APPENDIX

B

PERFORMANCE INDICATOR MONITORING PROGRAM RESULTS

TABLE B-1
PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION
DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DESIGNATION	NAD27 EASTING	NAD27 NORTHING	APPROXIMATE GROUND ELEVATION (m ASL)	DESCRIPTION	CULVERT DIMENSIONS	MONITORING PROGRAM	MEASUREMENT TYPE
SW1	559102	4914051	513	Twin culverts located at southwest corner of quarry wetland at Grey County Road 31 (Townline Road)	South culvert dia. 0.62m, North culvert dia. 0.60m	Performance Indicator	V, M
SW2	559063	4914546	515	Single culvert located at northwest corner of quarry wetland	Oblong shaped culvert	Performance Indicator	V,M
SWB-1	559491	4914187	513	Single culvert located at southwest corner of quarry; outlet into quarry wetland	Oblong shaped culvert	Historical	-
QFSW1	559487	4914389	500	Quarry floor influx from west face	Stream Channel Flow	Historical	-
QFSW2	559810	4914354	499	Quarry floor surface water flow in channel prior to main sump pond	Stream Channel Flow	Long Term Trend	V
SWO-2	558414	4914264	510	Stream Channel west of SW1 on Osprey Quarry Property	Stream Channel Flow	Performance Indicator	V,M
SW3	558875	4915721	510	Single culvert located across Grey Rd 31 at north edge of proposed quarry property	Oblong shaped culvert	Performance Indicator	V,M,E
SW3A	558805	4915721	511	Single culvert located under Grey Rd 31, just south of intersection with 26/27 Sideroad	Oblong shaped culvert	Historical	V,B,E
SW4	558876	4913736	515	Single culvert located on Osprey 10th Line, east of Kenwell farm buildings	Culvert Diameter: 0.57 m	Historical	E,V
SW5	556683	4913070	499	Single concrete culvert located on Osprey 10th Line	4.91 m wide square concrete culvert	Historical	V
SW6	556103	4912881	500	Single concrete culvert located on Osprey 10th Line	4.78 m wide square concrete culvert	Historical	V
SW6A	555237	4912472	495	Double culvert on Osprey Sideroad 30, south of Osprey 10th Line	Stream Channel Flow	Performance Indicator	V
SW7	560196	4915307	512	Millar pond outlet	Stream Channel Flow	Long Term Trend	V,E
SW8	560343	4915276	510	Bridson pond outlet	Bucket Capture of Flow out of partial culvert	Long Term Trend	V,E
SW9	560440	4915421	508	Channel flow beneath walking path into sinkhole on Bridson property	Stream Channel Flow	Performance Indicator	V,M,E

NOTE:
- Ground Elevation data determined from Ontario Base Map elevation contours
- V indicates Valeport Electronic Flow Velocity Meter measurement
- M indicates manual velocity measurement
- - indicates SW location not currently monitored for discharge volumes
- * indicates historical surface water station that is not included in the Performance Indicator Monitoring Program.
- E indicates visual estimate velocity measurement
- B indicates bucket collection velocity measurement

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PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION
DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DESIGNATION	NAD27 EASTING	NAD27 NORTHING	APPROXIMATE GROUND ELEVATION (m ASL)	DESCRIPTION	CULVERT DIMENSIONS	MONITORING PROGRAM	MEASUREMENT TYPE
SW10	561192	4915418	477	Seep uphill of B. Franks' well tile catchment	Stream Channel Flow	Performance Indicator	V,M,E
SW11	561128	4915780	445	Culmination of B. Franks' seeps into a stream; taken near toe of scarp where stream passes beneath path	Stream Channel Flow	Performance Indicator	V,M,E
SW11A	561081	4915809	446	B. Franks' seep, located near toe of scarp in rock talus	Stream Channel Flow	Performance Indicator	V,M,E
SW11B	561065	4915819	446	B. Franks' seep, located near toe of scarp in rock talus	Stream Channel Flow	Performance Indicator	V,M,E
SW11C	561048	4915838	446	B. Franks' seep, located near toe of scarp in rock talus	Stream Channel Flow	Performance Indicator	V,M,E
SW11D	561038	4915866	446	B. Franks' seep, located near toe of scarp in rock talus	Stream Channel Flow	Performance Indicator	V,M,E
SW11E	561219	4915760	435	Stream from B. Franks' seeps into pond; downstream from SW11 and just upstream of pond	Stream Channel Flow	Performance Indicator	V,E,B
SW12	561273	4915694	435	Single culvert into B. Franks' pond from south	Bucket capture of flow out of culvert	Historical	V,E,B
SW12A	561471	4915441	450	Single culvert near B. Franks' barn	Stream Channel Flow	Historical	V,E
SW13	561283	4915824	427	B. Franks' pond outlet	Bucket capture of flow out of culvert	Long Term Trend	V,E,B
SW14	561574	4916032	410	Channel flow east of Conc. 10, from culvert crossing Conc. 10 south of H. Franks' driveway	Stream Channel Flow	Performance Indicator	V
SW15	561481	4916204	420	Channel flow east of Conc. 10, from culvert crossing Conc. 10 north of H. Franks' driveway	Stream Channel Flow	Performance Indicator	V
SW16	560955	4916433	415	Single culvert under 26/27 Sideroad east of F. Sestito's property	Stream Channel Flow	Performance Indicator	E
SW17	560592	4916314	431	Sestito pond outlet channel on south side of 26/27 Sideroad, measured just west Sestito property driveway	Stream Channel Flow	Performance Indicator	V,M,E
SW17A	560595	4916324	430	Stream channel on north side of 26/27 Sideroad, measured across from Sestito property driveway	Stream Channel Flow	Performance Indicator	V

NOTE:
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- M indicates manual velocity measurement
- - indicates SW location not currently monitored for discharge volumes
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TABLE B-1
PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION
DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DESIGNATION	NAD27 EASTING	NAD27 NORTHING	APPROXIMATE GROUND ELEVATION (m ASL)	DESCRIPTION	CULVERT DIMENSIONS	MONITORING PROGRAM	MEASUREMENT TYPE
SW17B	560593	4916314	431	Stream channel on south side of 26/27 Sideroad, measured west of Sistito property driveway, upstream of where 17/17B join.	Stream Channel Flow	Historical	V
SW18	561392	4916787	390	Single culvert on Concession 10, north of 26/27 Sideroad	Stream Channel Flow	Performance Indicator	V
SW19	564260	4915281	335	Single large diameter culvert for Batteaux Creek on County Rd. 124	Stream Channel Flow	Long Term Trend	V
SW20	560010	4916161	495	Concrete crib north of 26/27 sideroad adjacent to Pretty River Provincial Park/Bruce Trail	Stream Channel Flow	Long Term Trend	V,E
SW21	561298	4916061	430	H. Franks' pond outlet	Bucket capture of flow out of culvert	Long Term Trend	V,E,B
SW21A	561236	4916039	433	H. Franks' pond inlet	Stream Channel Flow	Long Term Trend	V,E,B
SW21B	561013	4915969	449	Cistern overflow channel uphill of H. Franks' pond, feeds pond inlet	Stream Channel Flow Cistern outlet pipe diameter: 0.10 m	Long Term Trend	V,M,E
SW21C	560703	4916021	470	H. Franks' water supply system cistern inlet/overflow culvert	Stream channel Flow	Performance Indicator	V,E
SW21D	560949	4915928	450	Single culvert under H. Franks field access trail at base of scarp	Bucket capture of flow out of culvert	Historical	V,B,E
SW22	560645	4914445	492	Single culvert under ski trail west of Sampson fields	Bucket capture of flow out of culvert	Long Term Trend	V,B
SW22A	560950	4914876	485	Seep feeding small stream in northwest corner of Sampson fields	Stream Channel Flow	Long Term Trend	B,E
SW22B	560804	4914711	477	Swamp/seep area on north side of access trail from Sampson fields to ski trails	Stream Channel Flow	Historical	-
SW22C	560800	4914701	477	Culvert on south side of access trail from Sampson fields to ski trails. Culvert is infilled with sediment and channel is relatively flat. Treated as stream flow.	Stream Channel Flow just downstream of culvert	Long Term Trend	V
SW23	561197	4916509	410	Single culvert crossing 26/27 Sideroad west of Concession 10	Bucket capture of flow out of culvert	Historical	-
SW24	560603	4916157	445	F. Sestito's pond inlet from H. Franks' property	Stream Channel Flow	Historical	V,M,E

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- - indicates SW location not currently monitored for discharge volumes
- * indicates historical surface water station that is not included in the Performance Indicator Monitoring Program
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PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION
DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DESIGNATION	NAD27 EASTING	NAD27 NORTHING	APPROXIMATE GROUND ELEVATION (m ASL)	DESCRIPTION	CULVERT DIMENSIONS	MONITORING PROGRAM	MEASUREMENT TYPE
SW24A	560487	4916124	460	F. Sestito's water supply: barrel overflow and pipe discharges (below Manitoulin formation outcrop)	Bucket capture of flow out of pipes, Valeport measurement of stream channel	Performance Indicator	V,B,E
SW24B	560569	4916169	445	Seep channel just up from F. Sestito's garden	Bucket capture of flow out of pipes, Valeport measurement of stream channel	Historical	V,B,E
SW24C	560600	4916150	442	Stream just east of where SW24A and SW24B combine and upstream of outlet into Sistito pond.	Stream Channel Flow	Historical	V
SW25	559425	4912202	507	Single culvert outlet into swamp southwest of Edward Lake; fed by Edward Lake and open grate in the ditch north of SW25	Culvert Diameter: 0.62 m	Historical	-
SW25A	559435	4912359	508	Channel outlet from Edward Lake into a culvert which crosses beneath Grey Road 31. Only monitored when input from open grate/ditch is observed when monitoring SW25.	Stream Channel Flow	Historical	-
SW26	560781	4913072	507	Channel flow upstream of sinkhole on ski trails near unopened road allowance for 21/22 Sideroad	Stream Channel Flow	Historical	-
SW26A	560745	4913095	512	Two culverts upstream of SW26 sinkhole	East Culvert Diameter: 0.38 m West Culvert: Oblong Shaped	Historical	-
SW27	560266	4916323	462	Culmination of SW27A and SW27B	Stream Channel Flow	Historical	-
SW27A	560021	4916333	492	Groundwater seep, located east of SW28, east of Bruce Trail	Stream Channel Flow	Historical	-
SW27B	559989	4916364	497	Groundwater seep, located north-west of SW27A, east of Bruce Trail	Stream Channel Flow	Historical	-
SW77	560149	4916284	494	Groundwater seep, located south-east of SW20, west of Bruce Trail	Stream Channel Flow	Performance Indicator	V

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- - indicates SW location not currently monitored for discharge volumes
- * indicates historical surface water station that is not included in the Performance Indicator Monitoring Program
- E indicates visual estimate velocity measurement
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DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DESIGNATION	NAD27 EASTING	NAD27 NORTHING	APPROXIMATE GROUND ELEVATION (m ASL)	DESCRIPTION	CULVERT DIMENSIONS	MONITORING PROGRAM	MEASUREMENT TYPE
SW3B (RR3 KARST)	558854	4915346	510	RR3 Wetland Karst Sink Point Channel, west of Grey County Road 31, downstream of SW3 and SW3C.	Stream Channel Flow	Performance Indicator	V
SW3C (RR3 OUT)	558875	4915347	510	RR3 Wetland outflow from pond that is downstream of SW3. West of Grey County Road 31.	Stream Channel Flow	Long Term Trend	V
PR Control	558052	4918002	360	Pretty River Control Station on 30/31 Sideroad. Flow measured on south side of road, upstream of culvert.	Stream Channel Flow	Performance Indicator	V
BC Control	563207	4913957	405	Batteaux Creek Control Station on 21/22 Sideroad. Flow measured on north side of road, downstream of culvert.	Stream Channel Flow	Performance Indicator	V

NOTE:
- Ground Elevation data determined from Ontario Base Map elevation contours
- V indicates Valeport Electronic Flow Velocity Meter measurement
- M indicates manual velocity measurement
- - indicates SW location not currently monitored for discharge volumes
- * indicates historical surface water station that is not included in the Performance Indicator Monitoring Program
- E indicates visual estimate velocity measurement
- B indicates bucket collection velocity measurement

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
8-Jul-96	3.4					
6-Sep-96	47.0	1.4				
23-Dec-96	11.3	11.3				
26-Feb-97	91.2	55.2				
8-May-97	42.1	24.0				
26-Aug-97	7.0	3.6				
19-Dec-97	4.5	9.4				
27-Feb-98	NA	NA				
8-Apr-98	32.2	2.7				
10-Aug-98	Dry	1.7				
29-Dec-98	NA	NA				
24-Feb-99	NA	NA				
28-Apr-99	7.1	5.8		29.1		
26-May-99	15.0	4.0		19.5		
29-Jun-99	1.0	2.0				
26-Jul-99	Dry	0.5				
17-Aug-99	Dry	1.0				
27-Sep-99	Dry	0.4				
25-Oct-99	18.0	1.8				
21-Nov-99	25.0	6.0				
21-Dec-99	NA	NA				
25-Jan-00	Frozen	14.3				
29-Feb-00	98.0	17.4				
31-Mar-00	41.0	8.0				
2-Jun-00	51.6	11.5	131.9			
8-Jun-00	35.0	8.9	110.5			
15-Jun-00	107.0	23.6	78.7			
22-Jun-00	93.6	15.8	70.5			
29-Jun-00	106.0	14.0	72.5			
7-Jul-00	57.0	12.0	69.0			
13-Jul-00	45.0	10.0	64.0			
20-Jul-00	54.0	13.0	55.0			
27-Jul-00	49.0	11.0	59.0			
3-Aug-00	58.8	17.0	43.4			
17-Aug-00	27.0	6.0	26.0			
24-Aug-00	29.0	5.0	25.0			
29-Aug-00	27.0	5.0	25.0			

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
7-Sep-00	23.0	5.0	37.0			
14-Sep-00	23.0	5.0	21.0			
21-Sep-00	13.0	1.0	NA			
28-Sep-00	16.0	5.0	17.0			
5-Oct-00	25.0	9.0	21.0			
12-Oct-00	29.0	9.0	43.0			
19-Oct-00	32.0	10.0	35.0			
26-Oct-00	24.0	6.0	22.0			
2-Nov-00	68.0	7.0	42.0			
9-Nov-00	40.0	8.0	42.0			
16-Nov-00	71.0	7.0	38.0			
18-Nov-00	46.1	NA	NA			
24-Nov-00	41.0	5.0	19.0			
30-Nov-00	45.7	13.2	14.1			
21-Dec-00	45.0	196105.0	19.0			
16-Feb-01	35.0	11.9	31.6			
22-Feb-01	62.0	11.0	22.0			
1-Mar-01	99.0	11.1	24.6			
8-Mar-01	64.0	13.2	19.3			
15-Mar-01	72.0	12.5	23.6			
22-Mar-01	54.0	11.0	28.0			
29-Mar-01	53.0	9.0	20.8			
6-Apr-01	72.0	28.7	51.9			
12-Apr-01	152.0	35.0	82.8			
19-Apr-01	191.0	42.0	72.8			
26-Apr-01	110.0	19.0	56.0			
2-May-01	94.0	13.0	39.0			
10-May-01	76.0	8.0	26.0			
17-May-01	56.0	6.0	24.0			
24-May-01	74.0	6.0	26.0			
31-May-01	45.5	6.0	25.1			
7-Jun-01	47.0	5.0	30.2			
12-Jun-01	49.8	5.0	21.0			
21-Jun-01	Dry	3.9	76.3			
28-Jun-01	66.0	4.0	76.0			
5-Jul-01	30.0	11.0	20.0			
12-Jul-01	32.0	1.9	16.0			

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
19-Jul-01	16.0	2.0	25.0			
26-Jul-01	10.0	2.0	78.0			
30-Jul-01	13.0	2.0	80.0			
9-Aug-01	13.0	3.0	74.0			
16-Aug-01	14.0	1.0	76.0			
23-Aug-01	21.2	2.0	4.0			
30-Aug-01	35.3	1.5	7.1			
6-Sep-01	30.0	2.0	0.3			
13-Sep-01	46.0	2.0	Dry			
20-Sep-01	38.0	2.0	Dry			
27-Sep-01	35.8	2.2	Dry			
4-Oct-01	38.1	2.4	Dry			
11-Oct-01	34.4	2.2	Dry	9.2		
18-Oct-01	51.7	10.2	Dry			
24-Oct-01	73.0	13.0	81.0			
1-Nov-01	93.0	12.0	58.4			
6-Nov-01	85.9	11.7	73.4			
15-Nov-01	97.6	10.4	72.5			
29-Nov-01	81.4	12.8	59.6			
6-Dec-01	73.9					
12-Dec-01	72.6					
4-Jan-02	70.0	8.0	12.0			
10-Jan-02	60.0	6.0	7.0			
16-Jan-02	57.5	7.0	8.0			
24-Jan-02	53.0	8.0	5.0			
31-Jan-02	55.0	6.0	3.0			
7-Feb-02	58.5	7.0	1.0			
14-Feb-02	51.0	7.0	4.0			
21-Feb-02	64.0	21.0	29.0			
28-Feb-02	71.5	14.0	26.0			
7-Mar-02	74.0	15.0	29.0			
14-Mar-02	94.5	35.0	76.0			
21-Mar-02	80.5	24.0	49.0			
28-Mar-02	78.0	14.0	13.0			
4-Apr-02	86.5	17.0	19.0			
12-Apr-02	104.0	42.0	81.0			
18-Apr-02	92.5	25.0	67.0			
25-Apr-02	86.0	15.0	47.0			
16-May-02	79.0	18.0	66.0			

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
23-May-02	62.5	15.0	76.0			
30-May-02	67.0	11.0	83.0			
6-Jun-02	46.0	7.5	78.0			
13-Jun-02	90.0	8.0	77.0			
20-Jun-02	45.0	5.0	75.0			
28-Jun-02	48.5	6.0	70.0			
4-Jul-02	<0.1	2.0	66.0			
11-Jul-02	38.0	3.0	69.0			
18-Jul-02	1.0	2.0	47.0			
25-Jul-02	19.5	3.6	82.0			
1-Aug-02	36.6	2.1	Dry			
8-Aug-02	16.5	1.3	82.8	2.2		
15-Aug-02	36.1	10.0	Dry			
23-Aug-02	40.3					
30-Aug-02	21.7	3.7	72.0			
6-Sep-02	16.0	1.5	10.0			
13-Sep-02	20.7	1.1	Dry			
19-Sep-02	1.0	1.0	Dry			
26-Sep-02	46.6	1.0	Dry			
3-Oct-02	56.4	1.0	Dry			
11-Oct-02	Dry	1.0	Dry			
17-Oct-02	Dry	1.0	Dry			
25-Oct-02	92.0	1.0	76.3			
1-Nov-02	62.2	1.0	63.0			
8-Nov-02	<0.1	1.0	72.3			
15-Nov-02	66.2	1.0	60.8			
22-Nov-02	56.1	1.0	Dry			
28-Nov-02	54.0	1.6	Dry			
6-Dec-02	36.6	1.0	Dry			
12-Dec-02	31.4	1.0	Dry			
20-Dec-02	20.2	5.5	Dry			
3-Jan-03	29.5	2.5	Dry			
10-Jan-03	20.8	2.3	Dry			
16-Jan-03	22.8	Frozen	Dry			
24-Jan-03	24.2	Frozen	Dry			
31-Jan-03	22.0	Frozen	Dry			
7-Feb-03	20.7	Frozen	Dry			
14-Feb-03	19.6	Frozen	Dry			

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
21-Feb-03	17.1	Frozen	Dry			
28-Feb-03	18.5	Frozen	Dry			
7-Mar-03	16.4	Frozen	Dry			
14-Mar-03	17.8	Frozen	Dry			
21-Mar-03	23.0	26.7	Dry			
28-Mar-03	134.9	38.3	Dry			
4-Apr-03	119.5	26.7	65.5			
9-Apr-03	61.0	12.6	66.9			
17-Apr-03	94.6	27.0	67.4			
25-Apr-03	60.4	13.2	67.4			
2-May-03	88.9	21.1	75.3			
9-May-03	96.7	7.9	78.9			
15-May-03	87.7	5.7	0.0			
22-May-03	11.9	5.0	25.2			
29-May-03	Dry	11.8	62.9			
9-Jun-03	19.3	8.3	64.8			
13-Jun-03	17.3	9.6	73.3			
23-Jun-03	89.6	5.8	74.7			
4-Jul-03	69.8	4.0	78.1			
11-Jul-03	54.2	3.4	69.3			
18-Jul-03	42.7	3.6	78.9			
22-Jul-03	2.6	3.6	50.8			
24-Jul-03	4.5	2.8	52.6			
31-Jul-03	42.6	2.8	72.3			
8-Aug-03	3.6	4.3	19.6			
15-Aug-03	Dry	2.3	Dry			
20-Aug-03	Dry	2.6	6.9			
27-Aug-03	35.2	1.6	75.5			
5-Sep-03	Dry	2.3	76.4			
11-Sep-03	22.9	1.4	<1.0			
18-Sep-03	13.5	0.8	76.5			
25-Sep-03	0.7	0.5	Dry			
2-Oct-03	33.1	0.8	Dry			
9-Oct-03	Dry	0.4	Dry			
17-Oct-03	58.3	1.7	Dry			
23-Oct-03	<0.1	1.4	Dry			
31-Oct-03	49.5	3.2	Dry			

NOTE:
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- SWB-1 - Culvert under western berm (represents old sump discharge)
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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
7-Nov-03	46.6	8.0	73.2			
17-Nov-03	67.8	11.1	45.2			
28-Nov-03	60.4	13.3	29.5			
19-Dec-03	55.8	12.5	2.2			
31-Dec-03	55.8	15.7	5.5			
12-Jan-04	106.1	16.8	5.3			
16-Jan-04	76.9	13.0	6.2			
20-Jan-04	68.8	9.8	Frozen			
30-Jan-04	58.9	6.6	Dry			
6-Feb-04	49.2	5.4	5.1			
12-Feb-04	44.4	4.6	6.0			
27-Feb-04	39.9	3.9	Frozen			
4-Mar-04	66.1	12.8	5.6			
12-Mar-04	101.7	24.2	4.7			
19-Mar-04	73.9	12.8	19.0			
26-Mar-04	136.1	58.8	8.8			114.7
2-Apr-04	117.1	58.1	85.3			82.2
8-Apr-04	104.8	30.1	79.6			Flooded
16-Apr-04	86.7	19.9	80.2			Flooded
23-Apr-04	91.3	13.5	76.4		30.0	153.2
30-Apr-04	62.4	10.5	72.3			210.2
7-May-04	88.9	11.9	Dry			NA
14-May-04	4.1	9.8	27.9			217.0
19-May-04	18.2	7.6	78.4			278.6
28-May-04	112.8	26.6	72.7			308.7
4-Jun-04	95.6	10.6	71.0			242.3
11-Jun-04	9.8	6.9	Dry			172.2
17-Jun-04	84.6	6.9	Dry			179.5
24-Jun-04	Dry	5.9	Dry		34.0	125.1
1-Jul-04	44.7	3.8	Dry	7.7	23.0	108.3
9-Jul-04	Dry	3.7	74.9	3.5	29.0	NA
16-Jul-04	58.3	4.2	70.5	60.8	27.0	293.0
22-Jul-04	45.3	3.3	66.6	20.6		213.8
29-Jul-04	76.7	3.2	Dry	24.0		133.5
6-Aug-04	Dry	1.8	Dry	13.3		159.1
12-Aug-04	Dry	2.7	Dry	4.3		155.5
19-Aug-04	26.8					
20-Aug-04	36.5	6.6	Dry	19.8		84.2

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
26-Aug-04	36.5	2.4	Dry	9.5		116.9
3-Sep-04	Dry	1.3	Dry	4.9		176.6
9-Sep-04	Dry	2.3	Dry	1.9		163.4
17-Sep-04	49.6	3.2	Dry	2.6		194.3
23-Sep-04	Dry					
26-Sep-04	Dry	2.1	Dry	9.5		126.7
1-Oct-04	Dry	<1.0	Dry	6.6		128.9
7-Oct-04	Dry	<1.0	Dry	0.1		86.9
14-Oct-04	Dry	3.2	Dry	1.2		77.1
20-Oct-04	Dry	0.9	Dry	31.3		122.7
24-Oct-04	42.4					
28-Oct-04	Dry	1.2	Dry	7.7		141.1
4-Nov-04	90.0	2.7	Dry	60.0		124.2
7-Nov-04	90.0					
11-Nov-04	Dry	1.7	Dry	42.4		78.0
19-Nov-04	Dry	1.8	42.4	10.2		97.6
25-Nov-04	Dry	0.4	79.5	0.0		88.8
2-Dec-04	Dry	0.3	66.3	23.3		87.8
9-Dec-04	Dry	3.9	69.9	23.8		71.9
17-Dec-04	0.6	Frozen	31.5	19.2		57.6
29-Dec-04	44.1	Frozen	Frozen	Frozen		Frozen
5-Jan-05	59.4	10.7	4.9	108.9		107.2
13-Jan-05	Dry	41.9	70.7	258.5		
20-Jan-05	79.2	18.1	Frozen	Frozen		121.1
28-Jan-05	45.5	9.3	4.7	Frozen		78.0
3-Feb-05	50.6	8.1	5.6	Frozen		71.3
10-Feb-05	Dry	5.5	64.9	Frozen		80.4
16-Feb-05	64.0	9.0	Dry	Frozen		80.2
24-Feb-05	9.0	3.8	Dry	Frozen		62.3
3-Mar-05	3.3	5.7	Dry	Frozen		59.5
10-Mar-05	Dry	9.4	Dry	Frozen		67.6
17-Mar-05	<1.0	9.4	Dry	Frozen		62.6
24-Mar-05	38.5	8.9	Dry	Frozen		68.5
30-Mar-05	71.4	15.6	Dry	124.3		77.0
7-Apr-05	15.2	46.6	46.3	Flooded		65.7
15-Apr-05	121.8	49.9	66.7	Flooded		233.4
21-Apr-05	90.8	39.8	73.1	253.6		319.3
28-Apr-05	70.3	43.1	44.3	348.6		323.8
6-May-05	60.1	19.4	67.1	116.2		268.9
13-May-05	21.7	11.3	Dry	73.4		272.0

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
20-May-05	21.2	8.7	Dry	68.5		356.3
27-May-05	44.4	7.4	38.0	90.8		268.7
3-Jun-05	23.5	5.8	34.2	62.2		258.3
10-Jun-05	Dry	4.6	Dry	8.5		273.4
17-Jun-05	11.0	5.1	Dry	53.8		283.9
24-Jun-05	1.1	3.7	NA	4.9		313.2
30-Jun-05	9.3	3.8	42.3	3.6		346.8
7-Jul-05	4.6	3.1	32.5	10.6		244.5
15-Jul-05	25.0	2.7	57.8	Dry		238.6
21-Jul-05	16.2	1.8	56.1	Dry		226.1
28-Jul-05	Dry	1.7	54.4	Dry		251.2
2-Aug-05	Dry	1.7	53.7	Dry		256.0
12-Aug-05	Dry	1.4	59.3	Dry		309.1
19-Aug-05	Dry	1.4	NA	Dry		373.3
24-Aug-05	Dry	0.6	Dry	Dry		263.0
1-Sep-05	Dry	0.8	62.1	Dry		201.0
9-Sep-05	Dry	0.8	34.7	Dry		436.8
16-Sep-05	Dry	0.6	65.0	Dry		258.7
23-Sep-05	Dry	0.3	<0.1	Dry		317.2
30-Sep-05	Dry	1.0	<0.1	Dry		371.9
7-Oct-05	Dry	0.9	Dry	Dry		280.3
14-Oct-05	Dry	0.8	Dry	0.1		357.7
21-Oct-05	Dry	0.5	Dry	1.9		256.0
28-Oct-05	Dry	0.6	Dry	10.1		205.9
4-Nov-05	Dry	0.5	Dry	4.4		254.8
11-Nov-05	Dry	0.2	Dry	4.1		210.7
18-Nov-05	57.0	1.0	66.2	42.9		222.3
25-Nov-05	49.5	0.5	61.1			231.2
2-Dec-05	51.5	2.0	71.3	32.7		221.8
9-Dec-05	44.1	1.9	56.8	28.5		175.0
16-Dec-05	45.8	1.8				Flooded
22-Dec-05	39.0	1.3	62.3	56.6		220.0
30-Dec-05	55.4	2.5				
6-Jan-06	40.7	5.9	62.7	88.1		207.8
13-Jan-06	Dry	10.0	58.0	48.2		202.1
20-Jan-06	44.7	11.6	65.3	85.5		194.5
27-Jan-06	53.1	11.0	75.0	78.8		210.5

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SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
3-Feb-06	53.5	16.7	63.8	154.3		179.6
10-Feb-06	52.8	11.4	Dry	94.6		194.5
20-Feb-06	51.9	10.2	Dry	Frozen		191.9
24-Feb-06	50.4	9.7	Dry	Frozen		153.2
3-Mar-06	55.3	7.9	Dry	Frozen		177.4
10-Mar-06	58.7	35.6	72.8	134.3		229.0
17-Mar-06	92.4	41.8	87.4	166.4		208.2
24-Mar-06	74.4	21.4	71.6	143.4		215.0
31-Mar-06	79.7	24.7	71.3	184.9		266.8
7-Apr-06	162.9	35.1	70.5	238.5		Flooded
10-Apr-06	111.0	29.3				
13-Apr-06	55.1	35.1	Dry	133.9		274.4
21-Apr-06	59.8	15.5	Dry	88.6		190.8
26-Apr-06	60.2	15.4	Dry	92.0		225.8
5-May-06	64.1	11.9	Dry	102.0		202.0
12-May-06	57.7	8.7	Dry	84.6		253.8
19-May-06	48.5	9.3	Dry	61.4		219.6
25-May-06	43.0	4.7	Dry	77.7		197.5
2-Jun-06	35.4	5.3	Dry	29.0		192.3
9-Jun-06	48.5	5.1	Dry	39.3		194.4
16-Jun-06	6.1	3.9	Dry	8.6		120.1
23-Jun-06	Dry	3.6	Dry	12.9		236.8
30-Jun-06	Dry	3.7	Dry	4.5		251.6
7-Jul-06		1.5	Dry	10.5		225.1
10-Jul-06	1.0					
14-Jul-06	Dry	1.3	Dry	5.2		249.6
21-Jul-06	Dry	1.7		12.7		226.0
28-Jul-06	Dry	2.5	Dry	7.2		214.4
4-Aug-06	32.8	5.1	Dry	10.8		245.0
11-Aug-06	Dry	0.3	Dry	2.7		232.7
18-Aug-06	Dry	0.9	Dry	4.4		197.2
25-Aug-06	4.4	0.1	Dry	3.8		197.9
1-Sep-06	13.8	<0.1	Dry	4.0		204.3
8-Sep-06	2.2	<0.1	Dry	8.9		192.7
15-Sep-06	33.8	<0.1	Dry	18.6		185.7
21-Sep-06	2.0	0.4	Dry	19.2		191.6
28-Sep-06	15.6	0.8		18.7		212.0

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SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
6-Oct-06		0.7		17.5		170.4
13-Oct-06		0.1	Dry	12.9		189.7
20-Oct-06	48.2	0.5	Dry	7.4		209.0
26-Oct-06		2.6	Dry	24.5		213.1
3-Nov-06	95.4	5.7	Dry	123.3		153.9
10-Nov-06	77.8	9.4	Dry	62.7		186.3
17-Nov-06	26.4	17.8	Dry	45.6		167.8
24-Nov-06	51.5	12.7	Dry	47.2		196.5
4-Dec-06	92.9	13.1	Dry	80.3		Flooded
8-Dec-06	70.2	11.5	Dry	Frozen		128.8
28-Dec-06	54.9	10.2		86.8		141.1
5-Jan-07	60.1	11.1		78.3		164.8
12-Jan-07	56.1	10.8		Frozen		150.0
19-Jan-07	58.8	9.3		Frozen		136.9
26-Jan-07	4.9	7.4		Frozen		125.7
2-Feb-07	63.4	7.4		Frozen		122.2
9-Feb-07	63.6	5.1		Frozen		102.9
16-Feb-07	60.0	4.8		Frozen		94.3
22-Feb-07	58.4	3.5		Frozen		114.8
2-Mar-07	60.8	4.2		Frozen		134.7
9-Mar-07	32.4	4.3		Frozen		105.4
16-Mar-07	105.0	27.6		Frozen		Flooded
23-Mar-07	53.6	38.8		112.0		109.8
30-Mar-07	106.9	41.1		118.4		Flooded
5-Apr-07	108.9	35.0		177.2		Flooded
13-Apr-07	74.5	16.8		89.1		223.9
20-Apr-07	95.2	14.0		109.9		172.0
28-Apr-07	7.4	11.6		150.4		214.0
4-May-07	80.5	8.1		91.5		111.5
11-May-07	43.3	7.0		34.7		165.5
18-May-07	74.8	6.4		68.9		141.8
25-May-07	61.2	4.2		46.9		138.9
1-Jun-07	0.1	4.8		25.8		100.5
8-Jun-07	58.1	3.6		20.3		90.4
14-Jun-07	47.9	3.1		31.6		103.2

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SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
22-Jun-07	0.0	1.8		0.0		121.0
29-Jun-07	17.0	1.6		21.2		147.4
6-Jul-07	20.5	3.8		15.2		150.0
13-Jul-07	0.0	5.2		4.9		97.0
20-Jul-07	0.1	1.7		3.6		140.9
27-Jul-07	1.6	1.4		0.0		148.6
3-Aug-07	0.0	0.6		0.0		141.8
10-Aug-07	0.1	0.6		0.0		93.0
17-Aug-07	10.1	0.6		0.0		147.7
24-Aug-07	0.0	1.1		2.1		157.2
30-Aug-07	7.6	0.6		7.3		100.3
7-Sep-07	21.1	1.1		17.7		71.6
14-Sep-07	1.2	0.7		13.1		65.4
21-Sep-07	10.7	0.2		3.3		86.9
28-Sep-07	9.8	<0.1		13.4		84.1
5-Oct-07	27.4	<0.1		15.9		78.3
12-Oct-07	Dry	0.1		28.8		76.4
19-Oct-07	10.4	<0.1		20.7		169.1
26-Oct-07	0.9	<0.1		26.3		99.0
2-Nov-07	27.2	<0.1		32.1		118.2
9-Nov-07	47.1	1.8		32.2		118.9
16-Nov-07	45.3	<0.1		57.9		122.8
23-Nov-07	35.6	0.7		Frozen		172.8
30-Nov-07	36.1	N/A		Frozen		139.6
7-Dec-07	48.9	0.7		Frozen		128.2
14-Dec-07	19.3	4.2		N/A		117.3
20-Dec-07	18.2	Frozen		Frozen		138.3
28-Dec-07	56.5	5.7		Frozen		N/A
4-Jan-08	31.1	7.0		Frozen		165.0
11-Jan-08	38.4	81.9		194.5		284.3
18-Jan-08	41.5	30.9		Frozen		593.7
25-Jan-08	57.3	26.2		Frozen		172.2
1-Feb-08	57.6	8.9		Frozen		180.9
8-Feb-08	48.0	25.8		Frozen		160.4
15-Feb-08	41.5	11.0		Frozen		135.9
22-Feb-08	63.4	10.8		Frozen		153.8
29-Feb-08	55.9	16.8		Frozen		131.6

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DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
7-Mar-08	61.3	12.0		Frozen		151.7
14-Mar-08	53.1	14.8		Frozen		146.3
20-Mar-08	58.5	2.8		Frozen		161.9
28-Mar-08	63.5	5.1		Frozen		132.9
4-Apr-08	86.5	41.8		125.8		N/A
11-Apr-08	145.7	93.3		295.2		N/A
15-Apr-08	91.8	50.0		N/A		N/A
18-Apr-08	88.1	66.2		265.7		N/A
25-Apr-08	74.1	18.5		77.7		183.3
2-May-08	92.0	22.0		138.4		177.6
8-May-08	74.4	12.8		103.9		184.5
15-May-08	75.6	11.6		181.9		82.1
23-May-08	59.5	12.6		66.7		184.1
30-May-08	64.9	51.1		16.1		104.3
6-Jun-08	67.2	32.6		93.8		165.4
13-Jun-08	12.7	8.3		36.7		277.3
20-Jun-08	Dry	6.5		36.5		169.0
27-Jun-08	42.5	5.0		55.4		95.0
4-Jul-08	Dry	2.2		9.8		256.1
11-Jul-08	Dry	3.3		1.7		153.7
18-Jul-08	30.7	3.9		10.8		291.4
25-Jul-08	41.7	1.2		30.6		156.9
1-Aug-08	3.0	1.8		15.9		97.2
8-Aug-08	Dry	15.3		57.4		287.6
15-Aug-08	8.9	4.0		28.8		184.1
22-Aug-08	Dry	7.1		61.5		166.6
28-Aug-08	21.2	5.1		10.8		159.1
5-Sep-08	Dry	9.3		5.1		259.7
12-Sep-08	4.2	2.9		27.5		149.3
19-Sep-08	Dry	2.3		35.9		236.1
26-Sep-08	7.2	0.6		19.6		168.1
3-Oct-08	48.2	13.3		67.2		185.5
10-Oct-08	46.5	17.9		29.5		396.5
17-Oct-08	45.2	15.5		27.1		188.4
24-Oct-08	1.7	18.9		17.7		162.3
31-Oct-08	30.7	6.9		51.0		184.8
7-Nov-08	34.8	6.2		48.8		347.1

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
13-Nov-08	34.8	13.2		85.5		204.8
21-Nov-08	12.0	Buried		Frozen		N/A
28-Nov-08	14.2	Frozen		Frozen		121.8
30-Nov-08	5.1	Buried		Frozen		Frozen
7-Dec-08	30.4	10.6		Frozen		154.9
19-Dec-08	26.8	N/A		Frozen		N/A
23-Dec-08	70.1	13.1		Frozen		151.5
29-Dec-08	103.2	69.3		Frozen		N/A
9-Jan-09	40.2	0.8		Frozen		Flooded
16-Jan-09	16.5	9.2		Frozen		193.2
23-Jan-09	0.9	11.0		Frozen		156.6
30-Jan-09	63.4	5.8		Frozen		N/A
6-Feb-09	<0.1	5.1		Frozen		77.5
13-Feb-09	53.7	35.0		Frozen		Flooded
20-Feb-09	67.1	14.6		Frozen		121.7
27-Feb-09	4.8	13.8		Frozen		128.6
6-Mar-09	0.6	13.0		Frozen		189.6
13-Mar-09	21.0	31.2		Frozen		179.6
20-Mar-09	55.3	26.3		88.0		142.3
27-Mar-09	40.5	19.2		104.3		139.1
3-Apr-09	109.6	28.3		166.7		226.5
9-Apr-09	92.3	26.6		Frozen		182.0
17-Apr-09	109.7	22.4		104.1		196.0
24-Apr-09	94.2	18.0		112.2		178.5
1-May-09	98.4	22.6		185.3		168.4
8-May-09	77.9	14.6		98.2		142.2
15-May-09	76.1	11.2		62.2		167.5
22-May-09	79.0	8.8		46.9		126.9
29-May-09	87.5	6.4		59.5		177.8
5-Jun-09	65.3	5.3		50.1		152.6
12-Jun-09	38.2	6.0		37.5		151.8
19-Jun-09	86.8	4.0		36.3		86.4
26-Jun-09	83.2	3.7		37.8		137.3
2-Jul-09	<0.1	2.0		63.4		131.2
10-Jul-09	4.0	1.3		9.6		141.6
17-Jul-09	0.2	2.2		3.3		150.1
24-Jul-09	<0.1	1.6		19.0		229.0

NOTE:
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- SW1 - 2 Culverts across Townline Road.
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- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- NA indicates flow not available
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- Dry indicates no flow or ponded water at surface water station

TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
31-Jul-09	<0.1	0.5		11.8		167.8
7-Aug-09	Dry	1.4		6.7		268.3
14-Aug-09	Dry	6.4		129.9		18.7
21-Aug-09	Dry	4.8		21.0		161.5
28-Aug-09	0.5	0.9		20.1		271.0
4-Sep-09	Dry	0.8		11.8		151.4
11-Sep-09	Dry	4.0		8.4		168.1
18-Sep-09	Dry	1.0		8.6		209.0
25-Sep-09	Dry	0.8		8.0		188.8
2-Oct-09	2.5	0.9		26.8		166.0
9-Oct-09	51.3	0.4		47.3		238.6
16-Oct-09	10.3	0.5		29.0		207.6
23-Oct-09	69.3	3.1		33.0		130.1
30-Oct-09	73.5	4.2		32.8		257.2
6-Nov-09	54.4	1.3		25.9		311.6
13-Nov-09	39.7	1.5		15.2		181.5
20-Nov-09	2.9	1.5		24.0		236.7
27-Nov-09	17.4	2.7		10.5		370.2
4-Dec-09	35.2	6.9		27.1		141.8
11-Dec-09	47.4	2.7		Frozen		94.1
18-Dec-09	12.9	13.4		Frozen		104.6
22-Dec-09	54.8	2.8		Frozen		135.1
28-Dec-09	52.6	4.7		Frozen		N/A
8-Jan-10	52.8	4.9		Frozen		N/A
15-Jan-10	55.2	4.5		Frozen		114.4
22-Jan-10	13.8	3.7		Frozen		80.2
29-Jan-10	32.7	8.2		Frozen		N/A
5-Feb-10	55.5	7.5		Frozen		95.8
12-Feb-10	40.3	8.2		Frozen		71.9
19-Feb-10	26.8	3.0		Frozen		86.0
1-Mar-10	28.0	2.5		Frozen		122.6
5-Mar-10	42.4	2.2		Frozen		100.8
12-Mar-10	23.1	12.5		Frozen		133.5
19-Mar-10	32.5	68.9		156.8		129.2
26-Mar-10	35.3	26.9		69.3		135.6
2-Apr-10	75.2	28.2		102.1		N/A
9-Apr-10	61.2	6.5		78.0		140.5
16-Apr-10	48.0	10.1		50.0		123.5

NOTE:
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- SW1 - 2 Culverts across Townline Road.
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- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
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- N/A indicates flow not available
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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
23-Apr-10	48.6	8.6		43.6		248.1
30-Apr-10	17.6	15.8		31.7		163.3
7-May-10	75.2	3.6		28.3		199.4
14-May-10	2.5	26.3		132.0		229.0
21-May-10	77.8	7.9		37.7		244.7
28-May-10	10.3	11.1		33.5		139.4
4-Jun-10	76.5	13.9		59.9		244.2
11-Jun-10	39.4	10.8		64.5		141.1
18-Jun-10	18.6	9.4		29.4		163.6
25-Jun-10	72.8	8.3		56.7		171.2
1-Jul-10	80.3	9.7		36.0		N/A
9-Jul-10	0.8	9.6		105.5		250.5
15-Jul-10	2.2	7.8		38.8		92.0
23-Jul-10	0.3	9.3		89.6		123.7
30-Jul-10	0.2	8.5		41.6		202.1
6-Aug-10	<0.1	9.7		26.0		118.3
13-Aug-10	0.0	4.6		21.1		182.7
20-Aug-10	0.0	2.8		17.1		153.8
27-Aug-10	0.0	3.5		14.0		117.2
3-Sep-10	0.0	5.9		1.4		162.1
10-Sep-10	0.0	5.4		2.0		172.0
17-Sep-10	0.0	5.3		21.3		302.9
24-Sep-10	0.2	3.2		41.7		199.9
1-Oct-10	3.6	7.8		53.5		276.6
8-Oct-10	17.6	6.6		33.5		285.1
15-Oct-10	4.2	5.6		45.2		151.5
22-Oct-10	7.2	2.6		24.2		182.7
29-Oct-10	1.3	4.2		27.1		169.8
5-Nov-10	1.3	6.2		68.8		162.8
12-Nov-10	6.4	11.1		40.3		182.8
19-Nov-10	11.5	22.6		83.3		139.1
26-Nov-10	16.6	13.8		106.6		150.7
3-Dec-10	5.0	12.7		68.3		140.0
9-Dec-10	15.5	9.3		Frozen		151.7
17-Dec-10	43.8	8.1		Frozen		106.0
23-Dec-10	10.4	6.3		Frozen		81.3
30-Dec-10	32.7	9.7		Frozen		N/A
7-Jan-11	34.0	23.6		Frozen		99.3

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
14-Jan-11	43.7	10.5		Frozen		123.9
21-Jan-11	42.0	8.1		Frozen		118.4
28-Jan-11	42.4	8.3		Frozen		93.9
4-Feb-11	34.8	6.4		Frozen		107.8
11-Feb-11	46.6	7.4		Frozen		69.4
18-Feb-11	12.6	16.5		Frozen		112.5
25-Feb-11	63.1	12.5		Frozen		102.1
4-Mar-11	6.8	4.8		Frozen		117.7
11-Mar-11	17.4	13.9		Frozen		82.0
18-Mar-11	10.3	42.0		Frozen		293.8
22-Mar-11	N/A	31.4		N/A		N/A
25-Mar-11	9.7	24.3		Frozen		120.5
1-Apr-11	11.7	15.8		158.7		132.1
8-Apr-11	14.2	34.0		134.2		171.4
5-Apr-11	73.7					
8-Apr-11	14.2	34.0		134.2		171.4
15-Apr-11	53.3	30.0		124.6		172.6
21-Apr-11	86.0	26.3		148.1		278.8
29-Apr-11	51.0	18.7		123.7		
5-May-11	57.9	3.3		103.2		200.2
13-May-11	45.5	3.9		94.0		206.2
20-May-11	81.7	24.4		144.1		328.9
27-May-11	18.7	14.2		132.7		
3-Jun-11	13.1	5.5		74.4		239.5
10-Jun-11	39.9	14.0		77.5		279.7
17-Jun-11	66.3	7.0		70.3		184.7
24-Jun-11	3.0	4.9		52.2		158.6
30-Jun-11	17.7	5.0		71.2		158.6
8-Jul-11	Dry	5.0		37.6		113.5
14-Jul-11	Dry	6.4		34.7		304.6
22-Jul-11	Dry	4.7		22.4		95.4
29-Jul-11	Dry	4.4		36.9		105.2
5-Aug-11	Dry	4.6		20.3		105.3
12-Aug-11	Dry	4.9		7.5		73.5
19-Aug-11	Dry	0.9		5.1		110.6
26-Aug-11	Dry	3.4		12.3		81.0
2-Sep-11	Dry	2.5		9.3		91.3
9-Sep-11	Dry	1.7		6.0		136.2
16-Sep-11	0.6	1.7		4.4		119.2
23-Sep-11	Dry	3.9		12.2		N/A

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SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
30-Sep-11	Dry	3.1		15.5		105.0
6-Oct-11	40.2	1.7		20.5		57.7
14-Oct-11	Dry	3.3		41.2		177.6
20-Oct-11	-	9.4		-		-
21-Oct-11	42.0	4.4		79.3		258.3
28-Oct-11	10.6	4.9		50.4		326.5
4-Nov-11	32.6	1.6		43.8		111.2
11-Nov-11	0.3	7.3		43.6		91.8
18-Nov-11	32.5	2.5		39.6		N/A
25-Nov-11	45.1	2.6		28.9		85.6
2-Dec-11	45.3	9.7		56.9		N/A
9-Dec-11	52.9	13.4		75.7		142.7
16-Dec-11	18.0	13.7		65.5		116.8
23-Dec-11	36.8	14.0		Frozen		N/A
30-Dec-11	21.1	10.1		Frozen		N/A
6-Jan-12	17.7	1.1		Frozen		107.0
13-Jan-12	48.7	-		Frozen		-
20-Jan-12	41.0	15.5		Frozen		105.4
27-Jan-12	37.3	12.1		Frozen		92.7
3-Feb-12	56.7	12.7		Frozen		103.4
10-Feb-12	42.1	11.2		Frozen		85.4
17-Feb-12	30.1	5.5		Frozen		109.6
24-Feb-12	41.2	8.5		Frozen		N/A
1-Mar-12	46.5	4.1		Frozen		109.4
9-Mar-12	36.7	37.8		Frozen		Flooded
16-Mar-12	136.7	70.3		529.8		
23-Mar-12	26.7	29.0		131.3		146.3
30-Mar-12	42.1	11.1		180.4		128.7
6-Apr-12	47.5	9.8		N/A		N/A
13-Apr-12	16.6	8.0		163.8		296.9
20-Apr-12	37.0	18.2		185.5		388.5
27-Apr-12	1.5	7.9		218.5		167.7
4-May-12	5.0	9.5		290.7		208.7
11-May-12	4.0	5.8		121.9		181.5
18-May-12	32.7	8.1		191.8		173.5
25-May-12	24.8	6.8		170.1		204.3
1-Jun-12	7.9	6.3		54.5		162.0
8-Jun-12	23.2	6.2		43.3		141.0

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TABLE B-2
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SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
15-Jun-12	10.8	5.4		31.7		119.0
22-Jun-12	28.5	1.7		29.9		77.4
28-Jun-12	1.1	2.1		27.7		136.6
6-Jul-12	2.4	5.1		10.1		59.0
13-Jul-12	0.0	6.3		16.4		201.6
20-Jul-12	0.0	3.0		16.3		130.7
27-Jul-12	0.0	1.9		27.6		141.7
3-Aug-12	0.0	2.0		12.5		165.2
10-Aug-12	1.3	2.1		67.0		457.5
17-Aug-12	30.8	8.7		82.8		254.4
24-Aug-12	0.0	4.9		31.7		222.2
31-Aug-12	0.9	4.3		34.6		222.1
7-Sep-12	0.0	3.5		19.6		183.1
14-Sep-12	1.2	5.5		30.7		149.1
21-Sep-12	0.0	3.5		41.2		130.8
28-Sep-12	1.0	3.9		12.4		206.1
5-Oct-12	3.6	3.4		29.0		246.5
12-Oct-12	1.3	4.9		43.0		121.2
19-Oct-12	7.7	5.0		21.4		145.2
26-Oct-12	2.8	3.2		40.8		117.4
2-Nov-12	11.7	36.3		120.0		136.3
9-Nov-12	14.7	16.8		103.7		146.8
16-Nov-12	2.2	16.5		83.3		127.0
23-Nov-12	23.4	15.7		66.9		165.1
30-Nov-12	9.9	14.5		60.8		152.7
7-Dec-12	35.0	11.3		73.7		149.6
14-Dec-12	42.7	7.8		56.8		140.0
21-Dec-12	39.9	8.5		67.5		148.6
28-Dec-12	49.3	7.7		Frozen		N/A
4-Jan-13	47.8	5.8		Frozen		102.5
11-Jan-13	62.4	11.8		Frozen		163.8
17-Jan-13	48.4	16.7		Frozen		133.4
25-Jan-13	24.7	14.0		Frozen		146.0
1-Feb-13	60.8	31.3		Frozen		N/A
8-Feb-13	53.7	9.9		Frozen		N/A
15-Feb-13	52.0	10.2		Frozen		123.5
22-Feb-13	52.0	6.2		Frozen		138.1
1-Mar-13	47.9	6.1		Frozen		138.5

NOTE:
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- SW1 - 2 Culverts across Townline Road.
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- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
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- N/A indicates flow not available
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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
8-Mar-13	49.8	7.5		Frozen		99.0
15-Mar-13	50.7	15.2		Frozen		96.8
22-Mar-13	50.4	12.7		Frozen		129.5
28-Mar-13	48.9	9.2		118.7		116.7
5-Apr-13	45.1	8.8		76.7		129.5
12-Apr-13	81.9	9.8		113.2		131.1
19-Apr-13	123.1	57.8		405.3		-
26-Apr-13	61.3	24.5		164.6		125.5
3-May-13	19.9	28.2		71.0		279.3
9-May-13	46.7	12.8		67.6		88.7
16-May-13	25.0	9.0		53.9		204.5
24-May-13	55.7	23.6		104.5		216.8
31-May-13	58.7	6.8		51.2		341.3
7-Jun-13	49.2	11.7		53.4		N/A
14-Jun-13	48.7	7.1		63.7		274.0
21-Jun-13	41.2	8.4		43.8		155.1
27-Jun-13	5.6	7.7		32.0		197.3
5-Jul-13	37.1	8.2		49.9		222.3
12-Jul-13	5.5	8.8		53.7		203.8
19-Jul-13	3.2	7.9		36.4		119.8
25-Jul-13	29.0	2.7		41.2		236.8
2-Aug-13	4.0	2.6		84.2		259.9
8-Aug-13	3.4	3.1		69.5		193.1
16-Aug-13	0.6	2.8		40.4		81.2
23-Aug-13	0.0	2.4		35.5		65.6
30-Aug-13	0.5	2.7		35.4		62.3
6-Sep-13	0.5	2.4		42.2		59.9
13-Sep-13	7.0	2.2		44.3		129.4
20-Sep-13	2.4	2.7		25.8		131.3
27-Sep-13	18.7	2.5		26.7		131.3
4-Oct-13	24.8	4.1		41.3		N/A
11-Oct-13	58.1	4.2		37.6		116.7
18-Oct-13	7.3	5.2		67.0		165.6
25-Oct-13	24.9	9.5		150.6		204.3
31-Oct-13	35.5	12.5		257.4		302.3
8-Nov-13	48.0	14.9		255.1		159.6
14-Nov-13	49.0	16.1		240.1		171.2
22-Nov-13	44.5	17.8		244.9		116.8

NOTE:
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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
29-Nov-13	47.8	5.5		-		85.4
6-Dec-13	29.2	14.2		119.7		121.6
13-Dec-13	42.7	Frozen		Frozen		N/A
19-Dec-13	39.5	Frozen		Frozen		118.4
27-Dec-13	36.8	Frozen		Frozen		N/A
3-Jan-14	34.5					65.3
10-Jan-14	13.8	6.3				88.7
17-Jan-14	10.5	8.1				80.4
24-Jan-14	35.9					102.6
31-Jan-14	37.8	5.0				92.1
7-Feb-14	14.1	6.1				86.6
14-Feb-14	7.1	3.1				110.8
21-Feb-14	29.2	-				92.8
28-Feb-14						73.4
7-Mar-14	21.1	4.1				69.3
14-Mar-14	31.9	3.7				82.2
21-Mar-14	33.8	3.8				88.0
28-Mar-14	34.4	6.6				114.5
4-Apr-14	26.2	14.4				98.1
11-Apr-14	52.3	33.6				215.1
17-Apr-14	177.9	104.1		247.6		244.9
25-Apr-14	65.4	88.3		469.4		166.7
1-May-14	93.7	67.1		288.6		147.4
9-May-14	35.8	9.4		151.0		197.1
16-May-14	31.4	8.2		142.7		110.8
23-May-14	12.8	28.8		82.1		214.9
30-May-14	33.3	9.0		86.4		185.2
6-Jun-14	5.6	7.5		51.7		186.0
13-Jun-14	5.6	4.2		49.6		161.0
20-Jun-14	9.1	5.5		52.9		135.7
27-Jun-14	3.9	4.6		40.7		132.9
4-Jul-14	1.8	1.4		24.5		149.0
11-Jul-14	8.2	0.8		15.4		127.1
18-Jul-14	5.0	1.6		39.5		145.0
25-Jul-14	2.8	0.5		15.9		147.8
1-Aug-14	0.7	1.3		11.8		149.3
8-Aug-14	0.6	1.0		10.1		128.5
15-Aug-14	4.4	1.1		13.3		148.0

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
22-Aug-14	2.9	0.3		12.8		237.3
29-Aug-14	1.4			11.2		147.8
5-Sep-14	4.0	0.1		N/A		167.3
12-Sep-14	1.2	0.8		15.1		91.5
19-Sep-14	4.3	0.9		17.7		88.9
26-Sep-14	3.9	0.8		20.4		98.5
3-Oct-14	4.7	0.3		21.9		81.3
10-Oct-14	8.4	0.1		25.1		85.1
16-Oct-14	5.4	0.2		39.1		102.0
24-Oct-14	1.6	2.9		10.8		124.2
31-Oct-14	11.5	1.8		14.8		156.0
7-Nov-14	51.6	6.0		20.8		92.8
14-Nov-14	14.4	9.2		26.2		71.9
28-Nov-14	65.3	2.8		Frozen		54.0
5-Dec-14	12.0	4.1		Frozen		52.8
12-Dec-14	13.7	2.1		Frozen		53.0
19-Dec-14	45.3	2.4		Frozen		48.4
26-Dec-14	84.6	5.2		169.2		-
2-Jan-15	36.4	2.4		Frozen		N/A
8-Jan-15	Frozen	2.3		Frozen		44.2
14-Jan-15	33.0	1.3		Frozen		45.2
22-Jan-15	28.4	2.4		Frozen		45.9
30-Jan-15	10.8	5.0		Frozen		N/A
6-Feb-15	15.8	1.8		Frozen		60.5
12-Feb-15	21.2	0.9		Frozen		N/A
27-Feb-15	24.5	0.6		Frozen		82.1
6-Mar-15	4.3	0.7		Frozen		103.1
13-Mar-15	7.5	2.4		Frozen		124.0
20-Mar-15	17.8	5.9		Frozen		87.8
26-Mar-15	6.8	3.6		Frozen		107.4
2-Apr-15	6.1	3.4		27.0		87.8
10-Apr-15	83.3	32.3		Flooded		164.0
17-Apr-15	63.3	23.6		Flooded		86.9
23-Apr-15	51.0	18.8		99.4		96.6
1-May-15	10.3	7.7		44.2		204.6
8-May-15	6.3	7.0		40.0		200.0
15-May-15	2.4	3.1		14.5		199.6
21-May-15	3.1	4.1		15.3		164.2
28-May-15	8.3	3.2		19.3		219.4
4-Jun-15	5.1	3.3		12.6		167.4

