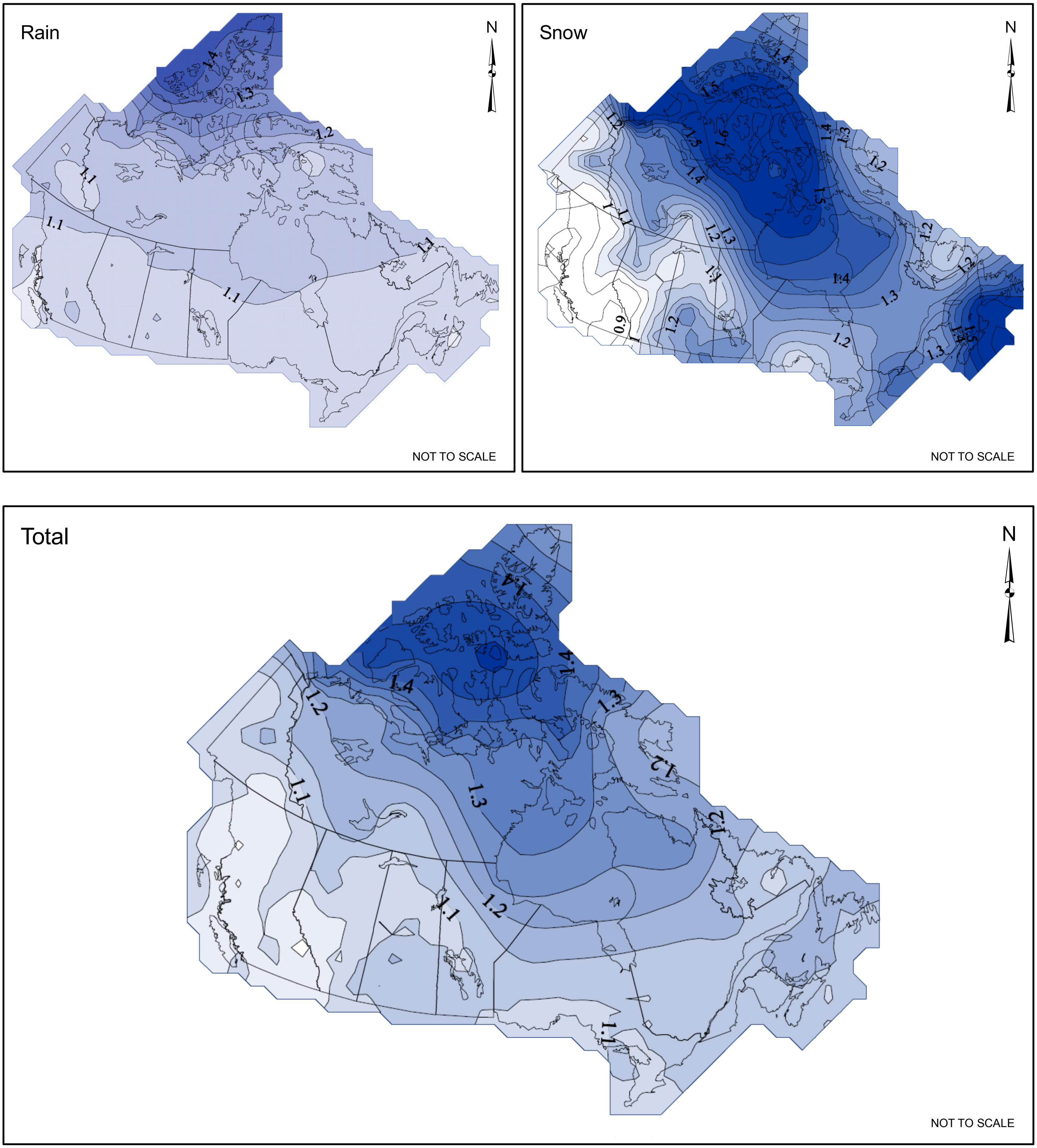
Alpha=0.35+0.01044*Tw+0.08+0.000249*(Up-161); when 161<=Up<322.
Alpha=0.35+0.01044*Tw+0.12+0.000124*(Up-322); when 322<=Up<483
Alpha=0.35+0.01044*Tw+0.14+0.000062*(Up-483); when Up>=483
Up=daily wind run across pan (km). Up=average wind speed*24
T=mean water and air temperature difference function.
T=(Tw-Ta)^0.88, when Tw>Ta; T=-[(Ta-Tw)^0.88], when Tw<Ta; T=0, when Tw=Ta
Tw=mean water temperature; Ta=mean air temperature.

A1 - 8. RELATIVE HUMIDITY DATA

Table A1-31: Rankin Inlet A: Relative Humidity Data (%), 1981 to 2008

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1981	73.7	69.2	74.1	74.0	86.1	84.7	79.6	80.2	86.1	87.6	82.1	68.7	79.3
1982	62.2	63.9	64.3	74.6	88.8	86.1	78.4	78.6	87.0	90.2	72.6	67.5	76.5
1983	66.6	65.5	66.9	77.0	83.0	81.2	76.1	83.6	85.4	85.5	81.6	65.9	76.6
1984	64.1	68.3	69.4	79.4	85.0	78.6	80.1	83.9	81.0	85.1	76.5	64.2	76.3
1985	66.1	66.2	68.7	74.9	88.7	76.5	81.4	85.0	89.8	90.0	82.2	75.2	78.8
1986	69.8	68.5	71.6	79.0	84.9	80.6	78.9	78.7	86.2	82.7	71.3	69.0	76.8
1987	67.6	68.7	69.8	79.3	82.6	88.6	78.6	83.7	90.0	86.0	81.1	77.4	79.5
1988	63.8	65.3	67.8	81.4	85.3	78.9	72.5	76.2	79.2	74.4	71.1	61.6	73.2
1989	59.1	59.5	63.6	77.6	83.5	77.9	72.9	73.2	81.9	86.7	72.2	64.4	72.8
1990	64.8	64.3	75.5	76.8	87.1	81.2	81.6	83.7	83.4	83.7	80.4	67.1	77.6
1991	66.1	67.7	70.0	85.3	86.5	77.3	79.1	75.8	87.6	86.0	74.7	67.1	77.0
1992	68.3	65.5	70.3	76.6	89.5	88.1	80.9	85.9	85.7	87.9	76.9	69.9	78.8
1993	69.1	64.9	68.3	74.7	92.2	75.2	78.4	83.6	85.6	91.2	74.0	72.6	77.6
1994	66.4	65.9	70.5	79.7	89.2	75.0	67.7	82.3	83.9	88.3	82.5	75.2	77.3
1995	67.9	64.4	73.6	81.8	82.9	76.9	76.7	79.3	80.1	87.5	70.8	69.2	76.0
1996	67.6	68.1	67.3	77.8	83.0	79.0	67.5	83.9	87.4	87.3	79.8	75.0	77.0
1997	66.3	66.5	69.5	79.1	83.9	78.0	73.1	79.4	81.0	84.9	77.6	73.3	76.1
1998	65.6	68.6	67.2	82.0	87.6	83.8	81.5	86.9	90.8	89.4	91.9	75.4	80.9
1999	70.9	77.0	82.2	89.9	92.1	83.7	80.4	81.4	83.0	85.0	80.5	72.3	81.5
2000	65.5	67.5	72.8	75.1	84.4	77.4	73.6	81.0	81.7	89.7	76.7	70.2	76.4
2001	67.8	65.5	76.2	80.8	86.9	76.9	79.1	79.2	81.7	87.7	78.8	76.7	78.2
2002	68.1	66.5	68.0	76.0	84.6	85.1	79.9	85.7	80.4	76.8	68.3	63.2	75.3
2003	59.3	68.9	60.1	63.2	68.8	80.0	79.7	80.8	85.1	90.5	84.8	75.2	74.8
2004	69.3	67.3	69.0	73.5	89.2	83.7	74.3	80.0	90.1	89.0	76.1	67.8	77.5
2005	65.3	66.1	72.6	85.8	87.1	79.6	77.7	79.7	82.1	91.1	83.6	69.8	78.4
2006	70.6	68.4	77.5	86.6	91.1	80.9	74.3	73.9	73.0	89.3	79.5	76.3	78.5
2007	69.6	71.0	71.5	85.2	91.5	87.8	77.5	84.8	81.5	88.0	75.7	69.2	79.5
2008	67.2	66.2	66.9	81.7	85.8	80.6	80.1	84.0	80.8	85.9	78.6	65.9	77.0
Mean	**66.6**	**67.0**	**70.2**	**78.9**	**86.1**	**80.8**	**77.2**	**81.2**	**84.0**	**86.7**	**77.9**	**70.2**	**77.3**

Note: % = percentage



LEGEND

Magnitude of Correction for Precipitation

0.80 - 085	1.20 - 1.25
0.85 - 0.90	1.25 - 1.30
0.90 - 0.95	1.30 - 1.35
0.95 - 1.00	1.35 - 1.40
1.00 - 1.05	1.40 - 1.45
1.05 - 1.10	1.45 - 1.50
1.10 - 1.15	1.50 - 1.55
1.15 - 1.20	1.55 - 1.60
	1.60 - 1.65

DRAFT

REFERENCE

Magnitude of correction data obtained from Environment Canada (Mekis, 2004).

PROJECT

COMAPLEX MINERALS CORP

COMAPLEX MINERALS CORPORATION
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

VARIATION OF UNDERCATCH FACTORS ACROSS CANADA

Golder Associates
Edmonton, Alberta

PROJECT NO. 09-1373-0010			PHASE No. 5000	
DESIGN	DC	27 Oct. 2009	SCALE AS SHOWN	REV. 0
GIS	CDB	27 Oct. 2009	FIGURE A1-1	
CHECK	NPS	17 Nov. 2009		
REVIEW	GA	25 Nov. 2009		

N:\Bur-Graphics\Projects\2007\1373\07-1373-0055\Mapping\MXD\2009\Hydrology\figure-a01-01_variation-undercatch-factors.mxd

FIELD DATA FROM PREVIOUS STUDIES

Introduction

This appendix presents all the previous hydrological data collected during the 1997 (AEE 1998a), 1998 (AEE 1998b), 1999 (AEE 1999), 2000 (AMEC 2000), and 2008 (Golder 2008) field seasons. The following symbols and units must be noted:

- m^3/s = cubic metres per second
- m = metres
- - = no available data
- B = ice conditions
- E = estimated
- P = partial

A2 - 1.0 MELIADINE LAKE MAIN OUTLET

Hydrometric data were measured during the open water seasons of 1997 to 2000 and 2008. Mean daily water levels and mean daily discharges at Meliadine Lake Main Outlet are presented in Tables A2-1 to A2-6.

Table A2-1: 1997 Meliadine Lake Main Outlet Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	6.82	1.92	0.831	-	-	-
2	-	-	-	-	-	-	6.67	2.05	0.805	-	-	-
3	-	-	-	-	-	-	6.55	2.09	0.798	-	-	-
4	-	-	-	-	-	-	6.14	2.07	0.876	-	-	-
5	-	-	-	-	-	-	6.13	2.07	0.856	-	-	-
6	-	-	-	-	-	-	6.04	1.76	0.810	-	-	-
7	-	-	-	-	-	-	5.99	1.93	0.808	-	-	-
8	-	-	-	-	-	-	5.95	1.71	0.791	-	-	-
9	-	-	-	-	-	-	6.03	1.63	0.757	-	-	-
10	-	-	-	-	-	-	5.77	1.51	0.710	-	-	-
11	-	-	-	-	-	-	5.59	1.53	0.691	-	-	-
12	-	-	-	-	-	6.39	5.48	1.56	0.652	-	-	-
13	-	-	-	-	-	-	5.55	1.55	0.649	-	-	-
14	-	-	-	-	-	-	5.26	1.51	0.596	-	-	-
15	-	-	-	-	-	-	4.98	1.47	0.531	-	-	-
16	-	-	-	-	-	-	4.73	1.43	0.558	-	-	-
17	-	-	-	-	-	-	4.22	1.41	0.597	-	-	-
18	-	-	-	-	-	-	4.03	1.21	0.527	-	-	-
19	-	-	-	-	0.600	-	4.01	1.19	0.465	-	-	-
20	-	-	-	-	-	-	3.91	1.22	0.445	-	-	-
21	-	-	-	-	-	-	3.72	1.24	0.445	-	-	-
22	-	-	-	-	-	-	3.67	1.23	0.415	-	-	-
23	-	-	-	-	-	6.71	3.64	1.25	0.421	-	-	-
24	-	-	-	-	-	6.63	3.96	1.25	0.446	-	-	-
25	-	-	-	-	-	6.53	3.73	1.18	0.477	-	-	-
26	-	-	-	-	-	6.52	3.54	1.08	-	-	-	-
27	-	-	-	-	-	6.58	3.38	1.06	-	-	-	-
28	-	-	-	-	-	6.59	3.25	0.992	-	-	-	-
29	-	-	-	-	-	7.09	3.00	1.00	-	-	-	-
30	-	-	-	-	-	6.87	2.58	1.02	-	-	-	-
31	-	-	-	-	-	-	2.10	0.899	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**6.39**	**2.10**	**0.899**	**0.415**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**0.600**	**6.66**	**4.72**	**1.45**	**0.638**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.09**	**6.82**	**2.09**	**0.876**	**-**	**-**	**-**

Table A2-2: 1997 Meliadine Lake Main Outlet Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	3.482	3.295	3.204	-	-	-
2	-	-	-	-	-	-	3.478	3.303	3.201	-	-	-
3	-	-	-	-	-	-	3.475	3.305	3.200	-	-	-
4	-	-	-	-	-	-	3.463	3.305	3.209	-	-	-
5	-	-	-	-	-	-	3.463	3.304	3.207	-	-	-
6	-	-	-	-	-	-	3.461	3.284	3.201	-	-	-
7	-	-	-	-	-	-	3.459	3.296	3.201	-	-	-
8	-	-	-	-	-	-	3.458	3.281	3.199	-	-	-
9	-	-	-	-	-	-	3.461	3.275	3.195	-	-	-
10	-	-	-	-	-	-	3.453	3.267	3.189	-	-	-
11	-	-	-	-	-	-	3.448	3.268	3.186	-	-	-
12	-	-	-	-	-	3.483	3.445	3.271	3.181	-	-	-
13	-	-	-	-	-	-	3.447	3.270	3.181	-	-	-
14	-	-	-	-	-	-	3.438	3.267	3.173	-	-	-
15	-	-	-	-	-	-	3.429	3.264	3.163	-	-	-
16	-	-	-	-	-	-	3.421	3.261	3.167	-	-	-
17	-	-	-	-	-	-	3.403	3.259	3.173	-	-	-
18	-	-	-	-	-	-	3.396	3.243	3.162	-	-	-
19	-	-	-	-	-	-	3.395	3.240	3.152	-	-	-
20	-	-	-	-	-	-	3.392	3.243	3.148	-	-	-
21	-	-	-	-	-	-	3.384	3.245	3.148	-	-	-
22	-	-	-	-	-	-	3.382	3.244	3.143	-	-	-
23	-	-	-	-	-	3.479	3.381	3.245	3.144	-	-	-
24	-	-	-	-	-	3.477	3.393	3.246	3.148	-	-	-
25	-	-	-	-	-	3.474	3.385	3.240	3.154	-	-	-
26	-	-	-	-	-	3.474	3.377	3.231	-	-	-	-
27	-	-	-	-	-	3.476	3.370	3.228	-	-	-	-
28	-	-	-	-	-	3.476	3.365	3.221	-	-	-	-
29	-	-	-	-	-	3.488	3.353	3.222	-	-	-	-
30	-	-	-	-	-	3.483	3.333	3.224	-	-	-	-
31	-	-	-	-	-	-	3.306	3.211	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**3.474**	**3.306**	**3.211**	**3.143**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**3.479**	**3.416**	**3.260**	**3.177**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**3.488**	**3.482**	**3.305**	**3.209**	**-**	**-**	**-**

Table A2-3: 1998 Meliadine Lake Main Outlet Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.67	4.09	2.09	-	-	-
2	-	-	-	-	-	-	7.84	3.95	2.04	-	-	-
3	-	-	-	-	-	-	7.81	3.84	2.04	-	-	-
4	-	-	-	-	-	-	7.51	3.80	2.03	-	-	-
5	-	-	-	-	-	-	7.35	3.62	2.05	-	-	-
6	-	-	-	-	-	2.67	7.59	3.61	2.03	-	-	-
7	-	-	-	-	-	3.68	7.04	4.40	2.05	-	-	-
8	-	-	-	-	-	4.96	6.73	4.24	2.15	-	-	-
9	-	-	-	-	-	6.35	6.59	3.97	2.20	-	-	-
10	-	-	-	-	-	6.06	6.29	3.85	2.14	-	-	-
11	-	-	-	-	-	8.44	6.06	3.73	2.04	-	-	-
12	-	-	-	-	-	11.6	5.76	3.09	2.13	-	-	-
13	-	-	-	-	-	11.0	5.53	3.15	2.17	-	-	-
14	-	-	-	-	-	10.8	5.15	3.05	2.67	-	-	-
15	-	-	-	-	-	13.0	4.14	2.97	1.98	-	-	-
16	-	-	-	-	-	13.7	4.94	2.89	1.93	-	-	-
17	-	-	-	-	-	10.6	5.92	2.79	2.69	-	-	-
18	-	-	-	-	-	11.3	6.03	2.70	2.71	-	-	-
19	-	-	-	-	-	11.2	6.10	2.47	2.86	-	-	-
20	-	-	-	-	-	11.0	5.79	1.22	2.80	-	-	-
21	-	-	-	-	-	10.7	5.69	1.46	2.91	-	-	-
22	-	-	-	-	-	10.7	5.32	2.21	2.97	-	-	-
23	-	-	-	-	-	10.5	5.01	2.29	-	-	-	-
24	-	-	-	-	-	10.5	4.81	2.21	-	-	-	-
25	-	-	-	-	-	10.3	4.91	2.11	-	-	-	-
26	-	-	-	-	-	9.97	4.96	2.04	-	-	-	-
27	-	-	-	-	-	9.63	5.44	2.04	-	-	-	-
28	-	-	-	-	-	9.26	5.06	2.12	-	-	-	-
29	-	-	-	-	-	8.89	4.79	2.01	-	-	-	-
30	-	-	-	-	-	8.55	4.52	1.95	-	-	-	-
31	-	-	-	-	-	-	4.43	2.11	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**2.67**	**4.14**	**1.22**	**1.93**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**9.41**	**5.90**	**2.90**	**2.30**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**13.7**	**7.84**	**4.40**	**2.97**	**-**	**-**	**-**

Table A2-4: 1999 Meliadine Lake Main Outlet Mean Daily Discharge (m³/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	16.6	6.20	3.12	-	-	-
2	-	-	-	-	-	-	15.9	5.78	2.91	-	-	-
3	-	-	-	-	-	-	15.5	4.70	3.48	-	-	-
4	-	-	-	-	-	-	14.9	4.55	3.31	-	-	-
5	-	-	-	-	-	-	14.4	4.96	3.63	-	-	-
6	-	-	-	-	-	6.61	14.0	4.90	3.68	-	-	-
7	-	-	-	-	-	-	13.8	4.83	3.58	-	-	-
8	-	-	-	-	-	-	13.4	4.91	3.71	-	-	-
9	-	-	-	-	-	-	13.3	4.66	4.02	-	-	-
10	-	-	-	-	-	-	12.7	4.55	3.82	-	-	-
11	-	-	-	-	-	-	12.3	4.58	3.68	-	-	-
12	-	-	-	-	-	-	12.2	4.42	3.78	-	-	-
13	-	-	-	-	-	-	11.6	4.06	3.75	-	-	-
14	-	-	-	-	-	-	11.4	4.03	3.64	-	-	-
15	-	-	-	-	-	12.8	10.2	3.89	4.07	-	-	-
16	-	-	-	-	-	14.9	9.61	3.93	4.24	-	-	-
17	-	-	-	-	-	14.4	8.98	3.73	3.95	-	-	-
18	-	-	-	-	-	13.8	8.57	3.81	3.99	-	-	-
19	-	-	-	-	-	13.5	8.97	3.52	3.88	-	-	-
20	-	-	-	-	-	13.5	8.05	3.50	3.79	-	-	-
21	-	-	-	-	-	13.3	8.00	3.47	-	-	-	-
22	-	-	-	-	-	12.8	8.03	3.99	-	-	-	-
23	-	-	-	-	-	14.3	7.70	4.27	-	-	-	-
24	-	-	-	-	-	18.3	6.15	4.15	-	-	-	-
25	-	-	-	-	-	19.1	6.89	4.41	-	-	-	-
26	-	-	-	-	-	19.1	7.03	3.47	-	-	-	-
27	-	-	-	-	-	19.0	8.18	3.20	-	-	-	-
28	-	-	-	-	-	18.5	7.80	2.74	-	-	-	-
29	-	-	-	-	-	17.9	7.45	2.70	-	-	-	-
30	-	-	-	-	-	17.2	7.21	2.90	-	-	-	-
31	-	-	-	-	0.000	-	6.70	3.39	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**12.8**	**6.15**	**2.70**	**2.91**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**16.0**	**10.6**	**4.14**	**3.70**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**19.1**	**16.6**	**6.20**	**4.24**	**-**	**-**	**-**

Table A2-5: 2000 Meliadine Lake Main Outlet Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	13.0	4.64	1.55	-	-	-
2	-	-	-	-	-	-	12.2	4.47	1.53	-	-	-
3	-	-	-	-	-	-	10.7	4.21	1.70	-	-	-
4	-	-	-	-	-	-	9.94	4.09	1.75	-	-	-
5	-	-	-	-	-	-	11.1	3.94	1.80	-	-	-
6	-	-	-	-	-	-	10.9	3.83	1.78	-	-	-
7	-	-	-	-	-	-	10.6	3.81	1.67	-	-	-
8	-	-	-	-	-	-	10.3	3.56	1.72	-	-	-
9	-	-	-	-	-	0.00	10.0	3.39	1.81	-	-	-
10	-	-	-	-	-	0.33	9.81	3.29	1.73	-	-	-
11	-	-	-	-	-	0.65	9.62	3.21	1.66	-	-	-
12	-	-	-	-	-	0.98	9.40	2.81	1.49	-	-	-
13	-	-	-	-	-	1.30	9.16	2.69	1.54	-	-	-
14	-	-	-	-	-	1.85	8.98	2.55	1.49	-	-	-
15	-	-	-	-	-	2.40	8.84	2.47	1.65	-	-	-
16	-	-	-	-	-	2.94	8.37	2.55	1.59	-	-	-
17	-	-	-	-	-	3.49	8.05	2.58	1.12	-	-	-
18	-	-	-	-	-	5.29	7.69	2.49	1.23	-	-	-
19	-	-	-	-	-	7.42	7.42	2.49	-	-	-	-
20	-	-	-	-	-	9.06	7.05	2.43	-	-	-	-
21	-	-	-	-	-	10.4	6.71	2.25	-	-	-	-
22	-	-	-	-	-	11.4	6.69	2.21	-	-	-	-
23	-	-	-	-	-	12.1	6.40	2.15	-	-	-	-
24	-	-	-	-	-	12.6	6.01	2.15	-	-	-	-
25	-	-	-	-	-	13.0	5.67	1.86	-	-	-	-
26	-	-	-	-	-	13.2	5.33	1.64	-	-	-	-
27	-	-	-	-	-	13.3	5.11	2.17	-	-	-	-
28	-	-	-	-	-	13.2	5.19	2.36	-	-	-	-
29	-	-	-	-	-	13.2	4.93	2.10	-	-	-	-
30	-	-	-	-	-	13.1	5.10	1.74	-	-	-	-
31	-	-	-	-	-	-	5.01	1.75	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**3.49**	**4.93**	**1.64**	**1.12**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**10.9**	**8.24**	**2.83**	**1.60**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**13.3**	**13.0**	**4.64**	**1.81**	**-**	**-**	**-**

Table A2-6: 2008 Meliadine Lake Main Outlet Instantaneous Measurements

Date and Time	Water Surface Elevation (m, non-geodetic)	Measured Discharge (m^3/s)
10-Jul-08	98.945	3.37
02-Aug-08	98.879	3.27
17-Sep-08	98.720	0.662

A2 - 2.0 MELIADINE LAKE WEST OUTLET

Hydrometric data were measured during the open water seasons of 1997 to 2000 and 2008. Mean daily water levels and mean daily discharges at Meliadine Lake West Outlet are presented in Tables A2-7 to A2-12.

