

Appendix I

Appendix I
List of Tables Graphs

Table 1	Description of Effluent, In-Mine Releases & Receiving Environment Monitoring Sites
Table 2	Summary of Permit Limit Exceedances & Permit Non-Compliances- Q2 2018
Table 3	Summary of Water Quality Guideline Observations at Receiving Monitoring Locations - Q2 2018
	North Mine - Weekly / Monthly In-Mine Releases Surface Water Quality Monitoring
Table 4	Settling Pond #4 Permitted Decant for the North Mining Operation (WD)
Table 5	2-North Pit Sump CCR Water Cover (WP)
Table 6	2-North Portal Sump Effluent (2NPS)
Table 7	Culvert, at Middle Quinsam Lake Road (WC)
Table 8	South Dyke Sump (SDS)
	Seep Monitoring North Mine Operation
Table 9	Groundwater / Surface Water from 2N Area at Road (PDSR)
	South Mine - Weekly / Monthly In-Mine Releases Surface Water Quality Monitoring
Table 10	Settling Pond # 1 - Permitted Decant for South Mining Operation (SPD)
Table 11	Long Lake Seep Passive Treatment System (LLSTS), INF and SPCEFF
Table 12	Flow from Treatment System into 2 South pit (2SI)
Table 13	2 South Pit in Pit Water Cover - CCR Water Cover (2S)
Table 14	3 South Pit- South Pit Main Sump Water - CCR Water Cover (3S)
Table 15	3 South 77 Adit Pit- Exploration pit from 1977 (3S77)
Table 16	4 South Lower- Culvert Downstream of Access Road (4S-LO)

Appendix I
List of Tables Graphs

Table 17	South Pit Culvert- Culvert, downstream of Settling Pond #1 discharge (SPC)
Initial Zone of Dilution for South Mining Operation	
Table 18	Long Lake Entrance - Last wetland prior to entering Long Lake near the outlet - IDZ (LLE)
Seep Monitoring South Mine Operation	
Table 19	Seep into Long Lake (LLS) & Middle Seep into Long Lake (LLSM)
7-South Mining Area	
Table 20	7 South Surface Decant - Permitted discharge location for the 7-South Mining Operation (7SSD)
Table 21	Stream 1 - Downstream of the 7SSD discharge, prior to entering the Lower Wetland Outlet (IDZ) (7S)
Total Suspended Solid Results From Settling Ponds	
Table 22	Settling Pond # 4 - Daily Total Suspended Solid Results (WD)
Table 23	Settling Pond # 1 - Total Suspended Solid Results (SPD)
Table 24	7-South Surface Decant - Total Suspended Solid Results (7SSD)
Discharge from Settling Ponds - Water Quantity & 7S Dilution Ratio	
Table 25	Discharge from Settling Pond # 4
Table 26	Discharge from Settling Pond # 1
Table 27	Discharge from 7-South Surface Decant
Table 28	Dilution Ratio: 7S vs 7SSD Discharge
Weekly Sulphate Results & Rolling Averages	
Table 29	Weekly / Monthly Sulphate Results at WD, SPD, SPEFF & BDS

Appendix I
List of Tables Graphs

Table 30	Weekly Sulphate Results & Rolling Averages at LLE & LLO
Table 31	Biweekly and Weekly TSS Results From WC, SPC, SPEFF and BDS
	Weekly Field Conductivity (us/cm) & pH Measurements
Table 32	Field Conductivity (us/cm) & pH (North Mine Area & 7-South)
Table 33	Field Conductivity (us/cm) & pH (South Mine Area)
Table 34	Field Conductivity (us/cm) & pH (Rivers & Wetland)
	Precipitation Results (mm)
Table 35	Daily Precipitation (mm)
	Physical Water Quality from Lakes-Depth Profiling
Table 36	Lakes Depth Profiling
	Receiving Environment - Lakes -5 in 30 Water Quality Monitoring
Table 37	No Name Lake 1 Metre Depth - Summer (NNL1)
Table 38	No Name Lake 4 Metre Depth - Summer (NNL4)
Table 39	No Name Lake 9 Metre Depth - Summer (NNL9)
Table 40	No Name Lake 1 Metre from Bottom Depth - Summer (NNLB)
Table 41	Long Lake 1 Metre Depth - Summer (LLM1)
Table 42	Long Lake 4 Metre Depth - Summer (LLM4)
Table 43	Long Lake 9 Metre Depth - Summer (LLM9)
Table 44	Long Lake 1 Metre from Bottom Depth - Summer (LLMB)

Appendix I
List of Tables Graphs

Table 45	Middle Quinsam Lake 1 Metre Depth - Summer (MQL1)
Table 46	Middle Quinsam Lake 4 Metre Depth - Summer (MQL4)
Table 47	Middle Quinsam Lake 9 Metre Depth - Summer (MQL9)
Table 48	Middle Quinsam Lake 1 Metre from Bottom Depth - Summer (MQLB)
Table 49	Lower Quinsam Lake 1 Metre Depth - Summer (LQL1)
Table 50	Lower Quinsam Lake 4 Metre Depth - Summer (LQL4)
Table 51	Lower Quinsam Lake 9 Metre Depth - Summer (LQL9)
Table 52	Lower Quinsam Lake 1 Metre from Bottom Depth - Summer (LQLB)
Receiving Environment - Rivers -5 in 30 Water Quality Monitoring	
Table 53	Middle Quinsam Lake Inlet-Summer (WA)
Table 54	Middle Quinsam Lake Outlet - Summer (WB)
Table 55	Long Lake Outlet - Summer (LLO)
Table 56	No Name Lake Outlet - Summer (NNO)
Receiving Environment - Rivers -5 in 30 & Monthly Water Quality Monitoring	
Table 57	Quinsam River Upstream of 7 South Mining Operation - Summer (QRDS1)
Table 58	Lower Wetland Outlet at the Confluence of the Quinsam River- Summer (LWO)
Table 59	Quinsam River Downstream of 7 South Mine Operation - Summer (7SQR)
Table 60	Iron River Upstream of Mining Operations -Summer (IR1)
Table 61	Iron River Upstream of Proposed 7SA5 & Upstream of Reclaimed 242 Mine - Summer (IR6)

Appendix I
List of Tables Graphs

Table 62	Iron River Downstream of Proposed 7SA5 & Reclaimed 242 Mine - Summer (IR8)
Table 63	Quinsam River Downstream of the Confluence with Iron River - Summer (IRQR)
Biological Data	
Table 64	Zooplankton Results
Groundwater	
Table 65	Ex-situ Groundwater
Table 66	In-situ Groundwater
2 South Pit Inflow and Outflow Data	
Table 67	2S Inflow
Table 68	2S Outflow Culvert into 3S Pit
Table 69	Staff Guage and Level Readings
Charts Flow Data	
Graph 1	Levle vs Discharge - WA
Graph 2	Flow vs precipitation - WB
Graph 3	Discharge vs precipitation - LLE
Graph 4	Flow vs precipitation - LLO
Graph 5	Flow vs precipitation - IR8
Graph 6	Daily Precipitation

Table 1
Q2 Report 2018

	A	B	C	D
1	Description of Effluent, In-Mine Releases & Receiving Environment Monitoring Sites			
2	EMS ID #	Monitoring Sites	Abbreviation (Station Code)	*Type of Water (MW, FW or GW)
3	North Coal Mining Operation			
4	E207409	Settling Pond #4 Decant	WD	Discharge (MW)
5	E207411	Culvert, at Middle Quinsam Lake Road	WC	MW & FW
6	E283433	2-North Portal Sump (Adit Sump)	2NPS	MW
7	E207412	2-North Pit Sump CCR Cover	WP	PAG-CCR Water Cover - MW
8	E292126	South Dyke Sump	SDS	MW
9	South Coal Mine			
10	E218582	Settling Pond #1 Decant	SPD	Discharge (MW)
11	E217014	Culvert, Downstream End at Access Road	SPC	MW & FW
12	E217015	South Pit Main Sump Water	3S	PAG-CCR Water Cover (MW & FW)
13	E292127	2-South Pit In Pit Water Cover (2-South Standpipe)	2S	PAG-CCR Water Cover (MW & FW)
14	E292128	1977 Bulk Sample Pit	3S77	MW & FW
15	E292129	Culvert Downstream of 4 South Access Road	4S-Lo	MW & FW
16	7-South Mining Operation			
17	E292069	7-South Surface Decant	7SSD	Discharge (MW & FW)
18	E292110	7-South Adit Sump	7SPS	MW
19	Seep Monitoring Sites			
20	E292131	Long Lake Seeps	LLS & LLSM	MW
21		Small seep near the plant (PDS) & groundwater surface near road entering MQL (PDSR)	PDS & PDSR	GW & MW
22	Receiving Environment Monitoring Sites - Initial Zone of Dilution (IDZ)			
23	Initial Dilution Zone (IDZ) Monitoring Sites			
24	E292130	Long Lake Entrance (South end water entering Long Lake)	LLE	IDZ
25	E292109	Road Crossing Bridge on Stream 1 above the Lower Wetland (Downstream of 7SSD).The site name is Stream 1, 7S.	7S	IDZ
26	Receiving Water (Streams & Lakes Monitoring Sites) 5 in 30 Monitoring Locations			
27	North Coal Mining Operation			
28	E0126402	Quinsam River at Argonaut Road	WA	FW
29	E206618	Middle Quinsam Lake Centre	MQL (1, 4, 9 & 1m from Bottom)	FW
30	E0900504	Outflow from Middle Quinsam Lake	WB	FW
31	South Coal Mine			
32	E217018	No Name Lake	NNL (1, 4, 9 & 1m from Bottom)	FW
33	E217017	No Name Lake Outlet	NNO	FW
34	E206619	Long Lake at Centre	LLM (1, 4, 9 & 1m from Bottom)	FW
35	E219412	Long Lake Outlet	LLO	FW
36	7-South Mining Operation (Areas 1 to 4)			
37	E286930	Quinsam River Upstream of 7-South Mining Operation	QRDS1	FW
38	E292113	Quinsam River Downstream of 7-South Mining Operation	7SQR	FW
39	E292112	Lower Wetland Outlet at the confluence of the Quinsam River	LWO	FW
40	E292118	Lower Quinsam Lake Centre	LQL (1, 4, 9 & 1m from Bottom)	FW
41	7-South (Proposed) Area 5 Mining Operation			
42	E297230	Iron River upstream of mining operations	IR1	FW
43	E297231	Iron River upstream of 7SA5	IR6	FW
44	E297232	Iron River downstream of 7SA5 and 242 inputs	IR8	FW
45	E299256	Quinsam River downstream of confluence with Iron River	IRQR	FW
46	E292118	Lower Quinsam Lake Centre	LQL (1, 4, 9 & 1m from Bottom)	FW
47	Block 242 Mining Operation (Reclaimed / Not Monitored)			
48	E225798	Iron River upstream of the 242 influence	Not Monitored	FW
49	E225808	Iron River downstream of the 242 influence	Not Monitored	FW
50	N/A	Old portal sump used for collection of water from underground	Reclaimed	FW / GW
51	Middle Point Barge Loading Facility PE: 17181			
52	E17181	Middle Point	MP	Surface runoff
53	Long Lake Seep Passive Treatment System			
54	N/A	Groundwater well (2-South Mine Pool) influent to the treatment system	QU11-11 (INF-EFF)	MW
55	N/A	Bio Cell Reactor	BCR-EFF	MW
56	N/A	Sulphide Polishing Cell	SPC-EFF	MW
57	N/A	Aeration Lagoon	AL-EFF	MW
58	N/A	Settling Pond Effluent	SP-EFF	Discharge MW
59	Authorization to Bypass the Works			
60	N/A	Sampling location 35 m downstream of discharge from the treatment system (SP-EFF) and Settling Pond #1. Discharge is compared to SPD permit limits.	BDS	Discharge MW
61	* MW= Mine Water, FW= Freshwater, GW =Groundwater IDZ = Intial Dilution Zone			

Table 2
Q2 Report 2018

SUMMARY OF PERMIT LIMIT EXCEEDANCES & PERMIT NON-COMPLIANCES Q2 2018							
EMS ID & Site Name	Permit Limit Exceedance (P) or Non-Compliance (PNC)	Parameter Exceeded / Other	Result (mg/L)	Requirement	Date	Non-Compliance Reason	Number of events or period for PNC, P or spill event.
E218582-Settling Pond #1 (SPD)	PNC	Alkalinity and Acidity	No Results	Monthly	September 4th	Sample was collected but the Chain of custody did not request this test to be analyzed.	(1/3) Required monthly events.
E207409- Settling Pond # 4 (WD)	PNC	TSS	No Results	TSS daily composite if decant flow is greater than 0.054 m ³ /s.	July 30th, August 5th, 6th , 14th, 15th, 30th and 31st	Water level in the pond was extremely low during the day and only discharged during the day. The suction line was not low enough in the water for required sample voume to be collected.	(7/68) required daily composite samples were not collected.

Table 3
Q2 Report 2018

SUMMARY OF WATER QUALITY GUIDELINE OBSERVATIONS AT RECEIVING MONITORING LOCATIONS - Q2							
EMS ID & Site Name	Site Code & Depth	Parameter (mg/L or pH Units)	Guideline Limit	Result	Date	Guideline	Sampling Events Exceeding Guideline
E217018 - No Name Lake (NNL)	NNL 6-11.8 metres	pH	6.5	5.84 - 6.48	Juy 25th through August 23rd	Min	(23/55) Depths profiled during summer
E206619 - Long Lake Middle (LLM)	LLM 9M	SO4-D	128	142	Fall 5 in 30	A	Summer 5 in 30
	LLM 1MB			143			
E292118 - Lower Quinsam Lake (LQL)	LQLB (14- 16.6 metres)	pH	6.5	6.43 - 6.45	August 22nd	Min	(2/77) Depths profiled during summer
		Hypolimnetic DO	3	0.63 - 2.93	August 9th, 16th & 22nd	Min	6 occurances during summer
	LQL 1MB	Fe-D	0.35	0.442, 0.442,0.632 and 0.746	Juy 26th through August 22nd	Max	(4/5) weekly samples during summer
		Fe-T	1	1.17 and 1.35	August 17th and 22nd		(2/5) weekly samples during summer
E297231 - Iron River Upstream of 7SA5 (IR6)	IR6	As-T	0.005	0.0052, 0.00565 & 0.00746	August 1st, 7th and 14th	Max	(3/ 5) weekly samples during summer
E297232 - Iron River Downstream of 7SA5 (IR8)	IR8			0.00612, 0.00864 & 0.00961	July 24th, August 1st and 7th		(3/ 5) weekly samples during summer
E292131- Seeps into Long Lake (LLS & LLSM)	LLS	Fe-D	0.35	0.517, 0.526 & 0.373	July 4th, August 8th and September 6th	Max	Monthly samples collected during low flow
	LLSM			0.483	August 8th		Monthly sample collected during low flow
E292130 - Long Lake Entry (LLE)	LLE	SO4-D	128	398	5 in 30 rolling average (June 11th through July 9th)	A	(1/13) weekly rolling averages during Q2
		Fe-D	0.35	0.800	September 17th	Max	Collected during summer low flow once the culvert started flowing again
		Fe-T	1	1.93			
E219412 - Long lake Outlet (LLO)	LLO	Cu-T	0.002	0.00449	Summer 5 in 30	A	Sample collected from a standing pool by hydrometric station
			0.007	0.0204	August 7th	Max	
Min = Minimum Water Quality Guidline (WQG) M= Maximum WQG, A= Average WQG							
For all Middle Quinsam Lake Sub-basin and Iron River results background hardness of 30 mg/L was used to calculate those parameters that are hardness dependent.							
*SO4 at LLE was calculated using a rolling average.							
British Columbia Contaminated Sites Regulations – Freshwater Aquatic Life Schedule 6 (CSR-AW).							
Ex-Situ Groundwater wells Quarter 2	Parameter	(CSR-AW) (mg/L)	Result				
QU0821GS & D, QU1105S, QU1109S & QU0813A	As-D	0.005	0.289, 0.173, 0.0539, 0.115 and 0.411				
MW002	SO4-D	1000	1340 & 1280				
QU0821GS & D, QU1105S & D, QU1109S & QU0813A	H2SEquiv	0.02	0.0526, 0.0674, 0.126, 7.86, 0.44 & 0.126				

Table 4
Q2 Report 2018

EMS ID		E207409													
Site Description		Settling Pond #4		Permitted Decant for the North Mining Operation											
Site Name		WD													
Date		3-Jul-18	9-Jul-18	17-Jul-18	23-Jul-18	30-Jul-18	8-Aug-18	13-Aug-18	20-Aug-18	27-Aug-18	4-Sep-18	10-Sep-18	17-Sep-18	24-Sep-18	Permit Limit
Parameter	Unit	North													
SO4-D	mg/L	520	494	581	485	635	255	700	505	471	651	697	562	411	-
TSS	mg/L														25
Alk-T	mg/L	397					92				368				-
Acidity 8.3	mg/L	3.3					2.4				7.4				-
Al-T	mg/L						0.0								-
As-T	mg/L						0.00357								-
Ba-T	mg/L						0.0207								-
B-T	mg/L						0.319								-
Cd-T	mg/L						<0.000010								-
Ca-T	mg/L						106								-
Cr-T	mg/L						<0.0010								-
Co-T	mg/L						0.00048								-
Cu-T	mg/L						0.00065								-
Hard-T	mg/L						340								-
Fe-T	mg/L						0.347								-
Pb-T	mg/L						<0.00020								-
Mg-T	mg/L						18								-
Mn-T	mg/L						0.0757								-
Hg-T	mg/L						<0.0000020								-
Mo-T	mg/L						<0.0010								-
Ni-T	mg/L						0.0021								-
K-T	mg/L						2.27								-
S-T	mg/L						108								-
Se-T	mg/L						<0.00010								-
Si-T	mg/L						6.44								-
Ag-T	mg/L						<0.000020								-
Na-T	mg/L						25.9								-
Sr-T	mg/L						0.824								-
Zn-T	mg/L						<0.0050								-
Al-D	mg/L						0.0071								0.5
As-D	mg/L						0.00333								-
Ba-D	mg/L						0.0207								-
B-D	mg/L						0.319								-
Be-D	mg/L						<0.00010								-
Cd-D	mg/L						<0.0000050								-
Ca-D	mg/L						102								-
Cr-D	mg/L						<0.0010								-
Co-D	mg/L						0.00058								-
Cu-D	mg/L						0.00065								0.02
Hard-D	mg/L						333								-
Fe-D	mg/L						0.238								0.3
Pb-D	mg/L						<0.00020								0.05
Mg-D	mg/L						18.7								-
Mn-D	mg/L						0.0831								-
Hg-D	mg/L						<0.0000020								-
Mo-D	mg/L						<0.0010								-
Ni-D	mg/L						0.0024								-
K-D	mg/L						2.16								-
S-D	mg/L						98								-
Se-D	mg/L						<0.00010								-
Si-D	mg/L						5.38								-
Na-D	mg/L						26.4								-
Sr-D	mg/L						0.794								-
Zn-D	mg/L						<0.0050								0.1
O&G	mg/L						<5.0								10

Table 5
Q2 Report 2018

EMS ID		E207412		
Site Description		2-North Pit Sump (WP) CCR Water Cover		
Site Name		WP		
Date		3-Jul-18	8-Aug-18	4-Sep-18
Parameter	Unit			
SO4-D	mg/L	560	588	705
TSS	mg/L	18.8	<4.0	48.8
Alk-T	mg/L	268	237	290
Acidity83	mg/L	1.1	<1.0	3.3
Al-T	mg/L	0.0618	0.015	0.349
As-T	mg/L	0.00107	0.00077	0.00192
Ba-T	mg/L	0.0187	0.0188	0.0259
B-T	mg/L	0.804	0.961	1.04
Cd-T	mg/L	<0.000010	<0.000010	<0.000010
Ca-T	mg/L	92.9	79.1	133
Cr-T	mg/L	<0.0010	<0.0010	<0.0010
Co-T	mg/L	<0.00020	<0.00020	0.00087
Cu-T	mg/L	0.00081	0.00081	0.003
Hard-T	mg/L	296	263	400
Fe-T	mg/L	0.207	0.029	1.05
Pb-T	mg/L	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	15.5	16	16.6
Mn-T	mg/L	0.021	0.0039	0.0632
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020
Mo-T	mg/L	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	0.0011	<0.0010	0.0015
K-T	mg/L	3.56	3.83	4.75
S-T	mg/L	198	214	277
Se-T	mg/L	<0.00010	<0.00010	<0.00010
Si-T	mg/L	2.12	2.28	3.13
Ag-T	mg/L	<0.000020	<0.000020	<0.000020
Na-T	mg/L	271	293	307
Sr-T	mg/L	1.09	1.13	1.31
Zn-T	mg/L	<0.0050	<0.0050	<0.0050
Al-D	mg/L	0.0032	<0.015	<0.015
As-D	mg/L	0.00067	0.00064	0.00075
Ba-D	mg/L	0.0179	0.0184	0.0226
B-D	mg/L	0.826	1.04	1.09
Be-D	mg/L	<0.00010	<0.00050	<0.00050
Cd-D	mg/L	<0.0000050	<0.000025	<0.000025
Ca-D	mg/L	94.2	79.4	134
Cr-D	mg/L	<0.0010	<0.0050	<0.0050
Co-D	mg/L	<0.00020	<0.0010	<0.0010
Cu-D	mg/L	0.00049	<0.0010	<0.0010
Hard-D	mg/L	301	267	404
Fe-D	mg/L	0.0059	<0.025	0.034
Pb-D	mg/L	<0.00020	<0.0010	<0.0010
Mg-D	mg/L	15.9	16.6	16.8
Mn-D	mg/L	0.0026	<0.0050	0.0236
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020
Mo-D	mg/L	<0.0010	<0.0050	<0.0050
Ni-D	mg/L	<0.0010	<0.0050	<0.0050
K-D	mg/L	3.76	3.95	4.48
S-D	mg/L	199	208	238
Se-D	mg/L	<0.00010	<0.00050	<0.00050
Si-D	mg/L	2.35	2.25	2.21
Na-D	mg/L	278	307	312
Sr-D	mg/L	1.06	1.05	1.32
Zn-D	mg/L	<0.0050	<0.025	<0.025

Table 6
Q2 Report 2018

EMS ID		E283433		
Site Description		2-North Portal Sump Effluent		
Site Name		2NPS		
Date		10-Apr-18	8-May-18	4-Jun-18
Parameter	Unit			
SO4-D	mg/L	928	1090	1060
Alk-T	mg/L	266	252	308
Acidity83	mg/L	11.0	8.4	13.3
Al-T	mg/L	0.203	0.140	0.017
As-T	mg/L	0.00088	0.00063	0.00056
Ba-T	mg/L	0.0162	0.0142	0.0118
B-T	mg/L	0.674	0.75	0.86
Cd-T	mg/L	0.000032	<0.000050	<0.000050
Ca-T	mg/L	261	302	288
Cr-T	mg/L	<0.0010	<0.0050	<0.0050
Co-T	mg/L	0.00635	0.0017	<0.0010
Cu-T	mg/L	0.00224	<0.0025	<0.0025
Hard-T	mg/L	767	894	844
Fe-T	mg/L	0.628	0.341	0.165
Pb-T	mg/L	<0.00020	<0.0010	<0.0010
Mg-T	mg/L	27.7	34.1	30.6
Mn-T	mg/L	0.302	0.257	0.189
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020
Mo-T	mg/L	<0.0010	<0.0050	<0.0050
Ni-T	mg/L	0.0126	<0.0050	<0.0050
K-T	mg/L	3.70	4.24	4.02
S-T	mg/L	321	381	351
Se-T	mg/L	<0.00010	<0.00050	<0.00050
Si-T	mg/L	3.18	2.97	3.08
Ag-T	mg/L	<0.000020	<0.00010	<0.00010
Na-T	mg/L	200	223	223
Sr-T	mg/L	1.84	1.91	1.83
Zn-T	mg/L	0.0103	<0.025	<0.025
Al-D	mg/L	0.0079	<0.015	<0.015
As-D	mg/L	0.00053	<0.00050	0.00054
Ba-D	mg/L	0.0139	0.0133	0.0130
B-D	mg/L	0.651	0.71	0.86
Be-D	mg/L	<0.00010	<0.00050	<0.00050
Cd-D	mg/L	0.0000320	<0.000025	<0.000025
Ca-D	mg/L	254	277	317
Cr-D	mg/L	<0.0010	<0.0050	<0.0050
Co-D	mg/L	0.00671	0.0015	<0.0010
Cu-D	mg/L	0.00062	<0.0010	<0.0010
Hard-D	mg/L	748	817	926
Fe-D	mg/L	0.0071	0.038	<0.025
Pb-D	mg/L	<0.00020	<0.0010	<0.0010
Mg-D	mg/L	27.5	30.3	32.7
Mn-D	mg/L	0.301	0.267	0.213
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020
Mo-D	mg/L	<0.0010	<0.0050	<0.0050
Ni-D	mg/L	0.0132	<0.0050	<0.0050
K-D	mg/L	3.72	3.44	4.87
S-D	mg/L	320	316	385
Se-D	mg/L	<0.00010	<0.00050	<0.00050
Si-D	mg/L	2.87	2.47	3.39
Na-D	mg/L	197	212	250
Sr-D	mg/L	1.81	2.09	1.97
Zn-D	mg/L	0.0094	<0.025	<0.025

Table 7
Q2 Report 2018

EMS ID		E207411								
Site Description		Culvert at Middle Quinsam Lake Road								
Site Name		WC								
Date		03-Jul-2018	17-Jul-2018	30-Jul-2018	08-Aug-2018	13-Aug-2018	27-Aug-2018	04-Sep-2018	11-Sep-2018	24-Sep-2018
Parameter	Unit									
SO4-D	mg/L	505			598			570		
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0		<4.0	<4.0
Al-T	mg/L				0.0073					
As-T	mg/L				0.00106					
Ba-T	mg/L				0.0228					
B-T	mg/L				1.07					
Cd-T	mg/L				<0.000010					
Ca-T	mg/L				95.5					
Cr-T	mg/L				<0.0010					
Co-T	mg/L				0.00021					
Cu-T	mg/L				0.00054					
Hard-T	mg/L				300					
Fe-T	mg/L				0.182					
Pb-T	mg/L				<0.00020					
Mg-T	mg/L				15.0					
Mn-T	mg/L				0.0479					
Hg-T	mg/L				<0.0000020					
Mo-T	mg/L				<0.0010					
Ni-T	mg/L				0.0010					
K-T	mg/L				4.25					
S-T	mg/L				224					
Se-T	mg/L				<0.00010					
Si-T	mg/L				4.89					
Ag-T	mg/L				<0.000020					
Na-T	mg/L				323					
Sr-T	mg/L				1.20					
Zn-T	mg/L				<0.0050					
Al-D	mg/L				<0.015					
As-D	mg/L				0.00092					
Ba-D	mg/L				0.0218					
B-D	mg/L				1.08					
Be-D	mg/L				<0.00050					
Cd-D	mg/L				<0.000025					
Ca-D	mg/L				90.5					
Cr-D	mg/L				<0.0050					
Co-D	mg/L				<0.0010					
Cu-D	mg/L				<0.0010					
Hard-D	mg/L				288					
Fe-D	mg/L				0.114					
Pb-D	mg/L				<0.0010					
Mg-D	mg/L				15.0					
Mn-D	mg/L				0.0521					
Hg-D	mg/L				<0.0000020					
Mo-D	mg/L				<0.0050					
Ni-D	mg/L				<0.0050					
K-D	mg/L				4.16					
S-D	mg/L				209					
Se-D	mg/L				<0.00050					
Si-D	mg/L				4.61					
Na-D	mg/L				317					
Sr-D	mg/L				1.07					
Zn-D	mg/L				<0.025					

Table 8
Q2 Report 2018

EMS ID		E292126	
Site Description		South Dyke Sump - Collects seepage from tailings dam and pumped into 2-North Mine	
Site Name		SDS	
Date		10-Apr-2018	10-Jul-2018
Parameter	Unit		
SO4-D	mg/L	966	1450
Alk-T	mg/L	179	183
Acidity83	mg/L	3.0	2.2
Al-T	mg/L	0.312	0.031
As-T	mg/L	0.00045	<0.00050
Ba-T	mg/L	0.0227	0.0190
B-T	mg/L	0.460	0.73
Cd-T	mg/L	0.000020	<0.000050
Ca-T	mg/L	280	372
Cr-T	mg/L	<0.0010	<0.0050
Co-T	mg/L	0.00185	<0.0010
Cu-T	mg/L	0.00301	<0.0025
Hard-T	mg/L	837	1140
Fe-T	mg/L	0.672	<0.050
Pb-T	mg/L	<0.00020	<0.0010
Mg-T	mg/L	33.4	51.8
Mn-T	mg/L	0.259	0.0105
Hg-T	mg/L	<0.0000020	<0.0000020
Mo-T	mg/L	<0.0010	<0.0050
Ni-T	mg/L	0.0061	<0.0050
K-T	mg/L	3.83	5.00
S-T	mg/L	317	463
Se-T	mg/L	0.00037	<0.00050
Si-T	mg/L	2.88	0.57
Ag-T	mg/L	<0.000020	<0.00010
Na-T	mg/L	117	190
Sr-T	mg/L	1.68	2.49
Zn-T	mg/L	<0.0050	<0.025
Al-D	mg/L	0.0173	0.0153
As-D	mg/L	0.00022	0.00057
Ba-D	mg/L	0.0213	0.0195
B-D	mg/L	0.463	0.772
Be-D	mg/L	<0.00010	<0.00010
Cd-D	mg/L	0.0000170	<0.0000050
Ca-D	mg/L	285	384
Cr-D	mg/L	<0.0010	<0.0010
Co-D	mg/L	0.00143	<0.00020
Cu-D	mg/L	0.00108	0.00083
Hard-D	mg/L	858	1190
Fe-D	mg/L	0.0058	0.0082
Pb-D	mg/L	<0.00020	<0.00020
Mg-D	mg/L	35.6	55.3
Mn-D	mg/L	0.246	0.0143
Hg-D	mg/L	<0.0000020	<0.0000020
Mo-D	mg/L	<0.0010	<0.0010
Ni-D	mg/L	0.0056	0.0015
K-D	mg/L	3.88	5.02
S-D	mg/L	335	481
Se-D	mg/L	0.00036	0.00019
Si-D	mg/L	2.48	0.48
Na-D	mg/L	120	198
Sr-D	mg/L	1.69	2.47
Zn-D	mg/L	<0.0050	<0.0050