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
12-Jun-15	2.5	1.9	-	22.3	-	191.5
18-Jun-15	2.8	3.1	-	23.3	-	172.2
26-Jun-15	10.3	1.6	-	N/A	-	178.8
1-Jul-15	77.9	11.0	-	N/A	-	N/A
10-Jul-15	5.0	7.9	-	28.3	-	106.2
17-Jul-15	8.0	7.3	-	30.0	-	135.9
22-Jul-15	4.9	3.6	-	13.1	-	86.7
30-Jul-15	3.4	0.9	-	5.2	-	89.9
5-Aug-15	19.2	1.9	-	23.0	-	92.2
13-Aug-15	7.8	2.3	-	15.6	-	120.2
21-Aug-15	2.3	0.8	-	10.8	-	159.7
28-Aug-15	1.9	0.9	-	8.5	-	95.3
3-Sep-15	4.6	0.6	-	6.6	-	99.5
10-Sep-15	1.8	0.8	-	15.6	-	65.1
18-Sep-15	DRY	0.3	-	5.0	-	68.5
25-Sep-15	3.4	0.5	-	7.8	-	68.0
2-Oct-15	14.8	0.4	-	4.8	-	81.3
9-Oct-15	1.3	0.6	-	11.0	-	97.8
16-Oct-15	3.3	0.5	-	8.0	-	84.9
23-Oct-15	3.1	0.3	-	14.1	-	70.6
30-Oct-15	27.0	0.7	-	48.6	-	124.2
5-Nov-15	2.6	2.2	-	20.7	-	103.7
10-Nov-15	9.4	-	-	-	-	-
13-Nov-15	61.5	1.5	-	78.0	-	70.3
19-Nov-15	17.1	1.1	-	33.3	-	86.0
26-Nov-15	0.8	1.3	-	36.6	-	81.6
4-Dec-15	2.3	0.9	-	24.0	-	100.5
10-Dec-15	12.3	1.4	-	20.9	-	102.9
17-Dec-15	21.2	2.2	-	41.5	-	127.2
23-Dec-15	32.0	3.9	-	49.7	-	63.7
30-Dec-15	34.4	1.7	-	63.5	-	67.5
8-Jan-16	11.8	2.6	-	30.4	-	73.9
14-Jan-16	12.1	2.1	-	FROZEN	-	70.8
22-Jan-16	12.1	2.0	-	FROZEN	-	58.2
29-Jan-16	16.7	1.2	-	FROZEN	-	38.0
5-Feb-16	77.1	10.4	-	FROZEN	-	65.6
11-Feb-16	53.4	3.9	-	FROZEN	-	104.1
18-Feb-16	19.2	5.7	-	FROZEN	-	83.6
25-Feb-16	10.2	3.9	-	FROZEN	-	136.2
4-Mar-16	66.8	9.7	-	FROZEN	-	93.6
10-Mar-16	160.7	53.4	-	388.1	-	48.6
18-Mar-16	54.8	19.2	-	156.6	-	169.1

NOTE:
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SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
28-Mar-16	233.3	93.3	-	576.7	-	107.1
1-Apr-16	253.8	36.9	-	509.4	-	26.7
7-Apr-16	168.5	19.7	-	301.6	-	258.2
15-Apr-16	61.9	11.5	-	130.6	-	180.8
22-Apr-16	50.9	12.8	-	84.3	-	149.7
29-Apr-16	41.6	8.6	-	36.6	-	230.6
6-May-16	40.3	6.7	-	25.4	-	129.0
13-May-16	30.2	5.3	-	36.6	-	135.4
20-May-16	23.6	5.3	-	20.2	-	183.7
27-May-16	22.7	3.9	-	22.6	-	224.5
2-Jun-16	18.8	3.9	-	28.5	-	73.1
10-Jun-16	11.7	2.7	-	15.4	-	194.2
17-Jun-16	10.4	2.2	-	5.2	-	82.9
24-Jun-16	6.3	1.7	-	3.9	-	169.4
28-Jun-16	6.9	1.8	-	6.2	-	132.0
5-Jul-16	5.0	-	-	-	-	-
8-Jul-16	5.0	1.6	-	4.3	-	151.9
15-Jul-16	6.6	2.6	-	4.7	-	139.7
22-Jul-16	2.7	6.2	-	2.1	-	94.1
29-Jul-16	3.1	0.2	-	1.1	-	134.5
5-Aug-16	0.8	0.5	-	DRY	-	81.5
12-Aug-16	DRY	0.9	-	DRY	-	117.1
19-Aug-16	26.9	0.6	-	N/A	-	42.0
26-Aug-16	2.1	0.3	-	N/A	-	85.8
2-Sep-16	0.6	1.6	-	N/A	-	99.0
9-Sep-16	9.6	1.3	-	N/A	-	51.3
16-Sep-16	2.6	5.5	-	N/A	-	131.4
21-Sep-16	3.6	0.4	-	N/A	-	103.4
30-Sep-16	4.4	0.6	-	N/A	-	73.7
7-Oct-16	6.7	1.6	-	9.0	-	99.0
13-Oct-16	13.7	0.9	-	N/A	-	112.2
19-Oct-16	13.9	1.0	-	N/A	-	77.8
27-Oct-16	13.1	0.5	-	25.6	-	55.3
3-Nov-16	19.1	0.6	-	25.2	-	80.8
11-Nov-16	11.2	0.8	-	N/A	-	46.6

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SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
18-Nov-16	2.5	0.3	-	8.9	-	51.0
24-Nov-16	7.5	0.6	-	12.8	-	79.6
2-Dec-16	24.5	0.6	-	55.0	-	40.9
7-Dec-16	28.6	0.5	-	N/A	-	78.7
16-Dec-16	27.4	0.8	-	14.1	-	94.3
22-Dec-16	Frozen	0.2	-	Frozen	-	60.4
30-Dec-16	Frozen	0.7	-	Frozen	-	N/A
6-Jan-17	Frozen	3.4	-	Frozen	-	30.5
13-Jan-17	Frozen	2.1	-	Frozen	-	94.8
20-Jan-17	12.8	2.5	-	Frozen	-	65.4
26-Jan-17	55.9	8.5	-	94.6	-	65.7
3-Feb-17	Frozen	0.6	-	Frozen	-	49.5
10-Feb-17	Frozen	0.9	-	Frozen	-	49.0
17-Feb-17	Frozen	1.4	-	Frozen	-	61.7
19-Apr-17	53.7	8.0	-	58.5	-	160.6
3-May-17	-	-	-	-	-	122.8
16-May-17	95.5	4.4	-	99.4	-	136.2
28-Jun-17	34.0	3.6	-	53.6	-	141.7
18-Jul-17	8.9	2.6	-	40.7	-	63.7
15-Aug-17	14.4	1.4	-	36.2	-	107.8
18-Sep-17	21.8	0.6	-	26.8	-	53.8
18-Oct-17	37.3	2.6	-	58.6	-	118.8
14-Nov-17	33.2	1.1	-	44.5	-	84.9
13-Dec-17	Frozen	Frozen	-	Frozen	-	71.1
17-Jan-18	Frozen	6.3	-	Frozen	-	55.1
18-Feb-18	128.6	29.3	-	280.5	-	Flooded
18-Mar-18	Frozen	8.8	-	Frozen	-	77.9
18-Apr-18	Frozen	9.3	-	Frozen	-	28.3
13-May-18	76.2	3.6	-	66.7	-	73.1
19-Jun-18	3.4	1.9	-	6.6	-	73.6
18-Jul-18	1.8	1.5	-	1.5	-	53.7
23-Aug-18	54.2	5.8	-	39.2	-	69.4
19-Sep-18	1.1	2.4	-	4.5	-	93.8
24-Oct-18	18.1	1.7	-	12.5	-	35.3
21-Nov-18	-	0.9	-	-	-	59.1
12-Dec-18	Frozen	1.6	-	Frozen	-	39.4
18-Jan-19		1.5				54.3
26-Feb-19						47.0
15-Mar-19	Frozen	Frozen		Frozen		Frozen
24-Apr-19	110.3	32.7		162.7		132.4

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TABLE B-2
SURFACE WATER FLOW SUMMARY
SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	SW 1	SW 2	SW B-1	SW 0-2	QFSW 1	QFSW 2
23-May-19	51.7	5.6		64.7		113.5
18-Jun-19	24.4	2.5		31.3		28.6
29-Jul-19	0.0	0.3		0.8		59.8
29-Aug-19	0.0	1.0		0.8		69.0
26-Sep-19	0.0	0.1		2.3		86.4
23-Oct-19		0.8		13.8		89.0
22-Nov-19	57.9					82.6
20-Dec-19						76.8
15-Jan-20		0.8				38.2
20-Feb-20						22.8
26-Mar-20	114.2	4.9				58.9
27-Apr-20	268.3	7.5		37.9		74.4
29-May-20	141.7	8.5		27.8		93.1
23-Jun-20	14.0	31.9		18.5		64.1
30-Jul-20	10.7	5.5		12.7		47.0
25-Aug-20	0.0	0.7		9.1		25.4
25-Sep-20	0.0	3.7		28.1		57.7
30-Oct-20		1.1		10.0		60.9
26-Nov-20		2.0		14.2		94.4
23-Dec-20		0.1		4.7		0.0

NOTE:
- All surface water flow measurements recorded in L/s
- SW1 - 2 Culverts across Townline Road.
- SW2 - Culvert across County Road 63
- SWB-1 - Culvert under western berm (represents old sump discharge)
- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
- QFSW1 - Represents seepage inflow in southwest corner/west wall of quarry (not monitorable after July 16, 2004).
- QFSW2 - Stream flow measurement of surface water prior to main sump pond
- N/A indicates flow not available
- Frozen indicates flow not measured due to snow accumulation or frozen water conditions
- Dry indicates no flow or ponded water at surface water station

FIGURE B-1

SURFACE WATER HYDROGRAPH
SW1

FIGURE B-1 (a)

SURFACE WATER HYDROGRAPH
SW1

FIGURE B-1 (b)

SURFACE WATER ELEVATION (DATALOGGER)
SW1
New Dataloggers - Installed July 30 2015 with new Culverts
SURFACE WATER ELEVATION (mASL)
513.5
513.0
512.5
512.0
511.5
511.0
510.5
1-Jan-15
15-May-16
27-Sep-17
9-Feb-19
23-Jun-20
DATE
Transducer Water Level
Manual Measurement

FIGURE B-1 (c)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW1
New Dataloggers - Installed July 30 2015 with new Culverts
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
1-Jan-15
15-May-16
27-Sep-17
9-Feb-19
23-Jun-20
DATE
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-2

SURFACE WATER HYDROGRAPH
SW2

FIGURE B-2 (a)

SURFACE WATER HYDROGRAPH
SW2

FIGURE B-2 (b)

SURFACE WATER ELEVATION (DATALOGGER)
SW2
SURFACE WATER ELEVATION (mASL)
515.40
515.30
515.20
515.10
515.00
514.90
514.80
1-Jan-15
15-May-16
27-Sep-17
9-Feb-19
23-Jun-20
DATE
Transducer Level Measurement
Manual SG Measurement

FIGURE B-2 (c)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW2
TEMPERATURE (C)
60
50
40
30
20
10
0
-10
-20
-30
-40
1-Jan-15
15-May-16
27-Sep-17
9-Feb-19
23-Jun-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-3

SURFACE WATER HYDROGRAPH
SWB-1

FIGURE B-4

SURFACE WATER HYDROGRAPH
SWO-2

FIGURE B-4 (a)

SURFACE WATER HYDROGRAPH
SWO-2

FIGURE B-4 (b)

SURFACE WATER ELEVATION (DATALOGGER)
SW0-2
SURFACE WATER ELEVATION (mASL)
510.8
510.7
510.6
510.5
510.4
510.3
510.2
510.1
510.0
509.9
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
DATE
Datalogger Measurement
Manual SG Measurement

FIGURE B-4 (c)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW0-2
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
1-Dec-19
18-Jun-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-5

SURFACE WATER HYDROGRAPH
QFSW1

FIGURE B-6

SURFACE WATER HYDROGRAPH
QFSW2

FIGURE B-6 (a)

SURFACE WATER HYDROGRAPH
QFSW2

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	0.0	E	4.1 (1)	B	0.0	E	112.8	V	46.0	V	164.4	V	0.1	E
23-Jun-03	0.0	E	0.0	E	0.0	E	(*)	(*)	18.6	V	58.3	V	0.5	E
22-Jul-03	0.0	E	0.0	E	0.0	E	(*)	(*)	59.6	V	92.5	V	0.3	E
20-Aug-03	0.0	E	0.0	E	0.0	E	9.8 (*)	V	14.9	V	57.6	V	0.0	E
25-Sep-03	0.0	E	0.0	E	0.0	E	3.6 (*)	V	<0.1	E	9.0	V	0.0	E
22-Oct-03	0.0	E	1.5	B	0.0	E	19.0	V	14.6	V	50.8	V	0.0	E
28-Nov-03	0.0	E	1.4	B	0.0	E	116.9	V	183.4	V	214.9	V	0.5	E
19-Dec-03	0.2	M	2.8	B	0.0	E	184.5	V	Frozen	E	266.5	V	Frozen	E
10-Feb-04	Frozen	E	Frozen	E	0.0	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
18-Mar-04	2.8	V	1.8	B	0.0	E	246.5	V	Frozen	E	473.4	V	0.5	E
19-Apr-04	14.4	V	4.9	B	0.0	E	225.2	V	371.1	V	606.6	V	0.6	E
19-May-04	0.8	V	1.0	V	0.0	E	78.3	V	182.0	V	291.5	V	0.4	E
24-Jun-04	0.0	E	<0.1	E	0.0	E	68.9	V	111.9	V	185.9	V	1.0	E
29-Jul-04	0.0	E	0.0	E	0.0	E	22.6	V	32.1	V	100.5	V	0.5	E
23-Aug-04	0.0	E	0.0	E	0.0	E	12.3	V	7.3	V	24.9	V	0.0	E
21-Sep-04	0.0	E	0.0	E	0.0	E	8.5	V	7.0	V	41.3	V	0.0	E
21-Oct-04	0.0	E	0.0	E	0.0	E	11.0	V	12.7	V	41.5	V	0.0	E
17-Nov-04	0.0	E	0.0	E	0.0	E	24.7	V	26.9	V	69.8	V	0.5	E
15-Dec-04	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E

NOTE:

- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- (1) indicates measurement taken on June 9, 2003.
- (*) indicates flow not measureable/affected due to beaver activity

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	63.2	V	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
27-Mar-05	0.8	V	3.1	B/E	Frozen	E	98.8	V	Frozen	E	220.0	V	Frozen	E
10-Apr-05	31.4	V	7.5	B/E	Frozen	E	742.4	V	1376.5	V	1671.0	V	Frozen	E
22-May-05	0.0	E	0.8	B/E	0.0	E	120.4	V	184.8	V	286.6	V	<0.1	E
26-Jun-05	0.0	E	0.0	E	0.0	E	33.0	V	61.6	V	123.0	V	<0.1	E
10-Jul-05	0.0	E	0.0	E	0.0	E	21.3	V	30.6	V	87.5	V	0.0	E
21-Aug-05	0.0	E	0.0	E	0.0	E	7.6	V	20.9	V	53.2	V	0.0	E
25-Sep-05	0.0	E	0.0	E	0.0	E	1.0	V	26.2	V	14.7	V	0.0	E
23-Oct-05	0.0	E	0.0	E	0.0	E	8.3	V	19.8	V	46.0	V	0.0	E
13-Nov-05	0.0	E	0.0	E	0.0	E	3.4	V	12.3	V	32.8	V	0.0	E
11-Dec-05	0.0	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	166.9	E/V/M	Frozen	E
15-Jan-06	2.4	V	3.8	B/E	Frozen	E	Frozen	E	Frozen	E	133.0	E/V/M	Frozen	E
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Mar-06	39.7	V	2.7	V	6.0	E	389.2	V	Frozen	E	966.1	V	Frozen	E
16-Apr-06	5.2	V	1.1	V	0.0	E	223.2	V	366.7	V	569.4	V	0.4	B/E
21-May-06	0.8	V	1.0	V	0.0	E	203.3	V	215.6	V	407.6	V	<0.1	E
18-Jun-06	0.0	E	<0.1	V	0.0	E	16.8	V	2.6	V	83.4	V	0.0	E
9-Jul-06	0.0	E	0.0	E	0.0	E	9.4	V	4.6	V	55.6	V	0.0	E

NOTE:
- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	0.0	E	0.0	E	0.0	E	<0.1	E	<0.1	E	32.0	V	0.0	E
17-Sep-06	0.0	E	0.0	E	0.0	E	1.2	V	<0.1	E	36.4	V	0.0	E
15-Oct-06	0.0	E	0.0	E	0.0	E	54.1	V	57.9	V	124.8	V	0.0	E
19-Nov-06	0.0	E	1.0	V	0.0	E	134.7	V	152.0	V	286.8	V	<0.1	V
17-Dec-06	1.3	V	1.0	V	0.0	E	167.8	V	212.3	V	382.9	V	0.5	V
21-Jan-07	0.1	V	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
18-Feb-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
18-Mar-07	Frozen	E	Frozen	E	9.1	V	281.9	V	Frozen	E	492.0	V	Frozen	E
16-Apr-07	4.3	V	1.2	V	0.0	E	227.0	V	286.4	V	574.2	V	1.4	V
13-May-07	0.0	E	0.3	V	0.0	E	71.5	V	97.7	V	170.1	V	0.5	V
17-Jun-07	0.0	E	0.0	E	0.0	E	24.7	V	55.9	V	92.8	V	0.0	E
15-Jul-07	0.0	E	0.0	E	0.0	E	9.7	V	0.0	E	47.5	E	0.0	E
19-Aug-07	0.0	E	0.0	E	0.0	E	0.0	E	0.0	E	32.1	V	0.0	E
16-Sep-07	0.0	E	0.0	E	0.0	E	0.0	E	0.0	E	14.2	V	0.0	E
14-Oct-07	0.0	E	0.0	E	0.0	E	4.6	V	0.0	E	47.0	V	0.0	E
18-Nov-07	0.0	E	0.0	E	0.0	E	97.0	V	85.1	V	123.9	V	0.0	E
9-Dec-07	Frozen	E	Frozen	E	Frozen	E	110.7	V	Frozen	E	Frozen	E	Frozen	E
20-Jan-08	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	883.4	V	Frozen	E
17-Feb-08	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E

NOTE:
- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry or ponded.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	Frozen	E	Frozen	E	Frozen	E	145.4	V	Frozen	E	178.8	V	Frozen	E
30-Mar-08	12.9	V	9.6	V	8.8	V	525.3	V	1637.1	V	964.1	V	2.8	V
20-Apr-08	11.1	V	0.9	V	0.0	E	184.7	V	395.2	V	624.1	V	0.7	V
18-May-08	0.4	V	2.1	V	0.0	E	141.7	V	173.8	V	283.7	V	0.2	V
15-Jun-08	0.0	E	0.5	B	0.0	E	33.1	V	43.8	V	158.4	V	0.0	E
13-Jul-08	0.0	E	Dry	E	0.0	E	7.3	V	28.9	V	56.2	V	0.0	E
17-Aug-08	0.0	E	<0.1	E	0.0	E	31.8	V	42.7	V	105.1	V	0.0	E
14-Sep-08	0.0	E	Dry	E	0.0	E	150.0	V	200.0	V	60.7	V	0.0	E
19-Oct-08	0.0	E	0.3	V	0.0	E	14.5	V	44.9	V	119.3	V	0.0	E
23-Nov-08	Frozen	E	Frozen	E	Frozen	E	280.2	V/E	Frozen	E	357.9	V	Frozen	E
14-Dec-08	Frozen	E	Frozen	E	0.0	E	Frozen	E	Frozen	E	474.6	V	Frozen	E
18-Jan-09	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	261.7	V	Frozen	E
8-Feb-09	Buried	E	Buried	E	Dry	E	361.4	V	Frozen	E	545.2	V	Buried	E
15-Mar-09	8.8	V	2.4	V	4.4	V	491.0	V	675.0	V	1095.0	V	0.4	V
12-Apr-09	9.1	V	2.8	V	1.3	V	197.4	V	332.6	V	382.7	V	0.9	V
17-May-09	0.8	V	0.3	V	Dry	E	109.8	V	222.4	V	393.6	V	0.9	V
14-Jun-09	Dry	E	<0.1	V	Dry	E	71.5	V	88.7	V	155.8	V	Dry	E
12-Jul-09	Dry	E	Dry	E	Dry	E	30.4	V	39.1	V	106.6	V	Dry	E
9-Aug-09	Dry	E	Dry	E	Dry	E	82.4	V	123.8	V	169.3	V	Dry	E

NOTE:
- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	Dry	E	Dry	E	Dry	E	9.4	V	6.2	V	44.4	V	Dry	E
11-Oct-09	Dry	E	0.2	V	Dry	E	84.6	V	56.8	V	150.7	V	Dry	E
15-Nov-09	Dry	E	<0.1	V	Dry	E	45.9	V	44.5	V	123.9	V	Dry	E
13-Dec-09	Buried	E	Buried	E	Dry	E	Frozen	E	Frozen	E	151.0	V	Buried	E
17-Jan-10	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	113.0	V	Buried	E
7-Feb-10	Frozen	E	Frozen	E	Buried	E	Frozen	E	Frozen	E	134.9	V	Frozen	E
14-Mar-10	26.4	V	3.0	V	8.1	V	662.8	V	810.2	V	1499.6	V	0.8	V
4-Apr-10	6.7	V	0.6	V	-	-	-	-	-	-	-	-	-	-
11-Apr-10	3.4	V	0.4	V	Ponded	E	151.2	V	240.9	V	303.4	V	1.1	V
16-May-10	1.3	V	0.3	V	Dry	E	187.1	V	116.4	V	247.0	V	0.3	V
23-May-10	Dry	E	<0.1	V	-	-	-	-	-	-	-	-	-	-
13-Jun-10	3.0	V	0.5	V	Dry	E	115.9	V	169.6	V	240.0	V	0.1	V
18-Jul-10	3.1	V	7.4	V	1.1	V	156.6	V	197.4	V	287.1	V	Dry	E
15-Aug-10	Dry	E	Dry	E	Dry	E	55.6	V	48.0	V	106.9	V	Dry	E
12-Sep-10	Dry	E	Dry	E	Dry	E	12.5	V	21.1	V	89.1	V	Dry	E
17-Oct-10	Dry	E	<0.1	V	Dry	E	103.6	V	82.5	V	99.5	V	Dry	E
14-Nov-10	0.3	V	0.6	V	Ponded	E	181.5	V	187.0	V	276.6	V	Dry	E
19-Dec-10	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	241.2	V	Buried	E

NOTE:
- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11	1.7	V		E		E		E		E	305.3	V		E
20-Feb-11	Buried	E	Buried	E		E		E		E	418.7	V		E
13-Mar-11	6.0	V	Buried	E	Buried	E	141.1	V	Buried	E	387.8	V	Buried	E
17-Mar-11	11.2	V	-	-	-	-	-	-	-	-	-	-	-	-
18-Mar-11	59.8	V	-	-	-	-	-	-	-	-	-	-	-	-
20-Mar-11	15.8	V	Buried	E	Buried	E	-	-	-	-	962.9	V	Buried	E
1-Apr-11	4.4	V	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	32.4	V	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	17.1	V	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	48.7	V	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	18.0	V	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	14.0	V	1.1	V	Ponded	E	368.0	V	515.8	V	699.4	V	3.7	V
20-Apr-11	33.3	V	-	-	-	-	-	-	-	-	-	-	-	-
21-Apr-11	20.9	V	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	14.0	V	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	19.5	V	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	8.4	V	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	4.2	V	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	1.5	V	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	8.1	V	-	-	-	-	-	-	-	-	-	-	-	-

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13 march is 2011 spring monitoring event, additional melt measurements performed on 17, 18 and 22nd.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	95.3	V	1.2	V	Ponded	E	315.3	V	426.0	V	577.0	V	1.8	V
16-May-11	28.8	V	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	22.5	V	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	23.1	V	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	16.8	V	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	17.8	V	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	3.8	V	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	1.5	V	0.1	V	Ponded	-	149.6	V	160.8	V	296.3	V	<0.1	V
17-Jul-11	Dry	E	Dry	E	Dry	E	45.9	V	33.9	V	89.5	V	Dry	E
14-Aug-11	Dry	E	Dry	E	Dry	E	31.3	V	9.7	V	61.5	V	Dry	E
18-Sep-11	Dry	E	Dry	E	Dry	E	7.9	V	12.6	V	42.5	V	Dry	E
16-Oct-11	Dry	E	0.3	E	Dry	E	85.6	V	74.9	V	90.1	V	Dry	E
20-Nov-11		E	0.1	V		E	53.1	V	50.6	V	96.9	V		E
18-Dec-11	3.7	V	2.3	V	Dry	E	151.7	V	Frozen	E	284.5	V	Buried	E
15-Jan-12	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	174.6	V	Buried	E
19-Feb-12	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	164.9	V	Buried	E
18-Mar-12	13.7	V	1.4	V	Dry	E	486.3	V	735.1	V	981.3	V	0.9	V
15-Apr-12	0.0	E	0.2	V	Dry	E	79.5	V	122.1	V	200.0	V	0.0	V
13-May-12	0.0	E	0.1	V	Dry	E	139.1	V	87.5	V	168.9	V	0.0	E
17-Jun-12	0.0	E	0.0	E	0.0	E	34.2	V	31.7	V	81.0	V	0.0	E

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- 0.0 indicates no flow, surface water location dry.
- (1) indicates measurement taken on June 9, 2003.
- (*) indicates flow not measureable/affected due to beaver activity

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TABLE B-3
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SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.0	E	0.0	E	0.0	E	2.1	V	16.7	V	48.1	V	0.0	E
12-Aug-12	0.0	E	0.7	V	0.0	E	98.7	V	64.0	V	126.6	V	0.0	E
16-Sep-12	0.0	E	0.0	E	0.0	E	48.0	V	65.3	V	79.3	V	0.0	E
14-Oct-12	0.0	E	0.4	V	0.0	E	72.6	V	40.3	V	85.1	V	0.0	E
18-Nov-12	4.7	V	0.6	V	0.0	E	178.2	V	175.1	V	245.1	V	0.0	E
16-Dec-12	5.2	V	1.6	V	2.1	V	113.4	V	-	Frozen	257.4	V	0.0	E
13-Jan-13	9.8	V	0.0	E	0.2	V	384.3	V	-	Frozen	557.6	V	0.0	E
17-Feb-13	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	190.7	V	-	Frozen
17-Mar-13	5.5	V	-	Frozen	-	Frozen	-	Frozen	-	Frozen	363.6	V	-	Frozen
14-Apr-13	18.3	V	2.6	V	1.3	V	365.2	V	653.3	V	901.3	V	1.3	V
12-May-13	7.2	V	0.6	V	Dry	E	249.4	V	100.8	V	394.8	V	0.3	V
16-Jun-13	Dry	E	Dry	E	Dry	E	118.2	V	117.2	V	252.6	V	0.0	E
14-Jul-13	Dry	E	Dry	E	Dry	E	38.7	V	57.2	V	157.3	V	0.0	E
18-Aug-13	Dry	E	Dry	E	Dry	E	30.9	V	12.9	V	63.0	V	0.0	E
15-Sep-13	Dry	E	Dry	E	Dry	E	34.6	V	38.1	V	84.1	V	0.0	E
13-Oct-13	Dry	E	Dry	E	Dry	E	75.5	V	121.4	V	183.8	V	0.0	E
17-Nov-13	6.2	V	0.6	V	1.0	V	157.7	V	95.5	V	369.5	V	0.0	E
15-Dec-13	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	262.4	V	Frozen	E
19-Jan-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
16-Feb-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E

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SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Apr-14	50.5	V	9.1	V	14.0	V	1082.8	V	1833.9	V	1147.5	V	Frozen	E
11-May-14	2.4	V	0.4	V	<0.1	E	134.2	V	244.0	V	413.9	V	0.3	V
15-Jun-14	Dry	E	Dry	E	Dry	E	35.5	V	74.5	V	113.2	V	Dry	V
13-Jul-14	Dry	E	Dry	E	Dry	E	51.7	V	75.0	V	131.8	V	Dry	E
17-Aug-14	Dry	E	0.1	B	Dry	E	26.8	V	<0.1	E	72.4	V	Dry	E
7-Sep-14	Dry	E	0.1	B	Dry	E	29.9	V	52.5	V	61.0	V	Dry	E
19-Oct-14	Ponded	E	0.4	V	1.1	V	22.1	V	40.1	V	208.0	V	Dry	E
16-Nov-14	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	Frozen	E	Buried	E
14-Dec-14	3.0	V	Buried	E	Buried	E	Frozen	E	Frozen	E	277.6	V	Buried	E
18-Jan-15	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	Frozen	E	Buried	E
15-Feb-15	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	Frozen	E	Buried	E
15-Mar-15	Buried	E	Buried	E	Buried	E	Frozen	E	Frozen	E	172.4	D	Buried	E
19-Apr-15	5.4	V	1.5	V	0.6	V	250.6	V	389.3	V	535.0	V	0.4	V
17-May-15	Ponded	E	0.3	V	Dry	E	44.3	V	78.6	V	163.3	V	Ponded	E
14-Jun-15	2.3	V	2.1	V	Ponded	E	105.8	V	169.6	V	233.4	V	Ponded	E
19-Jul-15	Dry	E	0.1	E	Dry	E	30.9	V	52.7	V	64.2	V	Ponded	E
9-Aug-15	Dry	E	<0.1	E	Dry	E	20.2	V	22.5	V	57.4	V	Dry	E
23-Aug-15	Dry	E	-	-	-	-	-	-	-	-	59.4	V	-	-
6-Sep-15	Dry	E	Dry	E	Dry	-	18.9	V	7.3	V	31.3	V	Dry	E

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111-53312-03 100

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	Dry	E	Dry	E	Dry	E	7.2	V	23.5	V	21.7	V	Dry	E
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	Dry	E	0.2	V	Dry	E	58.9	V	84.2	V	110.6	V	Dry	E
6-Dec-15	Dry	E	0.2	V	Dry	E	69.0	V	77.7	V	101.1	V	Dry	E
17-Jan-16	22.0	V	Frozen	E	Buried	E	Frozen	E	Frozen	E	227.6	V	Buried	E
14-Feb-16	3.0	V	Buried	E	Buried	E	Frozen	E	Frozen	E	Frozen	E	Buried	E
13-Mar-16	48.1	V	6.9	V	10.1	V	567.6	V	914.5	V	951.7	V	2.5	V
17-Apr-16	10.6	V	0.9	V	0.4	V	182.7	V	273.3	V	409.5	V	2.9	V
15-May-16	4.0	V	1.0	V	0.6	V	174.0	V	219.0	V	302.8	V	0.9	V
19-Jun-16	Dry	E	0.1	V	Dry	E	26.8	V	48.0	V	86.7	V	Dry	E
3-Jul-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Jul-16	Dry	-	Dry	-	Dry	-	18.7	V	25.3	V	47.8	V	Dry	-
7-Aug-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Aug-16	Dry	-	Dry	-	Dry	-	20.9	V	14.5	V	38.2	V	Dry	-
18-Sep-16	Dry	-	Dry	-	Dry	-	13.5	V	17.9	V	30.9	V	Dry	-
16-Oct-16	Dry	-	Dry	-	Dry	-	34.5	V	27.7	V	48.9	V	Dry	-
18-Nov-16	Dry	-	Dry	-	Dry	-	34.4	V	27.5	V	46.9	V	Dry	-
12-Dec-16	Dry	-	Dry	-	Dry	-	Frozen	-	Frozen	-	54.4	V	Dry	-
22-Jan-17	Buried	-	0.4	V	4.4	V	Frozen	-	Frozen	-	340.4	V	Buried	-
15-Feb-17	Buried	-	Buried	-	Buried	-	Buried	-	Buried	-	163.3	V	Buried	-
19-Mar-17	3.2	V	1.9	V	1.0	V	120.9	V	181.3	V	298.7	V	6.3	V
16-Apr-17	7.7	V	1.6	V	0.2	V	178.3	V	271.9	V	380.1	V	0.7	V
14-May-17	5.5	V	1.0	V	0.6	V	224.3	V	389.9	V	487.2	V	2.2	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	2.5	V	1.4	V	1.4	V	212.1	V	325.0	V	457.4	V	0.3	V
7-Jul-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Jul-17	1.1	V	0.5	V	Dry	E	76.5	V	132.8	V	236.7	V	Dry	E
27-Jul-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Aug-17	Ponded	E	0.4	V	Dry	E	63.4	V	98.8	V	148.7	V	Dry	E
17-Sep-17	Dry	E	0.1	V	Dry	E	18.0	V	54.2	V	100.2	V	Dry	E
17-Oct-17	2.3	V	1.5	V	2.5	V	93.7	V	137.4	V	204.0	V	Dry	E
14-Nov-17	0.9	V	0.5	V	3.1	V	60.9	V	135.1	V	190.9	V	Dry	E
12-Dec-17	Frozen	E	0.4	V	Frozen	E	Frozen	E	Frozen	E	219.0	V	Frozen	E
17-Jan-18	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	381.9	V	Frozen	E
18-Feb-18	27.5	V	3.2	V	206.1	V	669.2	V	Frozen	E	1793.4	V	1.1	V
18-Mar-18	Frozen	E	Frozen	E	0.4	V	Frozen	E	Frozen	E	276.6	V	Frozen	E
18-Apr-18	Buried	E	Frozen	E	5.4	V	206.5	V	Frozen	E	502.4	V	Frozen	E
13-May-18	3.6	V	3.2	V	0.2	V	110.4	V	240.6	V	324.8	V	0.8	V
19-Jun-18	0.0	V									238.2	V		
20-Jun-18			0.0	V	0.0	V	3.6	V	13.9	V			0.0	V
4-Jul-18														
18-Jul-18	0.0	V									1008.8	V		
19-Jul-18			0.0	V	0.0	V	0.8	V	3.4	V			0.0	V
3-Aug-18														
23-Aug-18	0.0	V	0.0	V	0.0	V	6.4	V	16.5	V	72.9	V	0.0	V
24-Aug-18														
19-Sep-18	0	V	0	V	0	V	1.4	V	3.4	V	26.9	V	0	V

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DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
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20-Sep-18														
24-Oct-18	0	V	0	V	0	V	23.4	V	33.6	V	60.5	V	0	V
25-Oct-18														
21-Nov-18	0	V	0	V	0	V	0	V	0	V	111.1	V	0	V
22-Nov-18														
12-Dec-18	0	V	0	V	0	V	0	V	0	V	187.9	V	0	V
13-Dec-18														
18-Jan-19		Frozen		Frozen		Frozen		Frozen		Frozen	211.4	V		Frozen
19-Jan-19														
26-Feb-19		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen
28-Feb-19														
15-Mar-19	Frozen	V	Frozen	V		frozen		frozen		frozen		frozen	Frozen	V
19-Mar-19														
24-Apr-19	19.8	V	0.0	V	5.7	V	461.4	V	842.9	V	985.0	V	3.4	V
25-Apr-19														
23-May-19	5.8	V	0.0	V	0.4	V	242.9	V	257.6	V	337.1	V	0.2	V
27-May-19														
18-Jun-19	0.1	V	0.0	V	0.0	V	70.6	V	99.5	V	149.3	V	0.0	V
21-Jun-19														
29-Jul-19	0.0	V	0.0	V	0.0	V	28.4	V	18.9	V	45.2	V	0.0	V
30-Jul-19														
29-Aug-19		Dry		Dry		Dry	9.5	V	23.8	V	38.2	V		Dry
30-Aug-19														

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DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
26-Sep-19	0	V	0	V		dry	5.1	V	7.9	V	46.2	V	0	V
27-Sep-19														
23-Oct-19		dry		Dry		Dry	11.8	V	10	V	62.7	V		Dry
22-Oct-19														
22-Nov-19		Frozen		Frozen		Frozen		Frozen		Frozen	75.5	V		Frozen
21-Nov-19														
20-Dec-19		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen
15-Jan-20		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen
24-Jan-20														
20-Feb-20		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen
21-Feb-20														
26-Mar-20	9.6	V	0.0	V	0.0	V	211.0	V	516.5	V	563.3	V		Frozen
25-Mar-20														
27-Apr-20		Dry		Dry		Dry	55.1	V	138.1	V	237.6	V		-
28-Apr-20														
29-May-20	5.0	V	0.0	V		Ponded	74.8	V	59.8	V	166.9	V		DRY
28-May-20														
23-Jun-20	4.3	V	0.0	V		No Flow	200.5	V	235.3	V	393.6	V		DRY
24-Jun-20														
30-Jul-30		no flow		dry		no flow	14.2	V	89.9	V	134.5	V		DRY
31-Jul-20														
25-Aug-20		dry		dry		ponded		ponded	30	V				dry
26-Aug-20														

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- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW3		SW3A		SW4		SW5		SW6		SW6A		SW7	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
25-Sep-20		dry		dry		no flow		ponded	17.8	V				Dry
26-Sep-20														
30-Oct-20		dry		dry		no flow		Ponded	19.4	V	68.8	V		dry
29-Oct-20														
26-Nov-20		snow		snow		frozen		frozen		frozen	66.5	V		snow
27-Nov-20														
23-Dec-20		frozen		frozen		frozen		frozen		frozen		frozen		frozen
22-Dec-20		frozen		frozen		frozen		frozen		frozen		frozen		frozen

NOTE:

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- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	0.2	B	0.0	E	0.6	E	23.0	M	2.1 (1)	B/E	12.0 (1)	B/E	2.4 (1)	B/E
23-Jun-03	0.0	B	0.0	E	0.3	E	3.8	M	0.8	E	1.0	E	0.4	E
22-Jul-03	0.0	E	0.0	E	1.1	E	0.8	M	1.4	E	0.8	E	0.0	E
20-Aug-03	0.0	E	0.0	E	<0.1	E	3.2	M	0.0	E	0.4	E	0.0	E
25-Sep-03	0.0	E	0.0	E	<0.1	M/V	1.0	M	0.1	E	0.1	E	0.0	E
22-Oct-03	0.0	E	0.0	E	0.7	E	-	-	0.2	B	1.3	B	0.1	E
28-Nov-03	0.1	B	2.0	V	<0.1	E	6.9	V	0.3	B/E	0.3	B/E	0.6	B/E
19-Dec-03	Frozen	E	4.5	V	2.0	E	13.1	V	0.5	E	0.6	E	1.0	E
10-Feb-04	Frozen	E	2.1	V	0.3	E	6.7	V	1.5	E	0.8	E	0.5	E
18-Mar-04	Frozen	E	5.2	V	0.2	B	22.4	M	1.7	B/E	0.8	B/E	0.6	B/E
19-Apr-04	0.5	B	7.0	V	1.1	B/E	27.4	M	12.2	B/E	5.8	M	1.8	B/E
19-May-04	0.2	B	1.4	V	0.2	B/E	11.1	M	2.7	M	0.9	B	0.6	B
24-Jun-04	0.1	B	0.6	V	0.1	B/E	4.0	M	0.4	B/E	0.3	B/E	0.1	B/E
29-Jul-04	0.0	E	0.0	E	<0.1	B/E	3.0	M	0.5	E	1.5	E	<0.1	E
23-Aug-04	0.0	E	0.0	E	<0.1	B/E	0.2	M	<0.1	E	0.3	E	DRY	E
21-Sep-04	0.0	E	0.0	E	<0.1	B/E	0.2	M	<0.1	E	0.1	E	DRY	E
21-Oct-04	0.0	E	0.0	E	<0.1	B/E	1.1	M	<0.1	E	0.1	E	DRY	E
17-Nov-04	0.0	E	0.0	E	<0.1	B/E	5.9	M	<0.1	E	0.1	E	DRY	E
15-Dec-04	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- (1) indicates surface water station monitored on June 9, 2003
- SW11A to SW11E March 2004 flow data are recorded as estimates due to snow and ice accumulation hindering measurement accuracy.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
27-Mar-05	Frozen	E	4.2	V	0.4	B/E	18.4	M	15.0	E	10.0	E	4.0	E
10-Apr-05	Frozen	E	41.7	V	3.2	B/E	62.1	M	12.0	E	10.0	E	8.0	E
22-May-05	0.1	B/E	1.1	V	0.2	B/E	10.4	V	5.3	V	2.2	V	1.4	V
26-Jun-05	0.0	E	0.0	E	0.1	E	3.2	V	0.1	B/E	0.9	V	0.0	E
10-Jul-05	0.0	E	0.0	E	<0.1	E	5.0	E	1.0	E	2.0	E	0.0	E
21-Aug-05	0.0	E	0.0	E	<0.1	E	0.9	V	0.1	E	0.4	E	0.0	E
25-Sep-05	0.0	E	0.0	E	0.1	E	0.9	M	<0.1	E	0.5	E	0.0	E
23-Oct-05	0.0	E	0.0	E	0.5	E	0.8	V	0.0	E	0.1	E	0.0	E
13-Nov-05	0.0	E	0.0	E	0.1	B/E	2.2	V	0.2	V	1.7	V	0.1	E
11-Dec-05	Frozen	E	0.0	E	0.1	E	3.5	E	0.3	V	0.9	V	0.0	E
15-Jan-06	Frozen	E	5.5	V	2.7	V	20.2	V	7.6	E/V/M	6.3	E/V/M	9.7	E/V/M
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Mar-06	Frozen	E	15.3	V	2.0	V	29.2	V	11.4	V	3.5	V	1.7	V
16-Apr-06	0.3	B/E	5.6	V	3.8	V	22.1	V	5.2	V	4.1	V	2.1	V
21-May-06	0.1	B	2.4	V	<0.1	V	10.7	V	3.3	V	1.1	V	2.2	V
18-Jun-06	0.0	E	0.0	E	<0.1	V	3.0	V	0.5	V	1.6	V	0.0	E
9-Jul-06	0.0	E	0.0	E	0.4	V	2.6	V	0.3	V	2.0	V	<0.1	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	0.0	E	0.0	E	<0.1	E	1.0	V	0.7	V	0.5	V	0.0	E
17-Sep-06	0.0	E	0.0	E	<0.1	V	1.5	V	0.3	E	0.6	E	0.0	E
15-Oct-06	0.0	E	0.0	E	<0.1	V	2.2	V	0.9	V	1.6	V	0.1	E
19-Nov-06	0.0	E	2.4	V	1.5	M	16.8	V	3.8	V	1.9	V	3.3	V
17-Dec-06	0.1	V	3.9	V	0.5	V	19.8	V	5.4	V	7.0	V	3.7	V
21-Jan-07	Frozen	E	Frozen	E	Frozen	E	35.0	E	15.0	E	4.0	E	3.0	E
18-Feb-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
18-Mar-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
15-Apr-07	1.0	V	7.2	V	1.7	V	26.2	V	6.3	V	4.9	V	1.4	V
13-May-07	<0.1	E	2.0	V	0.2	V	11.1	V	4.6	V	2.3	V	0.6	V
17-Jun-07	0.0	E	0.0	E	0.1	V	2.8	V	0.1	V	0.0	E	2.1	V
15-Jul-07	0.0	E	0.0	E	<0.1	E	1.0	V	<0.1	E	0.5	E	0.6	V
19-Aug-07	0.0	E	0.0	E	<0.1	E	0.6	V	0.0	E	0.0	E	0.2	V
16-Sep-07	0.0	E	0.0	E	<0.1	E	0.5	V	0.0	E	0.0	E	1.3	V
14-Oct-07	0.0	E	0.0	E	0.1	E	0.4	V	0.0	E	0.0	E	0.0	E
18-Nov-07	0.0	E	0.0	E	0.2	V	1.4	V	0.0	E	0.0	E	1.5	V
9-Dec-07	Frozen	E	Frozen	E	Frozen	E	2.8	V	2.5	V	0.6	V	2.5	V
20-Jan-08	Frozen	E	Frozen	E	Frozen	E	73.6	V	1.1	V	7.3	V	5.6	V
17-Feb-08	Frozen	E	Frozen	E	Frozen	E	15.3	V	4.3	V	4.7	V	4.1	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	Frozen	E	Frozen	E	Frozen	E	2.1	V	1.2	V	7.2	V	2.9	V
30-Mar-08	<0.1	V	0.1	V	2.8	V	100.8	V	3.3	V	11.1	V	8.9	V
20-Apr-08	0.3	E	12.5	V	0.2	V	32.6	V	2.0	V	6.0	V	3.1	V
18-May-08	<0.1	E	2.8	V	0.4	V	13.1	V	0.5	V	3.8	V	1.4	V
15-Jun-08	0.0	E	0.0	E	0.1	V	13.1	V	0.3	V	4.3	V	1.1	V
13-Jul-08	0.0	E	0.0	E	<0.1	V	0.8	V	<0.1	E	0.4	V	0.5	V
17-Aug-08	0.0	E	0.0	E	0.3	V	7.3	V	0.2	V	0.2	V	0.9	V
14-Sep-08	0.0	E	0.0	E	0.3	V	7.5	V	1.6	V	1.4	V	1.4	V
19-Oct-08	0.0	E	0.0	E	0.4	V	0.8	V	0.2	V	1.3	V	1.6	V
23-Nov-08	Frozen	E	Frozen	E	0.9	V	7.5	V	2.2	V	3.0	V	1.6	V
14-Dec-08	Frozen	E	Frozen	E	0.6	V	17.4	V	1.9	V	5.7	V	10.7	V
18-Jan-09	Frozen	E	Frozen	E	Frozen	E	11.0	V	1.3	V	2.8	V	0.5	V
8-Feb-09	Buried	E	Buried	E	1.8	V	51.1	V	5.3	V	10.8	V	7.5	V
15-Mar-09	0.3	V	0.4	V	1.7	V	43.8	V	4.8	V	9.6	V	4.6	V
12-Apr-09	2.4	V	17.2	V	0.7	V	27.3	V	3.8	V	10.4	V	6.1	V
17-May-09	0.3	V	5.9	V	0.2	V	5.1	V	0.2	V	4.5	V	1.8	V
14-Jun-09	Dry	E	Dry	E	0.1	V	2.3	V	0.1	V	1.8	V	1.3	V
12-Jul-09	Dry	E	Dry	E	<0.1	V	0.8	V	0.2	V	0.5	V	1.6	V
9-Aug-09	Dry	E	Dry	E	0.2	V	0.8	V	0.1	V	0.5	V	1.2	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	Dry	E	Dry	E	<0.1	E	0.8	V	<0.1	E	<0.1	E	0.5	V
11-Oct-09	Dry	E	Dry	E	0.1	V	1.1	V	<0.1	V	0.2	V	0.5	V
15-Nov-09	Dry	E	Dry	E	0.4	V	2.4	V	0.1	V	1.0	V	0.7	V
13-Dec-09	Dry	E	Buried	E	<0.1	V	0.9	V	0.8	V	1.1	V	1.1	V
17-Jan-10	Buried	E	Buried	E	Buried	E	1.2	V	0.2	V	4.0	V	0.7	V
7-Feb-10	Frozen	E	Frozen	E	Buried	E	1.4	V	0.2	V	1.0	V	0.9	V
14-Mar-10	Buried	E	25.4	V	2.0	V	19.5	V	2.3	V	15.0	V	4.4	V
4-Apr-10	-	-	11.2	V	-	-	-	-	-	-	-	-	-	-
11-Apr-10	0.1	V	8.3	V	0.5	V	9.0	V	0.6	V	6.7	V	2.3	V
16-May-10	Dry	E	5.4	V	0.3	V	12.0	V	0.4	V	4.1	V	0.6	V
23-May-10	-	-	0.6	V	-	-	-	-	-	-	-	-	-	-
13-Jun-10	Dry	E	2.6	V	0.7	V	8.0	V	0.6	V	2.5	V	0.5	V
18-Jul-10	Dry	E	1.6	V	<0.1	V	6.2	V	1.5	V	5.5	V	1.8	V
15-Aug-10	Dry	E	Dry	E	0.2	V	1.3	V	<0.1	V	0.4	V	0.5	V
12-Sep-10	Dry	E	Dry	E	<0.1	V	0.2	V	<0.1	E	<0.1	E	0.3	V
17-Oct-10	Dry	E	0.8	V	0.2	V	6.0	V	0.2	V	1.9	V	0.8	V
14-Nov-10	Dry	E	1.7	V	1.4	V	16.9	V	1.4	V	6.2	V	2.7	V
19-Dec-10	Buried	E	Buried	E	Buried	E	5.3	V	Buried	E	Buried	E	Buried	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11		E		E		E	10.3	V	0.5	V		E		E
20-Feb-11		E		E	0.4	V	4.6	V	0.4	V	4.0	V	1.6	V
13-Mar-11	Buried	E	Buried	E	0.2	V	9.5	V	1.0	V	5.8	V	1.2	V
17-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Mar-11	-	-	17.1	V	-	-	-	-	-	-	-	-	-	-
1-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	0.7	V	45.3	V	0.9	V	8.2	V	0.7	V	6.4	V	2.6	V
20-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	0.5	V	16.9	V	2.1	V	41.7	V	8.2	V	12.8	V	6.5	V
16-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	<0.1	V	1.2	V	0.1	V	3.6	V	0.2	V	3.3	V	1.2	V
17-Jul-11	Dry	E	Dry	E	0.1	V	0.9	V	<0.1	E	0.3	E	0.2	E
14-Aug-11	Dry	E	Dry	E	<0.1	E	0.1	V	<0.1	E	<0.1	E	<0.1	E
18-Sep-11	Dry	E	Dry	E	<0.1	V	<0.1	V	<0.1	E	<0.1	E	<0.1	E
16-Oct-11	Dry	E	Dry	E	2.2	V	7.0	V	0.6	V	4.3	V	0.8	V
20-Nov-11		E		E	0.1	V	5.2	V	0.2	V	0.7	V	0.1	V
18-Dec-11	Buried	E	Buried	E	0.6	V	3.8	V	0.8	V	1.6	V	1.2	V
15-Jan-12	Buried	E	Buried	E	-	-	17.6	V	Buried	E	Buried	E	Buried	E
19-Feb-12	Buried	E	Buried	E	0.5	V	4.4	V	Buried	E	Buried	E	Buried	E
18-Mar-12	0.1	V	12.2	V	1.2	V	22.7	V	5.1	V	5.1	V	1.3	V
15-Apr-12	0.0	V	0.3	V	0.4	V	5.8	V	0.3	V	0.7	V	0.2	V
13-May-12	0.0	E	<0.1	V	0.7	V	2.5	V	0.2	V	0.9	V	0.1	V
17-Jun-12	0.0	E	0.0	E	0.1	V	1.9	V	<0.1	V	0.5	V	0.2	V

NOTE:

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- (1) indicates surface water station monitored on June 9, 2003
- SW11A to SW11E March 2004 flow data are recorded as estimates due to snow and ice accumulation hindering measurement accuracy.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.0	E	0.0	E	0.1	V	1.1	V	0.0	E	<0.1	E	0.2	V
12-Aug-12	0.0	E	0.0	E	0.6	V	1.7	V	0.2	V	0.4	V	0.4	V
16-Sep-12	0.0	E	0.0	E	0.2	V	1.3	V	<0.1	E	<0.1	E	0.1	V
14-Oct-12	0.0	E	0.0	E	0.3	V	1.1	V	<0.1	E	<0.1	E	<0.1	E
18-Nov-12	0.0	E	0.0	E	0.3	V	10.1	V	1.0	V	1.3	V	0.9	V
16-Dec-12	0.0	E	10.1	V	0.1	V	6.1	V	0.4	V	1.1	V	0.6	V
13-Jan-13	0.0	E	5.1	V	0.8	V	19.8	V	0.9	V	3.6	V	0.9	V
17-Feb-13	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen
17-Mar-13	-	Frozen	-	Frozen	-	Frozen	19.8	V	0.3	V	1.3	V	1.2	V
14-Apr-13	0.1	V	24.4	V	1.1	V	42.8	V	5.1	V	12.5	V	4.8	V
12-May-13	<0.1	V	11.8	V	0.1	V	15.3	V	0.2	V	2.6	V	0.4	V
16-Jun-13	0.0	E	0.8	V	<0.1	V	4.0	V	0.1	V	0.5	V	0.2	V
14-Jul-13	0.0	E	0.0	E	<0.1	V	1.7	V	<0.1	V	<0.1	E	<0.1	E
18-Aug-13	0.0	E	0.0	E	0.1	V	1.0	V	<0.1	E	<0.1	E	<0.1	E
15-Sep-13	0.0	E	0.0	E	<0.1	V	0.5	V	<0.1	E	<0.1	E	<0.1	E
13-Oct-13	0.0	E	0.0	E	0.7	V	3.2	V	0.4	V	2.4	V	0.7	V
17-Nov-13	0.0	E	6.4	V	4.6	V	5.5	V	0.3	V	2.6	V	0.5	V
15-Dec-13	Frozen	E	Frozen	E	Buried	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Jan-14	Frozen	E	Frozen	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E
16-Feb-14	Frozen	E	Frozen	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E

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111-53312-03 100

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Apr-14	Frozen	E	58.0	V/E	6.7	V	47.5	V	1.3	V	10.9	V	23.9	V
11-May-14	0.1	V	6.4	V	0.2	V	10.9	V	0.5	V	2.7	V	1.6	V
15-Jun-14	Dry	E	Dry	E	0.5	V	12.5	V	2.6	V	7.1	V	4.5	V
13-Jul-14	Dry	E	Dry	E	<0.1	V	1.1	V	<0.1	E	<0.1	E	<0.1	E
17-Aug-14	Dry	E	Dry	E	Ponded	E	1.0	V	<0.1	E	<0.1	E	<0.1	E
7-Sep-14	Dry	E	Dry	E	<0.1	E	0.3	V	<0.1	E	<0.1	E	<0.1	E
19-Oct-14	Dry	E	1.5	V	<0.1	V	2.3	V	<0.1	V	0.1	V	0.4	V
16-Nov-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E
14-Dec-14	Buried	E	Buried	E	Buried	E	2.8	V	0.6	V	0.1	V	0.4	V
18-Jan-15	Buried	E	Buried	E	Buried	E	0.3	V	Buried	E	Buried	E	Buried	E
15-Feb-15	Buried	E	Buried	E	Buried	E	N/A	E	N/A	E	N/A	E	N/A	E
15-Mar-15	Buried	E	Buried	E	Frozen	E	5.3	V	0.2	V	0.9	V	<0.1	E
19-Apr-15	0.2	V	7.7	V	0.2	V	25.7	V	1.5	V	2.7	V	2.9	V
17-May-15	Dry	E	Ponded	E	<0.1	V	1.5	V	0.1	V	0.5	V	0.1	V
14-Jun-15	Dry	E	0.8	V	0.1	V	6.6	V	0.3	V	0.6	V	0.4	V
19-Jul-15	Dry	E	Dry	E	0.2	V	5.3	V	0.3	V	0.2	V	0.3	V
9-Aug-15	Dry	E	Dry	E	0.3	V	2.7	V	<0.1	V	0.2	V	0.2	V
23-Aug-15	-	-	Dry	E	0.2	E	0.4	V	<0.1	E	<0.1	E	0.3	E
6-Sep-15	Dry	E	Dry	E	<0.1	E	0.8	V/E	0.3	E	0.2	V	0.1	V

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DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	Dry	E	Dry	E	0.2	E	0.6	E/V	0.2	E	0.3	E	0.5	E
8-Nov-15	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-
15-Nov-15	Dry	E	Dry	E	<0.1	V	1.6	V	0.2	V	0.3	V	0.5	V
6-Dec-15	Dry	E	Dry	E	0.3	V	1.1	V	0.1	V	1.0	V	0.3	V
17-Jan-16	Buried	E	Buried	E	0.5	V	5.2	V	0.4	V	2.4	V	0.6	V
14-Feb-16	Buried	E	Buried	E	0.6	V	8.1	V	1.9	V	2.0	V	1.1	V
13-Mar-16	0.3	V	30.7	V	3.5	V	51.9	V	3.5	V	2.2	V	5.1	V
17-Apr-16	<0.1	E	8.5	V	1.0	V	23.4	V	1.0	V	1.9	V	4.3	V
15-May-16	DRY	E	5.5	V	0.1	V	13.3	V	0.2	V	1.8	V	2.1	V
19-Jun-16	Dry	E	Dry	E	0.2	V	4.3	V	0.2	V	1.0	V	0.1	V
3-Jul-16	-	-	-	-	0.2	V	12.2	V	0.1	V	0.8	V	0.1	V
17-Jul-16	Dry	-	Dry	-	0.2	V	2.1	V	0.1	V	0.7	V	0.1	V
7-Aug-16	-	-	-	-	<0.1	E	0.4	E/V	0.1	E	0.2	E	0.3	E
21-Aug-16	Dry	-	Dry	-	<0.1	E	0.8	V	<0.1	E	0.4	V	0.3	V
18-Sep-16	Dry	-	Dry	-	0.1	V	1.1	V	<0.1	E	0.2	E	0.4	V
16-Oct-16	Dry	-	Dry	-	0.2	V	0.4	V	<0.1	E	<0.1	E	0.3	V
18-Nov-16	Dry	-	Dry	-	0.2	V	0.9	V	<0.1	E	0.9	V	0.1	V
12-Dec-16	Dry	-	Dry	-	0.9	V	2.5	V	0.1	V	0.7	V	0.5	V
22-Jan-17	Buried	-	4.0	V	1.5	V	12.9	V	4.7	V	3.8	V	1.3	V
15-Feb-17	Buried	-	Buried	-	0.7	V	8.5	V	0.1	V	1.7	V	0.7	V
21-Mar-17	Buried	-	7.7	V	1.6	V	23.4	V	0.6	V	2.6	V	0.5	V
19-Apr-17	Dry	-	20.1	V	0.5	V	18.8	V	0.6	V	1.6	V	0.9	V
14-May-17	Dry	-	5.0	V	1.7	V	33.4	V	0.8	V	0.3	V	2.0	V

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TABLE B-3
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111-53312-03 100