Table A2-7: 1997 Meliadine Lake West Outlet Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	1.76	0.064	0.002	-	-	-
2	-	-	-	-	-	-	1.68	0.079	0.001	-	-	-
3	-	-	-	-	-	-	1.62	0.084	0.001	-	-	-
4	-	-	-	-	-	-	1.40	0.082	0.002	-	-	-
5	-	-	-	-	-	-	1.40	0.081	0.002	-	-	-
6	-	-	-	-	-	-	1.35	0.047	0.001	-	-	-
7	-	-	-	-	-	-	1.33	0.064	0.001	-	-	-
8	-	-	-	-	-	-	1.31	0.043	0.001	-	-	-
9	-	-	-	-	-	-	1.35	0.036	0.001	-	-	-
10	-	-	-	-	-	-	1.22	0.028	0.001	-	-	-
11	-	-	-	-	-	-	1.14	0.028	0.000	-	-	-
12	-	-	-	-	-	1.54	1.09	0.031	0.000	-	-	-
13	-	-	-	-	-	-	1.12	0.030	0.000	-	-	-
14	-	-	-	-	-	-	0.989	0.027	0.000	-	-	-
15	-	-	-	-	-	-	0.869	0.025	0.000	-	-	-
16	-	-	-	-	-	-	0.772	0.022	0.000	-	-	-
17	-	-	-	-	-	-	0.588	0.021	0.000	-	-	-
18	-	-	-	-	-	-	0.525	0.011	0.000	-	-	-
19	-	-	-	-	-	-	0.517	0.010	0.000	-	-	-
20	-	-	-	-	-	-	0.486	0.012	0.000	-	-	-
21	-	-	-	-	-	-	0.428	0.012	0.000	-	-	-
22	-	-	-	-	-	-	0.414	0.012	0.000	-	-	-
23	-	-	-	-	-	1.70	0.406	0.013	0.000	-	-	-
24	-	-	-	-	-	1.66	0.500	0.013	0.000	-	-	-
25	-	-	-	-	-	1.60	0.431	0.010	0.000	-	-	-
26	-	-	-	-	-	1.60	0.378	0.007	-	-	-	-
27	-	-	-	-	-	1.63	0.335	0.006	-	-	-	-
28	-	-	-	-	-	1.63	0.302	0.004	-	-	-	-
29	-	-	-	-	-	1.92	0.243	0.005	-	-	-	-
30	-	-	-	-	-	1.79	0.159	0.005	-	-	-	-
31	-	-	-	-	-	-	0.087	0.003	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**1.54**	**0.087**	**0.003**	**0.000**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**1.67**	**0.845**	**0.030**	**0.001**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**1.92**	**1.76**	**0.084**	**0.002**	**-**	**-**	**-**

Table A2-8: 1997 Meliadine Lake West Outlet Mean Daily Water Level (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	3.482	3.295	3.204	-	-	-
2	-	-	-	-	-	-	3.478	3.303	3.201	-	-	-
3	-	-	-	-	-	-	3.475	3.305	3.200	-	-	-
4	-	-	-	-	-	-	3.463	3.305	3.209	-	-	-
5	-	-	-	-	-	-	3.463	3.304	3.207	-	-	-
6	-	-	-	-	-	-	3.461	3.284	3.201	-	-	-
7	-	-	-	-	-	-	3.459	3.296	3.201	-	-	-
8	-	-	-	-	-	-	3.458	3.281	3.199	-	-	-
9	-	-	-	-	-	-	3.461	3.275	3.195	-	-	-
10	-	-	-	-	-	-	3.453	3.267	3.189	-	-	-
11	-	-	-	-	-	-	3.448	3.268	3.186	-	-	-
12	-	-	-	-	-	3.483	3.445	3.271	3.181	-	-	-
13	-	-	-	-	-	-	3.447	3.270	3.181	-	-	-
14	-	-	-	-	-	-	3.438	3.267	3.173	-	-	-
15	-	-	-	-	-	-	3.429	3.264	3.163	-	-	-
16	-	-	-	-	-	-	3.421	3.261	3.167	-	-	-
17	-	-	-	-	-	-	3.403	3.259	3.173	-	-	-
18	-	-	-	-	-	-	3.396	3.243	3.162	-	-	-
19	-	-	-	-	-	-	3.395	3.240	3.152	-	-	-
20	-	-	-	-	-	-	3.392	3.243	3.148	-	-	-
21	-	-	-	-	-	-	3.384	3.245	3.148	-	-	-
22	-	-	-	-	-	3.482	3.382	3.244	3.143	-	-	-
23	-	-	-	-	-	3.479	3.381	3.245	3.144	-	-	-
24	-	-	-	-	-	3.477	3.393	3.246	3.148	-	-	-
25	-	-	-	-	-	3.474	3.385	3.240	3.154	-	-	-
26	-	-	-	-	-	3.474	3.377	3.231	-	-	-	-
27	-	-	-	-	-	3.476	3.370	3.228	-	-	-	-
28	-	-	-	-	-	3.476	3.365	3.221	-	-	-	-
29	-	-	-	-	-	3.488	3.353	3.222	-	-	-	-
30	-	-	-	-	-	3.483	3.333	3.224	-	-	-	-
31	-	-	-	-	-	-	3.306	3.211	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**3.474**	**3.306**	**3.211**	**3.143**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**3.479**	**3.416**	**3.260**	**3.177**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**3.488**	**3.482**	**3.305**	**3.209**	**-**	**-**	**-**

Table A2-9: 1998 Meliadine Lake West Outlet Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	2.80	1.13	0.356	-	-	-
2	-	-	-	-	-	-	2.89	1.07	0.341	-	-	-
3	-	-	-	-	-	-	2.87	1.02	0.341	-	-	-
4	-	-	-	-	-	-	2.72	1.00	0.339	-	-	-
5	-	-	-	-	-	-	2.64	0.927	0.343	-	-	-
6	-	-	-	-	-	0.559	2.76	0.924	0.336	-	-	-
7	-	-	-	-	-	0.959	2.49	1.26	0.344	-	-	-
8	-	-	-	-	-	1.51	2.34	1.19	0.376	-	-	-
9	-	-	-	-	-	2.16	2.27	1.07	0.393	-	-	-
10	-	-	-	-	-	2.02	2.13	1.02	0.373	-	-	-
11	-	-	-	-	-	3.20	2.02	0.974	0.340	-	-	-
12	-	-	-	-	-	4.82	1.88	0.720	0.370	-	-	-
13	-	-	-	-	-	4.51	1.77	0.739	0.384	-	-	-
14	-	-	-	-	-	4.41	1.59	0.702	0.559	-	-	-
15	-	-	-	-	-	5.56	1.15	0.671	0.326	-	-	-
16	-	-	-	-	-	5.92	1.50	0.638	0.312	-	-	-
17	-	-	-	-	-	4.28	1.95	0.603	0.566	-	-	-
18	-	-	-	-	-	4.68	2.00	0.570	0.570	-	-	-
19	-	-	-	-	-	4.61	2.04	0.490	0.629	-	-	-
20	-	-	-	-	-	4.52	1.89	0.118	0.607	-	-	-
21	-	-	-	-	-	4.36	1.85	0.178	0.645	-	-	-
22	-	-	-	-	-	4.34	1.67	0.395	0.668	-	-	-
23	-	-	-	-	-	4.25	1.53	0.424	-	-	-	-
24	-	-	-	-	-	4.22	1.44	0.398	-	-	-	-
25	-	-	-	-	-	4.13	1.49	0.362	-	-	-	-
26	-	-	-	-	-	3.97	1.51	0.340	-	-	-	-
27	-	-	-	-	-	3.79	1.73	0.341	-	-	-	-
28	-	-	-	-	-	3.60	1.55	0.366	-	-	-	-
29	-	-	-	-	-	3.42	1.43	0.331	-	-	-	-
30	-	-	-	-	-	3.24	1.31	0.314	-	-	-	-
31	-	-	-	-	-	-	1.27	0.363	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.559**	**1.15**	**0.118**	**0.312**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**3.72**	**1.95**	**0.666**	**0.433**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**5.92**	**2.89**	**1.26**	**0.668**	**-**	**-**	**-**

Table A2-10: 1999 Meliadine Lake West Outlet Mean Daily Discharge (m³/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	10.9	1.46	0.615	-	-	-
2	-	-	-	-	-	-	9.52	1.33	0.565	-	-	-
3	-	-	-	-	-	-	8.93	1.01	0.701	-	-	-
4	-	-	-	-	-	-	8.00	0.974	0.658	-	-	-
5	-	-	-	-	-	-	7.28	1.09	0.735	-	-	-
6	-	-	-	-	-	2.72	6.79	1.07	0.749	-	-	-
7	-	-	-	-	-	-	6.48	1.05	0.724	-	-	-
8	-	-	-	-	-	-	6.02	1.07	0.756	-	-	-
9	-	-	-	-	-	-	5.93	1.00	0.833	-	-	-
10	-	-	-	-	-	-	5.36	0.974	0.782	-	-	-
11	-	-	-	-	-	-	5.08	0.982	0.749	-	-	-
12	-	-	-	-	-	-	4.92	0.937	0.772	-	-	-
13	-	-	-	-	-	-	4.43	0.845	0.765	-	-	-
14	-	-	-	-	-	-	4.24	0.835	0.739	-	-	-
15	-	-	-	-	-	-	3.29	0.802	0.849	-	-	-
16	-	-	-	-	-	7.96	2.93	0.810	0.891	-	-	-
17	-	-	-	-	-	7.32	2.55	0.761	0.816	-	-	-
18	-	-	-	-	-	6.55	2.34	0.782	0.826	-	-	-
19	-	-	-	-	-	6.18	2.55	0.709	0.798	-	-	-
20	-	-	-	-	-	6.20	2.12	0.706	0.774	-	-	-
21	-	-	-	-	-	5.91	2.07	0.701	-	-	-	-
22	-	-	-	-	-	5.50	2.08	0.826	-	-	-	-
23	-	-	-	-	-	7.55	1.94	0.899	-	-	-	-
24	-	-	-	-	-	14.54	1.44	0.871	-	-	-	-
25	-	-	-	-	-	16.4	1.66	0.937	-	-	-	-
26	-	-	-	-	-	16.37	1.74	0.698	-	-	-	-
27	-	-	-	-	-	15.9	2.15	0.633	-	-	-	-
28	-	-	-	-	-	14.92	1.98	0.528	-	-	-	-
29	-	-	-	-	-	13.56	1.85	0.518	-	-	-	-
30	-	-	-	-	-	12.10	1.76	0.563	-	-	-	-
31	-	-	-	-	-	-	1.61	0.679	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**5.50**	**1.44**	**0.518**	**0.565**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**10.47**	**4.19**	**0.873**	**0.755**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**16.4**	**10.9**	**1.46**	**0.891**	**-**	**-**	**-**

Table A2-11: 2000 Meliadine Lake West Outlet Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	5.70	0.992	0.282	-	-	-
2	-	-	-	-	-	-	5.01	0.95	0.278	-	-	-
3	-	-	-	-	-	-	3.66	0.881	0.312	-	-	-
4	-	-	-	-	-	-	3.15	0.848	0.321	-	-	-
5	-	-	-	-	-	-	4.02	0.808	0.331	-	-	-
6	-	-	-	-	-	-	3.88	0.781	0.326	-	-	-
7	-	-	-	-	-	-	3.65	0.777	0.304	-	-	-
8	-	-	-	-	-	-	3.40	0.716	0.315	-	-	-
9	-	-	-	-	-	-	3.21	0.677	0.331	-	-	-
10	-	-	-	-	-	-	3.07	0.649	0.317	-	-	-
11	-	-	-	-	-	-	2.95	0.631	0.303	-	-	-
12	-	-	-	-	-	-	2.82	0.542	0.270	-	-	-
13	-	-	-	-	-	-	2.68	0.515	0.280	-	-	-
14	-	-	-	-	-	-	2.58	0.483	0.270	-	-	-
15	-	-	-	-	-	0.000	2.51	0.467	0.302	-	-	-
16	-	-	-	-	-	-	2.27	0.482	0.288	-	-	-
17	-	-	-	-	-	-	2.12	0.489	0.203	-	-	-
18	-	-	-	-	-	-	1.96	0.470	0.223	-	-	-
19	-	-	-	-	-	1.57	1.84	0.471	-	-	-	-
20	-	-	-	-	-	2.62	1.72	0.457	-	-	-	-
21	-	-	-	-	-	3.46	1.61	0.422	-	-	-	-
22	-	-	-	-	-	4.28	1.61	0.414	-	-	-	-
23	-	-	-	-	-	4.89	1.52	0.401	-	-	-	-
24	-	-	-	-	-	5.32	1.40	0.401	-	-	-	-
25	-	-	-	-	-	5.67	1.29	0.341	-	-	-	-
26	-	-	-	-	-	5.88	1.19	0.299	-	-	-	-
27	-	-	-	-	-	5.92	1.13	0.404	-	-	-	-
28	-	-	-	-	-	5.82	1.15	0.442	-	-	-	-
29	-	-	-	-	-	5.83	1.06	0.390	-	-	-	-
30	-	-	-	-	-	5.81	1.13	0.320	-	-	-	-
31	-	-	-	-	-	-	1.10	0.320	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**2.62**	**1.08**	**0.300**	**0.203**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**5.05**	**2.46**	**0.557**	**0.292**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**5.92**	**5.70**	**0.992**	**0.332**	**-**	**-**	**-**

Table A2-12: 2008 Meliadine Lake West Outlet Instantaneous Measurements

Date and Time	Water Surface Elevation (m, non-geodetic)	Measured Discharge (m^3/s)
10-Jul-08	98.883	1.19
03-Aug-08	98.795	0.981
18-Sep-08	98.569	0.461

A2 - 3.0 MELIADINE RIVER NEAR RANKIN INLET

Hydrometric data were measured during the open water seasons of 1997 to 2000 and 2008. Mean daily water levels and mean daily discharges at Meliadine River near Rankin Inlet are presented in Tables A2-13 to A2-21.

Table A2-13: 1997 Meliadine River near Rankin Inlet Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	8.57	2.88	1.17	-	-	-
2	-	-	-	-	-	-	8.17	2.33	1.09	-	-	-
3	-	-	-	-	-	-	7.72	2.10	1.11	-	-	-
4	-	-	-	-	-	-	7.94	1.97	1.13	-	-	-
5	-	-	-	-	-	-	7.28	1.95	1.13	-	-	-
6	-	-	-	-	-	-	6.96	2.01	1.08	-	-	-
7	-	-	-	-	-	-	6.68	1.80	1.04	-	-	-
8	-	-	-	-	-	-	6.54	1.84	0.999	-	-	-
9	-	-	-	-	-	-	6.55	1.79	0.982	-	-	-
10	-	-	-	-	-	-	6.51	1.74	0.967	-	-	-
11	-	-	-	-	-	-	6.39	1.64	0.939	-	-	-
12	-	-	-	-	-	-	6.26	1.54	0.957	-	-	-
13	-	-	-	-	-	12.9	5.70	1.47	0.927	-	-	-
14	-	-	-	-	-	-	5.43	1.42	0.912	-	-	-
15	-	-	-	-	-	-	5.24	1.42	0.900	-	-	-
16	-	-	-	-	-	-	5.35	1.43	0.851	-	-	-
17	-	-	-	-	-	-	5.49	1.41	0.835	-	-	-
18	-	-	-	-	-	-	5.46	1.39	0.833	-	-	-
19	-	-	-	-	-	-	5.05	1.41	0.921	-	-	-
20	-	-	-	-	-	9.13	4.62	1.42	1.25	-	-	-
21	-	-	-	-	-	8.63	4.45	1.38	1.11	-	-	-
22	-	-	-	-	-	8.53	4.38	1.32	0.891	-	-	-
23	-	-	-	-	-	8.33	4.22	1.33	0.824	-	-	-
24	-	-	-	-	-	8.36	3.97	1.36	0.692	-	-	-
25	-	-	-	-	-	8.07	3.90	1.31	0.868	-	-	-
26	-	-	-	-	-	8.27	3.85	1.29	-	-	-	-
27	-	-	-	-	-	8.10	3.77	1.25	-	-	-	-
28	-	-	-	-	-	8.06	3.67	1.27	-	-	-	-
29	-	-	-	-	-	8.12	3.48	1.26	-	-	-	-
30	-	-	-	-	-	8.71	3.42	1.27	-	-	-	-
31	-	-	-	-	-	-	3.21	1.30	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**8.06**	**3.21**	**1.25**	**0.692**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**8.77**	**5.49**	**1.59**	**0.976**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**12.9**	**8.57**	**2.88**	**1.25**	**-**	**-**	**-**

Table A2-14: 1997 Meliadine River near Rankin Inlet Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.304	7.057	6.913	-	-	-
2	-	-	-	-	-	-	7.292	7.019	6.902	-	-	-
3	-	-	-	-	-	-	7.277	7.002	6.904	-	-	-
4	-	-	-	-	-	-	7.284	6.991	6.907	-	-	-
5	-	-	-	-	-	-	7.262	6.989	6.908	-	-	-
6	-	-	-	-	-	-	7.250	6.994	6.902	-	-	-
7	-	-	-	-	-	-	7.240	6.976	6.896	-	-	-
8	-	-	-	-	-	-	7.235	6.980	6.891	-	-	-
9	-	-	-	-	-	-	7.235	6.975	6.889	-	-	-
10	-	-	-	-	-	-	7.233	6.971	6.887	-	-	-
11	-	-	-	-	-	-	7.229	6.962	6.883	-	-	-
12	-	-	-	-	-	-	7.224	6.952	6.885	-	-	-
13	-	-	-	-	-	7.437	7.201	6.945	6.881	-	-	-
14	-	-	-	-	-	-	7.190	6.939	6.879	-	-	-
15	-	-	-	-	-	-	7.182	6.940	6.878	-	-	-
16	-	-	-	-	-	-	7.187	6.941	6.871	-	-	-
17	-	-	-	-	-	-	7.192	6.939	6.868	-	-	-
18	-	-	-	-	-	-	7.191	6.936	6.868	-	-	-
19	-	-	-	-	-	-	7.173	6.938	6.877	-	-	-
20	-	-	-	-	-	7.322	7.153	6.940	6.916	-	-	-
21	-	-	-	-	-	7.306	7.145	6.936	6.901	-	-	-
22	-	-	-	-	-	7.303	7.142	6.929	6.876	-	-	-
23	-	-	-	-	-	7.297	7.134	6.931	6.866	-	-	-
24	-	-	-	-	-	7.298	7.121	6.934	6.846	-	-	-
25	-	-	-	-	-	7.288	7.117	6.928	6.873	-	-	-
26	-	-	-	-	-	7.295	7.114	6.926	-	-	-	-
27	-	-	-	-	-	7.289	7.110	6.922	-	-	-	-
28	-	-	-	-	-	7.288	7.104	6.923	-	-	-	-
29	-	-	-	-	-	7.290	7.094	6.922	-	-	-	-
30	-	-	-	-	-	7.309	7.09	6.924	-	-	-	-
31	-	-	-	-	-	-	7.078	6.927	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**7.288**	**7.078**	**6.922**	**6.846**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**7.310**	**7.186**	**6.954**	**6.887**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.437**	**7.304**	**7.057**	**6.916**	**-**	**-**	**-**

Table A2-15: 1998 Meliadine River near Rankin Inlet Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	11.6	5.54	3.71	-	-	-
2	-	-	-	-	-	-	11.6	5.19	3.63	-	-	-
3	-	-	-	-	-	-	10.1	4.87	3.59	-	-	-
4	-	-	-	-	-	23.1	9.39	4.59	3.61	-	-	-
5	-	-	-	-	-	30.0	8.70	4.57	3.91	-	-	-
6	-	-	-	-	-	25.5	8.32	4.31	4.00	-	-	-
7	-	-	-	-	-	21.8	8.19	4.65	4.00	-	-	-
8	-	-	-	-	-	20.9	7.94	5.06	3.92	-	-	-
9	-	-	-	-	-	20.1	7.37	5.30	4.16	-	-	-
10	-	-	-	-	-	20.6	6.98	5.16	4.24	-	-	-
11	-	-	-	-	-	19.9	6.51	4.92	4.36	-	-	-
12	-	-	-	-	-	17.4	6.08	5.10	4.40	-	-	-
13	-	-	-	-	-	17.1	5.55	4.71	4.37	-	-	-
14	-	-	-	-	-	17.1	6.10	4.41	5.22	-	-	-
15	-	-	-	-	-	17.3	7.46	4.22	7.09	-	-	-
16	-	-	-	-	-	17.4	6.83	4.17	7.68	-	-	-
17	-	-	-	-	-	17.1	6.14	4.12	6.85	-	-	-
18	-	-	-	-	-	16.3	6.22	3.95	6.84	-	-	-
19	-	-	-	-	-	15.6	6.24	3.96	6.55	-	-	-
20	-	-	-	-	-	15.1	6.40	5.41	6.53	-	-	-
21	-	-	-	-	-	14.9	6.34	4.06	6.32	-	-	-
22	-	-	-	-	-	14.6	6.29	3.10	6.17	-	-	-
23	-	-	-	-	-	14.8	6.20	2.94	6.13	-	-	-
24	-	-	-	-	-	14.6	6.00	2.84	-	-	-	-
25	-	-	-	-	-	14.6	5.53	2.79	-	-	-	-
26	-	-	-	-	-	14.5	5.31	2.82	-	-	-	-
27	-	-	-	-	-	14.1	5.62	2.74	-	-	-	-
28	-	-	-	-	-	13.6	5.89	2.86	-	-	-	-
29	-	-	-	-	-	12.9	6.05	3.10	-	-	-	-
30	-	-	-	-	-	12.3	5.87	3.09	-	-	-	-
31	-	-	-	-	-	-	5.57	3.31	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**12.3**	**5.31**	**2.74**	**3.59**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**17.5**	**7.05**	**4.12**	**5.10**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**30.0**	**11.6**	**5.54**	**7.68**	**-**	**-**	**-**

Table A2-16: 1998 Meliadine River near Rankin Inlet Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.383	7.215	7.128	-	-	-
2	-	-	-	-	-	-	7.384	7.200	7.125	-	-	-
3	-	-	-	-	-	-	7.345	7.185	7.123	-	-	-
4	-	-	-	-	-	7.896	7.325	7.172	7.124	-	-	-
5	-	-	-	-	-	7.972	7.306	7.170	7.140	-	-	-
6	-	-	-	-	-	7.880	7.295	7.157	7.143	-	-	-
7	-	-	-	-	-	7.791	7.292	7.172	7.140	-	-	-
8	-	-	-	-	-	7.745	7.285	7.190	7.133	-	-	-
9	-	-	-	-	-	7.700	7.272	7.200	7.143	-	-	-
10	-	-	-	-	-	7.676	7.266	7.194	7.145	-	-	-
11	-	-	-	-	-	7.634	7.256	7.183	7.148	-	-	-
12	-	-	-	-	-	7.569	7.247	7.191	7.148	-	-	-
13	-	-	-	-	-	7.549	7.226	7.174	7.143	-	-	-
14	-	-	-	-	-	7.536	7.247	7.160	7.179	-	-	-
15	-	-	-	-	-	7.525	7.296	7.151	7.249	-	-	-
16	-	-	-	-	-	7.513	7.273	7.149	7.267	-	-	-
17	-	-	-	-	-	7.492	7.248	7.146	7.236	-	-	-
18	-	-	-	-	-	7.475	7.250	7.138	7.233	-	-	-
19	-	-	-	-	-	7.462	7.250	7.139	7.220	-	-	-
20	-	-	-	-	-	7.452	7.256	7.206	7.216	-	-	-
21	-	-	-	-	-	7.447	7.253	7.143	7.206	-	-	-
22	-	-	-	-	-	7.443	7.250	7.091	7.198	-	-	-
23	-	-	-	-	-	7.448	7.246	7.081	7.194	-	-	-
24	-	-	-	-	-	7.445	7.238	7.075	-	-	-	-
25	-	-	-	-	-	7.446	7.219	7.073	-	-	-	-
26	-	-	-	-	-	7.445	7.209	7.074	-	-	-	-
27	-	-	-	-	-	7.437	7.221	7.069	-	-	-	-
28	-	-	-	-	-	7.426	7.231	7.078	-	-	-	-
29	-	-	-	-	-	7.411	7.237	7.093	-	-	-	-
30	-	-	-	-	-	7.398	7.229	7.093	-	-	-	-
31	-	-	-	-	-	-	7.217	7.106	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**7.398**	**7.209**	**7.069**	**7.123**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**7.563**	**7.266**	**7.144**	**7.173**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.972**	**7.384**	**7.215**	**7.267**	**-**	**-**	**-**

Table A2-17: 1999 Meliadine River near Rankin Inlet Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	20.0	8.74	8.62	-	-	-
2	-	-	-	-	-	-	18.7	8.12	8.49	-	-	-
3	-	-	-	-	-	-	17.6	7.70	9.07	-	-	-
4	-	-	-	-	-	-	16.6	6.99	9.01	-	-	-
5	-	-	-	-	-	36.7	15.9	6.20	8.70	-	-	-
6	-	-	-	-	-	-	14.8	5.91	8.68	-	-	-
7	-	-	-	-	-	33.6	14.0	5.95	8.53	-	-	-
8	-	-	-	-	-	-	13.3	6.06	8.38	-	-	-
9	-	-	-	-	-	-	12.4	6.14	8.08	-	-	-
10	-	-	-	-	-	-	12.4	6.12	7.90	-	-	-
11	-	-	-	-	-	-	12.6	6.02	7.65	-	-	-
12	-	-	-	-	-	-	11.3	6.06	6.85	-	-	-
13	-	-	-	-	-	-	10.5	5.92	6.36	-	-	-
14	-	-	-	-	-	-	10.8	5.57	6.30	-	-	-
15	-	-	-	-	-	21.3	11.3	5.26	6.53	-	-	-
16	-	-	-	-	-	-	10.5	5.04	6.95	-	-	-
17	-	-	-	-	-	21.9	9.71	5.03	6.72	-	-	-
18	-	-	-	-	-	22.0	8.99	4.78	6.58	-	-	-
19	-	-	-	-	-	21.0	8.33	5.04	6.41	-	-	-
20	-	-	-	-	-	19.5	8.61	5.03	5.89	-	-	-
21	-	-	-	-	-	18.2	7.60	5.03	6.73	-	-	-
22	-	-	-	-	-	18.0	7.02	4.22	7.70	-	-	-
23	-	-	-	-	-	20.9	6.95	3.94	-	-	-	-
24	-	-	-	-	-	35.3	7.43	4.04	-	-	-	-
25	-	-	-	-	-	39.2	6.65	4.17	-	-	-	-
26	-	-	-	-	-	32.2	6.78	4.96	-	-	-	-
27	-	-	-	-	-	27.5	9.24	7.75	-	-	-	-
28	-	-	-	-	-	25.1	10.5	9.95	-	-	-	-
29	-	-	-	-	-	23.6	10.2	9.27	-	-	-	-
30	-	-	-	-	-	21.7	9.77	8.86	-	-	-	-
31	-	-	-	-	-	-	9.32	8.52	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**18.0**	**6.65**	**3.94**	**5.89**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**24.7**	**11.3**	**6.21**	**7.55**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**39.2**	**20.0**	**9.95**	**9.07**	**-**	**-**	**-**

Table A2-18: 1999 Meliadine River near Rankin Inlet Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.568	7.316	7.312	-	-	-
2	-	-	-	-	-	-	7.546	7.297	7.308	-	-	-
3	-	-	-	-	-	-	7.525	7.283	7.325	-	-	-
4	-	-	-	-	-	-	7.506	7.259	7.324	-	-	-
5	-	-	-	-	-	-	7.492	7.230	7.315	-	-	-
6	-	-	-	-	-	-	7.468	7.218	7.314	-	-	-
7	-	-	-	-	-	-	7.450	7.220	7.309	-	-	-
8	-	-	-	-	-	-	7.436	7.224	7.305	-	-	-
9	-	-	-	-	-	-	7.416	7.228	7.295	-	-	-
10	-	-	-	-	-	-	7.413	7.227	7.290	-	-	-
11	-	-	-	-	-	-	7.419	7.223	7.281	-	-	-
12	-	-	-	-	-	-	7.388	7.224	7.254	-	-	-
13	-	-	-	-	-	-	7.365	7.219	7.236	-	-	-
14	-	-	-	-	-	-	7.374	7.205	7.234	-	-	-
15	-	-	-	-	-	7.604	7.386	7.192	7.242	-	-	-
16	-	-	-	-	-	-	7.367	7.182	7.257	-	-	-
17	-	-	-	-	-	7.601	7.344	7.182	7.249	-	-	-
18	-	-	-	-	-	7.603	7.324	7.171	7.244	-	-	-
19	-	-	-	-	-	7.585	7.303	7.182	7.238	-	-	-
20	-	-	-	-	-	7.560	7.312	7.182	7.218	-	-	-
21	-	-	-	-	-	7.537	7.279	7.181	7.249	-	-	-
22	-	-	-	-	-	7.532	7.260	7.144	7.283	-	-	-
23	-	-	-	-	-	7.581	7.257	7.130	-	-	-	-
24	-	-	-	-	-	7.784	7.274	7.135	-	-	-	-
25	-	-	-	-	-	7.831	7.247	7.141	-	-	-	-
26	-	-	-	-	-	7.748	7.251	7.176	-	-	-	-
27	-	-	-	-	-	7.686	7.330	7.283	-	-	-	-
28	-	-	-	-	-	7.650	7.366	7.351	-	-	-	-
29	-	-	-	-	-	7.627	7.357	7.332	-	-	-	-
30	-	-	-	-	-	7.598	7.346	7.319	-	-	-	-
31	-	-	-	-	-	-	7.333	7.309	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**7.532**	**7.247**	**7.130**	**7.218**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**7.637**	**7.378**	**7.225**	**7.276**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.831**	**7.568**	**7.351**	**7.325**	**-**	**-**	**-**