Table 9
Q2 Report 2018

Site Description		Groundwater / Surface Water from 2N Area at Road					
Site Name		PDSR					
Date		10-Apr-18	8-May-18	4-Jun-18	3-Jul-18	3-Aug-18	3-Sep-18
Parameter	Unit						
SO4-D	mg/L	495	784	1060	992	Dry No Flow	Dry No Flow
TSS	mg/L		<4.0	<8.0	<4.0		
Alk-T	mg/L	144	203	246	246		
Acidity83	mg/L	2.1	<1.0	2.8	5.0		
Al-T	mg/L	0.0173	0.016	0.055	0.035		
As-T	mg/L	<0.00010	<0.00050	<0.00050	<0.00050		
Ba-T	mg/L	0.0200	0.0342	0.0410	0.0447		
B-T	mg/L	0.236	0.38	0.45	0.48		
Cd-T	mg/L	<0.000010	<0.000050	<0.000050	<0.000050		
Ca-T	mg/L	182	297	307	304		
Cr-T	mg/L	<0.0010	<0.0050	<0.0050	<0.0050		
Co-T	mg/L	<0.00020	<0.0010	<0.0010	<0.0010		
Cu-T	mg/L	<0.00050	<0.0025	<0.0025	<0.0025		
Hard-T	mg/L	569	933	988	981		
Fe-T	mg/L	0.018	<0.050	0.061	0.065		
Pb-T	mg/L	<0.00020	<0.0010	<0.0010	<0.0010		
Mg-T	mg/L	27.9	46.6	53.7	54.0		
Mn-T	mg/L	0.0043	<0.0050	0.0074	<0.0050		
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020		
Mo-T	mg/L	<0.0010	<0.0050	<0.0050	<0.0050		
Ni-T	mg/L	<0.0010	<0.0050	<0.0050	<0.0050		
K-T	mg/L	1.64	2.85	2.73	2.44		
S-T	mg/L	177	317	336	346		
Se-T	mg/L	<0.00010	<0.00050	<0.00050	<0.00050		
Si-T	mg/L	3.58	4.17	3.84	4.25		
Ag-T	mg/L	<0.000020	<0.00010	<0.00010	<0.00010		
Na-T	mg/L	49.3	79.5	85.4	85.7		
Sr-T	mg/L	1.11	1.68	2.07	2.32		
Zn-T	mg/L	<0.0050	<0.025	<0.025	<0.025		
Al-D	mg/L	0.0120	<0.015	<0.015	0.017		
As-D	mg/L	<0.00010	<0.00050	<0.00050	<0.00050		
Ba-D	mg/L	0.0202	0.0313	0.0428	0.0417		
B-D	mg/L	0.235	0.34	0.45	0.45		
Be-D	mg/L	<0.00010	<0.00050	<0.00050	<0.00050		
Cd-D	mg/L	<0.0000050	<0.000025	<0.000025	<0.000025		
Ca-D	mg/L	177	240	355	329		
Cr-D	mg/L	<0.0010	<0.0050	<0.0050	<0.0050		
Co-D	mg/L	<0.00020	<0.0010	<0.0010	<0.0010		
Cu-D	mg/L	0.00055	<0.0010	<0.0010	<0.0010		
Hard-D	mg/L	561	754	1100	1040		
Fe-D	mg/L	0.0064	<0.025	<0.025	<0.025		
Pb-D	mg/L	<0.00020	<0.0010	<0.0010	<0.0010		
Mg-D	mg/L	29.0	37.6	51.3	53.8		
Mn-D	mg/L	0.0029	<0.0050	<0.0050	<0.0050		
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020		
Mo-D	mg/L	<0.0010	<0.0050	<0.0050	<0.0050		
Ni-D	mg/L	<0.0010	<0.0050	<0.0050	<0.0050		
K-D	mg/L	1.69	2.17	2.55	2.40		
S-D	mg/L	179	228	349	320		
Se-D	mg/L	<0.00010	<0.00050	<0.00050	<0.00050		
Si-D	mg/L	3.52	3.25	4.62	3.83		
Na-D	mg/L	48.0	65.1	76.8	87.6		
Sr-D	mg/L	1.09	1.66	2.15	2.08		
Zn-D	mg/L	<0.0050	<0.025	<0.025	<0.025		

Table 10
Q2 Report 2018

EMS ID		E218582				
Site Description		Settling Pond # 1 - Permitted Decant for South Mining Operation				Permit
Site Name		SPD	(No discharge occurred during Q2)			Limit-South
Date		03-Jul-2018	19-Jul-2018	08-Aug-2018	04-Sep-2018	
Parameter	Unit					
SO4-D	mg/L	252		255	262	-
TSS	mg/L		<4.0	<4.0	<4.0	25
Alk-T	mg/L	79.0		92.0	PNC	-
Acidity83	mg/L	<1.0		2.4	PNC	-
Al-T	mg/L			0.0085		-
As-T	mg/L			0.00357		-
Ba-T	mg/L			0.0207		-
B-T	mg/L			0.319		-
Cd-T	mg/L			<0.000010		-
Ca-T	mg/L			106		-
Cr-T	mg/L			<0.0010		-
Co-T	mg/L			0.00048		-
Cu-T	mg/L			0.00065		-
Hard-T	mg/L			340		-
Fe-T	mg/L			0.347		-
Pb-T	mg/L			<0.00020		-
Mg-T	mg/L			18.0		-
Mn-T	mg/L			0.0757		-
Hg-T	mg/L			<0.0000020		-
Mo-T	mg/L			<0.0010		-
Ni-T	mg/L			0.0021		-
K-T	mg/L			2.27		-
S-T	mg/L			108		-
Se-T	mg/L			<0.00010		-
Si-T	mg/L			6.44		-
Ag-T	mg/L			<0.000020		-
Na-T	mg/L			25.9		-
Sr-T	mg/L			0.824		-
Zn-T	mg/L			<0.0050		-
Al-D	mg/L			0.0071		0.5
As-D	mg/L			0.00333		-
Ba-D	mg/L			0.0207		-
B-D	mg/L			0.319		-
Be-D	mg/L			<0.00010		-
Cd-D	mg/L			<0.0000050		-
Ca-D	mg/L			102		-
Cr-D	mg/L			<0.0010		-
Co-D	mg/L			0.00058		-
Cu-D	mg/L			0.00065		0.02
Hard-D	mg/L			333		-
Fe-D	mg/L			0.238		0.5
Pb-D	mg/L			<0.00020		0.05
Mg-D	mg/L			18.7		-
Mn-D	mg/L			0.0831		-
Hg-D	mg/L			<0.0000020		-
Mo-D	mg/L			<0.0010		-
Ni-D	mg/L			0.0024		-
K-D	mg/L			2.16		-
S-D	mg/L			98.0		-
Se-D	mg/L			<0.00010		-
Si-D	mg/L			5.38		-
Na-D	mg/L			26.4		-
Sr-D	mg/L			0.794		-
Zn-D	mg/L			<0.0050		-
O&G	mg/L			<5.0		0.2

Table 11
Q2 Report 2018

Long Lake Seep Treatment System (Pumping from INF commenced in August to fully operation in September)			
Site Description		Influent for biocell (2S mine pool)	Sulphide Polishing Cell
Site Name		INF	SPCEFF
Date		05-Sep-2018	05-Sep-2018
Parameter	Unit		
SO4-D	mg/L	479	473
TSS	mg/L	6.8	9.5
Alk-T	mg/L	255	259
Acidity83	mg/L	17.6	17.4
N-NH3	mg/L	0.062	0.091
N-NO23	mg/L	<0.020	<2.0
Al-T	mg/L	0.0053	0.0605
As-T	mg/L	0.00414	0.00463
Ba-T	mg/L	0.0225	0.0224
B-T	mg/L	0.844	0.676
Cd-T	mg/L	<0.000010	<0.000010
Ca-T	mg/L	182	188
Cr-T	mg/L	<0.0010	<0.0010
Co-T	mg/L	0.00027	0.00040
Cu-T	mg/L	0.00087	0.00366
Hard-T	mg/L	502	519
Fe-T	mg/L	2.83	3.68
Pb-T	mg/L	<0.00020	<0.00020
Mg-T	mg/L	11.8	12.1
Mn-T	mg/L	0.273	0.264
Hg-T	mg/L	<0.0000020	<0.0000020
Mo-T	mg/L	<0.0010	<0.0010
Ni-T	mg/L	<0.0010	<0.0010
K-T	mg/L	1.76	1.77
S-T	mg/L	185	174
Se-T	mg/L	<0.00010	<0.00010
Si-T	mg/L	3.21	2.59
Ag-T	mg/L	<0.000020	<0.000020
Na-T	mg/L	123	123
Sr-T	mg/L	1.80	1.87
Zn-T	mg/L	<0.0050	0.0195
Al-D	mg/L	<0.0060	<0.0060
As-D	mg/L	0.00390	0.00380
Ba-D	mg/L	0.0224	0.0222
B-D	mg/L	0.87	0.90
Cd-D	mg/L	<0.000010	0.000016
Ca-D	mg/L	182	180
Cr-D	mg/L	<0.0020	<0.0020
Co-D	mg/L	<0.00040	<0.00040
Cu-D	mg/L	<0.00040	<0.00040
Hard-D	mg/L	504	500
Fe-D	mg/L	2.98	3.02
Pb-D	mg/L	<0.00040	<0.00040
Mg-D	mg/L	12.2	12.3
Mn-D	mg/L	0.274	0.276
Hg-D	mg/L	<0.0000020	<0.0000020
Mo-D	mg/L	<0.0020	<0.0020
Ni-D	mg/L	<0.0020	<0.0020
K-D	mg/L	1.73	1.76
S-D	mg/L	179	178
Se-D	mg/L	<0.00020	<0.00020
Si-D	mg/L	3.16	3.10
Na-D	mg/L	123	125
Sr-D	mg/L	1.78	1.76
Zn-D	mg/L	<0.010	<0.010

Table 12
Q2 Report 2018

Flow from the treatment system into 2-South Pit			
Site Description		2 South Inflow	Permit
Site Name		2SI	Limit-South
Date		05-Sep-2018	
Parameter	Unit		
SO4-D	mg/L	582	
TSS	mg/L	<4.0	25
Alk-T	mg/L	207	
Acidity83	mg/L	8.5	
N-NH3	mg/L	<0.020	1.0
N-NO23	mg/L	<0.020	
Al-T	mg/L	0.0042	
As-T	mg/L	0.00018	
Ba-T	mg/L	0.0344	
B-T	mg/L	0.783	
Cd-T	mg/L	0.000024	
Ca-T	mg/L	188	
Cr-T	mg/L	<0.0010	
Co-T	mg/L	0.00457	
Cu-T	mg/L	0.00118	
Hard-T	mg/L	529	
Fe-T	mg/L	0.076	
Pb-T	mg/L	<0.00020	
Mg-T	mg/L	14.6	
Mn-T	mg/L	1.19	
Hg-T	mg/L	<0.0000020	
Mo-T	mg/L	<0.0010	
Ni-T	mg/L	0.0017	
K-T	mg/L	1.67	
S-T	mg/L	211	
Se-T	mg/L	<0.00010	
Si-T	mg/L	3.26	
Ag-T	mg/L	<0.000020	
Na-T	mg/L	113	
Sr-T	mg/L	1.65	
Zn-T	mg/L	<0.0050	
Al-D	mg/L	0.0081	0.5
As-D	mg/L	0.00025	
Ba-D	mg/L	0.0366	
B-D	mg/L	0.85	
Cd-D	mg/L	<0.0000050	
Ca-D	mg/L	196	
Cr-D	mg/L	<0.0020	
Co-D	mg/L	0.00478	
Cu-D	mg/L	0.00110	0.02
Hard-D	mg/L	553	
Fe-D	mg/L	0.057	0.5
Pb-D	mg/L	<0.00040	0.05
Mg-D	mg/L	15.5	
Mn-D	mg/L	1.26	
Hg-D	mg/L	<0.0000020	
Mo-D	mg/L	<0.0020	
Ni-D	mg/L	<0.0020	
K-D	mg/L	1.69	
S-D	mg/L	215	
Se-D	mg/L	<0.00020	
Si-D	mg/L	3.31	
Na-D	mg/L	117	
Sr-D	mg/L	1.71	
Zn-D	mg/L	<0.010	0.2

Table 13
Q2 Report 2018

EMS ID		E292127		
Site Description		2 South Pit in Pit Water Cover (CCR Water Cover)		
Site Name		2S		
Date		3-Jul-18	8-Aug-18	4-Sep-18
Parameter	Unit			
SO4-D	mg/L	416	457	481
Alk-T	mg/L	97.8	97	140
Acidity83	mg/L	<1.0	1.7	<1.0
Al-T	mg/L	0.0317	0.0666	0.0175
As-T	mg/L	0.0006	0.00084	0.00054
Ba-T	mg/L	0.0191	0.025	0.0247
B-T	mg/L	0.261	0.363	0.571
Cd-T	mg/L	<0.000010	<0.000010	<0.000010
Ca-T	mg/L	150	176	186
Cr-T	mg/L	<0.0010	<0.0010	<0.0010
Co-T	mg/L	<0.00020	<0.00020	<0.00020
Cu-T	mg/L	0.00143	0.00228	0.00226
Hard-T	mg/L	466	552	562
Fe-T	mg/L	0.037	0.061	0.03
Pb-T	mg/L	<0.00020	<0.00020	<0.00020
Mg-T	mg/L	22.3	27.1	23.3
Mn-T	mg/L	0.0065	0.0091	0.0044
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020
Mo-T	mg/L	<0.0010	<0.0010	<0.0010
Ni-T	mg/L	<0.0010	<0.0010	<0.0010
K-T	mg/L	2.07	2.67	2.42
S-T	mg/L	144	172.0	194
Se-T	mg/L	<0.00010	0.0001	<0.00010
Si-T	mg/L	0.39	0.73	1.79
Ag-T	mg/L	<0.000020	<0.000020	<0.000020
Na-T	mg/L	22.6	29.1	59.8
Sr-T	mg/L	1.08	1.28	1.38
Zn-T	mg/L	<0.0050	<0.0050	<0.0050
Al-D	mg/L	0.0146	0.0196	0.0089
As-D	mg/L	0.0005	0.00070	0.00047
Ba-D	mg/L	0.0183	0.024	0.0228
B-D	mg/L	0.251	0.337	0.538
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050
Ca-D	mg/L	159	168	174
Cr-D	mg/L	<0.0010	<0.0010	<0.0010
Co-D	mg/L	<0.00020	<0.00020	<0.00020
Cu-D	mg/L	0.00213	0.00194	0.00202
Hard-D	mg/L	490	530	527
Fe-D	mg/L	0.0154	0.0136	0.0115
Pb-D	mg/L	<0.00020	<0.00020	<0.00020
Mg-D	mg/L	22.8	26.80	22.4
Mn-D	mg/L	0.003	0.0025	0.0021
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020
Mo-D	mg/L	<0.0010	<0.0010	<0.0010
Ni-D	mg/L	<0.0010	<0.0010	<0.0010
K-D	mg/L	2.02	2.56	2.32
S-D	mg/L	140	163	174
Se-D	mg/L	<0.00010	0.0001	<0.00010
Si-D	mg/L	0.31	0.62	1.43
Na-D	mg/L	23.3	29.1	58.1
Sr-D	mg/L	0.992	1.17	1.37
Zn-D	mg/L	<0.0050	<0.0050	<0.0050

Table 14
Q2 Report 2018

EMS ID		E217015		
Site Description		3 South Pit Main Water Sump (CCR Water Cover)		
Site Name		3S		
Date		3-Jul-18	8-Aug-18	4-Sep-18
Parameter	Unit			
SO4-D	mg/L	428	470	486
Alk-T	mg/L	140	137	131
Acidity83	mg/L	<1.0	1.4	<1.0
Al-T	mg/L	0.02	0.0108	
As-T	mg/L	0.00055	0.00063	
Ba-T	mg/L	0.0152	0.02	
B-T	mg/L	0.316	0.372	
Cd-T	mg/L	<0.000010	<0.000010	
Ca-T	mg/L	172	208	
Cr-T	mg/L	<0.0010	<0.0010	
Co-T	mg/L	<0.00020	<0.00020	
Cu-T	mg/L	0.00067	<0.00050	
Hard-T	mg/L	528	630	
Fe-T	mg/L	0.057	0.044	
Pb-T	mg/L	<0.00020	<0.00020	
Mg-T	mg/L	24	26.6	
Mn-T	mg/L	0.0302	0.022	
Hg-T	mg/L	<0.0000020	<0.0000020	
Mo-T	mg/L	<0.0010	<0.0010	
Ni-T	mg/L	<0.0010	<0.0010	
K-T	mg/L	2.43	2.88	
S-T	mg/L	154	185	
Se-T	mg/L	<0.00010	<0.00010	
Si-T	mg/L	0.76	0.95	
Ag-T	mg/L	<0.000020	<0.000020	
Na-T	mg/L	26.5	31.1	
Sr-T	mg/L	1.23	1.38	
Zn-T	mg/L	<0.0050	<0.0050	
Al-D	mg/L	0.0190	0.005	
As-D	mg/L	0.00046	0.00059	
Ba-D	mg/L	0.0141	0.0204	
B-D	mg/L	0.307	0.399	
Cd-D	mg/L	<0.0000050	<0.0000050	
Ca-D	mg/L	168	185	
Cr-D	mg/L	<0.0010	<0.0010	
Co-D	mg/L	<0.00020	<0.00020	
Cu-D	mg/L	0.00084	0.00035	
Hard-D	mg/L	518	575	
Fe-D	mg/L	0.0265	0.0183	
Pb-D	mg/L	<0.00020	<0.00020	
Mg-D	mg/L	23.9	27.4	
Mn-D	mg/L	0.0265	0.0051	
Hg-D	mg/L	<0.0000020	<0.0000020	
Mo-D	mg/L	<0.0010	<0.0010	
Ni-D	mg/L	<0.0010	<0.0010	
K-D	mg/L	2.35	2.79	
S-D	mg/L	140	167	
Se-D	mg/L	<0.00010	<0.00010	
Si-D	mg/L	0.7	0.74	
Na-D	mg/L	25.9	31.9	
Sr-D	mg/L	1.09	1.29	
Zn-D	mg/L	<0.0050	<0.0050	

Table 15
Q2 Report 2018

EMS ID		E292128
Site Description		3 South 77 Adit Pit- Exploration pit from 1977
Site Name		3S77
Date		10-Jul-18
Parameter	Unit	
SO4-D	mg/L	250
Alk-T	mg/L	114
Acidity 8.3	mg/L	<1.0
Al-T	mg/L	0.0087
As-T	mg/L	0.00163
Ba-T	mg/L	0.0247
B-T	mg/L	0.225
Cd-T	mg/L	<0.000010
Ca-T	mg/L	108
Cr-T	mg/L	<0.0010
Co-T	mg/L	<0.00020
Cu-T	mg/L	<0.00050
Hard-T	mg/L	324
Fe-T	mg/L	0.057
Pb-T	mg/L	<0.00020
Mg-T	mg/L	13.3
Mn-T	mg/L	0.0352
Hg-T	mg/L	<0.0000020
Mo-T	mg/L	<0.0010
Ni-T	mg/L	<0.0010
K-T	mg/L	1.62
S-T	mg/L	89.3
Se-T	mg/L	<0.00010
Si-T	mg/L	2.51
Ag-T	mg/L	<0.000020
Na-T	mg/L	24.9
Sr-T	mg/L	0.734
Zn-T	mg/L	<0.0050
Al-D	mg/L	0.0033
As-D	mg/L	0.00162
Ba-D	mg/L	0.025
B-D	mg/L	0.251
Cd-D	mg/L	<0.0000050
Ca-D	mg/L	109
Cr-D	mg/L	<0.0010
Co-D	mg/L	<0.00020
Cu-D	mg/L	0.00029
Hard-D	mg/L	331
Fe-D	mg/L	0.0341
Pb-D	mg/L	<0.00020
Mg-D	mg/L	14.1
Mn-D	mg/L	0.0336
Hg-D	mg/L	<0.0000020
Mo-D	mg/L	<0.0010
Ni-D	mg/L	<0.0010
K-D	mg/L	1.54
S-D	mg/L	89.7
Se-D	mg/L	<0.00010
Si-D	mg/L	2.42
Na-D	mg/L	26.2
Sr-D	mg/L	0.7
Zn-D	mg/L	<0.0050

Table 16
Q2 Report 2018

EMS ID		E292129		
Site Description		4 South Lower- Culvert Downstream of Access Road		
Site Name		4S-LO		
Date		July	August	September
Parameter	Unit	Dry for Q2		
SO4-D	mg/L	NF	NF	NF
Alk-T	mg/L			
Acidity83	mg/L			
Al-T	mg/L			
As-T	mg/L			
Ba-T	mg/L			
B-T	mg/L			
Cd-T	mg/L			
Ca-T	mg/L			
Cr-T	mg/L			
Co-T	mg/L			
Cu-T	mg/L			
Hard-T	mg/L			
Fe-T	mg/L			
Pb-T	mg/L			
Mg-T	mg/L			
Mn-T	mg/L			
Hg-T	mg/L			
Mo-T	mg/L			
Ni-T	mg/L			
K-T	mg/L			
S-T	mg/L			
Se-T	mg/L			
Si-T	mg/L			
Ag-T	mg/L			
Na-T	mg/L			
Sr-T	mg/L			
Zn-T	mg/L			
Al-D	mg/L			
As-D	mg/L			
Ba-D	mg/L			
B-D	mg/L			
Cd-D	mg/L			
Ca-D	mg/L			
Cr-D	mg/L			
Co-D	mg/L			
Cu-D	mg/L			
Hard-D	mg/L			
Fe-D	mg/L			
Pb-D	mg/L			
Mg-D	mg/L			
Mn-D	mg/L			
Hg-D	mg/L			
Mo-D	mg/L			
Ni-D	mg/L			
K-D	mg/L			
S-D	mg/L			
Se-D	mg/L			
Si-D	mg/L			
Na-D	mg/L			
Sr-D	mg/L			
Zn-D	mg/L			

Table 17
Q2 Report 2018

EMS ID		E217014		
Site Description		South Pit Culvert- Culvert, downstream of Settling Pond #1 discharge		
Site Name		SPC		
Date		July	August	September
Parameter	Unit	Dry for Q2		
SO4-D	mg/L	NF	NF	NF
TSS	mg/L			
Alk-T	mg/L			
Acidity83	mg/L			
Al-T	mg/L			
As-T	mg/L			
Ba-T	mg/L			
B-T	mg/L			
Cd-T	mg/L			
Ca-T	mg/L			
Cr-T	mg/L			
Co-T	mg/L			
Cu-T	mg/L			
Hard-T	mg/L			
Fe-T	mg/L			
Pb-T	mg/L			
Mg-T	mg/L			
Mn-T	mg/L			
Hg-T	mg/L			
Mo-T	mg/L			
Ni-T	mg/L			
K-T	mg/L			
S-T	mg/L			
Se-T	mg/L			
Si-T	mg/L			
Ag-T	mg/L			
Na-T	mg/L			
Sr-T	mg/L			
Zn-T	mg/L			
Al-D	mg/L			
As-D	mg/L			
Ba-D	mg/L			
B-D	mg/L			
Cd-D	mg/L			
Ca-D	mg/L			
Cr-D	mg/L			
Co-D	mg/L			
Cu-D	mg/L			
Hard-D	mg/L			
Fe-D	mg/L			
Pb-D	mg/L			
Mg-D	mg/L			
Mn-D	mg/L			
Hg-D	mg/L			
Mo-D	mg/L			
Ni-D	mg/L			
K-D	mg/L			
S-D	mg/L			
Se-D	mg/L			
Si-D	mg/L			
Na-D	mg/L			
Sr-D	mg/L			
Zn-D	mg/L			

Table 18
Q2 Report 2018

E292130									WQG-Max
Site Description Site Name		Long Lake Entrance- Last wetland prior to entering Long Lake near the outlet LLE							
Date		3-Jul-18	9-Jul-18	Jul	Aug	Sep	17-Sep-18	25-Sep-18	
Parameter	Unit	No Flow					Low Flow	Low flow	
SO4-D	mg/L	452	389				310	75.9	-
TSS	mg/L	<4.0					5.3		25
Alk-T	mg/L	110					90.8		-
Acidity83	mg/L	2.9					1.7		-
N-NH3	mg/L	<0.020					0.024		-
N-NO23	mg/L	0.022					0.129		-
Al-T	mg/L	<0.015					0.122		-
As-T	mg/L	0.00063					0.00112		0.005
Ba-T	mg/L	0.0313					0.0362		-
B-T	mg/L	0.26					0.209		-
Cd-T	mg/L	<0.000050					<0.000010		-
Ca-T	mg/L	136					102		-
Cr-T	mg/L	<0.0050					<0.0010		-
Co-T	mg/L	<0.0010					0.00055		0.05
Cu-T	mg/L	<0.0025					0.00096		0.007
Hard-T	mg/L	432					324		-
Fe-T	mg/L	0.187					1.93		1
P-T	mg/L	0.0099					0.0136		0.01*
Pb-T	mg/L	<0.0010					<0.00020		0.005
Mg-T	mg/L	22.2					16.8		-
Mn-T	mg/L	0.0531					0.328		0.8
Hg-T	mg/L	<0.0000020					<0.0000020		0.0001
Mo-T	mg/L	<0.0050					<0.0010		-
Ni-T	mg/L	<0.0050					<0.0010		0.025
K-T	mg/L	0.92					2.04		-
S-T	mg/L	1690					110		-
Se-T	mg/L	<0.00050					<0.00010		-
Si-T	mg/L	2.74					3.12		-
Ag-T	mg/L	<0.00010					<0.000020		0.0001
Na-T	mg/L	40.9					32.0		-
Sr-T	mg/L	0.848					0.712		-
Zn-T	mg/L	<0.025					<0.0050		0.03
Al-D	mg/L	<0.0030					0.0045		0.1
As-D	mg/L	0.00065					0.00077		-
Ba-D	mg/L	0.0327					0.0357		-
B-D	mg/L	0.270					0.259		-
Cd-D	mg/L	<0.0000050					0.0000050		0.000017
Ca-D	mg/L	148					112		-
Cr-D	mg/L	<0.0010					<0.0010		-
Co-D	mg/L	<0.00020					0.00052		-
Cu-D	mg/L	0.00035					0.00041		-
Hard-D	mg/L	474					354		-
Fe-D	mg/L	0.0665					0.800		0.35
Pb-D	mg/L	<0.00020					<0.00020		-
Mg-D	mg/L	25.5					18.4		-
Mn-D	mg/L	0.0622					0.364		-
Hg-D	mg/L	<0.0000020					<0.0000020		-
Mo-D	mg/L	<0.0010					<0.0010		-
Ni-D	mg/L	<0.0010					<0.0010		-
K-D	mg/L	1.11					1.96		-
S-D	mg/L	160					115		-
Se-D	mg/L	<0.00010					<0.00010		-
Si-D	mg/L	2.97					2.79		-
Na-D	mg/L	45.9					33.8		-
Sr-D	mg/L	0.974					0.697		-
Zn-D	mg/L	<0.0050					<0.0050		-
* Vancouver Island Objective for P-T in streams applicable from May through September. This is applied for observation only as LLE is not a stream.									