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	Dry	E	2.1	V	1.7	V	21.5	V	0.2	V	1.4	V	1.1	V
7-Jul-17	-	-	-	-	0.4	V	2.4	V	0.2	V	3.0	V	0.1	V
18-Jul-17	Dry	E	Dry	E	0.4	V	4.2	V	0.4	V	1.6	V	0.4	V
27-Jul-17	-	-	-	-	0.4	V	0.9	V	0.2	V	0.4	V	0.2	V
13-Aug-17	Dry	E	Dry	E	0.5	V	2.5	V	0.2	V	0.5	V	0.7	V
17-Sep-17	Dry	E	Dry	E	0.2	V	1.3	V	0.1	V	0.4	V	0.4	V
17-Oct-17	Dry	E	Dry	E	0.5	V	7.4	V	0.2	V	0.7	V	0.7	V
14-Nov-17	Dry	E	0.2	V	0.5	V	5.5	V	0.1	V	0.9	V	0.3	V
12-Dec-17	Frozen	E	Frozen	E	0.2	V	5.7	V	0.5	V	1.7	V	0.8	V
17-Jan-18	Frozen	E	Frozen	E	4.9	V	18.2	V	0.5	V	1.6	V	0.9	V
18-Feb-18	0.4	V	17.9	V	1.1	V	39.5	V	3.6	V	2.7	V	7.8	V
18-Mar-18	Frozen	E	Frozen	E	0.3	V	13.7	V	0.8	V	0.4	V	0.8	V
18-Apr-18	Frozen	E	Frozen	E	Buried	E	16.0	V	0.6	V	2.0	V	1.8	V
13-May-18	Dry	E	20.1	V	0.5	V	23.8	V	0.2	V	0.8	V	1.2	V
19-Jun-18			0.0	V										
20-Jun-18		Dry			0.8	V	3.5	V	0.6	V	0.6	V	0.5	V
4-Jul-18					0.3	V	1.4	V	0.2	V	0.3	V	0.4	V
18-Jul-18			0.0	V										
19-Jul-18		Dry			0.2	V	1.1	V	0.0	V	0.3	V	0.3	V
3-Aug-18					0.1	V	2.1	V	0.0	V	0.2	V	0.2	V
23-Aug-18	0.0	V	0.0	V										
24-Aug-18					0.1	V	1	V	0	V	0.2	V	0.2	V
19-Sep-18	0	V	0	V										

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20-Sep-18					0	V	2.3	V	0	V	0.2	V	0.3	V
24-Oct-18	0	V	0	V										
25-Oct-18					0.3	V	0.9	V	0	V	0.1	V	0.2	V
21-Nov-18	0	V	0	V										
22-Nov-18					0.1	V	2.3	V	0	V	0.4	V	0.2	V
12-Dec-18	0	V	0.5	V										
13-Dec-18					0.6	V	5.6	V	0.4	V	0.8	V	0.1	V
18-Jan-19		Frozen		Frozen		Frozen	6.4	V	0.6	V	0.9	V	1.9	V
19-Jan-19						Frozen	6.4	V	0.6	V	0.9	V	1.9	V
26-Feb-19		Frozen		Frozen										
28-Feb-19						Frozen	11.8	V		Frozen	1.8	V	1.7	V
15-Mar-19	Frozen	V	Frozen	V										
19-Mar-19					1.7	V	21.1	V	2.4	V	1.7	V	1.5	V
24-Apr-19	0.0	V	5.9	V										
25-Apr-19					4.0	V	43.1	V	2.0	V	3.8	V	2.8	V
23-May-19	0.0	V	2.4	V										
27-May-19					0.7	V	12.0	V	0.9	V	1.0	V	0.7	V
18-Jun-19	0.0	V	0.0	V										
21-Jun-19					0.8	V	5.3	V	0.2	V	0.8	V	0.7	V
29-Jul-19		Dry	0.0	V										
30-Jul-19					0.1	V	0.7	V	0.0	V	0.3	V	0.3	V
29-Aug-19		Dry		Dry										
30-Aug-19					0	V	1.4	V	0	V		DRY		DRY

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26-Sep-19	0	V	0	V										
27-Sep-19					0.2	V	1.3	V	0	V	0	V	0	V
23-Oct-19		Dry		dry										
22-Oct-19					0.2	V	2.9	V	0	V		Dry		Dry
22-Nov-19		Frozen		Frozen										
21-Nov-19						Frozen	6.2	V		Frozen		Frozen		Frozen
20-Dec-19		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen
15-Jan-20		Frozen		Frozen										
24-Jan-20						Frozen	5.7	V		Frozen		Frozen		Frozen
20-Feb-20		Frozen		Frozen										
21-Feb-20						Frozen		Frozen		Frozen		Frozen		Frozen
26-Mar-20		Frozen		Frozen										
25-Mar-20						Frozen	0.0	V		Ponded		Ponded		Ponded
27-Apr-20		-		-										
28-Apr-20						-	7.1	V		-		-		-
29-May-20		DRY	0.0	V										
28-May-20						BLOCKED	14.7	V	0.9	V	1.4	V	0.4	V
23-Jun-20		DRY		DRY										
24-Jun-20					1.7	V	0.0	V	0.0	V	0.0	V	0.0	V
30-Jul-30		DRY	0.0	V										
31-Jul-20					0.3	V	2.8	V	0.3	V	0.2	V	0.1	V
25-Aug-20		dry												
26-Aug-20						dry	1.5	V		low flow		low flow	0.3	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW8		SW9		SW10		SW11		SW11A		SW11B		SW11C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
25-Sep-20		Dry												
26-Sep-20						Dry	1.3	V		low flow		low flow	0.2	V
30-Oct-20		dry		dry										
29-Oct-20						dry	2.5	V		low flow		low flow	0.2	V
26-Nov-20		snow		dry										
27-Nov-20						snow	12.6	V	8.4	V	1.3	V	0.1	V
23-Dec-20		frozen		frozen										
22-Dec-20		frozen		frozen		frozen	3.9	V		snow		snow		snow

NOTE:

- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	2.4 (1)	B/E	27.8 (1)	B/E	1.7	B	0.0	E	6.0	B	15.0	V	1.8	B
23-Jun-03	0.8	E	2.5	B	0.9	B	0.0	E	4.7	B	6.2	V	0.5	B
22-Jul-03	0.8	E	1.4	B	0.6	B	0.0	E	2.8	B	2.8	V	2.9	E
20-Aug-03	0.1	E	1.9	E	0.3	B	0.0	E	2.2	B	2.2	V	1.2	M
25-Sep-03	0.2	E	0.4	E	0.3	B	0.0	E	1.9	B	3.0	V	0.8	B
22-Oct-03	0.1	B	2.2	E	1.9	B	0.0	E	2.7	B	6.2	V	1.1	B
28-Nov-03	0.8	B/E	12.5	B/E	4.3	B	-(**)	E	8.0	B/E	17.1	V	8.2	B/E
19-Dec-03	1.2	E	26.5	B/E	4.7	B	10.0	E	25.0	E	12.8	M	12.9	M
10-Feb-04	0.8	E	3.5	B	1.7	B	Frozen	E	10.0	E	3.0	V	Frozen	E
18-Mar-04	0.9	B/E	11.9	B/E	3.7	B	Frozen	E	8.0	E	49.0	V	Frozen	E
19-Apr-04	8.4	B	22.0	B/E	11.4	B	4.4	M	30.0	E	46.3	V	1.9	V
19-May-04	6.7	M	5.9	B	3.0	B	-(**)	E	11.2	B,E	14.2	V	1.6	V
24-Jun-04	0.2	B/E	3.4	BE	1.1	B	0.0	E	6.4	BE	1.8	V	1.4	BE
29-Jul-04	1.0	E	0.8	BE	0.7	B	0.0	E	3.3	BE	1.1	V	1.4	BE
23-Aug-04	<0.1	E	0.3	BE	0.3	B	0.0	E	1.6	BE	1.6	V	0.7	BE
21-Sep-04	<0.1	E	0.2	BE	0.2	B	0.0	E	0.6	BE	<0.1	V	<0.1	E
21-Oct-04	<0.1	E	0.2	BE	0.2	B	0.0	E	0.9	BE	0.8	V	0.8	BE
17-Nov-04	<0.1	E	0.4	BE	0.3	B	0.0	E	1.1	BE	1.3	V	1.0	BE
15-Dec-04	Frozen	E	1.05	BE	Frozen	E	Frozen	E	Frozen	E	2.53	V	1.52	BE

NOTE:

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- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- -(**) indicates slight flow through culvert - immeasureable
- SW11A to SW11E March 2004 flow data are recorded as estimates due to snow and ice accumulation hindering measurement accuracy.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
27-Mar-05	10.0	E	33.0	B/E	0.8	E	4.9	B/E	50.0	E	5.5	V	Frozen	E
10-Apr-05	5.7	E	61.0	B/E	16.1	B/E	6.7	B/E	80.0	E	70.7	V	5.3	B/E
22-May-05	2.8	V	13.4	B/E	2.1	B/E	0.0	E	8.2	B/E	7.4	V	3.5	B/E
26-Jun-05	0.2	E	3.0	B/E	1.0	B/E	0.0	E	10.0	B/E	2.9	V	0.2	B/E
10-Jul-05	1.5	E	6.0	B/E	0.7	B/E	0.0	E	5.0	E	2.1	V	1.0	B/E
21-Aug-05	0.3	E	1.0	B/E	0.3	B/E	0.0	E	1.1	B/E	1.1	V	1.4	B/E
25-Sep-05	0.1	E	0.9	E	0.2	B	0.0	E	0.0	E	1.3	V	0.4	B
23-Oct-05	0.1	E	2.0	B/E	0.2	B	0.0	E	1.5	E	1.7	V	1.9	B
13-Nov-05	1.2	V/E	1.4	B/E	1.0	B	0.0	E	8.8	E/V/M	6.7	V	1.0	B/E
11-Dec-05	0.2	V	1.4	V	0.9	B	Frozen	E	6.5	E/V/M	5.1	V	3.4	B
15-Jan-06	9.8	E/V/M	22.4	V	5.6	B	Frozen	E	19.6	V	15.6	V	Frozen	E
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Mar-06	4.2	V	30.4	V	5.5	B	0.5	V	37.3	VB	25.1	V	Frozen	E
16-Apr-06	8.6	V	29.4	V	3.2	V	0.5	V	30.0	V	19.5	V	5.7	V
21-May-06	3.4	V	19.9	V	1.3	V	0.2	V	13.8	V	8.8	V	3.5	V
18-Jun-06	0.3	V	16.7	V	0.7	V	0.0	E	3.4	V	1.6	V	2.5	V
9-Jul-06	0.4	V	3.7	V	0.9	V	0.0	E	2.4	E/V/M	3.0	V	1.5	V

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- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	0.7	V	1.9	V	0.2	V	0.0	E	0.8	V	0.4	V	1.0	V
17-Sep-06	0.2	V	1.9	V	0.4	V	0.0	E	0.9	V	1.9	V	2.2	V
15-Oct-06	0.6	V	5.2	V	0.7	V	0.0	E	2.2	V	5.0	V	1.8	V
19-Nov-06	4.9	V	17.2	V	3.3	V	0.1	V	26.5	V	10.6	V	1.5	V
17-Dec-06	2.6	V	23.2	V	3.7	V	0.9	V	37.4	V	17.8	V	1.3	V
21-Jan-07	15.0	E	37.0	E	8.0	E	Frozen	E	48.0	E	Frozen	E	Frozen	E
18-Feb-07	Frozen	E	6.2	V	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
18-Mar-07	Frozen	E	17.5	E/V/M	5.1	V	0.8	V	Frozen	E	Frozen	E	Frozen	E
15-Apr-07	3.3	V	59.3	V	6.9	V	0.6	V	33.8	V	14.3	V	2.1	V
13-May-07	1.6	V	15.3	V	0.4	V	0.0	E	5.6	V	4.1	V	2.2	V
17-Jun-07	0.4	V	0.9	V	0.3	V	0.0	E	5.6	V	1.7	V	1.3	V
15-Jul-07	0.3	V	0.7	V	3.0	V	0.0	E	3.9	V	0.5	V	0.8	V
19-Aug-07	0.1	V	3.5	V	0.2	V	0.0	E	1.7	V	1.1	V	0.7	V
16-Sep-07	0.2	V	2.3	V	0.1	V	0.0	E	1.5	V	1.3	V	0.4	V
14-Oct-07	0.0	V	0.6	V	0.1	V	0.0	E	0.2	V	0.3	V	0.5	V
18-Nov-07	0.2	V	0.3	V	0.4	V	0.0	E	1.6	V	6.9	V	1.1	V
9-Dec-07	0.9	V	3.2	V	0.6	V	Frozen	E	Frozen	E	Frozen	E	0.7	V
20-Jan-08	8.1	V	10.4	V	2.4	V	Frozen	E	Frozen	E	12.6	V	Frozen	E
17-Feb-08	14.5	V	17.4	V	3.7	V	Frozen	E	35.3	V	Frozen	E	Frozen	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	12.5	V	12.8	V	Frozen	E	Frozen	E	20.9	V	Frozen	V	Frozen	E
30-Mar-08	2.7	V	50.2	V	17.2	V	5.0	V	107.8	V	67.1	V	34.5	V
20-Apr-08	3.1	V	65.4	V	4.2	V	0.6	V	98.0	V	41.4	V	1.5	V
18-May-08	2.3	V	20.2	V	0.7	V	0.8	V	36.5	V	14.4	V	0.5	V
15-Jun-08	0.1	V	9.8	V	1.2	B	0.0	E	11.5	V	4.0	V	0.3	V
13-Jul-08	0.0	E	0.2	V	0.5	B	0.0	E	3.3	V	0.6	V	0.0	V
17-Aug-08	0.0	E	1.8	V	0.4	V	0.0	E	4.0	V	6.1	V	0.1	V
14-Sep-08	<0.1	V	6.3	V	0.6	V	0.0	E	10.2	V	7.0	V	0.6	V
19-Oct-08	0.1	V	2.2	V	0.4	V	0.0	E	20.4	V	10.2	V	0.5	V
23-Nov-08	3.5	V	12.2	V	2.8	V	1.1	V	35.6	V	13.4	V	Frozen	E
14-Dec-08	2.9	V	41.0	V	4.2	V	9.7	V	55.8	V	54.0	V	Frozen	E
18-Jan-09	Frozen	E	3.4	V	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
8-Feb-09	0.9	V	46.5	V	26.4	V	3.8	V	142.7	V	Buried	E	Buried	E
15-Mar-09	1.6	V	109.7	V	16.5	V	16.5	V	107.6	V	43.4	V	4.6	V
12-Apr-09	3.4	V	55.2	V	7.5	V	0.9	V	60.7	V	44.7	V	5.4	V
17-May-09	0.8	V	18.1	V	1.6	V	0.2	V	29.9	V	11.2	V	0.3	V
14-Jun-09	Dry	E	2.1	V	0.4	V	Dry	E	9.8	V	7.1	V	<0.1	V
12-Jul-09	Dry	E	0.7	V	0.3	V	Dry	E	3.4	V	1.9	V	0.2	V
9-Aug-09	Dry	E	1.0	V	0.3	V	Dry	E	18.8	V	3.8	V	0.1	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	Dry	E	0.2	V	0.2	V	Dry	E	1.3	V	0.5	V	<0.1	V
11-Oct-09	Dry	E	3.5	V	0.4	V	Dry	E	8.3	V	3.6	V	0.3	V
15-Nov-09	Dry	E	0.7	V	0.5	V	Dry	E	4.6	V	0.9	V	0.2	V
13-Dec-09	Buried	E	1.2	V	0.5	V	Buried	E	4.9	V	6.2	V	0.6	V
17-Jan-10	Buried	E	3.6	V	0.6	V	Buried	E	Frozen	E	Buried	E	Buried	E
7-Feb-10	Buried	E	1.1	V	Frozen	E	Buried	E	Frozen	E	Buried	E	Buried	E
14-Mar-10	0.5	V	57.5	V	14.3	V	2.5	V	125.8	V	100.6	V	15.9	V
4-Apr-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Apr-10	0.5	V	18.2	V	1.5	V	0.4	V	29.6	V	15.7	V	0.5	V
16-May-10	0.6	V	21.0	V	2.2	V	0.2	V	36.4	V	28.6	V	0.6	V
23-May-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jun-10	0.6	V	10.6	V	1.1	V	0.1	V	24.3	V	27.6	V	0.6	V
18-Jul-10	0.3	V	21.8	V	2.7	V	0.4	V	31.4	V	45.0	V	0.7	V
15-Aug-10	Dry	E	0.6	V	0.4	V	Dry	E	3.0	V	1.3	V	Dry	E
12-Sep-10	Dry	E	0.8	V	0.2	V	Dry	E	2.1	V	0.8	V	Dry	E
17-Oct-10	<0.1	V	2.3	V	0.9	V	Dry	E	18.5	V	5.6	V	0.7	V
14-Nov-10	0.4	V	32.1	V	7.3	V	2.3	V	54.9	V	16.6	V	0.5	V
19-Dec-10	Buried	E	8.7	V	Buried	E	Buried	E	Frozen	E	Buried	E	Buried	E

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MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11		E	3.0	V		E		E		E		E		E
20-Feb-11		E	4.6	V		E		E		E		E		E
13-Mar-11	0.6	V	22.5	V	7.4	V	Frozen	E	72.6	V	38.2	V	Frozen	E
17-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Mar-11	-	-	-	-	8.4	V	2.0	V	76.8	V	47.8	V	5.9	V
1-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	1.3	V	28.0	V	2.5	V	0.9	V	28.2	V	31.1	V	0.6	V
20-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	3.3	V	48.3	V	6.4	V	4.2	V	80.4	V	49.5	V	1.6	V
16-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	0.5	V	8.1	V	0.6	V	Ponded	E	8.6	V	10.0	V	0.4	V
17-Jul-11	<0.1	E	1.1	V	0.2	V	Dry	E	6.6	V	1.1	V	Dry	V
14-Aug-11	Dry	E	0.1	V	0.1	V	Dry	E	0.6	V	0.6	V	Dry	V
18-Sep-11	Dry	E	1.0	V	0.1	V	Dry	E	1.3	V	0.5	V	Dry	V
16-Oct-11	0.3	V	42.5	V	15.2	V	5.2	V	131.0	V	98.4	V	0.1	V
20-Nov-11	0.04	V	2.5	V	0.4	V		E	12.5	V	3.1	V	0.6	V
18-Dec-11	0.6	V	15.5	V	2.0	V	3.5	V	36.0	V	23.3	V	0.8	V
15-Jan-12	Buried	E	24.1	V	2.0	V	Frozen	E	21.3	V	Buried	E	Buried	E
19-Feb-12	Buried	E	11.1	V	0.7	V	Buried	E	12.8	V	Buried	E	Buried	E
18-Mar-12	4.6	V	47.7	V	5.8	V	1.7	V	71.8	V	37.9	V	1.5	V
15-Apr-12	<0.1	V	7.4	V	0.3	V	Dry	E	7.7	V	6.5	V	<0.1	V
13-May-12	0.3	V	6.3	V	0.6	V	Dry	E	15.4	V	11.6	V	<0.1	V
17-Jun-12	0.0	E	3.1	V	0.4	V	0.0	E	4.3	V	2.8	V	0.0	E

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- 0.0 indicates no flow, surface water location dry.
- -(**) indicates slight flow through culvert - immeasureable
- SW11A to SW11E March 2004 flow data are recorded as estimates due to snow and ice accumulation hindering measurement accuracy.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.0	E	1.8	V	0.1	V	0.0	E	2.4	V	1.2	V	0.0	E
12-Aug-12	<0.1	V	12.9	V	1.8	V	0.6	V	13.2	V	7.7	V	0.6	V
16-Sep-12	0.0	E	0.4	V	0.3	V	0.0	E	3.8	V	4.3	V	0.1	V
14-Oct-12	0.0	E	0.5	V	0.4	V	0.0	E	4.9	V	11.1	V	0.3	V
18-Nov-12	0.2	V	14.9	V	1.1	V	0.4	V	10.9	V	19.6	V	0.8	V
16-Dec-12	0.3	V	13.9	V	1.8	V	0.3	V	15.4	V	17.5	V	1.2	V
13-Jan-13	0.9	V	29.1	V	5.2	V	1.7	V	111.9	V	35.7	V	6.8	V
17-Feb-13	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen
17-Mar-13	0.5	V	17.9	V	5.2	V	1.7	V	32.8	V	25.1	V	-	Frozen
14-Apr-13	4.3	V	47.4	V	11.3	V	2.3	V	131.3	V	66.5	V	2.9	V
12-May-13	0.3	V	16.6	V	1.1	V	0.1	V	14.8	V	19.9	V	0.7	V
16-Jun-13	0.2	V	7.9	V	0.4	V	0.0	E	8.4	V	17.0	V	0.2	V
14-Jul-13	<0.1	E	1.4	V	0.3	V	0	E	6.9	V	10.9	V	<0.1	E
18-Aug-13	<0.1	E	2.0	V	0.1	V	0.0	E	0.9	V	3.4	V	<0.1	E
15-Sep-13	<0.1	E	0.9	V	0.1	V	0.0	E	1.2	V	0.9	V	0.0	E
13-Oct-13	0.9	V	6.5	V	0.9	V	0.2	V	12.4	V	10.9	V	0.8	V
17-Nov-13	1.1	V	19.0	V	2.2	V	1.7	V	28.1	V	20.3	V	0.9	V
15-Dec-13	Frozen	E	12.9	V	0.6	V	Frozen	E	9.2	V	Frozen	E	Frozen	E
19-Jan-14	Buried	E	9.5	V	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E
16-Feb-14	Buried	E	3.9	V	Buried	E	Buried	E	11.1	V	Buried	E	Buried	E

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TABLE B-3
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SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	5.5	V	Frozen	E	Frozen	E	7.1	V	Frozen	E	Frozen	E
13-Apr-14	2.2	V	51.4	V	17.0	V	5.3	V	108.5	V	108.6	V	6.7	V
11-May-14	1.2	V	13.5	V	2.8	V	0.5	V	45.5	V	29.3	V	0.4	V
15-Jun-14	8.0	V	10.5	V	0.5	V	DRY	E	6.4	V	2.1	V	DRY	E
13-Jul-14	<0.1	E	2.3	V	0.2	V	DRY	E	5.2	V	2.6	V	<0.1	E
17-Aug-14	<0.1	E	0.2	V	0.1	V	DRY	E	1.2	V	DRY	V	3.2	V
7-Sep-14	<0.1	E	1.1	V	0.1	V	DRY	E	1.5	V	0.6	V	0.1	V
19-Oct-14	0.2	V	11.2	V	1.7	V	0.2	V	21.2	V	0.8	V	0.1	V
16-Nov-14	Buried	E	5.4	V	Buried	E	Buried	E	4.5	V	Buried	E	Buried	E
14-Dec-14	0.3	V	9.7	V	0.1	V	Buried	E	0.1	V	Buried	E	1.1	V
18-Jan-15	Buried	E	19.2	V	0.2	V	Buried	E	7.9	V	Buried	E	Buried	E
15-Feb-15	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E
15-Mar-15	Buried	E	19.2	V	Buried	E	Buried	E	Frozen	E	Buried	E	Buried	E
19-Apr-15	1.0	V	28.9	V	9.8	V	3.3	V	28.7	V	16.4	V	2.5	V
17-May-15	0.3	V	25.9	V	0.5	V	Dry	E	3.4	V	6.8	V	1.0	E
14-Jun-15	2.5	V	25.9	V	2.4	V	Dry	E	17.9	V	12.6	V	0.8	V
19-Jul-15	0.1	V	25.9	V	0.4	V	DRY	E	6.1	V	4.3	V	0.3	V
9-Aug-15	0.4	V	1.2	V	0.3	V	DRY	E	3.4	V	5.3	V	DRY	V
23-Aug-15	<0.1	E	0.9	V	-	-	-	-	-	-	1.3	V	DRY	E
6-Sep-15	0.2	V	0.7	V	1.0	E	DRY	E	3.5	V	1.9	V	DRY	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	<0.1	V	0.3	V	0.1	V	Dry	E	0.6	V	0.4	V	Dry	E
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	0.2	V	2.7	V	0.4	V	Dry	E	13.9	V	3.9	V	0.4	V
6-Dec-15	0.1	V	2.3	V	1.5	V	Dry	E	3.6	V	2.5	V	0.5	V
17-Jan-16	3.4	V	6.9	V	2.7	V	Buried	E	Frozen	E	11.5	V	1.1	V
14-Feb-16	3.5	V	5.2	V	4.3	V	Buried	E	Frozen	E	Buried	E	Buried	E
13-Mar-16	12.9	V	77.0	V	50.4	V	23.6	V	166.1	V	175.4	V	5.3	V
17-Apr-16	10.5	V	35.4	V	5.5	V	1.3	V	74.6	V	64.7	V	1.2	V
15-May-16	5.4	V	11.2	V	3.0	V	0.1	V	19.5	V	30.3	V	0.8	V
19-Jun-16	0.9	V	17.0	V	0.6	V	Dry	E	7.9	V	1.2	V	Dry	V
3-Jul-16	0.4	V	2.0	V	-	-	-	-	-	-	-	-	-	-
17-Jul-16	0.3	V	2.7	V	Dry	-	0.4	V	1.3	V	3.5	V	Dry	-
7-Aug-16	0.4	E	1.5	E	-	-	-	-	-	-	-	-	-	-
21-Aug-16	0.3	V	1.2	V	0.2	V	Dry	E	2.9	V	1.5	V	0.1	V
18-Sep-16	0.3	V	1.0	V	0.3	V	Dry	E	5.4	V	2.3	V	0.5	V
16-Oct-16	0.1	V	1.0	V	0.1	V	Dry	E	1.8	V	1.9	V	0.6	V
18-Nov-16	0.4	V	1.6	V	0.2	V	Dry	E	2.1	V	2.3	V	0.5	V
12-Dec-16	0.1	V	1.9	V	0.3	V	Dry	E	0.3	V	3.7	V	1.8	V
22-Jan-17	10.3	V	19.5	V	6.2	V	0.8	V	26.9	V	39.6	V	3.8	V
15-Feb-17	3.3	V	6.5	V	1.1	V	Buried	-	Frozen	-	Buried	-	Buried	-
21-Mar-17	7.5	V	10.9	V	2.2	V	Frozen	V	3.6	V	19.6	V	1.2	V
19-Apr-17	20.7	V	32.0	V	4.2	V	3.0	V	51.6	V	46.1	V	1.3	V
14-May-17	14.5	V	19.5	V	2.6	V	0.1	V	13.0	V	23.1	V	1.9	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	5.5	V	17.9	V	2.3	V	0.1	V	34.0	V	43.9	V	2.2	V
7-Jul-17	0.8	V	8.9	V	-	-	-	-	-	-	-	-	-	-
18-Jul-17	1.1	V	4.9	V	1.3	V	Dry	E	11.6	V	6.1	V	0.4	V
27-Jul-17	0.4	V	4.3	V	-	-	-	-	-	-	-	-	-	-
13-Aug-17	1.0	V	1.8	V	0.5	V	Dry	E	7.2	V	5.8	V	0.3	V
17-Sep-17	0.2	V	1.8	V	0.7	V	Dry	E	6.7	V	10.7	V	0.5	V
17-Oct-17	0.3	V	3.1	V	1.2	V	Dry	E	7.3	V	18.4	V	1.9	V
14-Nov-17	0.8	V	6.0	V	1.4	V	Dry	E	11.2	V	13.8	V	1.3	V
12-Dec-17	2.0	V	7.8	V	1.6	V	Dry	E	18.7	V	14.5	V	Frozen	E
17-Jan-18	5.1	V	21.9	V	5.1	V	Frozen	E	26.7	V	29.4	V	Frozen	E
18-Feb-18	19.9	V	52.6	V	18.6	V	4.8	V	76.9	V	101.6	V	3.5	V
18-Mar-18	4.1	V	7.7	V	1.2	V	Frozen	E	41.0	V	12.4	V	0.9	V
18-Apr-18	7.3	V	15.3	V	3.8	V	Buried	E	23.4	V	43.8	V	3.5	V
13-May-18	5.5	V	51.9	V	3.7	V	1.9	V	25.3	V	35.2	V	2.4	V
19-Jun-18											10.4	V	0.5	V
20-Jun-18	0.3	V	2.7	V	1.1	V	0.0	V	4.2	V				
4-Jul-18	1.6	V	1.4	V										
18-Jul-18											3.0	V	0.0	V
19-Jul-18	0.4	V	0.7	V	0.2	V	0.0	V	2.2	V				
3-Aug-18	0.1	V	1.1	V										
23-Aug-18					0.5	V					2.5	V	0.1	V
24-Aug-18	0.2	V	0.7	V			0	V	2	V				
19-Sep-18					0.3	V					0.6	V	0	V

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MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Sep-18	0.1	V	0.3	V			0	V	0.4	V				
24-Oct-18														
25-Oct-18	0	V	1.3	V	0.4	V	0	V	1	V	4.8	V	0.5	V
21-Nov-18														
22-Nov-18	0.2	V	4.2	V	0	V	0	V	6.7	V	5.6	V	0.7	V
12-Dec-18														
13-Dec-18	1.3	V	7.5	V	0.6	V	0	V	13	V	0	V	0.8	V
18-Jan-19	2.4	V	5.9	V	17.5	V		Frozen		Frozen		Frozen		Frozen
19-Jan-19	2.4	V	5.9	V	17.5	V		Frozen		Frozen		Frozen		Frozen
26-Feb-19														
28-Feb-19	2.1	V		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen
15-Mar-19														
19-Mar-19	9.9	V	13.0	V	4.6	V	0.0	V	16.5	V	42.5	V	0.0	V
24-Apr-19														
25-Apr-19	3.6	V	78.3	V	0.0	V	0.0	V	0.0	V	189.8	V	31.8	V
23-May-19														
27-May-19	2.6	V	12.0	V	3.2	V	0.0	V	0.0	V	18.1	V	1.0	V
18-Jun-19														
21-Jun-19	1.1	V	6.5	V	0.0	V	0.0	V	10.5	V	9.3	V	0.4	V
29-Jul-19														
30-Jul-19	0.3	V	1.3	V	0.1	V	0.0	V	1.8	V	4.7	V	0.0	V
29-Aug-19														
30-Aug-19		DRY	7.5	V	0	V		Dry	2.2	V	2.3	V		Dry

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TABLE B-3
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111-53312-03 100

DATE	SW11D		SW11E		SW12		SW12A		SW13		SW14		SW15	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
26-Sep-19														
27-Sep-19	0	V	1	V	0	V	0	V	3.6	V	3	V	0	V
23-Oct-19														
22-Oct-19		Dry	3.3	V	0	V		Dry	2.6	V	2.7	V		dry
22-Nov-19														
21-Nov-19		Frozen	6.6	V		Frozen		Frozen	0.7	V	3.1	V		Frozen
20-Dec-19		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen
15-Jan-20														
24-Jan-20		Frozen	8.5	V		Frozen		Frozen		Frozen		Frozen		Frozen
20-Feb-20														
21-Feb-20		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen
26-Mar-20														
25-Mar-20		Ponded		Ponded		Frozen		Frozen		Frozen		Frozen		Frozen
27-Apr-20														
28-Apr-20		-	10.4	V	1.9	V		-	12.0	V		-	27.1	V
29-May-20														
28-May-20	2.7	V	10.1	V	2.8	V		Dry		Ponded	19.5	V	0.9	V
23-Jun-20														
24-Jun-20	0.0	V	0.0	V	0.0	V		DRY	0.0	V	81.6	V	0.7	V
30-Jul-30														
31-Jul-20	0.3	V	3.5	V	0.1	V		dry		no flow	7.2	V	0.1	V
25-Aug-20														
26-Aug-20	0.5	V	2.7	V	0.5	V		dry		overgrown			0	V

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
25-Sep-20														
26-Sep-20	0.4	V	0.7	V	1.1	V		Dry		overgrown			1.3	V
30-Oct-20														
29-Oct-20	0.6	V	1.7	V	1.3	V		dry	40.3	V	24.3	V	1.4	V
26-Nov-20														
27-Nov-20	7.9	V	25.5	V	5.9	V		dry	53.6	V	45.4	V	3.9	V
23-Dec-20														
22-Dec-20		snow	13.4	V	1.8	V		snow	21.4	V	44.8	V	1.1	V

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DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	1.0	B	2.2	B	12.0	V			46.0	V	95.6	V	0.3	E
23-Jun-03	1.6	E	1.5	B	10.4	V			11.8	V	40.5	V	3.0	B
22-Jul-03	0.3	E	1.6	B	9.5	B			13.3	V	19.1	V	0.7	B
20-Aug-03	<0.1	E	1.0	B	4.1	B			4.0	V	38.3	V	0.2	E
25-Sep-03	<0.1	E	0.1	B	1.9	V			1.6	V	21.3	V	0.0	E
22-Oct-03	2.5	E	2.6	B	3.3	B			25.8	V	68.3	V	0.4	E
28-Nov-03	2.5	E	6.9	B/E	10.6	V			36.7	V	104.2	V	0.3	E
19-Dec-03	2.0	E	5.0	B/E	18.5	V			33.7	V	- (na)	- (na)	1.5	E
10-Feb-04	Frozen	E	1.9	B	9.2	B			47.9	V	71.6	V	2.0	E
18-Mar-04	2.0	E	4.3	B	19.4	V			48.7	V	209.3	V	5.0	E
19-Apr-04	40.4	V	13.3	B	72.4	V			123.6	V	507.9	V	18.9	M
19-May-04	3.4	B,E	4.6	B	15.4	V			31.3	V	133.2	V	4.0	M
24-Jun-04	0.6	BE	1.9	BE	12.0	V			20.5	V	48.2	V	1.5	V
29-Jul-04	1.9	M	0.5	BE	5.9	V			9.2	V	25.1	V	2.5	V
23-Aug-04	<0.1	E	0.5	BE	2.9	BE			7.2	V	12.5	V	<0.1	M
21-Sep-04	<0.1	E	0.4	BE	3.5	V			3.8	V	9.3	V	<0.1	M
21-Oct-04	0.3	E	0.4	BE	3.2	V	0.2	B/E	4.0	V	17.7	V	DRY	E
17-Nov-04	2.3	E	0.5	BE	4.3	V	-	-	4.6	V	28.8	V	DRY	E
15-Dec-04	Frozen	E	1.93	BE	5.42	V	Frozen	E	Frozen	E	82.08	V	Frozen	E

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- 0.0 indicates no flow, surface water location dry.
- - (na) indicates unsafe access conditions therefore surface water flow not measured

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
27-Mar-05	4.1	V	3.2	B/E	14.7	V	Frozen	E	Frozen	E	171.4	V	3.3	V
10-Apr-05	27.0	V	17.5	B/E	68.6	V	18.6	V	207.2	V	700.0	E	19.3	V
22-May-05	3.6	V	6.0	B/E	22.6	V	9.0	V	27.7	V	140.0	V	10.9	V
26-Jun-05	0.4	V	2.3	B/E	7.2	V	1.4	V	11.5	V	29.0	V	2.4	V
10-Jul-05	0.5	V	1.4	B/E	6.1	V	1.0	V	6.6	V	9.6	V	0.7	V
21-Aug-05	0.0	V	0.2	B/E	5.2	V	0.5	V	4.4	V	8.1	V	0.5	E
25-Sep-05	0.1	E	0.2	B/E	3.1	V	0.9	V	6.3	V	9.3	V	0.1	E
23-Oct-05	0.0	E	0.2	B/E	3.6	V	1.0	V	5.9	V	15.5	V	0.0	E
13-Nov-05	0.0	E	0.3	B/E	2.9	V	1.8	V	7.9	V	9.1	V	0.0	E
11-Dec-05	0.6	V	1.4	B/E	11.7	V	Frozen	E	Frozen	E	27.6	V	0.1	E
15-Jan-06	13.0	V	3.7	B/E	17.3	V	3.9	V	31.6	V	201.8	V	3.4	V
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E	10.0	V	Frozen	E	Frozen	E
19-Mar-06	12.4	V	13.2	V	37.2	V	11.2	V	78.2	V	429.2	V	11.2	V
16-Apr-06	4.6	V	24.5	V	48.8	V	9.2	V	80.7	V	229.9	V	10.7	V
21-May-06	3.4	V	6.4	V	17.1	V	6.4	V	44.8	V	144.9	V	5.1	V
18-Jun-06	0.9	V	4.4	V	8.6	V	1.6	V	11.9	V	35.5	V	3.8	V
9-Jul-06	0.1	E	1.7	V	5.6	V	0.3	V	8.3	V	15.2	V	2.2	V

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DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	0.0	E	1.0	V	3.3	V	0.1	V	3.5	V	3.8	V	0.6	V
17-Sep-06	0.0	E	2.9	V	6.3	V	2.0	V	15.9	V	15.0	V	0.7	V
15-Oct-06	0.6	V	1.4	V	6.5	V	1.3	V	12.9	V	66.7	V	0.3	V
19-Nov-06	7.1	V	4.4	V	14.1	V	0.8	V	33.5	V	107.5	V	4.0	V
17-Dec-06	12.3	V	6.7	V	19.9	V	1.8	V	62.5	V	183.8	V	7.4	V
21-Jan-07	Frozen	E	2.4	V	15.5	E/V/M	Frozen	E	Frozen	E	79.9	V	7.7	V
18-Feb-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	2.7	V
18-Mar-07	Frozen	E	9.2	V	27.4	V	Frozen	E	50.5	V	408.9	V	8.6	V
15-Apr-07	10.5	V	28.7	V	34.7	V	4.2	V	102.5	V	346.6	V	19.0	V
13-May-07	2.4	V	2.8	V	24.6	V	9.4	V	30.9	V	228.3	V	9.6	V
17-Jun-07	0.1	V	0.6	V	10.5	V	0.2	V	21.0	V	49.5	V	1.9	V
15-Jul-07	0.0	E	0.3	V	2.9	V	0.3	V	7.1	V	12.8	V	3.6	V
19-Aug-07	0.0	E	0.1	V	0.9	V	0.4	V	5.4	V	5.3	V	0.4	V
16-Sep-07	0.0	E	0.3	V	1.2	V	0.1	V	4.3	V	10.2	V	0.1	E
14-Oct-07	0.0	E	0.4	V	2.3	V	0.3	V	3.3	V	21.7	V	0.0	E
18-Nov-07	0.1	V	0.6	V	2.2	V	0.6	V	33.5	V	228.5	V	0.0	E
9-Dec-07	Frozen	E	Frozen	E	2.6	V	Frozen	E	11.3	V	106.9	V	Frozen	V
20-Jan-08	39.5	V	1.4	V	35.1	V	Frozen	E	36.1	V	243.1	V	22.2	V
17-Feb-08	16.7	V	7.6	V	21.8	V	Frozen	E	77.1	V	1019.2	V	10.8	V

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111-53312-03 100

DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	15.6	E/V/M	1.8	V	11.7	V	Frozen	E	66.0	V	229.2	V	6.2	V
30-Mar-08	167.3	V	7.0	V	50.1	V	23.5	V	159.6	V	580.3	V	24.5	V
20-Apr-08	34.0	V	5.5	V	35.2	V	3.9	V	178.3	V	427.1	V	13.9	V
18-May-08	4.5	V	1.3	V	9.6	V	1.8	V	41.5	V	226.4	V	8.7	V
15-Jun-08	1.9	V	2.9	V	11.0	V	1.1	V	15.6	V	120.1	V	3.0	V
13-Jul-08	0.4	V	0.2	V	2.4	V	0.1	V	11.7	V	31.0	V	1.1	V
17-Aug-08	0.6	V	1.1	V	5.9	V	0.3	V	14.6	V	74.8	V	2.6	V
14-Sep-08	0.9	V	3.2	V	5.9	V	0.7	V	31.6	V	202.7	V	0.6	V
19-Oct-08	0.7	V	2.7	V	4.1	V	0.8	V	13.6	V	104.9	V	2.7	V
23-Nov-08	Frozen	E	5.1	V	24.5	V	1.7	V	44.3	V	Frozen	E	2.7	V
14-Dec-08	7.0	V	2.4	V	14.4	V	3.1	V	114.8	V	446.9	V	14.2	V
18-Jan-09	Frozen	E	1.8	V	35.4	V	Frozen	E	Frozen	E	Frozen	E	25.6	V
8-Feb-09	9.7	V	1.9	V	16.4	V	Buried	E	73.7	V	Flooded	E	3.6	V
15-Mar-09	12.1	V	6.6	V	23.2	V	2.6	V	150.6	V	1522.2	V	13.9	V
12-Apr-09	8.1	V	6.1	V	16.6	V	8.4	V	203.8	V	794.0	V	29.3	V
17-May-09	3.2	V	2.7	V	12.5	V	2.6	V	65.3	V	157.1	V	2.6	V
14-Jun-09	5.7	V	1.6	V	3.9	V	0.8	V	30.0	V	109.4	V	1.5	V
12-Jul-09	0.6	V	0.5	V	15.3	V	0.1	V	23.5	V	26.4	V	1.4	V
9-Aug-09	Dry	E	1.0	V	2.5	V	0.3	V	7.0	V	93.3	V	3.0	V

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13-Sep-09	Dry	E	1.8	V	1.1	V	0.2	V	4.6	V	6.7	V	0.2	V
11-Oct-09	1.0	V	1.7	V	2.6	V	0.1	V	13.0	V	164.4	V	0.4	V
15-Nov-09	4.2	V	3.5	V	5.2	V	0.6	V	8.8	V	71.2	V	2.4	V
13-Dec-09	Frozen	E	1.1	V	1.8	V	Buried	E	18.1	V	174.8	V	2.4	V
17-Jan-10	Buried	E	Buried	E	0.6	V	Buried	E	Buried	E	227.8	V	3.9	V
7-Feb-10	Buried	E	0.9	V	2.6	V	Buried	E	Frozen	E	Frozen	E	6.7	V
14-Mar-10	26.0	V	6.9	V	12.8	V	2.4	V	332.6	V	1785.5	V	4.8	V
4-Apr-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Apr-10	2.9	V	3.3	V	15.1	V	3.9	V	67.6	V	227.1	V	14.0	V
16-May-10	5.7	V	4.6	V	26.8	V	1.8	V	128.1	V	299.3	V	7.8	V
23-May-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jun-10	6.3	V	4.6	V	10.5	V	0.8	V	78.5	V	441.1	V	8.6	V
18-Jul-10	7.3	V	2.7	V	7.3	V	2.1	V	58.4	V	101.7	V	3.0	V
15-Aug-10	0.7	V	2.6	V	6.4	V	0.4	V	10.3	V	26.4	V	7.8	V
12-Sep-10	Ponded	E	1.1	V	2.3	V	0.3	V	2.4	V	36.0	V	0.7	V
17-Oct-10	0.2	V	1.9	V	5.4	V	0.3	V	26.6	V	249.1	V	1.4	V
14-Nov-10	1.0	V	4.1	V	6.2	V	1.7	V	25.2	V	705.7	V	6.6	V
19-Dec-10	2.4	V	1.1	V	5.5	V	Buried	E	9.3	V	328.4	V	0.8	V

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16-Jan-11	6.1	V	4.1	V	12.3	V		E		E		E	7.0	V
20-Feb-11		E		E	11.6	V		E		E	361.0	V	10.2	V
13-Mar-11	17.4	V	5.7	V	14.1	V	Buried	E	115.1	V	385.2	V	9.1	V
17-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Mar-11	-	-	7.8	V	48.3	V	8.2	V	108.6	V	901.9	V	-	-
1-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	4.9	V	2.9	V	29.9	V	3.4	V	102.3	V	1452.8	V	11.0	V
20-Apr-11	-	-	-	-	-	-	-	-	243.0	V	-	-	-	-
21-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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15-May-11	11.1	V	2.7	V	30.7	V	5.9	V	144.0	V	686.4	V	21.3	V
16-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	2.7	V	0.5	V	22.1	V	2.7	V	23.8	V	198.1	V	6.6	V
17-Jul-11	4.0	V	0.3	V	4.7	V	0.2	V	12.0	V	23.4	V	2.1	V
14-Aug-11	3.0	V	0.3	V	0.5	V	0.1	V	3.0	V	14.5	V	0.8	V
18-Sep-11	3.7	V	1.5	V	1.2	V	0.1	V	3.1	V	27.5	V	0.4	V
16-Oct-11	1.8	V	2.4	V	1.5	V	0.5	V	9.3	V	101.6	V	0.3	V
20-Nov-11	2.8	V	1.2	V	4.1	V	0.84	V	8.6	V	87.3	V	0.37	V
18-Dec-11	7.8	V	3.1	V	4.5	V	1.6	V	37.4	V	277.9	V	3.1	V
15-Jan-12	Frozen	E	5.6	V	27.5	V	Buried	E	Frozen	E	Frozen	E	2.1	V
19-Feb-12	6.5	V	1.9	V	2.4	V	Buried	E	15.5	V	178.0	V	2.0	V
18-Mar-12	15.7	V	11.0	V	53.6	V	3.1	V	95.4	V	426.3	V	8.8	V
15-Apr-12	3.0	V	1.6	V	14.7	V	0.2	V	29.5	V	105.0	V	2.9	V
13-May-12	6.9	V	1.9	V	10.7	V	1.2	V	25.3	V	87.1	V	2.7	V
17-Jun-12	1.8	V	0.3	V	6.9	V	0.4	V	15.0	B	40.7	V	0.6	V

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SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.5	V	0.2	V	1.7	V	0.1	V	3.8	V	14.4	V	0.3	V
12-Aug-12	3.5	V	2.8	V	3.1	V	0.4	V	23.2	V	117.3	V	1.0	V
16-Sep-12	3.0	V	0.9	V	2.0	V	0.1	V	13.1	V	46.3	V	0.6	V
14-Oct-12	2.8	V	0.9	V	4.5	V	0.8	V	14.6	V	82.0	V	1.2	V
18-Nov-12	5.1	V	2.3	V	14.5	V	0.4	V	46.3	V	219.4	V	6.9	V
16-Dec-12	4.5	V	1.9	V	11.0	V	1.4	V	57.6	V	291.9	V	2.8	V
13-Jan-13	21.8	V	8.0	V	23.4	V	1.3	V	78.1	V	447.7	V	6.9	V
17-Feb-13	-	Frozen	8.0	V	17.0	V	-	Frozen	-	Frozen	-	Frozen	4.0	V
17-Mar-13	-	Frozen	4.0	V	36.1	V	-	Frozen	-	Frozen	288.0	Frozen	6.8	V
14-Apr-13	100.4	V	3.1	V	58.7	V	6.1	V	166.7	V	1180.9	V	11.8	V
12-May-13	1.6	V	2.0	V	27.6	V	1.5	V	25.6	V	234.5	V	2.8	V
16-Jun-13	1.0	V	0.4	V	5.4	V	0.1	V	28.0	V	120.0	V	2.6	V
14-Jul-13	0.9	V	0.3	V	5.7	V	0.2	V	14.1	V	124.4	V	2.4	V
18-Aug-13	1.4	V	1.3	V	3.4	V	0.4	V	3.3	V	21.3	V	0.4	V
15-Sep-13	1.3	V	0.9	V	2.6	V	0.3	V	10.7	V	43.1	V	0.8	V
13-Oct-13	3.4	V	0.7	V	4.3	V	2.6	V	32.2	V	137.6	V	3.5	V
17-Nov-13	7.9	V	7.1	V	12.8	V	1.4	V	50.5	V	207.1	V	9.9	V
15-Dec-13	3.8	V	Frozen	E	11.3	V	Frozen	E	Frozen	E	Frozen	E	1.9	V
19-Jan-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Frozen	E	3.1	V
16-Feb-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Frozen	E	10.4	V

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DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW16		SW17		SW17A		SW17B		SW18		SW19		SW20	
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16-Mar-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	1.6	V
13-Apr-14	17.2	V	7.2	V	123.5	V	0.6	V	261.7	V	1825.7	V	17.1	V
11-May-14	10.3	V	7.3	V	32.5	V	3.4	V	64.3	V	284.6	V	10.0	V
15-Jun-14	0.9	V	1.7	V	8.0	V	1.1	V	31.7	V	222.2	V	1.6	V
13-Jul-14	7.1	V	0.9	V	18.3	V	2.3	V	47.4	V	225.6	V	0.7	V
17-Aug-14	1.6	V	0.6	V	2.2	V	0.2	V	6.1	V	52.9	V	0.5	V
7-Sep-14	0.2	V	1.0	V	2.3	V	0.3	V	2.3	V	31.5	V	0.2	V
19-Oct-14	1.2	V	2.6	V	3.7	V	0.9	V	16.3	V	117.1	V	0.1	V
16-Nov-14	Buried	E	Buried	E	Buried	E	Buried	E	Frozen	E	N/A	E	0.2	V
14-Dec-14	1.3	V	1.4	V	7.0	V	1.7	V	61.1	V	N/A	E	6.1	V
18-Jan-15	Buried	E	Buried	E	4.9	V	Buried	E	Frozen	E	N/A	E	3.6	V
15-Feb-15	Buried	E	N/A	E	N/A	E	N/A	E	Frozen	E	N/A	E	N/A	E
15-Mar-15	Buried	E	Buried	E	15.6	V	Buried	E	Frozen	E	N/A	E	4.6	V
19-Apr-15	2.0	V	3.5	V	32.8	V	6.4	V	99.4	V	556.5	V	12.7	V
17-May-15	0.6	V	2.6	V	7.1	V	0.6	V	40.0	V	138.8	V	2.6	V
14-Jun-15	5.0	V	2.0	V	8.9	V	0.9	V	22.4	V	155.5	V	5.2	V
19-Jul-15	0.5	V	0.6	V	8.5	V	1.1	V	13.3	V	78.0	V	1.7	V
9-Aug-15	0.3	V	1.4	V	3.3	V	0.5	V	8.4	V	52.4	V	0.6	V
23-Aug-15	0.3	V	0.8	V	4.8	V	-	-	8.2	V	-	-	-	-
6-Sep-15	0.4	V	0.7	V	2.2	V	0.3	V	4.4	V	185.0	V	0.7	V

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111-53312-03 100

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11-Oct-15	0.3	V	0.9	V	1.2	V	0.1	V	2.5	V	17.4	V	0.1	V
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	2.5	V	2.2	V	1.8	V	0.9	V	25.5	V	47.6	V	0.6	V
6-Dec-15	4.1	V	1.4	V	3.8	V	0.9	V	11.3	V	120.6	V	0.9	V
17-Jan-16	7.8	V	3.1	V	4.2	V	1.4	V	Frozen	E	395.1	V	2.2	V
14-Feb-16	2.3	V	2.9	V	13.0	V	2.6	V	39.5	V	Frozen	E	3.6	V
13-Mar-16	28.5	V	57.3	V	64.3	V	14.6	V	218.8	V	Flooded	E	20.0	V/E
17-Apr-16	14.1	V	3.8	V	29.6	V	4.9	V	136.8	V	514.8	V	27.0	V/E
15-May-16	9.3	V	2.9	V	25.3	V	3.9	V	57.2	V	394.9	V	7.2	V
19-Jun-16	1.9	V	2.0	V	9.6	V	0.8	V	19.5	V	46.0	V	3.5	V
3-Jul-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Jul-16	0.2	V	0.6	V	4.0	V	0.1	V	5.9	V	35.8	V	1.1	V
7-Aug-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Aug-16	1.8	V	0.7	V	6.6	V	0.1	V	5.2	V	11.7	V	0.5	V
18-Sep-16	1.4	V	1.9	V	3.2	V	0.6	V	3.6	V	9.4	V	0.4	V
16-Oct-16	4.5	V	0.7	V	4.9	V	0.4	V	5.5	V	15.8	V	0.3	V
18-Nov-16	1.2	V	0.8	V	1.8	V	0.5	V	9.3	V	12.5	V	0.2	V
12-Dec-16	0.8	V	0.8	V	4.8	V	0.8	V	17.4	V	41.2	V	0.6	V
22-Jan-17	7.9	V	4.4	V	21.6	V	4.3	V	76.8	V	440.5	V	4.9	V
15-Feb-17	4.4	V	3.3	V	13.8	V	7.7	V	Frozen	-	131.1	V	1.9	V
21-Mar-17	6.3	V	2.6	V	20.6	V	2.1	V	70.7	V	300.9	V	8.0	V
19-Apr-17	12.2	V	8.8	V	37.1	V	5.8	V	77.7	V	420.3	V	10.5	V
14-May-17	2.5	V	19.6	V	45.0	V	2.1	V	79.0	V	200.4	V	14.8	V

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111-53312-03 100

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	5.2	V	14.5	V	55.3	V	4.4	V	49.4	V	210.8	V	9.3	V
7-Jul-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Jul-17	2.2	V	2.1	V	19.1	V	0.6	V	28.5	V	100.5	V	3.2	V
27-Jul-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Aug-17	0.8	V	0.6	V	8.4	V	0.7	V	13.8	V	32.1	V	2.1	V
17-Sep-17	1.5	V	0.6	V	7.0	V	0.3	V	10.5	V	33.1	V	1.1	V
17-Oct-17	4.4	V	3.8	V	7.9	V	1.2	V	22.6	V	90.9	V	1.4	V
14-Nov-17	6.3	V	4.0	V	8.7	V	1.7	V	29.3	V	147.1	V	2.3	V
12-Dec-17	Frozen	E	6.0	V	16.3	V	Frozen	E	27.8	E	119.4	V	2.3	V
17-Jan-18	Frozen	E	4.9	V	23.4	V	9.1	V	61.3	V	263.6	V	6.0	V
18-Feb-18	17.8	V	31.2	V	70.5	V	33.2	V	159.0	V	468.9	V	17.4	V
18-Mar-18	2.9	V	6.3	V	24.0	V	3.1	V	34.6	V	267.7	V	6.1	V
18-Apr-18	13.6	V	12.1	V	42.8	V	7.7	V	95.1	V	598.0	V	10.0	V
13-May-18	22.1	V	13.4	V	50.7	V	2.7	V	160.6	V	251.5	V	5.6	V
19-Jun-18	1.3	V	3.6	V	6.8	V			23.8	V				
20-Jun-18							0.8	V			47.1	V	0.5	V
4-Jul-18														
18-Jul-18	2.3	V	1.8	V	13.6	V			4.5	V				
19-Jul-18							0.2	V			13.2	V	1.1	V
3-Aug-18														
23-Aug-18	2.1	V	0.4	V	3.8	V			3.8	V	49.5	V	0.4	V
24-Aug-18							0.7	V						
19-Sep-18	0.8	V	0.4	V	2.4	V			4.7	V	8.6	V	0.1	V

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Sep-18							0.4	V						
24-Oct-18											45.7	V	0.1	V
25-Oct-18	2.5	V	27.2	V	3.4	V	0.5	V	6.1	V				
21-Nov-18											60	V	1.3	V
22-Nov-18	2.5	V	1.2	V	6.6	V	1.1	V	0	V				
12-Dec-18											127	V	6.1	V
13-Dec-18	5.1	V	2.2	V	17.7	V	1	V	25.3	V				
18-Jan-19		Frozen	4.1	V	16.3	V	2.7	V		Frozen		Frozen	4.2	V
19-Jan-19		Frozen	4.1	V	16.3	V	2.7	V		Frozen				
26-Feb-19												Frozen		Frozen
28-Feb-19		Frozen		Frozen		Frozen		Frozen		Frozen				
15-Mar-19											0.0	V	15.5	V
19-Mar-19	0.0	V	14.8	V	24.6	V	0.0	V	61.9	V				
24-Apr-19												E	28.9	V
25-Apr-19	84.1	V	32.1	V	145.4	V	46.6	V		E				
23-May-19											188.8	V	4.7	V
27-May-19	7.4	V	4.8	V	25.2	V	2.1	V	54.9	V				
18-Jun-19											82.2	V	2.5	V
21-Jun-19	6.3	V	2.4	V	13.6	V	4.9	V	27.5	V				
29-Jul-19											3.5	V	0.8	V
30-Jul-19	2.1	V	0.7	V	4.9	V	0.4	V	9.9	V				
29-Aug-19											6.5	V	0.7	V
30-Aug-19	1.6	V	0.5	V	2.1	V	0	V	4.3	V				

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26-Sep-19											7.9	V	0	V
27-Sep-19	1.5	V	1.4	V	3.4	V	0.1	V	8.1	V				
23-Oct-19											10.6	V		Dry
22-Oct-19	0.3	V	2.4	V	3.9	V	0.1	V	2.4	V				
22-Nov-19											10.4	V		Frozen
21-Nov-19	0.3	V	2.2	V	2.4	V	0.6	V	0.9	V				
20-Dec-19	0.1	V		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen
15-Jan-20												Frozen		Frozen
24-Jan-20		Frozen	5.1	V	2.4	V		Frozen		Frozen				
20-Feb-20												Frozen		Frozen
21-Feb-20		Frozen		Frozen		Frozen		Frozen		Frozen				
26-Mar-20												Ponded	9.6	V
25-Mar-20		Ponded	42.3	V	11.8	V	3.9	V		Frozen				
27-Apr-20											98.9	V	10.3	V
28-Apr-20		-	21.7	V	7.4	V	2.2	V	54.5	V				
29-May-20											191.1	V	5.5	V
28-May-20	29.9	V	4.1	V	17.0	V	39.4	V	147.3	V				
23-Jun-20											201.1	V	2.3	V
24-Jun-20	6.4	V	8.3	V	12.7	V	2.8	V	7	V				
30-Jul-30											50.4	V	1.5	V
31-Jul-20	0.4	V	2.7	V	4.4	V	0.2	V	15.6	V				
25-Aug-20											20.6	V		Low flow
26-Aug-20		ponded	4.4	V	1.1	V	0.2	V	8.4	V				

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25-Sep-20											23.2	V	0.9	V
26-Sep-20	2.3	V	6.3	V	5.9	V	2.2	V	27.6	V				
30-Oct-20											28.2	V	1.4	V
29-Oct-20	6.1	V	6.8	V	6.3	V	2.3	V	20.1	V				
26-Nov-20												n/a		snow
27-Nov-20	4.3	V	1.1	V	10.7	V	3.6	V	7.6	V				
23-Dec-20												n/a		frozen
22-Dec-20		frozen	4.7	V	15.0	V	5.0	V	7.8	V				