Table A2-19: 2000 Meliadine River near Rankin Inlet Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	14.5	6.37	4.16	-	-	-
2	-	-	-	-	-	-	14.1	6.03	3.71	-	-	-
3	-	-	-	-	-	-	13.9	5.84	3.33	-	-	-
4	-	-	-	-	-	-	13.6	5.16	3.14	-	-	-
5	-	-	-	-	-	-	12.8	5.14	3.00	-	-	-
6	-	-	-	-	-	-	12.2	4.90	2.96	-	-	-
7	-	-	-	-	-	-	11.8	4.50	3.24	-	-	-
8	-	-	-	-	-	-	11.6	4.42	3.07	-	-	-
9	-	-	-	-	-	-	11.4	4.20	2.91	-	-	-
10	-	-	-	-	-	0.00 B	10.8	4.02	3.11	-	-	-
11	-	-	-	-	-	-	10.3	4.13	3.23	-	-	-
12	-	-	-	-	-	5.27 B	9.95	4.16	3.35	-	-	-
13	-	-	-	-	-	-	9.84	3.93	3.34	-	-	-
14	-	-	-	-	-	18.1 B	9.66	3.76	3.53	-	-	-
15	-	-	-	-	-	-	9.78	3.61	3.13	-	-	-
16	-	-	-	-	-	35.0 B	9.52	3.41	3.57	-	-	-
17	-	-	-	-	-	40.0 B	9.02	3.73	3.83	-	-	-
18	-	-	-	-	-	-	8.55	3.69	3.37	-	-	-
19	-	-	-	-	-	-	8.27	3.66	3.14	-	-	-
20	-	-	-	-	-	28.5	8.12	3.47	-	-	-	-
21	-	-	-	-	-	27.2	7.89	3.40	-	-	-	-
22	-	-	-	-	-	22.4	7.52	3.46	-	-	-	-
23	-	-	-	-	-	21.0	7.24	3.29	-	-	-	-
24	-	-	-	-	-	20.2	7.01	3.28	-	-	-	-
25	-	-	-	-	-	19.1	6.83	4.58	-	-	-	-
26	-	-	-	-	-	18.3	6.68	4.40	-	-	-	-
27	-	-	-	-	-	17.2	6.41	3.52	-	-	-	-
28	-	-	-	-	-	16.2	5.99	3.83	-	-	-	-
29	-	-	-	-	-	15.7	6.16	4.06	-	-	-	-
30	-	-	-	-	-	15.1	6.30	4.40	-	-	-	-
31	-	-	-	-	-	-	6.50	4.20	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**15.1**	**5.99**	**3.28**	**2.91**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**20.1**	**9.49**	**4.21**	**3.32**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**28.5**	**14.5**	**6.37**	**4.16**	**-**	**-**	**-**

Table A2-20: 2000 Meliadine River near Rankin Inlet Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.463	7.236	7.141	-	-	-
2	-	-	-	-	-	-	7.454	7.223	7.117	-	-	-
3	-	-	-	-	-	-	7.450	7.215	7.096	-	-	-
4	-	-	-	-	-	-	7.442	7.188	7.085	-	-	-
5	-	-	-	-	-	-	7.425	7.187	7.077	-	-	-
6	-	-	-	-	-	-	7.410	7.176	7.074	-	-	-
7	-	-	-	-	-	-	7.400	7.157	7.091	-	-	-
8	-	-	-	-	-	-	7.394	7.154	7.081	-	-	-
9	-	-	-	-	-	-	7.389	7.143	7.071	-	-	-
10	-	-	-	-	-	-	7.374	7.134	7.083	-	-	-
11	-	-	-	-	-	-	7.361	7.140	7.091	-	-	-
12	-	-	-	-	-	-	7.351	7.141	7.097	-	-	-
13	-	-	-	-	-	-	7.348	7.129	7.097	-	-	-
14	-	-	-	-	-	8.038 B	7.343	7.120	7.107	-	-	-
15	-	-	-	-	-	8.187 B	7.346	7.112	7.084	-	-	-
16	-	-	-	-	-	8.326 B	7.339	7.101	7.110	-	-	-
17	-	-	-	-	-	8.119 B	7.324	7.119	7.124	-	-	-
18	-	-	-	-	-	7.889 B	7.31	7.117	7.098	-	-	-
19	-	-	-	-	-	7.760 B	7.302	7.115	7.085	-	-	-
20	-	-	-	-	-	7.699	7.297	7.105	-	-	-	-
21	-	-	-	-	-	7.679	7.289	7.100	-	-	-	-
22	-	-	-	-	-	7.609	7.277	7.104	-	-	-	-
23	-	-	-	-	-	7.585	7.268	7.094	-	-	-	-
24	-	-	-	-	-	7.572	7.259	7.093	-	-	-	-
25	-	-	-	-	-	7.553	7.253	7.161	-	-	-	-
26	-	-	-	-	-	7.539	7.248	7.152	-	-	-	-
27	-	-	-	-	-	7.517	7.238	7.107	-	-	-	-
28	-	-	-	-	-	7.497	7.221	7.124	-	-	-	-
29	-	-	-	-	-	7.487	7.228	7.136	-	-	-	-
30	-	-	-	-	-	7.476	7.234	7.153	-	-	-	-
31	-	-	-	-	-	-	7.241	7.143	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**7.476**	**7.221**	**7.093**	**7.071**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**7.565**	**7.331**	**7.141**	**7.095**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.699**	**7.463**	**7.236**	**7.141**	**-**	**-**	**-**

Note: B indicates water level affected by ice conditions
All Minimum, Mean, And Maximum values are computed for data from June 20 to September 19 only

Table A2-21: 2008 Meliadine River near Rankin Inlet Instantaneous Measurements

Date and Time	Water Surface Elevation (m, non-geodetic)	Measured Discharge (m^3/s)
10-Jul-08	98.883	9.00
02-Aug-08	98.795	4.76
17-Sep-08	98.569	2.21

A2 - 4.0 MELIADINE LAKE

Hydrometric data were measured during the open water seasons of 1997 to 2000 and 2008. Mean daily water levels at Meliadine Lake are presented in Tables A2-22 to A2-26.

Table A2-22: 1997 Meliadine Lake Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	3.482	3.295	3.204	-	-	-
2	-	-	-	-	-	-	3.478	3.303	3.201	-	-	-
3	-	-	-	-	-	-	3.475	3.305	3.200	-	-	-
4	-	-	-	-	-	-	3.463	3.305	3.209	-	-	-
5	-	-	-	-	-	-	3.463	3.304	3.207	-	-	-
6	-	-	-	-	-	-	3.461	3.284	3.201	-	-	-
7	-	-	-	-	-	-	3.459	3.296	3.201	-	-	-
8	-	-	-	-	-	-	3.458	3.281	3.199	-	-	-
9	-	-	-	-	-	-	3.461	3.275	3.195	-	-	-
10	-	-	-	-	-	-	3.453	3.267	3.189	-	-	-
11	-	-	-	-	-	-	3.448	3.268	3.186	-	-	-
12	-	-	-	-	-	3.483	3.445	3.271	3.181	-	-	-
13	-	-	-	-	-	3.482	3.447	3.270	3.181	-	-	-
14	-	-	-	-	-	-	3.438	3.267	3.173	-	-	-
15	-	-	-	-	-	-	3.429	3.264	3.163	-	-	-
16	-	-	-	-	-	-	3.421	3.261	3.167	-	-	-
17	-	-	-	-	-	-	3.403	3.259	3.173	-	-	-
18	-	-	-	-	-	-	3.396	3.243	3.162	-	-	-
19	-	-	-	-	-	-	3.395	3.240	3.152	-	-	-
20	-	-	-	-	-	-	3.392	3.243	3.148	-	-	-
21	-	-	-	-	-	-	3.384	3.245	3.148	-	-	-
22	-	-	-	-	-	-	3.382	3.244	3.143	-	-	-
23	-	-	-	-	-	3.479	3.381	3.245	3.144	-	-	-
24	-	-	-	-	-	3.477	3.393	3.246	3.148	-	-	-
25	-	-	-	-	-	3.474	3.385	3.240	3.154	-	-	-
26	-	-	-	-	-	3.474	3.377	3.231	-	-	-	-
27	-	-	-	-	-	3.476	3.370	3.228	-	-	-	-
28	-	-	-	-	-	3.476	3.365	3.221	-	-	-	-
29	-	-	-	-	-	3.488	3.353	3.222	-	-	-	-
30	-	-	-	-	-	3.483	3.333	3.224	-	-	-	-
31	-	-	-	-	-	-	3.306	3.211	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**3.474**	**3.306**	**3.211**	**3.143**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**3.479**	**3.416**	**3.260**	**3.177**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**3.488**	**3.482**	**3.305**	**3.209**	**-**	**-**	**-**

Table A2-23: 1998 Meliadine Lake Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	3.476	3.395	3.319	-	-	-
2	-	-	-	-	-	-	3.480	3.39	3.317	-	-	-
3	-	-	-	-	-	-	3.479	3.387	3.317	-	-	-
4	-	-	-	-	-	-	3.473	3.386	3.316			-
5	-	-	-	-	-	-	3.470	3.380	3.317			-
6	-	-	-	-	-	3.345	3.475	3.380	3.316			-
7	-	-	-	-	-	3.381	3.465	3.403	3.317			-
8	-	-	-	-	-	3.418	3.458	3.399	3.322			-
9	-	-	-	-	-	3.450	3.456	3.391	3.325			-
10	-	-	-	-	-	3.444	3.449	3.387	3.322			-
11	-	-	-	-	-	3.487	3.445	3.384	3.317	-	-	-
12	-	-	-	-	-	3.537	3.438	3.361	3.321	-	-	-
13	-	-	-	-	-	3.529	3.433	3.364	3.323	-	-	-
14	-	-	-	-	-	3.526	3.423	3.360	3.345	-	-	-
15	-	-	-	-	-	3.554	3.396	3.357	3.313	-	-	-
16	-	-	-	-	-	3.562	3.418	3.354	3.310	-	-	-
17	-	-	-	-	-	3.522	3.441	3.350	3.346	-	-	-
18	-	-	-	-	-	3.533	3.444	3.347	3.347	-	-	-
19	-	-	-	-	-	3.532	3.445	3.336	3.353	-	-	-
20	-	-	-	-	-	3.529	3.439	3.266	3.351	-	-	-
21	-	-	-	-	-	3.525	3.436	3.282	3.355	-	-	-
22	-	-	-	-	-	3.524	3.427	3.325	3.357	-	-	-
23	-	-	-	-	-	3.522	3.420	3.329	-	-	-	-
24	-	-	-	-	-	3.521	3.415	3.325	-	-	-	-
25	-	-	-	-	-	3.519	3.417	3.32	-	-	-	-
26	-	-	-	-	-	3.514	3.418	3.317	-	-	-	-
27	-	-	-	-	-	3.509	3.430	3.317	-	-	-	-
28	-	-	-	-	-	3.503	3.421	3.321	-	-	-	-
29	-	-	-	-	-	3.497	3.414	3.315	-	-	-	-
30	-	-	-	-	-	3.492	3.407	3.312	-	-	-	-
31	-	-	-	-	-	-	3.404	3.32	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**3.345**	**3.396**	**3.266**	**3.310**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**3.499**	**3.439**	**3.350**	**3.328**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**3.562**	**3.480**	**3.403**	**3.357**	**-**	**-**	**-**

Table A2-24: 1999 Meliadine Lake Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	3.665	3.447	3.363	3.392	3.342	3.308
2	-	-	-	-	-	-	3.649	3.438	3.355	3.392	3.341	3.304
3	-	-	-	-	-	-	3.641	3.412	3.375	3.39	3.340	3.304
4	-	-	-	-	-	-	3.629	3.408	3.370	3.385	3.337	3.307
5	-	-	-	-	-	-	3.618	3.419	3.380	3.373	3.336	3.304
6	-	-	-	-	-	-	3.610	3.417	3.382	3.371	3.335	3.306
7	-	-	-	-	-	-	3.605	3.415	3.379	3.379	3.331	3.308
8	-	-	-	-	-	-	3.596	3.417	3.383	3.377	3.333	3.309
9	-	-	-	-	-	-	3.595	3.411	3.392	3.379	3.332	3.308
10	-	-	-	-	-	-	3.581	3.408	3.386	3.387	3.329	3.305
11	-	-	-	-	-	-	3.575	3.409	3.382	3.384	3.331	3.303
12	-	-	-	-	-	-	3.571	3.404	3.385	3.378	3.332	3.302
13	-	-	-	-	-	-	3.559	3.394	3.384	3.383	3.332	3.301
14	-	-	-	-	-	-	3.555	3.393	3.381	3.384	3.328	3.300
15	-	-	-	-	-	-	3.529	3.389	3.394	3.382	3.325	3.295
16	-	-	-	-	-	3.628	3.517	3.390	3.399	3.380	3.323	3.293
17	-	-	-	-	-	3.618	3.503	3.384	3.391	3.381	3.318	3.295
18	-	-	-	-	-	3.606	3.495	3.386	3.392	3.378	3.319	3.295
19	-	-	-	-	-	3.600	3.503	3.376	3.388	3.371	3.316	3.292
20	-	-	-	-	-	3.600	3.484	3.375	3.385	3.369	3.314	3.289
21	-	-	-	-	-	3.594	3.482	3.374	3.385	3.367	3.313	3.282
22	-	-	-	-	-	3.584	3.483	3.392	3.382	3.364	3.312	3.282
23	-	-	-	-	-	3.616	3.476	3.400	3.381	3.361	3.308	3.284
24	-	-	-	-	-	3.702	3.446	3.396	3.38	3.359	3.306	3.284
25	-	-	-	-	-	3.719	3.460	3.404	3.389	3.358	3.302	3.284
26	-	-	-	-	-	3.719	3.463	3.374	3.394	3.355	3.301	3.281
27	-	-	-	-	-	3.715	3.486	3.365	3.398	3.352	3.298	3.282
28	-	-	-	-	-	3.706	3.478	3.348	3.39	3.351	3.297	3.278
29	-	-	-	-	-	3.693	3.471	3.347	3.399	3.348	3.299	3.275
30	-	-	-	-	-	3.679	3.466	3.355	3.401	3.346	3.301	3.275
31	-	-	-	-	-	-	3.457	3.372	3.401	3.343	-	3.276
Minimum	**-**	**-**	**-**	**-**	**-**	**3.584**	**3.446**	**3.347**	**3.355**	**3.343**	**3.297**	**3.275**
Mean	**-**	**-**	**-**	**-**	**-**	**3.652**	**3.537**	**3.394**	**3.382**	**3.372**	**3.321**	**3.294**
Maximum	**-**	**-**	**-**	**-**	**-**	**3.719**	**3.665**	**3.447**	**3.401**	**3.392**	**3.342**	**3.309**

Table A2-25: 2000 Meliadine Lake Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	3.279	3.259	3.254	3.261	3.240	3.222	3.589	3.410	3.289		-	-
2	3.278	3.258	3.256	3.258	3.239	3.220	3.573	3.405	3.288		-	-
3	3.280	3.259	3.255	3.261	3.244	3.218	3.540	3.398	3.298		-	-
4	3.280	3.260	3.260	3.260	3.244	3.220	3.525	3.394	3.301		-	-
5	3.280	3.261	3.260	3.260	3.243	3.218	3.549	3.390	3.304		-	-
6	3.278	3.261	3.259	3.264	3.243	3.215	3.546	3.386	3.302		-	-
7	3.277	3.257	3.260	3.261	3.242	3.214	3.539	3.386	3.296		-	-
8	3.277	3.261	3.259	3.259	3.240	3.212	3.532	3.378	3.299	-	-	-
9	3.276	3.258	3.257	3.258	3.239	3.210	3.526	3.372	3.304	-	-	-
10	3.275	3.256	3.257	3.256	3.238	3.212	3.522	3.368	3.300	-	-	-
11	3.273	3.255	3.257	3.256	3.237	3.217	3.518	3.366	3.295	-	-	-
12	3.272	3.256	3.255	3.255	3.235	3.225	3.513	3.351	3.285	-	-	-
13	3.271	3.255	3.254	3.253	3.235	3.238	3.508	3.346	3.288	-	-	-
14	3.271	3.260	3.252	3.252	3.232	3.257	3.504	3.340	3.285	-	-	-
15	3.270	3.257	3.251	3.252	3.231	3.286	3.501	3.337	3.295	-	-	-
16	3.269	3.255	3.252	3.249	3.229	3.328	3.491	3.340	3.291	-	-	-
17	3.268	3.254	3.251	3.249	3.225	3.376	3.485	3.341	3.258	-	-	-
18	3.270	3.254	3.250	3.249	3.226	3.427	3.477	3.337	3.267	-	-	-
19	3.269	3.255	3.249	3.247	3.224	3.471	3.471	3.337	-	-	-	-
20	3.269	3.255	3.251	3.245	3.222	3.506	3.464	3.335	-	-	-	-
21	3.267	3.253	3.261	3.244	3.222	3.534	3.457	3.327	-	-	-	-
22	3.266	3.252	3.264	3.245	3.221	3.555	3.457	3.325	-	-	-	-
23	3.266	3.254	3.265	3.244	3.221	3.570	3.451	3.322	-	-	-	-
24	3.265	3.253	3.265	3.251	3.219	3.580	3.443	3.322	-	-	-	-
25	3.263	3.253	3.266	3.250	3.215	3.589	3.435	3.307	-	-	-	-
26	3.264	3.254	3.263	3.248	3.213	3.594	3.428	3.294	-	-	-	-
27	3.262	3.255	3.260	3.246	3.211	3.595	3.422	3.323	-	-	-	-
28	3.261	3.256	3.258	3.245	3.212	3.592	3.424	3.331	-	-	-	-
29	3.263	3.254	3.257	3.244	3.212	3.592	3.417	3.320	-	-	-	-
30	3.261	-	3.258	3.243	3.215	3.592	3.422	3.301	-	-	-	-
31	3.262	-	3.260	-	3.224	-	3.419	3.301	-	-	-	-
Minimum	**3.261**	**3.252**	**3.249**	**3.243**	**3.211**	**3.210**	**3.417**	**3.294**	**3.258**	**-**	**-**	**-**
Mean	**3.270**	**3.256**	**3.257**	**3.252**	**3.229**	**3.376**	**3.489**	**3.348**	**3.291**	**-**	**-**	**-**
Maximum	**3.280**	**3.261**	**3.266**	**3.264**	**3.244**	**3.595**	**3.589**	**3.410**	**3.304**	**-**	**-**	**-**

Table A2-26: 2008 Meliadine Lake Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	98.844	-	-	-	-
3	-	-	-	-	-	-	-	98.844	-	-	-	-
4	-	-	-	-	-	-	-	98.844	-	-	-	-
5	-	-	-	-	-	-	-	98.837	-	-	-	-
6	-	-	-	-	-	-	-	98.829	-	-	-	-
7	-	-	-	-	-	-	-	98.821	-	-	-	-
8	-	-	-	-	-	-	-	98.825	-	-	-	-
9	-	-	-	-	-	-	-	98.826	-	-	-	-
10	-	-	-	-	-	-	98.040	98.826	-	-	-	-
11	-	-	-	-	-	-	-	98.821	-	-	-	-
12	-	-	-	-	-	-	-	98.819	-	-	-	-
13	-	-	-	-	-	-	-	98.820	-	-	-	-
14	-	-	-	-	-	-	-	98.822	-	-	-	-
15	-	-	-	-	-	98.120	-	98.824	-	-	-	-
16	-	-	-	-	-	-	-	98.817	97.770	-	-	-
17	-	-	-	-	-	-	-	98.816	-	-	-	-
18	-	-	-	-	-	-	-	98.814	-	-	-	-
19	-	-	-	-	-	-	-	98.814	-	-	-	-
20	-	-	-	-	-	-	-	98.798	-	-	-	-
21	-	-	-	-	-	-	-	98.799	-	-	-	-
22	-	-	-	-	-	-	-	98.794	-	-	-	-
23	-	-	-	-	-	-	-	98.792	-	-	-	-
24	-	-	-	-	-	-	-	98.789	-	-	-	-
25	-	-	-	-	-	-	-	98.785	-	-	-	-
26	-	-	-	-	-	-	-	98.795	-	-	-	-
27	-	-	-	-	-	-	-	98.808	-	-	-	-
28	-	-	-	-	-	-	-	98.798	-	-	-	-
29	-	-	-	-	-	-	-	98.782	-	-	-	-
30	-	-	-	-	-	-	-	98.722	-	-	-	-
31	-	-	-	-	-	-	-	98.650	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**98.650**	**-**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**98.120**	**98.040**	**98.806**	**97.770**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**98.844**	**-**	**-**	**-**	**-**

A2 - 5.0 DIANA RIVER NEAR RANKIN INLET

Hydrometric data were measured during the open water seasons of 1997 to 1999. Mean daily water levels and mean daily discharges at Meliadine Lake Main Outlet are presented in Tables A2-27 to A2-32.

Table A2-27: 1997 Diana River near Rankin Inlet Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	7.00E	33.8	16.4	6.36	-	-	-
2	-	-	-	-	-	8.75E	33.0	15.2	6.17	-	-	-
3	-	-	-	-	-	10.8E	32.3	13.7	5.96	-	-	-
4	-	-	-	-	-	14.8E	32.7	12.9	5.81	-	-	-
5	-	-	-	-	-	20.8E	32.0	12.3	5.75	-	-	-
6	-	-	-	-	-	26.0E	31.0	12.3	5.74	-	-	-
7	-	-	-	-	-	30.2	30.1	11.7	5.61	-	-	-
8	-	-	-	-	-	34.4	29.4	11.2	5.39	-	-	-
9	-	-	-	-	-	37.0	28.8E	10.9	5.17	-	-	-
10	-	-	-	-	-	37.2	28.0E	10.5	5.07	-	-	-
11	-	-	-	-	-	36.9	27.4	10.1	5.03	-	-	-
12	-	-	-	-	-	37.9	26.8	9.52	5.02	-	-	-
13	-	-	-	-	-	38.2	25.3	8.98	4.90	-	-	-
14	-	-	-	-	-	38.7	23.7	8.51	4.77	-	-	-
15	-	-	-	-	-	39.1	23.6	8.26	4.67	-	-	-
16	-	-	-	-	-	39.9	23.6	8.16	4.69	-	-	-
17	-	-	-	-	-	39.9	23.4	8.06	4.77E	-	-	-
18	-	-	-	-	-	39.7	23.3	7.87	4.84E	-	-	-
19	-	-	-	-	-	38.0	22.4	7.69	4.92E	-	-	-
20	-	-	-	-	-	37.5	21.4	7.59	4.99E	-	-	-
21	-	-	-	-	-	36.8	20.8	7.47	5.06E	-	-	-
22	-	-	-	-	-	36.3	20.7	7.22	5.14E	-	-	-
23	-	-	-	-	-	35.9	20.0	7.04	5.21E	-	-	-
24	-	-	-	-	-	36.1	18.7	7.01	5.29	-	-	-
25	-	-	-	-	0.500E	35.5	18.2	6.78	-	-	-	-
26	-	-	-	-	1.00E	34.8	18.0	6.72	-	-	-	-
27	-	-	-	-	1.50E	34.6	17.9	6.6	-	-	-	-
28	-	-	-	-	2.25E	34.4	17.6	6.51	-	-	-	-
29	-	-	-	-	3.00E	34.4	17.0	6.45	-	-	-	-
30	-	-	-	-	4.25E	34.9	16.9	6.37	-	-	-	-
31	-	-	-	-	5.50E	-	16.8	6.31	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**0.500E**	**7.00**	**16.8**	**6.31**	**0.825**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**2.57E**	**32.2**	**24.3**	**9.24**	**5.16**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**5.50E**	**39.9**	**33.8**	**16.4**	**6.36**	**-**	**-**	**-**

Table A2-28: 1997 Diana River near Rankin Inlet, Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	7.250	7.110	6.804	6.470	-	-	-
2	-	-	-	-	-	7.320	7.099	6.776	6.460	-	-	-
3	-	-	-	-	-	7.210	7.090	6.736	6.449	-	-	-
4	-	-	-	-	-	7.190	7.095	6.712	6.441	-	-	-
5	-	-	-	-	-	7.160	7.086	6.697	6.438	-	-	-
6	-	-	-	-	-	7.080	7.071	6.695	6.438	-	-	-
7	-	-	-	-	-	7.060	7.058	6.677	6.430	-	-	-
8	-	-	-	-	-	7.120	7.048	6.660	6.418	-	-	-
9	-	-	-	-	-	7.150	-	6.650	6.405	-	-	-
10	-	-	-	-	-	7.150	-	6.640	6.399	-	-	-
11	-	-	-	-	-	7.150	7.016	6.625	6.397	-	-	-
12	-	-	-	-	-	7.160	7.006	6.604	6.397	-	-	-
13	-	-	-	-	-	7.170	6.981	6.584	6.389	-	-	-
14	-	-	-	-	-	7.170	6.953	6.565	6.381	-	-	-
15	-	-	-	-	-	7.180	6.953	6.555	6.375	-	-	-
16	-	-	-	-	-	7.190	6.952	6.551	6.376	-	-	-
17	-	-	-	-	-	7.190	6.949	6.547	-	-	-	-
18	-	-	-	-	7.550	7.190	6.946	6.539	-	-	-	-
19	-	-	-	-	7.490	7.164	6.931	6.532	-	-	-	-
20	-	-	-	-	7.470	7.158	6.910	6.527	-	-	-	-
21	-	-	-	-	7.000	7.150	6.901	6.522	-	-	-	-
22	-	-	-	-	7.100	7.142	6.897	6.511	-	-	-	-
23	-	-	-	-	7.430	7.138	6.884	6.502	-	-	-	-
24	-	-	-	-	7.230	7.141	6.857	6.501	6.412	-	-	-
25	-	-	-	-	7.130	7.133	6.845	6.490	-	-	-	-
26	-	-	-	-	7.000	7.123	6.842	6.487	-	-	-	-
27	-	-	-	-	6.910	7.120	6.838	6.481	-	-	-	-
28	-	-	-	-	6.840	7.119	6.831	6.477	-	-	-	-
29	-	-	-	-	7.120	7.118	6.819	6.474	-	-	-	-
30	-	-	-	-	7.080	7.125	6.816	6.470	-	-	-	-
31	-	-	-	-	6.870	-	6.814	6.467	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**7.060**	**7.060**	**6.814**	**6.467**	**-**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**7.160**	**7.160**	**6.951**	**6.583**	**-**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**7.320**	**7.320**	**7.110**	**6.804**	**-**	**-**	**-**	**-**

Table A2-29: 1998 Diana River near Rankin Inlet, Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	45.2	22.4	12.8	-	-	-
2	-	-	-	-	-	-	43.7	22.0	13.0	-	-	-
3	-	-	-	-	-	-	41.4	21.4	12.7	-	-	-
4	-	-	-	-	-	-	40.2	20.6	12.5	-	-	-
5	-	-	-	-	-	-	38.7	19.9	12.6	-	-	-
6	-	-	-	-	-	19.4	37.3	19.4	13.0	-	-	-
7	-	-	-	-	-	21.4	36.2	18.7	13.0	-	-	-
8	-	-	-	-	-	24.5	35.6	19.0	12.7	-	-	-
9	-	-	-	-	-	28.4	34.5	19.3	12.7	-	-	-
10	-	-	-	-	-	32.8	33.7	18.9	13.0	-	-	-
11	-	-	-	-	-	36.6	32.6	18.0	13.2	-	-	-
12	-	-	-	-	-	37.8	31.2	18.6	13.2	-	-	-
13	-	-	-	-	-	42.9	29.8	19.0	13.1	-	-	-
14	-	-	-	-	-	45.9	30.3	18.3	14.3	-	-	-
15	-	-	-	-	-	48.4	22.7	17.9	18.6	-	-	-
16	-	-	-	-	-	49.9	23.6	17.4	14.2	-	-	-
17	-	-	-	-	-	50.8	30.7	17.1	15.6	-	-	-
18	-	-	-	-	-	50.9	29.6	16.6	17.2	-	-	-
19	-	-	-	-	-	52.1	28.8	16.4	16.4	-	-	-
20	-	-	-	-	-	50.3	27.9	19.1	15.2	-	-	-
21	-	-	-	-	-	52.6	27.1	19.5	15.6	-	-	-
22	-	-	-	-	-	52.1	26.3	16.5	16.0	-	-	-
23	-	-	-	-	-	51.4	25.6	15.0	-	-	-	-
24	-	-	-	-	-	51.0	24.9	14.3	-	-	-	-
25	-	-	-	-	-	49.6	23.8	14.0	-	-	-	-
26	-	-	-	-	-	48.6	23.2	13.6	-	-	-	-
27	-	-	-	-	-	47.7	24.1	13.1	-	-	-	-
28	-	-	-	-	-	46.6	23.6	12.8	-	-	-	-
29	-	-	-	-	-	45.6	23.5	12.8	-	-	-	-
30	-	-	-	-	-	44.8	23.4	12.9	-	-	-	-
31	-	-	-	-	-	-	22.7	12.7	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**19.4**	**22.7**	**12.7**	**12.5**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**43.3**	**30.4**	**17.3**	**14.1**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**52.6**	**45.2**	**22.4**	**18.6**	**-**	**-**	**-**