Table 19
Q2 Report 2018

EMS ID.		E292131						
Site Description		Seeps into Long Lake						
Site Name		LLS			LLSM			WQO-Max
Date		04-Jul-18	08-Aug-18	06-Sep-18	04-Jul-18	08-Aug-18	Sep	
Parameter	Unit							
SO4-D	mg/L	600	491	453	524	448	No Flow	-
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0		25
Alk-T	mg/L	255	245	243	241	236		-
Acidity 8.3	mg/L	12.1	3.2	11.4	5.4	3.9		-
Al-T	mg/L	0.0064	0.0132	<0.0030	0.0039	0.0034		-
As-T	mg/L	0.0017	0.00129	0.00087	0.00038	0.00068		0.005
Ba-T	mg/L	0.0225	0.0214	0.02	0.0204	0.0193		-
B-T	mg/L	0.69	0.732	0.641	0.600	0.602		-
Cd-T	mg/L	0.000134	<0.000010	0.000045	<0.000010	<0.000010		-
Ca-T	mg/L	204	201	178	203	188		-
Cr-T	mg/L	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010		-
Co-T	mg/L	0.00174	0.00183	0.00154	0.00084	0.00118		0.11
Cu-T	mg/L	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050		0.0051
Hard-T	mg/L	579	570	505	573	533		-
Fe-T	mg/L	0.521	0.498	0.207	0.132	0.500		1
Pb-T	mg/L	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020		0.005
Mg-T	mg/L	16.9	16.6	15	15.9	15.4		-
Mn-T	mg/L	0.419	0.416	0.339	0.177	0.311		0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020		0.0001
Mo-T	mg/L	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010		-
Ni-T	mg/L	0.0023	0.0022	0.002	0.0014	0.0016		0.025
K-T	mg/L	2.33	2.41	2.16	2.37	2.4		-
S-T	mg/L	192	186	161	183	176		-
Se-T	mg/L	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010		-
Si-T	mg/L	3.07	2.96	2.72	2.87	3.09		-
Ag-T	mg/L	<0.000040	<0.000020	<0.000020	<0.000020	<0.000020		0.0001
Na-T	mg/L	106	111	97.4	101	100		-
Sr-T	mg/L	1.96	1.97	1.88	1.9	1.75		-
Zn-T	mg/L	<0.010	<0.0050	0.0163	<0.0050	<0.0050		0.03
Al-D	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030		0.1
As-D	mg/L	0.00153	0.00124	0.00088	0.00037	0.00061		-
Ba-D	mg/L	0.0208	0.0209	0.0191	0.019	0.0204		-
B-D	mg/L	0.616	0.662	0.556	0.568	0.644		-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050		0.000017
Ca-D	mg/L	203	194	174	189	185		-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		-
Co-D	mg/L	0.0017	0.00176	0.00158	0.00099	0.00124		-
Cu-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		-
Hard-D	mg/L	579	552	496	545	526		-
Fe-D	mg/L	0.517	0.526	0.373	0.128	0.483		0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		-
Mg-D	mg/L	17.3	16.5	15.2	17.9	15.8		-
Mn-D	mg/L	0.44	0.396	0.333	0.202	0.314		-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020		-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		-
Ni-D	mg/L	0.0019	0.0021	0.002	0.0016	0.0017		-

Table 20
Q2 Report 2018

EMS ID		E292069			
Site Description		Settling Pond at 7S - Permitted discharge location for the 7-South Mining Operation			
Site Name		7SSD			Permit Limits
Date		03-Jul-2018	08-Aug-2018	04-Sep-2018	7SSD
Parameter	Unit	No discharge occurred for this site			
SO4-D	mg/L	31.8	27.7	27.6	500
TSS	mg/L	<4.0	8.0	13.8	25
Alk-T	mg/L	97.6	88.5	88.4	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	-
Al-T	mg/L	0.0135	0.0133	0.0110	-
As-T	mg/L	0.00497	0.0130	0.00911	-
Ba-T	mg/L	0.0046	0.0036	0.0021	-
B-T	mg/L	<0.050	<0.050	<0.050	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	-
Ca-T	mg/L	26.6	17.8	14.4	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	-
Cu-T	mg/L	0.00167	0.00228	0.00238	-
Hard-T	mg/L	112	96.3	87.7	-
Fe-T	mg/L	0.044	0.076	0.088	-
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	-
Mg-T	mg/L	11.1	12.6	12.6	-
Mn-T	mg/L	0.0307	0.104	0.0655	-
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	-
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	-
K-T	mg/L	0.939	1.33	1.59	-
S-T	mg/L	9.1	9.9	9.8	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	-
Si-T	mg/L	2.43	3.10	1.01	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	-
Na-T	mg/L	6.91	10.2	12.6	-
Sr-T	mg/L	0.134	0.132	0.110	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	-
Al-D	mg/L	0.0111	0.0086	0.0152	0.1
As-D	mg/L	0.00501	0.0124	0.00872	-
Ba-D	mg/L	0.0047	0.0031	0.0019	-
B-D	mg/L	<0.050	<0.050	<0.050	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	0.000045
Ca-D	mg/L	25.8	17.3	13.9	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	-
Cu-D	mg/L	0.00183	0.00207	0.00235	0.014
DOC	mg/L	5.37	7.26	11	-
Hard-D	mg/L	114	97.1	87.6	-
Fe-D	mg/L	0.0353	0.0388	0.0462	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	-
Mg-D	mg/L	12.1	13.1	12.8	-
Mn-D	mg/L	0.0119	0.0439	0.0152	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	-
K-D	mg/L	1.02	1.37	1.52	-
S-D	mg/L	9.5	10.0	9.1	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	0.016
Si-D	mg/L	2.04	3.06	0.81	-
Na-D	mg/L	7.53	10.8	13.3	-
Sr-D	mg/L	0.139	0.127	0.108	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	-

Table 21
Q2 Report 2018

EMS ID		E292109			
Site Description		Stream 1 - Downstream of the 7SSD discharge, prior to entering the Lower Wetland Outlet			
Site Name		7S			
Date		July	August	September	WQG-Max
Parameter	Unit	No flow for Q2			
SO4-D	mg/L	NF	NF	NF	-
TSS	mg/L				25
Alk-T	mg/L				-
Acidity83	mg/L				-
Al-T	mg/L				-
As-T	mg/L				0.005
Ba-T	mg/L				-
B-T	mg/L				-
Cd-T	mg/L				-
Ca-T	mg/L				-
Cr-T	mg/L				-
Co-T	mg/L				0.11
Cu-T	mg/L				0.0051
Hard-T	mg/L				-
Fe-T	mg/L				1
Pb-T	mg/L				0.005
Mg-T	mg/L				-
Mn-T	mg/L				0.8
Hg-T	mg/L				0.0001
Mo-T	mg/L				-
Ni-T	mg/L				0.025
K-T	mg/L				-
S-T	mg/L				-
Se-T	mg/L				-
Si-T	mg/L				-
Ag-T	mg/L				0.0001
Na-T	mg/L				-
Sr-T	mg/L				-
Zn-T	mg/L				0.03
Al-D	mg/L				0.1
As-D	mg/L				-
Ba-D	mg/L				-
B-D	mg/L				-
Cd-D	mg/L				0.000017
Ca-D	mg/L				-
Cr-D	mg/L				-
Co-D	mg/L				-
Cu-D	mg/L				-
DOC	mg/L				-
Hard-D	mg/L				-
Fe-D	mg/L				0.35
Pb-D	mg/L				-
Mg-D	mg/L				-
Mn-D	mg/L				-
Hg-D	mg/L				-
Mo-D	mg/L				-
Ni-D	mg/L				-
K-D	mg/L				-
S-D	mg/L				-
Se-D	mg/L				-
Si-D	mg/L				-
Na-D	mg/L				-
Sr-D	mg/L				-
Zn-D	mg/L				-

Table 22
Q2 Report 2018

Daily Total Suspended Solid Results				Daily Total Suspended Solid Results		
EMS ID		E207409		EMS ID		
Site Description		Settling Pond #4 (WD)		Site Description		
TSS Permit Limit: 25.0 mg/L				TSS Permit Limit: 25.0 mg/L		
Date	April	May	June	July	August	September
1	<4.0	4.3	8.5	<4.0	-	<4.0
2	<4.0	<4.0	5.8	<4.0	-	<4.0
3	4.0	<4.0	<4.0	<4.0	-	<4.0
4	<4.0	<4.0	5.5	<4.0	-	<4.0
5	4.3	<4.0	<4.0	<4.0	PNC	<4.0
6	<4.0	<4.0	<4.0	<4.0	PNC	<4.0
7	<4.0	<4.0	4.0	<4.0	<4.0	<4.0
8	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
9	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
10	<4.0	4.0	<4.0	<4.0	<4.0	<4.0
11	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
12	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
13	4.5	4.0	5.3	<4.0	4.5	<6.2
14	4.0	<4.0	<4.0	<4.0	PNC	<4.0
15	4.3	<4.0	<4.0	<4.0	PNC	<4.0
16	4.5	<4.0	5.3	<4.0	4.8	<4.0
17	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
18	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
19	<4.0	<4.0	4.0	<4.0	<4.0	<4.0
20	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
21	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
22	4.0	4.0	<4.0	<4.0	<4.0	<4.0
23	5.3	4.0	<4.0	<4.0	<4.0	<4.0
24	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
25	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
26	4.3	<4.0	<4.0	<4.0	<4.0	<4.0
27	<4.0	<4.0	<4.0	4.30	<4.0	<4.0
28	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
29	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
30	<4.0	<4.0	<4.0	PNC	PNC	21.00
31	<4.0	<4.0			PNC	
Notes: TSS composite sample is required: monthly - no decant flow, weekly when max daily flow < 0.054m³/s & daily when max daily flow > 0.054m³/s						
Values highlighted in bold red indicate a permit limit exceedance						
PNC (Permit Non-Compliance) indicates a required TSS sample was not collected.						
A dash (-) indicates that a sample was not required						

Table 23
Q2 Report 2018

Total Suspended Solid Results			
EMS ID		E218582	
Site Description		Settling Pond #1 (SPD)	
TSS Permit Limit: 25.0 mg/L			
Date	TSS mg/L	Date	TSS mg/L
1-Apr-18	<4.0	1-May-18	<4.0
2-Apr-18	<4.0	2-May-18	<4.0
3-Apr-18	<4.0	3-May-18	<4.0
4-Apr-18	<4.0	4-May-18	<4.0
5-Apr-18	<4.0	5-May-18	<4.0
6-Apr-18	<4.0	6-May-18	<4.0
7-Apr-18	<4.0	7-May-18	<4.0
8-Apr-18	<4.0	8-May-18	<4.0
9-Apr-18	<4.0	9-May-18	<4.0
10-Apr-18	<4.0	16-May-18	<4.0
11-Apr-18	<4.0	23-May-18	PNC
12-Apr-18	<4.0	4-Jun-18	8.3
13-Apr-18	<4.0	19-Jul-18	<4.0
14-Apr-18	<4.0	8-Aug-18	<4.0
15-Apr-18	<4.0	4-Sep-18	<4.0
16-Apr-18	<4.0	27-Sep-18	6.00
17-Apr-18	<4.0	28-Sep-18	<4.0
18-Apr-18	<4.0	29-Sep-18	<4.0
19-Apr-18	<4.0	30-Sep-18	4.00
20-Apr-18	<4.0		
21-Apr-18	<4.0		
22-Apr-18	5.0		
23-Apr-18	<4.0		
24-Apr-18	<4.0		
25-Apr-18	<4.0		
26-Apr-18	<4.0		
27-Apr-18	<4.0		
28-Apr-18	<4.0		
29-Apr-18	<4.0		
30-Apr-18	<4.0		
Notes: TSS composite sample is required: monthly - no decant flow, weekly when max daily flow < 0.046m³/s & daily when max daily flow > 0.046m³/s Values highlighted in bold red indicate a permit limit exceedance PNC (Permit Non-Compliance) indicates a required TSS sample was not collected.			

Table 24
Q2 Report 2018

Total Suspended Solid Results	
EMS ID	E292069
Site Description	7 South Surface Decant (7SSD)
TSS Permit Limit: 25.0 mg/L	
Date	TSS mg/L
10-Apr-2018	<4.0
15-May-2018	5.0
05-Jun-2018	10.5
03-Jul-2018	<4.0
08-Aug-2018	8.0
04-Sep-2018	13.8
Notes:	
Values highlighted in bold red indicate a permit limit exceedance	
PNC (Permit Non-Compliance) indicates a required TSS sample was not collected.	

Table 25
Q2 Report 2018

E207409												
DISCHARGE FROM SETTLING POND # 4 (WD)												
Date	April	April	May	May	June	June	July	July	August	August	September	September
	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)	Max. (m3/s)	Daily (m3/s)
1	0.1540	0.1446	0.1880	0.1640	0.1620	0.1219	0.177	0.161740	0.0000	0.0000	0.0670	0.0563
2	0.1580	0.1459	0.2000	0.1785	0.1320	0.0800	0.181	0.144677	0.0000	0.0000	0.0690	0.0601
3	0.1580	0.1234	0.2130	0.1916	0.1510	0.1220	0.174	0.106188	0.0000	0.0000	0.0690	0.0554
4	0.1440	0.1378	0.2180	0.2119	0.1650	0.0971	0.127	0.063885	0.0000	0.0000	0.0490	0.0124
5	0.1420	0.0936	0.2160	0.2043	0.1330	0.0697	0.121	0.060604	0.0910	0.0488	0.0000	0.0000
6	0.1450	0.0791	0.2190	0.2139	0.0780	0.0249	0.143	0.101635	0.1140	0.0542	0.0000	0.0000
7	0.1530	0.1495	0.2160	0.1895	0.0660	0.0172	0.163	0.128260	0.0740	0.0220	0.0480	0.0077
8	0.1480	0.1434	0.2090	0.1875	0.0970	0.0419	0.181	0.162250	0.0000	0.0000	0.0650	0.0580
9	0.1550	0.1289	0.2130	0.1894	0.1460	0.1375	0.182	0.127646	0.0000	0.0000	0.0590	0.0590
10	0.1690	0.1293	0.2030	0.1818	0.1550	0.1482	0.133	0.074146	0.0730	0.0242	0.0870	0.0665
11	0.1470	0.0926	0.2090	0.1965	0.1590	0.1020	0.127	0.057802	0.0830	0.0614	0.0530	0.0179
12	0.1490	0.1189	0.2160	0.2121	0.1380	0.1031	0.133	0.063583	0.0520	0.0147	0.0230	0.0023
13	0.1570	0.1520	0.2150	0.2113	0.1210	0.0469	0.14	0.120604	0.0110	0.0006	0.0500	0.0105
14	0.1570	0.1495	0.2150	0.1839	0.0000	0.0000	0.167	0.144323	0.0000	0.0000	0.0600	0.0148
15	0.1620	0.1504	0.1710	0.1016	0.1070	0.0548	0.184	0.165688	0.0000	0.0000	0.0750	0.0614
16	0.1770	0.1600	0.1590	0.1116	0.1620	0.1328	0.189	0.123635	0.0380	0.0056	0.1320	0.1097
17	0.1540	0.1247	0.1440	0.0773	0.1860	0.1752	0.159	0.115073	0.1280	0.0586	0.1350	0.0633
18	0.1530	0.1176	0.1260	0.0662	0.1920	0.1431	0.166	0.100167	0.1330	0.0771	0.0830	0.0318
19	0.1520	0.1211	0.1420	0.1290	0.1690	0.1095	0.141	0.100427	0.1510	0.0985	0.0770	0.0382
20	0.1610	0.1381	0.1940	0.1756	0.1490	0.0942	0.185	0.169948	0.1370	0.0566	0.1330	0.1091
21	0.1480	0.1364	0.1970	0.1647	0.1440	0.0903	0.181	0.161229	0.0590	0.0165	0.1360	0.1078
22	0.1550	0.1445	0.1800	0.1149	0.1740	0.1503	0.174	0.148448	0.0350	0.0051	0.1470	0.1407
23	0.1690	0.1364	0.0530	0.0401	0.1560	0.1193	0.174	0.097521	0.0490	0.0078	0.1460	0.1348
24	0.1690	0.1159	0.1540	0.1149	0.1970	0.1836	0.136	0.077646	0.0000	0.0000	0.1510	0.1328
25	0.0800	0.0529	0.1690	0.1249	0.1970	0.1701	0.164	0.106167	0.0000	0.0000	0.1380	0.0526
26	0.1980	0.1108	0.1380	0.0628	0.1380	0.0740	0.153	0.124802	0.1340	0.0833	0.0000	0.0000
27	0.2200	0.1973	0.1800	0.1609	0.0420	0.0315	0.174	0.153948	0.1430	0.1048	0.0580	0.0108
28	0.2140	0.2079	0.1700	0.1133	0.0410	0.0341	0.173	0.146240	0.0850	0.0336	0.0790	0.0605
29	0.2010	0.1825	0.0880	0.0266	0.1440	0.0728	0.139	0.114198	0.0830	0.0361	0.0810	0.0739
30	0.1970	0.1776	0.1450	0.0985	0.1640	0.1498	0.129	0.087542	0.0780	0.0212	0.1310	0.0886
31			0.1670	0.1264			0.008	0.000385	0.0660	0.0316		
Monthly Max	0.2200		0.2190		0.1970		0.1890		0.1510		0.0800	
Monthly Avg		0.1354		0.1460		0.0966		0.1132		0.0278		0.0546
P = Permit Limit Exceedance												
BOLD = Flow requires TSS composite sample (Max daily flow > 0.054m ³ /s)												
For Decant Flow > 0.054 m ³ /s												
Highlighted red requires a daily composite TSS sample.												

Table 26
Q2 Report 2018

[illegible]

Table 27
Q2 Report 2018

EMS ID E292069 DISCHARGE FROM 7-SOUTH SURFACE DECANT (7SSD)						
	April	May	June	July	August	September
Date	Daily Average L/S			Daily Average L/S		
1	NF	NF	NF	NF	NF	NF
2	NF	NF	NF	NF	NF	NF
3	NF	NF	NF	NF	NF	NF
4	NF	NF	NF	NF	NF	NF
5	NF	NF	NF	NF	NF	NF
6	NF	NF	NF	NF	NF	NF
7	NF	NF	NF	NF	NF	NF
8	NF	NF	NF	NF	NF	NF
9	NF	NF	NF	NF	NF	NF
10	NF	NF	NF	NF	NF	NF
11	NF	NF	NF	NF	NF	NF
12	NF	NF	NF	NF	NF	NF
13	NF	NF	NF	NF	NF	NF
14	NF	NF	NF	NF	NF	NF
15	NF	NF	NF	NF	NF	NF
16	NF	NF	NF	NF	NF	NF
17	NF	NF	NF	NF	NF	NF
18	NF	NF	NF	NF	NF	NF
19	NF	NF	NF	NF	NF	NF
20	NF	NF	NF	NF	NF	NF
21	NF	NF	NF	NF	NF	NF
22	NF	NF	NF	NF	NF	NF
23	NF	NF	NF	NF	NF	NF
24	NF	NF	NF	NF	NF	NF
25	NF	NF	NF	NF	NF	NF
26	NF	NF	NF	NF	NF	NF
27	NF	NF	NF	NF	NF	NF
28	NF	NF	NF	NF	NF	NF
29	NF	NF	NF	NF	NF	NF
30	NF	NF	NF	NF	NF	NF
31	NF	NF	NF	NF	NF	
Monthly Avg	0.000	0.000	0.000	0.000	0.000	0.000
Annual Avg						
Cummulative Daily Totalizer Value						
For Maximum Decant Flow (5.00 L/s)						

Table 28
Q2 Report 2018

Dilution Ratio: 7S vs 7SSD Discharge															
Date	July			August					September						
	7S	Q (L/s)	7SSD	Q (L/s)	Dilution	7S	Q (L/s)	7SSD	Q (L/s)	Dilution	7S	Q (L/s)	7SSD	Q (L/s)	Dilution
1		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
2		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
3		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
4		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
5		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
6		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
7		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
8		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
9		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
10		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
11		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
12		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
13		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
14		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
15		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
16		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
17		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
18		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
19		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
20		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
21		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
22		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
23		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
24		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
25		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
26		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
27		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
28		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
29		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
30		NF		0.0000	∞		NF		0.0000	∞		NF		NF	∞
31		NF		0.0000	∞		NF		0.0000	∞		-		-	-

Table 30
Q2 Report 2018

Weekly / Monthly Sulphate (mg/L) Results			
EMS ID:	E207409	E207411	E218582
Site Name	Settling Pond #4	Roadside culvert into MQL	Settling Pond #1
Site Code	WD	WC	SPD
Week of:			
4-Jun-18	532	524	339
7-Jun-18			
11-Jun-18	467		
18-Jun-18	688		
25-Jun-18	530		
3-Jul-18	520	505	252
9-Jul-18	494		
17-Jul-18	581		
19-Jul-18			
23-Jul-18	485		
24-Jul-18			
30-Jul-18	635		
1-Aug-18			
7-Aug-18			
8-Aug-18		598	255
13-Aug-18	700		
20-Aug-18	505		
27-Aug-18	471		
4-Sep-18	651	570	262
10-Sep-18	697		
11-Sep-18			
17-Sep-18	562		
24-Sep-18	411		
25-Sep-18			
Count for Q2	12	3	3
Average	559	558	256
Minimum	411	505	252
Maximum	700	598	262
NA = Not Applicable			
NF= No Flow			

Table 31
Q2 Report 2018

Weekly Sulphate (mg/L) Results and Rolling Averages at LLE & LLO				
EMS ID	E292130		E219412	
Site Name	South End Water Flowing into Long Lake - near the outlet		Long Lake Outlet	
Site Code Week of:	LLE	Results of 5 Weekly Sulphate Rolling Averages	LLO	5 Weekly Sulphate Rolling Averages
4-Jun-18	600			
7-Jun-18			79.3	
11-Jun-18	363		87.4	
18-Jun-18	388		87.1	
25-Jun-18	397		84.4	
3-Jul-18	452			
9-Jul-18	389	398	89.2	
17-Jul-18	NF		89.8	
19-Jul-18	NF		90.7	
23-Jul-18	568		91.8	
24-Jul-18	NF		89.1	90
30-Jul-18	NF			
1-Aug-18	NF		93.1	
7-Aug-18	NF		91.5	
8-Aug-18	NF			
14-Aug-18	NF		93.1	
20-Aug-18	NF		NF	
27-Aug-18	NF		NF	
4-Sep-18	NF		NF	
10-Sep-18	NF		NF	
11-Sep-18	631		NF	
17-Sep-18	310		110	
25-Sep-18	75.9		91.0	
Count	6		10	
Average	404		93	
Minimum	76		89	
Maximum	631		110	
Notes: WQG applies background hardness of 30 mg/L deriving a sulphate guideline of 128 mg/L. Average sulphate WQG is an average of 5 weekly samples collected over 30 days. NF = No flow.				

Table 31
Q2 Report 2018

Biweekly and Weekly TSS Results From WC, SPC, SPEFF				
EMS ID	E207411	E217014		
Site Date	WC	SPC	SPEFF	BDS
2-Apr-18	<4.0	<4.0	<4.0	<4.0
9-Apr-18	<4.0	<4.0	<4.0	<8.0
16-Apr-18	<4.0	4.8	<4.0	<4.0
23-Apr-18		<4.0	<4.0	<4.0
1-May-18	PNC	<4.0	6.5	13.3
7-May-18	<4.0	<4.0	<4.0	71.0
14-May-18	PNC	9.0	ND	ND
21-May-18		ND	ND	ND
28-May-18	<4.0	ND	ND	ND
4-Jun-18	<4.0	ND	ND	ND
11-Jun-18	<4.0	ND	ND	ND
18-Jun-18	<4.0	ND	ND	ND
25-Jun-18	PNC	ND	ND	ND
3-Jul-18	<4.0	ND	N/A	N/A
17-Jul-18	<4.0	ND	N/A	N/A
30-Jul-18	<4.0	ND	N/A	N/A
8-Aug-18	<4.0	ND	N/A	N/A
13-Aug-18	<4.0	ND	N/A	N/A
27-Aug-18	<4.0	ND	N/A	N/A
11-Sep-18	<4.0	ND	N/A	N/A
24-Sep-18	<4.0	ND	N/A	N/A
ND= No Discharge. All sites are based on discharge from Settling Ponds. WC dependant on WD discharge & SPC dependant on discharge from SPD. No discharge from the treatment system SPEFF & BDS in Q2.				

Table 32
Q2 Report 2018

Field Conductivity (uS/cm) & pH (North Mine Area & 7-South)																		
EMS ID	E283433		E207409		E207412		E207411		E292069		E292109		GW and SW from 2N Area at Road		E292126			
Site Name	2-N-Portal Sump		Settling Pond #4		2 North Pit Sump		North Pit Culvert		7 South Portal Sump		Settling Pond at 7S		Stream 1 -7S		South Dyke Sump			
Site Code	2NPS		WD		WP		WC		7SPS		7SSD		7S		PDSR		SDS	
	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH
July 2018	2.27	7.9	1895	8	1818	8.3	1797	8.1	2	3.9	274	8.6	Dry/ No Flow		Dry/ No Flow		825	8.1
	2.15	7.9	1874	8.2	1813	8.3	1742	8.5	1930	3.3	260	7.8					2.68	8.1
	2.25	7.8	1944	8	1850	8.2	1843	7.8	1500	6.5	260	8.7					2.82	8.1
	2.05	8	1806	7.8	1710	8	1727	8.4	1443	6.3	234	8					2.71	7
August 2018	2.15	8	1886	7.7	1715	8	1735	8.3	2.31	3	250	8.7					2.05	7.5
	2.11	8.1	2.07	7.5	1763	8.3	1845	8.5	1541	6.1	237	8.8					2.1	7.4
	2.05	7.9	2047	7.9	1750	8.3	1755	8.23	1535	6.4	235	8.8					2	7.5
	2.1	7.8	1992	8	1762	8.4	1702	8.2	1382	7.1	239	7.6					2.1	7.8
September 2018	2.08	7.8	1897	7.8	1750	8.3	1877	7.7	1341	7.6	240	9.2					2.05	7.8
	2.08	7.7	2.12	8	1980	8.2	1934	8.2	1245	7.6	223	9.1					2.68	8.1
	2.07	7.7	2.04	8	1990	8.2	1925	8.2	1133	7.6	223	8.5					2.79	8.2
	2.1	7.7	1617	7.6	1977	8.1	1650	8.1	2.75	3.3	225	8.5					826	8.1
	2.16	7.6	1503	8	1670	8.2	1300	8.3	923	6.5							831	8.1

Table 33
Q2 Report 2018

Field Conductivity (uS/cm) & pH (South Mine Area)																						
EMS ID	E292127		E217015		LLSTS Settling Pond Effluent		E218582		Biocell Downstream		E292128		E292129		E217014		E292130		E292131		E292131	
Site Name	2 South Pit CCR Water Cover		3 South Pit CCR Water Cover				Settling Pond # 1				3S77		4 South Lower		South Pit Culvert		Long Lake Entry		Seep into Long Lake		Long Lake Middle Seep	
Site Code	2S (2SS)		3S		SPEFF		SPD		BDS		3S77		4SLO		SPC		LLE		LLS		LLSM	
	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH
July 2018	1049	7.9	1112	8.2	Dry		752	8.3	Dry		776	8.1	Dry/ No Flow		Dry/ No Flow		1115	8	1600	7.9	1519	7.9
	1055	8	1113	8.2			747	7.9			722	7.2					1143	7.1	1608	7.7	1515	8.1
	1082	8	1169	8			782	8.1			833	8.1					1012	7	1616	7.6	1620	7.7
	1021	8.2	1093	8			723	7.8			255	8					No Flow	1516	8.1	1517	7.9	
August 2018	1040	8.2	1120	8			730	7.9			250	8.1						1490	8.1	1400	8.2	
	1084	8.1	1160	8.3			750	8			255	8.1						1488	8	No Flow		
	1186	8.1	1225	8.1			757	8.1			300	8						1479	8			
	1250	8	1221	8.1			797	7.5			836	7.6						1455	8			
September 2018	1183	8.2	1224	8.1			764	8			835	7.9						1467	8			
	1265	8.2	1136	8.1			716	8.4			822	8.1						1456	8			
	12.1	8.1	1215	7.9			804	7.6			723	8.2										
	1050	8	1020	7.7			646	7.9			647	7.8										
	1035	8.3	1100	8.2			646	7.9			650	7.9										

Table 34
Q2 Report 2018

Field Conductivity (uS/cm) & pH (Rivers & Wetland)																							
EMS ID	E297230		E297231		E297232		E0126402		E0900504		E217017		E219412		E292112		E286930		E292113		E299256		
Site Name	Iron River Upstream Site 1		Iron River Site 6		Iron River Site 8		Mid Quinsam Lake Inlet		Mid Quinsam Lake Outlet		No Name Lake Outlet		Long Lake Outlet		Lower Wetland Outlet (7S)		Quinsam River Downstream 1		7 South Quinsam River		Iron River & Quinsam River		
Site Code	IR1		IR6		IR8		WA		WB		NNO		LLO		LWO		QRDS1		7SQR		IRQR		
	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	Cond	pH	
July 2018	131	7.9	124	8.1	125	7.9	40	6.8	157	8.5	39	8.3	272	8	No Flow		130	7.5	161	8.1	156	8	
	141	8.1	135	8.1	141	8.2	45	7.8	158	8.1	37	7.9	308	8				130	7.8	147	8.5	148	8.1
	160	8.3	157	8	162	8.3	46	8.7	143	7.3	38	7.8	302	8				165	8.4	147	8.1	147	7.9
	169	8	167	7.8	170	8	46	7.4	146	7.8	40	8.5	296	8.3				142	8	142	7.6	142	7.6
August 2018	187	7.7	182	7.9	193	7.3	48	7.8	143	7.7	52	7.8	285	7.8				148	8	130	6.7	134	7
													295	7.5									
													283	7.5									
September 2018													No Flow										

Table 35
Q2 Report 2018

Daily Precipitation (mm)						
DATE	APRIL	MAY	JUNE	JULY	AUG	SEPT
1	0.00	0.20	0.00	0.30	3.00	0.00
2	1.00	0.00	1.00	0.00	1.40	4.50
3	0.00	0.00	3.40	0.00	0.00	0.00
4	0.20	0.00	0.00	0.00	0.00	0.00
5	7.20	0.40	1.10	0.80	0.00	0.00
6	4.40	0.00	0.70	2.60	0.00	0.00
7	0.20	0.10	0.70	18.40	0.00	3.90
8	18.80	0.10	0.80	0.00	0.00	1.30
9	2.00	2.40	12.30	2.40	0.00	17.10
10	0.00	1.50	7.00	0.00	0.00	16.00
11	16.30	2.90	5.10	0.00	0.50	5.40
12	5.20	0.00	0.00	0.00	0.00	0.10
13	0.00	0.00	4.80	0.00	0.00	10.90
14	12.50	0.00	1.50	0.00	0.00	5.80
15	0.70	0.00	0.10	0.00	0.00	15.50
16	0.00	0.00	0.00	0.00	0.00	15.80
17	0.80	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00
19	5.60	0.30	0.00	0.00	0.00	0.70
20	0.00	0.10	0.00	0.00	0.00	16.40
21	0.70	0.10	0.00	0.00	0.00	31.70
22	0.20	0.00	0.00	0.00	0.00	5.10
23	0.00	0.00	1.90	0.00	0.00	0.10
24	0.00	0.00	0.10	0.00	0.00	0.00
25	0.00	0.00	12.80	0.00	4.20	0.10
26	0.00	0.00	2.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00
29	6.60	0.00	1.00	0.00	0.00	0.00
30	0.80	0.00	5.40	0.00	0.10	19.00
31		0.00		0.00	0.00	
Monthly Total (mm)	83.20	8.10	61.70	24.50	9.20	169.40
2018 Q2 Total (mm)	203.10					