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111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Jun-03	-	-	-	-	-	-	-	-	-	-	1.6	B	2.0	B
22-Jul-03	1.9	B	1.5	B	1.9	M	2.0	E	0.0	E	1.5	B	1.1	B
20-Aug-03	1.6	B	1.5	B	0.9	M	0.8	E	0.0	E	1.2	B	0.5	E
25-Sep-03	1.4	B	0.9	B	1.2	M	1.2	E	0.0	E	0.2	B	0.6	E
22-Oct-03	2.1	B	1.0	B	1.0	M	2.0	B	<0.1	B	0.3	B	1.0	E
28-Nov-03	1.8	B	0.4	B/E	2.3	M	2.8	B/E	0.2	B	2.1	B	1.9	B
19-Dec-03	1.7	B	Frozen	E	3.0	M	2.0	E	Frozen	E	3.2	B	1.6	B/E
10-Feb-04	0.9	B	Frozen	E	3.0	M	2.0	E	Frozen	E	2.1	B	2.5	E
18-Mar-04	1.0	B	Frozen	E	Frozen	E	3.0	E	Frozen	E	3.8	B	2.2	B
19-Apr-04	1.4	B	0.3	E	0.1	E	4.0	B/E	1.4	B	8.4	B	3.0	B/E
19-May-04	2.1	B	1.8	B,E	0.8	M	4.8	B,E	0.2	B	3.9	B	1.9	B,E
24-Jun-04	1.1	V	0.4	V	4.0	M	2.5	BE	0.0	E	2.4	B	1.0	BE
29-Jul-04	1.8	B	0.9	BE	4.7	M	1.2	BE	0.0	E	1.3	B	0.2	BE
23-Aug-04	1.4	BE	0.9	BE	1.1	V	0.1	BE	DRY	E	0.9	BE	0.3	BE
21-Sep-04	0.2	BE	DRY	E	0.3	E	0.7	BE	DRY	E	0.4	BE	0.1	BE
21-Oct-04	1.0	BE	0.2	BE	4.2	M	0.7	BE	DRY	E	0.3	BE	0.3	BE
17-Nov-04	1.0	BE	0.4	BE	1.3	M	1.4	BE	DRY	E	0.3	BE	0.2	BE
15-Dec-04	Frozen	E	0.7	BE	Frozen	E	Frozen	E	Frozen	E	0.4	BE	Frozen	E

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- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
27-Mar-05	2.0	E	1.2	B/E	5.1	M	2.8	B/E	Frozen	E	1.6	B/E	2.2	B/E
10-Apr-05	3.9	B/E	5.8	B/E	3.1	M	16.6	B/E	Frozen	E	9.5	B/E	4.9	B/E
22-May-05	1.3	B/E	0.2	B/E	3.4	V	4.8	B/E	<0.1	E	4.2	B/E	1.8	V
26-Jun-05	0.8	B/E	0.1	B/E	0.1	E	2.1	B/E	0.0	E	2.3	B/E	1.0	V
10-Jul-05	1.8	B/E	1.3	B/E	6.0	M	4.5	B/E	0.0	E	1.6	B/E	0.9	V
21-Aug-05	1.7	B/E	1.0	B/E	2.7	V	2.6	B/E	0.0	E	1.1	B/E	0.9	V
25-Sep-05	1.4	B/E	1.3	B/E	2.7	B/E	1.2	E	0.0	E	0.4	B/E	0.7	V
23-Oct-05	1.8	B	2.0	V	2.2	V	1.2	B/E	0.0	E	0.3	B/E	0.2	V
13-Nov-05	1.0	B	1.2	V	2.3	V	1.3	B/E	0.0	E	0.3	B/E	0.4	V
11-Dec-05	2.3	B/E	4.7	V	2.4	V	1.5	B/E	Frozen	E	0.3	B/E	0.2	V
15-Jan-06	12.1	V	9.8	V	0.7	V	2.8	V	Frozen	E	10.4	V	3.8	V
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Mar-06	1.0	V	0.5	V	Frozen	E	1.7	B/E	Frozen	E	9.4	V	3.5	V
16-Apr-06	4.1	V	3.4	V	5.6	V	6.4	V	0.6	V	10.9	V	6.0	V
21-May-06	3.4	V	4.7	V	2.3	V	3.5	V	0.2	V	3.9	V	1.5	V
18-Jun-06	3.6	V	3.8	V	2.5	V	6.1	V	0.0	E	2.9	V	1.4	V
9-Jul-06	2.5	V	3.5	V	1.4	V	3.3	V	0.0	E	1.6	V	1.4	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	2.1	V	3.0	V	1.0	V	2.9	V	0.0	E	0.6	V	0.5	V
17-Sep-06	4.3	V	4.0	V	1.3	V	3.5	V	0.0	E	0.5	V	0.7	V
15-Oct-06	4.2	V	2.6	V	3.2	V	1.9	V	0.0	E	0.5	V	0.7	V
19-Nov-06	2.0	V	2.1	V	1.6	V	4.6	V	0.0	E	1.6	V	1.5	V
17-Dec-06	1.0	V	0.7	V	0.8	V	4.2	V	0.0	E	4.7	V	1.9	V
21-Jan-07	Frozen	E	Frozen	E	3.6	V	2.9	V	Frozen	E	3.6	V	4.2	V
18-Feb-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	2.2	V	Frozen	E
18-Mar-07	Frozen	E	Frozen	E	Frozen	E	4.5	V	Frozen	E	3.4	V	3.1	V
15-Apr-07	1.2	V	1.0	V	3.3	V	8.3	V	0.1	V	7.7	V	1.4	V
13-May-07	2.6	V	2.5	V	3.4	V	11.4	V	<0.1	E	6.5	V	1.5	V
17-Jun-07	1.5	V	1.2	V	6.0	V	0.6	V	0.0	E	2.0	V	6.8	V
15-Jul-07	2.8	V	1.9	V	1.6	V	0.7	V	0.0	E	1.8	V	3.6	V
19-Aug-07	1.1	V	0.8	V	1.3	V	0.3	V	0.0	E	1.5	V	0.2	V
16-Sep-07	1.7	V	2.4	V	1.2	V	0.7	V	0.0	E	1.2	V	0.6	V
14-Oct-07	0.7	V	1.4	V	4.1	V	2.7	V	0.0	E	0.2	V	0.3	V
18-Nov-07	4.3	V	0.8	V	4.0	V	1.6	V	0.0	E	1.1	V	1.0	V
9-Dec-07	2.5	V	0.2	V	1.8	V	2.0	V	Frozen	E	0.4	V	0.1	V
20-Jan-08	1.1	V	Frozen	E	7.8	V	8.0	V	Frozen	E	7.0	V	0.6	V
17-Feb-08	1.2	V	Frozen	E	0.4	V	2.3	V	Frozen	E	3.3	V	2.2	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	2.7	V	Frozen	E	Frozen	E	0.7	V	Frozen	E	1.2	V	1.5	V
30-Mar-08	68.8	V	Frozen	V	Frozen	E	23.4	V	Frozen	E	7.4	V	2.9	V
20-Apr-08	3.5	V	1.7	V	1.4	V	9.9	V	1.0	V	2.0	V	2.5	V
18-May-08	1.8	V	0.3	V	1.5	V	6.7	V	0.0	E	7.9	V	2.2	V
15-Jun-08	0.5	B	0.2	V	1.2	V	2.3	V	0.0	E	4.3	V	0.4	V
13-Jul-08	0.1	V	<0.1	V	0.4	V	2.2	V	0.0	E	3.2	V	0.7	V
17-Aug-08	0.2	B	<0.1	V	0.4	V	4.5	V	0.0	E	1.8	V	0.9	V
14-Sep-08	1.2	V	<0.1	E	0.2	V	1.9	V	0.0	E	2.7	V	0.5	V
19-Oct-08	1.4	V	0.7	V	1.3	V	1.5	V	0.0	E	0.6	V	0.6	V
23-Nov-08	3.0	V	0.8	V	0.8	V	4.6	V	Frozen	E	Frozen	E	0.3	V
14-Dec-08	0.5	V	0.2	V	1.4	V	8.8	V	Frozen	E	1.9	V	1.8	V
18-Jan-09	0.8	V	Frozen	E	Frozen	E	5.2	V	Frozen	E	2.8	V	1.3	V
8-Feb-09	2.2	V	Buried	E	Buried	E	2.2	V	Buried	E	0.7	V	2.7	V
15-Mar-09	2.8	V	0.8	V	Frozen	E	7.4	V	Dry	E	3.9	V	3.2	V
12-Apr-09	2.5	V	0.4	V	0.2	V	3.7	V	0.2	V	3.4	V	1.8	V
17-May-09	1.6	V	0.1	V	0.2	V	3.7	V	0.1	V	3.7	V	2.3	V
14-Jun-09	0.7	V	Dry	E	0.1	V	2.2	V	Dry	E	1.8	V	0.7	V
12-Jul-09	0.8	V	Dry	E	0.4	V	1.8	V	Dry	E	0.4	V	0.4	V
9-Aug-09	8.1	V	Dry	E	0.1	V	2.2	V	Dry	E	0.5	V	0.9	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	0.6	V	0.3	V	1.0	V	1.6	V	Dry	E	0.3	V	<0.1	V
11-Oct-09	1.4	V	0.4	V	0.8	V	1.4	V	Dry	E	1.1	V	0.6	V
15-Nov-09	1.9	V	<0.1	V	0.4	V	2.0	V	Dry	E	0.3	V	3.1	V
13-Dec-09	0.2	V	Frozen	E	Buried	E	0.4	V	Dry	E	2.4	V	0.7	V
17-Jan-10	Buried	E	Buried	E	Buried	E	0.5	V	Buried	E	0.9	V	0.8	V
7-Feb-10	0.2	V	Buried	E	Buried	E	0.7	V	Buried	E	1.2	V	0.7	V
14-Mar-10	7.3	V	0.9	V	Buried	E	4.3	V	Buried	E	6.5	V	5.0	V
4-Apr-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Apr-10	1.2	V	0.5	V	0.9	V	2.3	V	0.1	V	7.1	V	2.1	V
16-May-10	1.6	V	0.3	V	1.4	V	5.6	V	0.1	V	6.4	V	1.5	V
23-May-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jun-10	1.1	V	Dry	E	0.0	V	2.2	V	0.3	V	9.5	V	1.5	V
18-Jul-10	2.8	V	0.3	V	<0.1	E	2.2	V	0.5	V	4.4	V	1.5	V
15-Aug-10	0.2	V	Ponded	E	0.6	V	2.1	V	Dry	E	1.9	V	0.7	V
12-Sep-10	0.2	V	0.1	V	0.4	V	2.0	V	Dry	E	1.2	V	0.6	V
17-Oct-10	0.5	V	<0.1	V	0.5	V	1.5	V	Dry	E	1.5	V	0.8	V
14-Nov-10	1.4	V	0.6	V	0.4	V	2.3	V	0.1	V	5.0	V	1.7	V
19-Dec-10	Buried	E	Buried	E	Buried	E	6.2	V	Buried	E	1.9	V	0.6	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11		E		E		E	4.5	V		E	5.5	V	0.5	V
20-Feb-11	0.1	V		E		E	1.4	V		E	2.3	V	1.0	V
13-Mar-11	3.6	V	Buried	E	Buried	E	2.7	V	Buried	E	5.9	V	1.7	V
17-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	V
18-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	V
20-Mar-11	-	-	-	-	-	-	-	-	-	-	9.3	V	2.7	V
1-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	0.8	V	0.2	V	<0.1	V	3.3	V	0.2	V	6.9	V	2.5	V
20-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	3.3	V	1.1	V	1.4	V	5.4	V	0.5	V	12.8	V	1.4	V
16-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	0.8	V	0.5	V	0.7	V	2.4	V	No Flow	E	2.6	V	1.8	V
17-Jul-11	<0.1	V	0.1	V	0.3	V	1.6	V	Dry	E	2.0	V	0.4	V
14-Aug-11	<0.1	V	0.2	V	0.2	V	1.0	V	0.0	E	0.3	V	0.2	V
18-Sep-11	Dry	E	Dry	E	0.2	V	0.8	V	Dry	E	1.2	V	0.3	V
16-Oct-11	0.2	V	<0.1	V	0.2	V	0.8	V	Dry	E	0.3	V	0.3	V
20-Nov-11	0.2	V	0.08	V	0.11	V	0.5	V		E	1.3	V	0.5	V
18-Dec-11	1.5	V	0.2	V	Buried	E	2.8	V	Dry	E	4.4	V	1.3	V
15-Jan-12	Buried	E	Buried	E	Buried	E	2.1	V	Buried	E	1.2	V	4.1	V
19-Feb-12	Buried	E	Buried	E	Buried	E	2.2	V	Buried	E	1.7	V	1.8	V
18-Mar-12	1.6	V	2.5	V	1.2	V	4.5	V	1.2	V	22.6	V	5.1	V
15-Apr-12	0.1	V	0.1	V	0.4	V	1.9	V	0.0	E	4.0	V	1.1	V
13-May-12	0.1	V	0.3	V	0.4	V	2.6	V	0.0	E	1.1	V	0.7	V
17-Jun-12	0.0	E	0.0	E	0.4	V	1.2	V	0.0	E	1.9	V	0.3	V

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- V indicates valeport electromagnetic flow meter value
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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- Monthly monitoring of SW22B discontinued commencing January 2005 as no flowing water was observed at location from May 2003 to December 2004.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.0	E	0.0	E	0.1	V	1.1	V	0.0	E	1.4	V	0.3	V
12-Aug-12	0.7	V	<0.1	V	0.1	V	1.5	V	<0.1	V	1.0	V	1.3	V
16-Sep-12	0.2	V	0.1	V	0.2	V	0.9	V	0.0	E	1.1	V	0.5	V
14-Oct-12	0.6	V	0.5	V	0.4	V	1.4	V	0.0	E	1.1	V	0.7	V
18-Nov-12	0.4	V	0.2	V	0.1	V	2.6	V	0.0	E	0.8	V	1.2	V
16-Dec-12	0.8	V	0.1	V	0.3	V	1.7	V	<0.1	V	4.1	V	0.7	V
13-Jan-13	1.3	V	1.7	V	-	Frozen	8.5	V	0.1	V	3.9	V	1.2	V
17-Feb-13	-	Frozen	-	Frozen	-	Frozen	-	Frozen	-	Frozen	3.9	V	2.1	V
17-Mar-13	-	Frozen	-	Frozen	-	Frozen	1.0	V	-	Frozen	2.8	V	2.2	V
14-Apr-13	1.6	V	0.6	V	-	Frozen	5.6	V	1.6	V	7.9	V	5.0	V
12-May-13	0.7	V	<0.1	V	<0.1	V	7.5	V	0.1	V	2.4	V	0.8	V
16-Jun-13	0.5	V	0.5	V	0.9	V	6.0	V	0.0	E	1.2	V	1.0	V
14-Jul-13	<0.1	V	0	E	0.1	V	1.3	V	0.0	E	0.6	V	0.2	V
18-Aug-13	0.3	V	<0.1	E	0.1	V	0.6	V	0.0	E	0.5	V	0.4	V
15-Sep-13	0.1	V	<0.1	E	0.1	V	3.0	V	0.0	E	0.4	V	0.3	V
13-Oct-13	0.4	V	0.1	V	0.1	V	1.7	V	<0.1	V	1.3	V	2.9	V
17-Nov-13	4.7	V	0.2	V	0.1	V	5.3	V	0.1	V	1.9	V	2.6	V
15-Dec-13	Frozen	E	0.7	V	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E
19-Jan-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	0.7	V	Buried	E
16-Feb-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	0.7	V	Frozen	E
13-Apr-14	4.9	V	1.1	V	Frozen	E	14.5	V	Frozen	E	24.8	V	2.3	V
11-May-14	0.2	V	0.1	V	0.2	V	3.5	V	0.2	V	0.8	V	1.9	V
15-Jun-14	<0.1	E	DRY	E	0.1	V	1.4	V	DRY	E	1.5	V	0.2	V
13-Jul-14	0.1	V	<0.1	V	0.4	V	1.7	V	0.1	V	0.3	V	0.1	V
17-Aug-14	0.2	V	<0.1	E	0.1	V	0.5	V	Dry	V	0.3	V	0.1	V
7-Sep-14	0.1	V	Ponded	E	0.2	V	0.5	V	DRY	V	0.1	V	0.1	V
19-Oct-14	0.5	V	0.1	V	<0.1	V	1.6	V	0.7	V	0.9	V	0.2	V
16-Nov-14	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E
14-Dec-14	0.4	V	<0.1	V	<0.1	E	1.4	V	1.1	V	4.0	V	2.5	V
18-Jan-15	Buried	E	Buried	E	Buried	E	0.9	V	Buried	E	3.7	V	0.9	V
15-Feb-15	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E
15-Mar-15	Buried	E	Buried	E	Buried	E	1.9	V	Buried	E	0.8	E	0.6	D
19-Apr-15	1.5	V	0.2	B	<0.1	E	5.6	V	1.0	V	4.6	V	2.5	V
17-May-15	<0.1	E	Dry	E	Dry	E	1.9	V	0.3	E	2.5	V	1.7	V
14-Jun-15	0.8	V	DRY	E	Dry	E	4.8	V	0.2	V	1.0	V	1.0	V
19-Jul-15	0.5	E	DRY	E	Dry	E	2.7	V	Dry	E	1.2	V	0.2	V
9-Aug-15	<0.1	E	DRY	E	0.3	V	4.7	V	DRY	E	0.3	V	0.5	V
23-Aug-15	-	-	-	-	-	-	1.1	V	-	-	-	-	-	-
6-Sep-15	<0.1	E	DRY	E	0.1	V	2.7	V	DRY	E	0.5	V	0.4	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	Dry	E	Dry	E	<0.1	E	0.6	V	Dry	E	0.3	V	0.2	V
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	0.4	V	Dry	E	0.1	V	0.9	V	Dry	E	0.4	V	1.1	V
6-Dec-15	0.6	V	Dry	E	0.1	V	0.8	V	Dry	E	0.3	V	1.5	V
17-Jan-16	2.2	V	Frozen	E	Buried	E	2.1	V	Frozen	E	2.1	V	2.3	V
14-Feb-16	2.1	V	Frozen	E	Buried	E	1.8	V	Buried	E	1.2	V	1.1	V
13-Mar-16	1.9	V	0.5	V	Buried	E	7.2	V	1.4	V	20.8	V	11.9	V
17-Apr-16	2.0	V	0.1	V	DRY	E	8.1	V	0.5	V	18.3	V	4.3	V
15-May-16	2.2	V	Dry	V	0.1	V	2.3	V	0.4	V	5.7	V	2.3	V
19-Jun-16	<0.1	E	Dry	E	0.1	V	1.9	V	Dry	V	2.8	V	1.2	V
3-Jul-16	-	-	-	-	-	-	1.4	V	-	-	-	-	-	-
17-Jul-16	0.1	V	0.5	V	1.7	V	1.5	V	DRY	V	1.8	V	0.5	V
7-Aug-16	-	-	-	-	-	-	0.3	E	-	-	-	-	-	-
21-Aug-16	0.7	V	0.5	V	1	V	2.3	V	Dry	E	1	V	0.5	V
18-Sep-16	0.7	V	1.3	V	2.0	V	1.5	V	Dry	E	0.8	V	0.6	V
16-Oct-16	0.6	V	2.8	V	0.7	V	3.5	V	Dry	E	0.5	V	1.4	V
18-Nov-16	1.0	V	1.9	V	1.1	V	2.0	V	Dry	E	0.5	V	0.1	V
12-Dec-16	2.4	V	2.8	V	3.8	V	2.4	V	Dry	E	0.2	V	1.5	V
22-Jan-17	3.7	V	3.2	V	6.2	V	4.6	V	<0.1	E	1.3	V	1.9	V
15-Feb-17	Frozen	-	0.4	V	Buried	-	4.6	V	Buried	-	2.8	V	2.6	V
21-Mar-17	3.8	V	1.3	V	0.3	V	5.1	V	Frozen	-	6.6	V	0.9	V
19-Apr-17	2.8	V	1.3	V	1.6	V	5.3	V	0.5	V	16.6	V	1.0	V
14-May-17	4.5	V	2.0	V	1.6	V	3.5	V	0.1	V	3.3	V	12.8	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	1.7	V	2.2	V	1.2	V	1.4	V	0.2	V	6.4	V	2.1	V
7-Jul-17	-	-	-	-	-	-	5.5	V	-	-	-	-	-	-
18-Jul-17	1.4	V	0.4	V	0.5	V	3.8	V	Dry	E	3.7	V	1.0	V
27-Jul-17	-	-	-	-	-	-	2.4	V	-	-	-	-	-	-
13-Aug-17	1.0	V	0.9	V	0.9	V	7.2	V	Dry	E	1.9	V	1.1	V
17-Sep-17	0.9	V	1.5	V	0.8	V	5.7	V	Dry	E	0.8	V	0.6	V
17-Oct-17	2.3	V	1.0	V	0.6	V	1.1	V	Dry	E	0.9	V	1.9	V
14-Nov-17	1.4	V	2.6	V	1.5	V	2.4	V	0.1	E	2.1	V	2.6	V
12-Dec-17	2.5	V	0.8	V	1.3	V	5.6	V	Frozen	E	3.4	V	2.6	V
17-Jan-18	Frozen	E	Frozen	E	Frozen	E	7.4	E	Frozen	E	5.1	V	2.8	V
18-Feb-18	2.6	V	2.4	V	Buried	E	9.0	V	0.8	V	8.5	V	5.2	V
18-Mar-18	1.0	V	Frozen	E	Buried	E	6.5	V	Frozen	E	4.6	V	1.2	V
18-Apr-18	2.2	V	Buried	E	Buried	E	7.4	V	Buried	E	4.8	V	2.4	V
13-May-18	2.2	V	1	V	<0.1	E	5.5	V	1.3	V	11.9	V	3.4	V
19-Jun-18														
20-Jun-18	3.5	V	1.0	V	1.2	V	4.3	V	0.0	V	5.6	V	1.4	V
4-Jul-18							3.3	V						
18-Jul-18														
19-Jul-18	0.0	V	0.8	V	0.0	V	1.7	V	0.0	V	1.4	V	1.3	V
3-Aug-18							2.1	V						
23-Aug-18											0.7	V	1.6	V
24-Aug-18	0.3	V	0.5	V	0.3	V	4.9	V	0	V				
19-Sep-18											0.2	V	0.5	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Sep-18	0	V	0.1	V	0.2	V	1.2	V	0	V				
24-Oct-18											0.7	V	0.4	V
25-Oct-18	0.4	V	0.1	V	0.1	V	2.4	V	0	V				
21-Nov-18											0.6	V	0.1	V
22-Nov-18	0	V	0.7	V	0	V	1.9	V	0	V				
12-Dec-18											1.6	V	1.6	V
13-Dec-18	0.8	V	0.5	V	0.3	V	3.1	V	0	V				
18-Jan-19		Frozen		Frozen		Frozen	6.0	V		Frozen	2.7	V	7.8	V
19-Jan-19		Frozen		Frozen		Frozen	6.0	V		Frozen				
26-Feb-19											2.1	V		Frozen
28-Feb-19		Frozen		Frozen		Frozen		Frozen		Frozen				
15-Mar-19											2.6	V	5.3	V
19-Mar-19	1.2	V	0.0	V	0.0	V	12.6	V	0.0	V				
24-Apr-19											22.9	V	4.9	V
25-Apr-19	1.8	V	3.4	V	0.0	V	17.1	V	6.7	V				
23-May-19											7.9	V	2.2	V
27-May-19	1.4	V	0.1	V	0.0	V	7.0	V	0.2	V				
18-Jun-19											2.9	V	2.6	V
21-Jun-19	1.1	V	0.0	V	0.0	V	3.8	V	0.0	V				
29-Jul-19											0.5	V	0.3	V
30-Jul-19	0.2	V	0.1	V	0.3	V	3.5	V	0.0	V				
29-Aug-19											4.0	V	1.1	V
30-Aug-19	0.2	V	1.9	V	1.9	V		DRY		Dry				

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
26-Sep-19											42.7	V	0.7	V
27-Sep-19	0.2	V	1.7	V	1.6	V	0	V	0	V				
23-Oct-19											2.7	V	1.3	V
22-Oct-19	0.3	V	2.1	V	0.8	V		dry		Dry				
22-Nov-19											2.4	V	0.9	V
21-Nov-19	1.1	V	3	V	0.9	V		Frozen		Frozen				
20-Dec-19		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen		Frozen
15-Jan-20												Frozen		Frozen
24-Jan-20		Frozen		Frozen		Frozen	2.7	V		Frozen				
20-Feb-20												Frozen		Frozen
21-Feb-20		Frozen		Frozen		Frozen		Frozen		Frozen				
26-Mar-20												Frozen		Frozen
25-Mar-20		Frozen		Frozen		Frozen		Frozen		Frozen				
27-Apr-20												-	1.9	V
28-Apr-20		-		-		-	4.4	V	0.3	V				
29-May-20											6.4	V	3.0	V
28-May-20		Ponded	0.0	V		Dry	4.2	V	0.6	V				
23-Jun-20											1.2	V	34.1	V
24-Jun-20	0.0	V	0.0	V	0.0	V	0.0	V	0.0	V				
30-Jul-30											1.2	V	1.2	V
31-Jul-20		overgrown		overgrown		dry	3.3	V		dry				
25-Aug-20											0.7	V	1.1	V
26-Aug-20		overgrown		overgrown		dry	1.7	V		dry				

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW21		SW21A		SW21B		SW21C		SW21D		SW22		SW22A	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
25-Sep-20											0.7	V	1.1	V
26-Sep-20		overgrown		overgrown		Dry	1.5	V		Dry				
30-Oct-20											0.9	V	1.3	V
29-Oct-20	0.3	V	3.4	V		dry	1.5	V		dry				
26-Nov-20											5.5	V	4.3	V
27-Nov-20	0.5	V	6.5	V		dry	4.1	V		dry				
23-Dec-20												frozen		frozen
22-Dec-20	6.1	V	1.6	V		snow	2.8	V		frozen		frozen		frozen

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-Jun-03	-	-	-	-	0.5	E	-	-	-	-	-	-	-	-
22-Jul-03	0.0	E	-	-	-	-	0.0	E	0.8	B	-	-	-	-
20-Aug-03	0.0	E	-	-	<0.1	B	0.0	E	0.6	B/E	0.1	B	-	-
25-Sep-03	0.0	E	-	-	0.1	B	0.0	E	0.2	B	0.2	B	-	-
22-Oct-03	0.0	E	-	-	1.4	B	0.4	B	0.4	B	0.4	B	-	-
28-Nov-03	0.0	E	-	-	2.1	B	4.0	M	1.4	B	1.5	B	-	-
19-Dec-03	0.0	E	-	-	1.7	B/E	6.7	M	5.8	B/E	1.2	B	-	-
10-Feb-04	0.0	E	-	-	0.8	B	0.8	M	0.9	B	0.6	B	-	-
18-Mar-04	0.0	E	-	-	1.4	B	6.3	M	2.5	E	1.4	B	-	-
19-Apr-04	0.0	E	-	-	1.4	B	3.7	M	3.3	B	1.7	B	-	-
19-May-04	0.0	E	-	-	1.0	B	1.7	M	1.7	M	1.0	B	-	-
24-Jun-04	0.0	E	-	-	0.1	BE	5.6	M	1.1	BE	0.6	BE	-	-
29-Jul-04	0.0	E	-	-	0.1	B	0.0	E	0.9	B	0.5	B	-	-
23-Aug-04	DRY	E	-	-	<0.1	BE	DRY	E	0.2	BE	0.2	BE	-	-
21-Sep-04	DRY	E	-	-	<0.1	BE	<0.1	E	0.3	BE	0.2	BE	-	-
21-Oct-04	DRY	E	-	-	0.2	BE	<0.1	E	0.5	BE	0.2	BE	-	-
17-Nov-04	DRY	E	-	-	0.2	BE	<0.1	E	0.5	BE	0.3	BE	-	-
15-Dec-04	Frozen	E	-	-	Frozen	E	Frozen	E	0.5	BE	0.3	BE	-	-

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- (2) indicates measurement taken on October 31, 2003.
- (3) indicates measurement taken on November 9, 2003.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	-	-	-	-	Frozen	E	Frozen	E	Frozen	E	Frozen	E	-	-
13-Feb-05	-	-	-	-	Frozen	E	Frozen	E	Frozen	E	Frozen	E	-	-
27-Mar-05	-	-	-	-	0.8	B/E	6.4	B/E	0.2	B/E	0.9	B/E	-	-
10-Apr-05	-	-	-	-	2.1	B/E	17.8	B/E	7.9	B/E	4.5	B/E	-	-
22-May-05	-	-	-	-	0.8	B/E	3.0	M	1.4	B/E	1.4	B/E	-	-
26-Jun-05	-	-	-	-	0.1	B/E	1.6	M	0.5	B/E	0.5	B/E	-	-
10-Jul-05	-	-	-	-	0.0	B/E	0.5	M	0.4	B/E	0.6	B/E	-	-
21-Aug-05	-	-	-	-	0.2	B/E	0.0	E	0.1	B/E	0.4	B/E	-	-
25-Sep-05	-	-	-	-	<0.1	B	0.0	E	0.1	E	0.3	B	-	-
23-Oct-05	-	-	-	-	0.2	B	0.0	E	0.1	E	0.3	B/E	-	-
13-Nov-05	-	-	-	-	0.1	B	0.0	E	0.1	B/E	0.3	B	-	-
11-Dec-05	-	-	-	-	0.9	B/E	Frozen	E	2.1	V	1.2	B/E	-	-
15-Jan-06	-	-	-	-	4.9	B	5.3	V	1.5	B	5.8	V	-	-
19-Feb-06	-	-	-	-	Frozen	E	Frozen	E	Frozen	E	Frozen	E	-	-
19-Mar-06	-	-	-	-	0.8	B	2.9	V	3.0	V	3.6	V	-	-
16-Apr-06	-	-	-	-	0.6	V	2.2	V	3.7	V	4.9	V	-	-
21-May-06	-	-	-	-	0.6	M/V	0.5	V	12.3	V	1.2	V	-	-
18-Jun-06	-	-	-	-	0.2	V	<0.1	E	2.3	V	2.5	V	-	-
9-Jul-06	-	-	-	-	<0.1	M/V	0.0	E	0.5	V	1.4	M/V	-	-

NOTE:
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- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	-	-	-	-	<0.1	B	0.0	E	0.3	V	0.6	V	-	-
17-Sep-06	-	-	-	-	<0.1	B	0.0	E	0.6	V	0.4	V	-	-
15-Oct-06	-	-	-	-	0.2	V	0.1	E	0.3	V	0.5	V	-	-
19-Nov-06	-	-	-	-	0.6	V	2.9	V	1.3	V	1.9	V	-	-
17-Dec-06	-	-	-	-	0.6	V	2.9	V	1.3	V	2.9	V	-	-
21-Jan-07	-	-	-	-	Frozen	E	0.6	V	2.2	V	1.6	V	-	-
18-Feb-07	-	-	-	-	Frozen	E	Frozen	E	Frozen	E	Frozen	E	-	-
18-Mar-07	-	-	Frozen	E	0.9	V	2.0	V	2.5	V	2.1	V	-	-
15-Apr-07	-	-	11.5	V	0.1	V	1.3	V	5.5	V	1.6	V	-	-
13-May-07	-	-	7.7	V	0.7	V	0.1	V	1.4	V	2.5	V	-	-
17-Jun-07	-	-	9.8	V	0.1	B	0.0	E	0.2	V	0.7	V	-	-
15-Jul-07	-	-	2.7	V	0.2	E	0.0	E	0.4	V	0.3	V	-	-
19-Aug-07	0.0	E	1.6	V	0.0	E	0.0	E	0.4	V	0.1	V	-	-
16-Sep-07	-	-	3.0	V	0.0	E	0.0	E	0.3	V	0.1	V	-	-
14-Oct-07	2.8	V	2.2	V	0.0	E	0.0	E	0.2	V	0.1	V	-	-
18-Nov-07	-	-	4.4	V	0.7	V	Frozen	E	2.1	V	0.1	V	-	-
9-Dec-07	-	-	Frozen	E	1.2	V	Frozen	E	0.5	V	0.2	V	-	-
20-Jan-08	2.6	V	2.6	V	Frozen	E	Frozen	E	1.5	V	1.7	V	-	-
17-Feb-08	Frozen	E	16.9	V	1.8	V	11.0	V	1.6	V	2.7	V	7.7	V

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111-53312-03 100

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	-	-	5.6	V	Frozen	E	7.8	V	0.8	V	0.9	V	7.6	V
30-Mar-08	-	-	17.6	V	73.5	V	34.6	V	0.8	V	13.1	V	7.6	V
20-Apr-08	-	-	12.4	V	1.4	V	6.8	V	1.9	V	3.9	V	16.2	V
18-May-08	-	-	3.9	V	1.2	V	2.8	V	1.4	V	2.2	V	6.9	V
15-Jun-08	-	-	3.1	V	0.3	B	1.4	V	0.4	V	2.3	V	5.6	V
13-Jul-08	-	-	4.1	V	<0.01	B	0.5	V	0.3	V	0.9	V	0.4	V
17-Aug-08	-	-	3.1	V	0.1	B	0.3	V	1.4	V	1.6	V	3.1	V
14-Sep-08	-	-	3.8	V	0.4	B	0.8	V	0.5	V	0.5	V	3.2	V
19-Oct-08	-	-	3.2	V	0.3	V	3.7	V	0.8	V	0.3	V	2.7	V
23-Nov-08	-	-	8.3	V	Frozen	E	2.6	V	0.6	V	1.4	V	3.0	V
14-Dec-08	-	-	8.6	V	Frozen	E	4.9	V	1.8	V	2.4	V	5.8	V
18-Jan-09	-	-	3.9	V	Frozen	E	1.7	V	3.9	V	1.7	V	4.9	V
8-Feb-09	-	-	13.3	V	Frozen	E	3.0	V	0.7	V	2.1	V	5.4	V
15-Mar-09	-	-	26.9	V	0.6	V	7.8	V	1.5	V	5.3	V	6.9	V
12-Apr-09	-	-	21.6	V	1.3	V	6.0	V	3.4	V	2.4	V	7.0	V
17-May-09	-	-	8.2	V	0.3	V	2.1	V	1.0	V	1.2	V	6.6	V
14-Jun-09	-	-	0.8	V	0.2	V	0.5	V	0.4	V	1.6	V	1.2	V
12-Jul-09	-	-	1.1	V	0.1	V	0.2	V	0.3	V	<0.1	V	1.2	V
9-Aug-09	-	-	1.7	V	2.1	V	0.4	V	0.4	V	0.2	V	0.9	V

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	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	-	-	0.7	V	<0.1	V	0.1	V	0.4	V	0.3	V	0.6	V
11-Oct-09	-	-	4.3	V	0.7	V	0.4	V	0.4	V	0.1	V	1.4	V
15-Nov-09	-	-	2.5	V	0.8	V	1.0	V	0.3	V	0.5	V	1.6	V
13-Dec-09	-	-	1.2	V	1.1	V	1.2	V	0.1	V	0.1	V	0.8	V
17-Jan-10	-	-	0.3	V	Buried	E	2.7	V	1.2	V	1.4	V	1.6	V
7-Feb-10	-	-	1.7	V	Buried	E	Buried	E	1.2	V	0.8	V	1.4	V
14-Mar-10	-	-	20.8	V	3.3	V	10.8	V	1.5	V	7.5	V	10.1	V
4-Apr-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-Apr-10	-	-	6.4	V	0.9	V	2.1	V	3.9	V	5.5	V	3.3	V
16-May-10	-	-	7.8	V	1.0	V	3.5	V	1.5	V	6.7	V	8.3	V
23-May-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-Jun-10	-	-	6.5	V	0.5	V	5.5	V	1.0	V	4.5	V	3.2	V
18-Jul-10	-	-	8.0	V	2.4	V	4.9	V	0.4	V	2.5	V	1.1	V
15-Aug-10	-	-	3.7	V	0.2	V	1.6	V	0.5	V	0.3	V	1.7	V
12-Sep-10	-	-	<0.1	V	<0.1	E	1.1	V	0.3	V	0.3	V	1.3	V
17-Oct-10	-	-	5.0	V	0.2	V	0.2	V	0.5	V	0.5	V	1.6	V
14-Nov-10	-	-	13.2	V	1.1	V	3.7	V	0.6	V	0.8	V	2.6	V
19-Dec-10	-	-	3.0	V	Buried	E	0.4	V	0.8	V	1.2	V	0.7	V

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16-Jan-11	-	-	7.6	V		E	2.4	V	1.5	V	3.1	V	2.9	V
20-Feb-11	-	-	5.0	V		E	1.4	V	1.9	V	1.0	V	4.6	V
13-Mar-11	Buried	E	10.2	V	Frozen	E	3.4	V	2.6	V	1.7	V	6.2	V
17-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Mar-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-Mar-11	-	-	14.0	V	-	-	-	-	-	-	-	-	-	-
1-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-Apr-11	-	-	21.2	V	1.2	V	4.6	V	1.3	V	1.5	V	6.7	V
20-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-Apr-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

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DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	-	-	15.1	V	1.6	V	5.8	V	2.9	V	1.2	V	5.7	V
16-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-May-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Jun-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-Jun-11	-	-	6.1	V	0.8	V	0.8	V	1.7	V	0.2	V	2.3	V
17-Jul-11	-	-	2.1	V	0.2	V	0.6	V	0.7	V	0.3	V	0.9	V
14-Aug-11	-	-	1.9	V	<0.1	E	0.6	V	0.4	V	0.2	V	0.4	V
18-Sep-11	-	-	1.4	V	0.1	V	0.3	V	0.1	V	0.1	V	0.4	V
16-Oct-11	-	-	2.9	V	0.3	V	0.3	V	1.1	V	0.4	V	1.1	V
20-Nov-11	-	-	2.5	V	0.4	V	0.8	V	0.7	V	0.3	V	0.1	V
18-Dec-11	-	-	6.7	V	1.3	V	0.4	V	0.4	V	1.4	V	3.6	V
15-Jan-12	-	-	5.2	V	Frozen	E	4.6	V	1.4	V	6.0	V	6.2	V
19-Feb-12	-	-	5.1	V	Frozen	E	3.4	V	0.3	V	0.3	V	2.3	V
18-Mar-12	-	-	6.6	V	0.9	V	6.4	V	2.0	V	12.9	V	15.4	V
15-Apr-12	-	-	2.4	V	0.3	V	0.5	V	0.4	V	0.8	V	0.9	V
13-May-12	-	-	3.5	V	0.1	V	1.4	V	1.6	V	0.7	V	2.4	V
17-Jun-12	-	-	1.3	V	<0.1	E	1.3	V	0.3	V	1.5	V	4.5	V

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- 0.0 indicates no flow, surface water location dry.
- (2) indicates measurement taken on October 31, 2003.
- (3) indicates measurement taken on November 9, 2003.

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15-Jul-12	-	-	2.3	V	<0.1	V	0.3	V	0.2	V	0.2	V	0.8	V
12-Aug-12	-	-	3.5	V	0.5	V	2.6	V	0.9	V	2.5	V	5.1	V
16-Sep-12	-	-	2.2	V	1.2	V	0.5	V	0.2	V	0.4	V	1.0	V
14-Oct-12	-	-	2.2	V	0.4	V	0.7	V	0.1	V	0.5	V	0.7	V
18-Nov-12	-	-	8.6	V	0.5	V	2.6	V	4.8	V	1.2	V	3.9	V
16-Dec-12	-	-	3.8	V	0.8	V	3.5	V	1.3	V	1.4	V	4.7	V
13-Jan-13	-	-	12.1	V	0.2	V	5.4	V	1.8	V	3.1	V	4.6	V
17-Feb-13	-	-	6.7	V	-	Frozen	1.3	V	1.4	V	1.9	V	5.0	V
17-Mar-13	-	-	4.8	V	-	Frozen	2.9	V	2.7	V	5.1	V	4.6	V
14-Apr-13	-	-	15.9	V	2.2	V	16.3	V	18.4	V	12.9	V	26.3	V
12-May-13	-	-	2.3	V	1.0	V	0.9	V	0.2	V	0.7	V	1.8	V
16-Jun-13	-	-	2.7	V	0.1	V	0.6	V	0.5	V	2.1	V	2.4	V
14-Jul-13	-	-	1.4	V	<0.1	V	0.2	V	0.3	V	0.3	V	3.3	V
18-Aug-13	-	-	0.0	E	<0.1	V	0.4	V	0.2	V	0.2	V	0.6	V
15-Sep-13	-	-	1.4	V	<0.1	E	0.7	V	1.0	V	0.3	V	1.4	V
13-Oct-13	-	-	4.7	V	0.4	V	1.6	V	0.8	V	0.1	V	4.7	V
17-Nov-13	-	-	4.8	V	0.6	V	1.2	V	0.9	V	1.1	V	4.0	V
15-Dec-13	-	-	Frozen	E	Frozen	E	Frozen	E	1.1	V	0.6	V	1.4	V
19-Jan-14	-	-	1.0	V	Buried	E	Buried	E	1.6	V	0.6	V	2.2	V
16-Feb-14	-	-	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E	Buried	E

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DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	-	-	Frozen	E	Frozen	E	Frozen	E	Frozen	E	Frozen	E	2.3	V
13-Apr-14	-	-	16.5	V	Frozen	E	11.9	V	3.5	V	15.4	V	17.6	V
11-May-14	-	-	12.3	V	0.4	V	3.2	V	1.5	V	2.7	V	5.8	V
15-Jun-14	-	-	4.8	V	0.1	V	2.2	V	0.2	V	0.8	V	3.2	V
13-Jul-14	-	-	1.5	V	4.8	V	2.1	V	0.3	V	0.3	V	2.1	V
17-Aug-14	-	-	0.6	V	0.2	V	0.3	V	<0.1	V	0.2	V	1.2	V
7-Sep-14	-	-	0.6	V	0.1	V	0.1	V	<0.1	V	0.2	V	0.5	V
19-Oct-14	-	-	1.6	V	0.1	V	2.9	V	0.1	V	0.3	V	2.1	V
16-Nov-14	-	-	Buried	E	Frozen	E	Buried	E	Buried	E	Buried	E	Buried	E
14-Dec-14	-	-	4.6	V	1.2	V	2.0	V	1.4	V	0.3	V	1.5	V
18-Jan-15	-	-	16.2	V	Frozen	E	0.1	V	0.2	V	0.1	V	1.7	V
15-Feb-15	-	-	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E
15-Mar-15	-	-	Frozen	E	Frozen	E	2.9	V	0.2	V	1.3	V	6.4	V
19-Apr-15	-	-	11.2	V	2.7	B	3.2	V	2.4	V	10.4	V	14.1	V
17-May-15	-	-	1.6	V	3.0	E	0.6	V	1.2	V	0.2	V	0.9	V
14-Jun-15	-	-	3.6	V	1.1	V	1.7	V	0.1	V	2.1	V	1.8	V
19-Jul-15	-	-	1.4	V	0.8	V	0.6	V	0.2	V	1.2	V	2.0	V
9-Aug-15	-	-	1.6	V	0.3	V	1.0	V	0.1	V	1.1	V	2.7	V
23-Aug-15	-	-	-	-	-	-	-	-	0.3	V	-	-	-	-
6-Sep-15	-	-	1.2	V	<0.1	E	0.6	V	0.1	V	0.1	V	0.5	V

NOTE:

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- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	-	-	1.6	V	3.5	V	0.6	V	0.1	V	0.1	V	0.5	V
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	-	-	3.8	V	0.5	V	2.1	V	0.4	V	0.4	V	0.4	V
6-Dec-15	-	-	2.5	V	0.5	V	2.0	V	1.1	V	0.7	V	1.4	V
17-Jan-16	-	-	5.3	V	Frozen	E	2.4	V	1.0	V	1.9	V	1.6	V
14-Feb-16	-	-	7.0	V	Frozen	E	9.0	V	1.2	V	1.7	V	3.8	V
13-Mar-16	-	-	29.5	V	2.5	V	18.2	V	4.9	V	19.9	V	21.8	V
17-Apr-16	-	-	14.5	V	2.1	V	14.0	V	1.8	V	0.9	V	9.3	V
15-May-16	-	-	6.5	V	1.8	V	2.9	V	0.5	V	1.1	V	6.6	V
19-Jun-16	-	-	2.4	V	0.5	V	1.6	V	2.4	V	1.8	V	1.8	V
3-Jul-16	-	-	-	-	-	-	-	-	0.6	V	-	-	-	-
17-Jul-16	-	-	2.2	V	0.1	V	0.6	V	0.5	V	0.9	V	1.0	V
7-Aug-16	-	-	-	-	-	-	-	-	0.1	V	-	-	-	-
21-Aug-16	-	-	0.9	V	<0.1	V	0.2	V	0.4	V	0.9	V	1.7	V
18-Sep-16	-	-	1.8	V	0.8	V	1.0	V	0.5	V	0.2	V	1.4	V
16-Oct-16	-	-	2.1	V	0.2	V	0.5	V	0.7	V	0.5	V	1.1	V
18-Nov-16	-	-	3.2	V	0.3	V	1.7	V	0.4	V	0.5	V	1.6	V
12-Dec-16	-	-	7.8	V	0.4	V	2.2	V	0.2	V	0.3	V	2.0	V
22-Jan-17	-	-	8.1	V	39.3	V	1.4	V	3.7	V	1.6	V	6.8	V
15-Feb-17	-	-	7.9	V	Frozen	-	1.6	V	0.6	V	3.4	V	5.0	V
21-Mar-17	-	-	13.5	V	2.7	V	4.3	V	0.3	V	3.7	V	5.5	V
19-Apr-17	-	-	12.0	V	2.7	V	4.5	V	3.6	V	3.6	V	14.2	V
14-May-17	-	-	9.0	V	0.9	V	2.3	V	1.5	V	7.0	V	19.2	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	-	-	6.9	V	0.8	V	6.7	V	1.2	V	3.5	V	7.4	V
7-Jul-17	-	-	-	-	-	-	-	-	0.1	V	1.9	V	-	-
18-Jul-17	-	-	6.6	V	0.3	V	1.0	V	1.1	V	0.7	V	2.1	V
27-Jul-17	-	-	-	-	-	-	-	-	0.6	V	-	-	-	-
13-Aug-17	-	-	2.8	V	0.2	V	0.7	V	0.1	V	0.7	V	2.8	V
17-Sep-17	-	-	6.8	V	0.2	V	0.3	V	0.2	V	1.3	V	2.3	V
17-Oct-17	-	-	5.3	V	0.9	V	1.6	V	0.8	V	1.0	V	3.4	V
14-Nov-17	-	-	5.3	V	1.8	V	1.0	V	0.2	V	0.3	V	3.5	V
12-Dec-17	-	-	7.9	V	Frozen	V	0.6	V	0.5	V	1.9	V	5.7	V
17-Jan-18	-	-	5.1	V	-	-	5.0	V	0.5	V	2.4	V	5.7	V
18-Feb-18	-	-	19.4	V	-	-	8.7	V	1.3	V	15.5	V	15.5	V
18-Mar-18	-	-	5.4	V	-	-	Frozen	E	0.2	V	2.4	V	3.7	V
18-Apr-18	-	-	8.5	V	-	-	Frozen	E	1.5	V	1.9	V	13.6	V
13-May-18	-	-	6.3	V	-	-	4.7	V	2.2	V	4.5	V	6.4	V
19-Jun-18	-	-			-	-								
20-Jun-18	-	-	2.3	V	-	-	0.2	V	1.3	V	1.7	V	4.9	V
4-Jul-18	-	-			-	-			0.5	V				
18-Jul-18	-	-			-	-								
19-Jul-18	-	-	1.8	V	-	-	0.2	V	1.0	V	0.2	V	2.3	V
3-Aug-18	-	-			-	-			0.4	V				
23-Aug-18	-	-	2.6	V	-	-								
24-Aug-18	-	-			-	-	0.2	V	0.4	V	0.2	V	1	V
19-Sep-18	-	-	1.8	V	-	-								

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Sep-18	-	-			-	-	0.2	V	0.5	V	0.1	V	0.6	V
24-Oct-18	-	-	3.1	V	-	-								
25-Oct-18	-	-			-	-	0.7	V	0.9	V	0.1	V	0.6	V
21-Nov-18	-	-	2	V	-	-								
22-Nov-18	-	-			-	-	0.3	V	0.5	V	0.8	V	3.5	V
12-Dec-18	-	-	3.8	V	-	-								
13-Dec-18	-	-			-	-	1.3	V	1.9	V	0.7	V	2.7	V
18-Jan-19			4.0	V				Frozen	1.2	V	1.8	V	2.3	V
19-Jan-19								Frozen	1.2	V	1.8	V	2.3	V
26-Feb-19				Frozen										
28-Feb-19								Frozen		Frozen		Frozen		Frozen
15-Mar-19			24.7	V										
19-Mar-19							1.7	V	1.9	V	1.6	V	6.7	V
24-Apr-19			15.6	V										
25-Apr-19							11.3	V	5.0	V	0.7	V	18.4	V
23-May-19			7.7	V										
27-May-19							1.4	V	1.8	V	0.1	V	5.0	V
18-Jun-19			5.5	V										
21-Jun-19							0.4	V	0.5	V	0.8	V	5.1	V
29-Jul-19			4.5	V										
30-Jul-19							0.1	V	0.5	V	0.4	V	1.4	V
29-Aug-19			2.4	V										
30-Aug-19							0.1	V	0.4	V	0.4	V	0	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
26-Sep-19			2.6	V										
27-Sep-19							0.1	V	0.4	V	0	V	0.6	V
23-Oct-19			3.3	V										
22-Oct-19							0	V	0.6	V	0	V	0	V
22-Nov-19			2.6	V										
21-Nov-19							0	V		Frozen		Frozen	0	V
20-Dec-19				Frozen				Frozen		Frozen		Frozen		Frozen
15-Jan-20				Frozen										
24-Jan-20							12.5	V		Frozen	0.7	V	0.6	V
20-Feb-20				Frozen										
21-Feb-20								Frozen		Frozen		Frozen		Frozen
26-Mar-20				Frozen										
25-Mar-20								Frozen		Frozen		Frozen		Frozen
27-Apr-20			10	V										
28-Apr-20							6.6	V		-		-	0.9	V
29-May-20			5.1	V										
28-May-20							7.0	V	0.5	V	0.1	V	0.9	V
23-Jun-20			3.9	V										
24-Jun-20							1.9	V	0.0	V	0.2	V	6.5	V
30-Jul-30			0.8	V										
31-Jul-20							0.8	V	1.3	V	0.8	V	4.2	V
25-Aug-20			1	V										
26-Aug-20							1.3	V	0.6	V	0.3	V	2.7	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW22B		SW22C		SW23		SW24		SW24A		SW24B		SW24C	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
25-Sep-20			1	V										
26-Sep-20							0.3	V	0.7	V	0.2	V	0.3	V
30-Oct-20			1.4	V										
29-Oct-20							0.4	V	0.8	V	0.3	V	0.6	V
26-Nov-20			1.7	V										
27-Nov-20							1.8	V	1.8	V	1.1	V	3.3	V
23-Dec-20				frozen										
22-Dec-20				frozen			4.1	V	5.5	V	0.4	V		frozen

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03	-	-	-	-	-	-	-	-						
23-Jun-03	-	-	-	-	-	-	-	-						
22-Jul-03	-	-	-	-	-	-	-	-						
20-Aug-03	-	-	-	-	-	-	-	-						
25-Sep-03	-	-	-	-	-	-	-	-						
22-Oct-03	12.9 (2)	V	16.0 (3)	V	9.8	V	-	-						
28-Nov-03	30.8	V	17.6	V	4.9	V	-	-						
19-Dec-03	31.4	V	20.8	V	4.3	V	-	-						
10-Feb-04	20.7	V	42.7	V	0.9	V	-	-						
18-Mar-04	35.8	V	24.7	V	7.3	V	-	-						
19-Apr-04	49.6	V	183.7	V	101.6	V	-	-						
19-May-04	23.4	V	18.8	V	3.4	V	-	-						
24-Jun-04	29.6	V	0.6	M	0.2	BE	-	-						
29-Jul-04	22.1	V	1.3	V	0.1	V	-	-						
23-Aug-04	0.5	E	DRY	E	DRY	E	-	-						
21-Sep-04	<0.1	E	DRY	E	DRY	E	-	-						
21-Oct-04	0.1	E	DRY	E	1.5	E	1.5	V						
17-Nov-04	0.9	V	1.7	M	0.9	V	0.9	V						
15-Dec-04	17.7	V	Frozen	E	Frozen	E	0.5	B/E						

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
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- (2) indicates measurement taken on October 31, 2003.
- (3) indicates measurement taken on November 9, 2003.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E						
13-Feb-05	Frozen	E	Frozen	E	Frozen	E	Frozen	E						
27-Mar-05	17.1	V	10.0	M	3.2	V	5.9	V						
10-Apr-05	80.1	V	111.4	V	59.9	V	39.7	V						
22-May-05	21.8	V	6.0	V	2.6	V	9.5	V						
26-Jun-05	4.9	V	1.2	M	1.6	M	5.2	V						
10-Jul-05	0.4	M	0.0	E	0.0	E	3.3	V						
21-Aug-05	0.2	M	0.0	E	0.0	E	0.9	V						
25-Sep-05	0.0	E	0.0	E	0.0	E	0.7	V						
23-Oct-05	0.0	E	0.0	E	0.0	E	0.3	V						
13-Nov-05	0.2	V	0.0	E	0.0	E	0.4	V						
11-Dec-05	16.1	V	2.9	V	2.0	V	2.8	V						
15-Jan-06	Frozen	E	Frozen	E	6.1	V	3.9	V						
19-Feb-06	Frozen	E	Frozen	E	Frozen	E	Frozen	E						
19-Mar-06	90.1	V	42.1	V	27.2	V	18.7	V						
16-Apr-06	2.7	V	58.7	V	60.0	V	20.4	V						
21-May-06	0.7	V	14.8	V	6.2	V	30.5	V						
18-Jun-06	0.0	E	0.6	V	0.5	V	1.2	V						
9-Jul-06	0.0	E	0.0	E	0.0	E	1.5	V						

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06	0.0	E	0.0	E	0.0	E	0.8	V						
17-Sep-06	0.0	E	0.0	E	0.0	E	1.7	V						
15-Oct-06	3.1	V	1.4	V	0.9	V	0.5	V						
19-Nov-06	24.7	V	9.3	V	8.9	V	5.2	V						
17-Dec-06	40.1	V	16.2	V	11.9	V	7.5	V						
21-Jan-07	18.6	V	Frozen	E	5.3	V	9.0	V						
18-Feb-07	Frozen	E	Frozen	E	Frozen	E	Frozen	E						
18-Mar-07	Frozen	E	Frozen	E	Frozen	E	7.5	V						
15-Apr-07	36.5	V	22.7	V	14.9	V	14.2	V						
13-May-07	23.1	V	9.8	V	6.7	V	9.4	V						
17-Jun-07	4.1	V	0.1	V	1.6	V	6.2	V						
15-Jul-07	0.0	E	0.0	E	0.0	E	1.5	V						
19-Aug-07	0.0	E	0.0	E	0.0	E	1.2	V						
16-Sep-07	0.0	E	0.0	E	0.0	E	0.6	V						
14-Oct-07	0.0	E	0.0	E	0.0	E	0.3	V						
18-Nov-07	0.2	E	0.0	E	0.0	E	0.9	V						
9-Dec-07	12.0	V	1.3	V	Frozen	E	Frozen	E						
20-Jan-08	163.7	V	Frozen	E	Frozen	E	10.9	V						
17-Feb-08	39.0	V	17.1	V	24.0	V	10.4	V						

NOTE:
- - indicates measurement not available
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- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08	20.3	V	8.9	V	14.8	V	7.6	V						
30-Mar-08	58.1	V	135.0	V	74.0	V	97.1	V						
20-Apr-08	48.0	V	156.0	V	165.4	V	42.9	V						
18-May-08	20.4	V	9.8	V	10.1	V	15.0	V						
15-Jun-08	8.9	V	6.2	V	2.6	V	6.6	V						
13-Jul-08	0.2	V	<0.1	V	0.1	V	8.2	V						
17-Aug-08	0.0	E	3.2	V	2.4	V	22.2	V						
14-Sep-08	13.2	V	19.3	V	23.1	V	3.1	V						
19-Oct-08	10.7	V	3.9	V	3.1	V	11.1	V						
23-Nov-08	32.0	V	Frozen	E	Frozen	E	10.9	V						
14-Dec-08	42.4	V	Frozen	E	Frozen	E	13.7	V						
18-Jan-09	33.5	V	Frozen	E	Frozen	E	17.8	V						
8-Feb-09	18.2	V	7.8	V	Buried	E	10.1	V						
15-Mar-09	40.4	V	5.3	V	44.2	V	23.0	V						
12-Apr-09	36.2	V	51.0	V	47.4	V	18.8	V						
17-May-09	18.5	V	6.0	V	5.7	V	16.9	V						
14-Jun-09	7.1	V	1.7	V	1.6	V	6.3	V						
12-Jul-09	0.5	V	0.2	V	0.2	V	6.5	V						
9-Aug-09	12.0	V	2.3	V	10.6	V	2.4	V						