Table A2-30: 1998 Diana River near Rankin Inlet, Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.251	6.987	6.760	-	-	-
2	-	-	-	-	-	-	7.235	6.981	6.766	-	-	-
3	-	-	-	-	-	-	7.209	6.971	6.757	-	-	-
4	-	-	-	-	-	-	7.195	6.956	6.749	-	-	-
5	-	-	-	-	-	-	7.179	6.945	6.753	-	-	-
6	-	-	-	-	-	6.998	7.162	6.935	6.766	-	-	-
7	-	-	-	-	-	7.020	7.149	6.918	6.767	-	-	-
8	-	-	-	-	-	7.050	7.143	6.925	6.757	-	-	-
9	-	-	-	-	-	7.086	7.130	6.931	6.756	-	-	-
10	-	-	-	-	-	7.122	7.121	6.924	6.766	-	-	-
11	-	-	-	-	-	7.158	7.107	6.901	6.771	-	-	-
12	-	-	-	-	-	7.170	7.089	6.915	6.773	-	-	-
13	-	-	-	-	-	7.233	7.069	6.925	6.770	-	-	-
14	-	-	-	-	-	7.266	7.080	6.909	6.805	-	-	-
15	-	-	-	-	-	7.290	6.937	6.899	6.917	-	-	-
16	-	-	-	-	-	7.303	6.954	6.888	6.803	-	-	-
17	-	-	-	-	-	7.308	7.095	6.879	6.838	-	-	-
18	-	-	-	-	-	7.305	7.079	6.866	6.869	-	-	-
19	-	-	-	-	-	7.317	7.068	6.863	6.825	-	-	-
20	-	-	-	-	-	7.298	7.056	6.928	6.771	-	-	-
21	-	-	-	-	-	7.323	7.044	6.936	6.759	-	-	-
22	-	-	-	-	-	7.320	7.033	6.865	6.757	-	-	-
23	-	-	-	-	-	7.313	7.023	6.824	-	-	-	-
24	-	-	-	-	-	7.309	7.013	6.806	-	-	-	-
25	-	-	-	-	-	7.295	6.995	6.795	-	-	-	-
26	-	-	-	-	-	7.285	6.986	6.785	-	-	-	-
27	-	-	-	-	-	7.274	7.006	6.770	-	-	-	-
28	-	-	-	-	-	7.263	7.000	6.759	-	-	-	-
29	-	-	-	-	-	7.252	7.001	6.761	-	-	-	-
30	-	-	-	-	-	7.244	7.001	6.762	-	-	-	-
31	-	-	-	-	-	-	6.991	6.757	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**6.998**	**6.937**	**6.757**	**6.749**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**7.232**	**7.077**	**6.880**	**6.784**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.323**	**7.251**	**6.987**	**6.917**	**-**	**-**	**-**

Table A2-31: 1999 Diana River near Rankin Inlet, Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	74.0	35.2	23.4	-	-	-
2	-	-	-	-	-	-	72.0	34.8	23.2	-	-	-
3	-	-	-	-	-	-	69.1	34.7	24.7	-	-	-
4	-	-	-	-	-	-	66.7	34.2	26.3	-	-	-
5	-	-	-	-	-	-	64.6	32.6	25.4	-	-	-
6	-	-	-	-	-	36.3	62.0	31.0	25.1	-	-	-
7	-	-	-	-	-	39.6	59.7	30.3	25.4	-	-	-
8	-	-	-	-	-	45.1	57.5	29.5	25.7	-	-	-
9	-	-	-	-	-	42.1	55.4	28.5	25.6	-	-	-
10	-	-	-	-	-	44.7	53.7	27.8	25.6	-	-	-
11	-	-	-	-	-	48.9	54.4	27.3	25.7	-	-	-
12	-	-	-	-	-	56.3	52.9	26.6	25.5	-	-	-
13	-	-	-	-	-	60.1	50.0	25.8	25.1	-	-	-
14	-	-	-	-	-	57.9	48.7	24.9	25.0	-	-	-
15	-	-	-	-	-	56.3	47.7	24.0	25.7	-	-	-
16	-	-	-	-	-	57.1	46.1	23.4	26.7	-	-	-
17	-	-	-	-	-	56.2	44.2	23.0	-	-	-	-
18	-	-	-	-	-	55.7	41.9	22.2	-	-	-	-
19	-	-	-	-	-	60.3	39.5	22.0	-	-	-	-
20	-	-	-	-	-	60.4	38.5	22.0	-	-	-	-
21	-	-	-	-	-	59.2	36.8	22.4	-	-	-	-
22	-	-	-	-	-	58.2	33.5	20.6	-	-	-	-
23	-	-	-	-	-	61.8	31.7	19.3	-	-	-	-
24	-	-	-	-	-	73.4	31.4	18.3	-	-	-	-
25	-	-	-	-	-	78.1	29.8	18.5	-	-	-	-
26	-	-	-	-	-	78.6	29.6	18.8	-	-	-	-
27	-	-	-	-	-	78.2	32.6	21.3	-	-	-	-
28	-	-	-	-	-	77.9	34.2	23.9	-	-	-	-
29	-	-	-	-	-	77.0	34.5	23.4	-	-	-	-
30	-	-	-	-	-	75.8	34.9	23.4	-	-	-	-
31	-	-	-	-	0.000	-	35.1	23.6	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**36.3**	**29.6**	**18.3**	**23.2**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**0.000**	**59.8**	**47.2**	**25.6**	**25.3**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**78.6**	**74.0**	**35.2**	**26.7**	**-**	**-**	**-**

Table A2-32: 1999 Diana River near Rankin Inlet, Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.500	7.128	6.949	-	-	-
2	-	-	-	-	-	-	7.486	7.123	6.945	-	-	-
3	-	-	-	-	-	-	7.464	7.122	6.972	-	-	-
4	-	-	-	-	-	-	7.444	7.115	6.999	-	-	-
5	-	-	-	-	-	-	7.427	7.094	6.983	-	-	-
6	-	-	-	-	-	7.135	7.406	7.071	6.978	-	-	-
7	-	-	-	-	-	7.171	7.386	7.061	6.983	-	-	-
8	-	-	-	-	-	7.243	7.367	7.049	6.989	-	-	-
9	-	-	-	-	-	7.212	7.348	7.034	6.988	-	-	-
10	-	-	-	-	-	7.241	7.332	7.022	6.987	-	-	-
11	-	-	-	-	-	7.285	7.339	7.015	6.989	-	-	-
12	-	-	-	-	-	7.351	7.324	7.003	6.985	-	-	-
13	-	-	-	-	-	7.390	7.296	6.990	6.979	-	-	-
14	-	-	-	-	-	7.370	7.284	6.975	6.977	-	-	-
15	-	-	-	-	-	7.356	7.273	6.960	6.988	-	-	-
16	-	-	-	-	-	7.363	7.257	6.949	7.005	-	-	-
17	-	-	-	-	-	7.354	7.236	6.941	-	-	-	-
18	-	-	-	-	-	7.348	7.211	6.926	-	-	-	-
19	-	-	-	-	-	7.392	7.182	6.923	-	-	-	-
20	-	-	-	-	-	7.393	7.170	6.922	-	-	-	-
21	-	-	-	-	-	7.382	7.148	6.930	-	-	-	-
22	-	-	-	-	-	7.374	7.106	6.896	-	-	-	-
23	-	-	-	-	-	7.404	7.080	6.868	-	-	-	-
24	-	-	-	-	-	7.495	7.077	6.848	-	-	-	-
25	-	-	-	-	-	7.530	7.053	6.851	-	-	-	-
26	-	-	-	-	-	7.533	7.049	6.857	-	-	-	-
27	-	-	-	-	-	7.530	7.093	6.908	-	-	-	-
28	-	-	-	-	-	7.528	7.116	6.957	-	-	-	-
29	-	-	-	-	-	7.522	7.120	6.948	-	-	-	-
30	-	-	-	-	-	7.513	7.125	6.948	-	-	-	-
31	-	-	-	-	-	-	7.128	6.952	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**7.135**	**7.049**	**6.848**	**6.945**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**7.377**	**7.253**	**6.980**	**6.981**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.533**	**7.500**	**7.128**	**7.005**	**-**	**-**	**-**

A2 - 6.0 DIANA LAKE

Instantaneous water levels were measured during the open water seasons of 1997 to 1999 and are presented in Table A2-33.

Table A2-33: Diana Lake Water Level Observations (m)

Date	Water Level
23-Jun-97	6.540
26-Jun-97	6.519
8-Jul-97	6.462
17-Jul-97	6.402
29-Jul-97	6.252
24-Aug-97	6.005
24-Sep-97	5.840
7-May-98	5.850
8-Jun-98	6.257
16-Jun-98	6.678
19-Jun-98	6.720
1-Jul-98	6.939
8-Jul-98	6.555
23-Aug-98	6.263
22-Sep-98	6.252
16-Jun-99	6.806
6-Jul-99	6.899
13-Jul-99	6.764
22-Sep-99	6.433

A2 - 7.0 PETER LAKE

Instantaneous water levels were measured during the open water seasons of 1997 to 1999 and are presented in Table A2-34.

Table A2-34: Peter Lake Water Level Observations (m)

Date	Water Level
23-Jun-97	7.488
26-Jun-97	7.471
8-Jul-97	7.441
17-Jul-97	7.478
29-Jul-97	7.281
24-Aug-97	7.110
24-Sep-97	6.936
7-May-98	7.075
8-Jun-98	7.399
16-Jun-98	7.638
19-Jun-98	7.635
1-Jul-98	7.541
8-Jul-98	7.481
1-Aug-98	7.265
23-Aug-98	7.275
22-Sep-98	7.259
31-May-99	7.275
13-Jun-99	7.699
16-Jun-99	7.713
2-Jul-99	7.810
13-Jul-99	7.627
22-Sep-99	7.399

A2 - 8.0 CHAR RIVER NEAR RANKIN INLET

Hydrometric data were measured during the open water season of 2000. Instantaneous water levels and discharge measurements at Char River near Rankin Inlet are presented in Table A2-35.

Table A2-35: Char River near Rankin Inlet

Date	Water Level	Discharge	Comments
12-Jun-2000		0.000	
13-Jun-2000		5 to 6	estimated
14-Jun-2000	7.000	5.04	ice conditions
16-Jun-2000	7.041	9.45	
18-Jun-2000	7.015	9.00	
21-Jun-2000	6.945	4.36	
24-Jul-2000	6.670	0.130	
19-Sep-2000	6.709	0.259	

A2 - 9.0 LAKE A1 AND OUTLET

Hydrometric data were measured during the open water season of 1997 to 2000 and 2008. Mean daily water levels and mean daily discharges at Lake A1 are presented in Tables A2-36 to A2-45.

Table A2-36: 1997 Lake A1 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.539	0	0	-	-	-
2	-	-	-	-	-	-	0.456	0.000	0.000	-	-	-
3	-	-	-	-	-	-	0.342	0.000	0.000	-	-	-
4	-	-	-	-	-	-	0.335	0.000	0.000	-	-	-
5	-	-	-	-	-	-	0.258	0.000	0.000	-	-	-
6	-	-	-	-	-	-	0.21	0.000	0.000	-	-	-
7	-	-	-	-	-	-	0.163	0.000	0.000	-	-	-
8	-	-	-	-	-	-	0.136	0.000	0.000	-	-	-
9	-	-	-	-	-	-	0.132	0.000	0.000	-	-	-
10	-	-	-	-	-	-	0.109	0.000	0.000	-	-	-
11	-	-	-	-	-	0.372	0.087	0.000	0.000	-	-	-
12	-	-	-	-	-	-	0.068	0.000	0.000	-	-	-
13	-	-	-	-	-	-	0.032	0.000	0.000	-	-	-
14	-	-	-	-	-	-	0.021	0.000	0.000	-	-	-
15	-	-	-	-	-	-	0.013	0.000	0.000	-	-	-
16	-	-	-	-	-	-	0.013	0.000	0.000	-	-	-
17	-	-	-	-	-	-	0.011	0.000	0.000	-	-	-
18	-	-	-	-	-	-	0.008	0.000	0.000	-	-	-
19	-	-	-	-	-	-	0.005	0.000	0.000	-	-	-
20	-	-	-	-	-	0.281	0.003	0.000	0.000	-	-	-
21	-	-	-	-	-	0.244	0.004	0.000	0.000	-	-	-
22	-	-	-	-	-	0.206	0.005	0.000	0.000	-	-	-
23	-	-	-	-	-	0.166	0.004	0.000	0.000	-	-	-
24	-	-	-	-	-	0.198	0.002	0.000	0.000	-	-	-
25	-	-	-	-	-	0.173	0.001	0.000	0.000	-	-	-
26	-	-	-	-	-	0.163	0.001	0.000	-	-	-	-
27	-	-	-	-	-	0.221	0.000	0.000	-	-	-	-
28	-	-	-	-	-	0.269	0.000	0.000	-	-	-	-
29	-	-	-	-	-	0.374	0.000	0.000	-	-	-	-
30	-	-	-	-	-	0.552	0.000	0.000	-	-	-	-
31	-	-	-	-	-	-	0.000	0.000	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.163**	**0.000**	**0.000**	**-**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.268**	**0.095**	**0.000**	**0.000**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.552**	**0.539**	**0.000**	**0.000**	**-**	**-**	**-**

Table A2-37: 1997 Lake A1 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	9.420	9.280	9.215	-	-	-
2	-	-	-	-	-	-	9.415	9.272	9.211	-	-	-
3	-	-	-	-	-	-	9.405	9.267	9.211	-	-	-
4	-	-	-	-	-	-	9.405	9.265	9.218	-	-	-
5	-	-	-	-	-	-	9.397	9.264	9.222	-	-	-
6	-	-	-	-	-	-	9.392	9.264	9.219	-	-	-
7	-	-	-	-	-	-	9.385	9.257	9.217	-	-	-
8	-	-	-	-	-	-	9.381	9.256	9.215	-	-	-
9	-	-	-	-	-	-	9.380	9.252	9.215	-	-	-
10	-	-	-	-	-	-	9.375	9.248	9.214	-	-	-
11	-	-	-	-	-	9.560	9.370	9.245	9.214	-	-	-
12	-	-	-	-	-	-	9.365	9.242	9.214	-	-	-
13	-	-	-	-	-	-	9.350	9.239	9.209	-	-	-
14	-	-	-	-	-	-	9.344	9.237	9.209	-	-	-
15	-	-	-	-	-	-	9.337	9.237	9.207	-	-	-
16	-	-	-	-	-	-	9.337	9.236	9.205	-	-	-
17	-	-	-	-	-	-	9.335	9.234	9.203	-	-	-
18	-	-	-	-	-	-	9.331	9.233	9.204	-	-	-
19	-	-	-	-	-	-	9.326	9.232	9.201	-	-	-
20	-	-	-	-	-	9.400	9.320	9.231	9.198	-	-	-
21	-	-	-	-	-	9.396	9.323	9.228	9.197	-	-	-
22	-	-	-	-	-	9.391	9.325	9.224	9.197	-	-	-
23	-	-	-	-	-	9.385	9.323	9.227	9.198	-	-	-
24	-	-	-	-	-	9.390	9.314	9.227	9.194	-	-	-
25	-	-	-	-	-	9.387	9.311	9.225	9.206	-	-	-
26	-	-	-	-	-	9.385	9.310	9.222	-	-	-	-
27	-	-	-	-	-	9.393	9.307	9.220	-	-	-	-
28	-	-	-	-	-	9.399	9.303	9.220	-	-	-	-
29	-	-	-	-	-	9.408	9.299	9.219	-	-	-	-
30	-	-	-	-	-	9.421	9.293	9.220	-	-	-	-
31	-	-	-	-	-	-	9.287	9.221	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**9.385**	**9.287**	**9.219**	**9.194**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**9.410**	**9.347**	**9.240**	**9.209**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**9.560**	**9.420**	**9.280**	**9.222**	**-**	**-**	**-**

Table A2-38: 1998 Lake A1 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.062	0.005	-	-	-	-
2	-	-	-	-	-	-	0.055	0.003	-	-	-	-
3	-	-	-	-	-	-	0.047	0.001	-	-	-	-
4	-	-	-	-	-	-	0.043	0.001	-	-	-	-
5	-	-	-	-	-	1.27	0.037	0.001	-	-	-	-
6	-	-	-	-	-	1.03	0.038	0.000	-	-	-	-
7	-	-	-	-	-	0.878	0.033	0.004	-	-	-	-
8	-	-	-	-	-	0.783	0.029	0.006	-	-	-	-
9	-	-	-	-	-	0.691	0.025	0.007	-	-	-	-
10	-	-	-	-	-	0.644	0.022	0.006	-	-	-	-
11	-	-	-	-	-	0.523	0.019	0.005	-	-	-	-
12	-	-	-	-	-	0.440	0.014	0.006	-	-	-	-
13	-	-	-	-	-	0.408	0.010	-	-	-	-	-
14	-	-	-	-	-	0.362	0.015	-	-	-	-	-
15	-	-	-	-	-	0.313	0.024	-	-	-	-	-
16	-	-	-	-	-	0.265	0.028	-	-	-	-	-
17	-	-	-	-	-	0.217	0.031	-	-	-	-	-
18	-	-	-	-	-	0.183	0.034	-	-	-	-	-
19	-	-	-	-	-	0.165	0.032	-	-	-	-	-
20	-	-	-	-	-	0.148	0.031	-	-	-	-	-
21	-	-	-	-	-	0.138	0.028	-	-	-	-	-
22	-	-	-	-	-	0.136	0.023	-	-	-	-	-
23	-	-	-	-	-	0.122	0.021	-	-	-	-	-
24	-	-	-	-	-	0.112	0.018	-	-	-	-	-
25	-	-	-	-	-	0.101	0.015	-	-	-	-	-
26	-	-	-	-	-	0.093	0.012	-	-	-	-	-
27	-	-	-	-	-	0.083	0.013	-	-	-	-	-
28	-	-	-	-	-	0.075	0.012	-	-	-	-	-
29	-	-	-	-	-	0.069	0.010	-	-	-	-	-
30	-	-	-	-	-	0.062	0.008	-	-	-	-	-
31	-	-	-	-	-	-	0.006	-	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.062**	**0.006**	**0.000**	**-**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.358**	**0.026**	**0.004**	**-**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**1.27**	**0.062**	**0.007**	**-**	**-**	**-**	**-**

Table A2-39: 1998 Lake A1 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	9.396	9.312	-	-	-	-
2	-	-	-	-	-	-	9.390	9.307	-	-	-	-
3	-	-	-	-	-	-	9.382	9.299	-	-	-	-
4	-	-	-	-	-	-	9.378	9.294	-	-	-	-
5	-	-	-	-	-	9.709	9.372	9.293	-	-	-	-
6	-	-	-	-	-	9.668	9.373	9.288	-	-	-	-
7	-	-	-	-	-	9.639	9.366	9.306	-	-	-	-
8	-	-	-	-	-	9.621	9.362	9.312	-	-	-	-
9	-	-	-	-	-	9.602	9.356	9.313	-	-	-	-
10	-	-	-	-	-	9.593	9.353	9.311	-	-	-	-
11	-	-	-	-	-	9.565	9.348	9.309	-	-	-	-
12	-	-	-	-	-	9.544	9.340	9.310	-	-	-	-
13	-	-	-	-	-	9.537	9.333	-	-	-	-	-
14	-	-	-	-	-	9.526	9.340	-	-	-	-	-
15	-	-	-	-	-	9.512	9.353	-	-	-	-	-
16	-	-	-	-	-	9.498	9.357	-	-	-	-	-
17	-	-	-	-	-	9.482	9.360	-	-	-	-	-
18	-	-	-	-	-	9.469	9.363	-	-	-	-	-
19	-	-	-	-	-	9.462	9.361	-	-	-	-	-
20	-	-	-	-	-	9.453	9.359	-	-	-	-	-
21	-	-	-	-	-	9.447	9.355	-	-	-	-	-
22	-	-	-	-	-	9.446	9.349	-	-	-	-	-
23	-	-	-	-	-	9.438	9.345	-	-	-	-	-
24	-	-	-	-	-	9.433	9.340	-	-	-	-	-
25	-	-	-	-	-	9.425	9.335	-	-	-	-	-
26	-	-	-	-	-	9.420	9.330	-	-	-	-	-
27	-	-	-	-	-	9.413	9.331	-	-	-	-	-
28	-	-	-	-	-	9.407	9.329	-	-	-	-	-
29	-	-	-	-	-	9.402	9.325	-	-	-	-	-
30	-	-	-	-	-	9.396	9.320	-	-	-	-	-
31	-	-	-	-	-	-	9.316	-	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**9.396**	**9.316**	**9.288**	**-**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**9.504**	**9.352**	**9.305**	**-**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**9.709**	**9.396**	**9.313**	**-**	**-**	**-**	**-**

Table A2-40: 1999 Lake A1 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.151	0.028	0.123	-	-	-
2	-	-	-	-	-	0.000	0.119	0.028	0.119	-	-	-
3	-	-	-	-	-	-	0.099	0.026	0.137	-	-	-
4	-	-	-	-	-	1.480	0.080	0.024	0.161	-	-	-
5	-	-	-	-	-	-	0.071	0.023	0.150	-	-	-
6	-	-	-	-	-	1.470	0.062	0.022	0.133	-	-	-
7	-	-	-	-	-	-	0.055	0.022	0.119	-	-	-
8	-	-	-	-	-	-	0.049	0.023	0.110	-	-	-
9	-	-	-	-	-	0.645	0.046	0.022	0.098	-	-	-
10	-	-	-	-	-	-	0.042	0.022	0.090	-	-	-
11	-	-	-	-	-	-	0.044	0.022	0.082	-	-	-
12	-	-	-	-	-	-	0.046	0.022	0.076	-	-	-
13	-	-	-	-	-	-	0.045	0.022	0.073	-	-	-
14	-	-	-	-	-	0.312	0.048	0.021	0.073	-	-	-
15	-	-	-	-	-	0.311	0.048	0.021	0.076	-	-	-
16	-	-	-	-	-	0.331	0.045	0.020	0.093	-	-	-
17	-	-	-	-	-	0.312	0.041	0.021	0.092	-	-	-
18	-	-	-	-	-	0.283	0.037	0.020	0.086	-	-	-
19	-	-	-	-	-	0.236	0.034	0.021	0.078	-	-	-
20	-	-	-	-	-	0.189	0.034	0.022	0.076	-	-	-
21	-	-	-	-	-	0.151	0.030	0.021	-	-	-	-
22	-	-	-	-	-	0.130	0.028	0.022	-	-	-	-
23	-	-	-	-	-	0.211	0.026	0.022	-	-	-	-
24	-	-	-	-	-	0.916	0.025	0.023	-	-	-	-
25	-	-	-	-	-	0.756	0.022	0.024	-	-	-	-
26	-	-	-	-	-	0.568	0.024	0.031	-	-	-	-
27	-	-	-	-	-	0.427	0.031	0.119	-	-	-	-
28	-	-	-	-	-	0.325	0.032	0.160	-	-	-	-
29	-	-	-	-	-	0.245	0.032	0.143	-	-	-	-
30	-	-	-	-	-	0.191	0.031	0.130	-	-	-	-
31	-	-	-	-	-	-	0.029	0.120	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.130**	**0.022**	**0.020**	**0.073**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.347**	**0.049**	**0.041**	**0.102**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.916**	**0.151**	**0.160**	**0.161**	**-**	**-**	**-**

Table A2-41: 1999 Lake A1 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	9.463	9.330	9.447	-	-	-
2	-	-	-	-	-	-	9.444	9.327	9.444	-	-	-
3	-	-	-	-	-	-	9.429	9.322	9.455	-	-	-
4	-	-	-	-	-	9.730	9.412	9.316	9.468	-	-	-
5	-	-	-	-	-	-	9.403	9.312	9.463	-	-	-
6	-	-	-	-	-	9.683	9.392	9.310	9.453	-	-	-
7	-	-	-	-	-	-	9.383	9.311	9.444	-	-	-
8	-	-	-	-	-	-	9.374	9.313	9.438	-	-	-
9	-	-	-	-	-	9.590	9.368	9.310	9.429	-	-	-
10	-	-	-	-	-	-	9.361	9.310	9.422	-	-	-
11	-	-	-	-	-	-	9.365	9.311	9.415	-	-	-
12	-	-	-	-	-	-	9.368	9.311	9.408	-	-	-
13	-	-	-	-	9.248	-	9.366	9.309	9.405	-	-	-
14	-	-	-	-	-	9.522	9.372	9.307	9.405	-	-	-
15	-	-	-	-	-	9.522	9.372	9.305	9.408	-	-	-
16	-	-	-	-	-	9.527	9.366	9.303	9.425	-	-	-
17	-	-	-	-	-	9.522	9.359	9.304	9.423	-	-	-
18	-	-	-	-	-	9.514	9.351	9.304	9.418	-	-	-
19	-	-	-	-	-	9.499	9.343	9.305	9.411	-	-	-
20	-	-	-	-	-	9.481	9.343	9.309	9.408	-	-	-
21	-	-	-	-	-	9.463	9.333	9.305	-	-	-	-
22	-	-	-	-	-	9.451	9.330	9.311	-	-	-	-
23	-	-	-	-	-	9.477	9.324	9.308	-	-	-	-
24	-	-	-	-	-	9.634	9.321	9.312	-	-	-	-
25	-	-	-	-	-	9.606	9.311	9.317	-	-	-	-
26	-	-	-	-	-	9.573	9.316	9.337	-	-	-	-
27	-	-	-	-	-	9.547	9.336	9.444	-	-	-	-
28	-	-	-	-	-	9.525	9.339	9.468	-	-	-	-
29	-	-	-	-	-	9.502	9.339	9.459	-	-	-	-
30	-	-	-	-	-	9.482	9.338	9.451	-	-	-	-
31	-	-	-	-	-	-	9.332	9.445	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**9.451**	**9.311**	**9.303**	**9.405**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**9.248**	**9.542**	**9.363**	**9.335**	**9.429**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**9.730**	**9.463**	**9.468**	**9.468**	**-**	**-**	**-**