Table 36
Q1 Report 2018

DEPTH PROFILING - LAKES																														
NO NAME LAKE DEPTH PROFILING																														
STATION NAME: NO NAME LAKE (NNL)																														
Sample Date Parameter Sample Depth (m)	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV
1	23.42	7.65	40	101.3	8.62	188.7	24.53	7.55	41	99.7	8.31	240.1	24.79	7.56	40	100.7	8.37	285.8	23.03	6.72	39	95.3	8.17	266.3	21.17	6.93	38	99.6	8.96	254.9
2	23.14	7.51	40	100.7	8.63	191.2	24.52	7.53	40	99.5	8.30	239.9	24.39	7.52	40	99.6	8.32	289.5	23.00	6.92	39	94.9	8.14	268.5	21.11	6.99	37	99.4	8.84	258.5
3	21.90	7.44	42	99.6	8.76	193.0	23.22	7.34	41	102.1	8.67	242.1	23.74	7.32	40	96.6	8.15	295.0	22.95	7.11	39	94.7	8.13	269.4	21.10	7.00	37	99.5	8.87	260.6
4	17.57	7.29	40	105.0	10.13	191.8	18.19	7.18	36	111.1	10.51	244.4	19.29	7.21	35	113.5	10.67	299.1	20.57	6.94	35	113.4	10.22	276.5	21.00	7.00	37	101.8	9.08	262.4
5	13.46	7.13	35	101.0	10.58	193.1	13.67	6.99	34	102.1	10.60	249.1	14.18	6.98	33	105.4	10.87	306.7	14.97	6.70	33	103.7	10.49	283.3	15.63	6.60	32	108.1	10.79	269.5
6	10.05	6.91	39	87.5	9.92	196.1	10.12	6.84	36	87.9	9.86	235.7	10.22	6.75	36	86.0	9.62	314.8	11.12	6.48	35	87.4	9.58	294.8	11.82	6.33	33	91.3	9.94	277.2
7	7.66	6.79	42	78.0	9.08	198.6	8.27	6.71	39	77.8	9.04	257.1	8.22	6.58	38	72.3	8.50	320.1	8.79	6.22	37	72.9	8.44	307.0	9.42	6.18	36	77.1	8.83	282.9
8	7.02	6.46	43	63.0	7.64	205.2	7.14	6.54	41	64.6	7.73	261.4	7.25	6.47	39	63.4	7.43	323.4	7.58	5.99	38	61.0	7.28	316.2	7.67	6.09	37	63.3	7.53	287.2
9	6.78	6.44	43	60.4	7.38	206.3	6.92	6.45	41	60.3	7.31	263.3	6.68	6.38	40	55.2	6.74	326.3	6.88	5.89	39	54.3	6.58	320.4	7.26	6.04	38	57.0	6.89	288.6
10	6.49	6.38	44	56.8	6.98	207.7	6.56	6.39	41	55.6	6.82	265.0	6.50	6.34	40	52.6	6.46	328.3	6.68	5.84	39	50.9	6.21	322.7	6.77	6.00	38	54.0	6.38	290.6
11	6.40	6.37	44	56.1	6.91	209.1	6.45	6.35	41	54.5	6.70	267.1	6.40	6.31	40	51.9	6.40	330.4	6.55	5.86	39	49.1	6.02	322.7	6.59	5.97	38	50.0	6.10	291.4
1m from Bottom (BS)	6.40	6.37	44	56.1	6.91	209.1	6.45	6.35	41	54.5	6.70	267.1	6.40	6.31	40	51.9	6.40	330.4	6.55	5.86	39	49.1	6.02	322.7	6.59	5.97	38	50.0	6.10	291.4
BS=11.7						BS=11.5						BS=11.5						BS=11.3						BS=11.6						
LONG LAKE DEPTH PROFILING																														
STATION NAME: LONG LAKE (LLM)																														
Sample Date Parameter Sample Depth (m)	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV
1	22.58	7.81	313	99.7	8.61	196.6	23.64	7.60	313	98.9	8.37	284.3	24.24	7.87	309	101.0	8.45	299.0	22.61	7.46	307	96.2	8.31	308.3	20.77	7.44	307	100.2	8.97	300.7
2	22.11	7.82	313	99.7	8.68	198.0	23.66	7.74	313	98.9	8.37	281.3	23.83	7.88	309	100.0	8.44	300.3	22.54	7.62	308	96.0	8.30	301.3	20.72	7.56	307	100.0	8.96	299.1
3	21.50	7.76	319	98.2	8.67	199.3	23.61	7.80	314	98.8	8.37	280.7	23.38	7.83	311	98.8	8.41	301.7	22.51	7.68	307	95.7	8.29	298.1	20.67	7.58	307	99.6	8.93	299.1
4	18.28	7.55	366	107.3	10.07	203.4	19.72	7.66	325	109.3	10.10	285.9	21.21	7.64	347	113.3	10.10	307.6	22.06	7.67	313	97.2	8.49	298.9	20.65	7.59	307	99.1	8.89	299.1
5	12.58	7.27	430	106.1	11.13	207.2	15.16	7.48	415	109.6	11.23	292.5	15.55	7.40	405	111.2	11.14	313.4	16.79	7.34	390	114.8	11.21	306.3	17.64	7.33	379	100.8	11.33	306.4
6	10.70	7.20	442	100.9	11.19	209.7	11.00	7.35	439	101.0	11.21	296.7	11.36	7.27	422	100.0	10.99	319.1	11.21	7.22	414	96.6	10.65	310.3	12.16	7.16	406	104.6	11.19	311.9
7	7.88	7.16	450	86.0	10.17	211.3	8.13	7.25	444	86.7	10.08	300.6	8.57	7.16	427	84.1	9.81	323.6	8.67	7.07	418	80.9	9.41	314.3	9.22	7.02	410	90.4	10.34	314.9
8	6.65	7.09	452	75.0	9.16	213.3	7.21	7.16	446	71.8	8.71	304.0	7.03	7.10	429	74.0	8.92	326.4	7.36	7.00	422	72.1	8.67	316.9	7.54	6.91	410	75.0	8.95	317.9
9	6.20	7.02	454	67.6	8.40	217.9	6.44	7.08	448	67.5	8.34	305.6	6.37	7.05	430	69.3	8.54	328.8	6.41	6.95	419	65.9	8.09	319.7	6.56	6.82	409	67.7	8.30	321.0
10	5.71	7.00	454	62.2	7.80	220.4	5.91	7.04	449	62.8	7.78	306.7	5.97	7.02	431	65.1	8.07	330.3	6.02	6.89	420	61.8	7.54	321.4	6.11	6.76	409	63.0	7.76	323.2
11	5.50	6.95	455	58.4	7.35	222.1	5.72	7.00	449	59.1	7.38	307.1	5.71	6.97	431	57.7	7.22	332.7	5.75	6.83	420	53.7	6.71	324.0	5.81	6.72	409	57.8	7.21	324.9
12	5.46	6.94	456	56.7	7.14	222.9	5.48	6.97	449	56.2	7.07	308.7	5.57	6.94	432	55.4	6.94	333.9	5.53	6.80	420	51.4	6.48	327.0	5.61	6.70	409	54.8	6.87	325.9
13	5.20	6.92	456	54.6	6.92	223.9	5.31	6.95	449	53.4	6.72	309.7	5.35	6.92	432	51.6	6.51	336.1	5.28	6.77	420	48.1	6.08	328.9	5.36	6.67	409	50.7	6.40	327.6
14	5.01	6.91	456	51.1	6.50	225.3	5.15	6.92	449	51.0	6.48	310.5	5.23	6.90	432	49.7	6.30	337.4	5.03	6.75	420	41.4	5.23	330.2	5.20	6.66	410	47.6	6.06	328.6
15	4.99	6.89	456	45.3	5.73	227.2	5.05	6.91	449	48.3	6.12	311.3	5.16	6.89	432	47.8	6.05	338.4	4.94	6.73	421	36.2	4.60	331.3	5.12	6.64	410	44.2	5.54	329.7
16	4.88	6.88	455	43.7	5.58	228.2	4.94	6.89	450	43.5	5.42	312.1	5.05	6.88	433	46.1	5.85	339.6	4.91	6.72	421	33.8	4.30	332.1	5.05	6.63	410	40.1	5.08	330.7
17	4.83	6.87	455	41.6	5.28	229.1	4.87	6.87	450	38.2	4.86	313.1	4.94	6.86	433	39.9	5.07	341.1	4.89	6.71	421	31.9	4.07	333.2	5.00	6.61	410	37.6	4.78	331.6
18	4.83	6.87	455	41.6	5.28	229.1	4.87	6.87	450	38.2	4.86	313.1	4.89	6.84	433	37.3	4.75	342.0	4.89	6.71	421	30.8	3.95	335.1	4.94	6.60	411	35.0	4.47	332.3
1m from Bottom (BS)	4.83	6.87	455	41.6	5.28	229.1	4.87	6.87	450	38.2	4.86	313.1	4.89	6.84	433	37.3	4.75	342.0	4.89	6.71	421	30.8	3.93	335.9	4.94	6.60	411	33.9	4.33	333.0
BS= 17.80						BS= 18.00						BS= 19.00						BS= 18.9						BS= 18.5						
MIDDLE QUINSAM LAKE (MQL)																														
Sample Date Parameter Sample Depth (m)	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV	TEMP. °C	pH	C µS/cm	% Sat.	D.O. mg/L	ORP mV	TEMP. °C	pH																

Table 37
Q2 Report 2018

EMS ID	E217018	No Name Lake 1 Metre Depth							
Site Name	NNL1	5 in 30 Weekly Samples						Water Quality Guidelines	
Date		25-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18	5x30 Average	Average	Max
Parameter	Units								
SO4-D	mg/L	1.7	2.0	2.5	1.6	3.5	2.3	128	-
Chloro-a	ug/L					<0.50	0.250	-	-
Turb	NTU	0.31	0.38	0.25	0.27	0.27	0.30	-	-
Alk-T	mg/L	13.4	14.8	13.9	13.0	16.2	14.3	-	-
P-T	mg/L	<0.0020	0.0041	0.0045	0.0028	0.0030	0.00308	-	-
Al-T	mg/L	0.0159	0.0151	0.0130	0.0131	0.0127	0.0140	-	-
As-T	mg/L	0.00037	0.00039	0.00041	0.00043	0.00042	0.00040	-	0.005
Ba-T	mg/L	0.0012	0.0011	0.0011	0.0012	0.0011	0.0011	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.0250	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.0000050	-	-
Ca-T	mg/L	4.44	4.40	4.90	4.28	4.58	4.52	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.00050	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.000100	-	0.05
Cu-T	mg/L	0.00063	0.00068	0.00069	0.00058	<0.00050	0.000566	0.002	0.007
Hard-T	mg/L	15.1	15.2	16.4	14.6	15.4	15.3	-	-
Fe-T	mg/L	0.049	0.049	0.053	0.057	0.057	0.053	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.000100	0.003	0.005
Mg-T	mg/L	0.974	1.01	1.00	0.938	0.967	0.978	-	-
Mn-T	mg/L	0.0038	0.0049	0.0053	0.0052	0.0054	0.0049	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.00000100	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.00050	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.00050	-	0.025
K-T	mg/L	0.084	0.078	0.080	0.077	0.073	0.078	-	-
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	1.50	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.000050	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.0000100	-	0.0001
Na-T	mg/L	1.32	1.29	1.33	1.25	1.25	1.29	-	-
Sr-T	mg/L	0.0144	0.0153	0.0151	0.0156	0.0152	0.0151	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.00250	0.0075	0.03
Al-D	mg/L	0.0152	0.0134	0.0118	0.0126	0.0186	0.0143	0.05	0.1
As-D	mg/L	0.00034	0.00039	0.00037	0.00043	0.00037	0.00038	-	-
Ba-D	mg/L	0.0012	0.0010	0.0011	0.0010	0.0012	0.0011	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.0250	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.00000250	0.000088	0.00017
Ca-D	mg/L	4.49	4.51	4.48	4.61	4.61	4.54	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.00050	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.000100	-	-
Cu-D	mg/L	0.00045	0.00064	0.00040	0.00046	0.00039	0.00047	-	-
Hard-D	mg/L	15.1	15.2	15.1	15.6	15.5	15.3	-	-
Fe-D	mg/L	0.0365	0.0372	0.0385	0.0426	0.0396	0.0389	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.000100	-	-
Mg-D	mg/L	0.948	0.968	0.956	0.999	0.967	0.968	-	-
Mn-D	mg/L	0.0027	0.0035	0.0038	0.0038	0.0028	0.0033	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.00000100	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.00050	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.00050	-	-
K-D	mg/L	0.093	0.080	0.066	0.079	0.070	0.078	-	-
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	1.50	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.000050	-	-
Na-D	mg/L	1.27	1.32	1.23	1.29	1.27	1.28	-	-
Sr-D	mg/L	0.0146	0.0145	0.0143	0.0152	0.0151	0.0147	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.00250	-	-

Table 38
Q2 Report 2018

EMS ID		E217018					5x30 Average	Water Quality Guidelines	
Site Name		No Name Lake 4 Metre Depth							
NNL4		5 in 30 Weekly Samples							
Date		25-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18			
Parameter	Units							Average	Max
SO4-D	mg/L	<1.0	2.00	1	1.30	3.9	2	128	-
Turb	NTU	0.42	0.41	0.31	0.24	0.28	0.33	-	-
Alk-T	mg/L	15.1	14.6	16.9	16.3	16	15.8	-	-
P-T	mg/L	0.0161	0.0046	0.0068	0.0044	0.0025	0.0069	-	-
Al-T	mg/L	0.0234	0.0176	0.0483	0.0129	0.0128	0.023	-	-
As-T	mg/L	0.0005	0.00045	0.00045	0.00047	0.00041	0.00046	-	0.005
Ba-T	mg/L	0.0014	0.0012	0.0014	0.0011	0.0011	0.0012	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000005	-	-
Ca-T	mg/L	4.8	4.68	5.02	4.62	4.53	4.73	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.05
Cu-T	mg/L	0.00064	0.00298	0.00078	0.0006	<0.00050	0.00105	0.002	0.007
Hard-T	mg/L	16.3	16	16.7	15.7	15.4	16.000	-	-
Fe-T	mg/L	0.106	0.072	0.072	0.06	0.057	0.073	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	1.05	1.05	1.01	1.01	1.00	1.024	-	-
Mn-T	mg/L	0.0052	0.005	0.0057	0.0049	0.0051	0.005	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.091	0.088	0.079	0.079	0.071	0.082	-	-
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	1.5	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	1.33	1.29	1.29	1.25	1.28	1.29	-	-
Sr-T	mg/L	0.0157	0.0154	0.0155	0.0154	0.0152	0.0154	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.018	0.0146	0.0146	0.0122	0.0131	0.0145	0.05	0.1
As-D	mg/L	0.00042	0.00045	0.00041	0.00046	0.00038	0.00042	-	-
Ba-D	mg/L	0.0013	0.0012	0.0013	0.0011	0.0011	0.0012	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D	mg/L	4.68	4.57	4.52	4.56	4.7	4.61	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.0006	0.00037	0.0005	0.00076	0.00047	0.00054	-	-
Hard-D	mg/L	15.7	15.5	15.3	15.4	15.8	15.5	-	-
Fe-D	mg/L	0.0711	0.0496	0.0454	0.043	0.04	0.0498	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Mg-D	mg/L	0.983	0.995	0.965	0.978	0.987	0.982	-	-
Mn-D	mg/L	0.0027	0.003	0.0033	0.0039	0.0027	0.0031	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000033	0.0000015	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
K-D	mg/L	0.075	0.085	0.065	0.078	0.074	0.075	-	-
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	1.5	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Na-D	mg/L	1.19	1.32	1.19	1.27	1.29	1.25	-	-
Sr-D	mg/L	0.0147	0.0149	0.0144	0.0149	0.0154	0.0149	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	-	-

Table 39
Q2 Report 2018

EMS ID		E217018					5x30 Average	Water Quality Guidelines AverageMax	
Site Name		No Name Lake 9 Metre Depth							
NNL9		5 in 30 Weekly Samples							
Date		25-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18			
Parameter	Units								
SO4-D	mg/L	4.5	4.3	4.7	1.3	5.9	4	128	-
Turb	NTU	0.41	0.46	0.3	0.22	0.43	0.36	-	-
Alk-T	mg/L	11	11.8	11.4	14.6	13.7	12.5	-	-
P-T	mg/L	0.0025	0.005	0.0048	0.0045	0.0034	0.004	-	-
Al-T	mg/L	0.036	0.0346	0.0524	0.0129	0.0326	0.0337	-	-
As-T	mg/L	0.00023	0.00022	0.00021	0.00046	0.00019	0.00026	-	0.005
Ba-T	mg/L	0.0017	0.0015	0.0014	0.0012	0.0015	0.0015	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000005	-	-
Ca-T	mg/L	4.67	4.59	4.65	4.64	4.61	4.63	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.05
Cu-T	mg/L	0.00052	0.00057	0.00123	0.0007	<0.00050	0.00065	0.002	0.007
Hard-T	mg/L	15.4	15.2	15.2	15.7	15.1	15.300	-	-
Fe-T	mg/L	0.115	0.089	0.081	0.06	0.107	0.090	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	0.912	0.915	0.866	0.993	0.877	0.913	-	-
Mn-T	mg/L	0.0153	0.0123	0.0118	0.0049	0.0147	0.012	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000038	0.0000016	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.101	0.088	0.081	0.079	0.083	0.086	-	-
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	1.5	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	1.15	1.14	1.09	1.270	1.09	1.15	-	-
Sr-T	mg/L	0.0177	0.0169	0.0159	0.0155	0.0173	0.0167	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.0301	0.0325	0.0292	0.0116	0.0304	0.0268	0.05	0.1
As-D	mg/L	0.00017	0.00019	0.0002	0.00042	0.00018	0.00023	-	-
Ba-D	mg/L	0.0015	0.0014	0.0015	0.0011	0.0015	0.0014	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D	mg/L	4.65	4.51	4.43	4.56	4.61	4.55	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.00041	0.00045	0.00042	0.0004	0.00048	0.00043	-	-
Hard-D	mg/L	15.2	14.8	14.6	15.4	15.1	15	-	-
Fe-D	mg/L	0.0666	0.0595	0.0612	0.0424	0.0684	0.0596	-	0.35

Table 40
Q2 Report 2018

EMS ID		E217018					5x30 Average	Water Quality Guidelines	
		No Name Lake 1 Metre From Bottom Depth							
Site Name		NNLB							
Date		5 in 30 Weekly Samples							
Parameter		Units	25-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18	Average	Max
SO4-D	mg/L	4.7	5.30	5.2	4.40	5.9	5	128	-
Turb	NTU	0.54	0.53	0.41	0.36	0.45	0.46	-	-
Alk-T	mg/L	10.8	10.4	11.3	10.7	12.5	11.1	-	-
P-T	mg/L	0.0038	0.0061	0.0046	0.005	0.0051	0.0049	-	-
Al-T	mg/L	0.0369	0.037	0.0335	0.0333	0.0342	0.035	-	-
As-T	mg/L	0.00025	0.00024	0.00023	0.00022	0.00023	0.00023	-	0.005
Ba-T	mg/L	0.0017	0.0016	0.0016	0.0017	0.0016	0.0016	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000005	-	-
Ca-T	mg/L	4.62	4.82	4.88	4.75	4.47	4.71	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.050
Cu-T	mg/L	0.00054	0.00051	0.00079	0.00056	0.00052	0.00058	0.0020	0.0070
Hard-T	mg/L	15.2	15.9	15.8	15.7	14.8	15.500	-	-
Fe-T	mg/L	0.156	0.138	0.137	0.119	0.136	0.137	-	1.0
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	0.898	0.933	0.869	0.926	0.892	0.904	-	-
Mn-T	mg/L	0.0172	0.0167	0.0164	0.0156	0.0171	0.017	0.70	0.80
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000064	0.0000021	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.094	0.097	0.086	0.092	0.088	0.091	-	-
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	1.5	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	1.12	1.19	1.10	1.13	1.09	1.13	-	-
Sr-T	mg/L	0.0179	0.0181	0.017	0.0183	0.0178	0.0178	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.0313	0.033	0.0296	0.0293	0.0308	0.0308	0.05	0.1
As-D	mg/L	0.00018	0.00020	0.00018	0.00021	0.00017	0.00019	-	-
Ba-D	mg/L	0.0016	0.0015	0.0015	0.0015	0.0016	0.0015	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D	mg/L	4.86	4.68	4.68	4.55	4.67	4.69	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.00043	0.00042	0.00060	0.00068	0.00048	0.00052	-	-
Hard-D	mg/L	15.9	15.5	15.3	15.1	15.3	15.4	-	-
Fe-D	mg/L	0.0899	0.0865	0.0896	0.0784	0.0833	0.0855	-	0.35

Table 41
Q2 Report 2018

EMS ID		E206619					5x30 Average	Water Quality Guidelines AverageMax	
Site Name		Long Lake Middle 1 Metre Depth 5 in 30 Weekly Samples							
Date	LLM1	25-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18			
Parameter	Unit								
SO4-D	mg/L	93.5	98.2	90.9	99.7	97.9	96	128	-
Chloro-a	ug/L					0.5	0.5	-	-
Turb	NTU	0.23	0.3	0.26	0.19	0.23	0.24	-	-
Alk-T	mg/L	42.7	42.4	41.6	43.9	44	42.9	-	-
P-T	mg/L	<0.0020	0.0066	0.0064	0.0023	0.0025	0.0038	0.007	-
Al-T	mg/L	0.0146	0.0102	0.0142	0.0094	0.0083	0.0113	-	-
As-T	mg/L	0.00059	0.00057	0.00063	0.00066	0.00059	0.00061	-	0.005
Ba-T	mg/L	0.0072	0.0071	0.0073	0.0075	0.0067	0.0072	-	-
B-T	mg/L	0.089	0.1	0.091	0.097	0.106	0.097	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.0000050	-	-
Ca-T	mg/L	34.8	35.5	38.3	35.4	35.1	35.8	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.000	-	0.05
Cu-T	mg/L	0.00053	<0.00050	0.0006	<0.00050	0.00056	0.00044	0.002	0.007
Hard-T	mg/L	104	106	112	107	105	106.800	-	-
Fe-T	mg/L	0.025	0.021	0.017	0.012	0.012	0.017	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	4.15	4.15	4.1	4.39	4.29	4.220	-	-
Mn-T	mg/L	0.0069	0.0058	0.0045	0.0036	0.0046	0.005	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000048	0.0000018	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.429	0.42	0.424	0.448	0.438	0.432	-	-
S-T	mg/L	30.8	29.3	30.8	31.4	32.5	31.0	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	14.1	14.1	14.1	14.6	15	14.4	-	-
Sr-T	mg/L	0.265	0.264	0.27	0.271	0.287	0.271	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.0089	0.0095	0.0097	0.0081	0.0101	0.0093	0.05	0.1
As-D	mg/L	0.00052	0.00058	0.00057	0.00064	0.00064	0.00059	-	-
Ba-D	mg/L	0.007	0.007	0.007	0.0075	0.0077	0.0072	-	-
B-D	mg/L	0.085	0.093	0.090	0.086	0.092	0.089	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D	mg/L	35	36.9	35.7	36.1	36.7	36.1	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.00031	0.00027	0.00076	0.00036	0.00035	0.00041	-	-
Hard-D	mg/L	103	109	106	107	109	106.8	-	-
Fe-D	mg/L	0.0213	0.0121	0.0119	0.0118	0.0122	0.0139	-	0.35

Table 42
Q2 Report 2018

EMS ID	E206619	Long Lake Middle 4 Metre Depth							
Site Name	LLM4	5 in 30 Weekly Samples						Water Quality Guidelines	
Date		25-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18	5x30 Average	Average	Max
Parameter	Units								
SO4-D	mg/L	95.8	103	101	101	94.6	99.1	128	-
Turb	NTU	0.26	0.4	0.26	0.24	0.32	0.30	-	-
Alk-T	mg/L	41.5	40.6	43	41.6	44	42.1	-	-
P-T	mg/L	<0.0020	0.0038	0.0046	<0.0020	0.0029	0.00266	0.007	-
Al-T	mg/L	0.0099	0.0094	0.0118	0.0083	0.0097	0.0098	-	-
As-T	mg/L	0.00054	0.00056	0.00051	0.00063	0.00056	0.00056	-	0.005
Ba-T	mg/L	0.0072	0.0072	0.0075	0.0075	0.0069	0.0073	-	-
B-T	mg/L	0.094	0.099	0.098	0.1	0.11	0.100	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000005	-	-
Ca-T	mg/L	35.8	36.7	40.8	36.3	34.6	36.8	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.05
Cu-T	mg/L	<0.00050	0.00103	0.00061	<0.00050	<0.00050	0.00048	0.002	0.007
Hard-T	mg/L	107	109	120	108	104	109.600	-	-
Fe-T	mg/L	0.027	0.026	0.02	0.016	0.013	0.020	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	4.3	4.28	4.43	4.29	4.23	4.310	-	-
Mn-T	mg/L	0.0076	0.0066	0.0057	0.0033	0.0048	0.006	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000056	0.0000019	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.434	0.425	0.456	0.448	0.425	0.438	-	-
S-T	mg/L	31.7	31.5	33.9	31	31.4	31.9	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	14.4	14.6	15.6	14.6	14.5	14.7	-	-
Sr-T	mg/L	0.275	0.267	0.289	0.277	0.273	0.276	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.008	0.0085	0.0068	0.0097	0.0082	0.0082	0.05	0.1
As-D	mg/L	0.00048	0.00054	0.0005	0.00058	0.00065	0.00055	-	-
Ba-D	mg/L	0.0072	0.0072	0.0074	0.0074	0.0075	0.0073	-	-
B-D	mg/L	0.084	0.099	0.097	0.093	0.096	0.094	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D	mg/L	36.4	39.0	38.4	35.7	37.1	37.3	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.00034	0.00063	0.00048	0.00038	0.00037	0.00044	-	-
Hard-D	mg/L	107	114	114	106	110	110.2	-	-
Fe-D	mg/L	0.019	0.0137	0.0137	0.0106	0.0107	0.0135	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Mg-D	mg/L	3.86	4.06	4.5	4.01	4.29	4.14	-	-
Mn-D	mg/L	0.0013	<0.0010	<0.0010	0.0015	<0.0010	0.00086	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000061	0.0000020	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
K-D	mg/L	0.424	0.44	0.441	0.435	0.466	0.441	-	-
S-D	mg/L	31.6	33.7	34.1	30	33.0	32.5	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Na-D	mg/L	12.9	13.6	15.7	13.7	14.9	14.20	-	-
Sr-D	mg/L	0.269	0.265	0.295	0.278	0.272	0.2760	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0362	0.0092	-	-

Table 43
Q2 Report 2018

EMS ID	E206619	Long Lake Middle 9 Metre Depth							
Site Name	LLM9	5 in 30 Weekly Samples						Water Quality Guidelines	
Date		25-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18	5x30 Average	Average	Max
Parameter	Unit								
SO4-D	mg/L	142	145	138	146	140	142.2	128	-
Turb	NTU	0.18	0.33	0.26	0.17	0.31	0.25	-	-
Alk-T	mg/L	55.1	56.7	54.1	54.5	56.2	55.3	-	-
P-T	mg/L	<0.0020	0.0048	0.004	<0.0020	0.0045	0.00306	0.007	-
Al-T	mg/L	0.0128	0.0127	0.0122	0.0112	0.0117	0.0121	-	-
As-T	mg/L	0.00022	0.00023	0.0002	0.00022	0.00022	0.00022	-	0.005
Ba-T	mg/L	0.0085	0.0081	0.0081	0.0085	0.0078	0.0082	-	-
B-T	mg/L	0.135	0.133	0.127	0.137	0.152	0.137	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000005	-	-
Ca-T	mg/L	50.8	49.7	52.7	49.5	48.6	50.3	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.05
Cu-T	mg/L	<0.00050	0.00060	0.00052	<0.00050	<0.00050	0.00037	0.002	0.007
Hard-T	mg/L	150	147	153	146	145	148.20	-	-
Fe-T	mg/L	0.021	0.022	0.018	0.014	0.019	0.019	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	5.68	5.53	5.22	5.55	5.69	5.530	-	-
Mn-T	mg/L	0.0373	0.0422	0.0451	0.0391	0.0451	0.042	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000042	0.0000016	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.692	0.668	0.632	0.692	0.665	0.67	-	-
S-T	mg/L	49.2	48	45.2	46.7	48.1	47.4	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	24.3	23.7	22.5	23.8	23.9	23.6	-	-
Sr-T	mg/L	0.425	0.387	0.395	0.432	0.42	0.412	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.0108	0.0110	0.0110	0.0111	0.0138	0.0115	0.05	0.1
As-D	mg/L	0.00019	0.00024	0.00019	0.00018	0.00024	0.00021	-	-
Ba-D	mg/L	0.0082	0.008	0.0077	0.0081	0.0082	0.008	-	-
B-D	mg/L	0.121	0.13	0.122	0.124	0.133	0.126	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D	mg/L	49.6	53.0	49.3	49.2	47.9	49.8	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.00037	0.00042	0.00049	0.00043	0.00039	0.00042	-	-
Hard-D	mg/L	145	154	145	144	141	145.8	-	-
Fe-D	mg/L	0.0178	0.0136	0.0148	0.0127	0.0352	0.0188	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Mg-D	mg/L	5.04	5.25	5.34	5	5.21	5.17	-	-
Mn-D	mg/L	0.0339	0.0366	0.0401	0.0376	0.039	0.0375	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
K-D	mg/L	0.668	0.673	0.628	0.652	0.669	0.658	-	-
S-D	mg/L	46.7	48.5	45.1	44.4	45.9	46.1	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Na-D	mg/L	21.3	21.6	22.6	21.8	21.8	21.80	-	-
Sr-D	mg/L	0.403	0.391	0.402	0.41	0.385	0.3980	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	-	-