NOTE:
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- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09	0.2	V	Dry	E	Dry	E	1.9	V						
11-Oct-09	17.8	V	7.7	V	8.0	V	1.4	V	0.4	V				
15-Nov-09	10.8	V	3.3	V	3.5	V	4.3	V	<0.1	V				
13-Dec-09	38.8	V	Buried	E	Buried	E	0.8	V	Buried	E				
17-Jan-10	35.3	V	Buried	E	Buried	E	3.1	V	0.2	V				
7-Feb-10	37.5	V	Buried	E	Buried	E	1.3	V	0.2	V				
14-Mar-10	54.0	V	73.5	V	51.7	V	5.5	V	0.7	V				
4-Apr-10	-	-	-	-	-	-	-	-	-	-				
11-Apr-10	36.5	V	24.0	V	23.0	V	24.3	V	0.5	V				
16-May-10	21.2	V	31.6	V	27.4	V	11.1	V	0.2	V				
23-May-10	-	-	-	-	-	-	-	-	-	-				
13-Jun-10	15.1	V	9.5	V	7.6	V	28.3	V	0.3	V				
18-Jul-10	31.6	V	34.2	V	53.3	V	8.5	V	0.6	V				
15-Aug-10	9.0	V	1.7	V	1.8	V	3.9	V	0.2	V				
12-Sep-10	2.5	V	0.1	V	0.3	V	3.3	V	0.1	V				
17-Oct-10	7.0	V	1.0	V	1.7	V	2.7	V	<0.1	V				
14-Nov-10	12.3	V	24.1	V	15.1	V	6.6	V	0.2	V				
19-Dec-10	16.3	V	Buried	E	Buried	E	9.2	V	Buried	E				

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11	53.0	V		E		E	3.9	V	Buried	E				
20-Feb-11	36.2	V		E		E	13.5	V	Buried	E				
13-Mar-11	42.2	V	26.3	V	17.9	V	36.5	V	Buried	E				
17-Mar-11	-	-	-	-	-	-	-	-	-	-				
18-Mar-11	-	-	-	-	-	-	-	-	-	-				
20-Mar-11	-	-	-	-	-	-	-	-	-	-				
1-Apr-11	-	-	-	-	-	-	-	-	-	-				
5-Apr-11	-	-	-	-	-	-	-	-	-	-				
8-Apr-11	-	-	-	-	-	-	-	-	-	-				
12-Apr-11	-	-	-	-	-	-	-	-	-	-				
15-Apr-11	-	-	-	-	-	-	-	-	-	-				
17-Apr-11	86.3	V	54.5	V	36.6	V	43.1	V	0.8	V				
20-Apr-11	-	-	-	-	-	-	-	-	-	-				
21-Apr-11	-	-	-	-	-	-	-	-	-	-				
26-Apr-11	-	-	-	-	-	-	-	-	-	-				
29-Apr-11	-	-	-	-	-	-	-	-	-	-				
3-May-11	-	-	-	-	-	-	-	-	-	-				
6-May-11	-	-	-	-	-	-	-	-	-	-				
10-May-11	-	-	-	-	-	-	-	-	-	-				
13-May-11	-	-	-	-	-	-	-	-	-	-				

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- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11	39.4	V	53.8	V	61.7	V	45.5	V	0.5	V				
16-May-11	-	-	-	-	-	-	-	-	-	-				
18-May-11	-	-	-	-	-	-	-	-	-	-				
19-May-11	-	-	-	-	-	-	-	-	-	-				
20-May-11	-	-	-	-	-	-	-	-	-	-				
27-May-11	-	-	-	-	-	-	-	-	-	-				
3-Jun-11	-	-	-	-	-	-	-	-	-	-				
12-Jun-11	25.4	V	15.1	V	10.1	V	12.9	V	0.2	V				
17-Jul-11	0.6	V	Dry	E	Dry	E	5.5	V	0.2	V				
14-Aug-11	0.4	V	Dry	E	Dry	E	1.9	V	0.2	V				
18-Sep-11	0.2	V	Dry	E	Dry	E	1.4	V	0.1	V				
16-Oct-11	12.4	V	3.7	V	4.5	V	2.4	V	0.1	V				
20-Nov-11	13.1	V	2.2	V	2.5	V	1.95	V	0.13	V				
18-Dec-11	36.5	V	Frozen	E	Frozen	V	12.8	V	0.2	V				
15-Jan-12	19.8	V	Frozen	E	Frozen	E	15.5	V	0.4	V				
19-Feb-12	18.6	V	Frozen	E	Frozen	E	10.5	V	0.3	V				
18-Mar-12	64.5	V	97.4	V	65.7	V	46.5	V	1.0	V				
15-Apr-12	16.0	V	4.1	V	3.7	V	11.4	V	0.3	V				
13-May-12	16.5	V	4.8	V	6.8	V	7.3	V	0.2	V				
17-Jun-12	0.8	V	0.8	V	0.4	V	5.9	V	0.2	V				

NOTE:

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- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- (2) indicates measurement taken on October 31, 2003.
- (3) indicates measurement taken on November 9, 2003.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12	0.3	V	0.0	E	0.0	E	2.2	V	0.1	V				
12-Aug-12	25.0	V	0.0	E	0.0	E	1.9	V	0.1	V				
16-Sep-12	5.7	V	2.1	V	0.8	V	3.6	V	0.1	V				
14-Oct-12	9.9	V	1.6	V	2.6	V	3.5	V	0.2	V				
18-Nov-12	44.2	V	21.2	V	10.8	V	10.2	V	0.3	V				
16-Dec-12	36.0	V	15.4	V	24.0	V	19.9	V	0.8	V				
13-Jan-13	33.0	V	43.4	V	52.0	V	30.0	V	0.2	V				
17-Feb-13	23.6	V	-	Frozen	-	Frozen	14.9	V	0.3	V				
17-Mar-13	34.4	V	-	Frozen	-	Frozen	15.4	V	0.3	V				
14-Apr-13	59.6	V	138.1	V	120.2	V	42.9	V	1.3	V				
12-May-13	34.1	V	21.7	V	38.0	V	14.0	V	0.3	V				
16-Jun-13	21.1	V	5.8	V	4.8	V	5.3	V	0.1	V				
14-Jul-13	22.6	V	4.5	V	2.8	V	5.5	V	<0.1	V				
18-Aug-13	9.9	V	0.9	V	0.4	V	6.3	V	<0.1	V				
15-Sep-13	1.3	V	2.5	V	0.5	V	2.0	V	<0.1	E				
13-Oct-13	16.5	V	5.4	V	2.7	V	8.2	V	0.1	V				
17-Nov-13	10.0	V	15.1	V	21.8	V	15.6	V	0.8	V				
15-Dec-13	28.9	V	Frozen	E	Frozen	E	10.8	V	0.4	V				
19-Jan-14	Buried	E	Buried	E	Buried	E	11.0	V	0.3	V				
16-Feb-14	Buried	E	Buried	E	Buried	E	1.4	V	0.1	V				

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- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14	Frozen	E	Frozen	E	Frozen	E	8.5	V	0.2	V				
13-Apr-14	96.3	V	227.8	V	Frozen	E	92.7	V	1.4	V				
11-May-14	26.7	V	22.6	V	17.4	V	40.2	V	0.6	V				
15-Jun-14	5.2	V	10.2	V	13.1	V	25.9	V	0.1	V				
13-Jul-14	8.1	V	5.4	V	6.1	V	4.9	V	<0.1	V				
17-Aug-14	4.9	V	5.4	V	1.8	V	4.1	V	<0.1	V				
7-Sep-14	2.3	V	0.4	V	0.5	V	1.1	V	<0.1	V				
19-Oct-14	15.6	V	1.1	V	4.3	V	4.5	V	<0.1	V				
16-Nov-14	9.5	V	Buried	E	Buried	E	0.4	V	0.1	V				
14-Dec-14	16.8	V	Frozen	E	Frozen	E	3.9	V	Buried	E				
18-Jan-15	Buried	E	Frozen	E	Frozen	E	1.4	V	Buried	E				
15-Feb-15	N/A	E	N/A	E	N/A	E	N/A	E	N/A	E				
15-Mar-15	Buried	E	Buried	E	Buried	E	13.9	M	0.1	V				
19-Apr-15	24.0	V	67.4	V	39.2	V	17.5	V	0.9	V				
17-May-15	7.9	V	3.0	V	4.5	V	3.2	V	0.1	V				
14-Jun-15	13.4	V	8.5	V	8.5	V	3.2	V	1.3	V				
19-Jul-15	4.0	V	7.2	V	1.1	V	0.4	V	0.1	V				
9-Aug-15	3.0	V	1.8	V	0.7	V	2.2	V	0.1	V				
23-Aug-15	-	-	-	-	-	-	-	-	<0.1	V	DRY	E	DRY	E
6-Sep-15	0.3	V	1.1	V	2.2	V	0.9	V	<0.1	V	DRY	E	DRY	E

NOTE:
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- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	0.1	V	Dry	V	Dry	V	1.1	V	<0.1	V	DRY	E	DRY	E
8-Nov-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Nov-15	7.5	V	8.1	V	8.2	V	2.7	V	0.1	V	0.7	V	0.1	V
6-Dec-15	8.6	V	4.3	V	1.8	V	3.0	V	0.1	V	0.9	V	0.3	V
17-Jan-16	32.0	V	Frozen	E	5.8	V	6.3	V	0.3	V	8.3	V	0.8	V
14-Feb-16	31.0	V	Frozen	E	6.7	V	6.0	V	1.0	V	6.5	V	1.5	V
13-Mar-16	68.6	V	125.0	V	128.1	V	28.9	V	2.5	V	16.2	V	6.2	V
17-Apr-16	38.7	V	49.5	V	37.5	V	24.6	V/E	1.4	V	10.5	V	3.3	V
15-May-16	15.6	V	10.1	V	14.7	V	13.5	V	0.7	V	20.3	V	6.2	V
19-Jun-16	1.1	V	0.9	V	0.1	V	2.9	V	0.2	V	0.8	V	0.3	V
3-Jul-16	-	-	-	-	-	-	-	-	0.5	V	-	-	-	-
17-Jul-16	PONDED	E	DRY	E	DRY	E	2.6	V	0.1	V	DRY	E	DRY	E
7-Aug-16	-	-	-	-	-	-	-	-	0.5	E	-	-	-	-
21-Aug-16	DRY	E	DRY	E	DRY	E	2.3	V	0.1	V	DRY	E	DRY	E
18-Sep-16	DRY	E	DRY	E	DRY	E	2.9	V	0.1	V	DRY	E	DRY	E
16-Oct-16	DRY	E	DRY	E	DRY	E	1.5	V	0.1	V	DRY	E	DRY	E
18-Nov-16	0.7	V	2.4	V	0.2	V	2.1	V	0.5	V	DRY	E	DRY	E
12-Dec-16	14.4	V	0.8	V	0.3	V	1.7	V	0.3	V	DRY	E	DRY	E
22-Jan-17	29.9	V	79.2	V	21.1	V	6.2	V	0.4	V	6.0	V	0.7	V
15-Feb-17	13.4	V	Frozen	-	7.1	V	5.3	V	0.9	V	0.9	V	1.8	V
21-Mar-17	34.2	V	54.6	V	18.0	V	21.7	V	0.9	V	1.7	V	2.6	V
19-Apr-17	94.0	V	28.4	V	33.2	V	15.4	V	1.4	V	14.3	V	2.7	V
14-May-17	77.1	V	12.8	V	15.3	V	18.7	V	0.9	V	1.3	V	0.9	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	61.2	V	19.1	V	18.7	V	14.5	V	0.8	V	9.9	V	1.0	V
7-Jul-17	-	-	-	-	-	-	-	-	0.9	V	-	-	-	-
18-Jul-17	25.0	V	10.7	V	8.6	V	5.4	V	0.4	V	11.8	V	0.7	V
27-Jul-17	-	-	-	-	-	-	-	-	0.3	V	-	-	-	-
13-Aug-17	23.1	V	3.2	V	4.4	V	3.8	V	0.3	V	0.5	V	0.5	V
17-Sep-17	9.9	V	1.4	V	3.1	V	3.1	V	0.2	V	0.6	V	<0.1	V
17-Oct-17	20.2	V	18.1	V	12.5	V	3.1	V	0.2	V	5.4	V	0.8	V
14-Nov-17	15.4	V	9.8	V	7.5	V	4.1	V	0.3	V	1.2	V	0.2	V
12-Dec-17	12.2	V	Frozen	V	5.6	V	6.4	V	0.6	V	4.7	V	1.6	V
17-Jan-18	-	-	-	-	-	-	-	-	0.2	V	10.8	V	1.4	V
18-Feb-18	-	-	-	-	-	-	-	-	1.5	V	10.8	V	4.7	V
18-Mar-18	-	-	-	-	-	-	-	-	0.5	V	5.5	V	1.5	V
18-Apr-18	-	-	-	-	-	-	-	-	0.9	V	16.1	V	3.0	V
13-May-18	-	-	-	-	-	-	-	-	1.4	V				
19-Jun-18	-	-	-	-	-	-	-	-					0	V
20-Jun-18	-	-	-	-	-	-	-	-	0.1	V	0.0	V		
4-Jul-18	-	-	-	-	-	-	-	-	0.4	V				
18-Jul-18	-	-	-	-	-	-	-	-					0.0	V
19-Jul-18	-	-	-	-	-	-	-	-	0.2	V	0.0	V		
3-Aug-18	-	-	-	-	-	-	-	-	0.2	V				
23-Aug-18	-	-	-	-	-	-	-	-			0.0	V	0.0	V
24-Aug-18	-	-	-	-	-	-	-	-	0.7	V				
19-Sep-18	-	-	-	-	-	-	-	-			0	V	0	V

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- M indicates manual flow value
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- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Sep-18	-	-	-	-	-	-	-	-	0.2	V				
24-Oct-18	-	-	-	-	-	-	-	-	0.2	V	0	V	0	V
25-Oct-18	-	-	-	-	-	-	-	-						
21-Nov-18	-	-	-	-	-	-	-	-	0	V	0.4	V	0	V
22-Nov-18	-	-	-	-	-	-	-	-						
12-Dec-18	-	-	-	-	-	-	-	-	1.1	V	4.2	V	0.6	V
13-Dec-18	-	-	-	-	-	-	-	-						
18-Jan-19										Frozen	3.4	V		Frozen
19-Jan-19														
26-Feb-19										Frozen		Frozen		Frozen
28-Feb-19														
15-Mar-19									1.4	V	6.6	V	0.0	V
19-Mar-19														
24-Apr-19									0.5	V	18.3	V	1.1	V
25-Apr-19														
23-May-19									1.2	V	4.7	V	1.0	V
27-May-19														
18-Jun-19									1.0	V	3.9	V	0.9	V
21-Jun-19														
29-Jul-19									0.0	V	0.0	V	0.0	V
30-Jul-19														
29-Aug-19									0.0	V		Dry		Dry
30-Aug-19														

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- D indicates doppler flow meter value
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
26-Sep-19									0	V	0	V	0	V
27-Sep-19														
23-Oct-19										dry		Dry		dry
22-Oct-19														
22-Nov-19										Frozen		Frozen		Frozen
21-Nov-19														
20-Dec-19										Frozen		Frozen		Frozen
15-Jan-20										Frozen		Frozen		Frozen
24-Jan-20														
20-Feb-20										Frozen		Frozen		Frozen
21-Feb-20														
26-Mar-20										Frozen	24.5	V		Ponded
25-Mar-20														
27-Apr-20										Dry		Dry	12.7	V
28-Apr-20														
29-May-20									0.3	V	0.0	V	0.0	V
28-May-20														
23-Jun-20									3.9	V	14.9	V	3.1	V
24-Jun-20														
30-Jul-30										n/a		dry		dry
31-Jul-20														
25-Aug-20									2.7	V		dry		dry
26-Aug-20														

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- D indicates doppler flow meter value
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	SW25		SW26		SW26A		SW27		SW77		RR3 OUT		RR3 KARST	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
25-Sep-20									0.2	V		dry		dry
26-Sep-20														
30-Oct-20									0.3	V		dry		no flow
29-Oct-20														
26-Nov-20										snow		snow		frozen
27-Nov-20														
23-Dec-20										frozen		frozen		frozen
22-Dec-20										frozen		frozen		frozen

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- B indicates bucket flow value
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- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
22-May-03				
23-Jun-03				
22-Jul-03				
20-Aug-03				
25-Sep-03				
22-Oct-03				
28-Nov-03				
19-Dec-03				
10-Feb-04				
18-Mar-04				
19-Apr-04				
19-May-04				
24-Jun-04				
29-Jul-04				
23-Aug-04				
21-Sep-04				
21-Oct-04				
17-Nov-04				
15-Dec-04				

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- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.
- (2) indicates measurement taken on October 31, 2003.
- (3) indicates measurement taken on November 9, 2003.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-05				
13-Feb-05				
27-Mar-05				
10-Apr-05				
22-May-05				
26-Jun-05				
10-Jul-05				
21-Aug-05				
25-Sep-05				
23-Oct-05				
13-Nov-05				
11-Dec-05				
15-Jan-06				
19-Feb-06				
19-Mar-06				
16-Apr-06				
21-May-06				
18-Jun-06				
9-Jul-06				

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- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Aug-06				
17-Sep-06				
15-Oct-06				
19-Nov-06				
17-Dec-06				
21-Jan-07				
18-Feb-07				
18-Mar-07				
15-Apr-07				
13-May-07				
17-Jun-07				
15-Jul-07				
19-Aug-07				
16-Sep-07				
14-Oct-07				
18-Nov-07				
9-Dec-07				
20-Jan-08				
17-Feb-08				

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- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-08				
30-Mar-08				
20-Apr-08				
18-May-08				
15-Jun-08				
13-Jul-08				
17-Aug-08				
14-Sep-08				
19-Oct-08				
23-Nov-08				
14-Dec-08				
18-Jan-09				
8-Feb-09				
15-Mar-09				
12-Apr-09				
17-May-09				
14-Jun-09				
12-Jul-09				
9-Aug-09				

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- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
13-Sep-09				
11-Oct-09				
15-Nov-09				
13-Dec-09				
17-Jan-10				
7-Feb-10				
14-Mar-10				
4-Apr-10				
11-Apr-10				
16-May-10				
23-May-10				
13-Jun-10				
18-Jul-10				
15-Aug-10				
12-Sep-10				
17-Oct-10				
14-Nov-10				
19-Dec-10				

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- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Jan-11				
20-Feb-11				
13-Mar-11				
17-Mar-11				
18-Mar-11				
20-Mar-11				
1-Apr-11				
5-Apr-11				
8-Apr-11				
12-Apr-11				
15-Apr-11				
17-Apr-11				
20-Apr-11				
21-Apr-11				
26-Apr-11				
29-Apr-11				
3-May-11				
6-May-11				
10-May-11				
13-May-11				

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- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-May-11				
16-May-11				
18-May-11				
19-May-11				
20-May-11				
27-May-11				
3-Jun-11				
12-Jun-11				
17-Jul-11				
14-Aug-11				
18-Sep-11				
16-Oct-11				
20-Nov-11				
18-Dec-11				
15-Jan-12				
19-Feb-12				
18-Mar-12				
15-Apr-12				
13-May-12				
17-Jun-12				

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- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
15-Jul-12				
12-Aug-12				
16-Sep-12				
14-Oct-12				
18-Nov-12				
16-Dec-12				
13-Jan-13				
17-Feb-13				
17-Mar-13				
14-Apr-13				
12-May-13				
16-Jun-13				
14-Jul-13				
18-Aug-13				
15-Sep-13				
13-Oct-13				
17-Nov-13				
15-Dec-13				
19-Jan-14				
16-Feb-14				

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
16-Mar-14				
13-Apr-14				
11-May-14				
15-Jun-14				
13-Jul-14				
17-Aug-14				
7-Sep-14				
19-Oct-14				
16-Nov-14				
14-Dec-14				
18-Jan-15				
15-Feb-15				
15-Mar-15				
19-Apr-15				
17-May-15				
14-Jun-15				
19-Jul-15				
9-Aug-15				
23-Aug-15	7.4	V	0.4	V
6-Sep-15	8.3	V	7.5	V

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- M indicates manual flow value
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
11-Oct-15	0.2	V	6.0	V
8-Nov-15	-	-	-	-
15-Nov-15	13.3	V	6.4	V
6-Dec-15	9.2	V	1.8	V
17-Jan-16	30.8	V	Frozen	E
14-Feb-16	18.7	V	Frozen	E
13-Mar-16	148.4	V	192.0	V
17-Apr-16	86.0	V	41.5	V
15-May-16	59.4	V	17.3	V
19-Jun-16	25.5	V	1.4	V
3-Jul-16	-	-	-	-
17-Jul-16	11.5	V	0.4	V
7-Aug-16	-	-	-	-
21-Aug-16	6.3	V	0.2	V
18-Sep-16	8.5	V	0.3	V
16-Oct-16	6.1	V	0.2	V
18-Nov-16	11.1	V	0.4	V
12-Dec-16	10.5	V	1.2	V
22-Jan-17	44.6	V	37.3	V
15-Feb-17	18.3	V	Frozen	-
21-Mar-17	40.3	V	14.6	V
19-Apr-17	93.8	V	35.1	V
14-May-17	77.2	V	17.1	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
28-Jun-17	60.3	V	25.1	V
7-Jul-17	-	-	-	-
18-Jul-17	25.9	V	5.3	V
27-Jul-17	-	-	-	-
13-Aug-17	24.8	V	2.3	V
17-Sep-17	9.9	V	1.1	V
17-Oct-17	27.3	V	8.8	V
14-Nov-17	40.1	V	21.4	V
12-Dec-17	37.5	V	11.2	V
17-Jan-18	51.3	V	25.8	V
18-Feb-18	140.9	V	55.0	V
18-Mar-18	57.5	V	Frozen	E
18-Apr-18	89.2	V	44.4	V
13-May-18	50.4	V	18	V
19-Jun-18	38.195	V	1.662	V
20-Jun-18				
4-Jul-18				
18-Jul-18	11.2	V	0.2	V
19-Jul-18				
3-Aug-18				
23-Aug-18	26.5	V	0.8	V
24-Aug-18				
19-Sep-18	25.9	V	0.2	V

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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
20-Sep-18				
24-Oct-18	13	V	0.7	V
25-Oct-18				
21-Nov-18	19.2	V	6.7	V
22-Nov-18				
12-Dec-18	43.8	V	18.7	V
13-Dec-18				
18-Jan-19		Frozen		Frozen
19-Jan-19				
26-Feb-19		Frozen		Frozen
28-Feb-19				
15-Mar-19		frozen		frozen
19-Mar-19				
24-Apr-19	158.2	V	66.5	V
25-Apr-19				
23-May-19	77.8	V	21.0	V
27-May-19				
18-Jun-19	25.2	V	4.4	V
21-Jun-19				
29-Jul-19	10.9	V	1.1	V
30-Jul-19				
29-Aug-19	8.7	V	0.2	V
30-Aug-19				

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- M indicates manual flow value
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- Frozen indicates surface water frozen or snow covered
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
26-Sep-19	13	V	3.1	V
27-Sep-19				
23-Oct-19	12.6	V	0.2	V
22-Oct-19				
22-Nov-19	12.2	V	0.1	V
21-Nov-19				
20-Dec-19	8.7	V		Frozen
15-Jan-20	12.7	V	0.5	V
24-Jan-20				
20-Feb-20		Frozen		Frozen
21-Feb-20				
26-Mar-20		Frozen	44.8	V
25-Mar-20				
27-Apr-20	84	V	34.3	V
28-Apr-20				
29-May-20	13.3	V	7.4	V
28-May-20				
23-Jun-20	79.1	V	3.1	V
24-Jun-20				
30-Jul-30	32.8	V	1.1	V
31-Jul-20				
25-Aug-20	7.3	V	0.5	V
26-Aug-20				

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- B indicates bucket flow value
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- Frozen indicates surface water frozen or snow covered
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TABLE B-3
MONTHLY STATIONS
SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT

111-53312-03 100

DATE	PR CONTROL		BC CONTROL	
	SW Flow (L/s)	Measurement Type	SW Flow (L/s)	Measurement Type
25-Sep-20	6.7	V	0.6	V
26-Sep-20				
30-Oct-20	9	V	2.1	V
29-Oct-20				
26-Nov-20	15.2	V	11.4	V
27-Nov-20				
23-Dec-20	37.9	V	9.9	V
22-Dec-20				

NOTE:

- - indicates measurement not available
- E indicates estimated flow value
- B indicates bucket flow value
- M indicates manual flow value
- V indicates valeport electromagnetic flow meter value
- D indicates doppler flow meter value
- Frozen indicates surface water frozen or snow covered
- <0.1 indicates flow measured to be less than 0.1 L/s, or water present at monitoring location and flow is immeasureable
- 0.0 indicates no flow, surface water location dry.

FIGURE B-7

SURFACE WATER HYDROGRAPH
SW3

FIGURE B-7 (a)

SURFACE WATER ELEVATION (DATALOGGER)
SW3
SURFACE WATER ELEVATION (mASL)
512
512
511
511
510
510
509
509
508
1-Jan-15
15-May-16
27-Sep-17
9-Feb-19
23-Jun-20
DATE
Pressure transducer removed in June 2016 to allow for culvert replacement. SW Station has been dry since, and there has been no opportunity to replace the staff gauge.
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-7 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW3
TEMPERATURE (C)
60
50
40
30
20
10
0
-10
-20
-30
-40
1-Jan-15
20-Jul-15
5-Feb-16
23-Aug-16
11-Mar-17
27-Sep-17
15-Apr-18
1-Nov-18
20-May-19
6-Dec-19
23-Jun-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-8

SURFACE WATER HYDROGRAPH
SW3A

FIGURE B-9

SURFACE WATER HYDROGRAPH
SW4

FIGURE B-10

SURFACE WATER HYDROGRAPH
SW5

FIGURE B-11

SURFACE WATER HYDROGRAPH
SW6

FIGURE B-12

SURFACE WATER HYDROGRAPH
SW6A

FIGURE B-12 (a)

SURFACE WATER ELEVATION (DATALOGGER)
SW6A
SURFACE WATER ELEVATION (mASL)
500.9
500.8
500.7
500.6
500.5
500.4
500.3
500.2
500.1
500.0
499.9
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
1-Dec-19
DATE
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-12 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW6A
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
2-Dec-14
20-Jun-15
6-Jan-16
24-Jul-16
9-Feb-17
28-Aug-17
16-Mar-18
2-Oct-18
20-Apr-19
6-Nov-19
24-May-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement

FIGURE B-13

SURFACE WATER HYDROGRAPH
SW7

FIGURE B-14

SURFACE WATER HYDROGRAPH
SW8

FIGURE B-15

SURFACE WATER HYDROGRAPH
SW9

FIGURE B-15 (a)

SURFACE WATER ELEVATION (DATALOGGER)
SW9
SURFACE WATER ELEVATION (mASL)
510.80
510.60
510.40
510.20
510.00
509.80
509.60
509.40
1-Jan-15
15-May-16
27-Sep-17
9-Feb-19
23-Jun-20
DATE
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-15 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW9
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
1-Jan-15
15-May-16
27-Sep-17
9-Feb-19
23-Jun-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-16

SURFACE WATER HYDROGRAPH
SW10

FIGURE B-17

SURFACE WATER HYDROGRAPH
SW11

FIGURE B-18

SURFACE WATER HYDROGRAPH
SW11A

FIGURE B-19

SURFACE WATER HYDROGRAPH
SW11B

FIGURE B-20

SURFACE WATER HYDROGRAPH
SW11C

FIGURE B-21

SURFACE WATER HYDROGRAPH
SW11D

FIGURE B-22

SURFACE WATER HYDROGRAPH
SW11E

FIGURE B-23

SURFACE WATER HYDROGRAPH
SW12

FIGURE B-24

SURFACE WATER HYDROGRAPH
SW12A

FIGURE B-25

SURFACE WATER HYDROGRAPH
SW13

FIGURE B-26

SURFACE WATER HYDROGRAPH
SW14

FIGURE B-27

SURFACE WATER HYDROGRAPH
SW15

FIGURE B-27 (a)

SURFACE WATER ELEVATION (DATALOGGER)
SW15
SURFACE WATER ELEVATION (mASL)
421.20
421.00
420.80
420.60
420.40
420.20
420.00
419.80
419.60
1-Jan-15
15-May-16
27-Sep-17
9-Feb-19
23-Jun-20
DATE
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-27 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW15
TEMPERATURE (C)
60
50
40
30
20
10
0
-10
-20
-30
-40
1-Jan-15
15-May-16
27-Sep-17
9-Feb-19
23-Jun-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-28

SURFACE WATER HYDROGRAPH
SW16

FIGURE B-28 (a)

SURFACE WATER ELEVATION (DATALOGGER)
SW16
SURFACE WATER ELEVATION (mASL)
415.60
415.50
415.40
415.30
415.20
415.10
415.00
414.90
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
DATE
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-28 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
SW16
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
2-Dec-14
2-Dec-15
1-Dec-16
1-Dec-17
1-Dec-18
1-Dec-19
30-Nov-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-29

SURFACE WATER HYDROGRAPH
SW17

FIGURE B-30

SURFACE WATER HYDROGRAPH
SW17A

FIGURE B-31

SURFACE WATER HYDROGRAPH
SW17B

FIGURE B-32

SURFACE WATER HYDROGRAPH
SW18

FIGURE B-33

SURFACE WATER HYDROGRAPH
SW19

FIGURE B-34

SURFACE WATER HYDROGRAPH
SW20

FIGURE B-35

SURFACE WATER HYDROGRAPH
SW21

FIGURE B-36

SURFACE WATER HYDROGRAPH
SW21A

FIGURE B-37

SURFACE WATER HYDROGRAPH
SW21B

FIGURE B-38

SURFACE WATER HYDROGRAPH
SW21C

FIGURE B-39

SURFACE WATER HYDROGRAPH
SW21D

FIGURE B-40

SURFACE WATER HYDROGRAPH
SW22

FIGURE B-41

SURFACE WATER HYDROGRAPH
SW22A

FIGURE B-42

SURFACE WATER HYDROGRAPH
SW22B

FIGURE B-43

SURFACE WATER HYDROGRAPH
SW22C

FIGURE B-44

SURFACE WATER HYDROGRAPH
SW23

FIGURE B-45

SURFACE WATER HYDROGRAPH
SW24

FIGURE B-46

SURFACE WATER HYDROGRPAH
SW24A

FIGURE B-47

SURFACE WATER HYDROGRAPH
SW24B

FIGURE B-48

SURFACE WATER HYDROGRAPH
SW24C

FIGURE B-49

SURFACE WATER HYDROGRAPH
SW25

FIGURE B-50

SURFACE WATER HYDROGRAPH
SW26

FIGURE B-51

SURFACE WATER HYDROGRAPH
SW26A

FIGURE B-52

SURFACE WATER HYDROGRAPH
SW27

FIGURE B-53

SURFACE WATER HYDROGRAPH
SW77

FIGURE B-54

SURFACE WATER HYDROGRAPH
SW3C "RR3 OUT"

FIGURE B-55

SURFACE WATER HYDROGRAPH
SW3B "RR3 KARST"

FIGURE B-55 (a)

SURFACE WATER ELEVATION (DATALOGGER)
RR3 KARST (SW3B)

FIGURE B-55 (b)

SURFACE WATER TEMPERATURE (DATALOGGER)
RR3 KARST (SW3B)

FIGURE B-56

SURFACE WATER HYDROGRAPH
Pretty River Control

FIGURE B-57

SURFACE WATER HYDROGRAPH
Batteaux Creek Control

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

Flow (L/s)	QFSW 2																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	308.7	436.8	274.4	223.9	593.7	370.2	302.9	328.9	457.5	341.3	244.9	219.4	258.2	160.6	93.8	132.4	94.4
Low	0.0	0.0	0.0	0.0	0.0	18.7	71.9	57.7	59.0	59.9	48.4	44.2	38.0	30.5	28.3	28.6	0.0
Winter Average	-	73.3	190.4	122.7	226.6	135.5	89.7	103.4	100.6	134.6	88.1	55.6	78.8	59.5	55.1	50.7	30.5
Spring Average	182.7	227.0	207.3	114.4	130.1	159.8	166.5	193.9	176.1	170.2	151.9	150.3	150.7	140.3	63.2	91.5	72.6
Summer Average	150.0	290.3	213.4	111.6	191.9	176.3	173.1	120.1	194.1	145.9	140.5	98.9	100.4	75.1	72.3	71.7	43.4
Fall Average	86.1	219.6	159.0	120.4	212.5	200.8	167.7	152.0	149.7	156.2	83.8	90.2	73.1	91.6	44.6	82.8	51.8

Flow (L/s)	SW 1																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	136.1	121.8	162.9	108.9	145.7	109.7	80.3	86.0	136.7	123.1	177.9	83.3	233.3	95.5	128.6	110.3	268.3
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	8.9	0.0	0.0	0.0
Winter Average	63.8	34.6	45.4	53.3	50.5	30.8	39.6	39.9	39.4	50.2	22.9	24.3	26.6	34.3	128.6	-	-
Spring Average	72.5	34.0	58.7	56.9	63.8	67.5	43.6	34.6	29.4	50.5	39.7	17.1	59.4	61.1	39.8	62.1	134.5
Summer Average	22.8	3.3	8.1	7.9	12.7	0.6	7.0	0.6	2.9	8.6	3.2	11.7	5.6	15.0	19.0	0.0	3.6
Fall Average	14.8	26.3	51.5	29.0	35.0	40.1	12.7	31.5	18.8	37.5	26.5	16.2	15.3	35.3	9.1	57.9	-

Flow (L/s)	SW 2																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	58.8	49.9	41.8	41.1	93.3	35.0	68.9	42.0	70.3	57.8	104.1	32.3	93.3	8.5	29.3	32.7	31.9
Low	0.0	0.2	0.0	<0.1	0.6	0.4	2.2	0.9	1.1	2.2	0.1	0.3	0.2	0.6	0.9	0.1	0.1
Winter Average	8.6	13.3	10.8	7.4	24.3	11.9	5.7	11.7	9.5	13.2	5.7	2.1	4.0	2.8	17.8	1.5	0.8
Spring Average	19.3	16.6	16.7	13.0	26.0	15.0	15.2	17.9	13.8	14.8	23.7	7.4	15.4	5.3	5.9	13.6	13.2
Summer Average	3.3	1.4	1.1	1.4	4.5	2.0	6.6	3.6	4.2	3.9	0.9	3.0	1.7	1.5	3.2	0.5	3.3
Fall Average	1.5	1.1	8.9	1.2	18.5	3.5	9.0	7.0	11.7	10.4	3.1	1.3	0.7	1.9	1.4	0.8	1.1

Flow (L/s)	SW 0-2																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	60.8	348.6	238.5	177.2	295.2	185.3	156.8	158.7	529.8	405.3	469.4	99.4	576.7	99.4	280.5	162.7	37.9
Low	0.0	0.0	0.0	0.0	1.7	3.3	1.4	4.4	10.1	25.8	10.1	4.8	1.1	26.8	0.0	0.8	4.7
Winter Average	-	183.7	91.6	Frozen	194.5	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	30.4	94.6	280.5	-	-
Spring Average	7.7	86.3	93.7	73.2	107.4	83.5	64.9	109.5	158.1	101.4	151.2	31.8	114.9	70.5	36.7	86.2	28.1
Summer Average	13.2	0.8	9.7	6.9	28.7	21.9	35.1	17.2	31.0	45.0	17.3	14.1	3.1	34.6	15.1	1.3	16.6
Fall Average	19.9	19.7	46.1	33.0	43.3	27.2	55.1	49.6	63.9	157.1	41.0	32.5	21.5	51.5	6.3	13.8	9.6

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

Flow (L/s)	SW 3																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	14.4	31.4	39.7	4.3	12.9	9.1	26.4	95.3	13.7	18.3	50.5	5.4	48.1	7.7	27.5	19.8	9.6
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.5	0.0	0.0	2.4	0.0	0.0	0.9	0.0	0.0	4.3
Winter Average	Frozen	Frozen	2.4	<0.1	Frozen	Frozen	Frozen	1.7	Frozen	9.8	Frozen	Buried	12.5	0.0	27.5	Frozen	-
Spring Average	4.5	8.0	11.4	1.4	6.1	4.7	8.2	21.0	3.4	7.8	26.5	5.4	20.9	4.7	1.8	8.6	6.3
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	Dry	2.3	0.0	1.1	0.0	0.0	-
Fall Average	0.0	0.0	0.4	0.0	0.0	0.0	0.3	3.7	3.3	3.1	3.0	0.0	0.0	1.6	0.0	0.0	-

Flow (L/s)	SW 3A																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	4.9	7.5	3.8	1.2	9.6	2.8	7.4	2.3	1.6	2.6	9.1	2.1	6.9	1.9	3.2	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Winter Average	Frozen	Frozen	3.8	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Buried	Frozen	0.4	3.2	Frozen	-
Spring Average	2.0	2.8	1.2	0.5	3.3	1.4	1.0	0.8	0.4	1.1	4.8	0.9	2.2	1.5	1.6	0.0	0.0
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.2	0.0	0.1	1.1	0.0	0.3	0.0	0.0	-
Fall Average	0.0	0.0	0.6	0.0	0.3	0.2	0.6	0.9	0.9	0.6	0.4	0.0	0.0	0.8	0.0	0.0	-

Flow (L/s)	SW 4																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	0.0	63.2	0.0	9.1	8.8	4.4	8.1	0.0	2.1	1.3	14.0	0.6	10.1	4.4	206.1	5.7	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	1.1	0.0	0.0	0.2	0.0	0.0	0.0
Winter Average	0.0	63.2	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	0.2	Frozen	Buried	Buried	4.4	206.1	Frozen	-
Spring Average	0.0	0.0	0.0	2.3	2.2	1.4	8.1	0.0	0.0	1.3	14.0	0.6	3.7	0.8	1.5	2.0	0.0
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	Dry	Dry	0.0	0.0	0.0	0.0	-
Fall Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.0	1.1	0.0	0.0	2.8	0.0	0.0	-

Flow (L/s)	SW 5																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	246.5	742.4	389.2	281.9	525.3	491.0	662.8	368.0	486.3	384.3	1,082.8	250.6	567.6	224.3	669.2	461.4	211.0
Low	8.5	1.0	<0.1	0.0	7.3	9.4	12.5	7.9	2.1	30.9	22.1	7.2	13.5	18.0	0.0	5.1	14.2
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	361.4	Frozen	Frozen	Frozen	384.3	Frozen	Frozen	Frozen	0.0	669.2	Frozen	-
Spring Average	154.7	248.7	208.1	151.3	206.0	217.4	279.3	243.5	184.8	244.3	417.5	147.5	237.8	183.9	106.8	258.3	135.4
Summer Average	14.5	10.0	3.6	3.2	63.0	40.7	74.9	28.4	49.6	34.7	36.1	44.0	17.7	52.6	2.9	14.3	14.2
Fall Average	17.9	5.9	118.8	70.8	147.3	65.3	142.6	96.8	121.4	116.6	22.1	45.0	34.5	77.3	7.8	11.8	-

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

Flow (L/s)	SW 6																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	371.1	1,376.5	366.7	286.4	1,637.1	675.0	810.2	515.8	735.1	653.3	1,833.9	389.3	914.5	389.9	240.6	842.9	516.5
Low	7.0	12.3	<0.1	0.0	28.9	6.2	21.1	9.7	16.7	12.9	40.1	7.3	14.5	54.2	0.0	7.9	17.8
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	0.0	0.0	Frozen	-
Spring Average	221.7	541.0	194.9	146.7	562.4	329.7	334.3	367.5	244.1	290.4	717.5	234.0	363.7	292.0	127.3	400.0	237.4
Summer Average	15.5	25.9	1.6	0.0	90.5	56.4	88.8	18.7	48.7	36.1	63.8	63.0	19.2	95.3	7.8	16.9	45.9
Fall Average	19.8	16.1	140.7	42.6	44.9	50.7	134.8	62.8	107.7	108.5	40.1	61.8	27.6	136.3	11.2	10.0	19.4

Flow (L/s)	SW 6A																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	606.6	1,671.0	966.1	574.2	964.1	1,095.0	1,499.6	962.9	981.3	901.3	1,147.5	535.0	951.7	487.2	1,793.4	985.0	563.3
Low	24.9	14.7	32.0	14.2	56.2	44.4	89.1	42.5	48.1	63.0	61.0	21.7	30.9	100.2	26.9	38.2	66.5
Winter Average	Frozen	Frozen	133.0	Frozen	883.4	403.5	124.0	362.0	169.8	374.2	Frozen	Frozen	227.6	251.9	1,087.7	211.4	-
Spring Average	389.3	575.1	506.6	332.3	441.8	506.8	572.5	584.7	357.8	478.1	558.2	290.2	437.7	405.9	335.5	490.5	340.4
Summer Average	55.6	51.8	41.3	31.3	74.0	106.8	161.0	64.5	84.7	101.5	88.4	89.1	39.0	161.9	369.5	43.2	134.5
Fall Average	55.7	81.9	264.8	85.5	317.3	141.9	205.8	157.2	195.9	271.9	242.8	77.8	50.1	204.6	119.8	69.1	67.7

Flow (L/s)	SW 7																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	1.0	<0.1	0.5	1.4	2.8	0.9	1.1	3.7	0.9	1.3	0.3	0.4	2.9	6.3	1.1	3.4	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.8	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Buried	Buried	0.0	1.1	Frozen	-
Spring Average	0.6	<0.1	0.2	0.6	0.9	0.6	0.6	2.8	0.2	0.5	0.3	0.4	2.1	2.4	0.4	1.2	-
Summer Average	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Dry	0.0	0.0	0.0	0.0	0.0	-
Fall Average	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Buried	0.0	0.0	0.0	0.0	0.0	-

Flow (L/s)	SW 8																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	0.5	<0.1	0.3	1.0	0.3	2.4	0.1	0.7	0.1	0.1	0.1	0.2	0.3	0.0	0.4	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	0.0	Frozen	Buried	Buried	0.0	0.4	Frozen	-
Spring Average	0.3	<0.1	<0.1	0.4	<0.1	0.8	0.1	0.6	0.0	0.1	0.1	0.2	0.3	0.0	0.0	0.0	-
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Dry	0.0	0.0	0.0	0.0	0.0	-
Fall Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Buried	0.0	0.0	0.0	0.0	0.0	-

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW 9																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	7.0	41.7	15.3	7.2	12.5	17.2	25.4	45.3	12.2	24.4	58.0	7.7	30.7	20.1	20.1	5.9	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.2	0.0	0.0	1.5	0.8	5.5	0.2	0.0	0.0	0.0
Winter Average	2.1	Frozen	5.5	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	5.1	Frozen	Buried	Buried	4.0	17.9	Frozen	-
Spring Average	3.6	11.7	5.8	3.1	3.9	5.9	8.9	20.1	4.2	12.3	32.2	7.7	14.9	8.7	10.1	2.8	0.0
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	Dry	0.8	0.0	0.0	0.0	0.0	0.0
Fall Average	0.0	0.0	2.1	0.0	0.0	0.0	1.3	0.0	3.4	0.0	1.5	0.0	0.0	0.2	0.2	0.0	-

Flow (L/s)	SW 10																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	1.1	3.2	3.8	1.7	2.8	1.8	2.0	2.2	1.2	4.6	6.7	0.4	3.5	1.7	4.9	4.0	1.7
Low	0.0	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.1	0.0	0.1	0.2	<0.1	<0.1	0.2	0.0	0.0	0.3
Winter Average	0.3	Frozen	2.7	Frozen	Frozen	1.8	Frozen	0.4	0.5	0.8	Buried	Buried	0.6	1.1	3.0	Frozen	-
Spring Average	0.4	0.9	1.5	0.7	0.9	0.7	0.9	0.8	0.6	0.6	2.5	0.2	1.2	1.4	0.5	1.8	1.7
Summer Average	<0.1	<0.1	0.2	<0.1	0.2	0.1	0.2	0.1	0.3	0.1	<0.1	0.2	0.2	0.4	0.1	0.1	0.3
Fall Average	<0.1	0.2	0.7	0.2	0.6	0.2	0.8	1.0	0.2	2.7	Buried	0.3	0.4	0.4	0.3	0.2	-

Flow (L/s)	SW 11																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	27.4	62.1	29.2	35.0	100.8	51.1	19.5	41.7	22.7	42.8	47.5	25.7	51.9	33.4	39.5	43.1	14.7
Low	0.2	0.8	1.0	0.4	0.8	0.8	0.2	0.1	1.1	0.5	0.3	0.3	0.4	1.3	0.9	0.7	0.0
Winter Average	6.7	Frozen	20.2	35.0	44.5	31.1	1.3	7.5	11.0	19.8	Buried	0.3	6.7	10.7	28.9	8.2	5.7
Spring Average	16.2	23.5	16.3	13.4	32.3	19.6	12.1	15.8	8.2	20.5	23.6	10.8	23.2	24.3	14.3	20.4	5.5
Summer Average	1.1	0.9	1.7	0.7	5.2	0.8	2.6	0.5	1.4	1.1	0.8	3.2	1.1	2.6	1.6	1.1	1.9
Fall Average	3.5	2.2	12.9	1.5	8.6	1.5	9.4	5.3	5.8	4.4	2.6	1.1	1.3	6.2	2.9	4.6	6.3

Flow (L/s)	SW 11A																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	12.2	15.0	11.4	15.0	4.3	5.3	2.3	8.2	5.1	5.1	2.6	1.5	3.5	4.7	3.6	2.4	8.4
Low	<0.1	0.0	0.3	0.0	<0.1	<0.1	0.2	0.2	0.0	0.1	0.5	<0.1	<0.1	0.1	0.0	0.0	0.0
Winter Average	1.5	Frozen	7.6	15.0	2.7	3.3	0.2	0.5	Frozen	0.9	Buried	Buried	1.2	2.4	2.0	0.6	-
Spring Average	4.3	8.3	5.1	3.7	1.5	2.2	1.0	2.5	1.9	1.4	1.5	0.6	1.2	0.6	0.5	1.4	0.5
Summer Average	0.2	0.4	0.4	0.0	0.6	0.1	1.5	0.1	0.1	<0.1	<0.1	0.3	0.1	0.2	0.0	0.0	0.3
Fall Average	<0.1	0.2	3.4	0.8	1.4	0.3	0.8	0.5	0.7	0.4	0.6	0.2	0.1	0.3	0.1	0.0	8.4

NOTE:

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TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW 11B																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	5.8	10.0	7.0	4.9	11.1	10.8	15.0	12.8	5.1	12.5	10.9	2.7	2.4	3.8	2.7	3.8	1.4
Low	<0.1	<0.1	0.5	0.0	0.2	<0.1	0.4	0.3	0.4	0.5	0.1	<0.1	<0.1	0.3	0.1	0.0	0.0
Winter Average	0.8	Frozen	6.3	4.0	6.0	6.8	2.5	4.0	Frozen	3.6	Buried	Buried	2.2	2.8	2.2	1.2	-
Spring Average	1.9	5.8	2.6	2.4	6.5	6.6	7.1	7.1	1.8	4.2	6.9	1.4	1.7	1.5	1.0	1.8	0.7
Summer Average	0.6	1.0	1.0	0.2	0.7	0.4	3.0	0.3	0.4	<0.1	<0.1	0.3	0.4	1.4	0.3	0.2	0.2
Fall Average	0.1	0.9	3.5	0.2	3.3	0.8	4.1	2.2	1.2	2.5	0.1	0.5	0.8	1.1	0.4	0.0	1.3

Flow (L/s)	SW 11C																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	1.8	8.0	9.7	3.0	10.7	7.5	4.4	6.5	1.3	4.8	23.9	2.9	5.1	2.0	7.8	2.8	0.4
Low	0.0	0.0	0.0	0.0	0.5	0.5	0.3	0.1	0.1	0.2	0.4	<0.1	0.1	0.1	0.1	0.0	0.0
Winter Average	0.5	Frozen	9.7	3.0	4.9	4.0	0.8	1.6	Frozen	0.9	Buried	Buried	0.9	1.0	4.3	1.8	-
Spring Average	0.8	3.4	1.5	1.4	3.5	3.5	1.9	2.9	0.5	1.7	10.0	1.5	2.9	1.1	1.1	1.4	0.2
Summer Average	0.0	0.0	0.0	0.7	0.9	1.1	0.8	0.2	0.2	<0.1	<0.1	0.3	0.3	0.4	0.3	0.2	0.2
Fall Average	0.0	0.0	2.3	1.3	4.6	0.8	1.8	0.7	0.8	0.6	0.4	0.4	0.3	0.6	0.2	0.0	0.2

Flow (L/s)	SW 11D																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	8.4	10.0	9.8	15.0	14.5	3.4	0.6	3.3	4.6	4.3	8.0	2.5	12.9	20.7	19.9	9.9	7.9
Low	<0.1	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.2	<0.1	0.1	0.2	0.0	0.0	0.0
Winter Average	0.8	Frozen	9.8	15.0	11.3	0.9	Frozen	Frozen	Frozen	0.9	Buried	Buried	3.5	6.8	12.5	2.3	-
Spring Average	4.1	4.6	4.2	1.8	4.1	1.9	0.5	1.4	1.6	1.3	3.8	0.7	7.4	12.1	4.3	4.3	1.4
Summer Average	0.4	0.6	0.4	0.2	0.0	0.0	0.3	0.0	0.0	<0.1	<0.1	0.8	0.3	0.8	0.5	0.2	0.4
Fall Average	<0.1	0.5	2.7	0.4	2.2	0.0	0.4	0.3	0.2	1.0	0.3	0.2	0.2	1.0	0.5	0.0	4.3

Flow (L/s)	SW 11E																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	22.0	61.0	30.4	59.3	65.4	109.7	57.5	48.3	47.7	47.4	51.4	28.9	77.0	32.0	52.6	78.3	25.5
Low	0.2	0.9	1.9	0.3	0.2	0.2	0.6	0.1	0.4	0.9	0.2	0.3	1.0	1.8	0.3	1.0	0.0
Winter Average	3.5	Frozen	22.4	21.6	13.9	25.0	2.3	3.8	17.6	29.1	6.7	19.2	6.1	13.0	37.3	5.9	8.5
Spring Average	10.8	27.6	24.1	23.2	31.7	46.3	26.8	26.7	16.1	22.5	20.2	24.7	35.2	20.1	19.4	27.5	6.8
Summer Average	0.4	2.6	2.5	2.2	2.8	0.6	7.7	0.7	5.0	1.4	1.2	10.9	1.6	4.3	0.8	3.3	2.3
Fall Average	0.5	1.6	15.2	1.4	18.5	1.8	14.4	20.2	9.8	12.8	8.8	1.8	1.5	5.6	4.3	5.0	13.5

NOTE:

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TABLE B-4
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Flow (L/s)	SW 12																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	11.4	16.1	5.6	8.0	17.2	26.4	14.3	15.2	5.8	11.3	17.0	9.8	50.4	6.2	18.6	17.5	5.9
Low	0.2	0.2	0.2	<0.1	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.5	0.0	0.0	0.0
Winter Average	1.7	Frozen	5.6	8.0	3.0	26.4	0.6	Frozen	1.4	5.2	Buried	0.2	3.5	3.7	11.9	17.5	-
Spring Average	4.8	5.0	2.7	3.2	5.8	6.5	4.8	5.1	1.8	4.5	6.8	5.2	14.9	2.8	2.4	2.0	1.6
Summer Average	0.4	0.4	0.5	1.1	0.5	0.2	1.1	0.1	0.7	0.2	0.1	1.0	0.3	0.8	0.3	0.0	0.6
Fall Average	0.2	0.7	2.5	0.3	2.5	0.5	4.1	5.9	1.1	1.2	0.9	0.7	0.2	1.4	0.3	0.0	3.0

Flow (L/s)	SW 12A																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	4.4	6.7	0.9	0.8	9.7	16.5	2.5	5.2	1.7	2.3	5.3	3.3	23.6	3.0	4.8	0.0	0.0
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.9	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	3.8	Frozen	Frozen	Frozen	1.7	Buried	Buried	Buried	0.8	4.8	Frozen	-
Spring Average	2.2	2.9	0.3	0.4	1.6	4.4	0.8	2.4	0.9	1.0	2.9	3.3	8.3	1.1	0.9	0.0	-
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.2	0.0	Dry	0.0	0.4	0.0	0.0	0.0	-
Fall Average	0.0	0.0	0.3	0.0	3.6	0.0	2.3	4.4	0.2	1.0	0.2	0.0	0.0	0.0	0.0	0.0	-

Flow (L/s)	SW 13																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	30.0	80.0	37.4	48.0	107.8	142.7	125.8	131.0	71.8	131.3	108.5	28.7	166.1	51.6	76.9	16.5	53.6
Low	0.6	0.0	0.8	0.2	3.3	1.3	2.1	0.6	2.4	0.9	0.1	0.6	0.3	3.6	0.4	0.0	0.0
Winter Average	10.0	Frozen	19.6	48.0	35.3	142.7	Frozen	Frozen	17.1	111.9	Buried	7.9	Frozen	26.9	51.8	Frozen	-
Spring Average	13.9	37.0	21.1	15.0	55.0	52.0	54.0	53.3	24.8	46.8	41.9	16.1	67.0	25.5	23.5	6.8	6.0
Summer Average	1.8	2.0	1.4	2.3	5.8	7.8	12.2	2.8	6.5	3.0	2.6	7.7	3.2	8.5	1.5	2.5	-
Fall Average	1.0	5.6	22.0	0.9	37.3	5.9	36.7	59.8	10.4	16.6	8.6	6.0	1.4	12.4	6.9	1.7	38.4

Flow (L/s)	SW 14																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	49.0	70.7	25.1	14.3	67.1	44.7	100.6	98.4	37.9	66.5	108.6	16.4	175.4	46.1	101.6	189.8	81.6
Low	<0.1	1.1	0.4	0.3	0.6	0.5	0.8	0.5	1.2	0.9	0.6	0.4	1.2	5.8	0.0	2.3	7.2
Winter Average	3.0	Frozen	15.6	Frozen	12.6	Frozen	Frozen	Frozen	Frozen	35.7	Buried	Buried	11.5	39.6	65.5	Frozen	-
Spring Average	27.8	21.6	13.7	6.7	31.7	26.6	43.1	35.3	14.7	32.1	46.7	11.6	67.9	33.2	25.5	64.9	50.6
Summer Average	0.9	1.5	1.7	1.0	4.6	2.1	15.7	0.7	4.4	5.1	1.6	5.1	2.4	7.5	2.0	3.3	7.2
Fall Average	1.5	4.5	11.1	3.6	25.9	3.6	11.1	41.6	16.1	15.6	0.8	2.3	2.6	15.6	3.5	2.9	38.2

NOTE:

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TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW 15																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	1.9	5.3	5.7	2.2	34.5	5.4	15.9	5.9	1.5	6.8	6.7	2.5	5.3	3.8	3.5	31.8	27.1
Low	<0.1	0.2	1.0	0.4	0.0	<0.1	0.5	0.1	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.0
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	6.8	Buried	Buried	1.1	3.8	3.5	Frozen	-
Spring Average	1.6	3.0	3.9	1.9	9.2	2.6	4.4	2.1	0.8	1.3	3.6	1.8	2.4	1.6	1.8	8.3	9.6
Summer Average	0.7	1.0	1.6	0.7	0.2	0.1	0.7	0.0	0.2	0.0	1.7	0.6	0.3	0.4	0.0	0.0	0.5
Fall Average	1.1	2.1	1.5	0.8	0.5	0.4	0.6	0.5	0.8	0.9	0.6	0.5	1.0	1.6	0.7	0.0	2.1

Flow (L/s)	SW 16																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	40.4	27.0	13.0	10.5	167.3	12.1	26.0	17.4	15.7	100.4	17.2	5.0	28.5	12.2	22.1	84.1	29.9
Low	<0.1	0.0	0.0	0.0	0.4	0.0	0.2	1.8	0.5	0.9	0.2	0.3	0.2	0.8	0.8	0.0	0.4
Winter Average	Frozen	Frozen	13.0	Frozen	28.1	9.7	Frozen	6.1	6.5	21.8	Buried	Buried	5.1	6.2	17.8	Frozen	-
Spring Average	11.6	8.8	5.3	4.3	44.7	7.3	10.2	9.0	6.9	34.3	9.5	1.3	13.5	6.6	10.0	24.5	18.2
Summer Average	0.7	0.2	0.0	0.0	0.6	0.2	4.0	3.6	2.3	1.2	3.0	1.3	1.1	1.5	1.7	1.7	1.4
Fall Average	1.3	0.2	6.7	0.1	3.9	2.6	1.2	4.1	4.1	5.0	1.3	2.3	2.2	5.3	3.4	0.2	5.2

Flow (L/s)	SW 17																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	13.3	17.5	24.5	28.7	7.6	6.6	6.9	7.8	11.0	8.0	7.3	3.5	57.3	19.6	31.2	32.1	42.3
Low	0.4	0.2	1.0	<0.1	0.2	0.5	0.9	0.3	0.2	0.3	0.6	0.6	0.6	0.6	0.4	0.5	1.1
Winter Average	1.9	Frozen	3.7	2.4	4.5	1.8	0.9	4.1	3.8	8.0	Buried	Buried	3.0	3.8	18.0	4.1	5.1
Spring Average	6.0	7.2	12.1	10.3	3.7	4.3	4.9	3.9	3.7	2.4	5.4	3.1	16.5	11.4	8.9	13.5	19.1
Summer Average	0.5	0.6	1.9	0.2	1.5	1.1	2.1	0.7	1.3	0.8	0.8	1.1	1.1	1.1	0.9	0.9	4.5
Fall Average	0.9	0.6	4.2	0.5	3.4	2.1	2.4	2.2	1.7	3.9	2.0	1.5	0.8	4.6	10.2	2.3	4.2

Flow (L/s)	SW 17A																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	72.4	68.6	48.8	34.7	65.8	35.4	26.8	48.3	53.6	58.7	123.5	32.8	64.3	55.3	70.5	145.4	17.0
Low	2.9	2.9	3.3	0.9	2.4	1.1	0.6	0.5	1.7	2.6	2.2	1.2	1.8	7.0	2.4	2.1	1.1
Winter Average	9.2	Frozen	17.3	15.5	28.5	25.9	1.6	12.0	15.0	20.2	Buried	4.9	8.6	17.7	47.0	16.3	2.4
Spring Average	29.8	28.3	27.9	24.3	26.7	14.1	16.3	29.0	21.5	32.0	54.7	18.5	32.2	39.5	31.1	52.2	12.2
Summer Average	4.1	4.8	5.0	1.7	4.7	6.3	5.3	2.1	2.3	3.9	7.6	5.5	4.6	11.5	6.6	3.5	3.8
Fall Average	4.3	6.1	13.5	2.4	14.3	3.2	5.7	3.4	10.0	9.5	5.4	2.3	3.8	11.0	9.2	3.2	10.7