Table A2-42: 2000 Lake A1 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.110	0.017	0.018	-	-	-
2	-	-	-	-	-	-	0.100	0.016	0.018	-	-	-
3	-	-	-	-	-	-	0.088	0.016	0.018	-	-	-
4	-	-	-	-	-	-	0.080	0.015	0.018	-	-	-
5	-	-	-	-	-	-	0.075	0.014	0.017	-	-	-
6	-	-	-	-	-	-	0.068	0.013	0.017	-	-	-
7	-	-	-	-	-	-	0.064	0.013	0.018	-	-	-
8	-	-	-	-	-	-	0.060	0.012	0.018	-	-	-
9	-	-	-	-	-	-	0.056	0.011	0.016	-	-	-
10	-	-	-	-	-	-	0.053	0.010	0.017	-	-	-
11	-	-	-	-	-	-	0.048	0.011	0.018	-	-	-
12	-	-	-	-	-	0.000 B	0.044	0.011	0.018	-	-	-
13	-	-	-	-	-	0.869 B	0.039	0.011	0.018	-	-	-
14	-	-	-	-	-	-	0.036	0.010	0.018	-	-	-
15	-	-	-	-	-	1.010 B	0.035	0.010	0.017	-	-	-
16	-	-	-	-	-	-	0.033	0.009	0.021	-	-	-
17	-	-	-	-	-	1.316	0.030	0.011	0.022	-	-	-
18	-	-	-	-	-	1.226	0.028	0.010	0.021	-	-	-
19	-	-	-	-	-	0.959	0.026	0.010	0.021	-	-	-
20	-	-	-	-	-	0.853	0.025	0.009	-	-	-	-
21	-	-	-	-	-	0.763	0.023	0.010	-	-	-	-
22	-	-	-	-	-	0.602	0.022	0.010	-	-	-	-
23	-	-	-	-	-	0.443	0.020	0.010	-	-	-	-
24	-	-	-	-	-	0.378	0.019	0.010	-	-	-	-
25	-	-	-	-	-	0.316	0.018	0.013	-	-	-	-
26	-	-	-	-	-	0.257	0.018	0.013	-	-	-	-
27	-	-	-	-	-	0.219	0.017	0.012	-	-	-	-
28	-	-	-	-	-	0.185	0.016	0.014	-	-	-	-
29	-	-	-	-	-	0.152	0.015	0.016	-	-	-	-
30	-	-	-	-	-	0.124	0.017	0.017	-	-	-	-
31	-	-	-	-	-	-	0.020	0.020	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.124**	**0.015**	**0.009**	**0.016**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.557**	**0.040**	**0.012**	**0.018**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**1.316**	**0.088**	**0.017**	**0.022**	**-**	**-**	**-**

Table A2-43: 2000 Lake A1 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	9.435	9.288	9.293	-	-	-
2	-	-	-	-	-	-	9.426	9.283	9.295	-	-	-
3	-	-	-	-	-	-	9.417	9.283	9.295	-	-	-
4	-	-	-	-	-	-	9.410	9.277	9.293	-	-	-
5	-	-	-	-	-	-	9.406	9.275	9.291	-	-	-
6	-	-	-	-	-	-	9.400	9.270	9.290	-	-	-
7	-	-	-	-	-	-	9.394	9.267	9.295	-	-	-
8	-	-	-	-	-	-	9.389	9.263	9.293	-	-	-
9	-	-	-	-	-	-	9.383	9.257	9.285	-	-	-
10	-	-	-	-	-	-	9.380	9.250	9.290	-	-	-
11	-	-	-	-	-	-	9.372	9.256	9.293	-	-	-
12	-	-	-	-	-	-	9.364	9.255	9.293	-	-	-
13	-	-	-	-	-	9.899 B	9.355	9.251	9.292	-	-	-
14	-	-	-	-	-	9.842 B	9.349	9.248	9.295	-	-	-
15	-	-	-	-	-	9.763 B	9.347	9.244	9.291	-	-	-
16	-	-	-	-	-	9.706 B	9.342	9.239	9.305	-	-	-
17	-	-	-	-	-	9.673	9.334	9.252	9.309	-	-	-
18	-	-	-	-	-	9.655	9.329	9.250	9.307	-	-	-
19	-	-	-	-	-	9.618	9.324	9.246	9.305	-	-	-
20	-	-	-	-	-	9.603	9.318	9.243	-	-	-	-
21	-	-	-	-	-	9.591	9.314	9.247	-	-	-	-
22	-	-	-	-	-	9.571	9.309	9.249	-	-	-	-
23	-	-	-	-	-	9.550	9.302	9.248	-	-	-	-
24	-	-	-	-	-	9.534	9.300	9.250	-	-	-	-
25	-	-	-	-	-	9.519	9.296	9.266	-	-	-	-
26	-	-	-	-	-	9.505	9.293	9.266	-	-	-	-
27	-	-	-	-	-	9.491	9.289	9.260	-	-	-	-
28	-	-	-	-	-	9.476	9.284	9.273	-	-	-	-
29	-	-	-	-	-	9.461	9.280	9.284	-	-	-	-
30	-	-	-	-	-	9.446	9.288	9.291	-	-	-	-
31	-	-	-	-	-	-	9.291	9.291	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**9.446**	**9.280**	**9.239**	**9.285**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**9.550**	**9.346**	**9.262**	**9.295**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**9.673**	**9.435**	**9.291**	**9.309**	**-**	**-**	**-**

Table A2-44: 2008 Lake A1 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.010	0.004	0.046	-	-	-
2	-	-	-	-	-	-	0.010	0.003	0.059	-	-	-
3	-	-	-	-	-	-	0.010	0.003	0.062	-	-	-
4	-	-	-	-	-	-	0.010	0.004	0.057	-	-	-
5	-	-	-	-	-	-	0.009	0.004	0.051	-	-	-
6	-	-	-	-	-	-	0.008	0.004	0.051	-	-	-
7	-	-	-	-	-	-	0.008	0.004	0.042	-	-	-
8	-	-	-	-	-	-	0.007	0.004	0.041	-	-	-
9	-	-	-	-	-	-	0.007	0.003	0.040	-	-	-
10	-	-	-	-	-	-	0.006	0.003	0.039	-	-	-
11	-	-	-	-	-	-	0.005	0.003	0.039	-	-	-
12	-	-	-	-	-	-	0.004	0.003	0.037	-	-	-
13	-	-	-	-	-	-	0.004	0.003	0.037	-	-	-
14	-	-	-	-	-	-	0.004	0.003	0.038	-	-	-
15	-	-	-	-	-	0.065	0.004	0.006	0.040	-	-	-
16	-	-	-	-	-	0.053	0.003	0.006	0.036	-	-	-
17	-	-	-	-	-	0.044	0.004	0.008	-	-	-	-
18	-	-	-	-	-	0.036	0.004	0.009	-	-	-	-
19	-	-	-	-	-	0.029	0.003	0.010	-	-	-	-
20	-	-	-	-	-	0.026	0.003	0.009	-	-	-	-
21	-	-	-	-	-	0.022	0.002	0.008	-	-	-	-
22	-	-	-	-	-	0.020	0.002	0.008	-	-	-	-
23	-	-	-	-	-	0.018	0.002	0.007	-	-	-	-
24	-	-	-	-	-	0.016	0.002	0.007	-	-	-	-
25	-	-	-	-	-	0.014	0.002	0.007	-	-	-	-
26	-	-	-	-	-	0.013	0.003	0.006	-	-	-	-
27	-	-	-	-	-	0.013	0.003	0.006	-	-	-	-
28	-	-	-	-	-	0.013	0.002	0.011	-	-	-	-
29	-	-	-	-	-	0.012	0.003	0.014	-	-	-	-
30	-	-	-	-	-	0.011	0.004	0.015	-	-	-	-
31	-	-	-	-	-	-	0.004	0.030	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.011**	**0.002**	**0.003**	**0.036**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.025**	**0.005**	**0.007**	**0.045**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.065**	**0.010**	**0.030**	**0.062**	**-**	**-**	**-**

Table A2-45: 2008 Lake A1 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	98.069	98.034	98.119	-	-	-
2	-	-	-	-	-	-	98.067	98.034	98.128	-	-	-
3	-	-	-	-	-	-	98.067	98.033	98.130	-	-	-
4	-	-	-	-	-	-	98.066	98.036	98.126	-	-	-
5	-	-	-	-	-	-	98.064	98.039	98.123	-	-	-
6	-	-	-	-	-	-	98.060	98.041	98.122	-	-	-
7	-	-	-	-	-	-	98.058	98.039	98.116	-	-	-
8	-	-	-	-	-	-	98.057	98.034	98.114	-	-	-
9	-	-	-	-	-	-	98.055	98.033	98.113	-	-	-
10	-	-	-	-	-	-	98.051	98.032	98.113	-	-	-
11	-	-	-	-	-	-	98.045	98.031	98.113	-	-	-
12	-	-	-	-	-	-	98.041	98.031	98.111	-	-	-
13	-	-	-	-	-	-	98.037	98.032	98.111	-	-	-
14	-	-	-	-	-	-	98.035	98.032	98.112	-	-	-
15	-	-	-	-	-	98.131	98.037	98.049	98.114	-	-	-
16	-	-	-	-	-	98.123	98.033	98.053	98.110	-	-	-
17	-	-	-	-	-	98.117	98.034	98.059	-	-	-	-
18	-	-	-	-	-	98.110	98.036	98.062	-	-	-	-
19	-	-	-	-	-	98.103	98.032	98.064	-	-	-	-
20	-	-	-	-	-	98.099	98.025	98.063	-	-	-	-
21	-	-	-	-	-	98.094	98.018	98.060	-	-	-	-
22	-	-	-	-	-	98.089	98.015	98.059	-	-	-	-
23	-	-	-	-	-	98.086	98.017	98.058	-	-	-	-
24	-	-	-	-	-	98.083	98.014	98.057	-	-	-	-
25	-	-	-	-	-	98.078	98.019	98.055	-	-	-	-
26	-	-	-	-	-	98.076	98.026	98.053	-	-	-	-
27	-	-	-	-	-	98.076	98.028	98.051	-	-	-	-
28	-	-	-	-	-	98.075	98.023	98.068	-	-	-	-
29	-	-	-	-	-	98.073	98.030	98.077	-	-	-	-
30	-	-	-	-	-	98.069	98.037	98.081	-	-	-	-
31	-	-	-	-	-	-	98.036	98.102	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**98.069**	**98.014**	**98.031**	**98.110**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**98.093**	**98.040**	**98.050**	**98.117**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**98.131**	**98.069**	**98.102**	**98.130**	**-**	**-**	**-**

A2 - 10.0 LAKE A6 AND OUTLET

Hydrometric data were measured during the open water season of 1997 and 1998. Mean daily water levels and mean daily discharges at Lake A6 are presented in Tables A2-46 to A2-49.

Table A2-46: 1997 Lake A6 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.061	0.000	0.000	-	-	-
2	-	-	-	-	-	-	0.056	0.000	0.000	-	-	-
3	-	-	-	-	-	-	0.051	0.000	0.000	-	-	-
4	-	-	-	-	-	-	0.045	0.000	0.000	-	-	-
5	-	-	-	-	-	-	0.038	0.000	0.000	-	-	-
6	-	-	-	-	-	-	0.034	0.000	0.000	-	-	-
7	-	-	-	-	-	-	0.031	0.000	0.000	-	-	-
8	-	-	-	-	-	-	0.026	0.000	0.000	-	-	-
9	-	-	-	-	-	-	0.027	0.000	0.000	-	-	-
10	-	-	-	-	-	-	0.023	0.000	0.000	-	-	-
11	-	-	-	-	-	0.221	0.021	0.000	0.000	-	-	-
12	-	-	-	-	-	0.188	0.018	0.000	0.000	-	-	-
13	-	-	-	-	-	-	0.010	0.000	0.000	-	-	-
14	-	-	-	-	-	-	0.006	0.000	0.000	-	-	-
15	-	-	-	-	-	-	0.003	0.000	0.000	-	-	-
16	-	-	-	-	-	-	0.002	0.000	0.000	-	-	-
17	-	-	-	-	-	-	0.003	0.000	0.000	-	-	-
18	-	-	-	-	-	-	0.003	0.000	0.000	-	-	-
19	-	-	-	-	-	-	0.002	0.000	0.000	-	-	-
20	-	-	-	-	-	0.080	0.001	0.000	0.000	-	-	-
21	-	-	-	-	-	0.062	0.001	0.000	0.000	-	-	-
22	-	-	-	-	-	0.057	0.002	0.000	0.000	-	-	-
23	-	-	-	-	-	0.052	0.001	0.000	0.000	-	-	-
24	-	-	-	-	-	0.050	0.000	0.000	0.000	-	-	-
25	-	-	-	-	-	0.045	0.000	0.000	0.000	-	-	-
26	-	-	-	-	-	0.043	0.000	0.000	-	-	-	-
27	-	-	-	-	-	0.048	0.000	0.000	-	-	-	-
28	-	-	-	-	-	0.050	0.000	0.000	-	-	-	-
29	-	-	-	-	-	0.059	0.000	0.000	-	-	-	-
30	-	-	-	-	-	0.068	0.000	0.000	-	-	-	-
31	-	-	-	-	-	-	0.000	0.000	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.043**	**0.000**	**0.000**	**-**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.079**	**0.015**	**0.000**	**0.000**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.221**	**0.061**	**0.000**	**0.000**	**-**	**-**	**-**

Table A2-47: 1997 Lake A6 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	9.309	9.188	9.116	-	-	-
2	-	-	-	-	-	-	9.305	9.178	9.120	-	-	-
3	-	-	-	-	-	-	9.302	9.174	9.117	-	-	-
4	-	-	-	-	-	-	9.297	9.173	9.116	-	-	-
5	-	-	-	-	-	-	9.292	9.175	9.118	-	-	-
6	-	-	-	-	-	-	9.288	9.170	9.121	-	-	-
7	-	-	-	-	-	-	9.285	9.163	9.114	-	-	-
8	-	-	-	-	-	-	9.280	9.162	9.110	-	-	-
9	-	-	-	-	-	-	9.281	9.159	9.108	-	-	-
10	-	-	-	-	-	-	9.278	9.154	9.110	-	-	-
11	-	-	-	-	-	9.380	9.275	9.151	9.109	-	-	-
12	-	-	-	-	-	9.370	9.271	9.146	9.110	-	-	-
13	-	-	-	-	-	-	9.259	9.145	9.100	-	-	-
14	-	-	-	-	-	-	9.252	9.142	9.100	-	-	-
15	-	-	-	-	-	-	9.243	9.143	9.104	-	-	-
16	-	-	-	-	-	-	9.241	9.142	9.099	-	-	-
17	-	-	-	-	-	-	9.245	9.141	9.083	-	-	-
18	-	-	-	-	-	-	9.245	9.141	9.080	-	-	-
19	-	-	-	-	-	-	9.242	9.141	9.092	-	-	-
20	-	-	-	-	-	-	9.235	9.142	9.095	-	-	-
21	-	-	-	-	-	9.310	9.236	9.139	9.095	-	-	-
22	-	-	-	-	-	9.306	9.239	9.133	9.093	-	-	-
23	-	-	-	-	-	9.302	9.236	9.139	9.092	-	-	-
24	-	-	-	-	-	9.301	9.227	9.129	9.087	-	-	-
25	-	-	-	-	-	9.297	9.222	9.128	9.096	-	-	-
26	-	-	-	-	-	9.295	9.222	9.127	-	-	-	-
27	-	-	-	-	-	9.299	9.219	9.130	-	-	-	-
28	-	-	-	-	-	9.301	9.216	9.131	-	-	-	-
29	-	-	-	-	-	9.307	9.210	9.127	-	-	-	-
30	-	-	-	-	-	9.313	9.209	9.125	-	-	-	-
31	-	-	-	-	-	-	9.198	9.117	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**9.295**	**9.198**	**9.117**	**9.080**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**9.315**	**9.253**	**9.147**	**9.103**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**9.380**	**9.309**	**9.188**	**9.121**	**-**	**-**	**-**

Table A2-48: 1998 Lake A6 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.024	0.004	0.008	-	-	-
2	-	-	-	-	-	-	0.020	0.004	0.010	-	-	-
3	-	-	-	-	-	-	0.019	0.003	0.010	-	-	-
4	-	-	-	-	-	-	0.017	0.003	0.011	-	-	-
5	-	-	-	-	-	1.18	0.014	0.003	0.013	-	-	-
6	-	-	-	-	-	0.935	0.013	0.002	0.014	-	-	-
7	-	-	-	-	-	0.704	0.011	0.003	0.016	-	-	-
8	-	-	-	-	-	0.542	0.011	0.003	0.018	-	-	-
9	-	-	-	-	-	0.420	0.008	0.003	0.024	-	-	-
10	-	-	-	-	-	0.340	0.007	0.003	0.026	-	-	-
11	-	-	-	-	-	0.285	0.006	0.003	0.028	-	-	-
12	-	-	-	-	-	0.241	0.005	0.005	0.030	-	-	-
13	-	-	-	-	-	0.222	0.003	0.003	0.031	-	-	-
14	-	-	-	-	-	0.203	0.003	0.003	0.048	-	-	-
15	-	-	-	-	-	0.179	0.006	0.002	0.090	-	-	-
16	-	-	-	-	-	0.154	0.007	0.002	0.101	-	-	-
17	-	-	-	-	-	0.132	0.008	0.002	0.091	-	-	-
18	-	-	-	-	-	0.115	0.009	0.003	0.087	-	-	-
19	-	-	-	-	-	0.101	0.009	0.003	0.082	-	-	-
20	-	-	-	-	-	0.091	0.009	0.004	0.077	-	-	-
21	-	-	-	-	-	0.083	0.007	0.003	0.074	-	-	-
22	-	-	-	-	-	0.075	0.008	0.004	0.069	-	-	-
23	-	-	-	-	-	0.075	0.008	0.005	0.065	-	-	-
24	-	-	-	-	-	0.067	0.008	0.005	-	-	-	-
25	-	-	-	-	-	0.059	0.007	0.004	-	-	-	-
26	-	-	-	-	-	0.055	0.006	0.004	-	-	-	-
27	-	-	-	-	-	0.048	0.007	0.004	-	-	-	-
28	-	-	-	-	-	0.041	0.006	0.004	-	-	-	-
29	-	-	-	-	-	0.036	0.005	0.005	-	-	-	-
30	-	-	-	-	-	0.031	0.005	0.006	-	-	-	-
31	-	-	-	-	-	-	0.005	0.005	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.031**	**0.003**	**0.002**	**0.008**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.247**	**0.009**	**0.004**	**0.045**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**1.18**	**0.024**	**0.006**	**0.101**	**-**	**-**	**-**

Table A2-49: 1998 Lake A6 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	9.270	9.206	9.200	-	-	-
2	-	-	-	-	-	-	9.264	9.205	9.206	-	-	-
3	-	-	-	-	-	-	9.262	9.200	9.206	-	-	-
4	-	-	-	-	-	-	9.257	9.196	9.208	-	-	-
5	-	-	-	-	-	9.511	9.253	9.196	9.213	-	-	-
6	-	-	-	-	-	9.488	9.250	9.193	9.216	-	-	-
7	-	-	-	-	-	9.465	9.246	9.197	9.219	-	-	-
8	-	-	-	-	-	9.447	9.245	9.197	9.224	-	-	-
9	-	-	-	-	-	9.432	9.237	9.193	9.232	-	-	-
10	-	-	-	-	-	9.421	9.233	9.192	9.236	-	-	-
11	-	-	-	-	-	9.407	9.229	9.190	9.239	-	-	-
12	-	-	-	-	-	9.394	9.225	9.198	9.241	-	-	-
13	-	-	-	-	-	9.387	9.215	9.192	9.244	-	-	-
14	-	-	-	-	-	9.380	9.217	9.189	9.260	-	-	-
15	-	-	-	-	-	9.370	9.227	9.183	9.289	-	-	-
16	-	-	-	-	-	9.360	9.230	9.183	9.296	-	-	-
17	-	-	-	-	-	9.349	9.232	9.184	9.291	-	-	-
18	-	-	-	-	-	9.341	9.232	9.184	9.290	-	-	-
19	-	-	-	-	-	9.333	9.231	9.185	9.287	-	-	-
20	-	-	-	-	-	9.327	9.231	9.189	9.285	-	-	-
21	-	-	-	-	-	9.322	9.225	9.183	9.284	-	-	-
22	-	-	-	-	-	9.317	9.226	9.187	9.281	-	-	-
23	-	-	-	-	-	9.317	9.227	9.193	9.279	-	-	-
24	-	-	-	-	-	9.311	9.225	9.191	-	-	-	-
25	-	-	-	-	-	9.306	9.221	9.187	-	-	-	-
26	-	-	-	-	-	9.302	9.216	9.188	-	-	-	-
27	-	-	-	-	-	9.296	9.218	9.188	-	-	-	-
28	-	-	-	-	-	9.289	9.216	9.186	-	-	-	-
29	-	-	-	-	-	9.284	9.213	9.189	-	-	-	-
30	-	-	-	-	-	9.279	9.210	9.193	-	-	-	-
31	-	-	-	-	-	-	9.208	9.192	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**9.279**	**9.208**	**9.183**	**9.200**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**9.363**	**9.232**	**9.191**	**9.249**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**9.511**	**9.270**	**9.206**	**9.296**	**-**	**-**	**-**

A2 - 11.0 LAKE B2 AND OUTLET

Hydrometric data were measured during the open water seasons of 1998 to 2000 and 2008. Mean daily water levels and mean daily discharges at Lake B2 are presented in Tables A2-50 to A2-57.

Table A2-50: 1998 Lake B2 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.174	0.029	0.024	-	-	-
2	-	-	-	-	-	-	0.145	0.026	0.026	-	-	-
3	-	-	-	-	-	-	0.129	0.022	0.027	-	-	-
4	-	-	-	-	-	-	0.119	0.020	0.029	-	-	-
5	-	-	-	-	-	-	0.108	0.019	0.032	-	-	-
6	-	-	-	-	-	-	0.107	0.017	0.034	-	-	-
7	-	-	-	-	-	-	0.102	0.028	0.036	-	-	-
8	-	-	-	-	-	2.29	0.091	0.029	0.035	-	-	-
9	-	-	-	-	-	1.77	0.083	0.028	0.042	-	-	-
10	-	-	-	-	-	1.30	0.077	0.023	0.049	-	-	-
11	-	-	-	-	-	1.05	0.070	0.021	0.049	-	-	-
12	-	-	-	-	-	0.932	0.059	0.022	0.052	-	-	-
13	-	-	-	-	-	0.894	0.050	0.020	0.053	-	-	-
14	-	-	-	-	-	0.794	0.057	0.019	0.078	-	-	-
15	-	-	-	-	-	0.701	0.061	0.018	0.099	-	-	-
16	-	-	-	-	-	0.623	0.053	0.018	0.095	-	-	-
17	-	-	-	-	-	0.557	0.049	0.017	0.095	-	-	-
18	-	-	-	-	-	0.507	0.054	0.016	0.097	-	-	-
19	-	-	-	-	-	0.460	0.055	0.016	0.106	-	-	-
20	-	-	-	-	-	0.415	0.053	0.019	0.112	-	-	-
21	-	-	-	-	-	0.376	0.053	0.011	0.127	-	-	-
22	-	-	-	-	-	0.346	0.049	0.011	0.134	-	-	-
23	-	-	-	-	-	0.339	0.046	0.010	0.140	-	-	-
24	-	-	-	-	-	0.314	0.044	0.010	0.139	-	-	-
25	-	-	-	-	-	0.295	0.040	0.010	-	-	-	-
26	-	-	-	-	-	0.273	0.040	0.011	-	-	-	-
27	-	-	-	-	-	0.252	0.046	0.010	-	-	-	-
28	-	-	-	-	-	0.238	0.044	0.011	-	-	-	-
29	-	-	-	-	-	0.223	0.041	0.014	-	-	-	-
30	-	-	-	-	-	0.200	0.036	0.016	-	-	-	-
31	-	-	-	-	-	-	0.033	0.018	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.200**	**0.033**	**0.010**	**0.024**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.659**	**0.070**	**0.018**	**0.071**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**2.29**	**0.174**	**0.029**	**0.140**	**-**	**-**	**-**

Table A2-51: 1998 Lake B2 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.589	7.479	7.461	-	-	-
2	-	-	-	-	-	-	7.576	7.475	7.463	-	-	-
3	-	-	-	-	-	-	7.568	7.469	7.463	-	-	-
4	-	-	-	-	-	-	7.562	7.466	7.465	-	-	-
5	-	-	-	-	-	-	7.555	7.464	7.469	-	-	-
6	-	-	-	-	-	-	7.554	7.460	7.471	-	-	-
7	-	-	-	-	-	-	7.550	7.480	7.473	-	-	-
8	-	-	-	-	-	7.813	7.542	7.481	7.470	-	-	-
9	-	-	-	-	-	7.799	7.533	7.480	7.478	-	-	-
10	-	-	-	-	-	7.787	7.525	7.474	7.484	-	-	-
11	-	-	-	-	-	7.769	7.516	7.470	7.484	-	-	-
12	-	-	-	-	-	7.758	7.504	7.472	7.485	-	-	-
13	-	-	-	-	-	7.753	7.496	7.468	7.486	-	-	-
14	-	-	-	-	-	7.739	7.502	7.465	7.504	-	-	-
15	-	-	-	-	-	7.724	7.506	7.463	7.518	-	-	-
16	-	-	-	-	-	7.711	7.499	7.462	7.515	-	-	-
17	-	-	-	-	-	7.699	7.496	7.460	7.514	-	-	-
18	-	-	-	-	-	7.689	7.501	7.457	7.515	-	-	-
19	-	-	-	-	-	7.679	7.502	7.456	7.519	-	-	-
20	-	-	-	-	-	7.668	7.501	7.461	7.522	-	-	-
21	-	-	-	-	-	7.658	7.501	7.443	7.529	-	-	-
22	-	-	-	-	-	7.650	7.498	7.442	7.532	-	-	-
23	-	-	-	-	-	7.648	7.496	7.439	7.534	-	-	-
24	-	-	-	-	-	7.640	7.493	7.439	7.533	-	-	-
25	-	-	-	-	-	7.635	7.490	7.438	-	-	-	-
26	-	-	-	-	-	7.627	7.490	7.439	-	-	-	-
27	-	-	-	-	-	7.620	7.497	7.434	-	-	-	-
28	-	-	-	-	-	7.615	7.496	7.436	-	-	-	-
29	-	-	-	-	-	7.609	7.493	7.445	-	-	-	-
30	-	-	-	-	-	7.600	7.487	7.447	-	-	-	-
31	-	-	-	-	-	-	7.484	7.450	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**7.600**	**7.484**	**7.434**	**7.461**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**7.691**	**7.516**	**7.459**	**7.495**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.813**	**7.589**	**7.481**	**7.534**	**-**	**-**	**-**