Table 44
Q2 Report 2018

EMS ID	E206619	Long Lake Middle 1 Metre From Bottom Depth							
Site Name	LLMB	5 in 30 Weekly Samples						Water Quality Guidelines	
Date		25-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18	5x30 Average	Average	Max
Parameter	Unit						-		
SO4-D	mg/L	143	143	136	147	146	143.0	128	-
Turb	NTU	0.41	0.51	0.4	0.45	0.57	0.47	-	-
Alk-T	mg/L	57.5	58	58	58	55.8	57.5	-	-
P-T	mg/L	<0.0020	0.0052	0.0085	<0.0020	0.0035	0.00384	0.007	-
Al-T	mg/L	0.014	0.0112	0.0122	0.0121	0.0099	0.0119	-	-
As-T	mg/L	0.00027	0.00022	0.00026	0.0003	0.00024	0.00026	-	0.005
Ba-T	mg/L	0.0116	0.0115	0.012	0.0134	0.0111	0.0119	-	-
B-T	mg/L	0.139	0.143	0.129	0.134	0.137	0.136	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000005	-	-
Ca-T	mg/L	50	50.1	53.4	47.5	48.3	49.9	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.05
Cu-T	mg/L	0.00062	0.00055	0.00051	<0.00050	<0.00050	0.00044	0.002	0.007
Hard-T	mg/L	148	148	156	141	143	147.200	-	-
Fe-T	mg/L	0.037	0.043	0.033	0.039	0.037	0.038	-	1.0
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	5.66	5.5	5.53	5.43	5.31	5.490	-	-
Mn-T	mg/L	0.241	0.241	0.304	0.391	0.326	0.301	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.694	0.685	0.67	0.678	0.663	0.678	-	-
S-T	mg/L	47.7	46.8	46.8	45.4	47.1	46.8	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	24.3	24	23.9	23.2	22.9	23.7	-	-
Sr-T	mg/L	0.427	0.419	0.415	0.409	0.422	0.418	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.0095	0.0093	0.0088	0.0078	0.0098	0.0090	0.05	0.1
As-D	mg/L	0.00019	0.00021	0.00020	0.00023	0.00022	0.00021	-	-
Ba-D	mg/L	0.0109	0.0109	0.011	0.013	0.0118	0.0115	-	-
B-D	mg/L	0.124	0.134	0.122	0.119	0.126	0.125	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D	mg/L	49.7	53	48.6	48.7	48.3	49.7	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.00136	0.00032	0.00036	0.00045	0.00038	0.00057	-	-
Hard-D	mg/L	145	154	143	143	142	145.4	-	-
Fe-D	mg/L	0.0114	0.0132	0.0125	0.0126	0.0207	0.0141	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Mg-D	mg/L	5.12	5.24	5.21	5.13	5.29	5.2	-	-
Mn-D	mg/L	0.201	0.213	0.267	0.391	0.272	0.269	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000058	0.0000020	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
K-D	mg/L	0.673	0.707	0.629	0.674	0.693	0.675	-	-
S-D	mg/L	48.5	50	43.7	44.1	46.5	46.6	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Na-D	mg/L	21.7	22	22.7	22.1	22.0	22.10	-	-
Sr-D	mg/L	0.406	0.403	0.4	0.402	0.396	0.4010	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	-	-

Table 45
Q2 Report 2018

EMS ID		E206618								
Site Description		Middle Quinsam Lake 1 Metre Depth								
Site Name		MQL1								
Date		5 in 30 Weekly Samples								
Parameter		Units	26-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18	5x30 Average	Average	Max
SO4-D	mg/L	27.5	27.2	23.4	17.8	15.6	22	128	-	
Chloro-a	ug/L					<0.50	0.25	-	-	
Turb	NTU	0.37	0.35	0.32	0.25	0.24	0.31	-	-	
Alk-T	mg/L	36.4	39.1	34.7	31.4	29.7	34.3	-	-	
P-T	mg/L	0.0032	<0.0020	0.0036	0.0042	0.0029	0.0030	0.006	-	
Al-T	mg/L	0.0204	0.0187	0.0192	0.0175	0.0161	0.0184	-	-	
As-T	mg/L	0.0002	0.0002	0.00023	0.0002	0.0002	0.00021	-	0.005	
Ba-T	mg/L	0.0018	0.0017	0.0016	0.0014	0.0012	0.0015	-	-	
B-T	mg/L	<0.050	0.057	<0.050	<0.050	<0.050	0.031	-	-	
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.0000050	-	-	
Ca-T	mg/L	10.9	11.6	10.7	8.72	9.06	10.2	-	-	
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-	
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.000	-	0.05	
Cu-T	mg/L	0.00062	0.00060	0.00153	0.0006	0.00056	0.00078	0.002	0.007	
Hard-T	mg/L	33.1	34.6	32	26.1	27.2	30.600	-	-	
Fe-T	mg/L	0.035	0.04	0.035	0.034	0.031	0.035	-	1	
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005	
Mg-T	mg/L	1.42	1.41	1.27	1.06	1.11	1.250	-	-	
Mn-T	mg/L	0.0066	0.0075	0.0071	0.0047	0.0045	0.006	0.7	0.8	
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	0.0001	
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-	
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025	
K-T	mg/L	0.239	0.244	0.205	0.170	0.163	0.204	-	-	
S-T	mg/L	8.9	9	7.3	5.4	5.2	7.2	-	-	
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-	
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001	
Na-T	mg/L	15.3	15.6	12.4	9.1	8.7	12.22	-	-	
Sr-T	mg/L	0.0558	0.0604	0.0499	0.0434	0.0377	0.0494	-	-	
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03	
Al-D	mg/L	0.0159	0.017	0.0206	0.0161	0.0158	0.0171	0.05	0.1	
As-D	mg/L	0.00019	0.0002	0.00018	0.00018	0.00019	0.00019	-	-	
Ba-D	mg/L	0.0020	0.0016	0.0015	0.0013	0.0013	0.0015	-	-	
B-D	mg/L	<0.050	0.054	<0.050	<0.050	<0.050	0.031	-	-	
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017	
Ca-D	mg/L	10.8	11.6	10.5	10.2	9.44	10.51	-	-	
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-	
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-	
Cu-D	mg/L	0.00059	0.00052	0.0006	0.00053	0.00053	0.00055	-	-	
Hard-D	mg/L	32.2	34.5	31.4	30.3	28.1	31.3	-	-	
Fe-D	mg/L	0.0253	0.0227	0.0302	0.0225	0.0234	0.0248	-	0.35	
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-	
Mg-D	mg/L	1.28	1.33	1.23	1.18	1.1	1.22	-	-	
Mn-D	mg/L	<0.0010	<0.0010	0.0017	<0.0010	<0.0010	0.00074	-	-	
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000035	0.0000015	-	-	
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-	
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-	
K-D	mg/L	0.219	0.258	0.209	0.177	0.171	0.207	-	-	
S-D	mg/L	8.7	9.8	7	6.1	5.1	7.3	-	-	
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-	
Na-D	mg/L	14.6	14.6	11.8	10	8.62	11.92	-	-	
Sr-D	mg/L	0.0584	0.0586	0.0502	0.043	0.0398	0.0500	-	-	
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	-	-	

Table 46
Q2 Report 2018

EMS ID		E206618					5x30 Average	Water Quality Guidelines	
Site Description		Middle Quinsam Lake 4 Metre Depth							
Site Name		MQL4							
Date		5 in 30 Weekly Samples							
Parameter		Unit	26-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18	Average	Max
SO4-D	mg/L	29.9	27.2	25.3	18.0	15.3	23	128	-
Turb	NTU	0.37	0.4	0.3	0.28	0.24	0.32	-	-
Alk-T	mg/L	37.5	36.7	35.8	33.2	31.3	34.9	-	-
P-T	mg/L	0.0048	0.008	0.0025	0.0026	0.0045	0.0045	0.006	-
Al-T	mg/L	0.019	0.0193	0.0262	0.0151	0.017	0.0193	-	-
As-T	mg/L	0.00018	0.00019	0.00023	0.0002	0.0002	0.0002	-	0.005
Ba-T	mg/L	0.0018	0.0018	0.0016	0.0014	0.0012	0.0016	-	-
B-T	mg/L	<0.050	0.060	<0.050	<0.050	<0.050	0.032	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000005	-	-
Ca-T	mg/L	11.0	11.2	11.1	9.05	9.13	10.3	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.05
Cu-T	mg/L	0.00058	0.00063	0.00114	0.00057	0.00403	0.00139	0.002	0.007
Hard-T	mg/L	33.4	33.7	33	27.0	27.5	30.900	-	-
Fe-T	mg/L	0.038	0.04	0.035	0.033	0.031	0.035	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	1.46	1.41	1.3	1.06	1.13	1.270	-	-
Mn-T	mg/L	0.0067	0.0077	0.007	0.0047	0.0045	0.006	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.241	0.243	0.209	0.171	0.161	0.205	-	-
S-T	mg/L	9	8.8	7.9	5.4	5.2	7.3	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	15.3	15.5	13.3	9.22	8.77	12.42	-	-
Sr-T	mg/L	0.0562	0.0611	0.0523	0.0433	0.0391	0.0504	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.0149	0.0163	0.0163	0.0165	0.0182	0.0164	0.05	0.1
As-D	mg/L	0.00019	0.00016	0.00018	0.00017	0.00019	0.00018	-	-
Ba-D	mg/L	0.0018	0.0016	0.0015	0.0013	0.0013	0.0015	-	-
B-D	mg/L	0.052	0.052	<0.050	<0.050	<0.050	0.036	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D	mg/L	11.7	11.6	10.2	10.1	9.67	10.65	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.00057	0.00071	0.00053	0.00054	0.00051	0.00057	-	-
Hard-D	mg/L	34.7	34.3	30.7	30.3	28.8	31.8	-	-
Fe-D	mg/L	0.0229	0.0235	0.0228	0.0228	0.022	0.0228	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Mg-D	mg/L	1.34	1.28	1.26	1.2	1.13	1.24	-	-
Mn-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000036	0.0000015	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
K-D	mg/L	0.228	0.239	0.221	0.177	0.172	0.207	-	-
S-D	mg/L	9.2	9.3	7.4	6.8	5.6	7.7	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Na-D	mg/L	15	14.2	12.6	9.98	8.3	12.02	-	-
Sr-D	mg/L	0.0608	0.0580	0.0522	0.0429	0.0395	0.0507	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	-	-

Table 47
Q2 Report 2018

EMS ID		E206618					5x30 Average	Water Quality Guidelines		
Site Description		Middle Quinsam Lake 9 Metre Depth								
Site Name		MQL9								
Date		5 in 30 Weekly Samples								
Parameter		Unit	26-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18		23-Aug-18	Average	Max
SO4-D		mg/L	33.8	32.3	35.1	37.4	32.5	34	128	-
Turb		NTU	0.31	0.42	0.4	0.35	0.49	0.39	-	-
Alk-T		mg/L	37.4	36.8	38.8	39.6	39.7	38.5	-	-
P-T		mg/L	0.0044	0.0034	0.0043	0.003	0.0041	0.0038	0.006	-
Al-T		mg/L	0.0114	0.0142	0.0104	0.0095	0.0108	0.0113	-	-
As-T		mg/L	0.00015	0.00016	0.00016	0.00015	0.00015	0.00015	-	0.005
Ba-T		mg/L	0.0021	0.002	0.0021	0.0022	0.0020	0.0021	-	-
B-T		mg/L	<0.050	0.061	0.057	0.058	0.067	0.054	-	-
Cd-T		mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000005	-	-
Ca-T		mg/L	12.8	12.4	13.9	12.2	12.9	12.8	-	-
Cr-T		mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T		mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.05
Cu-T		mg/L	0.00078	0.00072	0.00092	0.00069	0.0006	0.00074	0.002	0.007
Hard-T		mg/L	39.4	37.8	41.8	37.4	39.5	39.200	-	-
Fe-T		mg/L	0.02	0.026	0.02	0.031	0.026	0.025	-	1
Pb-T		mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T		mg/L	1.77	1.63	1.74	1.66	1.76	1.710	-	-
Mn-T		mg/L	0.0051	0.0054	0.0052	0.0074	0.0088	0.006	0.7	0.8
Hg-T		mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	0.00010
Mo-T		mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T		mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T		mg/L	0.245	0.252	0.231	0.233	0.235	0.239	-	-
S-T		mg/L	11.7	11.4	12.5	12.7	12.3	12.1	-	-
Se-T		mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T		mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T		mg/L	17.6	17.1	17.5	16.6	17.3	17.2	-	-
Sr-T		mg/L	0.0668	0.0681	0.07	0.074	0.0696	0.0697	-	-
Zn-T		mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D		mg/L	0.0093	0.011	0.0087	0.0076	0.0084	0.0090	0.05	0.1
As-D		mg/L	0.00015	0.00016	0.00014	0.00013	0.00015	0.00015	-	-
Ba-D		mg/L	0.0020	0.0018	0.0020	0.002	0.0021	0.002	-	-
B-D		mg/L	0.056	0.056	0.052	0.056	0.054	0.055	-	-
Cd-D		mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D		mg/L	13.1	12.8	13.5	13.5	13.5	13.3	-	-
Cr-D		mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D		mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D		mg/L	0.00084	0.00047	0.00053	0.00052	0.00062	0.0006	-	-
Hard-D		mg/L	39.6	38.1	41	41.1	40.6	40.1	-	-
Fe-D		mg/L	0.0141	0.0123	0.0121	0.0073	0.0066	0.0105	-	0.35
Pb-D		mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Mg-D		mg/L	1.64	1.50	1.74	1.78	1.68	1.67	-	-
Mn-D		mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Hg-D		mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000035	0.0000015	-	-
Mo-D		mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-D		mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
K-D		mg/L	0.228	0.242	0.247	0.233	0.246	0.239	-	-
S-D		mg/L	11.8	11.8	13	13	12.4	12.4	-	-
Se-D		mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Na-D		mg/L	16.7	15.6	17	17.7	16.8	16.80	-	-
Sr-D		mg/L	0.0708	0.0644	0.0698	0.0724	0.0691	0.0693	-	-
Zn-D		mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	-	-

Table 48
Q2 Report 2018

EMS ID		E206618					5x30 Average	Water Quality Guidelines	
Site Description		Middle Quinsam Lake 1 Metre from Bottom Depth							
Site Name		MQLB							
Date		5 in 30 Weekly Samples							
Parameter		Unit							
		26-Jul-18	2-Aug-18	9-Aug-18	16-Aug-18	23-Aug-18		Average	Max
SO4-D	mg/L	46	47.7	45	45	42.8	45	128	-
Turb	NTU	0.29	0.43	0.29	0.34	0.40	0.35	-	-
Alk-T	mg/L	42.4	43.6	41.6	42.7	42.5	42.6	-	-
P-T	mg/L	0.0063	0.0034	0.0045	0.0025	0.0042	0.0042	0.006	-
Al-T	mg/L	0.0083	0.0093	0.0076	0.0072	0.0072	0.0079	-	-
As-T	mg/L	0.00012	0.00012	0.00013	0.00013	0.00011	0.00012	-	0.005
Ba-T	mg/L	0.0028	0.0027	0.0029	0.0031	0.003	0.0029	-	-
B-T	mg/L	0.059	0.069	0.065	0.068	0.075	0.067	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000005	-	-
Ca-T	mg/L	15.4	15.2	16.2	14.3	15	15.2	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.05
Cu-T	mg/L	0.00057	0.0007	0.00080	0.00058	0.00057	0.00064	0.002	0.007
Hard-T	mg/L	47.7	46.9	49.3	44.3	46.9	47.000	-	-
Fe-T	mg/L	0.025	0.025	0.027	0.025	0.031	0.027	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	2.25	2.18	2.17	2.1	2.28	2.200	-	-
Mn-T	mg/L	0.0086	0.0088	0.0089	0.0092	0.0109	0.009	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000053	0.0000019	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.281	0.307	0.267	0.277	0.273	0.281	-	-
S-T	mg/L	15.4	15.4	15.4	15.4	15.6	15.4	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	21.1	20.4	20.5	19.6	20.7	20.5	-	-
Sr-T	mg/L	0.0788	0.0803	0.0821	0.0866	0.0802	0.0816	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.0066	0.0075	0.0063	0.0065	0.0107	0.0075	0.05	0.1
As-D	mg/L	0.00013	0.00011	0.00011	<0.00010	0.00014	0.000108	-	-
Ba-D	mg/L	0.0028	0.0026	0.0027	0.0028	0.0031	0.0028	-	-
B-D	mg/L	0.063	0.066	0.061	0.063	0.062	0.063	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D	mg/L	15.5	16.3	14.9	15.6	15.9	15.6	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.0005	0.00088	0.00057	0.00055	0.0005	0.0006	-	-
Hard-D	mg/L	47.7	49.2	45.7	48.3	48.7	47.9	-	-
Fe-D	mg/L	0.0176	0.0158	0.0224	0.0132	0.0161	0.017	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Mg-D	mg/L	2.17	2.06	2.07	2.23	2.18	2.14	-	-
Mn-D	mg/L	0.0065	0.0065	0.0059	0.0049	0.0043	0.0056	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000003	0.0000014	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
K-D	mg/L	0.261	0.28	0.264	0.27	0.285	0.272	-	-
S-D	mg/L	15.8	15.4	15.7	16	15.4	15.7	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Na-D	mg/L	20.4	19.9	18.9	20.8	19.7	19.90	-	-
Sr-D	mg/L	0.0833	0.0826	0.0807	0.0818	0.0818	0.0820	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	-	-

Table 49
Q2 Report 2018

EMS ID		E292118					5x30 Average	Water Quality Guidelines	
Site Description		Lower Quinsam Lake 1 Metre Depth							
Site Name		5 in 30 Weekly Samples							
Date	LQL1	26-Jul-18	2-Aug-18	9-Aug-18	17-Aug-18	22-Aug-18			
Parameter	Unit								
SO4-D	mg/L	22.9	24.1	24.1	24.6	20.9	23	128.0	-
Chloro-a	ug/L					0.94	0.94	-	-
Turb	NTU	0.35	0.58	0.33	0.34	0.35	0.39	-	-
Alk-T	mg/L	35.5	38.7	38.4	35.5	36	36.8	-	-
P-T	mg/L	0.0089	<0.0020	0.0048	0.0066	0.0029	0.0048	0.006	-
Al-T	mg/L	0.013	0.0124	0.0366	0.0109	0.0103	0.0166	-	-
As-T	mg/L	0.00065	0.00063	0.00069	0.00071	0.00070	0.00068	-	0.0050
Ba-T	mg/L	0.0036	0.0035	0.0035	0.0037	0.0036	0.0036	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.0000050	-	-
Ca-T	mg/L	12	11.9	11.9	10.6	11.6	11.6	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.05
Cu-T	mg/L	0.00075	0.00062	0.00072	0.00059	0.00058	0.00065	0.002	0.007
Hard-T	mg/L	36.1	35.7	35.9	31.9	34.6	34.800	-	-
Fe-T	mg/L	0.055	0.056	0.057	0.052	0.055	0.055	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	1.51	1.43	1.49	1.33	1.38	1.430	-	-
Mn-T	mg/L	0.0063	0.0066	0.0061	0.0074	0.0072	0.007	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.246	0.244	0.248	0.241	0.252	0.246	-	-
S-T	mg/L	7.5	7.8	7.9	7.5	7.4	7.6	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	11.7	11.9	12.6	11.2	11.2	11.7	-	-
Sr-T	mg/L	0.0575	0.0612	0.0593	0.0604	0.0598	0.0596	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.0079	0.0103	0.0095	0.0107	0.0089	0.0095	0.05	0.1
As-D	mg/L	0.00059	0.00057	0.00063	0.00062	0.00063	0.00061	-	-
Ba-D	mg/L	0.0032	0.0033	0.0034	0.0033	0.0033	0.0033	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.000003	0.000088	0.00017
Ca-D	mg/L	10.9	11.8	12.1	11.8	11.7	11.7	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.00108	0.00050	0.00053	0.00062	0.00051	0.00065	-	-
Hard-D	mg/L	32.5	35.3	36.3	35.3	35	34.9	-	-
Fe-D	mg/L	0.0553	0.0403	0.0432	0.0318	0.0287	0.0399	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Mg-D	mg/L	1.27	1.4	1.49	1.41	1.41	1.4	-	-
Mn-D	mg/L	0.0019	<0.0010	0.0010	<0.0010	<0.0010	0.00088	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
K-D	mg/L	0.222	0.262	0.228	0.233	0.238	0.237	-	-
S-D	mg/L	6.2	9.7	7.6	7.6	7.7	7.8	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Na-D	mg/L	10.6	11.3	12.5	11.6	11.3	11.50	-	-
Sr-D	mg/L	0.0532	0.061	0.0597	0.0582	0.058	0.0580	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	-	-

Table 50

Q2 Report 2018

EMS ID		E292118					5x30 Average	Water Quality Guidelines	
Site Description		Lower Quinsam Lake 4 Metre Depth							
Site Name		LQL4							
Date		5 in 30 Weekly Samples							
Parameter		Unit	26-Jul-18	2-Aug-18	9-Aug-18	17-Aug-18	22-Aug-18	Average	Max
SO4-D	mg/L	23.5	23.7	24.4	24.6	22.4	23.7	128	-
Turb	NTU	0.38	0.49	0.33	0.36	0.36	0.38	-	-
Alk-T	mg/L	36.2	39.7	38.5	36.7	37.6	37.7	-	-
P-T	mg/L	<0.0020	0.0048	0.0051	0.0031	0.0031	0.00342	-	-
Al-T	mg/L	0.0133	0.0122	0.0805	0.0132	0.0104	0.0259	-	-
As-T	mg/L	0.00067	0.00065	0.00068	0.00075	0.00069	0.00069	-	0.005
Ba-T	mg/L	0.0037	0.0036	0.0035	0.0037	0.0035	0.0036	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000005	-	-
Ca-T	mg/L	12.1	12.3	12.1	11.3	11.8	11.9	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	0.05
Cu-T	mg/L	0.00059	0.00203	0.00084	0.00073	0.00067	0.00097	0.002	0.007
Hard-T	mg/L	36.4	36.8	36.4	33.7	35.2	35.700	-	-
Fe-T	mg/L	0.063	0.063	0.051	0.056	0.052	0.057	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	1.52	1.45	1.47	1.35	1.38	1.430	-	-
Mn-T	mg/L	0.0064	0.0073	0.0055	0.008	0.006	0.007	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.252	0.255	0.248	0.245	0.248	0.25	-	-
S-T	mg/L	7.8	7.9	7.9	7.7	7.3	7.7	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	12.1	12.2	12.5	11.4	10.7	11.8	-	-
Sr-T	mg/L	0.0586	0.0624	0.0597	0.0626	0.06	0.0607	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.01	0.0095	0.0094	0.0114	0.0093	0.0099	0.05	0.1
As-D	mg/L	0.0006	0.00057	0.00062	0.00061	0.00066	0.00061	-	-
Ba-D	mg/L	0.0036	0.0034	0.0033	0.0038	0.0032	0.0035	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000260	0.000007	0.000088	0.00017
Ca-D	mg/L	12.3	12.9	11.7	12.2	12.0	12.2	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Cu-D	mg/L	0.00057	0.0006	0.00051	0.00053	0.00057	0.00056	-	-
Hard-D	mg/L	36.8	37.6	35	36.6	35.7	36.3	-	-
Fe-D	mg/L	0.0453	0.0391	0.038	0.0324	0.0312	0.0372	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Mg-D	mg/L	1.47	1.32	1.42	1.46	1.42	1.42	-	-
Mn-D	mg/L	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	0.00066	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
K-D	mg/L	0.256	0.266	0.226	0.243	0.246	0.247	-	-
S-D	mg/L	7.5	8.2	7.4	8.3	8.4	8.0	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Na-D	mg/L	12.2	11.1	12	12.1	11.4	11.80	-	-
Sr-D	mg/L	0.0626	0.0596	0.0582	0.0583	0.0572	0.0592	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	-	-

Table 51
Q2 Report 2018

EMS ID		E292118					5x30 Average	Water Quality Guidelines	
Site Description		Lower Quinsam Lake 9 Metre Depth							
Site Name		LQL9							
Date		5 in 30 Weekly Samples							
Parameter		Unit	26-Jul-18	2-Aug-18	9-Aug-18	17-Aug-18		22-Aug-18	Average
SO4-D	mg/L	21.5	17.2	18.1	18.1	17.9	18.6	128	-
Turb	NTU	0.34	0.56	0.31	0.39	0.4	0.4	-	-
Alk-T	mg/L	36.9	33	32	29.5	30.3	32.3	-	-
P-T	mg/L	0.0048	0.0051	0.0043	0.0029	0.0031	0.0040	-	-
Al-T	mg/L	0.0147	0.0198	0.051	0.0179	0.0151	0.0237	-	-
As-T	mg/L	0.00063	0.00055	0.00055	0.00059	0.00059	0.0006	-	0.005
Ba-T	mg/L	0.0035	0.0035	0.0041	0.0037	0.0036	0.0037	-	-
B-T	mg/L	0.050	0.050	0.050	0.050	0.050	0.050	-	-
Cd-T	mg/L	0.000010	0.000010	0.000010	0.000010	0.000010	0.000010	-	-
Ca-T	mg/L	11.7	10.7	10.7	9.83	10.9	10.8	-	-
Cr-T	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	-	-
Co-T	mg/L	0.00020	0.00024	0.00020	0.00020	0.00020	0.00021	-	0.05
Cu-T	mg/L	0.00061	0.00067	0.00082	0.00068	0.00061	0.00068	0.002	0.007
Hard-T	mg/L	35.1	31.7	31.9	29.3	32.2	32.0	-	-
Fe-T	mg/L	0.066	0.09	0.071	0.081	0.07	0.1	-	1
Pb-T	mg/L	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	0.003	0.005
Mg-T	mg/L	1.45	1.22	1.27	1.15	1.22	1.26	-	-
Mn-T	mg/L	0.0073	0.0095	0.0074	0.0102	0.0078	0.0084	0.7	0.8
Hg-T	mg/L	0.0000020	0.0000020	0.0000020	0.0000020	0.000002	0.0000020	-	0.00010
Mo-T	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	-	-
Ni-T	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	-	0.025
K-T	mg/L	0.242	0.22	0.221	0.218	0.237	0.228	-	-
S-T	mg/L	7.1	5.7	5.9	5.7	5.8	6.0	-	-
Se-T	mg/L	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	-	-
Ag-T	mg/L	0.000020	0.000020	0.000020	0.000020	0.000020	0.000020	-	0.0001
Na-T	mg/L	10.7	7.9	8.49	7.47	7.83	8.47	-	-
Sr-T	mg/L	0.0546	0.0517	0.0502	0.0521	0.0515	0.0520	-	-
Zn-T	mg/L	0.0050	0.0050	0.0050	0.0050	0.0050	0.0050	0.0075	0.03
Al-D	mg/L	0.011	0.0161	0.0149	0.02	0.0136	0.0151	0.05	0.1
As-D	mg/L	0.0006	0.00046	0.00054	0.00052	0.00059	0.00054	-	-
Ba-D	mg/L	0.0035	0.0033	0.0033	0.0035	0.0032	0.0034	-	-
B-D	mg/L	0.050	0.050	0.050	0.050	0.05	0.050	-	-
Cd-D	mg/L	0.0000050	0.0000050	0.0000050	0.0000055	0.000005	0.0000051	0.000088	0.00017
Ca-D	mg/L	11.6	11.2	10.8	11.1	10.6	11.1	-	-
Cr-D	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	-	-
Co-D	mg/L	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	-	-
Cu-D	mg/L	0.00086	0.00047	0.00064	0.00083	0.00054	0.00067	-	-
Hard-D	mg/L	34.4	32.7	32.1	32.7	31.4	32.66	-	-
Fe-D	mg/L	0.0457	0.0698	0.0598	0.0624	0.0558	0.05870	-	0.35
Pb-D	mg/L	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020	-	-
Mg-D	mg/L	1.33	1.14	1.25	1.23	1.19	1.23	-	-
Mn-D	mg/L	0.0021	0.0037	0.0045	0.0048	0.0016	0.0033	-	-
Hg-D	mg/L	0.0000020	0.0000020	0.0000020	0.0000020	0.000002	0.000002	-	-
Mo-D	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	-	-
Ni-D	mg/L	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	-	-
K-D	mg/L	0.227	0.243	0.211	0.22	0.217	0.224	-	-
S-D	mg/L	7	5.5	5.8	6.1	5.5	5.98	-	-
Se-D	mg/L	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	-	-
Na-D	mg/L	10.3	7.16	8.69	7.86	8.12	8.43	-	-
Sr-D	mg/L	0.0585	0.0507	0.0511	0.0507	0.0519	0.0526	-	-
Zn-D	mg/L	0.0142	0.0050	0.0050	0.0050	0.0050	0.0068	-	-

Table 52
Q2 Report 2018

EMS ID	E292118	Lower Quinsam Lake 1 Metre from Bottom					5x30 Average	Water Quality Guidelines	
Site Description									
Site Name	LQLB	5 in 30 Weekly Samples							
Date		26-Jul-18	2-Aug-18	9-Aug-18	17-Aug-18	22-Aug-18			
Parameter	Unit							Average	Max
SO4-D	mg/L	17.2	14.8	14.8	14.4	13.8	15	128	-
Turb	NTU	2.84	3.91	2.94	5.12	6.39	4.24	-	-
Alk-T	mg/L	32.6	33.9	32.4	32.8	33.9	33.1	-	-
P-T	mg/L	0.0086	0.0072	0.0069	0.0058	0.0071	0.0071	-	-
Al-T	mg/L	0.0297	0.0333	0.0472	0.0303	0.0321	0.0345	-	-
As-T	mg/L	0.00124	0.00149	0.00134	0.00196	0.00218	0.00164	-	0.005
Ba-T	mg/L	0.0052	0.006	0.0058	0.0077	0.0086	0.0067	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-T	mg/L	0.000012	<0.000010	0.000012	0.000015	0.000012	0.000011	-	-
Ca-T	mg/L	10.3	10.6	10.6	10.0	11.2	10.54	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-T	mg/L	<0.00020	0.00029	0.00025	0.00051	0.00059	0.00035	-	0.05
Cu-T	mg/L	0.00075	0.00082	0.00092	0.00088	0.00193	0.00106	0.002	0.007
Hard-T	mg/L	30.8	31.6	31.5	29.7	33	31.300	-	-
Fe-T	mg/L	0.582	0.826	0.69	1.17	1.35	0.924	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	0.003	0.005
Mg-T	mg/L	1.22	1.22	1.23	1.15	1.23	1.210	-	-
Mn-T	mg/L	0.179	0.272	0.272	0.481	0.532	0.347	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	0.00010
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	0.025
K-T	mg/L	0.227	0.226	0.229	0.231	0.242	0.231	-	-
S-T	mg/L	4.9	4.9	4.8	4.9	4.9	4.9	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	0.00006	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000010	-	0.0001
Na-T	mg/L	7.18	7.03	7.26	6.63	6.78	6.98	-	-
Sr-T	mg/L	0.0478	0.0509	0.0495	0.0531	0.0545	0.0512	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	0.0075	0.03
Al-D	mg/L	0.019	0.0219	0.0208	0.0238	0.0226	0.0216	0.05	0.1
As-D	mg/L	0.00075	0.00095	0.00091	0.00111	0.00127	0.001	-	-
Ba-D	mg/L	0.005	0.0055	0.0057	0.0068	0.0078	0.0062	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.025	-	-
Cd-D	mg/L	0.0000089	0.0000100	0.0000102	0.0000102	0.000011	0.0000101	0.000088	0.00017
Ca-D	mg/L	10.5	10.9	10.8	10.7	10.6	10.7	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Co-D	mg/L	<0.00020	<0.00020	0.00024	0.00040	0.00051	0.00027	-	-
Cu-D	mg/L	0.00062	0.00081	0.00088	0.00065	0.00076	0.00074	-	-
Hard-D	mg/L	31.1	32	31.9	31.6	31.4	31.6	-	-
Fe-D	mg/L	0.291	0.442	0.442	0.632	0.746	0.511	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00010	-	-
Mg-D	mg/L	1.16	1.15	1.21	1.2	1.19	1.18	-	-
Mn-D	mg/L	0.161	0.247	0.295	0.433	0.511	0.329	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000010	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0005	-	-
K-D	mg/L	0.217	0.238	0.212	0.219	0.233	0.224	-	-
S-D	mg/L	4.8	5.1	4.2	5.1	5.6	5.0	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00005	-	-
Na-D	mg/L	7.1	6.55	7.11	6.71	6.82	6.86	-	-
Sr-D	mg/L	0.0505	0.0501	0.0498	0.0488	0.0529	0.0504	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0025	-	-