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW 17B																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	0.2	18.6	11.2	9.4	23.5	8.4	3.9	8.2	3.1	6.1	3.4	6.4	14.6	7.7	33.2	46.6	39.4
Low	0.2	0.5	<0.1	<0.1	<0.1	0.1	0.3	0.1	0.1	0.1	0.2	0.1	0.1	0.3	0.2	0.0	0.2
Winter Average	-	Frozen	3.9	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	1.3	Buried	Buried	2.0	6.0	21.1	2.7	-
Spring Average	-	9.7	7.1	4.6	7.6	3.6	2.2	5.1	1.2	2.6	1.7	3.5	6.1	3.6	3.6	13.4	12.1
Summer Average	-	0.8	0.8	0.2	0.4	0.2	0.9	0.1	0.2	0.3	0.9	0.7	0.3	0.5	0.4	0.2	0.9
Fall Average	0.2	1.4	1.3	0.4	1.9	0.4	1.0	1.0	0.9	2.0	1.3	0.6	0.6	1.5	0.9	0.4	3.6

Flow (L/s)	SW 18																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	123.6	207.2	80.7	102.5	178.3	203.8	332.6	243.0	95.4	166.7	261.7	99.4	218.8	79.0	160.6	61.9	147.3
Low	3.8	4.4	3.5	3.3	11.7	4.6	2.4	3.0	3.8	3.3	2.3	2.5	3.6	10.5	0.0	0.9	7.0
Winter Average	47.9	Frozen	20.8	Frozen	56.6	73.7	Frozen	Frozen	15.5	78.1	Buried	Frozen	39.5	76.8	110.2	Frozen	-
Spring Average	56.0	82.1	53.9	51.2	92.2	112.4	151.7	122.8	41.3	73.4	119.2	69.7	108.1	69.2	78.5	48.1	69.6
Summer Average	6.7	5.8	9.2	5.6	19.3	11.7	23.7	6.0	13.4	9.4	18.6	11.3	4.9	17.6	4.3	7.4	17.2
Fall Average	4.3	6.9	36.3	16.0	57.6	13.3	20.4	18.4	39.5	41.4	38.7	13.1	10.7	26.6	10.5	1.7	11.8

Flow (L/s)	SW 19																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	507.9	700.0	429.2	408.9	1,019.2	1,522.2	1,785.5	1,452.8	426.3	1,180.9	1,825.7	556.5	514.8	440.5	598.0	188.8	201.1
Low	9.3	8.1	3.8	5.3	31.0	6.7	26.4	14.5	14.4	21.3	31.5	17.4	9.4	32.1	8.6	0.0	20.6
Winter Average	71.6	Frozen	201.8	79.9	631.2	Frozen	227.8	361.0	178.0	447.7	Frozen	Frozen	395.1	285.8	366.3	Frozen	-
Spring Average	224.7	260.1	209.9	258.3	316.6	645.7	688.3	724.9	164.8	455.9	777.5	347.7	318.6	283.1	291.1	90.3	163.7
Summer Average	15.6	9.0	11.3	9.4	102.8	42.1	54.7	21.8	59.3	62.9	103.3	117.7	19.0	55.2	23.8	6.0	31.4
Fall Average	42.9	17.4	119.4	119.0	275.9	136.8	427.7	155.6	197.8	172.4	117.1	61.9	23.2	119.1	77.6	10.5	28.2

Flow (L/s)	SW 20																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	18.9	19.3	11.2	19.0	24.5	29.3	14.0	21.3	8.8	11.8	17.1	12.7	27.0	14.8	17.4	28.9	10.3
Low	0.0	0.0	0.3	0.0	0.6	0.2	0.7	0.3	0.3	0.4	0.1	0.1	0.2	1.1	0.1	0.0	0.9
Winter Average	2.0	Frozen	3.4	5.2	16.5	14.6	5.3	8.6	2.1	5.5	6.8	3.6	2.9	3.4	11.7	4.2	-
Spring Average	7.4	9.0	7.7	9.8	11.2	11.8	8.8	12.0	3.7	6.0	7.6	6.6	14.4	10.6	5.5	12.9	6.9
Summer Average	0.9	0.4	1.2	1.4	1.4	1.5	3.8	1.1	0.6	1.2	0.5	2.1	0.7	2.1	0.5	0.5	1.2
Fall Average	0.0	0.0	3.9	0.0	6.5	1.7	2.9	1.2	3.6	5.1	2.1	0.5	0.4	2.0	2.5	0.0	1.4

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW 21																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	2.1	3.9	12.1	4.3	68.8	8.1	7.3	3.6	1.6	4.7	4.9	1.5	2.4	4.5	3.5	1.8	6.1
Low	0.2	0.8	1.0	0.7	<0.1	0.2	0.2	0.1	0.0	0.1	0.1	<0.1	<0.1	0.9	0.0	0.2	0.0
Winter Average	0.9	Frozen	12.1	Frozen	1.1	1.5	0.2	0.1	Frozen	1.3	Buried	Buried	2.2	3.7	2.6	Frozen	-
Spring Average	1.4	2.0	3.0	1.8	15.5	1.9	2.8	2.1	0.5	0.9	2.6	1.5	2.0	3.2	2.2	1.4	0.0
Summer Average	1.1	1.7	3.0	1.9	0.5	3.2	1.1	0.0	0.3	0.2	0.1	7.0	0.5	1.1	0.1	0.2	-
Fall Average	1.0	1.7	2.4	2.5	1.6	1.2	1.0	0.6	0.6	2.6	0.5	0.5	1.3	2.1	0.4	0.7	2.3

Flow (L/s)	SW 21A																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	1.8	5.8	9.8	2.5	1.7	0.8	0.9	1.1	2.5	1.7	1.1	0.2	2.8	3.2	2.4	3.4	6.5
Low	0.0	<0.1	0.5	0.2	<0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.4	0.1	0.0	0.0
Winter Average	Frozen	Frozen	9.8	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	1.7	Buried	Buried	Frozen	1.8	2.4	Frozen	-
Spring Average	0.8	1.8	3.1	1.6	0.7	0.3	0.6	0.6	0.7	0.6	0.6	0.2	0.3	1.7	1.0	0.9	0.0
Summer Average	0.6	1.2	3.5	1.7	<0.1	0.1	0.2	0.1	0.1	0.0	<0.1	0.0	0.8	0.9	0.5	1.2	-
Fall Average	0.4	2.6	1.8	0.8	0.6	0.2	0.6	0.1	0.3	0.3	0.1	0.0	2.5	1.5	0.4	2.6	3.8

Flow (L/s)	SW 21B																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	4.7	6.0	5.6	6.0	7.8	1.0	1.4	1.4	1.2	0.9	0.4	0.3	3.8	6.2	1.2	1.9	0.0
Low	<0.1	0.0	0.7	1.2	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.3	0.0	0.0	0.0
Winter Average	3.0	Frozen	0.7	3.6	4.1	Frozen	Frozen	Frozen	Frozen	Frozen	Buried	Buried	Buried	6.2	0.0	Frozen	-
Spring Average	1.6	2.9	3.4	4.2	1.3	0.2	0.8	1.0	0.6	0.9	0.2	<0.1	0.1	1.2	1.2	0.0	0.0
Summer Average	2.0	3.8	1.2	1.4	0.3	0.5	0.5	0.2	0.1	0.1	0.2	0.2	1.6	0.7	0.2	1.3	-
Fall Average	2.8	2.3	1.9	3.3	1.2	0.6	0.4	0.2	0.3	0.1	<0.1	0.1	1.9	1.1	0.1	0.9	-

Flow (L/s)	SW 21C																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	4.8	16.6	6.4	11.4	23.4	7.4	6.2	5.4	4.5	8.5	14.5	5.6	8.1	7.2	9.0	17.1	4.4
Low	<0.1	1.2	1.7	0.3	0.7	0.4	0.5	0.5	0.9	0.6	0.5	0.6	0.3	1.1	1.2	0.0	0.0
Winter Average	2.0	Frozen	2.8	2.9	5.2	3.7	0.6	3.0	2.2	8.5	Buried	0.9	2.0	4.6	8.2	6.0	2.7
Spring Average	3.6	6.6	4.4	6.2	8.6	4.2	3.6	3.5	2.6	5.0	6.5	3.1	4.9	3.8	5.9	10.1	2.9
Summer Average	0.7	2.8	3.2	0.6	2.9	1.9	2.1	1.1	1.2	1.6	0.9	3.2	1.4	5.6	2.7	1.8	2.2
Fall Average	1.0	1.3	3.6	2.1	5.0	1.3	3.3	1.4	1.9	3.5	1.5	0.8	2.6	3.0	2.5	0.0	2.8

NOTE:
- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW 21D																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	1.4	<0.1	0.6	<0.1	1.0	0.2	0.5	0.5	1.2	1.6	1.1	1.0	1.4	0.5	1.3	6.7	0.6
Low	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Winter Average	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen	0.1	Buried	Buried	Frozen	0.0	0.8	Frozen	-
Spring Average	0.5	<0.1	0.2	<0.1	0.3	0.1	0.2	0.4	0.3	0.6	0.2	0.7	0.8	0.3	0.6	1.7	0.3
Summer Average	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	-
Fall Average	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.9	0.0	0.0	0.1	0.0	0.0	-

Flow (L/s)	SW 22																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	8.4	9.5	10.9	7.7	7.9	3.9	9.5	12.8	22.6	7.9	24.8	4.6	20.8	16.6	11.9	42.7	6.4
Low	0.3	0.3	0.5	0.2	0.6	0.3	0.9	0.3	0.8	0.4	0.1	0.3	0.2	0.8	0.2	0.5	0.7
Winter Average	2.1	Frozen	10.4	2.9	5.1	1.7	1.1	3.9	1.5	3.9	0.7	3.7	1.7	2.0	6.8	2.4	-
Spring Average	4.6	4.4	6.8	4.9	4.6	3.2	7.4	7.5	7.4	3.6	7.0	2.6	11.9	8.2	6.7	9.1	3.8
Summer Average	0.8	1.0	0.9	1.5	2.6	0.4	2.5	1.2	1.2	0.5	0.2	0.8	1.2	2.1	0.8	15.7	0.9
Fall Average	0.4	0.3	2.2	0.6	1.2	1.3	2.8	2.0	2.0	1.6	2.5	0.3	0.4	2.1	1.0	2.6	3.2

Flow (L/s)	SW 22A																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	3.0	4.9	6.0	6.8	2.9	3.2	5.0	2.7	5.1	5.0	2.5	2.5	11.9	12.8	5.2	7.8	34.1
Low	<0.1	0.2	0.5	<0.1	0.3	<0.1	0.6	0.2	0.3	0.2	0.1	0.2	0.1	0.6	0.1	0.3	1.1
Winter Average	2.5	Frozen	3.8	4.2	1.4	2.0	0.7	0.8	3.0	1.7	Buried	0.9	1.7	2.3	4.0	7.8	-
Spring Average	2.0	2.4	3.1	3.2	1.9	2.0	2.5	2.0	1.8	2.3	1.5	1.6	4.9	4.2	2.1	3.8	13.0
Summer Average	0.2	0.8	0.9	1.5	0.7	0.5	0.9	0.3	0.7	0.3	0.1	0.5	0.5	0.9	1.1	0.7	1.1
Fall Average	0.2	0.3	1.3	0.5	0.9	1.5	1.0	0.7	0.9	2.8	1.4	0.9	1.0	2.4	0.7	1.1	2.8

Flow (L/s)	SW 22C																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	-	-	-	11.5	17.6	26.9	20.8	21.2	8.6	15.9	16.5	16.2	29.5	13.5	19.4	24.7	10.0
Low	-	-	-	1.6	2.6	0.7	0.3	1.4	1.3	0.0	0.6	1.2	0.9	2.8	1.8	2.4	0.8
Winter Average	-	-	-	Frozen	9.8	8.6	1.0	6.3	5.2	9.4	1.0	16.2	6.2	8.0	12.3	4.0	-
Spring Average	-	-	-	9.7	8.5	14.4	10.4	13.3	3.5	6.4	11.2	6.4	13.2	10.4	5.6	13.4	6.3
Summer Average	-	-	-	2.4	3.7	1.2	5.9	1.8	2.7	0.9	0.9	2.0	1.6	5.4	2.1	3.2	0.9
Fall Average	-	-	-	3.3	6.7	2.7	7.1	4.0	4.9	4.8	3.1	2.6	4.4	6.2	3.0	3.0	1.6

NOTE:
- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
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Flow (L/s)	SW 24																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	6.3	17.8	5.3	2.0	34.6	7.8	10.8	5.8	6.4	16.3	11.9	3.2	18.2	6.7	8.7	11.3	12.5
Low	0.0	0.0	0.0	0.0	0.3	0.1	0.2	0.3	0.3	0.2	0.1	0.1	0.2	0.3	0.2	0.0	0.3
Winter Average	0.8	Frozen	5.3	0.6	11.0	2.4	2.7	1.9	4.0	3.4	Buried	0.1	5.7	1.5	6.8	Frozen	12.5
Spring Average	4.3	7.2	1.4	0.9	10.7	4.1	5.5	3.7	2.4	5.2	5.8	2.2	9.2	4.4	2.4	3.7	5.2
Summer Average	0.0	0.2	0.0	0.0	0.6	0.2	2.5	0.5	1.1	0.4	0.8	1.0	0.6	0.7	0.2	0.1	0.8
Fall Average	<0.1	0.0	2.0	0.0	3.7	0.9	1.4	0.5	2.3	1.4	2.5	1.6	1.5	1.1	0.8	0.0	2.1

Flow (L/s)	SW 24A																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	3.3	7.9	12.3	5.5	1.9	3.9	3.9	2.9	4.8	16.3	3.5	2.4	4.9	3.7	2.2	5.0	5.5
Low	0.2	<0.1	0.3	0.2	0.3	0.1	0.3	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.4	0.0
Winter Average	0.9	Frozen	1.5	2.2	1.6	2.3	1.2	1.7	0.9	3.4	1.6	1.7	1.1	2.2	0.9	1.2	-
Spring Average	2.1	2.5	5.3	2.4	1.0	1.6	2.0	2.1	1.1	5.2	1.7	1.3	2.4	1.6	1.3	2.3	0.3
Summer Average	0.5	0.2	0.4	0.3	0.7	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.4	0.4	0.5	0.4	0.9
Fall Average	0.4	0.8	1.0	0.9	1.1	0.3	0.6	0.7	2.1	1.4	0.8	0.5	0.4	0.5	1.1	0.6	2.7

Flow (L/s)	SW 24B																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	1.7	4.5	5.8	2.5	13.1	5.3	7.5	3.1	12.9	12.9	15.4	10.4	19.9	7.0	15.5	1.8	1.1
Low	0.2	0.3	0.4	<0.1	0.3	<0.1	0.3	0.1	0.2	0.1	0.2	0.1	0.2	0.3	0.1	0.0	0.1
Winter Average	0.6	Frozen	5.8	1.6	2.2	1.9	1.1	2.1	3.2	2.5	0.6	0.1	1.8	2.5	8.9	1.8	0.7
Spring Average	1.2	1.8	3.0	1.7	4.5	2.6	6.1	1.2	4.0	5.2	6.3	4.0	5.9	4.4	2.6	0.8	0.2
Summer Average	0.3	0.4	0.8	<0.1	1.0	0.2	1.0	0.2	1.0	0.3	0.2	1.1	0.7	1.1	0.2	0.3	0.4
Fall Average	0.3	0.6	1.8	<0.1	1.4	0.3	0.8	0.7	1.0	0.6	0.3	0.4	0.4	1.1	0.5	0.0	0.6

Flow (L/s)	SW 24C																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	-	-	-	-	16.2	7.0	10.1	6.7	15.4	26.3	17.6	14.1	21.8	19.2	15.5	18.4	6.5
Low	-	-	-	-	0.4	0.6	0.7	0.1	0.7	0.6	0.5	0.4	1.0	2.1	0.6	0.0	0.3
Winter Average	-	-	-	-	7.7	5.2	1.5	3.8	4.3	4.8	2.2	1.7	2.7	5.9	10.6	2.3	0.6
Spring Average	-	-	-	-	8.8	5.4	6.2	5.2	5.8	8.8	7.2	7.1	9.9	11.6	7.1	8.8	2.8
Summer Average	-	-	-	-	2.2	0.9	1.4	0.6	2.3	1.8	1.3	1.8	1.4	2.4	1.3	0.7	2.4
Fall Average	-	-	-	-	3.8	1.3	1.6	1.6	3.1	3.4	1.8	0.8	1.6	4.2	2.3	0.0	2.0

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Aug), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

Flow (L/s)	SW 25													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	49.6	80.1	90.1	36.5	163.7	40.4	54.0	86.3	64.5	59.6	96.3	24.0	68.6	94.0
Low	<0.1	0.0	0.0	0.0	0.0	0.2	2.5	0.2	0.3	1.3	2.3	0.1	0.0	9.9
Winter Average	20.7	Frozen	Frozen	18.6	101.3	25.9	36.4	44.6	19.2	28.3	Buried	Buried	31.5	21.6
Spring Average	34.6	31.0	23.4	21.2	31.2	25.6	31.7	48.3	24.5	37.3	42.7	16.0	31.0	66.6
Summer Average	7.6	0.2	0.0	0.0	4.5	4.2	14.4	0.4	10.3	11.3	5.1	5.2	0.0	19.3
Fall Average	6.2	5.4	22.7	4.1	28.4	22.5	11.9	20.7	30.0	18.5	14.0	5.4	7.6	15.9

Flow (L/s)	SW 26													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	183.7	111.4	58.7	22.7	156.0	51.0	73.5	54.5	97.4	138.1	227.8	67.4	125.0	79.2
Low	0.0	0.0	0.0	0.0	<0.1	0.0	0.1	2.2	0.0	0.9	0.4	0.0	0.0	1.4
Winter Average	42.7	Frozen	Frozen	Frozen	17.1	7.8	Frozen	Frozen	Frozen	43.4	Buried	Frozen	Frozen	79.2
Spring Average	57.0	32.1	29.0	10.9	63.2	16.0	34.7	37.4	26.8	55.2	86.9	35.2	46.4	28.7
Summer Average	0.4	0.0	0.0	0.0	7.5	0.9	12.0	0.0	0.7	2.6	3.7	4.7	0.0	5.1
Fall Average	0.9	1.0	8.9	0.4	3.9	5.5	12.6	3.0	12.7	10.3	1.1	6.2	1.6	13.9

Flow (L/s)	SW 26A													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	101.6	59.9	60.0	14.9	165.4	47.4	53.3	61.7	65.7	120.2	17.4	39.2	128.1	33.2
Low	0.0	0.0	0.0	0.0	<0.1	0.0	0.3	2.5	0.0	0.4	0.5	0.0	0.0	3.1
Winter Average	0.9	Frozen	6.1	5.3	24.0	Frozen	Frozen	Frozen	Frozen	52.0	Buried	Frozen	6.7	14.1
Spring Average	28.1	16.8	23.5	7.7	53.4	24.7	27.4	31.6	19.2	54.3	15.3	21.9	45.1	21.3
Summer Average	0.0	0.0	0.0	0.0	8.5	3.6	18.5	0.0	0.3	1.2	2.8	3.1	0.0	5.4
Fall Average	1.2	0.7	7.2	0.0	3.1	5.8	8.4	3.5	12.5	12.3	4.3	5.0	0.3	8.5

Flow (L/s)	SW 27													
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
High	1.5	39.7	30.5	14.2	97.1	23.0	28.3	45.5	46.5	42.9	92.7	17.5	28.9	21.7
Low	0.5	0.3	0.5	0.3	3.1	0.8	1.3	1.4	1.9	2.0	0.4	0.4	1.5	3.1
Winter Average	-	Frozen	3.9	9.0	10.7	14.0	2.2	8.7	13.0	22.5	6.2	1.4	6.2	5.8
Spring Average	-	15.1	17.7	9.3	33.8	16.3	17.3	34.5	17.8	19.4	41.8	11.5	17.5	17.6
Summer Average	-	1.6	1.3	1.1	11.2	3.6	5.2	2.9	2.6	4.6	3.4	1.7	2.6	4.1
Fall Average	1.0	1.2	4.4	0.6	11.9	2.1	6.2	5.7	11.2	11.5	2.9	2.3	1.8	4.5

NOTE:

- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Sep), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

Flow (L/s)	SW 77																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	-	-	-	-	-	-	0.7	0.8	1.0	1.3	1.4	1.3	2.5	1.4	1.5	1.4	3.9
Low	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.2
Winter Average	-	-	-	-	-	-	0.2	-	0.4	0.3	0.2	Buried	0.7	0.6	0.9	Frozen	-
Spring Average	-	-	-	-	-	-	0.4	0.5	0.4	0.5	0.6	0.4	1.2	1.0	0.7	1.0	2.1
Summer Average	-	-	-	-	-	-	0.3	0.2	0.1	<0.1	<0.1	0.5	0.2	0.4	0.3	0.0	1.5
Fall Average	-	-	-	-	-	-	0.2	0.1	0.4	0.4	0.1	0.1	0.3	0.4	0.4	0.0	0.3

Flow (L/s)	RR3 OUT																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	-	-	-	-	-	-	-	-	-	-	-	0.9	20.3	14.3	16.1	18.3	24.5
Low	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.5	0.0	0.0	0.0
Winter Average	-	-	-	-	-	-	-	-	-	-	-	-	7.4	3.5	10.8	3.4	-
Spring Average	-	-	-	-	-	-	-	-	-	-	-	-	12.0	6.8	7.2	8.4	13.1
Summer Average	-	-	-	-	-	-	-	-	-	-	-	Dry	0.0	4.3	0.0	0.0	-
Fall Average	-	-	-	-	-	-	-	-	-	-	-	0.8	0.0	3.8	1.5	0.0	-

Flow (L/s)	RR3 KARST																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	-	-	-	-	-	-	-	-	-	-	-	0.3	6.2	2.7	4.7	1.1	12.7
Low	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0
Winter Average	-	-	-	-	-	-	-	-	-	-	-	-	1.2	1.3	3.0	Frozen	-
Spring Average	-	-	-	-	-	-	-	-	-	-	-	-	4.0	1.8	1.5	0.8	5.3
Summer Average	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.4	0.0	0.0	-
Fall Average	-	-	-	-	-	-	-	-	-	-	-	0.2	0.0	0.9	0.2	0.0	-

Flow (L/s)	PR CONTROL																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	-	-	-	-	-	-	-	-	-	-	-	13.3	148.4	93.8	140.9	158.2	84.0
Low	-	-	-	-	-	-	-	-	-	-	-	0.2	6.1	9.9	11.2	8.7	6.7
Winter Average	-	-	-	-	-	-	-	-	-	-	-	-	24.8	31.5	96.1	Frozen	12.7
Spring Average	-	-	-	-	-	-	-	-	-	-	-	-	79.8	67.9	58.8	87.1	58.8
Summer Average	-	-	-	-	-	-	-	-	-	-	-	7.9	8.8	20.2	21.2	10.9	15.6
Fall Average	-	-	-	-	-	-	-	-	-	-	-	7.6	9.2	35.0	25.3	11.2	20.7

NOTE:
- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Sep), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-4
SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

Flow (L/s)	BC CONTROL																
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High	-	-	-	-	-	-	-	-	-	-	-	7.5	192.0	37.3	55.0	66.5	44.8
Low	-	-	-	-	-	-	-	-	-	-	-	0.4	0.2	1.1	0.2	0.1	0.5
Winter Average	-	-	-	-	-	-	-	-	-	-	-	-	Frozen	37.3	40.4	Frozen	0.5
Spring Average	-	-	-	-	-	-	-	-	-	-	-	-	63.1	23.0	21.4	30.6	22.4
Summer Average	-	-	-	-	-	-	-	-	-	-	-	4.0	0.3	2.9	0.4	1.5	0.7
Fall Average	-	-	-	-	-	-	-	-	-	-	-	4.7	0.6	13.8	8.7	0.2	7.8

NOTE:
- Season averages were determined as follows: Winter (Jan-Feb), Spring (Mar-Jun), Summer (Jul-Sep), Fall (Oct-Dec).
- Seasonal averages are the average of the measured data for that period.