Table A2-52: 1999 Lake B2 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.479	0.067	0.117	-	-	-
2	-	-	-	-	-	0.000	0.403	0.063	0.120	-	-	-
3	-	-	-	-	-	-	0.337	0.056	0.135	-	-	-
4	-	-	-	-	-	-	0.288	0.050	0.150	-	-	-
5	-	-	-	-	-	4.66	0.241	0.048	0.153	-	-	-
6	-	-	-	-	-	3.80	0.208	0.047	0.159	-	-	-
7	-	-	-	-	-	-	0.191	0.048	0.162	-	-	-
8	-	-	-	-	-	1.68	0.171	0.050	0.159	-	-	-
9	-	-	-	-	-	-	0.159	0.050	0.151	-	-	-
10	-	-	-	-	-	-	0.149	0.051	0.148	-	-	-
11	-	-	-	-	-	-	0.131	0.056	0.140	-	-	-
12	-	-	-	-	-	-	0.124	0.060	0.134	-	-	-
13	-	-	-	-	-	-	0.120	0.057	0.129	-	-	-
14	-	-	-	-	-	0.786	0.132	0.053	0.127	-	-	-
15	-	-	-	-	-	0.772	0.126	0.050	0.126	-	-	-
16	-	-	-	-	-	0.738	0.109	0.049	0.124	-	-	-
17	-	-	-	-	-	0.715	0.098	0.048	0.123	-	-	-
18	-	-	-	-	-	0.689	0.087	0.047	0.114	-	-	-
19	-	-	-	-	-	0.640	0.084	0.047	0.109	-	-	-
20	-	-	-	-	-	0.579	0.081	0.049	0.106	-	-	-
21	-	-	-	-	-	0.522	0.074	0.042	-	-	-	-
22	-	-	-	-	-	0.480	0.069	0.040	-	-	-	-
23	-	-	-	-	-	0.748	0.067	0.040	-	-	-	-
24	-	-	-	-	-	2.056	0.061	0.042	-	-	-	-
25	-	-	-	-	-	1.699	0.057	0.045	-	-	-	-
26	-	-	-	-	-	1.281	0.062	0.055	-	-	-	-
27	-	-	-	-	-	1.004	0.085	0.094	-	-	-	-
28	-	-	-	-	-	0.823	0.082	0.093	-	-	-	-
29	-	-	-	-	-	0.698	0.079	0.098	-	-	-	-
30	-	-	-	-	-	0.574	0.076	0.099	-	-	-	-
31	-	-	-	-	-	-	0.071	0.106	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.480**	**0.057**	**0.040**	**0.106**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.871**	**0.145**	**0.058**	**0.134**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**2.06**	**0.479**	**0.106**	**0.162**	**-**	**-**	**-**

Table A2-53: 1999 Lake B2 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.691	7.517	7.566	-	-	-
2	-	-	-	-	-	-	7.676	7.512	7.569	-	-	-
3	-	-	-	-	-	-	7.660	7.502	7.578	-	-	-
4	-	-	-	-	-	-	7.646	7.492	7.588	-	-	-
5	-	-	-	-	-	7.899	7.630	7.488	7.590	-	-	-
6	-	-	-	-	-	7.866	7.617	7.487	7.593	-	-	-
7	-	-	-	-	-	-	7.609	7.488	7.595	-	-	-
8	-	-	-	-	-	7.807	7.600	7.493	7.593	-	-	-
9	-	-	-	-	-	-	7.593	7.491	7.589	-	-	-
10	-	-	-	-	-	-	7.587	7.494	7.587	-	-	-
11	-	-	-	-	-	-	7.576	7.502	7.582	-	-	-
12	-	-	-	-	-	-	7.571	7.508	7.578	-	-	-
13	-	-	-	-	-	-	7.568	7.504	7.575	-	-	-
14	-	-	-	-	-	7.735	7.577	7.497	7.574	-	-	-
15	-	-	-	-	-	7.734	7.572	7.492	7.573	-	-	-
16	-	-	-	-	-	7.730	7.560	7.491	7.571	-	-	-
17	-	-	-	-	-	7.727	7.551	7.488	7.571	-	-	-
18	-	-	-	-	-	7.723	7.540	7.487	7.564	-	-	-
19	-	-	-	-	-	7.717	7.537	7.487	7.560	-	-	-
20	-	-	-	-	-	7.708	7.534	7.489	7.558	-	-	-
21	-	-	-	-	-	7.699	7.526	7.477	-	-	-	-
22	-	-	-	-	-	7.691	7.520	7.472	-	-	-	-
23	-	-	-	-	-	7.723	7.518	7.472	-	-	-	-
24	-	-	-	-	-	7.817	7.509	7.476	-	-	-	-
25	-	-	-	-	-	7.803	7.504	7.483	-	-	-	-
26	-	-	-	-	-	7.779	7.509	7.496	-	-	-	-
27	-	-	-	-	-	7.757	7.538	7.547	-	-	-	-
28	-	-	-	-	-	7.739	7.535	7.546	-	-	-	-
29	-	-	-	-	-	7.724	7.532	7.551	-	-	-	-
30	-	-	-	-	-	7.707	7.528	7.552	-	-	-	-
31	-	-	-	-	-	-	7.522	7.557	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**7.691**	**7.504**	**7.472**	**7.558**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**7.754**	**7.569**	**7.501**	**7.578**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.899**	**7.691**	**7.557**	**7.595**	**-**	**-**	**-**

Table A2-54: 2000 Lake B2 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.368	0.039	0.029	-	-	-
2	-	-	-	-	-	-	0.319	0.038	0.027	-	-	-
3	-	-	-	-	-	-	0.288	0.035	0.028	-	-	-
4	-	-	-	-	-	-	0.263	0.035	0.028	-	-	-
5	-	-	-	-	-	-	0.237	0.035	0.028	-	-	-
6	-	-	-	-	-	-	0.215	0.033	0.028	-	-	-
7	-	-	-	-	-	-	0.197	0.032	0.027	-	-	-
8	-	-	-	-	-	-	0.178	0.031	0.028	-	-	-
9	-	-	-	-	-	-	0.167	0.029	0.026	-	-	-
10	-	-	-	-	-	-	0.149	0.028	0.027	-	-	-
11	-	-	-	-	-	-	0.136	0.028	0.027	-	-	-
12	-	-	-	-	-	-	0.129	0.027	0.026	-	-	-
13	-	-	-	-	-	0.000 B	0.117	0.025	0.027	-	-	-
14	-	-	-	-	-	-	0.104	0.025	0.027	-	-	-
15	-	-	-	-	-	0.243 B	0.098	0.025	0.027	-	-	-
16	-	-	-	-	-	-	0.087	0.023	0.030	-	-	-
17	-	-	-	-	-	3.33	0.077	0.027	0.026	-	-	-
18	-	-	-	-	-	2.57	0.073	0.027	0.026	-	-	-
19	-	-	-	-	-	2.13	0.069	0.026	0.027	-	-	-
20	-	-	-	-	-	2.15	0.065	0.026	-	-	-	-
21	-	-	-	-	-	2.15	0.062	0.027	-	-	-	-
22	-	-	-	-	-	1.61	0.055	0.027	-	-	-	-
23	-	-	-	-	-	1.30	0.050	0.027	-	-	-	-
24	-	-	-	-	-	1.04	0.047	0.028	-	-	-	-
25	-	-	-	-	-	0.868	0.045	0.031	-	-	-	-
26	-	-	-	-	-	0.748	0.046	0.028	-	-	-	-
27	-	-	-	-	-	0.650	0.043	0.027	-	-	-	-
28	-	-	-	-	-	0.569	0.039	0.031	-	-	-	-
29	-	-	-	-	-	0.489	0.039	0.030	-	-	-	-
30	-	-	-	-	-	0.419	0.041	0.031	-	-	-	-
31	-	-	-	-	-	-	0.041	0.031	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.419**	**0.039**	**0.023**	**0.026**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**1.28**	**0.124**	**0.029**	**0.027**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**2.57**	**0.369**	**0.039**	**0.030**	**-**	**-**	**-**

Table A2-55: 2000 Lake B2 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.667	7.470	7.446	-	-	-
2	-	-	-	-	-	-	7.655	7.469	7.440	-	-	-
3	-	-	-	-	-	-	7.646	7.461	7.441	-	-	-
4	-	-	-	-	-	-	7.637	7.462	7.442	-	-	-
5	-	-	-	-	-	-	7.629	7.461	7.441	-	-	-
6	-	-	-	-	-	-	7.620	7.457	7.441	-	-	-
7	-	-	-	-	-	-	7.612	7.453	7.440	-	-	-
8	-	-	-	-	-	-	7.603	7.450	7.441	-	-	-
9	-	-	-	-	-	-	7.597	7.444	7.435	-	-	-
10	-	-	-	-	-	-	7.588	7.440	7.438	-	-	-
11	-	-	-	-	-	-	7.579	7.443	7.439	-	-	-
12	-	-	-	-	-	-	7.575	7.437	7.437	-	-	-
13	-	-	-	-	-	-	7.566	7.433	7.437	-	-	-
14	-	-	-	-	-	-	7.556	7.430	7.439	-	-	-
15	-	-	-	-	-	-	7.551	7.430	7.438	-	-	-
16	-	-	-	-	-	7.684 B	7.540	7.426	7.447	-	-	-
17	-	-	-	-	-	7.838	7.530	7.439	7.437	-	-	-
18	-	-	-	-	-	7.834	7.525	7.438	7.434	-	-	-
19	-	-	-	-	-	7.819	7.519	7.437	7.437	-	-	-
20	-	-	-	-	-	7.820	7.515	7.434	-	-	-	-
21	-	-	-	-	-	7.820	7.510	7.438	-	-	-	-
22	-	-	-	-	-	7.800	7.500	7.437	-	-	-	-
23	-	-	-	-	-	7.780	7.491	7.438	-	-	-	-
24	-	-	-	-	-	7.760	7.487	7.441	-	-	-	-
25	-	-	-	-	-	7.744	7.483	7.452	-	-	-	-
26	-	-	-	-	-	7.731	7.484	7.443	-	-	-	-
27	-	-	-	-	-	7.718	7.480	7.439	-	-	-	-
28	-	-	-	-	-	7.706	7.471	7.449	-	-	-	-
29	-	-	-	-	-	7.693	7.470	7.448	-	-	-	-
30	-	-	-	-	-	7.679	7.474	7.451	-	-	-	-
31	-	-	-	-	-	-	7.474	7.450	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**7.679**	**7.470**	**7.426**	**7.434**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**7.767**	**7.550**	**7.445**	**7.439**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.838**	**7.667**	**7.470**	**7.447**	**-**	**-**	**-**

Table A2-56: 2008 Lake B2 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.089	0.023	0.021	-	-	-
2	-	-	-	-	-	-	0.084	0.022	0.022	-	-	-
3	-	-	-	-	-	-	0.080	0.021	0.023	-	-	-
4	-	-	-	-	-	-	0.075	0.023	0.022	-	-	-
5	-	-	-	-	-	-	0.071	0.023	0.020	-	-	-
6	-	-	-	-	-	-	0.065	0.024	0.020	-	-	-
7	-	-	-	-	-	-	0.060	0.022	0.019	-	-	-
8	-	-	-	-	-	-	0.057	0.019	0.018	-	-	-
9	-	-	-	-	-	-	0.052	0.018	0.019	-	-	-
10	-	-	-	-	-	-	0.050	0.018	0.019	-	-	-
11	-	-	-	-	-	-	0.047	0.017	0.020	-	-	-
12	-	-	-	-	-	-	0.042	0.017	0.021	-	-	-
13	-	-	-	-	-	-	0.037	0.017	0.019	-	-	-
14	-	-	-	-	-	-	0.036	0.015	0.020	-	-	-
15	-	-	-	-	-	0.210 P	0.036	0.020	0.021	-	-	-
16	-	-	-	-	-	0.202	0.033	0.016	0.020	-	-	-
17	-	-	-	-	-	0.184	0.029	0.015	-	-	-	-
18	-	-	-	-	-	0.166	0.026	0.014	-	-	-	-
19	-	-	-	-	-	0.150	0.024	0.014	-	-	-	-
20	-	-	-	-	-	0.138	0.021	0.014	-	-	-	-
21	-	-	-	-	-	0.132	0.018	0.011	-	-	-	-
22	-	-	-	-	-	0.124	0.018	0.010	-	-	-	-
23	-	-	-	-	-	0.119	0.019	0.010	-	-	-	-
24	-	-	-	-	-	0.113	0.018	0.009	-	-	-	-
25	-	-	-	-	-	0.106	0.022	0.009	-	-	-	-
26	-	-	-	-	-	0.109	0.023	0.009	-	-	-	-
27	-	-	-	-	-	0.107	0.022	0.011	-	-	-	-
28	-	-	-	-	-	0.097	0.018	0.012	-	-	-	-
29	-	-	-	-	-	0.094	0.022	0.014	-	-	-	-
30	-	-	-	-	-	0.091	0.025	0.014	-	-	-	-
31	-	-	-	-	-	-	0.023	0.020	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.091**	**0.018**	**0.009**	**0.018**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.134**	**0.040**	**0.016**	**0.020**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.210**	**0.089**	**0.024**	**0.023**	**-**	**-**	**-**

Table A2-57: 2008 Lake B2 Mean Daily Water Levels, Based on Benchmark Elevation (100.08 m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	97.822	97.752	97.749	-	-	-
2	-	-	-	-	-	-	97.818	97.750	97.751	-	-	-
3	-	-	-	-	-	-	97.815	97.749	97.753	-	-	-
4	-	-	-	-	-	-	97.812	97.753	97.750	-	-	-
5	-	-	-	-	-	-	97.809	97.754	97.747	-	-	-
6	-	-	-	-	-	-	97.804	97.754	97.746	-	-	-
7	-	-	-	-	-	-	97.800	97.750	97.744	-	-	-
8	-	-	-	-	-	-	97.797	97.745	97.743	-	-	-
9	-	-	-	-	-	-	97.793	97.742	97.745	-	-	-
10	-	-	-	-	-	-	97.790	97.741	97.745	-	-	-
11	-	-	-	-	-	-	97.786	97.741	97.748	-	-	-
12	-	-	-	-	-	-	97.782	97.741	97.749	-	-	-
13	-	-	-	-	-	-	97.775	97.740	97.744	-	-	-
14	-	-	-	-	-	-	97.774	97.735	97.746	-	-	-
15	-	-	-	-	-	97.875	97.773	97.745	97.747	-	-	-
16	-	-	-	-	-	97.872	97.769	97.736	97.748	-	-	-
17	-	-	-	-	-	97.866	97.763	97.734	-	-	-	-
18	-	-	-	-	-	97.860	97.758	97.731	-	-	-	-
19	-	-	-	-	-	97.853	97.755	97.731	-	-	-	-
20	-	-	-	-	-	97.848	97.749	97.727	-	-	-	-
21	-	-	-	-	-	97.845	97.742	97.721	-	-	-	-
22	-	-	-	-	-	97.841	97.742	97.719	-	-	-	-
23	-	-	-	-	-	97.839	97.746	97.716	-	-	-	-
24	-	-	-	-	-	97.836	97.743	97.715	-	-	-	-
25	-	-	-	-	-	97.832	97.751	97.714	-	-	-	-
26	-	-	-	-	-	97.833	97.753	97.715	-	-	-	-
27	-	-	-	-	-	97.832	97.749	97.719	-	-	-	-
28	-	-	-	-	-	97.827	97.742	97.725	-	-	-	-
29	-	-	-	-	-	97.825	97.751	97.731	-	-	-	-
30	-	-	-	-	-	97.823	97.756	97.731	-	-	-	-
31	-	-	-	-	-	-	97.753	97.746	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**97.823**	**97.742**	**97.714**	**97.743**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**97.844**	**97.773**	**97.736**	**97.747**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**97.875**	**97.822**	**97.754**	**97.753**	**-**	**-**	**-**

A2 - 12.0 LAKE B4 AND OUTLET

Hydrometric data were measured during the open water seasons of 1997 and 1998. Mean daily water levels and mean daily discharges at Lake B4 are presented in Tables A2-58 to A2-61.

Table A2-58: 1997 Lake B4 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.136	0.002	0.000	-	-	-
2	-	-	-	-	-	-	0.130	0.002	0.000	-	-	-
3	-	-	-	-	-	-	0.122	0.002	0.000	-	-	-
4	-	-	-	-	-	-	0.107	0.002	0.000	-	-	-
5	-	-	-	-	-	-	0.098	0.002	0.000	-	-	-
6	-	-	-	-	-	-	0.094	0.001	0.000	-	-	-
7	-	-	-	-	-	-	0.092	0.002	0.000	-	-	-
8	-	-	-	-	-	-	0.091	0.001	0.000	-	-	-
9	-	-	-	-	-	-	0.091	0.001	0.000	-	-	-
10	-	-	-	-	-	-	0.080	0.001	0.000	-	-	-
11	-	-	-	-	-	0.571	0.074	0.001	0.000	-	-	-
12	-	-	-	-	-	-	0.068	0.001	0.000	-	-	-
13	-	-	-	-	-	-	0.064	0.000	0.000	-	-	-
14	-	-	-	-	-	-	0.056	0.000	0.000	-	-	-
15	-	-	-	-	-	-	0.050	0.000	0.000	-	-	-
16	-	-	-	-	-	-	0.043	0.000	0.000	-	-	-
17	-	-	-	-	-	-	0.034	0.000	0.000	-	-	-
18	-	-	-	-	-	-	0.029	0.000	0.000	-	-	-
19	-	-	-	-	-	-	0.028	0.000	0.000	-	-	-
20	-	-	-	-	-	-	0.025	0.000	0.000	-	-	-
21	-	-	-	-	-	0.244	0.022	0.000	0.000	-	-	-
22	-	-	-	-	-	0.227	0.021	0.000	0.000	-	-	-
23	-	-	-	-	-	0.204	0.020	0.000	0.000	-	-	-
24	-	-	-	-	-	0.192	0.019	0.000	0.000	-	-	-
25	-	-	-	-	-	0.169	0.015	0.000	0.000	-	-	-
26	-	-	-	-	-	0.159	0.012	0.000	-	-	-	-
27	-	-	-	-	-	0.157	0.011	0.000	-	-	-	-
28	-	-	-	-	-	0.152	0.009	0.000	-	-	-	-
29	-	-	-	-	-	0.165	0.007	0.000	-	-	-	-
30	-	-	-	-	-	0.146	0.005	0.000	-	-	-	-
31	-	-	-	-	-	-	0.003	0.000	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**-**	**0.003**	**0.000**	**0.000**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**-**	**0.053**	**0.001**	**0.000**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**-**	**0.136**	**0.002**	**0.000**	**-**	**-**	**-**

Table A2-59: 1997 Lake B4 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	8.007	7.833	7.783	-	-	-
2	-	-	-	-	-	-	8.004	7.839	7.780	-	-	-
3	-	-	-	-	-	-	7.999	7.836	7.780	-	-	-
4	-	-	-	-	-	-	7.990	7.833	7.792	-	-	-
5	-	-	-	-	-	-	7.984	7.834	7.789	-	-	-
6	-	-	-	-	-	-	7.980	7.829	7.784	-	-	-
7	-	-	-	-	-	-	7.979	7.831	7.786	-	-	-
8	-	-	-	-	-	-	7.979	7.826	7.785	-	-	-
9	-	-	-	-	-	-	7.978	7.823	7.782	-	-	-
10	-	-	-	-	-	-	7.970	7.818	7.777	-	-	-
11	-	-	-	-	-	8.182	7.965	7.817	7.776	-	-	-
12	-	-	-	-	-	-	7.960	7.817	7.773	-	-	-
13	-	-	-	-	-	-	7.956	7.815	7.775	-	-	-
14	-	-	-	-	-	-	7.948	7.812	7.768	-	-	-
15	-	-	-	-	-	-	7.942	7.810	7.763	-	-	-
16	-	-	-	-	-	-	7.934	7.807	7.766	-	-	-
17	-	-	-	-	-	-	7.922	7.805	7.769	-	-	-
18	-	-	-	-	-	-	7.915	7.807	7.763	-	-	-
19	-	-	-	-	-	-	7.913	7.805	7.756	-	-	-
20	-	-	-	-	-	-	7.909	7.804	7.752	-	-	-
21	-	-	-	-	-	8.058	7.903	7.803	7.751	-	-	-
22	-	-	-	-	-	8.051	7.902	7.802	7.748	-	-	-
23	-	-	-	-	-	8.041	7.900	7.801	7.748	-	-	-
24	-	-	-	-	-	8.036	7.897	7.807	7.755	-	-	-
25	-	-	-	-	-	8.025	7.887	7.803	7.755	-	-	-
26	-	-	-	-	-	8.020	7.881	7.797	-	-	-	-
27	-	-	-	-	-	8.019	7.876	7.797	-	-	-	-
28	-	-	-	-	-	8.016	7.870	7.792	-	-	-	-
29	-	-	-	-	-	8.023	7.865	7.794	-	-	-	-
30	-	-	-	-	-	8.013	7.854	7.797	-	-	-	-
31	-	-	-	-	-	-	7.844	7.791	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**-**	**7.844**	**7.791**	**7.748**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**-**	**7.933**	**7.813**	**7.770**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**-**	**8.007**	**7.839**	**7.792**	**-**	**-**	**-**

Table A2-60: 1998 Lake B4 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.108	0.026	0.019	-	-	-
2	-	-	-	-	-	-	0.098	0.025	0.017	-	-	-
3	-	-	-	-	-	-	0.090	0.020	0.021	-	-	-
4	-	-	-	-	-	-	0.090	0.020	0.066	-	-	-
5	-	-	-	-	-	4.68	0.087	0.019	0.047	-	-	-
6	-	-	-	-	-	2.80	0.113	0.024	0.025	-	-	-
7	-	-	-	-	-	2.05	0.085	0.048	0.025	-	-	-
8	-	-	-	-	-	1.77	0.075	0.036	0.028	-	-	-
9	-	-	-	-	-	1.53	0.072	0.031	0.028	-	-	-
10	-	-	-	-	-	1.28	0.066	0.029	0.027	-	-	-
11	-	-	-	-	-	0.939	0.062	0.030	0.025	-	-	-
12	-	-	-	-	-	0.851	0.055	0.021	0.027	-	-	-
13	-	-	-	-	-	0.791	0.053	0.019	0.028	-	-	-
14	-	-	-	-	-	0.620	0.062	0.019	0.056	-	-	-
15	-	-	-	-	-	0.550	0.053	0.017	0.044	-	-	-
16	-	-	-	-	-	0.493	0.054	0.015	0.050	-	-	-
17	-	-	-	-	-	0.419	0.058	0.014	0.082	-	-	-
18	-	-	-	-	-	0.372	0.069	0.013	0.094	-	-	-
19	-	-	-	-	-	0.348	0.075	0.015	0.110	-	-	-
20	-	-	-	-	-	0.301	0.069	0.019	0.111	-	-	-
21	-	-	-	-	-	0.268	0.073	0.014	0.117	-	-	-
22	-	-	-	-	-	0.261	0.059	0.008	0.122	-	-	-
23	-	-	-	-	-	0.240	0.051	0.011	0.123	-	-	-
24	-	-	-	-	-	0.232	0.047	0.011	-	-	-	-
25	-	-	-	-	-	0.228	0.053	0.012	-	-	-	-
26	-	-	-	-	-	0.214	0.054	0.011	-	-	-	-
27	-	-	-	-	-	0.207	0.060	0.013	-	-	-	-
28	-	-	-	-	-	0.183	0.046	0.018	-	-	-	-
29	-	-	-	-	-	0.160	0.041	0.014	-	-	-	-
30	-	-	-	-	-	0.126	0.035	0.013	-	-	-	-
31	-	-	-	-	-	-	0.030	0.020	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.126**	**0.030**	**0.008**	**0.017**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.843**	**0.066**	**0.020**	**0.056**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**4.68**	**0.113**	**0.048**	**0.123**	**-**	**-**	**-**

Table A2-61: 1998 Lake B4 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.978	7.877	7.852	-	-	-
2	-	-	-	-	-	-	7.969	7.874	7.849	-	-	-
3	-	-	-	-	-	-	7.962	7.865	7.855	-	-	-
4	-	-	-	-	-	-	7.958	7.864	7.889	-	-	-
5	-	-	-	-	-	8.336	7.953	7.862	7.884	-	-	-
6	-	-	-	-	-	8.278	7.962	7.869	7.864	-	-	-
7	-	-	-	-	-	8.247	7.944	7.893	7.866	-	-	-
8	-	-	-	-	-	8.233	7.935	7.884	7.872	-	-	-
9	-	-	-	-	-	8.220	7.932	7.877	7.875	-	-	-
10	-	-	-	-	-	8.204	7.928	7.875	7.876	-	-	-
11	-	-	-	-	-	8.180	7.925	7.874	7.876	-	-	-
12	-	-	-	-	-	8.176	7.919	7.860	7.881	-	-	-
13	-	-	-	-	-	8.173	7.918	7.857	7.884	-	-	-
14	-	-	-	-	-	8.151	7.924	7.857	7.916	-	-	-
15	-	-	-	-	-	8.138	7.916	7.853	7.907	-	-	-
16	-	-	-	-	-	8.125	7.917	7.849	7.914	-	-	-
17	-	-	-	-	-	8.110	7.919	7.846	7.941	-	-	-
18	-	-	-	-	-	8.098	7.926	7.844	7.950	-	-	-
19	-	-	-	-	-	8.090	7.930	7.847	7.960	-	-	-
20	-	-	-	-	-	8.077	7.926	7.856	7.963	-	-	-
21	-	-	-	-	-	8.066	7.927	7.844	7.968	-	-	-
22	-	-	-	-	-	8.060	7.916	7.829	7.973	-	-	-
23	-	-	-	-	-	8.051	7.909	7.836	7.975	-	-	-
24	-	-	-	-	-	8.046	7.905	7.836	-	-	-	-
25	-	-	-	-	-	8.041	7.910	7.838	-	-	-	-
26	-	-	-	-	-	8.034	7.910	7.834	-	-	-	-
27	-	-	-	-	-	8.028	7.914	7.841	-	-	-	-
28	-	-	-	-	-	8.018	7.902	7.851	-	-	-	-
29	-	-	-	-	-	8.006	7.897	7.843	-	-	-	-
30	-	-	-	-	-	7.989	7.889	7.840	-	-	-	-
31	-	-	-	-	-	-	7.883	7.855	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**7.989**	**7.883**	**7.829**	**7.849**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**8.122**	**7.926**	**7.856**	**7.904**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**8.336**	**7.978**	**7.893**	**7.975**	**-**	**-**	**-**

A2 - 13.0 LAKE B5 AND OUTLET

Hydrometric data were measured during the open water season of 1998. Mean daily water levels and mean daily discharges at Lake B5 for this season are presented in Tables A2-62 and A2-63.