Table 53
Q2 Report 2018

EMS ID	E0126402	Middle Quinsam Lake Inlet					5x30 Average	Water Quality Guidelines	
Site Description	5 in 30 Weekly Samples								
Site Name	WA	17-Jul-18	24-Jul-18	1-Aug-18	7-Aug-18	14-Aug-18			
Date								Average	Max
Parameter	Unit								
SO4-D	mg/L	1.1	1.3	1.1	1.5	1.1	1	128	-
Alk-T	mg/L	20.3	20.4	21	21.4	22.1	21	-	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.00	-	-
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	4	5	25
Al-T	mg/L	0.0236	0.0272	0.0215	0.0218	0.0218	0.0232	-	-
As-T	mg/L	0.00012	0.00011	0.00012	0.00014	0.00012	0.00012	-	0.005
Ba-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	-	-
Ca-T	mg/L	6.9	6.87	6.89	6.58	6.7	6.79	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	0.05
Cu-T	mg/L	0.00136	0.00094	0.00063	0.0007	0.00059	0.00084	0.002	0.007
Hard-T	mg/L	20.4	20.3	20.1	19.4	19.7	20	-	-
Fe-T	mg/L	0.025	0.028	0.023	0.021	0.016	0.023	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	0.003	0.005
Mg-T	mg/L	0.764	0.76	0.71	0.723	0.711	0.734	-	-
Mn-T	mg/L	0.002	0.002	0.0015	0.0012	0.0012	0.002	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	0.025
K-T	mg/L	0.062	0.083	0.071	<0.050	0.058	0.065	-	-
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	3	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.00002	-	0.0001
Na-T	mg/L	0.674	0.63	0.594	0.581	0.567	0.609	-	-
Sr-T	mg/L	0.0114	0.0115	0.0109	0.0107	0.0109	0.0111	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.0075	0.03
Al-D	mg/L	0.0207	0.0189	0.0212	0.0176	0.0189	0.0195	0.05	0.1
As-D	mg/L	0.00012	0.00012	0.00016	0.00014	0.00011	0.00013	-	-
Ba-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.05	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000196	<0.0000050	0.000008	0.000088	0.00017
Ca-D	mg/L	7.12	6.89	6.9	7.04	7.27	7.04	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	-	-
Cu-D	mg/L	0.00058	0.0006	0.00058	0.00076	0.00065	0.00063	-	-
Hard-D	mg/L	20.8	20.1	20.3	20.6	21.3	20.6	-	-
Fe-D	mg/L	0.0169	0.0152	0.0287	0.0155	0.0141	0.0181	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	-	-
Mg-D	mg/L	0.723	0.703	0.75	0.741	0.768	0.737	-	-
Mn-D	mg/L	<0.0010	<0.0010	0.0014	0.0010	<0.0010	0.0011	-	-
Hg-D	mg/L	<0.0000020	0.0000021	<0.0000020	<0.0000020	<0.0000020	0.000002	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
K-D	mg/L	0.067	0.071	0.073	0.085	0.059	0.071	-	-
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	3	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	-	-
Na-D	mg/L	0.61	0.587	0.648	0.607	0.633	0.6	-	-
Sr-D	mg/L	0.0112	0.0117	0.0116	0.0111	0.0119	0.0115	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.005	-	-

Table 54
Q2 Report 2018

EMS ID		E0900504					5x30 Average	Water Quality Guidelines	
Site Description		Middle Quinsam Lake Outlet							
Site Name	WB	5 in 30 Weekly Samples							
Date		17-Jul-18	24-Jul-18	1-Aug-18	7-Aug-18	14-Aug-18		Average	Max
Parameter	Unit								
SO4-D	mg/L	29.3	27.8	27.7	25.2	20.5	26	128	-
Alk-T	mg/L	37.5	36.4	36.2	35.4	33.8	35.9	-	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.00	-	-
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	4	5	25
Al-T	mg/L	0.0167	0.0178	0.0195	0.0193	0.0184	0.0183	-	-
As-T	mg/L	0.00018	0.00018	0.00019	0.00021	0.0002	0.00019	-	0.005
Ba-T	mg/L	0.0016	0.0018	0.0017	0.0015	0.0014	0.0016	-	-
B-T	mg/L	0.052	0.058	0.054	<0.050	<0.050	0.053	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	-	-
Ca-T	mg/L	11.7	11.2	11.4	10.4	9.83	10.91	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	0.05
Cu-T	mg/L	0.00123	0.00097	0.00053	0.00064	0.00055	0.00078	0.002	0.007
Hard-T	mg/L	35.3	33.8	33.7	31.4	29.5	32.7	-	-
Fe-T	mg/L	0.041	0.034	0.033	0.039	0.034	0.036	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	0.003	0.005
Mg-T	mg/L	1.49	1.4	1.3	1.28	1.2	1.33	-	-
Mn-T	mg/L	0.0088	0.0074	0.0092	0.0088	0.0085	0.009	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	0.025
K-T	mg/L	0.23	0.237	0.239	0.199	0.191	0.219	-	-
S-T	mg/L	9.5	9.4	9.5	9.1	6.9	8.9	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.00002	-	0.0001
Na-T	mg/L	15.3	15.1	14.2	14.1	11.3	14	-	-
Sr-T	mg/L	0.0611	0.0601	0.0587	0.0519	0.0475	0.0559	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.0075	0.03
Al-D	mg/L	0.0168	0.0154	0.0183	0.0176	0.0179	0.0172	0.05	0.1
As-D	mg/L	0.00019	0.00015	0.00019	0.00021	0.0002	0.00019	-	-
Ba-D	mg/L	0.0018	0.0017	0.0016	0.0017	0.0016	0.0017	-	-
B-D	mg/L	0.055	<0.050	0.051	<0.050	<0.050	0.051	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000070	<0.0000050	0.000005	0.000088	0.00017
Ca-D	mg/L	11.1	11.3	11	10.9	10.8	11	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	-	-
Cu-D	mg/L	0.00076	0.00047	0.00052	0.00071	0.00084	0.00066	-	-
Hard-D	mg/L	33.6	33.6	33.2	32.4	32.2	33	-	-
Fe-D	mg/L	0.0309	0.0221	0.0256	0.0255	0.0244	0.0257	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	-	-
Mg-D	mg/L	1.40	1.29	1.37	1.25	1.25	1.31	-	-
Mn-D	mg/L	0.0016	0.0022	0.0023	0.0031	0.0018	0.0022	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
K-D	mg/L	0.228	0.243	0.239	0.249	0.195	0.231	-	-
S-D	mg/L	9.5	9.7	8.5	8.7	7.1	8.7	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	-	-
Na-D	mg/L	14.3	13.9	14.3	12.9	12	13.5	-	-
Sr-D	mg/L	0.0625	0.0623	0.0597	0.0535	0.0507	0.0577	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.005	-	-

Table 55
Q2 Report 2018

EMS ID		E219412					5x30 Average	Water Quality Guidelines	
Site Description		Long Lake Outlet							
Site Name		LLO							
Date		5 in 30 Weekly Samples							
Parameter		Unit	17-Jul-18	24-Jul-18	1-Aug-18	7-Aug-18	14-Aug-18	Average	Max
SO4-D	mg/L	89.8	89.1	93.1	91.5	93.1	91	128	-
Alk-T	mg/L	43.9	42.8	41.5	42.1	43.1	42.7	-	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.00	-	-
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	4	5	25
Al-T	mg/L	0.0128	0.0151	0.0109	0.0138	0.0124	0.013	-	-
As-T	mg/L	0.00049	0.00059	0.00047	0.00066	0.00066	0.00057	-	0.005
Ba-T	mg/L	0.0066	0.0078	0.0078	0.0079	0.0079	0.0076	-	-
B-T	mg/L	0.092	0.091	0.09	0.091	0.096	0.092	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	-	-
Ca-T	mg/L	34.2	34.3	34.9	33.6	35.1	34.40	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	0.05
Cu-T	mg/L	0.00052	0.00055	<0.00050	0.02040	<0.00050	0.00449	0.002	0.007
Hard-T	mg/L	102	102	103	100	105	102.4	-	-
Fe-T	mg/L	0.028	0.046	0.012	0.045	0.035	0.033	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	0.003	0.005
Mg-T	mg/L	4.02	4.03	3.87	3.99	4.16	4.01	-	-
Mn-T	mg/L	0.0063	0.0162	0.0048	0.0213	0.0238	0.015	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	0.025
K-T	mg/L	0.42	0.446	0.466	0.407	0.455	0.439	-	-
S-T	mg/L	28.4	29.2	29	27.8	31.1	29.1	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.00002	-	0.0001
Na-T	mg/L	13.5	13.7	13.1	14.1	14	13.7	-	-
Sr-T	mg/L	0.261	0.261	0.242	0.238	0.266	0.254	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.0075	0.03
Al-D	mg/L	0.0078	0.0054	0.0082	0.0105	0.0067	0.0077	0.05	0.1
As-D	mg/L	0.0005	0.0005	0.00048	0.00064	0.00063	0.00055	-	-
Ba-D	mg/L	0.0071	0.0077	0.0075	0.0082	0.0082	0.0077	-	-
B-D	mg/L	0.084	0.08	0.087	0.092	0.092	0.087	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000070	<0.0000050	0.000005	0.000088	0.00017
Ca-D	mg/L	34.1	34.3	34.8	36.3	37.2	35.3	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	-	-
Cu-D	mg/L	0.00033	0.00033	0.0004	0.00067	0.00034	0.00041	-	-
Hard-D	mg/L	101	101	104	106	110.0	104.4	-	-
Fe-D	mg/L	0.0165	0.0226	0.007	0.0266	0.016	0.0176	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	-	-
Mg-D	mg/L	3.98	3.72	4.06	3.83	4.23	3.96	-	-
Mn-D	mg/L	0.0015	0.0033	0.0024	0.0085	0.0021	0.0036	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
K-D	mg/L	0.419	0.444	0.456	0.457	0.455	0.446	-	-
S-D	mg/L	28.3	28.3	29.8	31.3	32	29.9	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	-	-
Na-D	mg/L	13.3	12.6	13.1	13.7	14.6	13.5	-	-
Sr-D	mg/L	0.238	0.256	0.244	0.249	0.288	0.255	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.005	-	-

Table 56
Q2 Report 2018

EMS ID		E217017					5x30 Average	Water Quality Guidelines	
Site Description		No Name Lake Outlet							
Site Name		NNO							
Date		5 in 30 Weekly Samples							
Parameter		Unit	17-Jul-18	24-Jul-18	1-Aug-18	7-Aug-18	14-Aug-18	Average	Max
SO4-D	mg/L	2	2.2	2.2	2.2	2	2	128	-
Alk-T	mg/L	14.5	14.5	14.9	15.9	22	16.4	-	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	1.00	-	-
TSS	mg/L	5.0	<4.0	<4.0	<4.0	<4.0	4	5	25
Al-T	mg/L	0.0551	0.0162	0.0188	0.0116	0.0112	0.0226	-	-
As-T	mg/L	0.00039	0.00037	0.00041	0.00037	0.00042	0.00039	-	0.005
Ba-T	mg/L	0.0012	0.0011	0.0011	0.0014	0.0011	0.0012	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	-	-
Ca-T	mg/L	4.44	4.5	4.49	5.05	5.64	4.82	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	0.05
Cu-T	mg/L	0.00125	0.0007	0.0005	<0.00050	<0.00050	0.00069	0.002	0.007
Hard-T	mg/L	15	15.3	14.9	17.1	19.2	16.3	-	-
Fe-T	mg/L	0.161	0.053	0.079	0.063	0.06	0.083	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	0.003	0.005
Mg-T	mg/L	0.95	0.982	0.9	1.1	1.23	1.032	-	-
Mn-T	mg/L	0.0209	0.004	0.0136	0.0408	0.0309	0.022	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	0.025
K-T	mg/L	0.112	0.093	0.078	0.107	0.122	0.102	-	-
S-T	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	3	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.00002	-	0.0001
Na-T	mg/L	1.29	1.35	1.23	1.38	1.48	1.35	-	-
Sr-T	mg/L	0.014	0.0148	0.0142	0.0178	0.0187	0.0159	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.0075	0.03
Al-D	mg/L	0.0152	0.0136	0.0173	0.0081	0.0095	0.0127	0.05	0.1
As-D	mg/L	0.00035	0.00035	0.00041	0.00032	0.00041	0.00037	-	-
Ba-D	mg/L	0.001	0.0011	0.001	0.0014	0.0016	0.0012	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.05	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	0.000006	<0.0000050	<0.0000050	0.000005	0.000088	0.00017
Ca-D	mg/L	4.51	4.43	4.4	5.32	6.68	5.07	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	-	-
Cu-D	mg/L	0.00041	0.00041	0.00051	0.00027	0.00032	0.00038	-	-
Hard-D	mg/L	15	14.8	14.9	17.8	22.5	17	-	-
Fe-D	mg/L	0.0441	0.0463	0.0714	0.0445	0.0591	0.0531	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	-	-
Mg-D	mg/L	0.914	0.911	0.948	1.1	1.41	1.057	-	-
Mn-D	mg/L	0.0032	0.0029	0.0156	0.0388	0.086	0.0293	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
K-D	mg/L	0.083	0.087	0.101	0.111	0.125	0.101	-	-
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	3	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	-	-
Na-D	mg/L	1.27	1.2	1.27	1.29	1.65	1.3	-	-
Sr-D	mg/L	0.0143	0.0148	0.0149	0.0175	0.0219	0.0167	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.005	-	-

Table 57
Q2 Report 2018

EMS ID	E286930	Quinsam River Upstream of 7 South Mining Operation							
Site Description		5 in 30 Weekly Samples						Water Quality Guidelines	
Site Name	QRDS1								
Date		17-Jul-18	24-Jul-18	1-Aug-18	7-Aug-18	14-Aug-18	5x30 Average	Average	Max
Parameter	Unit								
SO4-D	mg/L	28.4	28.9	28	25.9	21.9	27	128	-
Alk-T	mg/L	38.4	37.8	38	37	36.7	37.6	-	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	1.10	<1.0	1.00	-	-
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	4	5	25
Al-T	mg/L	0.0586	0.0323	0.0248	0.0242	0.0226	0.0325	-	-
As-T	mg/L	0.00035	0.00035	0.00036	0.00039	0.00036	0.00036	-	0.005
Ba-T	mg/L	0.0027	0.0024	0.0022	0.0022	0.002	0.0023	-	-
B-T	mg/L	0.054	0.052	0.055	0.053	0.050	0.053	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	-	-
Ca-T	mg/L	11.7	11.3	12.1	11.1	10	11.20	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	0.05
Cu-T	mg/L	0.00090	0.00067	0.0006	0.00062	0.00055	0.00067	0.002	0.007
Hard-T	mg/L	35.6	34	35.8	33.5	30.2	33.8	-	-
Fe-T	mg/L	0.099	0.065	0.058	0.056	0.05	0.066	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	0.003	0.005
Mg-T	mg/L	1.54	1.41	1.36	1.42	1.24	1.39	-	-
Mn-T	mg/L	0.0121	0.0108	0.0102	0.0097	0.0083	0.010	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	0.025
K-T	mg/L	0.244	0.245	0.253	0.232	0.204	0.236	-	-
S-T	mg/L	9.5	9.3	9.3	8.9	7.1	8.8	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.00002	-	0.0001
Na-T	mg/L	15.7	15	14.4	15	11.9	14.4	-	-
Sr-T	mg/L	0.0637	0.0627	0.0599	0.0569	0.0503	0.0587	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.0075	0.03
Al-D	mg/L	0.0127	0.0131	0.0131	0.0123	0.0144	0.0131	0.05	0.1
As-D	mg/L	0.00033	0.00031	0.00033	0.0003	0.00032	0.00032	-	-
Ba-D	mg/L	0.0023	0.0024	0.0021	0.0021	0.002	0.0022	-	-
B-D	mg/L	0.055	<0.050	0.054	0.051	<0.050	0.052	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000050	<0.0000050	0.000005	0.000088	0.00017
Ca-D	mg/L	11.8	11.5	11.1	11	10.7	11.2	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	-	-
Cu-D	mg/L	0.00056	0.00047	0.00095	0.00051	0.00051	0.0006	-	-
Hard-D	mg/L	35.8	34.1	33.4	32.7	32	33.6	-	-
Fe-D	mg/L	0.0212	0.0232	0.0297	0.0241	0.0286	0.0254	-	0.35

Table 58
Q2 Report 2018

EMS ID	E292112	Lower Wetland Outlet at the Confluence of the Quinsam River 5 in 30 Weekly Samples		5x30 Average	Water Quality Guidelines		
Site Description					Average	Max	
Site Name	LWO						
Date							
Parameter	Unit	Dry No Flow					
SO4-D	mg/L					128	-
Alk-T	mg/L					-	-
Acidity 8.3	mg/L					-	-
TSS	mg/L					5	25
Al-T	mg/L					-	-
As-T	mg/L					-	0.005
Ba-T	mg/L					-	-
B-T	mg/L					-	-
Cd-T	mg/L					-	-
Ca-T	mg/L					-	-
Cr-T	mg/L					-	-
Co-T	mg/L					-	0.05
Cu-T	mg/L					0.002	0.007
Hard-T	mg/L					-	-
Fe-T	mg/L					-	1
Pb-T	mg/L					0.003	0.005
Mg-T	mg/L					-	-
Mn-T	mg/L					0.7	0.8
Hg-T	mg/L					-	0.0001
Mo-T	mg/L					-	-
Ni-T	mg/L					-	0.025
K-T	mg/L					-	-
S-T	mg/L					-	-
Se-T	mg/L					-	-
Ag-T	mg/L					-	0.0001
Na-T	mg/L					-	-
Sr-T	mg/L					-	-
Zn-T	mg/L					0.0075	0.03
Al-D	mg/L					0.05	0.1
As-D	mg/L					-	-
Ba-D	mg/L					-	-
B-D	mg/L					-	-
Cd-D	mg/L					0.000088	0.00017
Ca-D	mg/L					-	-
Cr-D	mg/L					-	-
Co-D	mg/L					-	-
Cu-D	mg/L					-	-
Hard-D	mg/L					-	-
Fe-D	mg/L					-	0.35
Pb-D	mg/L					-	-
Mg-D	mg/L					-	-
Mn-D	mg/L					-	-
Hg-D	mg/L					-	-
Mo-D	mg/L					-	-
Ni-D	mg/L					-	-
K-D	mg/L					-	-
S-D	mg/L					-	-
Se-D	mg/L					-	-
Na-D	mg/L					-	-
Sr-D	mg/L					-	-
Zn-D	mg/L					-	-

Table 59
Q2 Report 2018

EMS ID		E292113					Monthly	5x30 Average	Water Quality Guidelines	
Site Description		Quinsam River Downstream of 7 South Mine Operation								
Site Name	7SQR	5 in 30 Weekly Samples								
Date		17-Jul-18	24-Jul-18	1-Aug-18	7-Aug-18	14-Aug-18	12-Sep-18		Average	Max
Parameter	Unit									
SO4-D	mg/L	29.4	28.6	26.9	24.3	21.1	16.1	26.1	128	-
Alk-T	mg/L	39	38.8	39.1	38.9	37.6	29.3	38.7	-	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.00	-	-
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	4.0	5	25
Al-T	mg/L	0.0245	0.0392	0.0237	0.0603	0.0247	0.0129	0.0345	-	-
As-T	mg/L	0.00042	0.00048	0.00051	0.00045	0.00049	0.00035	0.00047	-	0.005
Ba-T	mg/L	0.0023	0.0027	0.0025	0.0023	0.0021	0.0017	0.0024	-	-
B-T	mg/L	0.051	0.057	0.055	<0.050	0.050	<0.050	0.053	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	-	-
Ca-T	mg/L	11.5	11.8	11.8	10.3	10.5	9.45	11.20	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	0.05
Cu-T	mg/L	0.00099	0.00064	0.00053	0.00075	0.00058	0.00057	0.0007	0.002	0.007
Hard-T	mg/L	34.7	35.5	35.3	31.6	31.4	28.4	34	-	-
Fe-T	mg/L	0.085	0.122	0.087	0.084	0.086	0.065	0.093	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	0.003	0.005
Mg-T	mg/L	1.46	1.47	1.41	1.43	1.27	1.16	1.41	-	-
Mn-T	mg/L	0.008	0.0097	0.0082	0.0078	0.0067	0.0044	0.0081	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	0.025
K-T	mg/L	0.23	0.256	0.266	0.205	0.214	0.193	0.234	-	-
S-T	mg/L	9	9.5	9.3	9.3	7.1	5	8.8	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	-	-
Ag-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000020	-	0.0001
Na-T	mg/L	14.4	15.3	14.5	13.6	11.9	8.46	13.9	-	-
Sr-T	mg/L	0.0603	0.0641	0.0606	0.0538	0.0511	0.0409	0.0580	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.0075	0.033
Al-D	mg/L	0.0124	0.0114	0.0116	0.0133	0.0148	0.0088	0.0127	0.05	0.1
As-D	mg/L	0.00043	0.00044	0.00044	0.00041	0.00045	0.00036	0.00043	-	-
Ba-D	mg/L	0.0026	0.0026	0.0024	0.0024	0.0024	0.0018	0.0025	-	-
B-D	mg/L	0.053	<0.050	0.054	0.053	<0.050	<0.050	0.052	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000093	<0.0000050	<0.0000050	0.000006	0.000088	0.00017
Ca-D	mg/L	12.4	11.6	11.1	11.2	11.2	9.67	11.5	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	-
Cu-D	mg/L	0.00046	0.00047	0.00052	0.00046	0.00064	0.0005	0.00051	-	-
Hard-D	mg/L	36.9	34.5	33.4	33	33.6	29	34.3	-	-
Fe-D	mg/L	0.0507	0.0509	0.0487	0.0535	0.0558	0.0451	0.0519	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	-
Mg-D	mg/L	1.46	1.34	1.4	1.23	1.35	1.16	1.36	-	-
Mn-D	mg/L	0.0050	0.0059	0.0082	0.0053	0.0052	0.004	0.0059	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
K-D	mg/L	0.236	0.258	0.246	0.227	0.215	0.181	0.236	-	-
S-D	mg/L	9.1	9.5	7.9	7.3	7.5	5.8	8.3	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	-	-
Na-D	mg/L	14.7	13.9	13.8	13.1	12.6	8.6	13.600	-	-
Sr-D	mg/L	0.0604	0.0635	0.0593	0.0576	0.0538	0.0403	0.0589	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	-	-

Table 60
Q2 Report 2018

EMS ID		E297230								
Site Description		Iron River Upstream of Mining Operations								
Site Name	IR1	5 in 30 Weekly Samples					Monthly		Water Quality Guidelines	
Date		17-Jul-18	24-Jul-18	1-Aug-18	7-Aug-18	14-Aug-18	12-Sep-18	5x30 Average	Average	Max
Parameter	Unit									
SO4-D	mg/L	5.5	6.9	9.8	10.2	11.2	9.5	8.7	128	-
Alk-T	mg/L	52.5	61.6	70.2	71.7	76.1	59.8	66.4	-	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.00	-	-
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	4.0	5	25
Al-T	mg/L	0.0246	0.0251	0.0262	0.0256	0.0209	0.0213	0.0245	-	-
As-T	mg/L	0.0006	0.00069	0.00068	0.00068	0.00063	0.00074	0.00066	-	0.005
Ba-T	mg/L	0.0035	0.0046	0.0052	0.0051	0.0054	0.004	0.0048	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	-	-
Cd-T	mg/L	0.000020	0.000017	0.000017	0.000015	0.000016	0.000016	0.000017	-	-
Ca-T	mg/L	20.6	24.1	28.7	28.5	29.5	24.9	26.30	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	0.004	0.11
Cu-T	mg/L	0.00095	0.00055	0.00062	0.00058	<0.00050	0.0008	0.0006	0.002	0.007
Hard-T	mg/L	55.7	64.8	76.8	76.6	79.2	66.7	71	-	-
Fe-T	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	0.003	0.005
Mg-T	mg/L	1.01	1.15	1.26	1.32	1.36	1.11	1.22	-	-
Mn-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	0.7	0.8
Hg-T	mg/L	<0.0000020	0.0000030	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000022	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	0.025
K-T	mg/L	0.192	0.221	0.264	0.236	0.25	0.238	0.233	-	-
S-T	mg/L	<3.0	<3.0	<3.0	3.8	3.7	3.1	3.3	-	-
Se-T	mg/L	0.00037	0.00046	0.00041	0.00038	0.00042	0.00083	0.00041	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000020	0.00005	0.0001
Na-T	mg/L	1.18	1.32	1.49	1.62	1.66	1.35	1.45	-	-
Sr-T	mg/L	0.0657	0.0809	0.0912	0.091	0.0973	0.0817	0.0852	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.0075	0.03
Al-D	mg/L	0.0255	0.0244	0.0248	0.0229	0.0201	0.0227	0.0235	0.05	0.1
As-D	mg/L	0.00064	0.00063	0.00069	0.00059	0.00064	0.0007	0.00064	-	-
Ba-D	mg/L	0.0039	0.0049	0.0051	0.0054	0.0058	0.0043	0.0050	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	-	-
Cd-D	mg/L	0.000019	0.0000180	0.0000160	0.0000210	0.0000173	0.0000170	0.000018	0.00008	0.00017
Ca-D	mg/L	21.2	25.6	27	29.8	32.3	25.2	27.2	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	-
Cu-D	mg/L	0.00053	0.0005	0.00046	0.00051	0.00059	0.00083	0.00052	-	-
Hard-D	mg/L	57.1	68.5	72.9	80	86.6	67.3	73	-	-
Fe-D	mg/L	0.0056	0.0075	<0.0050	0.0062	<0.0050	0.0073	0.0059	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	-
Mg-D	mg/L	1.01	1.11	1.32	1.33	1.43	1.06	1.24	-	-
Mn-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000024	0.000002	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
K-D	mg/L	0.21	0.23	0.272	0.288	0.245	0.216	0.249	-	-
S-D	mg/L	<3.0	<3.0	<3.0	<3.0	3.2	3.3	3.0	-	-
Se-D	mg/L	0.00035	0.00047	0.00046	0.00033	0.00039	0.00081	0.00040	-	-
Na-D	mg/L	1.19	1.24	1.52	1.6	1.74	1.25	1.460	-	-
Sr-D	mg/L	0.0662	0.0842	0.0913	0.0937	0.101	0.0786	0.0873	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	-	-

Table 61
Q2 Report 2018

EMS ID	E297231									
Site Description	Iron River Upstream of Proposed 7SA5 & Upstream of Reclaimed 242 Mine									
Site Name	IR6	5 in 30 Weekly Samples					Monthly		Water Quality Guidelines	
Date		17-Jul-18	24-Jul-18	1-Aug-18	7-Aug-18	14-Aug-18	12-Sep-18	5x30 Average	Average	Max
Parameter	Unit									
SO4-D	mg/L	5.8	7.4	9.6	9.7	11.9	12.3	8.9	128	-
Alk-T	mg/L	51.0	58.5	67.2	67.1	71.7	61.2	63.1	-	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.00	-	-
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	4.0	5	25
Al-T	mg/L	0.0216	0.0208	0.0238	0.0253	0.0206	0.0193	0.0224	-	-
As-T	mg/L	0.0020	0.0032	0.0052	0.0057	0.0075	0.0019	0.0047	-	0.005
Ba-T	mg/L	0.006	0.0088	0.0111	0.0105	0.0128	0.0082	0.0098	-	-
B-T	mg/L	<0.050	<0.050	<0.050	<0.050	0.050	<0.050	0.050	-	-
Cd-T	mg/L	0.00001	0.000011	0.000011	0.000011	0.000011	0.000010	0.000011	-	-
Ca-T	mg/L	19.2	22.9	27.1	25.5	28.8	25.4	24.70	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	0.004	0.11
Cu-T	mg/L	0.00077	0.00057	0.00053	0.00068	0.00069	0.00073	0.0007	0.002	0.0070
Hard-T	mg/L	52.8	63.2	74.6	71.2	80.5	69.6	69	-	-
Fe-T	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	0.003	0.005
Mg-T	mg/L	1.18	1.46	1.68	1.85	2.1	1.51	1.65	-	-
Mn-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	0.025
K-T	mg/L	0.233	0.279	0.364	0.348	0.373	0.322	0.319	-	-
S-T	mg/L	<3.0	<3.0	3.3	3.9	3.9	3.9	3.4	-	-
Se-T	mg/L	0.00029	0.00036	0.00029	0.0002	0.00019	0.00073	0.00027	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000020	0.00005	0.0001
Na-T	mg/L	1.44	1.82	2.24	2.54	2.92	2.07	2.19	-	-
Sr-T	mg/L	0.0628	0.0774	0.0888	0.0845	0.0977	0.0869	0.0822	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.0075	0.03
Al-D	mg/L	0.0222	0.0331	0.0219	0.0194	0.0165	0.0202	0.0226	0.05	0.1
As-D	mg/L	0.002	0.00318	0.00516	0.00543	0.00714	0.00177	0.00458	-	-
Ba-D	mg/L	0.0066	0.0227	0.0107	0.0112	0.0129	0.0083	0.0128	-	-
B-D	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	-	-
Cd-D	mg/L	0.00001	0.0000120	0.0000100	0.0000140	0.0000083	0.000009	0.000011	0.000080	0.00017
Ca-D	mg/L	19.4	24.7	25.6	26.3	29.4	25.7	25.1	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	-
Cu-D	mg/L	0.00057	0.00064	0.0005	0.00052	0.00053	0.00101	0.00055	-	-
Hard-D	mg/L	53.3	67.5	70.9	72.8	81.9	70.2	69.3	-	-
Fe-D	mg/L	0.0053	0.0096	0.0071	0.0050	<0.0050	0.0054	0.0064	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	-
Mg-D	mg/L	1.19	1.39	1.72	1.75	2.08	1.47	1.63	-	-
Mn-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	0.0010	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
K-D	mg/L	0.256	0.290	0.341	0.354	0.344	0.3	0.317	-	-
S-D	mg/L	<3.0	<3.0	<3.0	3.1	3.6	4.3	3.1	-	-
Se-D	mg/L	0.0003	0.00033	0.00027	0.00019	0.00017	0.00071	0.00025	-	-
Na-D	mg/L	1.47	1.66	2.31	2.41	2.88	1.93	2.150	-	-
Sr-D	mg/L	0.0616	0.0817	0.0865	0.0893	0.0988	0.0831	0.0836	-	-
Zn-D	mg/L	<0.0050	0.0210	<0.0050	<0.0050	<0.0050	<0.0050	0.0082	-	-