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW 1					
	22-May-03	10.0			
	23-Jun-03	16.8			
	12-Feb-04	2.4		436	
	4-Mar-04	3.5		652	
	19-Mar-04	3.5		629	10.6
	2-Apr-04	4.8	7.8	281	
	8-Apr-04	4.3	7.7	286	
	7-May-04	11.4	8.1	521	
	14-May-04	17.7	7.9	609	
	20-May-04	13.3	8.0	592	
	28-May-04	10.4	7.9	497	11.0
	4-Jun-04	12.3	7.8	555	
	11-Jun-04	14.6	7.8	630	
	17-Jun-04	14.6	7.7	666	
	1-Jul-04	15.1	7.9	717	8.7
	16-Jul-04	15.7	7.8	644	9.2
	22-Jul-04	20.4	7.9		8.5
	29-Jul-04	15.8	7.7	647	
	19-Aug-04	15.8	7.7	731	
	26-Aug-04	17.8	7.8	713	
	9-Sep-04	14.7	8.1	705	7.9
	17-Sep-04	14.7	7.7	764	7.7
	7-Nov-04	7.1	7.8	604	11.4
	17-Dec-04	1.1	7.8	472	
	29-Dec-04	3.4	7.6	600	
	5-Jan-05	3.0	7.7	467	12.7
	20-Jan-05	1.0	7.5	409	
	28-Jan-05	0.7	7.5	422	
	3-Feb-05	2.7	7.5	450	
	16-Feb-05	3.3	7.8	454	12.3
	24-Feb-05	1.1	8.0	440	
	3-Mar-05	0.4	7.6	415	12.9
	24-Mar-05	3.9	7.4	448	12.4
	30-Mar-05	6.2	7.7	470	
	7-Apr-05	3.3	7.5	356	12.1
	15-Apr-05	1.5	6.9	330	9.1
	21-Apr-05	10.4	7.5	451	11.1
	28-Apr-05	7.0	7.5	398	
	6-May-05	14.6	7.7	610	
	13-May-05	11.0	8.2	514	
	20-May-05	10.1	7.2	522	7.8
	27-May-05	18.6	7.7	653	
	3-Jun-05	18.0	7.3	662	7.5
	17-Jun-05	15.2	7.2	601	7.7
	24-Jun-05	22.7	7.7	776	
	30-Jun-05	23.4	7.5	835	7.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	7-Jul-05	20.4	6.6	731	
	15-Jul-05	23.6	7.1	1148	6.4
	21-Jul-05	24.1	7.6	1524	
	18-Nov-05	4.1	8.5	943	
	25-Nov-05	2.5	8.3	524	12.0
	2-Dec-05	4.1	8.9	545	10.9
	9-Dec-05	3.8	9.4	538	11.0
	16-Dec-05	3.6	8.3	602	11.8
	22-Dec-05	2.8	8.2	592	12.8
	6-Jan-06	2.3	8.4	929	
	20-Jan-06	3.3	7.5	507	11.8
	27-Jan-06	3.5	6.9	547	13.3
	3-Feb-06	3.7	8.2	503	
	10-Feb-06	2.9	8.3	495	13.4
	20-Feb-06	2.4	8.3	493	
	24-Feb-06	2.3	8.2	485	
	3-Mar-06	2.7	8.1	534	
	10-Mar-06	3.3	8.1	483	13.1
	17-Mar-06	2.8	8.2	471	12.9
	24-Mar-06	4.3	8.2	440	
	31-Mar-06	7.5	8.2	601	
	7-Apr-06	5.3	8.1	596	
	10-Apr-06	9.1	8.1	591	
	13-Apr-06	10.7	8.2	594	
	21-Apr-06	11.3	8.3	602	
	26-Apr-06	9.5	8.6	627	
	5-May-06	10.8	8.2	655	
	12-May-06	10.6	8.5	735	
	19-May-06	10.1	8.0	705	
	25-May-06	11.1	7.8	732	
	2-Jun-06	12.5	7.8	754	
	9-Jun-06	12.3	7.9	604	
	16-Jun-06	14.6	8.0	805	
	23-Jun-06	15.2	8.0	794	
	4-Aug-06	19.7	7.8	736	
	25-Aug-06	16.2	7.5	896	
	1-Sep-06	19.0	7.6	871	
	8-Sep-06	18.2	7.7	877	
	15-Sep-06	15.3	7.4	897	
	21-Sep-06	12.3	7.5	895	
	28-Sep-06	11.6	7.5	924	
	20-Oct-06	9.3	7.6	908	
	3-Nov-06	6.7	7.7	898	10.9
	10-Nov-06	8.0	7.8	874	
	17-Nov-06	6.7	7.8	867	10.7
	24-Nov-06	6.1	7.9	867	10.8
	4-Dec-06	3.9	7.7	853	11.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	8-Dec-06	4.1	7.7	841	12.7
	14-Dec-06	5.5	7.8	886	
	21-Dec-06	4.8	7.9	852	12.0
	28-Dec-06	4.8	7.9	862	11.9
	5-Jan-07	5.6	7.9	853	10.7
	12-Jan-07	4.6	7.8	783	10.7
	19-Jan-07	3.0	8.1	791	12.2
	26-Jan-07	1.9	8.2	797	13.0
	2-Feb-07	3.4	8.0	768	11.7
	9-Feb-07	3.5	8.1	707	12.2
	16-Feb-07	3.2	8.1	808	11.9
	22-Feb-07	3.6	8.0	805	11.2
	2-Mar-07	3.4	8.1	800	12.0
	9-Mar-07	4.4	8.0	668	12.4
	16-Mar-07	3.6	7.9	709	12.0
	23-Mar-07	5.2	7.9	719	11.6
	30-Mar-07	5.7	8.0	669	12.4
	5-Apr-07	3.1	7.6	328	
	13-Apr-07	4.0	8.1	652	13.1
	20-Apr-07	9.0	8.2	613	
	28-Apr-07	9.6	8.1	598	10.9
	4-May-07	11.0	8.2	582	
	11-May-07	10.7	8.0	677	
	18-May-07	10.6	8.1	667	11.1
	25-May-07	11.7	7.9	645	10.6
	1-Jun-07	14.6	8.0	676	7.3
	8-Jun-07	15.4	8.1	757	9.4
	14-Jun-07	14.0	8.2	768	9.2
	29-Jun-07	15.9	8.0	706	8.2
	6-Jul-07	15.5	7.9	745	9.4
	20-Jul-07	15.0	7.6	751	9.0
	27-Jul-07	14.6	7.5	694	7.6
	17-Aug-07	14.4	7.5	797	7.3
	24-Aug-07	17.4	7.9	810	6.2
	30-Aug-07	15.4	7.9	813	7.5
	7-Sep-07	16.3	7.5	822	7.6
	14-Sep-07	13.9	7.5	782	7.3
	21-Sep-07	15.4	7.8	793	8.1
	28-Sep-07	13.6	8.5	820	8.2
	5-Oct-07	13.6	7.5	884	8.1
	19-Oct-07	13.9	7.7	803	7.7
	26-Oct-07	11.9	7.2	801	7.6
	2-Nov-07	10.1	7.6	836	8.7
	9-Nov-07	8.4	7.5	819	9.0
	16-Nov-07	6.9	7.4	862	9.7
	23-Nov-07	4.7	7.9	863	10.0
	7-Dec-07	3.9	7.9	784	10.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	14-Dec-07	4.0	7.8	781	10.9
	20-Dec-07	3.8	7.7	769	10.8
	28-Dec-07	5.3	6.8		7.7
	4-Jan-08	2.3	7.0	832	11.4
	11-Jan-08	3.5	7.3	719	10.3
	18-Jan-08	1.2	6.9	684	12.4
	25-Jan-08	1.2	8.0	689	12.6
	1-Feb-08	1.3	7.2	706	12.2
	8-Feb-08	2.6	6.9	735	12.1
	15-Feb-08	1.7	6.6	728	12.5
	22-Feb-08	2.0	6.9	731	
	29-Feb-08	1.9	7.0	738	
	7-Mar-08	2.3	7.0	721	13.2
	14-Mar-08	2.4	6.6	713	
	20-Mar-08	2.4	7.6	711	13.4
	28-Mar-08	3.4	7.3	592	
	4-Apr-08	3.9	7.1	629	12.5
	11-Apr-08	3.0	7.2	496	11.5
	15-Apr-08	6.5	7.1	563	
	18-Apr-08	6.0	6.8	374	
	25-Apr-08	9.2	7.7	581	8.8
	2-May-08	7.8	6.7	607	8.8
	8-May-08	8.7	7.1	651	11.4
	15-May-08	13.1	7.7	663	10.4
	23-May-08	10.4	7.5	610	9.4
	30-May-08	10.8	7.1	723	8.1
	6-Jun-08	17.0	7.1	748	6.8
	13-Jun-08	13.9	6.7	693	6.5
	27-Jun-08	14.4	7.1	815	7.9
	18-Jul-08	16.5	7.2	857	5.4
	25-Jul-08	16.2	7.5	891	5.1
	1-Aug-08	17.2	7.5	845	4.9
	15-Aug-08	16.3	6.8	949	5.2
	28-Aug-08	16.4	7.6		6.2
	5-Sep-08	17.2	7.8	864	6.2
	12-Sep-08	15.3	7.8	869	4.9
	26-Sep-08	14.0	7.6	870	5.1
	3-Oct-08	10.4	7.5	863	6.7
	10-Oct-08	11.2	7.2	864	7.0
	17-Oct-08	9.6	7.2	800	5.6
	24-Oct-08	7.7	7.8	804	5.9
	31-Oct-08	7.5	7.8	815	5.4
	2-Nov-08	9.2	6.7	478	7.0
	9-Nov-08	8.3	7.8	678	7.1
	16-Nov-08	1.2	7.4	828	10.7
	23-Nov-08	3.4		647	7.5
	30-Nov-08	1.2		487	12.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	7-Dec-08	3.1		738	9.1
	19-Dec-08	1.2	7.4	639	8.7
	23-Dec-08	2.5	8.1	649	9.5
	29-Dec-08	0.5	8.3	549	12.2
	9-Jan-09	1.3		616	9.7
	16-Jan-09	0.7	8.1	684	10.0
	23-Jan-09	1.3	8.1	657	7.4
	30-Jan-09	2.1	8.1	663	8.8
	13-Feb-09	1.1	8.2	578	7.6
	20-Feb-09	2.0	8.3	606	
	27-Feb-09	2.9	8.1	570	
	6-Mar-09	4.7		556	12.1
	13-Mar-09	0.6	8.5	557	
	20-Mar-09	2.5	8.4	540	
	27-Mar-09	4.2	7.4	624	
	3-Apr-09	5.7	7.7	588	
	9-Apr-09	3.1	7.8	535	
	17-Apr-09	6.4	8.3	590	
	24-Apr-09	7.4	8.2	585	
	1-May-09	10.9	8.5	435	10.8
	8-May-09	11.8	7.9	564	9.4
	15-May-09	11.5	8.1	483	10.5
	22-May-09	10.9	8.1	511	9.0
	29-May-09	11.0	7.4	621	9.9
	5-Jun-09	11.6	7.9	582	10.1
	12-Jun-09	12.5	8.0	556	9.5
	19-Jun-09	12.7	7.7	1277	9.8
	26-Jun-09	16.0	8.3	707	10.0
	2-Jul-09	13.9	7.6	621	8.8
	10-Jul-09	14.0		1179	8.5
	17-Jul-09	13.2	8.9	713	8.0
	24-Jul-09	14.8	7.9	738	9.4
	31-Jul-09	14.7	7.6	760	6.8
	7-Aug-09	14.4	7.7	776	6.5
	14-Aug-09	15.7	8.3	729	7.8
	21-Aug-09	16.6	8.4	820	4.6
	28-Aug-09	14.5	8.4	746	8.3
	2-Oct-09	10.8	8.1	858	
	9-Oct-09	11.0	6.4	881	10.6
	16-Oct-09	6.1	7.8	861	11.5
	23-Oct-09	7.8	6.7	776	11.1
	30-Oct-09	9.0	7.5	795	10.5
	6-Nov-09	7.1	6.4	793	
	13-Nov-09	7.1	7.3	860	
	20-Nov-09	7.0	7.3	731	11.9
	27-Nov-09	6.4	7.6	747	11.5
	11-Dec-09	1.4	7.7	632	11.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Dec-09	2.4	7.4	765	12.3
	22-Dec-09	3.0	7.9	734	13.6
	28-Dec-09	2.8	7.6	793	11.5
	8-Jan-10	2.2	7.8	694	12.1
	15-Jan-10	3.8	7.7	744	10.8
	22-Jan-10	2.3	8.1	768	12.2
	29-Jan-10	0.5	7.8	781	12.2
	5-Feb-10	3.1	6.5	494	11.6
	12-Feb-10	3.2	7.0	486	11.6
	19-Feb-10	2.0	8.2	586	11.8
	1-Mar-10	3.2	7.3	647	11.8
	5-Mar-10	5.6	7.4	631	11.4
	12-Mar-10	5.0	7.3	707	12.2
	19-Mar-10	8.8	7.5	667	12.5
	26-Mar-10	3.1	7.1	565	12.6
	2-Apr-10	8.4	6.9	569	12.0
	9-Apr-10	6.7	7.4	659	12.8
	16-Apr-10	10.2	8.0	500	11.2
	23-Apr-10	9.0	8.0	471	11.5
	30-Apr-10	9.9	7.9	464	10.7
	7-May-10	10.2	8.0	456	11.4
	14-May-10	10.2	7.8	389	9.1
	21-May-10	11.9	7.9	513	10.0
	28-May-10	15.4	7.9	503	8.8
	4-Jun-10	13.7	7.8	549	6.5
	11-Jun-10	13.4	7.9	476	6.7
	18-Jun-10	14.4	7.9	587	11.2
	25-Jun-10	14.4	7.9	560	9.4
	1-Jul-10	13.4	7.8	508	8.7
	9-Jul-10	18.4	7.6	545	8.3
	15-Jul-10	19.3	7.8	689	7.7
	23-Jul-10	17.8	7.1	606	8.4
	30-Jul-10	16.7	7.8	530	8.3
	24-Sep-10	16.2	7.9	-	7.2
	1-Oct-10	12.1	7.7	611	7.1
	8-Oct-10	11.2	7.7	599	7.6
	15-Oct-10	11.2	7.6	569	7.6
	22-Oct-10	6.9	7.8	566	9.4
	29-Oct-10	7.8	7.8	490	9.1
	5-Nov-10	4.1	7.9	453	9.4
	12-Nov-10	6.3	7.8	588	9.6
	19-Nov-10	4.8	8.0	474	11.4
	26-Nov-10	3.1	7.9	428	11.4
	3-Dec-10	2.8	7.8	428	10.2
	9-Dec-10	0.5	7.8	352	15.4
	17-Dec-10	0.5	7.6	335	12.0
	23-Dec-10	1.9	8.1	380	11.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	30-Dec-10	3.3	7.9	431	10.9
	7-Jan-11	1.8	7.8	369	12.1
	14-Jan-11	2.7	7.8	356	11.8
	21-Jan-11	1.3	7.7	355	11.0
	28-Jan-11	3.1	8.0	392	11.2
	4-Feb-11	0.4	7.9	335	11.6
	11-Feb-11	2.1	7.7	411	11.5
	18-Feb-11	3.0	7.7	379	12.3
	25-Feb-11	3.0	7.8	388	12.1
	4-Mar-11	2.5	7.7	371	12.3
	11-Mar-11	0.7	7.7	304	12.6
	18-Mar-11	2.7	7.8	266	15.1
	25-Mar-11	4.8	7.9	398	13.2
	1-Apr-11	4.3	7.8	359	12.0
	8-Apr-11	4.2	7.6	359	12.4
	15-Apr-11	4.4	7.7	288	10.4
	21-Apr-11	4.2	8.1	366	12.3
	29-Apr-11	5.7	7.2	372	-
	6-May-11	7.7	8.2	318	10.4
	13-May-11	10.6	8.0	485	11.9
	20-May-11	11.5	8.0	399	10.1
	27-May-11	10.3	8.0	387	8.4
	3-Jun-11	13.9	7.9	459	8.0
	10-Jun-11	14.5	7.8	534	8.5
	17-Jun-11	13.8	7.9	483	9.6
	24-Jun-11	15.1	7.8	571	7.2
	30-Jun-11	14.9	7.7	507	10.0
	16-Sep-11	12.0	8.1	529	8.3
	6-Oct-11	10.6	8.0	692	9.0
	21-Oct-11	9.4	8.0	593	9.6
	28-Oct-11	8.6	8.3	492	9.9
	4-Nov-11	7.9	8.1	518	10.1
	11-Nov-11	5.9	7.6	558	4.8
	18-Nov-11	5.7	7.5	547	11.0
	25-Nov-11	6.8	7.5	557	9.6
	2-Dec-11	5.1	8.1	484	11.6
	9-Dec-11	4.8	7.4	424	9.8
	16-Dec-11	4.0	7.6	396	12.8
	23-Dec-11	3.5	7.5	369	4.8
	30-Dec-11	3.5	9.2	355	11.3
	6-Jan-12	4.0	7.5	432	13.7
	13-Jan-12	2.9	8.1	344	-
	20-Jan-12	2.2	8.0	344	10.5
	27-Jan-12	8.4	8.1	309	12.8
	3-Feb-12	3.6	7.9	274	11.2
	10-Feb-12	2.6	7.9	308	13.7
	17-Feb-12	3.5	7.7	370	14.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-Feb-12	1.0	8.1	320	14.2
	1-Mar-12	2.6	7.8	359	-
	9-Mar-12	1.4	8.0	212	12.9
	16-Mar-12	4.4	7.5	300	10.9
	23-Mar-12	10.5	7.6	-	6.3
	30-Mar-12	5.2	8.0	369	12.4
	6-Apr-12	7.7	8.3	420	6.1
	13-Apr-12	6.4	8.0	408	9.0
	20-Apr-12	8.5	8.0	452	7.9
	27-Apr-12	4.5	8.4	350	12.4
	4-May-12	12.4	8.0	482	6.9
	11-May-12	9.2	7.8	285	9.5
	18-May-12	10.8	7.9	492	7.5
	25-May-12	14.8	7.3	570	6.7
	1-Jun-12	11.0	7.8	4.93	6.1
	8-Jun-12	14.0	8.2	547	7.8
	15-Jun-12	14.7	8.0	633	5.9
	22-Jun-12	16.2	7.9	664	6.4
	28-Jun-12	16.6	8.1	660	6.4
	6-Jul-12	17.9	8.0	769	5.6
	10-Aug-12	16.2	8.1	542	5.8
	17-Aug-12	16.3	8.2	520	5.7
	31-Aug-12	18.0	7.6	749	6.7
	14-Sep-12	14.8	7.4	661	5.5
	28-Sep-12	10.6	6.8	723	8.3
	5-Oct-12	13.5	7.3	808	8.6
	12-Oct-12	7.4	7.8	638	10.0
	19-Oct-12	10.8	8.5	613	7.2
	26-Oct-12	10.7	7.0	615	9.2
	2-Nov-12	4.2	5.8	567	6.6
	9-Nov-12	5.0	6.3	444	9.8
	16-Nov-12	5.4	7.2	541	9.1
	23-Nov-12	7.5	7.6	511	7.5
	30-Nov-12	5.3	8.7	515	5.0
	7-Dec-12	5.3	7.6	536	6.6
	14-Dec-12	3.8	8.3	462	9.1
	21-Dec-12	4.2	7.6	494	10.2
	28-Dec-12	3.8	7.5	434	12.1
	4-Jan-13	2.1	7.6	4.65	9.9
	11-Jan-13	3.7	7.7	547	9.1
	17-Jan-13	2.3	7.7	463	10.6
	25-Jan-13	1.6	7.7	458	4.5
	1-Feb-13	0.4	7.9	308	11.7
	8-Feb-13	0.7	7.6	322	13.4
	15-Feb-13	2.4	7.6	653	12.2
	22-Feb-13	2.0	7.3	335	8.6
	1-Mar-13	1.9	7.6	484	9.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	8-Mar-13	5.2	7.9	381	12.1
	15-Mar-13	2.0	-	-	-
	22-Mar-13	2.1	7.8	405	12.5
	28-Mar-13	4.8	7.9	370	11.5
	5-Apr-13	3.0	7.9	358	6.5
	12-Apr-13	2.9	7.4	382	3.8
	19-Apr-13	7.5	7.5	219	6.7
	26-Apr-13	4.8	7.6	288	9.3
	3-May-13	13.4	7.6	389	8.3
	9-May-13	10.4	7.8	439	9.5
	16-May-13	10.0	7.9	408	7.3
	24-May-13	8.2	7.7	439	8.2
	31-May-13	15.2	7.9	490	8.4
	7-Jun-13	10.2	-	411	6.5
	14-Jun-13	15.1	7.9	497	6.4
	21-Jun-13	13.1	7.9	530	7.7
	27-Jun-13	15.8	7.9	486	8.2
	5-Jul-13	14.9	7.7	584	7.8
	12-Jul-13	16.4	7.7	621	5.2
	19-Jul-13	19.7	7.7	621	5.2
	25-Jul-13	14.4	7.6	570	7.9
	2-Aug-13	16.3	8.1	587	9.0
	8-Aug-13	16.4	7.5	538	8.4
	16-Aug-13	13.8	7.9	621	4.9
	23-Aug-13	-	-	-	-
	30-Aug-13	14.3	7.9	613	4.8
	6-Sep-13	13.4	7.8	598	5.0
	13-Sep-13	12.5	8.4	530	8.1
	20-Sep-13	15.1	8.3	556	4.1
	27-Sep-13	11.8	7.9	491	6.9
	4-Oct-13	10.2	7.8	483	5.9
	11-Oct-13	9.2	7.6	458	3.9
	18-Oct-13	9.2	7.5	426	4.0
	25-Oct-13	7.3	7.6	438	4.3
	31-Oct-13	9.7	7.6	421	4.3
	8-Nov-13	7.0	7.4	403	4.5
	14-Nov-13	2.9	7.4	415	4.1
	22-Nov-13	3.5	7.4	405	4.1
	29-Nov-13	3.9	8.4	393	7.5
	6-Dec-13	3.0	7.8	340	5.4
	13-Dec-13	7.6	8.3	256	4.6
	19-Dec-13	3.5	8.8	386	6.3
	27-Dec-13	2.9	8.6	382	5.2
	3-Jan-14	0.9	8.5	360	3.2
	10-Jan-14	-0.9	7.5	360	4.1
	17-Jan-14	1.5	8.1	356	4.3
	24-Jan-14	0.8	7.5	369	11.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	31-Jan-14	1.7	7.1	398	4.0
	7-Feb-14	0.6	7.1	382	3.9
	14-Feb-14	1.9	7.4	254	4.4
	21-Feb-14	2.0	7.1	399	9.1
	7-Mar-14	0.1	7.4	389	7.8
	14-Mar-14	1.5	6.5	408	11.9
	21-Mar-14	1.4	7.3	408	3.8
	28-Mar-14	3.7	7.4	421	11.5
	4-Apr-14	3.2	7.8	403	11.2
	11-Apr-14	1.7	7.8	297	9.7
	17-Apr-14	3.8	7.7	485	9.0
	25-Apr-14	3.6	7.6	480	7.0
	1-May-14	4.2	7.5	473	5.8
	9-May-14	11.1	7.8	425	10.4
	16-May-14	10.2	7.2	328	10.3
	23-May-14	11.0	7.2	382	10.1
	30-May-14	11.0	7.3	375	10.0
	6-Jun-14	11.0	7.2	392	8.0
	13-Jun-14	11.2	7.2	402	8.1
	20-Jun-14	12.5	7.2	412	8.1
	27-Jun-14	12.5	7.2	423	8.1
	4-Jul-14	12.7	7.5	481	7.4
	11-Jul-14	14.3	7.3	424	6.9
	18-Jul-14	13.2	8.4	598	-
	25-Jul-14	13.1	8.7	603	-
	1-Aug-14	13.9	8.5	485	6.2
	8-Aug-14	13.8	8.5	460	6.2
	15-Aug-14	12.2	8.5	423	6.2
	22-Aug-14	14.3	8.8	693	-
	29-Aug-14	14.0	8.7	682	-
	5-Sep-14	16.3	8.9	717	-
	12-Sep-14	11.8	7.5	645	6.9
	19-Sep-14	9.2	7.9	422	6.1
	26-Sep-14	10.7	7.9	429	6.4
	3-Oct-14	13.8	7.7	473	6.0
	10-Oct-14	10.1	7.5	470	6.3
	16-Oct-14	12.8	7.9	666	6.3
	24-Oct-14	7.2	8.0	571	6.5
	31-Oct-14	6.0	7.9	423	6.0
	7-Nov-14	0.5	7.3	456	6.9
	14-Nov-14	-1.9	7.3	446	6.6
	20-Nov-14	-2.6	7.2	420	6.2
	28-Nov-14	-1.0	7.3	423	7.0
	5-Dec-14	0.3	7.3	425	4.3
	12-Dec-14	0.9	7.2	467	6.9
	19-Dec-14	-1.0	7.2	453	6.9
	26-Dec-14	1.9	7.3	413	6.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	2-Jan-15	-0.9	7.2	418	7.0
	14-Jan-15	-0.4	7.2	428	6.3
	23-Jan-15	-0.3	7.1	420	6.3
	30-Jan-15	0.0	8.1	283	11.9
	6-Feb-15	1.0	8.1	570	12.5
	12-Feb-15	0.0	7.9	545	11.9
	27-Feb-15	1.5	8.0	577	120.1
	6-Mar-15	1.4	8.1	576	12.6
	13-Mar-15	6.4	8.1	569	11.9
	20-Mar-15	7.2	8.0	364	11.9
	26-Mar-15	4.4	8.1	331	12.3
	2-Apr-15	8.3	7.9	369	10.8
	10-Apr-15	5.2	7.8	260	9.5
	17-Apr-15	7.8	8.4	353	-
	23-Apr-15	3.6	8.1	369	14.2
	1-May-15	9.8	7.7	482	7.5
	8-May-15	18.5	9.1	555	-
	15-May-15	11.9	7.6	437	7.7
	21-May-15	11.0	7.7	432	9.4
	28-May-15	16.1	7.7	519	7.3
	4-Jun-15	15.2	7.6	519	7.3
	12-Jun-15	13.1	7.5	551	5.1
	18-Jun-15	18.4	7.5	517	5.7
	26-Jun-15	26.0	8.1	617	-
	1-Jul-15	15.2	7.8	463	-
	10-Jul-15	18.5	7.7	595	-
	17-Jul-15	12.7	8.1	558	-
	22-Jul-15	14.5	7.8	665	-
	30-Jul-15	23.9	8.1	749	-
	5-Aug-15	15.4	7.4	564	6.0
	13-Aug-15	13.2	7.6	647	5.7
	21-Aug-15	17.4	7.3	608	4.7
	28-Aug-15	-	8.2	598	-
	3-Sep-15	16.5	7.6	741	5.9
	10-Sep-15	18.2	7.6	705	5.6
	25-Sep-15	14.0	7.6	640	7.6
	2-Oct-15	7.6	7.5	522	8.2
	9-Oct-15	10.7	7.3	558	6.2
	16-Oct-15	8.5	7.7	514	8.6
	23-Oct-15	7.1	7.6	523	9.4
	30-Oct-15	7.1	7.5	480	10.8
	5-Nov-15	10.9	7.8	572	7.6
	10-Nov-15	4.3	7.5	468	9.3
	13-Nov-15	5.2	7.3	432	6.7
	19-Nov-15	9.1	7.7	586	13.0
	26-Nov-15	0.8	7.3	443	11.1
	4-Dec-15	2.3	7.6	482	15.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	10-Dec-15	5.7	7.6	538	12.8
	17-Dec-15	3.7	7.8	420	11.5
	23-Dec-15	5.1	7.6	445	13.9
	30-Dec-15	0.5	7.4	391	10.4
	8-Jan-16	1.5	7.4	410	11.9
	14-Jan-16	0.2	7.2	383	10.8
	22-Jan-16	-0.1	7.3	431	9.8
	29-Jan-16	-0.1	7.2	401	8.8
	5-Feb-16	0.5	7.4	392	11.5
	11-Feb-16	-0.1	7.3	416	8.7
	18-Feb-16	0.2	7.3	407	11.0
	25-Feb-16	-0.2	7.5	255	6.4
	4-Mar-16	0.1	7.1	376	9.1
	10-Mar-16	0.5	7.3	244	9.4
	18-Mar-16	1.3	7.7	299	10.6
	28-Mar-16	4.4	7.3	189	9.4
	7-Apr-16	1.2	7.3	254	10.1
	15-Apr-16	2.9	7.4	265	11.9
	22-Apr-16	10.8	7.9	434	6.7
	29-Apr-16	5.5	8.0	380	10.8
	6-May-16	10.1	8.0	460	7.0
	13-May-16	14.5	7.7	598	-
	20-May-16	14.8	7.8	616	9.0
	27-May-16	17.3	7.5	602	2.7
	2-Jun-16	16.9	7.5	593	2.3
	10-Jun-16	10.6	7.6	696	4.6
	17-Jun-16	14.8	7.5	655	3.9
	24-Jun-16	13.2	7.4	521	4.1
	28-Jun-16	16.6	7.5	667	3.8
	5-Jul-16	17.4	7.6	665	6.6
	8-Jul-16	19.2	7.6	648	4.3
	15-Jul-16	18.7	7.6	623	4.1
	22-Jul-16	20.0	7.4	820	3.7
	29-Jul-16	17.9	7.6	744	4.2
	5-Aug-16	20.6	7.5	747	2.4
	19-Aug-16	17.4	7.6	595	2.7
	26-Aug-16	18.3	7.4	781	2.7
	2-Sep-16	15.3	7.1	653	3.8
	9-Sep-16	17.7	7.4	619	3.0
	16-Sep-16	10.9	7.7	618	5.6
	21-Sep-16	15.7	7.1	635	5.8
	30-Sep-16	11.9	7.4	620	4.8
	7-Oct-16	14.0	7.4	657	5.5
	13-Oct-16	10.4	7.0	506	6.1
	19-Oct-16	13.6	7.6	676	9.0
	27-Oct-16	1.5	7.2	418	10.4
	3-Nov-16	8.0	7.7	556	8.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Nov-16	4.8	7.3	450	10.2
	18-Nov-16	5.7	7.3	789	8.0
	24-Nov-16	0.1	7.2	412	10.8
	2-Dec-16	1.9	7.9	373	7.9
	7-Dec-16	0.1	7.6	364	7.9
	16-Dec-16	0.0	7.5	518	8.7
	20-Jan-17	0.1	7.4	405	8.1
	26-Jan-17	-0.9	7.5	400	6.7
	19-Apr-17	11.5	7.4	457	12.8
	16-May-17	11.4	7.9	636	7.9
	28-Jun-17	17.3	7.6	620	3.2
	18-Jul-17	20.2	7.4	737	2.5
	15-Aug-17	16.1	7.8	557	1.2
	18-Sep-17	16.3	6.6	735	2.2
	18-Oct-17	8.3	7.7	525	4.3
	15-Nov-17	0.7	7.7	447	10.4
	22-Feb-18	-0.2	7.3	220	8.7
	20-Mar-18	7.0	7.6	361	10.7
	18-Apr-18	-0.5	7.9	518	4.8
	15-May-18	13.2	7.5	570	4.9
	18-Jun-18	18.4	7.3	660	2.3
	19-Jul-18	17.5	7.2	735	1.8
	23-Aug-18	15.5	7.4	606	1.9
	19-Sep-18	14.9	7.5		4.0
	24-Oct-18	2.4	7.5	694	7.5
	24-Apr-19	5.0	7.6	390.1	6.5
	23-May-19	11.2	7.5	507	3.1
	18-Jun-19	16.5	7.4	569	2.5
	22-Nov-19	0.0	7.4	91	5.7
	26-Mar-20	1.6	7.5	565	7.5
	27-Apr-20	2.3	7.7	609	13.1
	29-May-20	20.8	7.8	583	2.0
	23-Jun-20	20.4	7.3	654	0.8
	30-Jul-20	19.6	7.3	734	1.0
	25-Aug-20	n/a	n/a	n/a	n/a
	25-Sep-20	dry	dry	dry	dry
	30-Oct-20	dry	dry	dry	dry
	26-Nov-20	frozen	frozen	frozen	frozen
SW 2					
	22-May-03	8.0			
	12-Feb-04	5.4		394	11.6
	19-Mar-04	5.1		571	9.3
	7-May-04	8.8	7.5	406	
	14-May-04	8.6	7.6	419	
	20-May-04	7.3	7.6	409	
	28-May-04	7.1	7.5	358	
	4-Jun-04	9.0	7.5	393	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Jun-04	9.3	7.6	425	
	17-Jun-04	8.2	7.4	410	
	24-Jun-04	9.9	7.7	442	11.2
	1-Jul-04	9.8	7.6	439	10.5
	16-Jul-04	10.0	7.5	458	10.2
	22-Jul-04	14.6	7.6		8.5
	29-Jul-04	10.3	7.6	422	
	6-Aug-04	13.6	7.8	491	10.1
	12-Aug-04	10.2	7.6	445	
	19-Aug-04	10.8	7.5	463	10.8
	26-Aug-04	13.7		478	
	3-Sep-04	13.7	7.6	426	7.7
	9-Sep-04	11.7	8.0	460	9.2
	17-Sep-04	10.9	7.4	450	8.1
	23-Sep-04	13.2	7.4	481	6.8
	1-Oct-04	11.6	7.4	469	7.3
	7-Oct-04	12.2	7.3	468	7.2
	14-Oct-04	10.6	7.4	446	8.0
	20-Oct-04	9.7	7.4	447	7.4
	28-Oct-04	9.8	7.3	509	6.9
	4-Nov-04	7.5	7.5	390	10.0
	11-Nov-04	8.2	7.3	435	7.8
	19-Nov-04	8.5	7.2	460	7.6
	25-Nov-04	6.0	7.3	454	7.7
	2-Dec-04	4.5	7.3	419	10.1
	9-Dec-04	6.0	7.6	427	10.8
	5-Jan-05	6.3	7.4	404	11.5
	13-Jan-05	6.1	7.2	375	11.5
	10-Feb-05	6.1	7.4	411	
	16-Feb-05	6.4	7.8	406	12.2
	24-Feb-05	4.4	8.0	398	
	3-Mar-05	4.4	7.6	392	
	10-Mar-05	6.9	7.5	430	12.0
	17-Mar-05	6.5	7.5	404	12.4
	24-Mar-05	7.4	7.5	449	11.8
	30-Mar-05	7.7	7.6	521	11.9
	7-Apr-05	4.8	7.3	406	12.3
	15-Apr-05	5.8	7.1	341	12.5
	21-Apr-05	7.0	7.0	323	11.7
	29-Apr-05	6.0	7.3	329	12.1
	6-May-05	8.1	6.8	506	
	13-May-05	6.4	8.6	377	12.1
	20-May-05	7.1	7.7	392	12.1
	27-May-05	8.9	6.6	420	
	3-Jun-05	9.7	6.9	443	
	10-Jun-05	10.3	7.1	449	
	17-Jun-05	8.6	6.8	472	10.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-Jun-05	13.1	7.1	511	
	30-Jun-05	11.2	7.0	487	
	7-Jul-05	10.7	5.0	454	9.9
	15-Jul-05	12.8	6.9	674	9.7
	21-Jul-05	14.8	6.3	959	9.3
	28-Jul-05	11.1	7.3	874	9.4
	2-Aug-05	12.4	8.8	511	9.4
	12-Aug-05	12.5	7.7	798	
	19-Aug-05	12.2	7.6	488	9.5
	24-Aug-05	11.1	7.4	480	9.3
	1-Sep-05	12.0		475	8.9
	9-Sep-05	11.8	6.7	473	8.0
	16-Sep-05	13.1	7.3	555	
	23-Sep-05	12.4	7.5	505	7.5
	30-Sep-05	12.2	7.5	520	7.9
	7-Oct-05	11.5	7.6	657	
	14-Oct-05	12.0	7.6	535	7.9
	21-Oct-05	10.5	8.4	510	8.4
	28-Oct-05	9.5	7.5	541	8.4
	4-Nov-05	10.6	7.5	552	7.9
	11-Nov-05	9.5	7.6	549	7.3
	18-Nov-05	5.4	7.6	777	
	25-Nov-05	6.8	7.5	506	7.2
	2-Dec-05	5.9	8.6	467	10.0
	9-Dec-05	5.3	8.7	447	10.0
	16-Dec-05	5.0	7.8	484	10.9
	22-Dec-05	4.0	8.0	469	11.6
	6-Jan-06	5.3	7.8	426	
	13-Jan-06	7.4	7.7	443	10.9
	20-Jan-06	6.7	7.5	428	11.4
	27-Jan-06	6.3	6.9	441	12.0
	3-Feb-06	6.4	7.7	421	11.6
	10-Feb-06	6.1	7.9	419	
	20-Feb-06	6.2	8.8	422	
	24-Feb-06	4.4	7.9	397	
	3-Mar-06	4.3	8.3	410	
	10-Mar-06	5.5	6.9	419	11.6
	17-Mar-06	4.8	7.4	364	12.2
	24-Mar-06	5.9	7.9	378	
	31-Mar-06	7.3	7.7	517	
	7-Apr-06	5.3	7.7	461	
	10-Apr-06	7.5	7.8	460	
	13-Apr-06	7.4	7.7	439	
	21-Apr-06	7.6	7.8	466	
	26-Apr-06	6.6	8.4	493	
	5-May-06	8.2	7.8	507	
	12-May-06	8.9	8.1	605	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-May-06	8.4	7.6	572	
	25-May-06	7.9	7.8	594	
	2-Jun-06	7.9	8.0	591	
	9-Jun-06	9.3	7.8	480	
	16-Jun-06	9.6	7.7	570	
	23-Jun-06	9.8	7.6	613	
	30-Jun-06	11.2	8.7	623	
	7-Jul-06	13.9	8.2	554	
	14-Jul-06	12.0	7.8	546	
	21-Jul-06	15.9	7.8	563	
	28-Jul-06	17.4	7.7	598	
	4-Aug-06	17.3	7.9	551	
	11-Aug-06	11.7	8.2	526	
	18-Aug-06	13.9	7.3	549	
	25-Aug-06	12.8	7.3	542	
	1-Sep-06	14.2	7.2	542	
	8-Sep-06	14.1	7.4	563	
	15-Sep-06	12.3	7.1	575	
	21-Sep-06	11.2	7.4	595	
	28-Sep-06	10.5	7.2	617	
	6-Oct-06	11.5	7.3	634	
	13-Oct-06	7.3	7.1	643	
	20-Oct-06	9.0	7.3	668	
	26-Oct-06	9.0	7.7	711	
	3-Nov-06	8.1	7.6	634	11.0
	10-Nov-06	9.2	7.3	588	
	17-Nov-06	8.3	7.5	595	10.4
	24-Nov-06	7.6	7.7	582	11.6
	4-Dec-06	7.1	7.6	588	11.9
	8-Dec-06	6.8	7.4	588	12.1
	14-Dec-06	7.8	7.5	602	
	21-Dec-06	7.2	7.6	604	11.9
	28-Dec-06	7.4	7.6	619	11.5
	5-Jan-07	7.5	7.6	620	11.0
	12-Jan-07	6.8	7.6	587	11.1
	19-Jan-07	5.2	7.8	580	12.1
	26-Jan-07	4.4	8.1	584	11.1
	2-Feb-07	5.5	8.0	559	
	9-Feb-07	5.7	8.0	510	
	16-Feb-07	4.3	8.0	576	12.6
	22-Feb-07	5.4	8.1	575	11.8
	2-Mar-07	5.3	8.7	568	
	9-Mar-07	4.4	8.0	479	12.7
	16-Mar-07	6.0	7.0	521	11.9
	23-Mar-07	5.6	7.6	532	
	30-Mar-07	5.6	7.7	492	12.6
	5-Apr-07	5.1	7.1	520	12.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-Apr-07	5.2	7.8	549	
	20-Apr-07	7.1	7.8	493	
	28-Apr-07	6.5	8.0	517	
	4-May-07	7.1	7.6	470	
	11-May-07	7.4	7.6	549	
	18-May-07	8.0	8.2	555	
	25-May-07	8.8	7.9	510	
	1-Jun-07	9.5	7.9	524	
	8-Jun-07	9.7	7.6	603	10.7
	14-Jun-07	8.6	7.6	597	11.0
	22-Jun-07	8.2	7.6	554	10.6
	29-Jun-07	13.5	8.4	547	9.4
	6-Jul-07	11.5	8.0	584	10.3
	13-Jul-07	10.9	8.9	575	9.6
	20-Jul-07	11.0	8.4	629	10.4
	27-Jul-07	11.1	7.4	530	9.3
	3-Aug-07	13.1	7.6	562	8.3
	10-Aug-07	11.7	7.3	556	8.9
	17-Aug-07	11.2	7.3	615	8.5
	24-Aug-07	13.4	7.9	598	7.8
	30-Aug-07	12.7	7.7	624	7.4
	7-Sep-07	12.9	7.4	629	6.4
	14-Sep-07	11.9	7.2	630	7.6
	21-Sep-07	12.1	8.4	619	7.4
	28-Sep-07	12.3	8.5	615	6.4
	5-Oct-07	12.2	7.1	671	2.5
	12-Oct-07	10.6	7.1	687	7.4
	19-Oct-07	12.4	7.7	669	6.2
	26-Oct-07	12.0	7.7	670	6.4
	2-Nov-07	10.9	7.3	732	5.8
	9-Nov-07	9.1	7.3	752	7.0
	16-Nov-07	8.0	7.1	852	7.7
	23-Nov-07	3.8	8.2	781	10.5
	7-Dec-07	5.2	8.2	640	11.1
	14-Dec-07	4.6	8.0	646	11.6
	28-Dec-07	6.6	6.4		9.7
	4-Jan-08	4.8	7.0	612	12.5
	11-Jan-08	5.6	7.1	418	12.0
	18-Jan-08	5.0	7.1	525	12.2
	25-Jan-08	5.2	7.7	517	11.9
	1-Feb-08	5.0	7.3	533	11.7
	8-Feb-08	5.7	6.8	563	11.9
	15-Feb-08	4.9	7.3	564	
	22-Feb-08	5.5	7.2	535	
	29-Feb-08	4.1	7.0	511	
	7-Mar-08	5.3	6.8	454	
	14-Mar-08	5.1	6.0	552	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	20-Mar-08	5.1	7.7	578	11.9
	28-Mar-08	5.3	7.3	485	
	4-Apr-08	4.7	6.9	476	12.5
	11-Apr-08	4.4	6.9	412	12.9
	15-Apr-08	5.5	7.7	427	12.2
	15-Apr-08	5.5	7.7	427	12.2
	18-Apr-08	6.1	6.5	434	10.1
	25-Apr-08	6.5	8.3	463	11.1
	2-May-08	6.3	7.3	560	11.4
	8-May-08	6.4	6.7	544	
	15-May-08	9.8	7.4	551	10.5
	23-May-08	7.6	8.0	497	9.4
	30-May-08	13.7	6.7	700	7.3
	6-Jun-08	11.9	6.7	611	7.6
	13-Jun-08	9.0	6.2	518	9.2
	20-Jun-08	8.7	8.2	540	8.6
	27-Jun-08	9.3	6.7	587	8.1
	4-Jul-08	9.2	7.4	609	7.5
	11-Jul-08	9.9	6.9	565	8.9
	18-Jul-08	10.7	7.2	593	6.8
	25-Jul-08	9.4	7.9	628	7.1
	1-Aug-08	10.2	7.8	580	7.0
	8-Aug-08	10.8	7.3	599	6.2
	15-Aug-08	9.6	7.1	657	7.0
	22-Aug-08	12.9	6.1	651	5.2
	28-Aug-08	10.5	6.9		8.8
	5-Sep-08	11.6	7.5	570	7.8
	12-Sep-08	11.0	7.6	575	6.2
	19-Sep-08	9.8	7.9	401	5.6
	26-Sep-08	10.0	7.5	585	5.8
	3-Oct-08	9.0	7.2	604	8.6
	10-Oct-08	9.2	7.3	598	8.7
	17-Oct-08	8.7	7.4	536	6.0
	24-Oct-08	7.9	7.7	549	6.2
	31-Oct-08	8.6	8.4	520	7.1
	7-Nov-08	9.5	6.6	526	9.2
	14-Nov-08	9.2	7.3	475	9.0
	12-Dec-08	6.7	8.7	548	9.4
	23-Dec-08	4.5	7.8	475	7.9
	29-Dec-08	5.1	7.6	449	9.9
	16-Jan-09	4.7	7.8	542	9.7
	23-Jan-09	5.5	7.8	530	8.9
	30-Jan-09	4.9	8.0	526	9.1
	6-Feb-09	4.8		477	9.6
	13-Feb-09	5.0	7.8	444	6.2
	20-Feb-09	5.1	8.0	476	
	27-Feb-09	4.5	7.9	515	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	6-Mar-09	6.0		503	
	13-Mar-09	4.3	7.9	441	
	20-Mar-09	4.5	7.8	442	
	27-Mar-09			544	
	3-Apr-09	5.5	7.4	493	
	9-Apr-09	4.7	7.6	458	
	17-Apr-09	5.2	7.8	513	
	24-Apr-09	5.8	7.7	507	
	1-May-09	8.2	7.3	396	11.6
	8-May-09	7.4	7.4	509	
	15-May-09	7.7	7.7	440	11.5
	22-May-09	7.0	8.1	344	11.6
	29-May-09	7.3	7.7	556	
	5-Jun-09	7.5	7.0	496	11.9
	12-Jun-09	8.5	8.2	564	11.6
	19-Jun-09	8.9	7.5	1022	11.7
	26-Jun-09	13.0	7.6	565	10.0
	2-Jul-09	8.8	7.6	490	11.3
	10-Jul-09	9.1			11.6
	17-Jul-09	9.1	9.4	544	10.2
	24-Jul-09	10.7	8.1	551	9.9
	31-Jul-09	10.1	7.7	545	10.8
	7-Aug-09	10.1	8.0	597	8.5
	14-Aug-09	10.4	9.0	554	10.4
	21-Aug-09	12.1	8.2	621	9.6
	28-Aug-09	10.7	8.5	559	9.2
	4-Sep-09	10.5	8.3	580	9.0
	11-Sep-09	11.4	8.8	538	9.0
	18-Sep-09	11.2	8.1	611	8.1
	25-Sep-09	11.3	7.4	542	9.3
	2-Oct-09	9.4	8.8	676	
	9-Oct-09	9.9	7.8	659	11.0
	16-Oct-09	6.5	8.1	636	12.2
	23-Oct-09	7.3	8.0	587	10.9
	30-Oct-09	9.2	7.9	595	11.5
	6-Nov-09	7.3	7.2	623	
	13-Nov-09	7.8	7.7	634	
	20-Nov-09	7.7	7.7	544	
	27-Nov-09	7.0	7.8	523	
	4-Dec-09	6.5	7.5	524	11.7
	11-Dec-09	4.8	7.9	483	
	18-Dec-09	4.2	7.9	561	12.1
	22-Dec-09	4.5	8.7	557	
	28-Dec-09	5.0	7.6	585	
	8-Jan-10	2.4	8.5	512	12.1
	15-Jan-10	5.5	8.8	487	12.7
	22-Jan-10	3.8	8.3	548	12.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	29-Jan-10	3.7	8.2	581	12.7
	5-Feb-10	5.2	6.4	553	12.6
	12-Feb-10	5.3	6.6	562	12.6
	19-Feb-10	4.9	7.6	504	11.3
	1-Mar-10	4.7	8.2	377	12.4
	5-Mar-10	5.6	7.4	522	11.7
	12-Mar-10	6.2	7.9	659	12.1
	19-Mar-10	5.4	7.6	464	12.8
	26-Mar-10	4.6	7.5	423	12.6
	2-Apr-10	6.0	7.0	440	
	9-Apr-10	5.6	7.2	543	12.2
	16-Apr-10	6.5	7.6	370	12.4
	23-Apr-10	6.1	7.7	344	12.7
	30-Apr-10	7.0	7.6	346	12.1
	7-May-10	7.2	7.7	348	
	14-May-10	10.0	7.7	345	11.4
	21-May-10	7.9	7.6	357	11.8
	28-May-10	9.0	7.6	339	11.8
	4-Jun-10	7.9	7.7	395	7.8
	11-Jun-10	8.1	7.6	337	8.3
	18-Jun-10	8.3	7.6	407	13.8
	25-Jun-10	8.7	7.7	391	11.5
	1-Jul-10	8.6	7.7	362	11.4
	9-Jul-10	9.8	7.7	441	10.8
	15-Jul-10	10.9	7.6	434	10.4
	23-Jul-10	10.2	7.6	449	13.5
	30-Jul-10	9.9	7.6	366	10.5
	6-Aug-10	10.3	7.7	423	
	13-Aug-10	10.5	7.6	436	7.8
	20-Aug-10	10.4	7.5	435	9.5
	27-Aug-10	10.9	7.5	306	9.6
	3-Sep-10	12.4	7.7	452	9.3
	10-Sep-10	11.3	7.6	367	9.8
	17-Sep-10	10.3	7.6	385	9.5
	24-Sep-10	12.4	7.6		9.1
	1-Oct-10	10.2	7.6	443	9.9
	8-Oct-10	10.1	7.4	446	9.1
	15-Oct-10	10.1	7.4	436	9.2
	22-Oct-10	7.8	7.6	429	10.3
	29-Oct-10	8.9	7.5	376	9.3
	5-Nov-10	7.9	7.6	477	10.3
	12-Nov-10	9.1	7.5	484	10.5
	19-Nov-10	8.6	7.7	385	10.9
	26-Nov-10	7.7	7.5	377	10.8
	3-Dec-10	7.8	7.5	399	10.1
	9-Dec-10	6.8	7.5	337	10.8
	17-Dec-10	7.1	7.7	406	11.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	23-Dec-10	5.0	8.0	339	11.0
	30-Dec-10	7.0	7.9	385	10.5
	7-Jan-11	6.1	7.7	307	12.2
	14-Jan-11	6.3	7.5	321	11.5
	21-Jan-11	5.0	7.6	318	10.4
	28-Jan-11	5.9	7.8	333	11.3
	4-Feb-11	2.3	7.8	290	10.4
	11-Feb-11	2.3	7.8	310	10.6
	18-Feb-11	2.5	7.8	329	11.3
	25-Feb-11	4.2	7.6	316	12.3
	4-Mar-11	5.9	7.5	332	12.1
	11-Mar-11	5.0	7.5	341	12.5
	18-Mar-11	5.6	7.6	298	-
	22-Mar-11	5.3	7.7	356	10.8
	25-Mar-11	5.8	7.7	342	12.3
	1-Apr-11	5.4	7.4	327	12.4
	8-Apr-11	5.2	7.4	320	12.8
	15-Apr-11	5.4	7.4	249	10.8
	21-Apr-11	5.3	7.8	338	10.6
	29-Apr-11	5.5	-	328	13.2
	6-May-11	6.4	8.0	265	11.6
	13-May-11	7.6	8.0	274	11.8
	20-May-11	7.1	7.6	298	12.0
	27-May-11	7.1	-	299	12.1
	3-Jun-11	7.9	7.6	309	13.6
	10-Jun-11	7.7	8.4	362	11.3
	17-Jun-11	8.7	6.7	321	11.3
	24-Jun-11	8.7	7.6	386	12.4
	30-Jun-11	9.0	7.6	289	11.9
	8-Jul-11	10.1	7.5	400	12.0
	14-Jul-11	9.3	6.3	403	10.8
	22-Jul-11	11.3	7.8	415	13.0
	29-Jul-11	11.4	6.7	385	10.2
	5-Aug-11	12.0	6.9	416	10.5
	12-Aug-11	10.9	7.9	435	9.1
	19-Aug-11	11.4	8.0	246	8.6
	26-Aug-11	12.2	7.7	388	8.2
	2-Sep-11	3.3	7.8	398	8.7
	9-Sep-11	11.7	7.7	421	7.8
	16-Sep-11	10.5	7.6	374	7.8
	23-Sep-11	11.7	7.9	396	5.9
	30-Sep-11	11.6	8.0	416	9.6
	6-Oct-11	10.0	7.8	490	8.7
	14-Oct-11	11.9	7.8	402	7.9
	21-Oct-11	9.9	7.8	461	9.5
	28-Oct-11	9.7	9.8	433	9.6
	4-Nov-11	8.7	7.8	365	9.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Nov-11	7.9	7.6	409	4.5
	18-Nov-11	6.8	8.3	401	10.8
	25-Nov-11	7.7	7.8	410	9.8
	2-Dec-11	8.0	8.2	373	12.1
	9-Dec-11	7.9	7.6	309	9.3
	16-Dec-11	7.6	7.4	327	11.9
	23-Dec-11	6.8	8.2	299	5.1
	30-Dec-11	7.0	8.4	280	11.1
	6-Jan-12	7.4	7.4	357	12.4
	20-Jan-12	5.5	8.0	293	10.1
	27-Jan-12	6.5	8.1	265	11.9
	3-Feb-12	6.5	7.8	233	11.3
	10-Feb-12	6.0	8.1	292	11.6
	17-Feb-12	6.2	7.7	320	13.3
	24-Feb-12	4.0	8.3	273	12.4
	1-Mar-12	5.6	8.0	323	-
	9-Mar-12	6.7	7.8	283	11.3
	16-Mar-12	6.7	7.8	283	11.3
	23-Mar-12	6.3	7.3	268	12.4
	30-Mar-12	6.2	8.4	328	12.8
	6-Apr-12	7.5	8.6	363	5.6
	13-Apr-12	6.6	8.0	358	10.5
	20-Apr-12	7.4	8.1	367	9.1
	27-Apr-12	6.4	7.9	349	12.4
	4-May-12	8.3	7.9	416	9.0
	11-May-12	7.4	7.6	232	12.0
	18-May-12	8.7	7.7	356	10.0
	25-May-12	10.0	6.5	383	8.6
	1-Jun-12	7.9	7.6	334	8.3
	8-Jun-12	9.1	8.1	354	9.5
	15-Jun-12	9.6	7.6	346	8.0
	22-Jun-12	7.0	7.9	486	9.1
	28-Jun-12	10.6	7.8	547	6.8
	6-Jul-12	11.1	7.7	345	6.2
	13-Jul-12	10.7	8.3	409	6.1
	20-Jul-12	11.3	7.9	440	6.9
	27-Jul-12	11.4	7.8	465	6.5
	3-Aug-12	12.0	7.5	460	7.4
	10-Aug-12	13.1	7.7	480	7.5
	17-Aug-12	11.0	7.9	414	6.6
	24-Aug-12	11.4	7.9	430	9.6
	31-Aug-12	12.2	7.3	468	6.7
	7-Sep-12	11.7	6.9	456	6.7
	14-Sep-12	11.7	7.0	466	8.5
	21-Sep-12	10.9	7.1	486	8.8
	28-Sep-12	9.8	6.6	497	9.3
	5-Oct-12	12.0	7.1	535	7.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-Oct-12	8.4	8.3	487	9.8
	19-Oct-12	9.6	8.4	5.26	9.9
	26-Oct-12	10.0	7.4	460	10.2
	2-Nov-12	8.7	6.5	410	6.9
	9-Nov-12	8.9	8.2	378	9.8
	16-Nov-12	8.9	8.3	403	10.1
	23-Nov-12	8.7	7.6	388	7.1
	30-Nov-12	8.4	7.5	363	6.0
	7-Dec-12	7.9	7.4	452	6.8
	14-Dec-12	7.8	7.7	384	10.6
	21-Dec-12	6.7	7.3	424	11.7
	28-Dec-12	6.8	7.4	381	11.4
	4-Jan-13	5.9	7.6	422	10.1
	11-Jan-13	5.4	7.5	623	9.9
	17-Jan-13	6.0	7.7	400	10.4
	25-Jan-13	6.2	7.7	416	4.0
	1-Feb-13	5.5	7.9	298	12.0
	8-Feb-13	4.9	7.6	314	13.1
	15-Feb-13	5.0	7.5	509	11.7
	22-Feb-13	4.6	7.5	331	9.4
	1-Mar-13	5.8	7.7	413	9.0
	8-Mar-13	6.7	7.7	362	11.8
	15-Mar-13	5.4	-	342	9.5
	22-Mar-13	4.9	7.6	411	12.5
	28-Mar-13	6.1	7.7	340	11.8
	5-Apr-13	5.3	7.7	389	10.0
	12-Apr-13	5.3	7.7	373	10.0
	19-Apr-13	6.8	7.3	311	5.9
	26-Apr-13	5.8	7.4	309	10.1
	3-May-13	7.8	7.9	312	9.9
	9-May-13	7.0	7.6	358	-
	16-May-13	7.4	7.6	342	11.3
	24-May-13	6.3	7.7	393	10.4
	31-May-13	8.4	7.7	364	8.5
	7-Jun-13	7.5	-	330	9.5
	14-Jun-13	10.3	7.7	393	8.5
	21-Jun-13	8.6	7.9	409	12.6
	27-Jun-13	8.6	7.9	423	11.1
	5-Jul-13	9.5	7.6	427	10.7
	12-Jul-13	9.6	7.5	447	10.6
	19-Jul-13	9.5	7.5	456	10.0
	25-Jul-13	9.4	7.5	451	8.5
	2-Aug-13	9.3	7.5	502	9.1
	8-Aug-13	9.2	7.6	508	8.6
	16-Aug-13	9.3	7.7	512	8.3
	23-Aug-13	9.2	7.6	523	8.3
	30-Aug-13	9.3	7.6	546	8.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	6-Sep-13	9.2	7.5	523	8.0
	13-Sep-13	7.6	7.5	506	8.1
	20-Sep-13	9.3	7.6	523	8.1
	27-Sep-13	9.4	7.6	523	7.9
	4-Oct-13	9.0	7.5	521	7.6
	11-Oct-13	9.5	7.6	530	8.0
	18-Oct-13	9.2	7.5	525	7.0
	25-Oct-13	8.0	7.4	521	3.9
	31-Oct-13	7.6	7.3	516	3.8
	8-Nov-13	7.6	7.2	510	5.3
	14-Nov-13	6.7	7.2	503	5.1
	22-Nov-13	6.8	7.1	510	4.9
	29-Nov-13	7.1	8.3	389	2.5
	6-Dec-13	7.3	7.6	396	3.7
	10-Jan-14	4.3	8.2	350	4.1
	17-Jan-14	5.4	7.8	276	7.1
	31-Jan-14	2.7	7.1	380	4.3
	7-Feb-14	4.6	7.0	394	3.3
	7-Mar-14	2.0	7.3	370	7.0
	14-Mar-14	3.6	6.3	402	9.3
	21-Mar-14	4.1	7.3	276	5.4
	28-Mar-14	4.6	6.8	591	11.6
	4-Apr-14	4.8	7.6	387	10.8
	11-Apr-14	5.2	7.5	429	11.5
	17-Apr-14	5.4	7.6	533	9.9
	25-Apr-14	5.3	7.5	530	9.9
	1-May-14	5.6	7.5	486	10.0
	9-May-14	7.6	7.2	473	6.9
	16-May-14	7.5	7.2	456	6.2
	23-May-14	7.6	7.2	463	6.3
	30-May-14	7.8	7.6	450	6.8
	6-Jun-14	9.0	7.2	461	6.2
	13-Jun-14	8.9	7.2	460	6.4
	20-Jun-14	8.9	7.2	456	7.0
	28-Jun-14	9.8	7.1	450	7.6
	4-Jul-14	9.8	7.1	448	7.8
	11-Jul-14	9.9	7.1	426	7.9
	18-Jul-14	9.7	8.4	535	-
	25-Jul-14	10.2	8.7	532	-
	1-Aug-14	10.2	8.6	478	7.9
	8-Aug-14	10.2	8.5	463	7.6
	15-Aug-14	10.0	8.2	456	7.5
	22-Aug-14	11.1	8.7	598	-
	29-Aug-14	11.1	8.5	608	-
	5-Sep-14	12.7	8.8	635	-
	12-Sep-14	10.5	8.1	625	6.2
	19-Sep-14	10.0	8.0	420	6.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	26-Sep-14	10.0	8.1	427	6.9
	3-Oct-14	9.9	7.6	463	4.9
	10-Oct-14	10.2	7.5	460	5.6
	16-Oct-14	9.9	7.5	456	5.9
	24-Oct-14	7.9	7.6	416	6.9
	31-Oct-14	7.6	7.4	423	6.0
	7-Nov-14	0.5	7.2	428	4.0
	14-Nov-14	1.0	7.3	431	4.2
	20-Nov-14	0.2	7.2	420	4.1
	28-Nov-14	0.1	7.2	416	5.3
	5-Dec-14	4.4	7.3	425	7.0
	12-Dec-14	3.3	7.2	431	6.9
	19-Dec-14	3.5	7.2	425	6.2
	26-Dec-14	4.5	7.2	469	7.9
	2-Jan-15	1.4	7.2	432	7.9
	8-Jan-15	1.3	7.3	432	6.9
	14-Jan-15	2.3	7.2	416	7.1
	23-Jan-15	3.4	7.2	402	7.1
	30-Jan-15	2.7	8.0	503	12.5
	6-Feb-15	4.0	7.9	513	11.7
	12-Feb-15	2.0	7.6	508	11.5
	27-Feb-15	3.2	7.8	379	13.0
	6-Mar-15	2.3	7.7	509	11.9
	13-Mar-15	6.1	7.7	361	10.3
	20-Mar-15	7.1	7.8	431	10.1
	26-Mar-15	5.9	7.9	409	10.8
	2-Apr-15	5.8	7.8	406	11.4
	10-Apr-15	6.2	7.6	270	11.5
	17-Apr-15	5.7	8.5	299	-
	23-Apr-15	5.0	7.8	386	13.9
	1-May-15	6.1	7.6	257	12.8
	8-May-15	8.5	8.9	400	-
	15-May-15	7.9	7.7	358	12.6
	21-May-15	7.2	7.8	355	14.4
	28-May-15	9.0	7.7	390	11.5
	4-Jun-15	8.8	7.8	389	11.3
	12-Jun-15	8.8	7.6	440	9.5
	18-Jun-15	10.2	7.7	494	9.4
	26-Jun-15	13.5	7.5	495	-
	1-Jul-15	9.0	7.6	420	-
	10-Jul-15	9.1	7.7	409	-
	17-Jul-15	9.2	7.9	401	-
	22-Jul-15	12.2	7.5	478	-
	30-Jul-15	14.3	7.9	463	-
	5-Aug-15	10.4	7.6	492	9.0
	13-Aug-15	11.4	8.0	497	9.1
	21-Aug-15	11.9	7.6	431	8.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	28-Aug-15	-	8.4	444	-
	3-Sep-15	12.0	8.1	487	11.6
	10-Sep-15	12.5	7.5	513	9.4
	18-Sep-15	11.5	7.5	484	9.7
	25-Sep-15	11.4	7.5	487	9.0
	2-Oct-15	10.8	7.1	461	8.0
	9-Oct-15	11.0	7.1	457	7.0
	16-Oct-15	10.7	7.5	454	7.8
	23-Oct-15	10.5	7.3	467	8.0
	30-Oct-15	10.0	7.1	556	7.7
	5-Nov-15	10.3	7.9	518	7.5
	13-Nov-15	8.2	7.3	230	8.0
	19-Nov-15	9.6	7.4	563	10.5
	26-Nov-15	6.5	7.2	523	12.5
	4-Dec-15	7.2	7.3	460	12.2
	10-Dec-15	7.8	7.1	526	9.9
	17-Dec-15	7.3	7.6	460	10.9
	23-Dec-15	8.2	7.5	470	11.3
	30-Dec-15	6.5	7.5	439	12.1
	8-Jan-16	6.0	7.3	427	12.3
	14-Jan-16	5.6	7.2	360	12.2
	22-Jan-16	1.1	7.5	443	13.0
	29-Jan-16	3.5	7.3	430	12.1
	5-Feb-16	6.0	7.2	458	12.0
	11-Feb-16	4.0	7.4	438	12.9
	18-Feb-16	5.8	7.7	474	13.0
	25-Feb-16	4.5	7.6	450	12.4
	4-Mar-16	3.4	7.1	430	12.7
	10-Mar-16	6.0	7.2	243	12.4
	18-Mar-16	5.5	7.5	379	13.1
	28-Mar-16	4.2	6.9	229	11.8
	1-Apr-16	5.5	7.2	234	11.5
	7-Apr-16	5.1	7.2	313	10.9
	15-Apr-16	6.1	7.2	314	11.9
	22-Apr-16	6.5	7.8	344	12.1
	29-Apr-16	6.2	7.9	397	13.6
	6-May-16	7.3	7.9	397	11.9
	13-May-16	9.0	7.8	546	-
	20-May-16	9.0	7.8	546	n/a
	27-May-16	9.0	7.8	423	10.1
	2-Jun-16	9.1	7.8	427	9.6
	10-Jun-16	7.9	7.7	587	10.5
	17-Jun-16	12.1	7.6	486	9.1
	24-Jun-16	8.8	7.5	445	9.3
	28-Jun-16	9.6	7.6	460	14.0
	8-Jul-16	9.3	7.5	491	12.0
	15-Jul-16	9.7	7.7	405	9.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-Jul-16	10.1	7.4	475	9.5
	29-Jul-16	10.3	7.4	453	9.2
	5-Aug-16	12.0	7.9	209	9.9
	12-Aug-16	11.1	7.6	489	9.0
	19-Aug-16	11.2	7.6	486	7.9
	26-Aug-16	11.5	7.6	468	8.5
	2-Sep-16	12.1	7.1	126	4.0
	9-Sep-16	11.8	7.6	444	8.0
	16-Sep-16	11.6	7.6	436	8.5
	21-Sep-16	11.9	7.3	346	9.5
	30-Sep-16	11.8	7.5	437	8.2
	7-Oct-16	11.9	7.5	439	8.9
	13-Oct-16	11.5	7.5	400	9.5
	19-Oct-16	11.6	7.7	486	11.8
	27-Oct-16	10.4	7.8	433	8.3
	3-Nov-16	10.7	7.6	595	10.4
	11-Nov-16	9.7	6.1	421	11.2
	18-Nov-16	10.1	7.6	616	9.3
	24-Nov-16	9.2	7.6	448	9.7
	2-Dec-16	9.2	7.7	540	5.9
	7-Dec-16	8.8	7.7	520	6.2
	16-Dec-16	8.3	7.6	719	10.5
	22-Dec-16	7.9	7.2	7.4	10.9
	30-Dec-16	7.5	7.1	600	10.4
	6-Jan-17	4.3	7.6	256	11.7
	13-Jan-17	5.6	7.5	498	11.6
	20-Jan-17	4.7	7.8	520	12.6
	26-Jan-17	6.3	7.8	544	11.8
	3-Feb-17	3.8	7.9	460	12.5
	10-Feb-17	4.0	7.8	424	13.5
	17-Feb-17	3.3	7.9	510	12.8
	19-Apr-17	8.6	7.0	461	15.2
	16-May-17	8.3	7.9	612	11.6
	28-Jun-17	9.4	7.6	456	10.1
	18-Jul-17	11.8	7.7	496	12.3
	15-Aug-17	10.6	8.2	403	9.7
	18-Sep-17	10.8	6.5	513	8.9
	18-Oct-17	9.8	7.7	509	9.1
	15-Nov-17	7.7	7.6	498	8.9
	17-Jan-18	4.6	7.7	410	10.5
	22-Feb-18	6.2	7.6	350	10.7
	20-Mar-18	3.1	7.6	418	15.7
	18-Apr-18	4.9	8.1	695	12.1
	14-May-18	7.9	7.5	633	10.6
	18-Jun-18	9.2	7.5	649	9.2
	19-Jul-18	9.6	7.3	643	9.2
	23-Aug-18	11.2	7.4	704	7.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Sep-18	11.7	7.5	622	8.4
	24-Oct-18	10.1	7.6	655	8.4
	21-Nov-18	5.8	7.4		9.5
	12-Dec-18	6.3	7.8	696	10.2
	18-Jan-19	4.2	7.7	662	11.3
	24-Apr-19	5.2	7.7	538	11.0
	23-May-19	7.7	7.7	538	10.1
	18-Jun-19	9.3	7.7	583	9.8
	29-Jul-19	10.0	7.5	585	8.9
	29-Aug-19	10.7	7.5	1120	8.7
	23-Oct-19		8.0	600	8.0
	23-Oct-19	10.4	8.0	600	8.0
	26-Sep-19	11.4	7.1	565	8.2
	15-Jan-20	1.2	8.0	456	7.6
	26-Mar-20	6.1	7.6	601	11.4
	27-Apr-20	6.7	7.7	457.2	10.7
	29-May-20	9.2	8.4	588	9.8
	23-Jun-20	8.7	7.7	610	9.3
	30-Jul-20	11.0	7.9	712	8.2
	25-Aug-20	11.3	7.2	631	8.3
	25-Sep-20	11.0	7.8	530	9.6
	30-Oct-20	9.4	7.8	510	7.1
	26-Nov-20	5.3	7.8	545	12.1
	23-Dec-20	5.5	7.5	675	8.6
SW 0-2					
	16-Jul-04	25.4	7.7	769	5.7
	22-Jul-04	29.2	8.0		7.2
	29-Jul-04	24.2	7.9	768	
	6-Aug-04	21.6	8.2	774	8.1
	12-Aug-04	15.5	8.1	683	
	20-Aug-04	20.0	8.0	801	6.0
	26-Aug-04	21.5	8.0	785	
	3-Sep-04	23.1	7.9	742	6.0
	9-Sep-04	15.8	8.3	716	7.9
	17-Sep-04	11.9	7.7	691	7.9
	1-Oct-04	17.1	8.0	825	8.8
	7-Oct-04	14.3	7.9	755	7.0
	14-Oct-04	10.2	7.8	709	7.9
	20-Oct-04	7.8	7.8	636	11.9
	28-Oct-04	11.7	8.0	803	9.3
	4-Nov-04	4.1	7.8	493	13.0
	11-Nov-04	3.4	7.8	528	
	19-Nov-04	7.7	7.9	624	
	2-Dec-04	0.1	7.4	436	11.3
	9-Dec-04	0.1	7.6	402	12.1
	17-Dec-04	0.1	7.3	441	10.3
	5-Jan-05	0.1	7.3	388	10.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-Jan-05	0.1	7.2	197	#REF!
	30-Mar-05	2.6	7.8	373	#REF!
	15-Apr-05	3.1	7.1	307	11.8
	21-Apr-05	9.8	7.6	370	
	29-Apr-05	6.4	7.5	323	
	6-May-05	17.4	7.7	560	
	13-May-05	11.8	8.4	494	
	20-May-05	9.8	7.2	478	9.3
	27-May-05	20.8	7.7	679	8.4
	3-Jun-05	19.8	7.6	670	9.1
	10-Jun-05	23.8	8.0	764	6.0
	17-Jun-05	15.7	7.2	535	6.7
	24-Jun-05	25.4	8.0	770	
	30-Jun-05	23.7	7.9	808	
	7-Jul-05	23.0	6.8	803	5.0
	21-Oct-05	10.0	8.1	630	11.0
	28-Oct-05	6.5	7.9	564	12.3
	4-Nov-05	11.1	7.7	654	9.4
	11-Nov-05	5.0	7.8	515	12.3
	18-Nov-05	0.3	7.1	850	
	2-Dec-05	0.1	8.5	437	11.3
	9-Dec-05	0.1	8.9	476	8.1
	16-Dec-05	0.1	7.8	490	9.1
	22-Dec-05	0.1	7.6	481	6.7
	28-Dec-06	0.3	7.8	842	13.3
	5-Jan-07	4.7	7.9	770	12.1
	12-Jan-07	0.1	7.8	740	12.8
	16-Mar-07	0.1	7.8	526	7.3
	23-Mar-07	0.5	7.6	490	10.6
	30-Mar-07	4.6	7.9	596	12.1
	5-Apr-07	0.1	7.2	372	12.0
	13-Apr-07	1.1	8.0	561	13.7
	20-Apr-07	11.5	8.1	572	
	28-Apr-07	10.3	8.3	550	10.3
	4-May-07	14.2	8.2	576	10.3
	11-May-07	15.6	8.0	644	8.6
	18-May-07	12.9	8.0	612	9.8
	25-May-07	18.9	7.7	644	7.1
	1-Jun-07	20.5	7.7	670	5.6
	8-Jun-07	20.3	7.6	743	5.4
	14-Jun-07	19.6	7.6	761	5.7
	29-Jun-07	20.5	8.0	743	6.4
	6-Jul-07	20.5	8.0	743	6.4
	13-Jul-07	18.0	8.2	785	8.2
	20-Jul-07	17.1	7.4	756	8.1
	24-Aug-07	18.9	7.8	913	6.5
	30-Aug-07	18.0	7.8	872	7.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	7-Sep-07	19.4	7.4	860	6.5
	14-Sep-07	13.4	7.4	740	7.9
	21-Sep-07	15.4	8.1	793	8.2
	28-Sep-07	13.3	8.4	817	7.9
	5-Oct-07	13.0	7.4	876	8.1
	12-Oct-07	8.6	7.2	713	8.5
	19-Oct-07	14.4	7.7	779	7.5
	26-Oct-07	8.6	7.3	757	10.8
	2-Nov-07	5.7	7.5	819	10.9
	9-Nov-07	2.5	7.4	776	12.0
	16-Nov-07	1.5	7.3	790	13.0
	11-Jan-08	0.4	7.1	478	10.7
	4-Apr-08	0.3	7.2	485	
	11-Apr-08	2.1	7.0	431	11.8
	18-Apr-08	10.2	6.8	494	8.5
	25-Apr-08	10.5	7.8	552	7.1
	2-May-08	8.1	7.0	617	9.4
	8-May-08	8.5	6.7	584	9.9
	15-May-08	12.2	7.5	683	8.1
	23-May-08	10.9	7.8	557	7.8
	30-May-08	8.1	6.3	566	10.5
	6-Jun-08	24.2	7.0	627	5.4
	13-Jun-08	18.5	7.0	655	5.1
	20-Jun-08	14.3	7.8	723	5.7
	27-Jun-08	20.5	6.7	815	4.6
	4-Jul-08	16.3	6.8	778	6.5
	11-Jul-08	17.3	6.9	773	5.2
	18-Jul-08	21.1	7.4	879	3.9
	25-Jul-08	18.4	7.3	707	4.3
	1-Aug-08	18.3	7.2	701	3.9
	8-Aug-08	17.1	7.4	549	4.2
	15-Aug-08	15.8	6.4	732	4.0
	22-Aug-08	20.2	7.3	740	4.7
	28-Aug-08	16.0	7.3		6.1
	5-Sep-08	17.5	7.6	874	5.6
	12-Sep-08	13.8	7.6	851	5.4
	19-Sep-08	10.9	7.9	568	6.0
	26-Sep-08	12.8	7.4	854	5.7
	3-Oct-08	7.4	7.3	665	7.7
	10-Oct-08	7.4	6.8	791	8.5
	17-Oct-08	7.9	6.5	748	5.9
	24-Oct-08	3.3	7.6	670	6.8
	31-Oct-08	2.5	8.1	720	9.1
	7-Nov-08	8.2	9.9	451	5.7
	14-Nov-08	6.3	8.8	609	8.1
	20-Mar-09	0.2	8.4	526	11.2
	27-Mar-09	2.3	7.1	566	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	3-Apr-09	6.4	7.5	498	10.3
	17-Apr-09	5.8	7.8	529	11.8
	24-Apr-09	7.4	8.0	530	11.7
	1-May-09	14.5	7.8	378	8.5
	8-May-09	13.9	7.5	555	6.8
	15-May-09	12.5	7.9	470	10.2
	22-May-09	14.5	7.7	517	3.3
	29-May-09	13.1	7.7	559	6.7
	5-Jun-09	13.7	7.5	546	3.5
	12-Jun-09	15.8	7.8	623	7.2
	19-Jun-09	16.6	7.2	1214	7.5
	26-Jun-09	25.1	7.7	687	5.6
	2-Jul-09	16.4	7.5	584	6.2
	10-Jul-09	17.8			6.2
	17-Jul-09	14.8	8.8	740	6.1
	24-Jul-09	17.5	7.7	732	6.2
	31-Jul-09	17.2	7.5	742	5.8
	7-Aug-09	14.9	7.6	782	5.0
	14-Aug-09	15.8	8.9	707	8.5
	21-Aug-09	18.8	8.0	788	5.6
	28-Aug-09	14.1	8.3	734	8.1
	4-Sep-09	13.1	8.4	654	9.2
	11-Sep-09	13.6	8.0	752	7.8
	18-Sep-09	12.5	7.7	826	7.5
	25-Sep-09	12.3	7.8	678	8.2
	9-Oct-09	9.4	7.5	764	10.4
	16-Oct-09	2.0	7.9	774	12.2
	23-Oct-09	4.2			7.9
	30-Oct-09	3.1	7.9	735	9.1
	6-Nov-09	2.2	7.3	711	12.4
	13-Nov-09	2.5	7.5	786	7.5
	20-Nov-09	5.7	7.2	350	10.9
	27-Nov-09	3.6		682	11.6
	4-Dec-09	0.8	7.2	605	13.0
	19-Mar-10	7.6	7.5	464	9.4
	26-Mar-10	0.6	7.2	535	11.2
	2-Apr-10	10.7	6.6	451	9.2
	9-Apr-10	4.8	7.3	582	12.4
	16-Apr-10	12.2	7.6	494	8.5
	23-Apr-10	7.9	7.8	443	9.5
	30-Apr-10	10.7	7.7	458	8.4
	7-May-10	10.4	7.8	396	9.1
	14-May-10	11.1	7.8	346	10.8
	21-May-10	17.7	7.8	578	7.1
	28-May-10	23.2	7.7	607	5.5
	4-Jun-10	17.0	7.7	427	5.3
	11-Jun-10	15.8	7.8	471	5.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Jun-10	18.2	7.2	604	8.8
	25-Jun-10	18.6	7.7	585	7.6
	9-Jul-10	20.0	7.2	532	4.7
	15-Jul-10	23.4	7.8	722	2.4
	23-Jul-10	10.4	7.6	573	7.3
	30-Jul-10	18.8	7.8	552	7.1
	6-Aug-10	18.6	7.7	636	8.6
	13-Aug-10	21.2	7.7	703	4.3
	20-Aug-10	16.1	7.6	651	6.5
	27-Aug-10	14.8	7.5	407	6.2
	30-Aug-10	17.8	7.6	632	4.6
	1-Sep-10	20.2	7.7	706	4.1
	3-Sep-10	19.8	7.7	720	3.9
	7-Sep-10	15.9	7.6	521	5.2
	10-Sep-10	13.1	7.8	510	6.8
	17-Sep-10	11.2	7.6	475	7.4
	24-Sep-10	16.2	7.8		6.1
	1-Oct-10	11.3	7.6	523	7.0
	8-Oct-10	9.5	7.6	563	8.2
	15-Oct-10	9.4	7.6	561	8.3
	22-Oct-10	3.1	7.7	441	10.3
	29-Oct-10	6.4	7.6	416	5.1
	5-Nov-10	1.5	7.8	413	11.2
	12-Nov-10	3.1	7.8	469	10.7
	19-Nov-10	1.3	8.1	357	12.3
	26-Nov-10	0.3	7.8	345	11.8
	3-Dec-10	0.2	7.8	334	10.3
	1-Apr-11	2.0	7.3	301	11.2
	8-Apr-11	2.7	7.4	299	9.2
	15-Apr-11	3.4	7.7	252	11.7
	21-Apr-11	2.8	8.0	287	13.1
	29-Apr-11	5.1	-	309	12.2
	6-May-11	8.6	8.1	307	9.3
	13-May-11	10.3	8.2	347	9.3
	20-May-11	14.1	7.9	349	8.6
	27-May-11	10.9	8.1	320	9.0
	3-Jun-11	15.5	7.8	448	9.9
	10-Jun-11	16.5	7.9	482	9.4
	17-Jun-11	16.7	7.8	514	8.1
	24-Jun-11	16.8	7.9	538	6.8
	30-Jun-11	15.7	7.8	505	10.3
	8-Jul-11	20.1	8.0	652	8.2
	14-Jul-11	17.6	7.8	633	6.9
	22-Jul-11	22.2	7.7	707	8.1
	29-Jul-11	20.6	7.7	567	5.6
	12-Aug-11	17.8	8.0	689	6.0
	19-Aug-11	18.0	8.0	478	5.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	26-Aug-11	19.1	8.0	741	6.1
	2-Sep-11	20.9	7.8	398	8.7
	9-Sep-11	15.9	8.0	640	6.2
	16-Sep-11	9.7	7.7	475	8.3
	23-Sep-11	12.9	7.7	557	5.4
	30-Sep-11	13.7	8.2	552	8.3
	6-Oct-11	8.1	8.2	453	5.9
	14-Oct-11	14.3	7.8	486	6.3
	21-Oct-11	8.7	7.8	401	9.6
	28-Oct-11	5.4	8.6	475	11.2
	4-Nov-11	4.3	8.0	435	11.2
	11-Nov-11	3.3	7.6	498	5.3
	18-Nov-11	0.8	7.6	445	12.6
	25-Nov-11	3.8	7.9	449	8.4
	2-Dec-11	0.6	7.9	346	14.6
	9-Dec-11	0.2	7.3	327	11.4
	16-Dec-11	1.3	7.5	280	14.0
	16-Mar-12	6.0	7.5	250	11.6
	23-Mar-12	10.6	7.5	-	7.6
	30-Mar-12	2.5	7.8	290	8.1
	13-Apr-12	5.4	8.0	340	10.9
	20-Apr-12	8.6	7.9	401	4.4
	27-Apr-12	3.0	8.0	288	12.3
	4-May-12	13.9	7.8	452	3.6
	11-May-12	9.0	7.8	298	10.6
	18-May-12	10.8	8.0	489	8.5
	25-May-12	11.5	7.5	501	9.0
	1-Jun-12	10.6	8.2	467	8.5
	8-Jun-12	16.8	8.1	558	7.9
	15-Jun-12	18.2	8.1	562	7.9
	22-Jun-12	20.0	8.0	726	7.4
	28-Jun-12	18.7	8.2	648	6.3
	6-Jul-12	22.4	8.0	853	5.3
	13-Jul-12	18.8	8.1	683	5.6
	20-Jul-12	19.2	7.9	781	4.9
	27-Jul-12	18.9	7.9	691	5.9
	3-Aug-12	18.6	7.9	720	4.0
	10-Aug-12	16.2	7.8	524	6.0
	17-Aug-12	17.3	7.9	461	5.3
	24-Aug-12	16.7	8.2	667	8.6
	31-Aug-12	18.5	7.7	757	7.2
	7-Sep-12	16.3	8.2	716	4.2
	14-Sep-12	15.2	7.0	593	1.9
	21-Sep-12	10.8	8.0	534	8.7
	28-Sep-12	7.8	6.5	648	9.8
	5-Oct-12	14.3	7.1	736	7.2
	12-Oct-12	4.7	8.0	574	11.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Oct-12	12.2	8.4	724	4.4
	26-Oct-12	10.4	7.3	615	4.7
	2-Nov-12	1.8	6.3	386	6.9
	9-Nov-12	2.2	7.6	363	11.2
	16-Nov-12	2.8	8.1	438	8.0
	23-Nov-12	6.4	7.7	443	7.4
	30-Nov-12	5.2	7.6	433	7.3
	7-Dec-12	1.1	7.5	386	8.9
	14-Dec-12	0.8	7.7	365	12.3
	21-Dec-12	0.1	7.4	404	12.2
	28-Mar-13	1.5	7.9	303	9.8
	5-Apr-13	0.0	8.0	250	6.9
	12-Apr-13	1.7	8.2	230	7.0
	19-Apr-13	11.2	7.6	277	8.7
	26-Apr-13	4.7	7.8	262	6.1
	3-May-13	15.2	7.8	293	10.5
	9-May-13	13.6	7.8	475	7.5
	16-May-13	11.3	7.8	410	8.2
	24-May-13	5.9	7.7	322	8.4
	31-May-13	19.5	7.7	509	8.5
	7-Jun-13	11.6	-	351	6.2
	14-Jun-13	19.5	7.9	517	5.4
	21-Jun-13	14.9	7.8	539	8.1
	27-Jun-13	15.2	7.9	536	8.1
	5-Jul-13	19.2	7.7	621	6.3
	12-Jul-13	14.7	7.6	582	7.0
	19-Jul-13	19.6	7.8	556	5.6
	25-Jul-13	14.6	7.7	523	8.9
	2-Aug-13	18.2	8.1	576	8.6
	8-Aug-13	19.0	8.1	565	8.5
	16-Aug-13	19.2	8.0	560	8.4
	23-Aug-13	19.2	8.1	562	8.5
	30-Aug-13	19.2	8.2	548	8.3
	6-Sep-13	18.7	8.1	530	8.1
	13-Sep-13	12.9	8.2	530	8.6
	20-Sep-13	17.4	8.2	556	8.1
	27-Sep-13	12.6	7.8	550	8.2
	4-Oct-13	10.2	7.6	545	8.2
	11-Oct-13	10.2	7.5	540	8.0
	18-Oct-13	9.8	7.5	539	9.0
	25-Oct-13	7.6	7.6	423	3.9
	31-Oct-13	7.4	7.5	406	3.9
	8-Nov-13	7.4	7.3	398	3.8
	14-Nov-13	3.3	7.4	350	3.0
	22-Nov-13	3.7	7.3	360	3.2
	6-Dec-13	-0.1	7.6	258	7.3
	17-Apr-14	4.2	7.8	491	8.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	25-Apr-14	4.0	7.8	486	8.2
	1-May-14	4.3	7.6	480	8.2
	9-May-14	11.0	7.6	421	4.3
	16-May-14	10.0	7.1	450	8.2
	23-May-14	9.9	7.1	432	8.7
	30-May-14	10.1	7.1	423	8.8
	6-Jun-14	11.3	7.1	430	8.6
	13-Jun-14	12.5	7.2	432	8.5
	20-Jun-14	13.2	7.2	442	8.5
	27-Jun-14	14.2	7.2	421	7.9
	4-Jul-14	14.6	7.1	406	7.8
	11-Jul-14	14.6	7.1	413	7.8
	18-Jul-14	15.1	8.4	600	-
	25-Jul-14	14.9	8.7	608	-
	1-Aug-14	15.0	8.6	565	4.9
	8-Aug-14	15.3	8.5	562	4.9
	15-Aug-14	13.2	8.5	486	5.2
	22-Aug-14	16.1	8.6	639	7.5
	29-Aug-14	14.9	8.6	659	-
	12-Sep-14	12.0	7.8	623	6.2
	19-Sep-14	10.3	7.9	449	4.9
	26-Sep-14	10.3	7.9	440	5.0
	3-Oct-14	12.9	7.7	425	4.7
	10-Oct-14	11.9	7.6	420	4.5
	16-Oct-14	12.1	7.5	430	4.0
	24-Oct-14	7.6	7.6	489	6.9
	31-Oct-14	7.0	7.6	423	6.0
	7-Nov-14	0.5	7.3	431	7.0
	14-Nov-14	0.2	7.2	428	6.8
	20-Nov-14	-1.2	7.3	432	6.2
	26-Dec-14	1.3	7.2	418	7.0
	2-Apr-15	2.8	7.6	281	9.8
	23-Apr-15	2.5	8.0	343	13.2
	1-May-15	8.1	8.0	447	9.1
	8-May-15	17.3	9.2	523	-
	15-May-15	11.4	7.8	413	9.2
	21-May-15	11.2	8.0	420	11.4
	28-May-15	16.7	7.9	506	8.7
	4-Jun-15	15.5	8.1	507	9.5
	12-Jun-15	14.1	7.7	523	7.3
	18-Jun-15	17.8	7.8	579	6.9
	10-Jul-15	15.9	7.9	545	-
	17-Jul-15	15.5	8.0	541	-
	22-Jul-15	20.5	7.8	683	7.7
	30-Jul-15	24.6	8.1	743	-
	5-Aug-15	14.7	7.6	541	6.1
	13-Aug-15	-	7.9	611	-