Table A2-62: 1998 Lake B5 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.039	0.013	0.004	-	-	-
2	-	-	-	-	-	-	0.029	0.011	0.004	-	-	-
3	-	-	-	-	-	-	0.022	0.008	0.004	-	-	-
4	-	-	-	-	-	-	0.021	0.007	0.005	-	-	-
5	-	-	-	-	-	-	0.018	0.006	0.006	-	-	-
6	-	-	-	-	-	-	0.017	0.005	0.008	-	-	-
7	-	-	-	-	-	0.630	0.019	0.008	0.009	-	-	-
8	-	-	-	-	-	0.512	0.020	0.009	0.009	-	-	-
9	-	-	-	-	-	0.379	0.020	0.009	0.011	-	-	-
10	-	-	-	-	-	0.351	0.022	0.006	0.015	-	-	-
11	-	-	-	-	-	0.300	0.020	0.005	0.018	-	-	-
12	-	-	-	-	-	0.241	0.017	0.006	0.018	-	-	-
13	-	-	-	-	-	0.200	0.014	0.005	0.019	-	-	-
14	-	-	-	-	-	0.167	0.027	0.004	0.036	-	-	-
15	-	-	-	-	-	0.138	0.046	0.004	0.069	-	-	-
16	-	-	-	-	-	0.110	0.038	0.003	0.067	-	-	-
17	-	-	-	-	-	0.088	0.032	0.003	0.057	-	-	-
18	-	-	-	-	-	0.075	0.034	0.003	0.059	-	-	-
19	-	-	-	-	-	0.067	0.034	0.003	0.057	-	-	-
20	-	-	-	-	-	0.059	0.032	0.011	0.060	-	-	-
21	-	-	-	-	-	0.053	0.031	0.004	0.058	-	-	-
22	-	-	-	-	-	0.049	0.028	0.002	0.057	-	-	-
23	-	-	-	-	-	0.047	0.027	0.001	0.057	-	-	-
24	-	-	-	-	-	0.044	0.025	0.001	0.054	-	-	-
25	-	-	-	-	-	0.043	0.021	0.001	-	-	-	-
26	-	-	-	-	-	0.042	0.019	0.001	-	-	-	-
27	-	-	-	-	-	0.040	0.022	0.001	-	-	-	-
28	-	-	-	-	-	0.038	0.020	0.001	-	-	-	-
29	-	-	-	-	-	0.036	0.019	0.002	-	-	-	-
30	-	-	-	-	-	0.034	0.017	0.002	-	-	-	-
31	-	-	-	-	-	-	0.015	0.002	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.034**	**0.014**	**0.001**	**0.004**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.156**	**0.025**	**0.005**	**0.032**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.630**	**0.046**	**0.013**	**0.069**	**-**	**-**	**-**

Table A2-63: 1998 Lake B5 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	8.588	8.536	8.485	-	-	-
2	-	-	-	-	-	-	8.575	8.532	8.484	-	-	-
3	-	-	-	-	-	-	8.565	8.522	8.485	-	-	-
4	-	-	-	-	-	-	8.563	8.520	8.488	-	-	-
5	-	-	-	-	-	-	8.557	8.518	8.493	-	-	-
6	-	-	-	-	-	-	8.554	8.512	8.501	-	-	-
7	-	-	-	-	-	8.723	8.559	8.527	8.502	-	-	-
8	-	-	-	-	-	8.711	8.560	8.530	8.500	-	-	-
9	-	-	-	-	-	8.692	8.555	8.530	8.507	-	-	-
10	-	-	-	-	-	8.687	8.552	8.521	8.515	-	-	-
11	-	-	-	-	-	8.675	8.543	8.516	8.519	-	-	-
12	-	-	-	-	-	8.659	8.533	8.523	8.519	-	-	-
13	-	-	-	-	-	8.653	8.521	8.516	8.520	-	-	-
14	-	-	-	-	-	8.648	8.543	8.513	8.543	-	-	-
15	-	-	-	-	-	8.643	8.567	8.508	8.572	-	-	-
16	-	-	-	-	-	8.636	8.560	8.504	8.570	-	-	-
17	-	-	-	-	-	8.630	8.554	8.500	8.561	-	-	-
18	-	-	-	-	-	8.622	8.558	8.497	8.562	-	-	-
19	-	-	-	-	-	8.617	8.559	8.498	8.560	-	-	-
20	-	-	-	-	-	8.611	8.556	8.528	8.561	-	-	-
21	-	-	-	-	-	8.605	8.556	8.500	8.559	-	-	-
22	-	-	-	-	-	8.601	8.554	8.481	8.557	-	-	-
23	-	-	-	-	-	8.599	8.553	8.477	8.556	-	-	-
24	-	-	-	-	-	8.595	8.551	8.474	8.553	-	-	-
25	-	-	-	-	-	8.595	8.544	8.472	-	-	-	-
26	-	-	-	-	-	8.593	8.542	8.471	-	-	-	-
27	-	-	-	-	-	8.591	8.549	8.466	-	-	-	-
28	-	-	-	-	-	8.587	8.546	8.466	-	-	-	-
29	-	-	-	-	-	8.585	8.546	8.472	-	-	-	-
30	-	-	-	-	-	8.583	8.542	8.471	-	-	-	-
31	-	-	-	-	-	-	8.538	8.476	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**8.583**	**8.521**	**8.466**	**8.484**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**8.631**	**8.553**	**8.502**	**8.528**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**8.723**	**8.588**	**8.536**	**8.572**	**-**	**-**	**-**

A2 - 14.0 LAKE B7 AND OUTLET

Hydrometric data were measured during the open water seasons of 1998 to 2000 and 2008. Mean daily water levels and mean daily discharges at Lake B7 are presented in Tables A2-64 to A2-71.

Table A2-64: 1998 Lake B7 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.027	0.005	0.000	-	-	-
2	-	-	-	-	-	-	0.026	0.004	0.001	-	-	-
3	-	-	-	-	-	-	0.024	0.002	0.002	-	-	-
4	-	-	-	-	-	-	0.022	0.001	0.003	-	-	-
5	-	-	-	-	-	-	0.021	0.001	0.005	-	-	-
6	-	-	-	-	-	-	0.020	0.001	0.007	-	-	-
7	-	-	-	-	-	0.282	0.018	0.008	0.007	-	-	-
8	-	-	-	-	-	0.150	0.016	0.008	0.009	-	-	-
9	-	-	-	-	-	0.084	0.014	0.007	0.010	-	-	-
10	-	-	-	-	-	0.082	0.013	0.007	0.011	-	-	-
11	-	-	-	-	-	0.077	0.011	0.006	0.012	-	-	-
12	-	-	-	-	-	0.074	0.008	0.004	0.013	-	-	-
13	-	-	-	-	-	0.074	0.005	0.004	0.013	-	-	-
14	-	-	-	-	-	0.072	0.008	0.003	0.021	-	-	-
15	-	-	-	-	-	0.070	0.010	0.002	0.025	-	-	-
16	-	-	-	-	-	0.068	0.012	0.001	0.026	-	-	-
17	-	-	-	-	-	0.065	0.014	0.000	0.028	-	-	-
18	-	-	-	-	-	0.063	0.015	0.000	0.027	-	-	-
19	-	-	-	-	-	0.061	0.015	0.000	0.026	-	-	-
20	-	-	-	-	-	0.059	0.015	0.000	0.025	-	-	-
21	-	-	-	-	-	0.056	0.014	0.000	0.024	-	-	-
22	-	-	-	-	-	0.054	0.013	0.000	0.024	-	-	-
23	-	-	-	-	-	0.052	0.012	0.000	0.023	-	-	-
24	-	-	-	-	-	0.050	0.011	0.000	0.022	-	-	-
25	-	-	-	-	-	0.047	0.011	0.000	-	-	-	-
26	-	-	-	-	-	0.045	0.010	0.000	-	-	-	-
27	-	-	-	-	-	0.042	0.012	0.000	-	-	-	-
28	-	-	-	-	-	0.040	0.010	0.000	-	-	-	-
29	-	-	-	-	-	0.037	0.009	0.000	-	-	-	-
30	-	-	-	-	-	0.033	0.007	0.000	-	-	-	-
31	-	-	-	-	-	-	0.006	0.000	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.033**	**0.005**	**0.000**	**0.000**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.073**	**0.014**	**0.002**	**0.015**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.282**	**0.027**	**0.008**	**0.028**	**-**	**-**	**-**

Table A2-65: 1998 Lake B7 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	8.014	7.941	7.920	-	-	-
2	-	-	-	-	-	-	8.012	7.938	7.923	-	-	-
3	-	-	-	-	-	-	8.006	7.932	7.926	-	-	-
4	-	-	-	-	-	-	8.000	7.929	7.929	-	-	-
5	-	-	-	-	-	-	7.997	7.927	7.934	-	-	-
6	-	-	-	-	-	-	7.997	7.926	7.940	-	-	-
7	-	-	-	-	-	8.196	7.990	7.947	7.942	-	-	-
8	-	-	-	-	-	8.184	7.985	7.946	7.946	-	-	-
9	-	-	-	-	-	8.174	7.980	7.944	7.951	-	-	-
10	-	-	-	-	-	8.171	7.976	7.941	7.955	-	-	-
11	-	-	-	-	-	8.163	7.971	7.937	7.957	-	-	-
12	-	-	-	-	-	8.162	7.964	7.932	7.958	-	-	-
13	-	-	-	-	-	8.162	7.957	7.932	7.959	-	-	-
14	-	-	-	-	-	8.153	7.963	7.930	7.984	-	-	-
15	-	-	-	-	-	8.143	7.971	7.927	7.996	-	-	-
16	-	-	-	-	-	8.133	7.974	7.923	7.999	-	-	-
17	-	-	-	-	-	8.121	7.979	7.921	8.004	-	-	-
18	-	-	-	-	-	8.113	7.982	7.919	8.002	-	-	-
19	-	-	-	-	-	8.106	7.982	7.915	7.999	-	-	-
20	-	-	-	-	-	8.100	7.980	7.898	7.996	-	-	-
21	-	-	-	-	-	8.092	7.978	7.897	7.993	-	-	-
22	-	-	-	-	-	8.087	7.974	7.905	7.992	-	-	-
23	-	-	-	-	-	8.081	7.971	7.905	7.989	-	-	-
24	-	-	-	-	-	8.076	7.967	7.903	7.988	-	-	-
25	-	-	-	-	-	8.070	7.965	7.902	-	-	-	-
26	-	-	-	-	-	8.063	7.962	7.900	-	-	-	-
27	-	-	-	-	-	8.056	7.966	7.901	-	-	-	-
28	-	-	-	-	-	8.048	7.961	7.902	-	-	-	-
29	-	-	-	-	-	8.041	7.956	7.903	-	-	-	-
30	-	-	-	-	-	8.031	7.950	7.903	-	-	-	-
31	-	-	-	-	-	-	7.947	7.911	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**8.031**	**7.947**	**7.897**	**7.920**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**8.114**	**7.977**	**7.921**	**7.966**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**8.196**	**8.014**	**7.947**	**8.004**	**-**	**-**	**-**

Table A2-66: 1999 Lake B7 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.052	0.013	0.026	-	-	-
2	-	-	-	-	-	0.000	0.046	0.012	0.026	-	-	-
3	-	-	-	-	-	-	0.041	0.011	0.025	-	-	-
4	-	-	-	-	-	-	0.036	0.010	0.027	-	-	-
5	-	-	-	-	-	0.138	0.033	0.010	0.028	-	-	-
6	-	-	-	-	-	0.190	0.030	0.010	0.026	-	-	-
7	-	-	-	-	-	-	0.029	0.010	0.025	-	-	-
8	-	-	-	-	-	0.133	0.027	0.011	0.024	-	-	-
9	-	-	-	-	-	-	0.025	0.010	0.022	-	-	-
10	-	-	-	-	-	-	0.023	0.010	0.020	-	-	-
11	-	-	-	-	-	-	0.022	0.010	0.020	-	-	-
12	-	-	-	-	-	-	0.022	0.010	0.019	-	-	-
13	-	-	-	-	-	-	0.023	0.009	0.018	-	-	-
14	-	-	-	-	-	0.108	0.025	0.009	0.017	-	-	-
15	-	-	-	-	-	0.101	0.022	0.008	0.017	-	-	-
16	-	-	-	-	-	0.103	0.020	0.008	0.017	-	-	-
17	-	-	-	-	-	0.103	0.018	0.008	0.017	-	-	-
18	-	-	-	-	-	0.100	0.017	0.008	0.016	-	-	-
19	-	-	-	-	-	0.092	0.017	0.008	0.015	-	-	-
20	-	-	-	-	-	0.083	0.015	0.008	0.015	-	-	-
21	-	-	-	-	-	0.075	0.015	0.011	-	-	-	-
22	-	-	-	-	-	0.069	0.015	0.011	-	-	-	-
23	-	-	-	-	-	0.101	0.014	0.011	-	-	-	-
24	-	-	-	-	-	0.231	0.012	0.012	-	-	-	-
25	-	-	-	-	-	0.170	0.013	0.012	-	-	-	-
26	-	-	-	-	-	0.125	0.014	0.015	-	-	-	-
27	-	-	-	-	-	0.100	0.016	0.022	-	-	-	-
28	-	-	-	-	-	0.085	0.016	0.023	-	-	-	-
29	-	-	-	-	-	0.071	0.016	0.026	-	-	-	-
30	-	-	-	-	-	0.061	0.015	0.027	-	-	-	-
31	-	-	-	-	-	-	0.014	0.027	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.061**	**0.012**	**0.008**	**0.015**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.105**	**0.023**	**0.013**	**0.021**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.231**	**0.052**	**0.027**	**0.028**	**-**	**-**	**-**

Table A2-67: 1999 Lake B7 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	8.111	7.967	8.039	-	-	-
2	-	-	-	-	-	-	8.097	7.962	8.036	-	-	-
3	-	-	-	-	-	-	8.085	7.947	8.035	-	-	-
4	-	-	-	-	-	-	8.073	7.940	8.042	-	-	-
5	-	-	-	-	-	8.226	8.063	7.945	8.045	-	-	-
6	-	-	-	-	-	8.236	8.054	7.943	8.040	-	-	-
7	-	-	-	-	-	-	8.047	7.944	8.032	-	-	-
8	-	-	-	-	-	8.211	8.040	7.946	8.029	-	-	-
9	-	-	-	-	-	-	8.035	7.942	8.022	-	-	-
10	-	-	-	-	-	-	8.025	7.941	8.013	-	-	-
11	-	-	-	-	-	-	8.024	7.941	8.008	-	-	-
12	-	-	-	-	-	-	8.023	7.939	8.004	-	-	-
13	-	-	-	-	-	-	8.026	7.931	8.000	-	-	-
14	-	-	-	-	-	8.186	8.032	7.928	7.996	-	-	-
15	-	-	-	-	-	8.179	8.019	7.924	7.993	-	-	-
16	-	-	-	-	-	8.181	8.010	7.922	7.993	-	-	-
17	-	-	-	-	-	8.181	8.000	7.919	7.997	-	-	-
18	-	-	-	-	-	8.178	7.993	7.918	7.989	-	-	-
19	-	-	-	-	-	8.170	7.995	7.911	7.984	-	-	-
20	-	-	-	-	-	8.158	7.984	7.912	7.982	-	-	-
21	-	-	-	-	-	8.148	7.984	7.947	-	-	-	-
22	-	-	-	-	-	8.140	7.983	7.949	-	-	-	-
23	-	-	-	-	-	8.173	7.978	7.953	-	-	-	-
24	-	-	-	-	-	8.266	7.958	7.955	-	-	-	-
25	-	-	-	-	-	8.233	7.965	7.955	-	-	-	-
26	-	-	-	-	-	8.201	7.974	7.979	-	-	-	-
27	-	-	-	-	-	8.177	7.988	8.020	-	-	-	-
28	-	-	-	-	-	8.160	7.986	8.027	-	-	-	-
29	-	-	-	-	-	8.142	7.985	8.038	-	-	-	-
30	-	-	-	-	-	8.126	7.980	8.040	-	-	-	-
31	-	-	-	-	-	-	7.974	8.041	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**8.126**	**7.958**	**7.911**	**7.982**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**8.176**	**8.016**	**7.956**	**8.014**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**8.266**	**8.111**	**8.041**	**8.045**	**-**	**-**	**-**

Table A2-68: 2000 Lake B7 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.037	0.002	0.000	-	-	-
2	-	-	-	-	-	-	0.033	0.002	0.000	-	-	-
3	-	-	-	-	-	-	0.031	0.000	0.000	-	-	-
4	-	-	-	-	-	-	0.029	0.001	0.000	-	-	-
5	-	-	-	-	-	-	0.028	0.000	0.001	-	-	-
6	-	-	-	-	-	-	0.026	0.000	0.001	-	-	-
7	-	-	-	-	-	-	0.024	0.000	0.000	-	-	-
8	-	-	-	-	-	-	0.023	0.000	0.001	-	-	-
9	-	-	-	-	-	-	0.021	0.000	0.002	-	-	-
10	-	-	-	-	-	-	0.020	0.000	0.001	-	-	-
11	-	-	-	-	-	-	0.019	0.000	0.000	-	-	-
12	-	-	-	-	-	-	0.019	0.000	0.000	-	-	-
13	-	-	-	-	-	-	0.018	0.000	0.000	-	-	-
14	-	-	-	-	-	0.000	0.017	0.000	0.000	-	-	-
15	-	-	-	-	-	-	0.015	0.000	0.003	-	-	-
16	-	-	-	-	-	0.338	0.013	0.000	0.001	-	-	-
17	-	-	-	-	-	0.404	0.013	0.000	0.000	-	-	-
18	-	-	-	-	-	0.330	0.012	0.000	0.000	-	-	-
19	-	-	-	-	-	0.221	0.011	0.000	-	-	-	-
20	-	-	-	-	-	0.181	0.010	0.000	-	-	-	-
21	-	-	-	-	-	0.165	0.010	0.000	-	-	-	-
22	-	-	-	-	-	0.139	0.009	0.000	-	-	-	-
23	-	-	-	-	-	0.125	0.007	0.000	-	-	-	-
24	-	-	-	-	-	0.087	0.006	0.000	-	-	-	-
25	-	-	-	-	-	0.059	0.005	0.000	-	-	-	-
26	-	-	-	-	-	0.051	0.005	0.000	-	-	-	-
27	-	-	-	-	-	0.048	0.004	0.000	-	-	-	-
28	-	-	-	-	-	0.045	0.004	0.000	-	-	-	-
29	-	-	-	-	-	0.042	0.003	0.000	-	-	-	-
30	-	-	-	-	-	0.039	0.003	0.000	-	-	-	-
31	-	-	-	-	-	-	0.003	0.000	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.039**	**0.003**	**0.000**	**0.000**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.118**	**0.016**	**0.000**	**0.001**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.330**	**0.037**	**0.002**	**0.003**	**-**	**-**	**-**

Table A2-69: 2000 Lake B7 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	8.064	7.908	7.879	-	-	-
2	-	-	-	-	-	-	8.053	7.909	7.882	-	-	-
3	-	-	-	-	-	-	8.045	7.900	7.894	-	-	-
4	-	-	-	-	-	-	8.038	7.902	7.899	-	-	-
5	-	-	-	-	-	-	8.033	7.899	7.902	-	-	-
6	-	-	-	-	-	-	8.027	7.897	7.902	-	-	-
7	-	-	-	-	-	-	8.019	7.895	7.895	-	-	-
8	-	-	-	-	-	-	8.013	7.888	7.903	-	-	-
9	-	-	-	-	-	-	8.005	7.885	7.905	-	-	-
10	-	-	-	-	-	-	8.001	7.881	7.901	-	-	-
11	-	-	-	-	-	-	7.997	7.879	7.895	-	-	-
12	-	-	-	-	-	-	7.999	7.872	7.891	-	-	-
13	-	-	-	-	-	-	7.992	7.870	7.899	-	-	-
14	-	-	-	-	-	-	7.988	7.870	7.898	-	-	-
15	-	-	-	-	-	-	7.979	7.869	7.911	-	-	-
16	-	-	-	-	-	-	7.971	7.873	7.904	-	-	-
17	-	-	-	-	-	-	7.967	7.881	7.872	-	-	-
18	-	-	-	-	-	8.191	7.963	7.882	7.887	-	-	-
19	-	-	-	-	-	8.158	7.959	7.882	-	-	-	-
20	-	-	-	-	-	8.146	7.954	7.881	-	-	-	-
21	-	-	-	-	-	8.142	7.951	7.878	-	-	-	-
22	-	-	-	-	-	8.134	7.946	7.878	-	-	-	-
23	-	-	-	-	-	8.130	7.937	7.879	-	-	-	-
24	-	-	-	-	-	8.119	7.932	7.880	-	-	-	-
25	-	-	-	-	-	8.109	7.928	7.867	-	-	-	-
26	-	-	-	-	-	8.099	7.924	7.869	-	-	-	-
27	-	-	-	-	-	8.093	7.921	7.893	-	-	-	-
28	-	-	-	-	-	8.085	7.917	7.900	-	-	-	-
29	-	-	-	-	-	8.079	7.912	7.887	-	-	-	-
30	-	-	-	-	-	8.071	7.915	7.882	-	-	-	-
31	-	-	-	-	-	-	7.915	7.887	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**8.071**	**7.912**	**7.867**	**7.872**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**8.120**	**7.976**	**7.885**	**7.896**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**8.266**	**8.064**	**7.909**	**7.911**	**-**	**-**	**-**

Table A2-70: 2008 Lake B7 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.016	0.005	0.006	-	-	-
2	-	-	-	-	-	-	0.015	0.005	0.007	-	-	-
3	-	-	-	-	-	-	0.014	0.005	0.007	-	-	-
4	-	-	-	-	-	-	0.013	0.005	0.007	-	-	-
5	-	-	-	-	-	-	0.012	0.005	0.007	-	-	-
6	-	-	-	-	-	-	0.011	0.005	0.006	-	-	-
7	-	-	-	-	-	-	0.011	0.004	0.006	-	-	-
8	-	-	-	-	-	-	0.010	0.004	0.006	-	-	-
9	-	-	-	-	-	-	0.010	0.004	0.006	-	-	-
10	-	-	-	-	-	-	0.009	0.004	0.006	-	-	-
11	-	-	-	-	-	-	0.008	0.004	0.006	-	-	-
12	-	-	-	-	-	-	0.008	0.004	0.006	-	-	-
13	-	-	-	-	-	-	0.007	0.004	0.006	-	-	-
14	-	-	-	-	-	-	0.007	0.004	0.006	-	-	-
15	-	-	-	-	-	-	0.006	0.005	0.006	-	-	-
16	-	-	-	-	-	0.033	0.006	0.005	0.005	-	-	-
17	-	-	-	-	-	0.032	0.006	0.005	-	-	-	-
18	-	-	-	-	-	0.030	0.006	0.005	-	-	-	-
19	-	-	-	-	-	0.029	0.006	0.005	-	-	-	-
20	-	-	-	-	-	0.027	0.005	0.004	-	-	-	-
21	-	-	-	-	-	0.026	0.005	0.004	-	-	-	-
22	-	-	-	-	-	0.024	0.004	0.004	-	-	-	-
23	-	-	-	-	-	0.023	0.004	0.004	-	-	-	-
24	-	-	-	-	-	0.022	0.004	0.004	-	-	-	-
25	-	-	-	-	-	0.021	0.005	0.004	-	-	-	-
26	-	-	-	-	-	0.020	0.005	0.004	-	-	-	-
27	-	-	-	-	-	0.019	0.005	0.004	-	-	-	-
28	-	-	-	-	-	0.019	0.004	0.004	-	-	-	-
29	-	-	-	-	-	0.018	0.005	0.005	-	-	-	-
30	-	-	-	-	-	0.017	0.005	0.005	-	-	-	-
31	-	-	-	-	-	-	0.005	0.006	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.017**	**0.004**	**0.004**	**0.005**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.024**	**0.008**	**0.004**	**0.006**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.033**	**0.016**	**0.006**	**0.007**	**-**	**-**	**-**

Table A2-71: 2008 Lake B7 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	98.069	98.034	98.119	-	-	-
2	-	-	-	-	-	-	98.067	98.034	98.128	-	-	-
3	-	-	-	-	-	-	98.067	98.033	98.130	-	-	-
4	-	-	-	-	-	-	98.066	98.036	98.126	-	-	-
5	-	-	-	-	-	-	98.064	98.039	98.123	-	-	-
6	-	-	-	-	-	-	98.060	98.041	98.122	-	-	-
7	-	-	-	-	-	-	98.058	98.039	98.116	-	-	-
8	-	-	-	-	-	-	98.057	98.034	98.114	-	-	-
9	-	-	-	-	-	-	98.055	98.033	98.113	-	-	-
10	-	-	-	-	-	-	98.051	98.032	98.113	-	-	-
11	-	-	-	-	-	-	98.045	98.031	98.113	-	-	-
12	-	-	-	-	-	-	98.041	98.031	98.111	-	-	-
13	-	-	-	-	-	-	98.037	98.032	98.111	-	-	-
14	-	-	-	-	-	-	98.035	98.032	98.112	-	-	-
15	-	-	-	-	-	98.131	98.037	98.049	98.114	-	-	-
16	-	-	-	-	-	98.123	98.033	98.053	98.110	-	-	-
17	-	-	-	-	-	98.117	98.034	98.059	-	-	-	-
18	-	-	-	-	-	98.110	98.036	98.062	-	-	-	-
19	-	-	-	-	-	98.103	98.032	98.064	-	-	-	-
20	-	-	-	-	-	98.099	98.025	98.063	-	-	-	-
21	-	-	-	-	-	98.094	98.018	98.060	-	-	-	-
22	-	-	-	-	-	98.089	98.015	98.059	-	-	-	-
23	-	-	-	-	-	98.086	98.017	98.058	-	-	-	-
24	-	-	-	-	-	98.083	98.014	98.057	-	-	-	-
25	-	-	-	-	-	98.078	98.019	98.055	-	-	-	-
26	-	-	-	-	-	98.076	98.026	98.053	-	-	-	-
27	-	-	-	-	-	98.076	98.028	98.051	-	-	-	-
28	-	-	-	-	-	98.075	98.023	98.068	-	-	-	-
29	-	-	-	-	-	98.073	98.030	98.077	-	-	-	-
30	-	-	-	-	-	98.069	98.037	98.081	-	-	-	-
31	-	-	-	-	-	-	98.036	98.102	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**98.069**	**98.014**	**98.031**	**98.110**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**98.093**	**98.040**	**98.050**	**98.117**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**98.131**	**98.069**	**98.102**	**98.130**	**-**	**-**	**-**

A2 - 15.0 LAKE D5 AND OUTFLOW

Hydrometric data were measured during the open water seasons of 1997 and 1998. Mean daily water levels and mean daily discharges at Lake D5 are presented in Tables A2-72 to A2-75.