Table 62
Q2 Report 2018

EMS ID		E297232							Water Quality Guidelines	
Site Description		Iron River Downstream of Proposed 7SA5 & Reclaimed 242 Mine								
Site Name	IR8	5 in 30 Weekly Samples								
Date		17-Jul-18	24-Jul-18	1-Aug-18	7-Aug-18	14-Aug-18				
Parameter	Unit									
SO4-D	mg/L	6.7	6.9	9.4	10.4	10.9	13.6	8.90	128	-
Alk-T	mg/L	50.4	57.7	66.3	69.7	74.8	60.1	63.8	-	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.00	-	-
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	4.0	5	25
Al-T	mg/L	0.0207	0.0202	0.0248	0.036	0.0206	0.0206	0.0245	-	-
As-T	mg/L	0.0036	0.0061	0.00894	0.00961	0.0114	0.00393	0.00793	-	0.005
Ba-T	mg/L	0.0064	0.0095	0.0112	0.0116	0.0122	0.0096	0.0102	-	-
B-T	mg/L	<0.050	<0.050	<0.050	0.053	0.065	<0.050	0.054	-	-
Cd-T	mg/L	<0.000010	0.000010	0.000011	<0.000010	<0.000010	<0.000010	0.000010	-	-
Ca-T	mg/L	18.8	22.6	27.1	25.7	27.8	25.6	24.40	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	0.004	0.11
Cu-T	mg/L	0.00082	0.0007	0.00091	0.00089	0.00063	0.00102	0.0008	0.002	0.0070
Hard-T	mg/L	51.9	62.8	75	72.2	77.9	70.6	68	-	-
Fe-T	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	0.003	0.005
Mg-T	mg/L	1.21	1.51	1.75	1.93	2.07	1.63	1.69	-	-
Mn-T	mg/L	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	0.0010	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	0.025
K-T	mg/L	0.243	0.3	0.422	0.339	0.352	0.327	0.331	-	-
S-T	mg/L	<3.0	<3.0	<3.0	4.4	3.6	4.4	3.4	-	-
Se-T	mg/L	0.00025	0.00031	0.00023	0.00019	0.00015	0.00074	0.00023	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000020	0.00005	0.0001
Na-T	mg/L	1.69	2.34	3.13	3.62	3.94	2.38	2.94	-	-
Sr-T	mg/L	0.061	0.0779	0.0904	0.091	0.0961	0.0885	0.0833	-	-
Zn-T	mg/L	<0.0050	<0.0050	0.0053	<0.0050	<0.0050	<0.0050	0.0051	0.0075	0.03
Al-D	mg/L	0.0219	0.0199	0.0213	0.0216	0.0157	0.0181	0.0201	0.05	0.1
As-D	mg/L	0.00377	0.00599	0.00927	0.00928	0.0115	0.00382	0.00796	-	-
Ba-D	mg/L	0.0075	0.0097	0.0112	0.0117	0.0128	0.0099	0.0106	-	-
B-D	mg/L	<0.050	<0.050	<0.050	0.053	0.06	<0.050	0.053	-	-
Cd-D	mg/L	0.00001	0.0000090	0.0000090	0.0000162	0.0000097	0.000008	0.000011	0.000080	0.00017
Ca-D	mg/L	19.7	23.5	25.7	26.3	31	26.2	25.2	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	-
Cu-D	mg/L	0.00061	0.00063	0.00067	0.00097	0.00073	0.00101	0.00072	-	-
Hard-D	mg/L	54.4	64.4	71.8	73.2	86.3	72.2	70	-	-
Fe-D	mg/L	0.0070	0.0130	0.0062	0.0102	0.0191	0.0087	0.0111	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	-
Mg-D	mg/L	1.27	1.39	1.84	1.82	2.16	1.66	1.7	-	-
Mn-D	mg/L	<0.0010	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	0.0010	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
K-D	mg/L	0.261	0.314	0.368	0.369	0.358	0.314	0.334	-	-
S-D	mg/L	<3.0	<3.0	3.2	<3.0	3.8	4.7	3.2	-	-
Se-D	mg/L	0.00027	0.00032	0.00025	0.00018	0.00015	0.00071	0.00023	-	-
Na-D	mg/L	1.8	2.11	3.26	3.31	4.21	2.38	2.940	-	-
Sr-D	mg/L	0.0646	0.0794	0.091	0.094	0.103	0.0867	0.0864	-	-
Zn-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	-	-

Table 63
Q2 Report 2018

EMS ID	E299256									
Site Description	Quinsam River Downstream of the Confluence with Iron River									
Site Name	IRQR	5 in 30 Weekly Samples					Monthly		Water Quality Guidelines	
Date		17-Jul-18	24-Jul-18	1-Aug-18	7-Aug-18	14-Aug-18	12-Sep-18	5x30 Average	Average	Max
Parameter	Unit									
SO4-D	mg/L	28.4	28	26.3	25.1	21.8	14.8	25.9	128	-
Alk-T	mg/L	39.7	39.7	40.4	36.8	41.2	34.9	39.6	-	-
Acidity 8.3	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.00	-	-
TSS	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	4.0	5	25
Al-T	mg/L	0.0301	0.0273	0.022	0.0219	0.0194	0.0140	0.0241	-	-
As-T	mg/L	0.00054	0.0005	0.00051	0.00049	0.00048	0.00056	0.0005	-	0.005
Ba-T	mg/L	0.0031	0.0031	0.0027	0.0025	0.0023	0.0033	0.0027	-	-
B-T	mg/L	0.052	0.054	0.057	0.051	0.050	<0.050	0.053	-	-
Cd-T	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	-	-
Ca-T	mg/L	12.6	11.8	12.4	11.1	10.5	11.9	11.70	-	-
Cr-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.0002	-	0.05
Cu-T	mg/L	0.00114	0.00061	0.00064	0.00057	0.00055	0.00096	0.0007	0.002	0.007
Hard-T	mg/L	37.8	35.5	37.1	33.2	31.3	35	35	-	-
Fe-T	mg/L	0.101	0.096	0.081	0.081	0.074	0.061	0.087	-	1
Pb-T	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	0.003	0.005
Mg-T	mg/L	1.52	1.45	1.45	1.35	1.25	1.29	1.4	-	-
Mn-T	mg/L	0.0087	0.0084	0.0078	0.0071	0.0062	0.0047	0.0076	0.7	0.8
Hg-T	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000031	0.000002	-	0.0001
Mo-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Ni-T	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	0.025
K-T	mg/L	0.256	0.253	0.268	0.204	0.212	0.222	0.239	-	-
S-T	mg/L	8.6	8.9	9.3	8.6	6.8	4.9	8.4	-	-
Se-T	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	-	-
Ag-T	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000020	-	0.0001
Na-T	mg/L	13.9	14.2	14.8	13.8	11.4	7.45	13.6	-	-
Sr-T	mg/L	0.0633	0.0635	0.0626	0.0575	0.051	0.0483	0.0596	-	-
Zn-T	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.0075	0.03
Al-D	mg/L	0.0130	0.0118	0.0262	0.0172	0.0114	0.0084	0.0159	0.05	0.1
As-D	mg/L	0.00049	0.00046	0.0005	0.00046	0.00043	0.00052	0.00047	-	-
Ba-D	mg/L	0.0033	0.0030	0.0028	0.0026	0.0024	0.0036	0.0028	-	-
B-D	mg/L	0.054	<0.050	0.054	0.054	<0.050	<0.050	0.052	-	-
Cd-D	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000080	<0.0000050	<0.0000050	0.000006	0.00017	0.00043
Ca-D	mg/L	12.9	12.1	11.7	11.4	10.9	12.7	11.8	-	-
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Co-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	-
Cu-D	mg/L	0.00074	0.00054	0.00413	0.00048	0.00047	0.00065	0.00127	-	-
Hard-D	mg/L	38.4	35.7	35	33.8	32.6	35.4	35.1	-	-
Fe-D	mg/L	0.0459	0.0484	0.0517	0.0587	0.0538	0.0311	0.0517	-	0.35
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	-	-
Mg-D	mg/L	1.49	1.36	1.4	1.31	1.29	1.33	1.37	-	-
Mn-D	mg/L	0.0053	0.0057	0.0055	0.0055	0.0054	0.0041	0.0055	-	-
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.000002	-	-
Mo-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
Ni-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	-	-
K-D	mg/L	0.267	0.26	0.253	0.219	0.206	0.218	0.241	-	-
S-D	mg/L	8.5	9.7	8.1	8.2	6.4	5.1	8.2	-	-
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	-	-
Na-D	mg/L	13.9	13.3	13.7	12.9	11.7	7.43	13.100	-	-
Sr-D	mg/L	0.0625	0.0631	0.0622	0.057	0.0522	0.0497	0.0594	-	-
Zn-D	mg/L	<0.0050	0.0063	<0.0050	<0.0050	<0.0050	<0.0050	0.0053	-	-

Table 64
Q2 Report 2018

Taxa and Abundance of Zooplankton Samples						
level of id. : lowest/lowest						
Site Name		LQL	LQL-Replicate	NNL	LLM	MQL
Sampling Date(s)		Aug. 22, 2018	Aug. 22, 2018	Aug. 23, 2018	Aug. 23, 2018	Aug. 23, 2018
units = total organisms/sample						
	stage					
Sub-class : Copepoda						
Order : Cyclopoida						
<u>Cryptocyclops bicolor</u>	adult	48	27		47	8
<u>Diacyclops thomasi</u>	adult	19	27	25		
<u>Ectocyclops phaleratus</u>	adult	19			8	4
<u>Microcyclops varicans rubellus</u>	adult	10	134			
UID	copepodid	192	198	7	108	19
Order : Calanoida						
Family : Diaptomidae						
<u>Hesperodiaptomus kenai</u>	adult			21		
<u>Hesperodiaptomus novemdecimus</u>	adult	5	8		3	4
<u>Skistodiaptomus oregonensis</u>	adult	115	73	149	49	119
UID	copepodid	91	57	4	15	42
UID Calanoida / Cyclopoida	nauplii	374	146	166	157	222
Order : Cladocera						
<u>Bosmina longirostris</u>	adult	91	99	32		23
<u>Ceriodaphnia dubia</u>	adult				12	
<u>Daphnia rosea</u>	adult	734	898	351	564	529
<u>Daphnia sp.</u>	juvenile	106	21		12	23
<u>Diaphanosoma brachyurum</u>	adult	110	303	21	237	426
<u>Leptodora kindtii</u>	adult	5		11		
<u>Polyphemus pediculus</u>	adult	5	10		6	
<u>Sida crystallina</u>	adult			28	12	
Phylum : Rotifera						
<u>Conochilus sp.</u>	colonies					50
<u>Kellicottia longispina</u>		250	136	89	206	46
<u>Keratella cochlearis</u>		82	37	25	391	58
<u>Keratella quadrata</u>				11	12	
<u>Polyarthra sp.</u>		5	16			
UID					9	23
Benthic						
Group : Hydracarina	larvae	5	11	7		8
Order : Diptera						
Chaoborus sp.	larvae				22	12
TOTAL		2,266	2,201	947	1,870	1,616
UID = unidentified due to lack of size and/or missing morphological characters.						

Table 65
Q2 Report 2018

			Ex-Situ													
	Stn.Code		QU0821GS	QU0821GD	QU1105S	QU1105D	QU1109S	MW001S	MW001D	MW006S	MW006D	QU0813A	MW002	MW002	242PS	242PS
Date			29-Aug-2018	29-Aug-2018	18-Sep-2018	18-Sep-2018	30-Jul-2018	13-Aug-2018	20-Aug-2018	20-Aug-2018	13-Aug-2018	11-Sep-2018	4-Jul-2018	5-Sep-2018	8-Aug-2018	4-Sep-2018
Parameter	Units	Freshwater Aquatic Life (C)														
SO4-D	mg/L	1000	<1.0	<1.0	56.5	182	353	799	27.8	573	12.0	30.0	1340	1280	56.6	75.6
S2-T	mg/L		0.0495	0.0634	0.119	7.39	0.414	<0.0050	<0.0050	<0.0050	<0.0050	0.119	<0.0050	<0.0050		Limited water in pond
Cond-F	uS/cm															
pH-F	pH Units															
Alk-T	mg/L		197	186	96.3	299	427	327	90.3	155	79.8	178	244	239	40.6	
Acidity83	mg/L		<1.0	<1.0	<1.0	<1.0	1.4	27.2	<1.0	9.1	<1.0	<1.0	15.5	16.5	<1.0	
N-D	mg/L		0.244	0.410	0.083	0.341	0.410	0.098	0.269	0.313	0.087	<0.20	0.199	0.175		
DOC	mg/L		0.99	1.1	1.3	<5.0	1.5	2.67	2.89	2.08	1.09	<0.50	1.41	0.69	4.83	
Hydrox	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Bicarb	mg/L		229	227	117	365	495	399	110	189	97.4	217	297	291	49.5	
Carb	mg/L		5.4	<1.0	<1.0	<1.0	12.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Cl-D	mg/L	1500	120	960	2.3	1200	38	6.8	1.8	3.6	<1.0	7.8	2.3	1.9		Limited water in pond
F-D	mg/L	*	1.80	1.10	0.200	0.036	0.490	<0.020	0.130	0.060	0.100	0.760	0.120	0.140		
Br-D	mg/L		0.17	1.4	<0.010	2.2	0.13	0.11	0.013	0.12	0.058	<0.010	0.20	0.17		
P-D	mg/L		0.155	0.0374	0.0237	0.377	0.0834	0.0050	0.173	0.0516	0.163	0.0775	0.0106	0.0032		
TSS	mg/L														7.3	14.3
Turb	NTU		1.36	8.41	3.05	1.70	2.47	1.74	69.8	0.64	0.39	1.40	43.6	4.40		
Al-D	mg/L		0.0037	0.026	0.0034	<0.015	<0.015	<0.0060	0.0354	0.0034	0.0170	<0.0030	<0.015	<0.015	0.0237	
Ag-D	mg/L	*	<0.000020	<0.00010	<0.000020	<0.00010	<0.00010	<0.000040	<0.000020	<0.000020	<0.000020	<0.000020	<0.00010	<0.00010	<0.000020	
As-D	mg/L	0.05	0.289	0.173	0.0539	0.0192	0.115	<0.00020	0.0215	0.00167	0.0276	0.411	0.00113	0.00115	0.0155	
Ba-D	mg/L	10	0.460	2.60	0.0609	0.297	0.0447	0.0217	0.0039	0.0342	0.0093	0.238	0.0133	0.0150	0.0408	
B-D	mg/L	50	1.93	3.16	0.380	0.52	1.81	0.43	0.080	0.172	0.052	0.643	0.71	0.73	0.104	
Be-D	mg/L	0.053	<0.00010	<0.00050	<0.00010	<0.00050	<0.00050	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00010	
Bi-D	mg/L		<0.0010	<0.0050	<0.0010	<0.0050	<0.0050	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0010	
Cd-D	mg/L	*	<0.0000050	<0.000025	<0.0000050	<0.000025	<0.000025	0.000104	<0.0000050	0.0000130	<0.0000050	<0.0000050	<0.000025	0.000096	<0.0000050	
Ca-D	mg/L		19.8	115	23.6	139	41.7	283	9.02	144	17.8	34.7	396	449	28.3	
Cr-D	mg/L	0.010	<0.0010	<0.0050	<0.0010	<0.0050	<0.0050	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0010	
Co-D	mg/L	0.04	<0.00020	<0.0010	<0.00020	<0.0010	<0.0010	0.00075	<0.00020	<0.00020	<0.00020	<0.00020	0.0040	0.0036	0.00031	
Cu-D	mg/L	*	<0.00020	<0.0010	<0.00020	<0.0010	<0.0010	0.00135	0.00118	0.00101	0.00073	<0.00020	<0.0010	<0.0010	0.00106	
Fe-D	mg/L		0.884	1.40	0.756	<0.025	0.325	0.059	0.0058	0.0123	<0.0050	0.209	2.89	3.47	0.168	
Hard-D	mg/L	1	67.2	350	76.3	367	151	930	23.7	416	46.8	119	1190	1320	87.4	
Pb-D	mg/L	*	<0.00020	<0.0010	<0.00020	<0.0010	<0.0010	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	
Mg-D	mg/L		4.28	15.4	4.24	4.56	11.4	54.1	0.291	13.8	0.550	7.94	49.5	49.1	4.05	
Mn-D	mg/L		0.0972	0.119	0.0995	0.233	0.0395	2.83	0.0061	0.0322	0.0011	0.0475	1.69	1.72	0.147	
Hg-D	mg/L	0.001	<0.0000020	0.0000022	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000027	<0.0000020	<0.0000020	<0.0000020	
Na-D	mg/L		125	542	37.3	839	304	103	43.5	139	21.6	43.5	93.5	93.4	3.88	
Mo-D	mg/L	10	<0.0010	<0.0050	<0.0010	<0.0050	<0.0050	<0.0020	0.0110	0.0319	0.0035	<0.0010	<0.0050	<0.0050	<0.0010	
Ni-D	mg/L	*	<0.0010	<0.0050	<0.0010	<0.0050	<0.0050	0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0010	
K-D	mg/L		4.29	9.47	1.35	4.77	3.78	2.06	0.608	2.24	0.674	2.04	4.07	4.40	0.406	
S-D	mg/L		<3.0	<15	20.7	95	121	271	9.0	205	3.9	10.5	404	447	18.0	
Sb-D	mg/L	0.2	<0.00050	<0.0025	<0.00050	<0.0025	<0.0025	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0025	<0.0025	<0.00050	
Se-D	mg/L	0.01	<0.00010	<0.00050	<0.00010	<0.00050	0.00225	<0.00020	<0.00010	0.00035	<0.00010	<0.00010	<0.00050	<0.00050	<0.00010	
Si-D	mg/L		3.29	4.15	2.31	4.62	5.77	9.09	2.75	4.87	3.50	3.39	3.03	3.43	0.51	
Sr-D	mg/L		0.503	2.31	0.223	1.57	0.566	1.51	0.0393	0.862	0.0814	0.477	3.25	3.59	0.0785	
Tl-D	mg/L	0.003	<0.000010	<0.000050	<0.000010	<0.000050	<0.000050	<0.000020	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	0.000020	
Ti-D	mg/L	1.00	<0.0050	<0.025	<0.0050	<0.025	<0.025	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.025	<0.0050	
U-D	mg/L	3	<0.00010	<0.00050	<0.00010	<0.00050	<0.00050	0.00307	0.00079	0.00657	0.00071	<0.00010	<0.00050	<0.00050	<0.00010	
V-D	mg/L		<0.0050	<0.025	<0.0050	<0.025	<0.025	<0.010	0.0063	<0.0050	<0.0050	<0.0050	<0.025	<0.025	<0.0050	
Zn-D	mg/L	*	<0.0050	<0.025	<0.0050	<0.025	<0.025	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	0.063	<0.0050	
HZSEquiv	mg/L	0.02	0.0526	0.0674	0.126	7.86	0.440	0.00266	0.00266	0.00266	0.00266	0.126	0.00266	0.00266		

Table 66
Q2 Report 2018

In-Situ														
	Stn.Code	1M2N	1M7S	5M#2	5SMW	QU1111	MW004	MW004	QU1013D	QU1109M	QU1410	QU1410	QU1410	242MW
Date		9-Jul-2018	12-Jul-2018	9-Jul-2018	30-Aug-2018	5-Sep-2018	5-Jul-2018	5-Sep-2018	25-Sep-2018	30-Jul-2018	23-Jul-2018	28-Aug-2018	24-Sep-2018	11-Sep-2018
Parameter	Units													
SO4-D	mg/L		429		182	479	304	373	581	804	1960	1940	1860	72.9
S2-T	mg/L	0.187		0.0379	0.0418	<0.0050	0.0095	<0.0050	0.432	0.0579	<0.0050	<0.0050	0.0077	<0.0050
Cond-F	uS/cm													
pH-F	pH Units													
Alk-T	mg/L		131		297	255	151	168	462	531	298	310	304	
Acidity83	mg/L		1.9		9.3	17.6	3.7	1.8	8.4	16.8	46.0	9.9	26.0	
N-D	mg/L	0.341		0.169	0.320		0.090	0.186	0.414	0.294	0.335	0.300	0.298	0.050
DOC	mg/L	<1.0		<0.50	2.4	0.50	1.85	2.8		<1.0	2.3	<0.50	2.05	<0.50
Hydrox	mg/L		<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Bicarb	mg/L		160		362	311	184	204	564	648	363	379	370	
Carb	mg/L		<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Cl-D	mg/L				3.2		2.5	<1.0	22	56	5.9	5.2	5.4	<1.0
F-D	mg/L				0.190		0.085	0.096	0.120	0.100	0.170	0.670	0.160	0.041
Br-D	mg/L				0.031		0.057	0.076	0.16	0.26	0.31	0.34	0.34	0.010
P-D	mg/L	0.0065	<0.0020	0.0035	<0.0020		0.0023	0.0027	0.0150	0.0037	0.0246	0.0025	0.0158	0.0022
TSS	mg/L					6.8								
Turb	NTU	51.7	5.76	2.36	40.3		0.75	0.37	4.87	150	14.9	16.1	19.8	11.7
Al-D	mg/L	<0.0030	0.0032	<0.0030	0.0037	<0.0060	0.0069	0.0078	0.0079	<0.015	<0.015	<0.015	<0.015	0.0047
Ag-D	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000040	<0.000020	<0.000020	<0.000040	<0.00010	<0.00010	<0.00010	<0.00010	<0.000020
As-D	mg/L	0.00850	0.00186	0.00784	0.00225	0.00390	0.00033	0.00034	0.00456	0.00263	0.101	0.0568	0.0799	0.00173
Ba-D	mg/L	0.0269	0.0589	0.0296	0.0265	0.0224	0.0315	0.0340	0.0247	0.0121	0.0160	0.0138	0.0164	0.0300
B-D	mg/L	1.06	0.556	0.963	0.842	0.87	0.300	0.285	1.04	1.03	1.21	1.09	1.32	0.070
Be-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010
Bi-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010
Cd-D	mg/L	<0.0000050	0.0000233	<0.0000050	<0.0000050	<0.000010	<0.0000050	<0.0000050	<0.000010	<0.000025	<0.000025	<0.000025	<0.000025	0.0000151
Ca-D	mg/L	114	150	47.3	39.0	182	133	143	83.2	92.9	504	472	474	36.6
Cr-D	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010
Co-D	mg/L	<0.00020	0.00485	<0.00020	0.00057	<0.00040	<0.00020	0.00025	0.00133	<0.0010	<0.0010	<0.0010	<0.0010	0.00161
Cu-D	mg/L	<0.00020	0.00030	<0.00020	<0.00020	<0.00040	0.00142	0.00187	<0.00040	<0.0010	<0.0010	0.0016	<0.0010	0.00162
Fe-D	mg/L	3.66	0.0633	0.419	6.52	2.98	0.0077	0.0053	0.751	10.5	1.69	0.997	1.38	3.73
Hard-D	mg/L	327	515	133	118	504	391	421	235	272	2070	2010	1940	99.6
Pb-D	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00040	<0.00020	<0.00020	<0.00040	<0.0010	<0.0010	<0.0010	<0.0010	<0.00020
Mg-D	mg/L	10.7	34.4	3.64	4.99	12.2	14.5	15.6	6.59	9.80	198	201	184	2.01
Mn-D	mg/L	0.352	0.287	0.0649	0.150	0.274	0.0132	0.0592	0.886	0.202	1.52	1.13	1.43	0.250
Hg-D	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	0.0000025	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
Na-D	mg/L	349	18.7	258	165	123	50.3	53.4	417	491	58.9	51.8	53.2	1.55
Mo-D	mg/L	<0.0010	0.0011	<0.0010	0.0019	<0.0020	0.0095	<0.0010	<0.0020	<0.0050	0.0052	<0.0050	<0.0050	<0.0010
Ni-D	mg/L	<0.0010	0.0100	<0.0010	<0.0010	<0.0020	0.0236	0.0026	<0.0020	<0.0050	0.0128	0.0062	<0.0050	0.0048
K-D	mg/L	5.44	2.82	2.62	4.14	1.73	1.85	1.92	4.17	4.74	7.51	6.92	7.48	0.444
S-D	mg/L	228	143	59.7	68.1	179	117	124	208	249	666	600	649	26.2
Sb-D	mg/L	<0.00050	0.00073	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.00050
Se-D	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050	<0.00010
Si-D	mg/L	3.46	2.98	3.21	2.73	3.16	2.67	2.43	3.50	2.73	3.16	2.80	3.08	3.86
Sr-D	mg/L	1.10	1.26	0.478	0.502	1.78	1.01	1.14	0.808	1.07	4.83	4.36	4.37	0.0497
Tl-D	mg/L	<0.000010	0.000053	<0.000010	<0.000010	<0.000020	<0.000010	<0.000010	<0.000020	<0.000050	<0.000050	<0.000050	<0.000050	0.000182
Ti-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.025	<0.025	<0.025	<0.025	<0.0050
U-D	mg/L	<0.00010	0.00018	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	0.00022	<0.00050	0.00104	0.00096	0.00109	<0.00010
V-D	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.025	<0.025	<0.025	<0.025	<0.0050
Zn-D	mg/L	<0.0050	0.0069	0.0096	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.025	<0.025	<0.025	<0.025	0.0110
H2SEquiv	mg/L	0.199		0.0403	0.0444	0.00266	0.0101	0.00266	0.459	0.0615	0.00266	0.00266	0.00819	0.00266

Table 67
Q2 Report 2018

2S Inflow					
Date	2SI	Baro	WL	Q (L/s)	Precip
1-Jul-18	10.007	10.008	-0.001	0.000	1.000
2-Jul-18	10.012	10.014	-0.002	0.000	0.000
3-Jul-18	9.987	9.989	-0.002	0.000	0.200
4-Jul-18	9.958	9.958	0.000	0.000	7.200
5-Jul-18	9.975	9.975	0.000	0.000	4.400
6-Jul-18	9.972	9.971	0.002	0.000	0.200
7-Jul-18	10.012	10.003	0.009	0.011	18.800
8-Jul-18	9.997	9.989	0.008	0.007	2.000
9-Jul-18	9.995	9.989	0.006	0.005	0.000
10-Jul-18	10.037	10.030	0.007	0.005	16.300
11-Jul-18	10.033	10.028	0.005	0.003	5.200
12-Jul-18	10.001	9.995	0.005	0.003	0.000
13-Jul-18	9.992	9.987	0.005	0.002	12.500
14-Jul-18	10.012	10.009	0.003	0.001	0.700
15-Jul-18	9.980	9.977	0.003	0.001	0.000
16-Jul-18	9.972	9.970	0.002	0.000	0.800
17-Jul-18	9.963	9.960	0.002	0.000	0.000
18-Jul-18	9.992	9.991	0.000	0.000	5.600
19-Jul-18	9.997	9.998	-0.001	0.000	0.000
20-Jul-18	10.001	10.003	-0.002	0.000	0.700
21-Jul-18	10.008	10.012	-0.004	0.000	0.200
22-Jul-18	10.018	10.023	-0.005	0.000	0.000
23-Jul-18	9.987	9.994	-0.006	0.000	0.000
24-Jul-18	9.989	9.998	-0.009	0.000	0.000
25-Jul-18	9.995	10.009	-0.014	0.000	0.000
26-Jul-18	9.973	9.989	-0.016	0.000	0.000
27-Jul-18	9.939	9.958	-0.019	0.000	0.000
28-Jul-18	9.939	9.962	-0.024	0.000	6.600
29-Jul-18	9.945	9.975	-0.030	0.000	0.800
30-Jul-18	9.913	9.952	-0.039	0.000	0.200
31-Jul-18	9.893	9.941	-0.048	0.000	0.000
1-Aug-18	9.890	9.945	-0.055	0.000	0.000
2-Aug-18	9.899	9.955	-0.055	0.000	0.000
3-Aug-18	9.929	9.977	-0.048	0.000	0.400
4-Aug-18	9.914	9.961	-0.046	0.000	0.000
5-Aug-18	9.914	9.962	-0.048	0.000	0.100
6-Aug-18	9.932	9.984	-0.053	0.000	0.100
7-Aug-18	9.907	9.964	-0.058	0.000	2.400
8-Aug-18	9.868	9.932	-0.064	0.000	1.500
9-Aug-18	9.869	9.945	-0.076	0.000	2.900
10-Aug-18	9.839	9.922	-0.083	0.000	0.000
11-Aug-18	9.857	9.951	-0.095	0.000	0.000
12-Aug-18	9.902	10.003	-0.101	0.000	0.000
13-Aug-18	9.899	9.992	-0.092	0.000	0.000
14-Aug-18	9.842	9.940	-0.098	0.000	0.000
15-Aug-18	9.822	9.929	-0.106	0.000	0.000
16-Aug-18	9.895	9.972	-0.078	0.000	0.000
17-Aug-18	10.118	10.020	0.098	4.141	0.300
18-Aug-18	10.139	10.024	0.116	6.306	0.100
19-Aug-18	10.111	9.988	0.123	7.268	0.100
20-Aug-18	10.087	9.984	0.102	4.641	0.000
21-Aug-18	10.040	9.975	0.065	1.479	0.000
22-Aug-18	10.045	9.935	0.110	5.502	0.000
23-Aug-18	10.056	9.946	0.110	5.517	0.000
24-Aug-18	10.079	9.968	0.111	5.625	0.000
25-Aug-18	10.080	9.966	0.114	6.026	0.000
26-Aug-18	10.061	9.944	0.116	6.380	0.000
27-Aug-18	10.101	9.987	0.114	5.993	0.000
28-Aug-18	10.086	9.970	0.116	6.361	0.000
29-Aug-18	10.034	9.915	0.119	6.800	0.000
30-Aug-18	10.065	9.952	0.113	5.953	0.000
31-Aug-18	10.091	9.980	0.112	5.729	1.000
1-Sep-18	10.102	9.991	0.110	5.577	3.400
2-Sep-18	10.095	9.983	0.111	5.722	0.000
3-Sep-18	10.111	10.000	0.111	5.712	1.100
4-Sep-18	10.088	9.997	0.092	3.517	0.700
5-Sep-18	10.075	9.964	0.111	5.657	0.700
6-Sep-18	10.060	9.957	0.103	4.683	0.800
7-Sep-18	10.038	9.951	0.087	3.125	12.300
8-Sep-18	10.032	9.948	0.085	2.893	7.000
9-Sep-18	9.997	9.898	0.099	4.252	5.100
10-Sep-18	9.995	9.911	0.084	2.792	0.000
11-Sep-18	9.987	9.921	0.066	1.545	4.800
12-Sep-18	9.971	9.923	0.048	0.699	1.500
13-Sep-18	10.029	9.931	0.098	4.178	0.100
14-Sep-18	10.057	9.923	0.133	8.964	0.000
15-Sep-18	10.014	9.884	0.130	8.436	0.000
16-Sep-18	10.046	9.908	0.138	9.839	0.000
17-Sep-18	10.107	9.994	0.113	5.919	0.000
18-Sep-18	10.102	9.987	0.115	6.142	0.000
19-Sep-18	10.085	9.975	0.110	5.580	0.000
20-Sep-18	10.080	9.968	0.112	5.750	0.000
21-Sep-18	10.044	9.891	0.153	12.731	1.900
22-Sep-18	10.047	9.910	0.137	9.673	0.100
23-Sep-18	10.122	9.994	0.128	8.149	12.800
24-Sep-18	10.167	10.042	0.124	7.479	2.000
25-Sep-18	10.176	10.054	0.121	7.055	0.000
26-Sep-18	10.150	10.031	0.120	6.851	0.000
27-Sep-18	10.101	9.982	0.119	6.718	1.000
28-Sep-18	10.033	9.917	0.117	6.412	5.400
29-Sep-18	10.002	9.887	0.115	6.189	0.300
30-Sep-18	9.990	9.865	0.125	7.665	0.000

Table 68
Q2 Report 2018

2S Outflow Culvert into 3S Pit			
Date	Level	Q	Precip
1-Jul-18	0.121	7.931	0.300
2-Jul-18	0.119	7.648	0.000
3-Jul-18	0.117	7.444	0.000
4-Jul-18	0.118	7.569	0.000
5-Jul-18	0.122	8.104	0.800
6-Jul-18	0.120	7.793	2.600
7-Jul-18	0.127	8.771	18.400
8-Jul-18	0.118	7.532	0.000
9-Jul-18	0.120	7.732	2.400
10-Jul-18	0.117	7.377	0.000
11-Jul-18	0.116	7.219	0.000
12-Jul-18	0.115	7.078	0.000
13-Jul-18	0.114	7.029	0.000
14-Jul-18	0.115	7.131	0.000
15-Jul-18	0.113	6.891	0.000
16-Jul-18	0.113	6.930	0.000
17-Jul-18	0.114	7.055	0.000
18-Jul-18	0.115	7.153	0.000
19-Jul-18	0.117	7.351	0.000
20-Jul-18	0.114	7.043	0.000
21-Jul-18	0.114	6.960	0.000
22-Jul-18	0.113	6.848	0.000
23-Jul-18	0.112	6.742	0.000
24-Jul-18	0.112	6.784	0.000
25-Jul-18	0.112	6.728	0.000
26-Jul-18	0.112	6.766	0.000
27-Jul-18	0.112	6.773	0.000
28-Jul-18	0.112	6.780	0.000
29-Jul-18	0.112	6.725	0.000
30-Jul-18	0.119	7.610	0.000
31-Jul-18	0.112	6.806	0.000
1-Aug-18	0.115	7.100	3.000
2-Aug-18	0.118	7.570	1.400
3-Aug-18	0.114	6.994	0.000
4-Aug-18	0.112	6.798	0.000
5-Aug-18	0.113	6.860	0.000
6-Aug-18	0.112	6.774	0.000
7-Aug-18	0.112	6.769	0.000
8-Aug-18	0.112	6.761	0.000
9-Aug-18	0.113	6.810	0.000
10-Aug-18	0.112	6.796	0.000
11-Aug-18	0.115	7.094	0.500
12-Aug-18	0.115	7.145	0.000
13-Aug-18	0.114	6.945	0.000
14-Aug-18	0.113	6.812	0.000
15-Aug-18	0.113	6.894	0.000
16-Aug-18	0.112	6.788	0.000
17-Aug-18	0.113	6.850	0.000
18-Aug-18	0.114	6.984	0.000
19-Aug-18	0.119	7.704	0.000
20-Aug-18	0.121	7.886	0.000
21-Aug-18	0.120	7.782	0.000
22-Aug-18	0.118	7.544	0.000
23-Aug-18	0.119	7.663	0.000
24-Aug-18	0.121	7.921	0.000
25-Aug-18	0.125	8.489	4.200
26-Aug-18	0.124	8.288	0.000
27-Aug-18	0.122	8.007	0.000
28-Aug-18	0.122	8.105	0.000
29-Aug-18	0.123	8.172	0.000
30-Aug-18	0.123	8.225	0.100
31-Aug-18	0.125	8.454	0.000
1-Sep-18	0.123	8.195	0.000
2-Sep-18	0.127	8.721	4.500
3-Sep-18	0.124	8.285	0.000
4-Sep-18	0.125	8.415	0.000
5-Sep-18	0.124	8.340	0.000
6-Sep-18	0.124	8.358	0.000
7-Sep-18	0.129	9.054	3.900
8-Sep-18	0.129	9.058	1.300
9-Sep-18	0.133	9.580	17.100
10-Sep-18	0.136	10.070	16.000
11-Sep-18	0.132	9.465	5.400
12-Sep-18	0.128	8.950	0.100
13-Sep-18	0.130	9.164	10.900
14-Sep-18	0.134	9.757	5.800
15-Sep-18	0.138	10.414	15.500
16-Sep-18	0.148	12.094	15.800
17-Sep-18	0.137	10.276	0.000
18-Sep-18	0.133	9.660	0.000
19-Sep-18	0.135	10.029	0.700
20-Sep-18	0.140	10.711	16.400
21-Sep-18	0.160	14.387	31.700
22-Sep-18	0.153	13.072	5.100
23-Sep-18	0.147	11.849	0.100
24-Sep-18	0.144	11.475	0.000
25-Sep-18	0.142	11.135	0.100
26-Sep-18	0.141	10.923	0.000
27-Sep-18	0.140	10.772	0.000
28-Sep-18	0.139	10.614	0.000
29-Sep-18	0.140	10.795	0.000
30-Sep-18	0.147	11.998	19.000

Table 69
Q2 Report 2018

Staff Guage and Level Readings

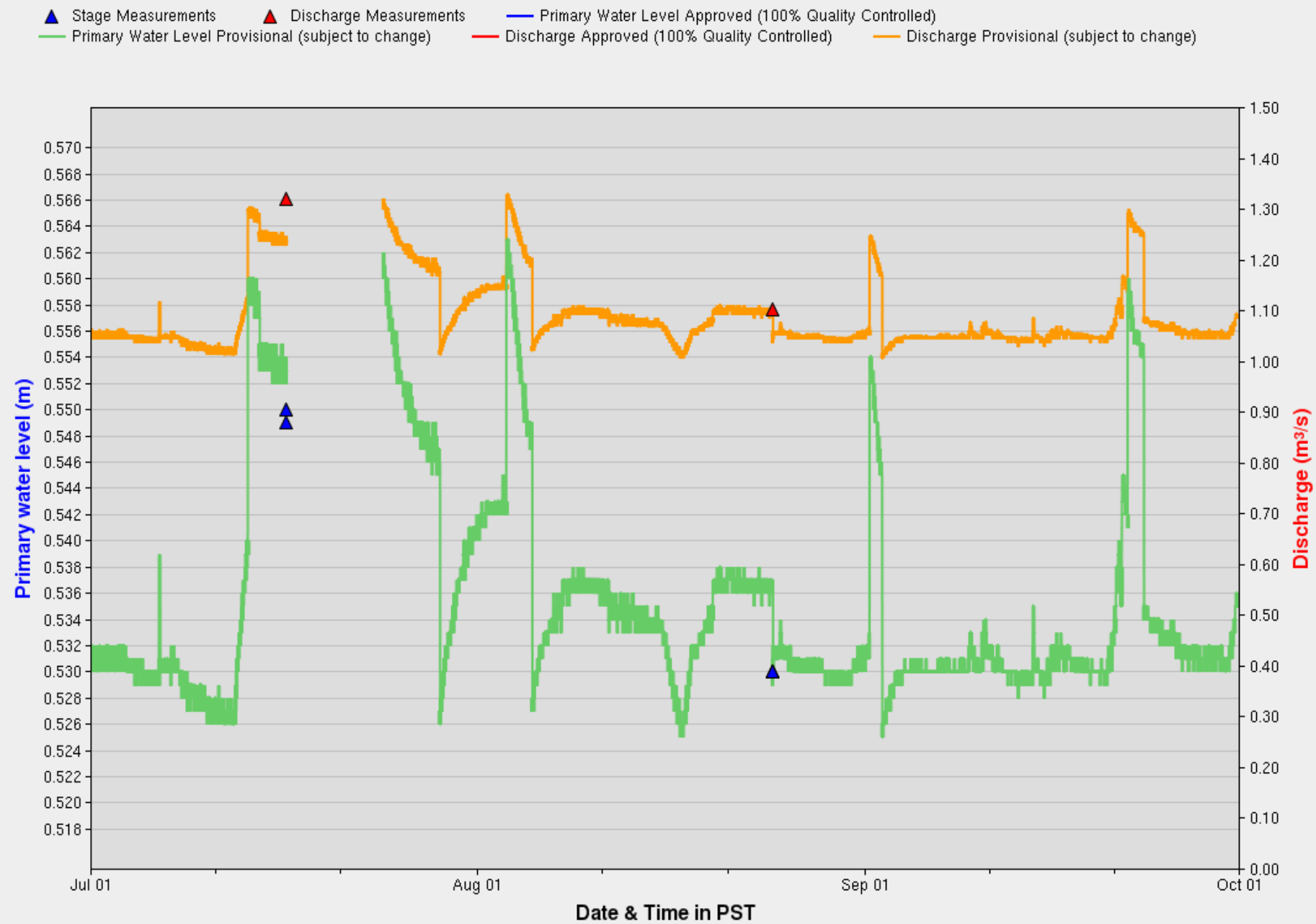
SITE:	LLE	LLSM	LLS		WB	LLO	2South Inflow		2-South Seepage to 3-South		3SO	7S
EMS ID:	E292130	E292131	E292131		900504	E219412	E292127		E292127			E292110
DATE:	L/min	Estimated Flow	SG (m)	Flow	SG (m)	SG (m)	SG (m)	2S Inflow	Date	m3/s	SG (m)	SG (m)
3-Jul-18	0.50 L/min	500mL to 1L/Min	0.01	200 mL/min	0.400	0.110	1.630	No flow	17-Jul-18	0.690	0.215	No flow
10-Jul-18	0.30 L/S	500mL to 1L/Min	0.01	200 mL/min	0.420	0.100	1.765	No flow	23Jul18	0.650	0.210	No flow
17-Jul-18	No Flow	500mL to 1L/Min	0.01	200 mL/min	0.410	0.100	1.540	No flow	01Aug18	0.610	0.205	No flow
23-Jul-18	No Flow	500mL to 1L/Min	0.01	200 mL/min	0.415	0.105	1.490	No flow	07Aug18	0.605	0.145	No flow
30-Jul-18	No Flow	500mL to 1L/Min	0.01	200 mL/min	0.425	0.070	1.390	No flow	14Aug18	0.590	0.130	No flow
7-Aug-18	No Flow	500mL to 1L/Min	0.01	200 mL/min	0.490	0.040	1.250	0.05 (flow due to SPEFF)	12Sep18	0.725	0.130	No flow
14-Aug-18	No Flow	500mL to 1L/Min	0.01	200 mL/min	0.385	0	1.100				0.100	No flow
20-Aug-18	No Flow	No Flow	0.01	200 mL/min	0.390	0	1.130				0.090	No flow
27-Aug-18	No Flow	No Flow	0.01	200 mL/min	0.380	0	1.270				0.090	No flow
4-Sep-18	No Flow	No Flow	0.01	200 mL/min	0.400	0	1.320				0.110	No flow
10-Sep-18	No Flow	No Flow	0.01	200 mL/min	0.410	0	1.410				0.115	No flow
17-Sep-18	0.20 L/min	No Flow	0.01	200 mL/min	0.410	0	1.720				0.265	No flow
24-Sep-18	0.17 L/min	No Flow	0.01	200 mL/min	0.414	0	1.600	0.155			0.268	No flow

Staff Gauge (SG)

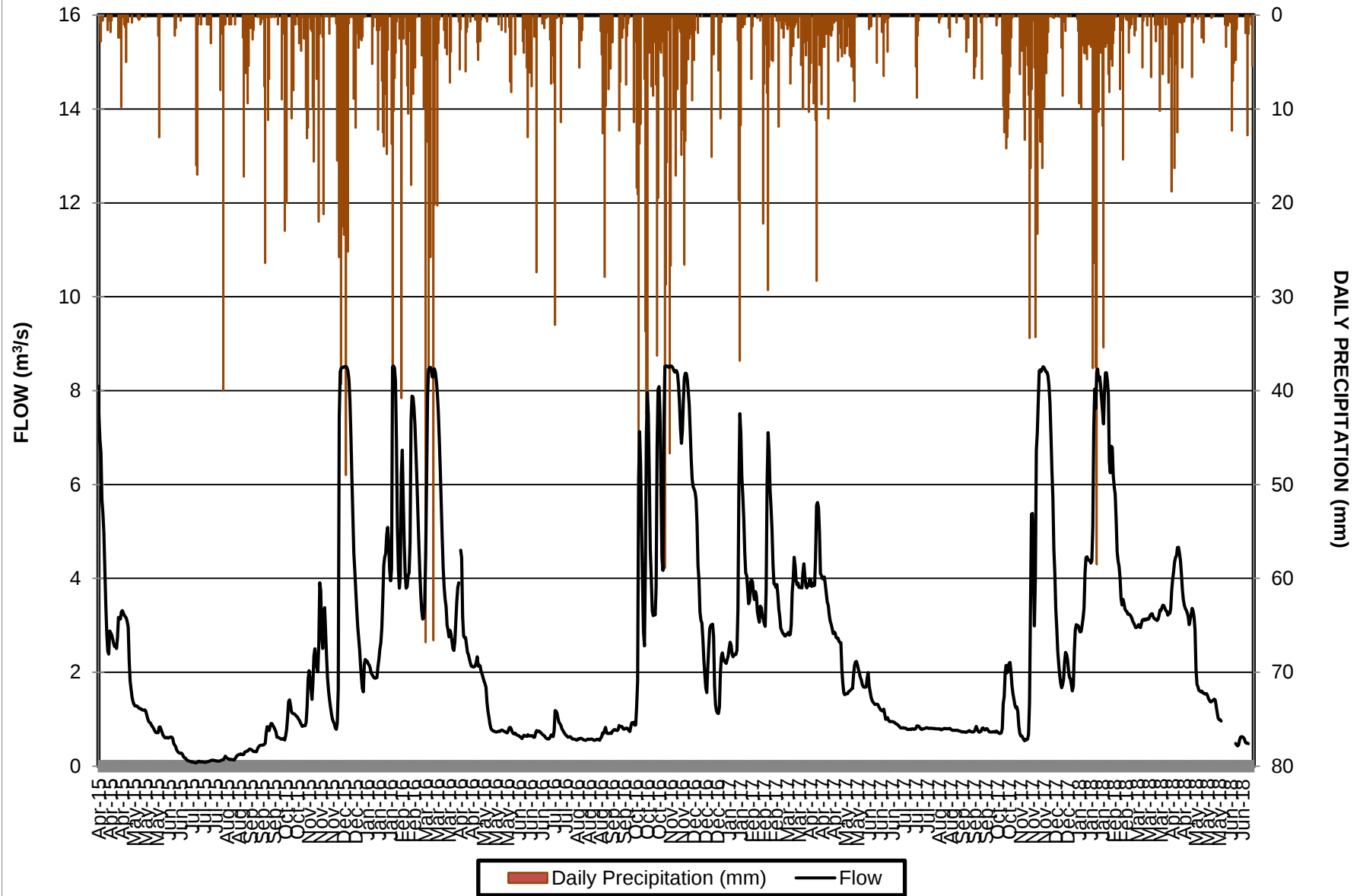
Flow at LLSM was estimated as it was not flowing over the weir or entering the lake.

GRAPH 1
LEVEL VS DISCHARGE
WA

Real-Time Hydrometric Data Graph for QUINSAM RIVER AT ARGONAUT BRIDGE (08HD021) [BC]

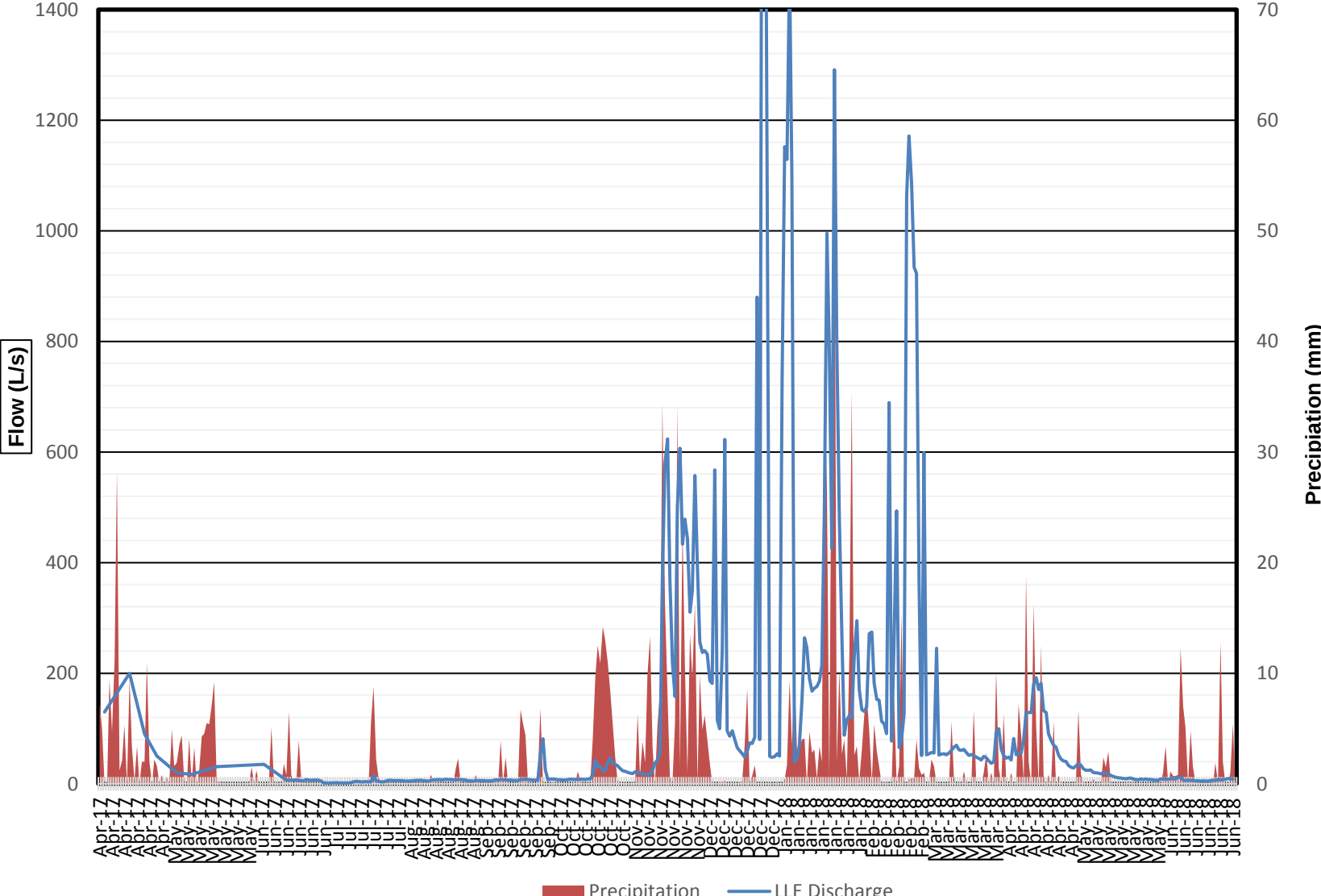


GRAPH 2
FLOW VS PRECIPITATION
WB

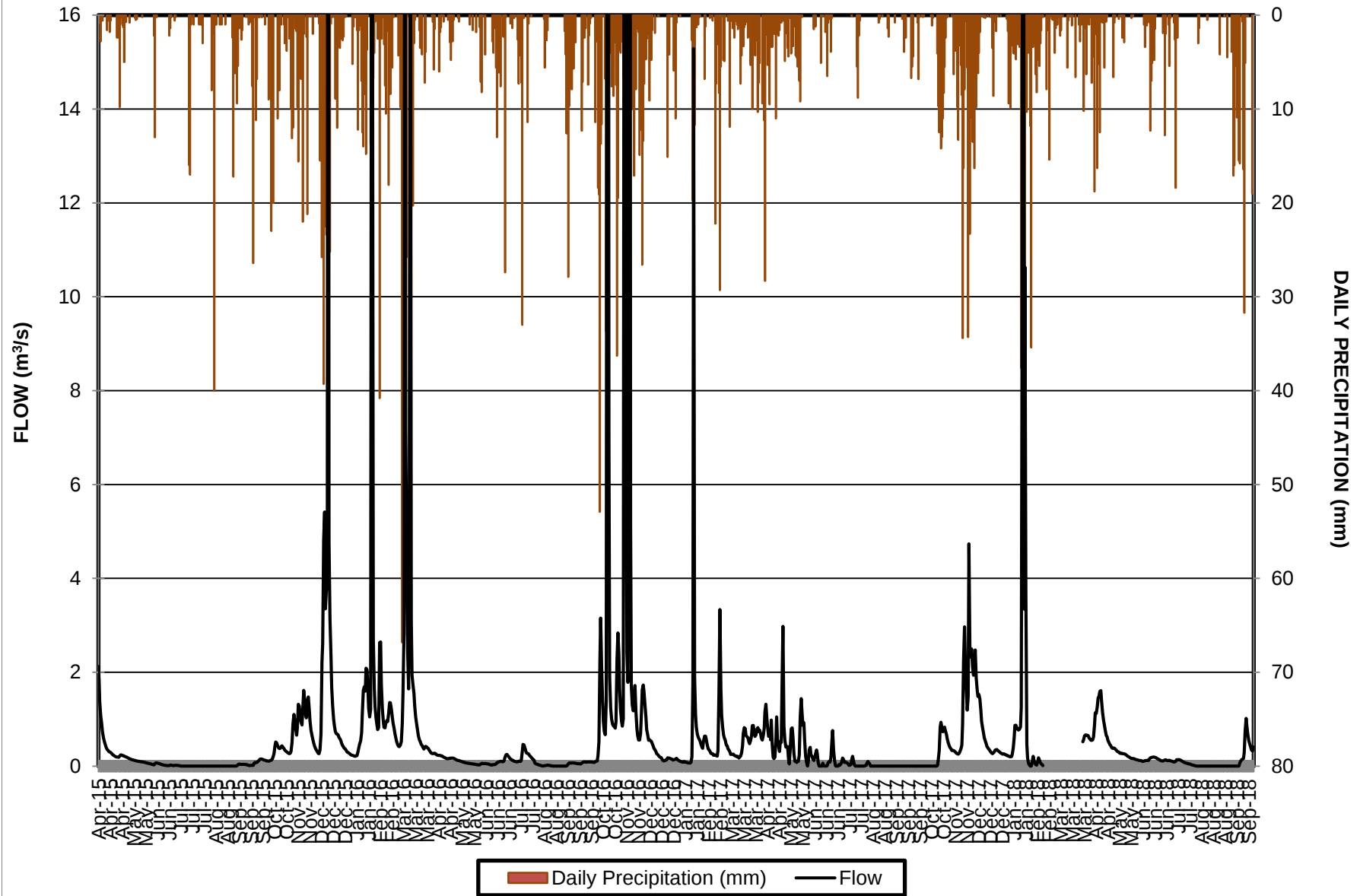


Average D=daily flow is not representative of high flow events when compared to inputs of WA, LLO and WD. Therefore the average daily flow from WA, WD and LLO is used for comparison.

GRAPH 3 DISCHARGE VS PRECIPITATION

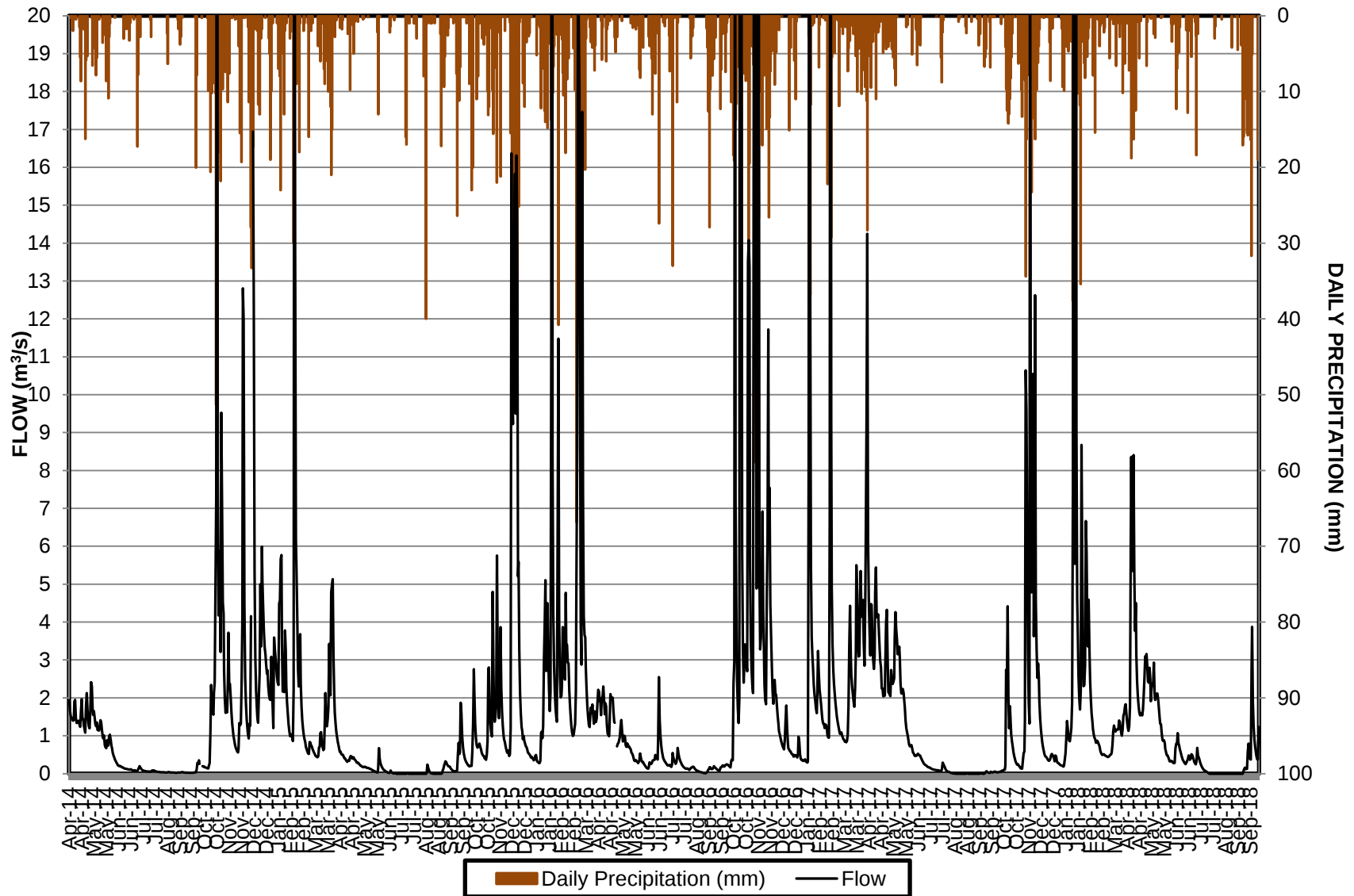


GRAPH 4
FLOW VS PRECIPITATION
LLO



Average D=daily flow is not representative of high flow events when compared to inputs of WA, LLO and WD. Therefore the average daily flow from WA, WD and LLO is used for comparison.

GRAPH 5
FLOW VS PRECIPITATION
IR8



The Dec. 9th storm event encompassed data that was out of range for the discharge curve used on the Iron River.

GRAPH 6
DAILY PRECIPITATION