Table A2-72: 1997 Lake D5 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.099	0.002	0.000	-	-	-
2	-	-	-	-	-	-	0.092	0.002	0.000	-	-	-
3	-	-	-	-	-	-	0.084	0.002	0.000	-	-	-
4	-	-	-	-	-	-	0.081	0.002	0.000	-	-	-
5	-	-	-	-	-	-	0.076	0.002	0.000	-	-	-
6	-	-	-	-	-	-	0.071	0.001	0.000	-	-	-
7	-	-	-	-	-	-	0.068	0.001	0.000	-	-	-
8	-	-	-	-	-	-	0.064	0.001	0.000	-	-	-
9	-	-	-	-	-	-	0.065	0.001	0.000	-	-	-
10	-	-	-	-	-	-	0.061	0.001	0.000	-	-	-
11	-	-	-	-	-	0.100	0.057	0.001	0.000	-	-	-
12	-	-	-	-	-	-	0.052	0.000	0.000	-	-	-
13	-	-	-	-	-	-	0.033	0.000	0.000	-	-	-
14	-	-	-	-	-	-	0.028	0.000	0.000	-	-	-
15	-	-	-	-	-	-	0.026	0.000	0.000	-	-	-
16	-	-	-	-	-	-	0.027	0.000	0.000	-	-	-
17	-	-	-	-	-	-	0.027	0.000	0.000	-	-	-
18	-	-	-	-	-	-	0.024	0.000	0.000	-	-	-
19	-	-	-	-	-	-	0.022	0.000	0.000	-	-	-
20	-	-	-	-	-	-	0.018	0.000	0.000	-	-	-
21	-	-	-	-	-	0.058	0.017	0.000	0.000	-	-	-
22	-	-	-	-	-	0.055	0.017	0.000	0.000	-	-	-
23	-	-	-	-	-	0.057	0.015	0.000	0.000	-	-	-
24	-	-	-	-	-	0.063	0.011	0.000	0.000	-	-	-
25	-	-	-	-	-	0.063	0.010	0.000	0.000	-	-	-
26	-	-	-	-	-	0.064	0.009	0.000	-	-	-	-
27	-	-	-	-	-	0.070	0.008	0.000	-	-	-	-
28	-	-	-	-	-	0.076	0.007	0.000	-	-	-	-
29	-	-	-	-	-	0.093	0.006	0.000	-	-	-	-
30	-	-	-	-	-	0.104	0.005	0.000	-	-	-	-
31	-	-	-	-	-	-	0.003	0.000	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**-**	**0.003**	**0.000**	**0.000**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**-**	**0.038**	**0.001**	**0.000**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**-**	**0.099**	**0.002**	**0.000**	**-**	**-**	**-**

Table A2-73: 1997 Lake D5 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	8.198	8.060	7.982	-	-	-
2	-	-	-	-	-	-	8.195	8.055	7.982	-	-	-
3	-	-	-	-	-	-	8.190	8.051	7.980	-	-	-
4	-	-	-	-	-	-	8.188	8.049	7.989	-	-	-
5	-	-	-	-	-	-	8.185	8.049	7.996	-	-	-
6	-	-	-	-	-	-	8.182	8.041	7.996	-	-	-
7	-	-	-	-	-	-	8.181	8.038	7.994	-	-	-
8	-	-	-	-	-	-	8.177	8.035	7.991	-	-	-
9	-	-	-	-	-	-	8.178	8.032	7.991	-	-	-
10	-	-	-	-	-	-	8.175	8.027	7.991	-	-	-
11	-	-	-	-	-	8.212	8.172	8.024	7.990	-	-	-
12	-	-	-	-	-	-	8.168	8.020	7.989	-	-	-
13	-	-	-	-	-	-	8.148	8.017	7.983	-	-	-
14	-	-	-	-	-	-	8.142	8.014	7.983	-	-	-
15	-	-	-	-	-	-	8.139	8.012	7.983	-	-	-
16	-	-	-	-	-	-	8.140	8.010	7.979	-	-	-
17	-	-	-	-	-	-	8.140	8.008	7.968	-	-	-
18	-	-	-	-	-	-	8.136	8.006	7.974	-	-	-
19	-	-	-	-	-	-	8.132	8.004	7.974	-	-	-
20	-	-	-	-	-	-	8.124	8.003	7.972	-	-	-
21	-	-	-	-	-	8.173	8.122	8.000	7.972	-	-	-
22	-	-	-	-	-	8.171	8.122	7.992	7.970	-	-	-
23	-	-	-	-	-	8.172	8.117	7.998	7.968	-	-	-
24	-	-	-	-	-	8.177	8.106	7.995	7.957	-	-	-
25	-	-	-	-	-	8.177	8.103	7.995	7.975	-	-	-
26	-	-	-	-	-	8.177	8.101	7.993	-	-	-	-
27	-	-	-	-	-	8.182	8.098	7.992	-	-	-	-
28	-	-	-	-	-	8.185	8.092	7.993	-	-	-	-
29	-	-	-	-	-	8.195	8.087	7.989	-	-	-	-
30	-	-	-	-	-	8.201	8.083	7.988	-	-	-	-
31	-	-	-	-	-	-	8.069	7.987	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**8.171**	**8.069**	**7.987**	**7.957**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**8.181**	**8.142**	**8.015**	**7.981**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**8.201**	**8.198**	**8.060**	**7.996**	**-**	**-**	**-**

Table A2-74: 1998 Lake D5 Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.018	0.000	0.000	-	-	-
2	-	-	-	-	-	-	0.016	0.000	0.000	-	-	-
3	-	-	-	-	-	-	0.016	0.000	0.000	-	-	-
4	-	-	-	-	-	-	0.014	0.000	0.001	-	-	-
5	-	-	-	-	-	-	0.013	0.000	0.001	-	-	-
6	-	-	-	-	-	0.408	0.011	0.000	0.001	-	-	-
7	-	-	-	-	-	0.590	0.011	0.000	0.002	-	-	-
8	-	-	-	-	-	0.600	0.010	0.000	0.002	-	-	-
9	-	-	-	-	-	0.416	0.008	0.000	0.004	-	-	-
10	-	-	-	-	-	0.363	0.007	0.000	0.005	-	-	-
11	-	-	-	-	-	0.165	0.006	0.000	0.006	-	-	-
12	-	-	-	-	-	0.044	0.004	0.000	0.008	-	-	-
13	-	-	-	-	-	0.049	0.003	0.000	0.009	-	-	-
14	-	-	-	-	-	0.050	0.003	0.000	0.017	-	-	-
15	-	-	-	-	-	0.050	0.004	0.000	0.031	-	-	-
16	-	-	-	-	-	0.052	0.005	0.000	0.042	-	-	-
17	-	-	-	-	-	0.055	0.005	0.000	0.044	-	-	-
18	-	-	-	-	-	0.057	0.005	0.000	0.044	-	-	-
19	-	-	-	-	-	0.050	0.005	0.000	0.044	-	-	-
20	-	-	-	-	-	0.045	0.004	0.000	0.046	-	-	-
21	-	-	-	-	-	0.041	0.003	0.000	0.050	-	-	-
22	-	-	-	-	-	0.038	0.003	0.000	0.053	-	-	-
23	-	-	-	-	-	0.037	0.002	0.000	0.056	-	-	-
24	-	-	-	-	-	0.034	0.001	0.000	-	-	-	-
25	-	-	-	-	-	0.030	0.001	0.000	-	-	-	-
26	-	-	-	-	-	0.027	0.001	0.000	-	-	-	-
27	-	-	-	-	-	0.025	0.001	0.000	-	-	-	-
28	-	-	-	-	-	0.023	0.001	0.000	-	-	-	-
29	-	-	-	-	-	0.021	0.001	0.000	-	-	-	-
30	-	-	-	-	-	0.020	0.000	0.000	-	-	-	-
31	-	-	-	-	-	-	0.000	0.000	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**0.020**	**0.000**	**0.000**	**0.000**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**0.132**	**0.006**	**0.000**	**0.020**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**0.600**	**0.018**	**0.000**	**0.056**	**-**	**-**	**-**

Table A2-75: 1998 Lake D5 Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	8.131	8.089	8.074	-	-	-
2	-	-	-	-	-	-	8.129	8.083	8.078	-	-	-
3	-	-	-	-	-	-	8.129	8.077	8.078	-	-	-
4	-	-	-	-	-	-	8.127	8.073	8.078	-	-	-
5	-	-	-	-	-	-	8.124	8.071	8.081	-	-	-
6	-	-	-	-	-	8.298	8.123	8.065	8.083	-	-	-
7	-	-	-	-	-	8.319	8.122	8.083	8.083	-	-	-
8	-	-	-	-	-	8.316	8.120	8.091	8.083	-	-	-
9	-	-	-	-	-	8.286	8.116	8.092	8.087	-	-	-
10	-	-	-	-	-	8.272	8.113	8.089	8.090	-	-	-
11	-	-	-	-	-	8.203	8.109	8.084	8.090	-	-	-
12	-	-	-	-	-	8.151	8.104	8.087	8.089	-	-	-
13	-	-	-	-	-	8.156	8.097	8.083	8.088	-	-	-
14	-	-	-	-	-	8.157	8.100	8.079	8.101	-	-	-
15	-	-	-	-	-	8.157	8.112	8.075	8.120	-	-	-
16	-	-	-	-	-	8.159	8.119	8.072	8.125	-	-	-
17	-	-	-	-	-	8.161	8.125	8.070	8.120	-	-	-
18	-	-	-	-	-	8.163	8.129	8.068	8.113	-	-	-
19	-	-	-	-	-	8.158	8.128	8.066	8.105	-	-	-
20	-	-	-	-	-	8.155	8.126	8.066	8.100	-	-	-
21	-	-	-	-	-	8.152	8.121	8.061	8.096	-	-	-
22	-	-	-	-	-	8.150	8.120	8.059	8.092	-	-	-
23	-	-	-	-	-	8.150	8.116	8.058	8.089	-	-	-
24	-	-	-	-	-	8.148	8.111	8.056	-	-	-	-
25	-	-	-	-	-	8.144	8.105	8.052	-	-	-	-
26	-	-	-	-	-	8.142	8.101	8.053	-	-	-	-
27	-	-	-	-	-	8.139	8.109	8.052	-	-	-	-
28	-	-	-	-	-	8.138	8.106	8.050	-	-	-	-
29	-	-	-	-	-	8.136	8.102	8.056	-	-	-	-
30	-	-	-	-	-	8.135	8.097	8.058	-	-	-	-
31	-	-	-	-	-	-	8.093	8.060	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**8.135**	**8.093**	**8.050**	**8.074**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**8.182**	**8.115**	**8.070**	**8.093**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**8.319**	**8.131**	**8.092**	**8.125**	**-**	**-**	**-**

A2 - 16.0 CONTROL LAKE AND OUTFLOW

Hydrometric data were measured during the open water season of 1997. Mean daily water levels and mean daily discharges at Control Lake for 1997 season are presented in Tables A2-76 and A2-77.

Table A2-76: 1997 Control Lake Mean Daily Discharge (m^3/s)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	0.006	0.000	0.000	-	-	-
2	-	-	-	-	-	-	0.005	0.000	0.000	-	-	-
3	-	-	-	-	-	-	0.002	0.000	0.000	-	-	-
4	-	-	-	-	-	-	0.003	0.000	0.000	-	-	-
5	-	-	-	-	-	-	0.001	0.000	0.000	-	-	-
6	-	-	-	-	-	-	0.001	0.000	0.000	-	-	-
7	-	-	-	-	-	-	0.001	0.000	0.000	-	-	-
8	-	-	-	-	-	-	0.001	0.000	0.000	-	-	-
9	-	-	-	-	-	-	0.001	0.000	0.000	-	-	-
10	-	-	-	-	-	-	0.001	0.000	0.000	-	-	-
11	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-
12	-	-	-	-	-	0.007	0.000	0.000	0.000	-	-	-
13	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-
14	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-
15	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-
16	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-
17	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-
18	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-
19	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-
20	-	-	-	-	-	-	0.000	0.000	0.000	-	-	-
21	-	-	-	-	-	0.003	0.000	0.000	0.000	-	-	-
22	-	-	-	-	-	0.003	0.000	0.000	0.000	-	-	-
23	-	-	-	-	-	0.002	0.000	0.000	0.000	-	-	-
24	-	-	-	-	-	0.003	0.000	0.000	0.000	-	-	-
25	-	-	-	-	-	0.002	0.000	0.000	-	-	-	-
26	-	-	-	-	-	0.002	0.000	0.000	-	-	-	-
27	-	-	-	-	-	0.003	0.000	0.000	-	-	-	-
28	-	-	-	-	-	0.004	0.000	0.000	-	-	-	-
29	-	-	-	-	-	0.007	0.000	0.000	-	-	-	-
30	-	-	-	-	-	0.007	0.000	0.000	-	-	-	-
31	-	-	-	-	-	-	0.000	0.000	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**-**	**0.000**	**0.000**	**0.000**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**-**	**0.001**	**0.000**	**0.000**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**-**	**0.006**	**0.000**	**0.000**	**-**	**-**	**-**

Table A2-77: 1997 Control Lake Mean Daily Water Levels (m)

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	7.330	7.216	7.149	-	-	-
2	-	-	-	-	-	-	7.327	7.212	7.146	-	-	-
3	-	-	-	-	-	-	7.319	7.208	7.146	-	-	-
4	-	-	-	-	-	-	7.321	7.205	7.153	-	-	-
5	-	-	-	-	-	-	7.317	7.205	7.156	-	-	-
6	-	-	-	-	-	-	7.315	7.202	7.156	-	-	-
7	-	-	-	-	-	-	7.315	7.200	7.156	-	-	-
8	-	-	-	-	-	-	7.316	7.196	7.156	-	-	-
9	-	-	-	-	-	-	7.317	7.191	7.155	-	-	-
10	-	-	-	-	-	-	7.314	7.188	7.153	-	-	-
11	-	-	-	-	-	-	7.312	7.184	7.153	-	-	-
12	-	-	-	-	-	7.347	7.308	7.182	7.153	-	-	-
13	-	-	-	-	-	-	7.303	7.180	7.152	-	-	-
14	-	-	-	-	-	-	7.295	7.178	7.150	-	-	-
15	-	-	-	-	-	-	7.292	7.176	7.149	-	-	-
16	-	-	-	-	-	-	7.288	7.175	7.149	-	-	-
17	-	-	-	-	-	-	7.284	7.173	7.150	-	-	-
18	-	-	-	-	-	-	7.280	7.171	7.147	-	-	-
19	-	-	-	-	-	-	7.276	7.171	7.143	-	-	-
20	-	-	-	-	-	-	7.270	7.169	7.142	-	-	-
21	-	-	-	-	-	7.323	7.269	7.166	7.143	-	-	-
22	-	-	-	-	-	7.321	7.271	7.163	7.142	-	-	-
23	-	-	-	-	-	7.317	7.269	7.163	7.142	-	-	-
24	-	-	-	-	-	7.322	7.266	7.165	7.039	-	-	-
25	-	-	-	-	-	7.319	7.261	7.162	-	-	-	-
26	-	-	-	-	-	7.318	7.257	7.158	-	-	-	-
27	-	-	-	-	-	7.322	7.253	7.156	-	-	-	-
28	-	-	-	-	-	7.325	7.248	7.156	-	-	-	-
29	-	-	-	-	-	7.334	7.242	7.155	-	-	-	-
30	-	-	-	-	-	7.333	7.232	7.157	-	-	-	-
31	-	-	-	-	-	-	7.223	7.154	-	-	-	-
Minimum	**-**	**-**	**-**	**-**	**-**	**7.317**	**7.223**	**7.154**	**7.039**	**-**	**-**	**-**
Mean	**-**	**-**	**-**	**-**	**-**	**7.324**	**7.287**	**7.179**	**7.145**	**-**	**-**	**-**
Maximum	**-**	**-**	**-**	**-**	**-**	**7.334**	**7.330**	**7.216**	**7.156**	**-**	**-**	**-**

A2 - 17.0 LAKE A54 AND OUTFLOW

Hydrometric data were measured during the open water season of 2008. Instantaneous water levels were measured during each visit at Peanut Lake and are presented in Table A2-78. No discharges were observed at the lake outlet during site visits.

Table A2-78: Peanut Lake Water Level Observations based on Benchmark Elevation 100.000 m

Date	Water Level (m)	Discharge
11-Jul-2008	99.354	No discharge
1-Aug-2008	99.309	No discharge
16-Sep-2008	99.310	No discharge

A2 - 18.0 LAKE A8 AND OUTFLOW

Hydrometric data were measured during the open water season of 2008. Instantaneous water levels and discharges were measured during each visit at Pump Lake and are presented in Table A2-79.

Table A2-79: Pump Lake Water Level Observations based on Benchmark Elevation 100.000 m

Date	Water Level (m)	Discharge (m^3/s)
11-Jul-2008	99.354	0.001
1-Aug-2008	99.309	<0.001
16-Sep-2008	99.310	<0.001

A3 - 1.0 INTRODUCTION

To assess mean characteristics and natural variability of discharges and water levels at lake outlets at the Comaplex Project area, a water balance model was developed. The model setup and calibration are described in this appendix.

The water balance model was set up using GoldSim™ software (GoldSim 2009) on a daily time step for the period of 1982 to 2009. This time period was selected to allow use of the climate data derived for the site based on long-term data from the Environment Canada Rankin Inlet A climate station. While data are available starting in 1981 at the climate station, the model is comprised of a snowmelt sub-model that runs on a hydrological year basis, which would require that the data set start in October 1980 to run the model starting from 1981. The basic water balance for each sub-watershed considered rainfall and snowmelt runoff, changes in lake storage, lake evaporation and outlet to downstream watersheds.

The model was calibrated using runoff coefficients for land surfaces, lake outlet stage-discharge rating curves, and degree-day models for snowmelt and spring ice melt in outlet channels. These parameters were selected to calibrate the model using site-specific climate and hydrology data collected in 1999. Site specific data from 2000 and 2009 were used to validate the results.

The calibrated model was used to generate a daily time series of flows for Lake A1 in the A watershed, Lake B2, and Lake B7 in the B watershed, and Chicken Head Lake in the Chicken Head watershed. Frequency analyses were performed on these data sets to define key discharge parameters.

A3 - 2.0 MODEL STRUCTURE

Each lake was modeled as a reservoir as described in the schematic diagram shown on Figure A3-1. Inflows in the reservoir consisted of rainfall and snowfall, separated into land and lake components to account for runoff losses, and outflows consisted of evaporation and lake outlet. Lake storage is also considered in the model. A key assumption of the model is that losses to deep percolation and changes to groundwater storage are not significant. This is based on the northern location and permafrost conditions at the Project.

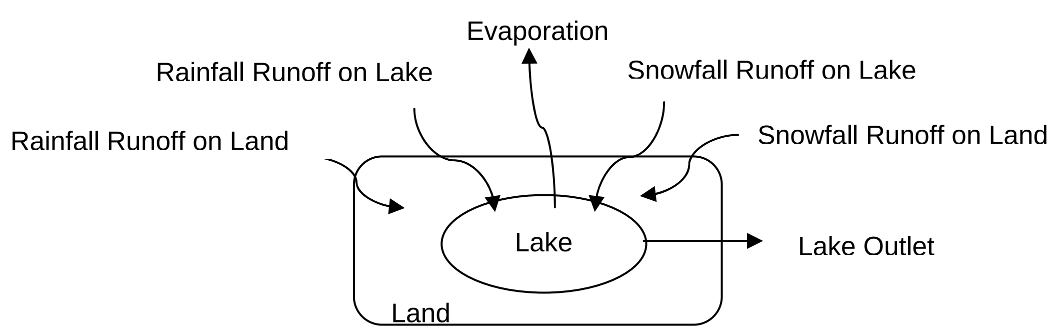


Figure A3-1: Schematic Diagram for Typical Watersheds in the Model

Inflows and outlets were calculated according to the input data and methods described on Figure A3-2.

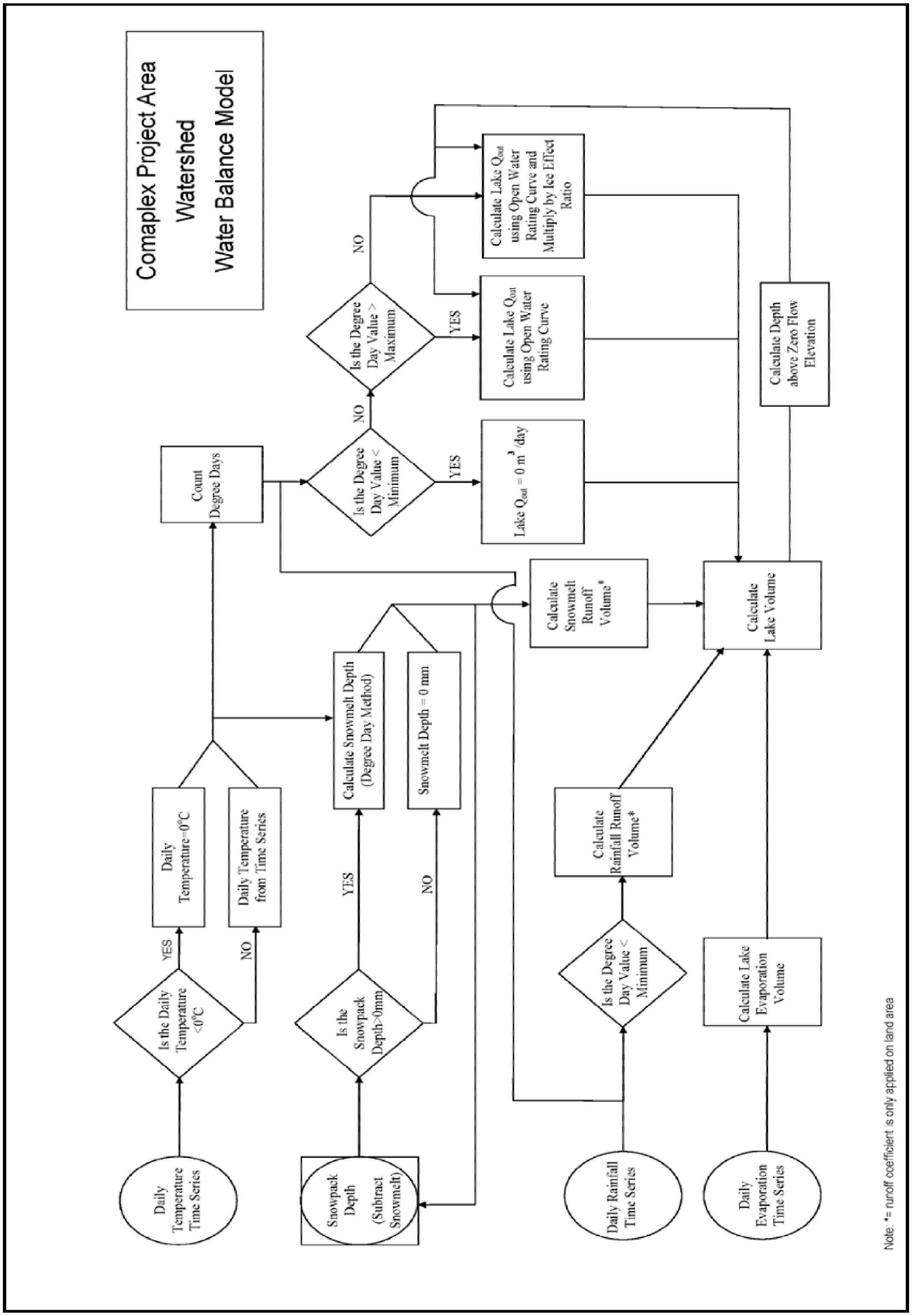


Figure A3-2: Watershed Water Balance Model Structure

A3 - 2.1 Model Components

A3 - 2.1.1 Lake Evaporation

Evaporation of water from lakes, ponds, and other open water surfaces is one of the primary mechanisms for moisture loss from a watershed. Evaporation is influenced by air and water temperatures, solar radiation, relative humidity, and wind. Evaporation from waterbodies is difficult to measure directly. It is typically estimated by using a local evaporation pan measurement and applying a coefficient (the "pan" coefficient), or by using energy budget relationships and computations based on the net energy input to the evaporation process. The modeling approach used was to derive a net lake evaporation time series based on locally collected data.

A3 - 2.1.1.1 Meteorological Data

Local gross lake evaporation data were available from June to September in 1997 to 1999 and from July to September in 2000. During each field program performed in those years, data were collected on a daily basis when possible.

A3 - 2.1.1.2 Method

Gross lake evaporation data were compiled for all years and averaged on a monthly basis for the summer months of June to September, as shown in Table A3-1. A daily time series was developed by dividing the resulting values by the number of days per month for the months of July and August. It was assumed that the gross lake evaporation was null at the start of June and at the end of September. This was dealt with by linearly increasing the evaporation value from 0 to a value that remained constant from 15 June to 30 June. The same was performed for September with a linear decrease.

Table A3-1: Gross Lake Evaporation (mm), 1997 to 2000

Year	Month				
	June	**July**	**August**	**September**	**Annual**
1997	46.9	142	97.3	41.3	328
1998	76.9	113	96.5	34.9	322
1999	81.3	110	89.8	44.6	326
2000	36.2	132	98.8	49.9	317
Mean	**60.4**	**124**	**95.6**	**42.7**	**323**

A3 - 2.1.1.3 Results and Discussion

The derived daily gross lake evaporation is shown in Figure A3-3 below.

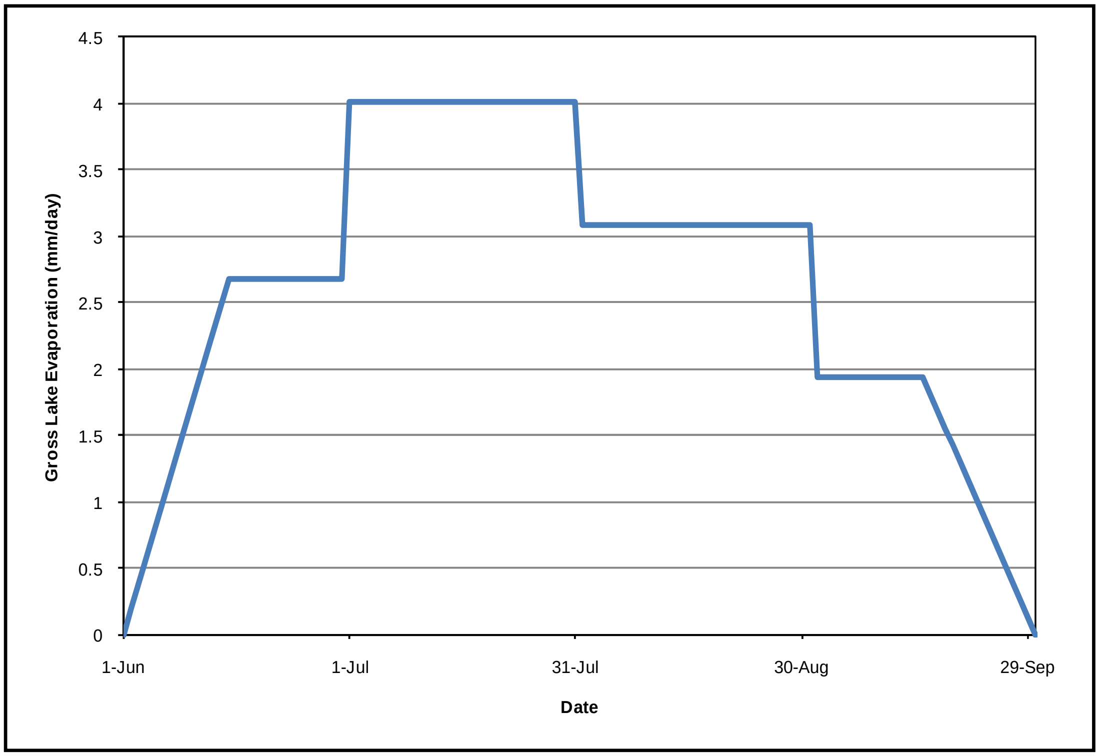


Figure A3-3: Derived Daily Gross Lake Evaporation

As discussed in Section 4.1.4.1 in the main report, it is likely that the mean annual lake evaporation value of 323 mm derived from local data for the period of 1997 to 2000 may be slightly greater than the actual long-term lake evaporation value at the Project area. However, due to the proportion of lake to land area, losses to lake evaporation are significantly low and have little effect on the model sensitivity. It is hence thought that for the purpose of this model, this estimate for lake evaporation, based on all available local data, is applicable.

This time series was applied for all modeled years, from 1982 to 2009.

A3 - 2.1.2 Lake Outlet Melt Period

During the end of May and the beginning of June, as temperatures rise above freezing and the cumulative degree-days increase, frozen lake outlets thaw and water begins to flow. During the early portion of the snowmelt season, ice effects have been observed to reduce the discharge to some factor (<1) of the discharge that would be observed under ice-free conditions. The modeling approach was to examine the relationship between lake outlet discharge and cumulative degree days, with the objective of defining a relationship to account for ice effects in the melt period in hydrological modeling.

A3 - 2.1.2.1 Hydrometric and Meteorological Data

Observations in the A and B watersheds were available in the outlet opening periods in 1999, 2000, and 2009 at Lake A1, Lake B2 and Lake B7. At the start of each open water season, lake outlets were visited to install hydrometric stations during the outlet opening period. Discharges were measured, where present, and ice conditions were recorded. Hydrographs are also available for these years at these stations.