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Aug-15	13.7	8.0	543	7.2
	28-Aug-15	14.6	8.1	565	7.8
	3-Sep-15	19.6	8.0	710	7.6
	10-Sep-15	18.6	7.7	621	7.1
	18-Sep-15	16.4	7.7	654	8.3
	25-Sep-15	14.0	7.6	583	9.6
	2-Oct-15	6.9	7.6	501	10.6
	9-Oct-15	10.4	7.7	530	8.5
	16-Oct-15	10.5	7.8	483	10.5
	23-Oct-15	5.9	7.6	464	10.8
	30-Oct-15	6.5	7.5	424	10.0
	5-Nov-15	9.9	7.5	445	6.3
	13-Nov-15	5.2	7.3	358	8.1
	19-Nov-15	9.8	7.7	535	12.1
	26-Nov-15	1.0	7.3	362	15.3
	4-Dec-15	2.0	7.5	390	15.5
	10-Dec-15	4.7	7.4	465	11.4
	17-Dec-15	3.6	7.7	370	11.3
	23-Dec-15	5.1	7.4	378	10.9
	30-Dec-15	-0.1	7.4	321	11.4
	8-Jan-16	0.1	7.2	355	12.1
	10-Mar-16	-0.1	6.9	210	10.4
	18-Mar-16	0.9	7.4	289	10.8
	28-Mar-16	1.0	6.6	132	11.5
	1-Apr-16	4.7	7.3	170	9.6
	7-Apr-16	0.2	7.4	219	12.5
	15-Apr-16	2.7	7.0	256	12.9
	22-Apr-16	10.7	7.9	426	8.6
	29-Apr-16	4.7	7.4	352	11.2
	6-May-16	9.2	7.9	424	8.5
	13-May-16	13.8	8.1	566	-
	20-May-16	13.5	8.0	570	8.7
	27-May-16	16.5	7.8	543	6.4
	2-Jun-16	15.9	7.9	544	6.5
	10-Jun-16	10.5	7.9	629	9.1
	17-Jun-16	14.4	7.9	581	8.0
	24-Jun-16	13.7	7.9	573	8.8
	28-Jun-16	16.0	8.0	609	10.7
	8-Jul-16	18.3	8.0	661	8.0
	15-Jul-16	18.0	7.9	562	6.9
	22-Jul-16	19.0	7.6	636	5.4
	29-Jul-16	16.4	7.8	606	5.9
	7-Oct-16	13.9	7.9	576	9.1
	27-Oct-16	1.7	8.0	396	12.0
	3-Nov-16	8.1	7.6	504	10.8
	11-Nov-16	5.0	7.8	409	12.2
	18-Nov-16	6.7	7.8	695	11.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-Nov-16	1.5	7.4	369	11.8
	2-Dec-16	2.3	7.5	340	7.2
	16-Dec-16	0.0	7.7	334	4.5
	26-Jan-17	0.0	7.5	362	10.1
	19-Apr-17	11.2	7.2	423	11.5
	16-May-17	17.4	8.2	483	7.8
	28-Jun-17	14.5	7.6	535	7.4
	18-Jul-17	19.6	6.1	666	9.2
	15-Aug-17	16.0	8.3	505	7.0
	18-Sep-17	14.2	7.7	649	7.7
	17-Oct-17	6.8	7.8	443	9.7
	14-Nov-17	0.5	7.7	413	12.8
	22-Feb-18	-0.2	7.5	235	8.7
	20-Mar-18	-0.2	7.5	358	11.4
	15-May-18	12.5	7.6	555	5.2
	18-Jun-18	18.8	7.7	641	6.3
	19-Jul-18	15.6	7.7	712	6.3
	23-Aug-18	15.2	7.6	628	4.5
	19-Sep-18	14.6	7.6	734	6.1
	24-Oct-18	2.9	7.5	641	10.0
	21-Nov-18	0.0	7.6	674	9.1
	12-Dec-18	0.3	8.1	637	9.9
	24-Apr-19	4.8	7.6	421.3	6.3
	23-May-19	10.8	7.6	496.9	4.0
	18-Jun-19	17.7	7.5	542	5.0
	29-Jul-19	18.9	7.8	637	6.9
	29-Aug-19	15.2	7.7	1332	6.4
	26-Sep-19	13.4	7.2	685	5.1
	23-Oct-19		7.4	743	7.3
	23-Oct-19	7.3	7.4	743	7.3
	27-Apr-20	6.2	7.7	511	8.1
	29-May-20	18.8	8.1	569	3.3
	23-Jun-20	19.0	7.7	616	4.2
	30-Jul-20	18.8	7.4	728	3.0
	25-Aug-20	19.2	7.3	709	4.7
	25-Sep-20	10.4	7.8	530	5.3
	30-Oct-20	7.0	7.3	654	7.0
	26-Nov-20	4.9	7.4	662	11.8
SW 3					
	22-May-03	10.0			
	18-Mar-04	0.6		340	4.4
	19-Apr-04	8.7	7.4	239	10.3
	19-May-04	14.6	7.5	378	5.3
	30-Mar-05	1.1	7.0	236	7.5
	11-Apr-05	1.5	6.1	154	7.5
	16-Jan-06	0.8	7.8	602	6.3
	20-Mar-06	0.5	7.8	209	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Apr-06	10.1	7.7	339	
	23-May-06	8.5	7.5	426	
	27-Nov-06	6.1	7.6	737	7.6
	17-Dec-06	1.4	7.5	353	
	21-Jan-07	2.5	7.6	452	6.5
	15-Apr-07	1.7	8.1	351	10.8
	13-May-07	13.2	8.0	849	7.0
	4-Apr-08	0.1	7.7	275	8.2
	23-Apr-08	18.7	7.8	329	5.8
	21-May-08	14.7	6.9	365	4.9
	15-Mar-09	2.0	7.7	295	10.4
	12-Apr-09	12.5	7.3	354	10.6
	17-May-09	20.5	7.7	351	4.5
	14-Mar-10	1.3	7.7	265	9.9
	11-Apr-10	8.2	7.8	373	11.3
	16-May-10	15.3	7.6	219	5.4
	13-Jun-10	18.5	7.5	334	6.2
	18-Jul-10	19.8	7.4	308	5.9
	14-Nov-10	6.0	7.3	365	10.6
	16-Jan-11	0.2	8.8	218	7.6
	13-Mar-11	0.3	8.1	209	7.1
	17-Mar-11	0.5	8.0	141	5.9
	22-Mar-11	0.5	7.9	204	8.2
	1-Apr-11	1.2	7.4	197	7.3
	5-Apr-11	0.4	8.0	166	12.3
	8-Apr-11	1.8	7.9	185	9.3
	12-Apr-11	4.4	6.3	164	10.8
	15-Apr-11	3.0	7.8	140	10.1
	18-Apr-11	2.1	7.8	200	11.7
	20-Apr-11	2.5	8.0	182	8.8
	21-Apr-11	2.3	8.1	185	12.5
	26-Apr-11	7.1	6.6	232	9.6
	29-Apr-11	5.2	7.6	225	11.2
	6-May-11	8.2	8.2	213	7.3
	15-May-11	10.7	8.4	252	9.3
	16-May-11	10.8	7.2	209	9.8
	18-May-11	12.2	8.2	228	7.0
	19-May-11	17.1	8.4	264	10.3
	20-May-11	15.5	7.8	256	6.7
	27-May-11	11.1	-	242	7.6
	3-Jun-11	13.7	7.6	304	5.9
	13-Jun-11	13.4	7.0	316	5.1
	16-Oct-11	9.9	7.4	296	8.0
	18-Dec-11	1.0	8.2	146	9.0
	18-Mar-12	12.8	7.5	215	5.9
	18-Nov-12	4.9	7.4	227	6.3
	16-Dec-12	1.2	7.4	215	10.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Jan-13	0.1	7.6	218	5.4
	19-Mar-13	0.2	7.7	185	6.7
	15-Apr-13	8.9	7.5	236	6.8
	13-May-13	7.4	7.6	257	7.0
	19-Nov-13	0.9	8.0	218	3.2
	15-Apr-14	0.4	7.6	161	7.0
	12-May-14	17.0	7.1	350	4.6
	22-Oct-14	9.4	7.2	418	4.9
	17-Dec-14	0.2	8.9	262	-
	22-Apr-15	9.2	7.8	229	7.5
	15-Jun-15	18.8	7.6	342	1.7
	19-Jan-16	0.0	7.1	219	11.0
	17-Feb-16	0.1	7.1	243	9.8
	15-Mar-16	2.6	7.4	173	10.6
	20-Apr-16	15.8	7.6	299	7.4
	17-May-16	8.0	7.8	319	8.4
	21-Mar-16	1.3	7.6	280	5.8
	19-Apr-17	8.2	7.5	263	8.0
	16-May-17	10.8	7.9	415	3.5
	28-Jun-17	14.5	7.7	344	4.7
	18-Jul-17	16.2	5.6	446	-
	17-Oct-17	9.7	7.7	458	7.3
	14-Nov-17	4.8	7.9	489	14.7
	22-Feb-18	0.0	7.3	160	6.2
	18-Apr-18	-0.2	7.7	370	5.8
	14-May-18	14.1	7.4	675	6.2
	21-Nov-18	0.0	7.7	713	9.0
	18-Jan-19	1.2	7.5	402.3	8.6
	24-Apr-19	4.6	7.5	282.2	6.6
	23-May-19	10.8	7.6	350.2	5.4
	18-Jun-19	15.9	7.5	434.6	5.0
	26-Mar-20	4.1	7.4	322.2	8.2
	29-May-20	13.9	8.0	352.2	5.0
	23-Jun-20	15.0	7.7	333.6	4.5
	30-Jul-20	18.8	8.5	624	6.8
	25-Aug-20	dry	dry	dry	dry
	25-Sep-20	dry	dry	dry	dry
	30-Oct-20	dry	dry	dry	dry
	26-Nov-20	frozen	frozen	frozen	frozen
SW 3A					
	22-May-03	12.0			
	17-Mar-04	0.1		303	4.2
	19-Apr-04	8.6	7.2	214	6.8
	19-May-04	16.4	7.2	349	5.0
	24-Jun-04	17.0	7.2	470	2.7
	30-Mar-05	0.1	7.0	267	4.0
	11-Apr-05	1.1	6.5	167	7.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-May-05	12.1	7.9	322	4.8
	16-Jan-06	0.1	8.0	178	1.8
	20-Mar-06	0.1	7.8	204	
	18-Apr-06	10.0	7.5	294	
	23-May-06	9.2	7.5	382	7.6
	19-Jun-06	19.7	6.5	688	5.6
	27-Nov-06	5.2	7.2	351	7.5
	17-Dec-06	0.6	7.2	369	2.8
	16-Apr-07	0.9	7.8	344	4.5
	13-May-07	17.0	8.2	389	3.5
	7-Apr-08	1.3	7.6	273	7.5
	23-Apr-08	18.4	7.7	323	2.8
	21-May-08	14.2	6.9	385	4.5
	17-Jun-08	16.3	7.7	465	3.5
	20-Oct-08	7.4	7.7	388	6.7
	15-Mar-09	0.3	7.5	342	7.6
	12-Apr-09	9.9	7.8	360	6.6
	17-May-09	18.4	7.6	358	3.9
	14-Jun-09	14.0	8.1	941	6.5
	11-Oct-09	5.8	6.9	414	8.3
	15-Nov-09	5.6	7.9	417	
	14-Mar-10	0.1	7.7	342	10.9
	11-Apr-10	8.0	7.9	399	9.8
	16-May-10	15.7	7.5	343	4.9
	23-May-10	18.6	7.3	432	4.2
	13-Jun-10	19.2	7.3	401	3.7
	18-Jul-10	19.5	7.5	331	6.5
	17-Oct-10	7.5	7.6	327	6.4
	14-Nov-10	3.6	7.5	246	9.9
	17-Apr-11	2.4	8.3	233	6.5
	15-May-11	10.6	7.9	235	10.6
	13-Jun-11	14.1	7.5	362	6.1
	16-Oct-11	8.3	7.7	300	5.6
	20-Nov-11	1.3	7.8	256	7.5
	19-Dec-11	0.2	8.3	164	6.2
	18-Mar-12	9.8	7.3	231	5.5
	15-Apr-12	3.7	8.3	231	
	13-May-12	14.5	7.7	369	6.5
	13-Aug-12	18.2	8.1	417	3.1
	18-Sep-12	14.1	7.6	444	7.4
	16-Oct-12	6.3	6.1	396	3.3
	20-Nov-12	3.1	7.5	234	5.5
	17-Dec-12	0.2	7.7	195	6.6
	15-Apr-13	4.4	7.3	227	4.6
	13-May-13	6.9	7.5	255	8.5
	19-Nov-13	1.2	8.0	231	3.0
	15-Apr-14	0.2	7.9	182	5.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-May-14	16.9	6.9	365	6.1
	18-Aug-14	14.5	8.5	409	6.5
	8-Sep-14	14.6	8.8	425	7.3
	22-Oct-14	10.0	7.3	463	5.0
	22-Apr-15	8.2	7.5	229	3.0
	19-May-15	14.2	7.5	361	3.8
	15-Jun-15	17.9	7.6	390	3.5
	21-Jul-15	17.7	7.8	437	-
	11-Aug-15	16.2	7.7	394	4.2
	18-Nov-15	5.2	7.2	263	5.9
	8-Dec-15	1.7	7.3	251	9.9
	15-Mar-16	0.4	7.1	164	5.8
	20-Apr-16	14.3	7.2	304	3.6
	17-May-16	7.7	7.5	263	5.2
	22-Jun-16	15.8	7.3	504	3.4
	24-Jan-17	0.0	7.0	215	6.0
	21-Mar-17	0.2	7.9	248	3.7
	19-Apr-17	7.4	7.3	247	4.9
	16-May-17	10.2	7.3	405	3.3
	28-Jun-17	14.2	7.5	360	2.4
	18-Jul-17	17.6	7.5	435	2.9
	15-Aug-17	15.6	7.8	349	2.2
	18-Sep-17	14.0	7.3	398	3.4
	17-Oct-17	7.8	7.5	295	3.2
	14-Nov-17	0.9	7.6	277	6.0
	14-Dec-17	-0.4	7.4	282	7.8
	22-Feb-17	-0.3	7.5	208	5.1
	14-May-18	9.3	7.3	467	7.0
	24-Apr-19	4.6	7.4	302.1	3.0
	29-May-20	17.7	7.7	332.7	2.3
	23-Jun-20	15.2	7.4	313.9	2.4
	30-Jul-20	0.0	dry	dry	dry
	25-Aug-20	dry	dry	dry	dry
	25-Sep-20	dry	dry	dry	dry
	30-Oct-20	dry	dry	dry	dry
	26-Nov-20	0.0	frozen	frozen	frozen
SW 4					
	13-Jan-05	0.9	7.2	125	13.6
	31-Mar-06	6.0	7.2	360	
	7-Apr-06	6.6	7.9	463	
	13-Apr-06	15.5	8.6	538	
	17-Nov-06	4.4	7.4	509	9.3
	18-Mar-07	1.5	8.0	338	11.4
	7-Apr-08	2.8	7.5	316	8.8
	15-Mar-09	2.0	7.6	356	6.0
	12-Apr-09	11.0	8.1	558	
	14-Mar-10	2.3	8.0	383	8.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Jul-10	20.6	7.3	303	5.0
	16-Dec-12	1.4	6.9	308	5.7
	13-Jan-13	0.3	7.4	370	4.3
	15-Apr-13	8.6	7.5	349	6.0
	19-Nov-13	2.6	8.0	338	1.4
	15-Apr-14	3.7	7.5	161	2.7
	22-Oct-14	8.6	7.5	421	7.0
	22-Apr-15	5.7	7.5	565	1.7
	15-Mar-16	3.2	7.1	327	4.4
	20-Apr-16	16.8	7.9	467	8.5
	17-May-16	8.5	7.7	472	3.9
	24-Jan-17	-0.1	7.2	327	3.0
	21-Mar-17	1.1	7.5	356	6.9
	19-Apr-17	7.4	7.4	401	8.6
	16-May-17	10.8	7.9	523	13.7
	28-Jun-17	13.9	7.0	425	2.6
	17-Oct-17	7.4	7.2	335	6.7
	14-Nov-17	2.3	7.3	441	12.3
	14-Dec-17	0.9	7.2	510	7.1
	22-Feb-18	-0.2	7.1	196	1.0
	20-Mar-18	0.4	7.4	404	9.0
	18-Apr-18	0.0	7.4	639	2.2
	15-May-18	15.9	7.8	711	6.9
	21-Nov-18	0.1	7.5	698	6.7
	12-Dec-18	0.9	7.5	673	4.4
	24-Apr-19	6.0	7.5	657	0.9
	23-May-19	11.2	7.7	665	2.3
	23-Jun-20	20.2	7.7	684	0.7
	30-Jul-20	18.0	7.4	665	0.9
	25-Aug-20	22.2	6.9	591	1.9
	25-Sep-20	12.6	7.0	585	2.9
	30-Oct-20	9.8	7.0	563	2.1
	26-Nov-20	frozen	frozen	frozen	frozen
SW 5					
	22-May-03	11.0			
	16-Mar-04	0.6	7.3	469	5.7
	19-Apr-04	8.0	7.5	316	8.2
	19-May-04	14.9	7.5	464	5.1
	24-Jun-04	14.1	7.5	458	5.1
	29-Jul-04	16.1	7.6	886	9.1
	26-Aug-04	15.6	7.5	430	8.3
	22-Sep-04	11.7	7.2	400	3.2
	21-Oct-04	6.7	7.5	375	8.0
	16-Nov-04	1.3	7.4	400	10.3
	28-Mar-05	0.9	7.0	336	9.7
	11-Apr-05	1.7	6.3	212	8.2
	24-May-05	11.6	6.9	411	8.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	28-Jun-05	20.2	7.7	522	9.7
	11-Jul-05	17.8	5.5	487	8.2
	22-Aug-05	14.6	6.8	441	8.8
	27-Sep-05	10.3	7.3	386	3.8
	24-Oct-05	5.9	7.9	562	3.2
	13-Nov-05	6.0	8.1	382	10.9
	20-Mar-06	0.8	8.0	317	11.6
	18-Apr-06	9.4	7.7	453	6.6
	23-May-06	6.3	8.3	553	
	21-Jun-06	17.5	7.5	513	
	11-Jul-06	17.7	7.5	486	
	22-Aug-06	19.3	7.1	485	
	20-Sep-06	12.2	7.2	588	
	18-Oct-06	9.7	7.3	471	
	24-Nov-06	1.0	7.6	604	11.2
	17-Dec-06	1.0	7.6	587	11.2
	18-Mar-07	0.5	7.8	560	4.8
	15-Apr-07	3.1	8.1	489	8.8
	13-May-07	19.1	8.2	516	8.9
	17-Jun-07	20.1	7.8	568	4.0
	15-Jul-07	18.7	7.8	518	#REF!
	18-Oct-07	13.0	7.7	564	6.4
	21-Nov-07	1.8	7.7	627	8.2
	12-Dec-07	0.2	7.7	587	4.9
	20-Feb-08	0.2	7.8	335	2.9
	18-Mar-08	0.5	7.7	547	5.5
	2-Apr-08	1.3	7.7	382	6.1
	24-Apr-08	12.4	8.1	461	8.6
	21-May-08	10.8	7.7	474	8.5
	17-Jun-08	17.8	7.6	450	5.3
	15-Jul-08	17.9	7.3	555	4.3
	19-Aug-08	17.2	7.9	606	3.5
	16-Sep-08	12.2	7.8	499	4.0
	22-Oct-08	2.8	7.5	538	#REF!
	23-Nov-08	0.2		609	3.0
	8-Feb-09	0.3		439	2.8
	15-Mar-09	2.7	8.5	368	7.2
	12-Apr-09	9.6	7.8	477	9.0
	17-May-09	15.5	7.5	415	2.8
	14-Jun-09	14.6	7.3	1007	5.0
	12-Jul-09	19.2	7.6	573	8.2
	9-Aug-09	17.1	9.0	512	3.1
	13-Sep-09	17.6	7.3	617	3.5
	11-Oct-09	2.0	7.4	576	10.0
	15-Nov-09	1.6	7.6	567	10.8
	17-Jan-10	0.6	8.2	222	6.7
	14-Mar-10	4.0	7.5	404	7.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Apr-10	13.1	8.0	524	10.6
	16-May-10	14.6	7.7	390	6.2
	13-Jun-10	21.0	7.8	471	11.8
	18-Jul-10	19.0	7.5	446	3.5
	15-Aug-10	22.0	7.6	546	4.7
	12-Sep-10	13.4	7.9	461	7.9
	17-Oct-10	6.6	7.7	399	9.1
	14-Nov-10	4.2	7.7	274	7.8
	13-Mar-11	1.5	7.9	286	5.6
	17-Apr-11	3.6	8.1	263	10.2
	15-May-11	11.6	7.7	303	6.1
	12-Jun-11	14.0	7.5	372	9.3
	17-Jul-11	25.9	7.8	582	6.2
	14-Aug-11	22.4	8.0	403	10.4
	18-Sep-11	15.2	8.4	380	4.4
	16-Oct-11	7.3	7.5	394	6.5
	20-Nov-11	0.6	8.9	368	8.6
	18-Dec-11	0.4	8.7	271	9.1
	18-Mar-12	13.5	7.4	340	4.8
	15-Apr-12	4.8	8.5	331	14.5
	13-May-12	19.3	8.2	423	13.2
	17-Jun-12	25.1	8.2	611	13.6
	16-Jul-12	22.2	8.0	627	3.0
	15-Aug-12	15.6	8.7	400	2.5
	19-Sep-12	11.2	7.6	497	8.4
	18-Oct-12	10.2	8.3	399	6.2
	20-Nov-12	4.3	7.6	352	7.9
	20-Dec-12	0.3	7.3	656	11.2
	15-Jan-13	0.2	7.6	285	8.3
	16-Apr-13	9.3	7.8	322	7.4
	14-May-13	8.1	7.8	313	8.4
	18-Jun-13	19.5	7.8	454	6.2
	17-Jul-13	22.5	7.1	407	8.4
	20-Aug-13	16.9	8.7	492	3.8
	18-Sep-13	13.0	8.0	438	6.7
	16-Oct-13	12.9	8.4	386	3.2
	20-Nov-13	0.3	8.1	276	2.9
	16-Apr-14	1.0	8.4	231	9.3
	13-May-14	15.6	7.6	389	4.9
	17-Jun-14	17.1	7.7	446	6.5
	15-Jul-14	18.2	8.4	488	8.0
	19-Aug-14	14.2	8.5	484	5.6
	9-Sep-14	15.9	8.5	448	4.9
	22-Oct-14	9.5	8.5	408	5.9
	22-Apr-15	5.8	7.6	346	8.2
	19-May-15	15.7	7.8	399	10.1
	16-Jun-15	20.1	7.5	469	3.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-Jul-15	18.3	7.3	511	3.1
	12-Aug-15	18.0	7.6	516	3.0
	8-Sep-15	21.1	7.4	621	1.1
	15-Oct-15	8.5	7.2	423	3.1
	18-Nov-15	4.9	7.1	380	8.0
	8-Dec-15	2.5	7.7	370	12.1
	15-Mar-16	2.9	7.3	264	10.0
	21-Apr-16	9.6	7.6	375	3.4
	17-May-16	7.6	7.8	368	7.5
	22-Jun-16	16.9	7.5	498	2.1
	20-Jul-16	17.6	8.0	487	4.2
	24-Aug-16	18.4	7.3	577	2.8
	19-Sep-16	15.4	7.4	619	1.0
	17-Oct-16	12.8	7.3	590	1.3
	15-Nov-16	3.7	7.6	410	7.1
	21-Mar-17	0.9	7.4	325	8.1
	19-Apr-17	8.1	7.4	359	6.7
	16-May-17	12.1	7.8	527	8.5
	28-Jun-17	13.8	7.3	422	3.0
	18-Jul-17	18.0	7.0	498	2.1
	15-Aug-17	16.6	8.0	408	1.4
	18-Sep-17	15.3	7.3	512	1.1
	17-Oct-17	6.5	7.2	347	4.0
	14-Nov-17	0.8	7.2	343	9.3
	22-Feb-18	-0.3	7.4	188	9.2
	20-Mar-18	1.0	7.4	335	9.4
	18-Apr-18	-0.2	7.6	440	4.6
	14-May-18	13.9	7.6	604	5.7
	18-Jun-18	20.1	7.6	521	3.4
	19-Jul-18	21.2	7.8	508	8.0
	23-Aug-18	19.5	7.5	468.3	6.3
	19-Sep-18	18.9	7.5	647	4.7
	24-Oct-18	3.3	7.5	515	7.5
	24-Apr-19	6.8	7.5	391.5	4.4
	23-May-19	11.5	7.6	437.9	3.9
	18-Jun-19	17.8	7.4	473.4	7.4
	29-Jul-19	21.0	7.6	459	3.4
	29-Aug-19	18.9	7.2	399	4.5
	26-Sep-19	15.6	7.3	472.8	3.1
	23-Oct-19		7.7	439.1	4.0
	23-Oct-19	9.1	7.7	439.1	4.0
	26-Mar-20	3.5	7.6	465.5	8.2
	27-Apr-20	7.2	7.6	443.7	7.4
	29-May-20	21.9	7.7	504	2.1
	23-Jun-20	16.3	7.5	367.9	1.1
	30-Jul-20	19.5	7.6	590	0.9
	25-Aug-20	20.7	7.3	539	2.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	25-Sep-20	12.4	7.3	562	2.5
	30-Oct-20	8.7	7.7	428.1	6.2
	26-Nov-20	frozen	frozen	frozen	frozen
SW 6					
	22-May-03	12.0			
	23-Jun-03	18.1			
	19-Apr-04	8.7	7.6	299	7.8
	19-May-04	15.4	7.5	425	4.6
	24-Jun-04	14.7	7.3	435	1.8
	29-Jul-04	16.5	7.1	841	1.8
	26-Aug-04	14.5	7.2	413	6.1
	22-Sep-04	11.9	7.0	393	1.5
	21-Oct-04	6.4	7.2	309	2.1
	16-Nov-04	3.2	6.8	414	5.8
	11-Apr-05	0.5	6.1	173	6.6
	24-May-05	12.2	6.9	400	4.6
	28-Jun-05	21.8	7.7	529	0.4
	11-Jul-05	19.8	6.3	500	0.7
	22-Aug-05	17.0	6.9	457	0.5
	27-Sep-05	13.2	7.1	411	0.5
	28-Oct-05	5.6	7.9	440	2.4
	14-Nov-05	6.1	7.6	369	6.1
	18-Apr-06	10.0	7.7	426	
	23-May-06	6.6	8.0	504	
	21-Jun-06	18.1	7.5	469	
	11-Jul-06	18.3	7.3	463	
	22-Aug-06	18.9	7.2	482	
	20-Sep-06	12.5	6.9	464	
	18-Oct-06	9.2	7.3	453	
	24-Nov-06	0.8	7.8	546	11.4
	17-Dec-06	0.6	7.6	546	12.7
	16-Apr-07	2.9	8.0	474	9.1
	13-May-07	18.3	8.0	496	7.0
	17-Jun-07	20.4	7.7	592	0.8
	15-Jul-07	17.3	7.6	518	2.4
	18-Oct-07	11.3	7.6	646	3.6
	21-Nov-07	1.6	7.9	578	9.4
	7-Apr-08	6.2	7.4	365	8.7
	24-Apr-08	12.7	7.8	452	3.0
	21-May-08	10.5	7.6	436	7.0
	17-Jun-08	16.2	7.5	296	2.4
	16-Jul-08	17.5	7.3	511	1.6
	19-Aug-08	16.6	7.6	565	2.9
	16-Sep-08	11.5	7.7	460	3.9
	22-Oct-08	2.8	7.4	475	5.1
	15-Mar-09	1.0	7.5	344	9.2
	12-Apr-09	10.4	9.6	440	7.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-May-09	15.8	7.6	404	4.1
	14-Jun-09	18.5	7.4	964	4.8
	12-Jul-09	16.8	7.8	556	6.2
	9-Aug-09	17.0	8.0	490	3.0
	13-Sep-09	18.5	6.9	537	5.9
	11-Oct-09	3.3	7.3	554	10.5
	15-Nov-09	1.5	7.3	526	10.5
	14-Mar-10	1.2	7.6	383	9.7
	11-Apr-10	7.3	8.2	499	11.8
	16-May-10	14.1	7.7	368	5.3
	13-Jun-10	20.1	7.6	429	5.3
	18-Jul-10	20.7	7.5	397	5.4
	15-Aug-10	21.5	7.7	526	1.9
	12-Sep-10	13.6	7.8	447	4.1
	17-Oct-10	6.5	7.7	384	7.8
	14-Nov-10	4.0	7.6	259	9.0
	17-Apr-11	3.9	8.0	246	9.2
	15-May-11	12.0	7.8	286	6.1
	12-Jun-11	14.4	7.6	352	4.5
	17-Jul-11	23.2	7.6	528	8.5
	14-Aug-11	21.7	8.1	403	4.9
	18-Sep-11	14.4	8.3	424	4.2
	16-Oct-11	7.5	7.7	371	6.7
	20-Nov-11	0.6	8.2	343	10.0
	18-Mar-12	13.8	7.5	299	5.5
	15-Apr-12	4.8	8.6	314	14.6
	13-May-12	18.3	7.8	439	6.1
	17-Jun-12	21.5	8.0	567	3.2
	16-Jul-12	21.2	7.9	611	1.6
	15-Aug-12	16.0	8.0	484	1.4
	19-Sep-12	10.8	7.4	407	1.3
	18-Oct-12	9.3	8.1	349	2.6
	20-Nov-12	3.8	7.5	327	6.6
	16-Apr-13	9.7	7.9	312	7.5
	14-May-13	8.3	7.7	304	8.4
	18-Jun-13	18.3	7.8	422	1.7
	17-Jul-13	22.7	7.1	407	8.4
	20-Aug-13	16.7	8.2	435	2.2
	18-Sep-13	11.7	7.8	391	3.1
	16-Oct-13	12.6	8.3	356	2.3
	20-Nov-13	0.1	8.3	266	2.1
	16-Apr-14	0.9	7.8	423	11.8
	13-May-14	16.2	7.8	380	6.6
	17-Jun-14	17.3	7.6	446	7.6
	15-Jul-14	17.1	7.5	459	7.9
	19-Aug-14	13.6	8.2	463	3.2
	9-Sep-14	16.6	8.3	444	4.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-Oct-14	8.9	7.3	423	3.9
	22-Apr-15	6.3	7.8	333	8.2
	20-May-15	14.2	8.0	371	9.5
	16-Jun-15	19.6	7.6	433	2.9
	22-Jul-15	17.7	7.5	473	3.3
	12-Aug-15	17.4	7.7	473	3.8
	8-Sep-15	18.7	7.4	512	1.5
	15-Oct-15	8.6	7.1	358	3.2
	18-Nov-15	4.8	7.2	347	8.4
	8-Dec-15	1.7	7.7	332	13.8
	15-Mar-16	1.2	7.2	187	10.6
	21-Apr-16	9.4	7.8	347	4.4
	17-May-16	7.0	7.8	337	8.4
	22-Jun-16	15.2	7.6	452	3.3
	20-Jul-16	14.5	7.7	452	4.4
	24-Aug-16	17.0	7.4	475	3.6
	19-Sep-16	13.1	7.5	576	4.1
	17-Oct-16	12.4	7.4	545	5.1
	15-Nov-16	3.5	7.7	383	9.0
	21-Mar-17	0.3	7.5	301	9.8
	19-Apr-17	8.2	7.4	323	7.8
	16-May-17	12.0	7.8	495	8.4
	28-Jun-17	13.7	7.3	382	7.8
	18-Jul-17	17.6	7.2	453	4.3
	15-Aug-17	16.2	8.1	368	4.3
	18-Sep-17	14.2	7.5	471	5.0
	17-Oct-17	7.2	7.4	325	7.4
	14-Nov-17	1.1	7.4	316	12.0
	20-Mar-18	0.4	7.5	309	10.8
	18-Apr-18	-0.4	7.7	409	5.8
	14-May-18	14.8	7.6	479	5.5
	18-Jun-18	18.7	7.6	478.5	3.6
	19-Jul-18	19.6	7.6	532	3.5
	23-Aug-18	18.0	7.5	470.6	4.0
	19-Sep-18	18.4	7.6	613	4.0
	24-Oct-18	3.3	7.6	567	7.8
	21-Nov-18	0.0	7.9	546	10.3
	12-Dec-18	0.1	7.6	507	8.0
	24-Apr-19	6.9	7.7	384.5	6.5
	23-May-19	11.7	7.7	414.1	5.1
	18-Jun-19	17.8	7.7	416.3	7.1
	29-Jul-19	20.5	7.6	466.8	3.8
	29-Aug-19	19.3	7.6	405	6.2
	26-Sep-19	12.2	7.4	485.6	2.2
	23-Oct-19		7.5	476.9	3.3
	23-Oct-19	8.9	7.5	476.9	3.3
	26-Mar-20	1.8	7.4	403.6	8.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	27-Apr-20	6.5	7.5	425.9	6.9
	29-May-20	21.0	8.0	477	3.0
	23-Jun-20	16.1	7.6	355.1	2.3
	30-Jul-20	19.4	7.7	558	2.6
	25-Aug-20	21.2	7.4	522	4.7
	25-Sep-20	13.0	7.3	534	5.2
	30-Oct-20	8.2	7.4	421.4	5.8
	26-Nov-20	frozen	frozen	frozen	frozen
SW 6A					
	22-Oct-03	5.1	6.6	461	
	16-Mar-04	0.3	6.1	435	10.2
	19-Apr-04	9.0	7.6	303	11.5
	19-May-04	15.4	7.7	432	7.8
	24-Jun-04	14.8	7.7	433	7.2
	29-Jul-04	17.7	7.7	867	6.4
	26-Aug-04	15.2	7.8	432	
	22-Sep-04	11.7	7.7	417	8.0
	21-Oct-04	6.9	7.7	356	9.3
	16-Nov-04	2.1	7.6	339	12.0
	28-Mar-05	0.6	7.4	303	12.4
	11-Apr-05	1.8	6.4	196	10.9
	24-May-05	12.5	7.3	407	8.4
	28-Jun-05	21.5	7.7	528	6.4
	11-Jul-05	19.6	6.1	503	5.8
	22-Aug-05	15.8	6.9	460	6.8
	27-Sep-05	11.7	7.3	382	7.6
	24-Oct-05	6.3	8.1	448	10.8
	14-Nov-05	5.5	7.8	356	11.0
	16-Jan-06	0.1	7.1	285	10.8
	20-Mar-06	0.4	8.3	276	11.0
	18-Apr-06	10.1	7.9	414	9.1
	23-May-06	7.2	8.5	493	10.1
	21-Jun-06	18.9	7.8	460	
	11-Jul-06	19.0	7.9	463	
	22-Aug-06	19.2	7.6	501	
	20-Sep-06	11.9	7.6	469	
	18-Oct-06	9.4	7.5	443	
	24-Nov-06	1.8	7.9	521	13.4
	17-Dec-06	1.2	7.8	521	14.1
	18-Mar-07	0.4	7.8	511	9.6
	16-Apr-07	3.1	8.1	460	11.5
	13-May-07	17.9	8.2	483	8.3
	17-Jun-07	20.3	8.1	535	5.5
	15-Jul-07	18.5	7.8	508	6.8
	19-Aug-07	17.0	8.0	523	7.9
	18-Sep-07	12.2	7.9	476	8.4
	18-Oct-07	12.2	7.8	489	8.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Nov-07	2.5	7.8	556	10.9
	21-Jan-08	0.1	6.5	460	2.7
	18-Mar-08	0.3	7.6	506	11.9
	2-Apr-08	0.4	7.5	369	9.6
	24-Apr-08	12.5	7.6	452	6.1
	21-May-08	10.3	7.7	439	8.4
	17-Jun-08	16.8	7.7	348	6.3
	15-Jul-08	18.6	7.3	525	5.8
	19-Aug-08	17.8	7.8	556	4.1
	12-Sep-08	13.5	7.8	515	5.2
	22-Oct-08	3.1	7.5	466	8.1
	23-Nov-08	0.5	7.6	540	7.3
	14-Dec-08	0.1	6.8	436	4.9
	18-Jan-09	0.1	7.5	529	6.7
	8-Feb-09	0.5		412	7.0
	15-Mar-09	1.9	8.0	339	13.1
	12-Apr-09	9.8	8.8	447	10.6
	17-May-09	14.5	7.9	402	7.5
	14-Jun-09	14.4	8.5	947	8.6
	12-Jul-09	17.6	8.2	474	9.1
	9-Aug-09	16.3	8.2	484	7.5
	13-Sep-09	16.0	6.9	492	9.1
	11-Oct-09	6.4	8.1	530	12.0
	15-Nov-09	2.1	7.4	495	
	13-Dec-09	0.2	7.5	553	13.5
	17-Jan-10	1.2	8.0	549	12.5
	7-Feb-10	0.2	7.4	548	12.8
	14-Mar-10	2.8	7.5	364	10.9
	11-Apr-10	11.1	8.0	494	12.2
	16-May-10	13.1	8.0	362	8.8
	13-Jun-10	19.6	8.0	426	10.6
	18-Jul-10	18.4	7.8	400	9.3
	15-Aug-10	20.2	8.1	481	7.9
	12-Sep-10	13.0	8.2	433	9.9
	17-Oct-10	8.9	8.1	377	10.4
	14-Nov-10	4.5	8.0	253	10.0
	19-Dec-10	0.5	8.0	260	11.3
	16-Jan-11	0.1	7.9	273	9.6
	20-Feb-11	0.4	7.9	275	6.7
	13-Mar-11	2.1	7.9	269	8.8
	20-Mar-11	0.7	7.8	251	10.2
	17-Apr-11	3.7	8.0	248	10.0
	15-May-11	11.6	7.8	287	8.4
	12-Jun-11	13.6	7.9	345	8.4
	17-Jul-11	22.1	8.4	491	8.1
	14-Aug-11	21.2	8.2	309	7.7
	18-Sep-11	15.2	8.6	380	9.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Oct-11	7.8	7.8	347	11.3
	20-Nov-11	1.6	8.4	229	13.2
	18-Dec-11	1.0	8.4	248	14.6
	15-Jan-12	0.6	8.0	237	11.9
	19-Feb-12	0.6	8.5	253	13.4
	18-Mar-12	13.1	7.6	297	7.2
	15-Apr-12	6.0	8.6	321	13.8
	13-May-12	19.7	8.1	444	8.3
	17-Jun-12	25.2	8.4	558	12.8
	16-Jul-12	23.4	8.4	522	7.3
	15-Aug-12	16.4	8.3	417	6.0
	19-Sep-12	12.6	7.9	407	9.3
	18-Oct-12	10.4	8.6	347	8.5
	20-Nov-12	4.2	7.6	321	8.8
	20-Dec-12	0.6	7.3	609	12.4
	15-Jan-13	0.2	7.5	264	9.2
	20-Feb-13	0.2	7.9	266	12.7
	20-Mar-13	0.4	7.7	246	13.3
	16-Apr-13	8.3	8.0	268	8.5
	14-May-13	8.1	7.9	300	9.9
	18-Jun-13	19.5	7.9	430	6.2
	17-Jul-13	22.6	7.7	453	7.2
	18-Sep-13	13.6	8.2	385	10.6
	16-Oct-13	12.7	8.5	354	5.0
	20-Nov-13	0.5	7.8	259	7.2
	17-Dec-13	0.3	8.7	269	7.2
	16-Apr-14	0.6	7.9	201	11.5
	13-May-14	15.2	7.8	366	8.0
	17-Jun-14	17.3	8.0	425	8.3
	15-Jul-14	16.6	7.6	440	10.6
	19-Aug-14	14.5	8.5	445	7.1
	9-Sep-14	16.0	8.6	474	4.8
	22-Oct-14	9.9	7.2	463	5.9
	16-Dec-14	0.7	8.2	323	-
	18-Mar-15	1.8	7.8	238	11.1
	22-Apr-15	6.0	7.8	322	10.9
	19-May-15	15.5	8.1	377	10.8
	16-Jun-15	19.6	7.8	434	6.9
	22-Jul-15	18.9	8.0	476	8.3
	12-Aug-15	17.8	8.0	454	-
	25-Aug-15	17.3	8.2	398	6.3
	8-Sep-15	20.5	7.8	473	8.0
	15-Oct-15	9.4	7.7	346	9.6
	18-Nov-15	5.3	7.2	349	11.3
	8-Dec-15	2.7	8.0	339	17.2
	19-Jan-16	-0.1	7.3	-	11.1
	15-Mar-16	2.4	7.5	226	11.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Apr-16	9.5	7.8	352	8.9
	17-May-16	7.5	8.1	347	10.7
	22-Jun-16	16.4	8.2	445	7.6
	20-Jul-16	17.2	8.3	450	8.1
	24-Aug-16	18.4	8.2	430	7.6
	19-Sep-16	15.2	7.7	508	8.2
	17-Oct-16	13.2	8.0	404	8.3
	15-Nov-16	4.8	7.5	360	12.7
	12-Dec-16	0.2	7.4	502	14.4
	24-Jan-17	0.3	7.5	281	11.5
	15-Feb-17	0.0	7.8	312	14.2
	21-Mar-17	0.9	7.8	311	12.4
	19-Apr-17	8.3	7.6	334	11.4
	16-May-17	11.6	8.0	494	9.9
	28-Jun-17	13.7	7.7	389	8.2
	18-Jul-17	17.3	7.5	447	9.2
	15-Aug-17	16.3	8.5	359	8.5
	18-Sep-17	15.1	7.9	447	8.5
	17-Oct-17	7.6	7.7	276	10.1
	14-Nov-17	1.9	7.6	325	14.1
	14-Dec-17	0.0	7.5	305	16.8
	17-Jan-18	-0.3	7.4	283	6.9
	22-Feb-18	-0.3	7.7	164	8.9
	20-Mar-18	1.1	7.9	313	15.4
	18-Apr-18	0.2	7.8	418	9.8
	14-May-18	14.1	7.9	479	8.3
	18-Jun-18	20.3	8.2	492.6	8.1
	19-Jul-18	21.5	8.2	483.6	7.7
	23-Aug-18	19.4	8.1	467.1	7.2
	19-Sep-18	17.6	7.7	487.2	2.8
	24-Oct-18	4.0	8.3	523	12.2
	21-Nov-18	0.1	7.8		12.3
	12-Dec-18	0.4	7.7		11.6
	18-Jan-19	0.1	7.7	517	10.8
	24-Apr-19	7.4	7.9	365.7	9.4
	23-May-19	11.6	8.0	412.7	8.4
	18-Jun-19	17.7	8.1	435.8	9.0
	29-Jul-19	22.6	8.1	431.8	7.2
	29-Aug-19	17.8	8.1	401.2	8.8
	26-Sep-19	15.3	7.8	410.7	7.5
	23-Oct-19		7.9	421.9	7.8
	23-Oct-19	8.5	7.9	421.9	7.8
	22-Nov-19	1.2	7.9	382	7.8
	26-Mar-20	1.9	7.6	398.4	10.4
	27-Apr-20	6.7	8.0	407.1	10.3
	29-May-20	20.5	8.5	457.8	6.8
	23-Jun-20	16.2	7.9	358.3	5.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	30-Jul-20	20.0	8.3	507	7.6
	25-Aug-20	22.0	8.1	447	7.5
	25-Sep-20	11.7	7.3	520	5.8
	30-Oct-20	7.6	7.5	321	8.0
	26-Nov-20	5.1	7.6	538	11.4
SW 7					
	22-May-03	11.0			
	25-Oct-05	6.2	7.6	396	9.8
	19-Apr-06	9.0	7.7	435	
	24-May-06	10.5	7.8	471	
	20-Jun-06	21.0	7.4	419	
	12-Jul-06	20.2	7.3	283	
	27-Nov-06	7.1	7.8	479	7.7
	17-Dec-06	1.7	7.8	517	12.5
	17-Apr-07	3.4	7.9	465	12.8
	13-May-07	15.6	8.2	429	8.6
	4-Apr-08	3.2	7.3	357	11.6
	23-Apr-08	17.0	7.6	451	6.8
	21-May-08	10.1	7.6	348	8.7
	15-Mar-09	9.6	8.2	394	
	12-Apr-09	12.6	7.9	277	
	17-May-09	14.5	7.6	415	8.0
	18-Mar-10	1.9	7.0	423	11.1
	12-Apr-10	12.4	7.7	468	11.9
	17-May-10	14.2	7.8	380	8.2
	17-Apr-11	2.9	7.9	351	12.6
	15-May-11	9.9	7.6	299	10.3
	12-Jun-11	15.2	7.9	347	7.5
	20-Mar-12	16.3	7.6	368	8.3
	17-Apr-13	11.0	8.2	332	11.4
	13-May-13	8.6	7.7	262	10.3
	12-May-14	21.1	8.0	380	3.9
	23-Apr-15	2.3	8.3	303	16.2
	15-Mar-16	4.8	7.5	295	12.5
	20-Apr-16	17.2	7.7	367	18.3
	17-May-16	13.5	8.8	314	18.0
	22-Mar-17	-0.2	7.7	332	9.1
	19-Apr-17	13.8	7.5	377	12.2
	16-May-17	18.5	8.3	149	8.8
	28-Jun-17	15.6	7.7	323	5.9
	24-Feb-18	3.7	8.3	291	13.5
	14-May-18	15.8	7.5	368	6.2
	25-Apr-19	7.6	8.0	394.2	15.7
	27-May-19	14.6	8.2	395.6	14.2
SW 8					
	22-May-03	8.0			
	20-Apr-04	11.9	7.8	441	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-May-04	17.4	7.7	591	
	24-Jun-04	18.9	7.6	617	
	29-Jul-04	21.9	7.7	491	
	26-Aug-04	20.5	7.9	441	
	23-Sep-04	17.3	8.1	403	
	18-Nov-04	6.0	8.5	273	
	11-Apr-05	8.5	7.0	513	
	26-May-05	19.3	7.8	549	
	29-Jun-05	24.4	7.9	637	
	12-Jul-05	25.0	7.7	589	
	22-Aug-05	20.6	8.7	449	8.2
	25-Oct-05	6.7	7.8	434	3.6
	16-Nov-05	5.8	7.7	305	11.1
	19-Apr-06	11.3	7.8	538	
	24-May-06	11.8	7.8	560	
	20-Jun-06	22.1	7.8	470	
	12-Jul-06	22.5	7.8	355	
	21-Aug-06	21.6	7.3	381	
	17-Oct-06	7.6	8.2	282	
	27-Nov-06	5.6	8.4	301	11.8
	17-Dec-06	3.8	7.7	405	9.5
	16-Apr-07	4.8	7.9	572	
	13-May-07	14.9	8.1	509	
	4-Apr-08	0.4	7.2	496	10.8
	15-Mar-09	7.5	7.7	295	
	12-Apr-09	9.6	8.1	515	
	17-May-09	15.4	7.7	423	
	11-Apr-10	12.3	7.7	507	12.5
	17-Apr-11	5.6	7.9	338	13.7
	15-May-11	11.56	7.58	297	11.98
	20-Mar-12	17.64	7.66	384	8.37
	17-Apr-13	9.4	7.7	386	10.9
	13-May-13	7.2	7.6	246	10.1
	12-May-14	18.6	7.1	391	3.4
	23-Apr-15	7.4	7.8	150	11.9
	15-Mar-16	0.9	6.8	135	7.3
	24-Feb-18	0.3	7.9	158	8.6
SW 9					
	22-May-03	8.0			
	13-Feb-04	1.0		314	9.3
	18-Mar-04	0.5		393	7.1
	20-Apr-04	8.3	7.6	259	10.8
	19-May-04	15.3	7.6	416	7.4
	24-Jun-04	16.4	7.7	483	8.3
	29-Mar-05	1.9	7.5	279	10.5
	11-Apr-05	0.9	6.7	179	11.5
	26-May-05	16.9	7.7	415	7.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Jan-06	1.5	7.4	231	10.3
	22-Mar-06	0.5	8.0	219	13.4
	19-Apr-06	7.5	7.8	360	
	24-May-06	9.3	7.9	420	
	27-Nov-06	5.5	7.7	424	8.4
	17-Dec-06	0.9	7.6	423	10.9
	16-Apr-07	0.8	8.0	386	11.3
	13-May-07	11.7	8.2	415	9.4
	4-Apr-08	3.7	7.4	353	7.1
	23-Apr-08	13.7	7.8	361	
	21-May-08	9.0	7.7	372	9.4
	15-Mar-09	10.4	7.7	342	5.4
	12-Apr-09	8.4	7.9	393	11.1
	17-May-09	11.2	7.4	340	8.4
	14-Mar-10	0.5	7.3	323	12.9
	11-Apr-10	9.0	8.2	367	13.1
	16-May-10	10.6	7.7	274	8.6
	23-May-10	18.3	7.3	346	7.8
	13-Jun-10	15.0	7.7	333	10.4
	18-Jul-10	19.2	7.9	4.28	11.1
	17-Oct-10	6.4	8.0	286	10.1
	14-Nov-10	5.3	7.8	244	9.6
	20-Mar-11	0.7	7.9	200	10.9
	17-Apr-11	2.1	8.2	217	10.5
	15-May-11	8.7	7.6	220	9.8
	12-Jun-11	16.1	7.7	315	7.9
	18-Mar-12	12.7	7.7	231	8.2
	15-Apr-12	7.5	8.5	278	10.3
	13-May-12	21.6	8.2	320	7.4
	16-Dec-12	1.9	7.1	348	8.1
	13-Jan-13	0.2	7.7	222	9.0
	16-Apr-13	-	8.3	167	9.1
	13-May-13	7.6	7.2	231	11.0
	18-Jun-13	16.0	7.9	343	5.7
	19-Nov-13	2.5	8.3	235	1.9
	15-Apr-14	0.2	7.7	149	11.2
	12-May-14	15.5	7.7	306	4.1
	23-Oct-14	8.3	-	345	11.0
	23-Apr-15	2.4	7.8	206	11.8
	16-Jun-15	14.6	7.8	372	6.7
	15-Mar-16	1.0	6.9	167	11.9
	20-Apr-16	7.9	7.5	246	8.5
	17-May-16	11.0	7.9	318	8.7
	25-Jan-17	1.4	7.9	218	10.7
	22-Mar-17	0.1	7.6	530	7.7
	19-Apr-17	9.1	7.1	254	9.6
	16-May-17	14.3	8.0	310	7.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	28-Jun-17	13.2	7.8	356	7.4
	15-Nov-17	3.2	7.9	285	7.7
	24-Feb-18	0.0	7.8	185	13.6
	14-May-18	11.4	7.6	349	6.8
	12-Dec-18	2.6	7.7	375.6	7.6
	24-Apr-19	4.4	7.8	285.1	9.9
	23-May-19	11.2	7.7	344.3	6.9
SW 10					
	22-May-03	15.0			
	22-Oct-03	6.2	7.5	523	
	11-Feb-04	1.2		306	13.8
	18-Mar-04	2.9		448	7.7
	20-Apr-04	8.5	8.0	261	
	19-May-04	10.8	8.0	386	
	24-Jun-04	13.0	8.0	434	
	29-Jul-04	16.0	8.0	452	8.9
	26-Aug-04	16.5	8.1	477	
	21-Sep-04	15.9	8.2	486	8.2
	21-Oct-04	7.9	7.7	367	6.8
	17-Nov-04	8.5	7.7	384	9.2
	29-Mar-05	4.5	7.8	314	
	11-Apr-05	5.5	7.3	229	
	26-May-05	11.3	6.8	386	10.2
	29-Jun-05	15.9	7.9	503	9.7
	12-Jul-05	17.8	7.8	528	6.8
	22-Aug-05	14.9	8.9	394	8.6
	25-Sep-05	14.2	7.9	443	8.7
	25-Oct-05	7.3	7.9	471	10.4
	16-Nov-05	7.2	8.3	349	10.0
	13-Dec-05	0.1	7.5	248	6.1
	17-Jan-06	1.7	6.8	242	12.9
	22-Mar-06	3.8	8.4	266	
	19-Apr-06	7.7	8.2	361	
	24-May-06	10.5	8.0	457	
	23-Jun-06	14.0	7.9	497	
	12-Jul-06	15.6	8.1	464	
	23-Aug-06	17.5	7.9	512	
	21-Sep-06	11.0	7.9	461	
	19-Oct-06	9.5	7.5	457	
	27-Nov-06	6.0	8.5	488	
	17-Dec-06	3.0	8.2	493	
	16-Apr-07	3.2	8.2	420	
	13-May-07	11.5	8.4	440	
	21-Nov-07	5.6	8.0	431	13.2
	4-Apr-08	4.6	7.4	376	10.2
	23-Apr-08	10.4	8.0	347	10.1
	20-May-08	10.6	7.2	408	9.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Jun-08	12.9	8.0	451	8.0
	19-Aug-08	12.4	7.8	559	5.8
	21-Oct-08	8.0	7.7	442	7.2
	23-Nov-08	3.8	7.7	471	9.7
	14-Dec-08	3.6	7.1	378	7.5
	18-Jan-09				
	8-Feb-09	2.2		329	9.7
	15-Mar-09	4.4	8.1	333	
	12-Apr-09	5.9	9.0	406	
	17-May-09	15.6	8.2	382	8.1
	14-Jun-09	12.6	8.3	900	9.4
	12-Jul-09	14.1	9.6	506	7.7
	9-Aug-09	16.8	8.2	485	8.5
	11-Oct-09	5.5	7.9	474	11.5
	15-Nov-09	5.9	7.7	409	10.6
	13-Dec-09	0.1	7.8	458	12.7
	14-Mar-10	5.2	7.8	435	14.7
	11-Apr-10	9.1	8.1	443	
	16-May-10	9.2	8.2	312	10.6
	13-Jun-10	12.7	8.1	357	12.5
	18-Jul-10	17.9	8.1	330	11.4
	15-Aug-10	15.4	8.3	318	9.3
	12-Sep-10	13.4	8.2	415	8.6
	17-Oct-10	10.3	7.9	352	8.4
	14-Nov-10	6.0	8.0	251	10.3
	20-Feb-11	1.1	8.3	248	11.6
	13-Mar-11	3.4	8.4	247	13.4
	22-Mar-11	4.0	8.4	306	13.0
	17-Apr-11	6.6	8.3	277	13.2
	15-May-11	10.3	8.6	301	12.0
	12-Jun-11	12.0	8.2	298	9.2
	17-Jul-11	16.1	8.4	498	10.8
	18-Sep-11	13.4	8.6	296	8.4
	16-Oct-11	11.2	7.8	302	9.4
	20-Nov-11	5.7	8.7	290	11.0
	18-Dec-11	3.8	8.4	250	12.3
	19-Feb-12	2.5	7.9	231	12.1
	18-Mar-12	11.4	7.9	253	7.5
	15-Apr-12	9.6	8.5	316	9.7
	13-May-12	14.9	7.9	356	7.1
	17-Jun-12	18.3	8.4	388	6.3
	15-Jul-12	21.3	8.4	479	6.3
	12-Aug-12	15.7	8.4	464	6.6
	16-Sep-12	12.6	7.7	367	9.0
	14-Oct-12	10.3	8.9	269	7.0
	18-Nov-12	6.4	7.8	329	8.4
	16-Dec-12	2.2	8.0	609	-

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-Jan-13	2.6	8.2	256	11.0
	17-Apr-13	5.5	7.9	239	12.2
	14-May-13	7.9	8.1	283	6.9
	19-Jun-13	11.4	8.4	340	10.9
	16-Jul-13	17.7	8.2	426	7.9
	21-Aug-13	16.5	8.4	426	10.4
	16-Oct-13	12.0	8.5	360	6.0
	20-Nov-13	4.2	8.5	204	3.0
	17-Apr-14	5.4	8.1	412	10.7
	13-May-14	9.6	7.2	322	10.6
	18-Jun-14	12.7	8.3	362	10.5
	15-Jul-14	13.1	7.8	416	8.7
	23-Oct-14	7.7	7.9	390	6.0
	23-Apr-15	5.1	8.3	303	13.8
	19-May-15	10.5	8.4	315	13.6
	15-Jun-15	13.1	8.0	388	9.7
	22-Jul-15	14.1	8.2	428	8.1
	11-Aug-15	16.3	8.3	446	8.6
	25-Aug-15	14.0	-	-	-
	8-Sep-15	20.0	8.0	445	5.6
	16-Oct-15	8.6	8.3	142	7.5
	10-Nov-15	8.4	7.0	309	6.6
	18-Nov-15	8.1	7.9	344	11.3
	9-Dec-15	5.3	7.9	331	12.7
	20-Jan-16	1.4	7.8	286	11.0
	18-Feb-16	0.6	7.6	281	14.4
	15-Mar-16	4.6	7.6	269	13.0
	21-Apr-16	7.8	7.8	299	13.4
	18-May-16	10.3	8.5	222	11.2
	23-Jun-16	13.0	8.4	389	9.5
	5-Jul-16	17.1	8.2	322	11.7
	21-Jul-16	20.4	8.3	275	4.9
	9-Aug-16	22.0	8.3	538	5.1
	24-Aug-16	19.4	8.4	404	5.7
	19-Sep-16	18.3	8.3	506	6.4
	18-Oct-16	16.1	8.2	415	8.9
	15-Nov-16	8.4	7.9	323	7.5
	12-Dec-16	0.2	7.6	395	13.3
	25-Jan-17	2.3	8.1	278	12.1
	17-Feb-17	1.2	8.3	309	15.7
	22-Mar-17	-0.2	8.1	343	14.4
	19-Apr-17	5.8	8.3	216	14.5
	16-May-17	8.6	8.3	312	10.4
	28-Jun-17	11.8	8.3	389	9.4
	7-Jul-17	13.5	8.2	386	8.5
	19-Jul-17	15.8	8.2	313	9.6
	2-Aug-17	16.3	8.4	366	9.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Aug-17	15.8	8.5	440	7.8
	18-Sep-17	15.0	8.1	2.91	7.8
	18-Oct-17	12.5	8.2	361	5.5
	15-Nov-17	5.0	8.4	337	10.7
	14-Dec-17	1.4	8.4	283	12.6
	18-Jan-18	1.0	8.0	273	10.1
	23-Feb-18	4.1	8.2	238	11.8
	21-Mar-18	1.4	8.3	260	11.5
	15-May-18	10.1	8.1	433	10.4
	18-Jun-18	8.2	8.2	474.3	9.1
	19-Jul-18	16.4	8.3	478.2	8.8
	24-Aug-18	18.1	8.3	479.2	8.1
	20-Sep-18	14.1	8.2	442.7	9.4
	25-Oct-18	7.2	8.1	467.8	9.0
	22-Nov-18	1.5	8.2	730.6	11.9
	13-Dec-18	2.4	8.3	468	12.4
	19-Jan-19	0.5	7.9	515	12.9
	19-Mar-19	2.6	8.3	415.4	12.8
	25-Apr-19	6.3	8.0	337.2	10.6
	27-May-19	9.1	8.2	381.9	10.4
	21-Jun-19	11.6	8.0	422.7	9.5
	30-Jul-19	16.9	8.3	451.2	8.3
	30-Aug-19	15.4	8.3	388.1	9.0
	27-Sep-19	12.7	8.2	396.5	9.5
	22-Oct-19		8.1	379.2	9.0
	22-Oct-19	10.2	8.1	379.2	9.0
	24-Jun-20	12.6	8.4	376.1	9.2
	31-Jul-20	18.1	8.6	233.3	8.3
SW 11					
	22-May-03	8.0			
	13-Feb-04	3.8		309	12.3
	18-Mar-04	4.3		410	9.6
	21-Apr-04	5.4	8.0	213	
	19-May-04	7.8	8.0	317	
	24-Jun-04	8.7	8.0	357	
	29-Jul-04	12.7	8.1	404	
	26-Aug-04	14.2	8.2	389	
	22-Sep-04	14.1	8.2	391	10.1
	21-Oct-04	7.0	7.9	323	11.2
	18-Nov-04	8.0	7.9	370	10.8
	29-Mar-05	6.4	7.8	305	
	11-Apr-05	4.6	6.8	207	
	26-May-05	8.3	7.4	311	
	29-Jun-05	10.3	7.9	368	
	12-Jul-05	11.5	7.7	371	10.8
	28-Sep-05	11.4	7.9	443	8.7
	25-Oct-05	6.2	8.0	393	10.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Nov-05	6.3	7.8	268	11.2
	13-Dec-05	0.3	8.2	299	13.4
	18-Jan-06	5.1	7.2	260	12.7
	24-Mar-06	4.9	8.3	250	
	24-May-06	7.7	8.1	418	
	21-Jun-06	9.9	8.1	426	
	12-Jul-06	11.9	8.1	364	
	24-Aug-06	13.6	7.9	428	
	21-Sep-06	11.8	8.3	404	
	19-Oct-06	9.1	7.9	433	
	23-Nov-06	6.1	7.9	425	
	17-Dec-06	5.1	8.0	436	
	21-Jan-07	2.8	8.3	438	
	17-Apr-07	4.1	8.2	382	
	13-May-07	6.0	8.2	400	
	17-Jun-07	9.5	8.4	428	
	15-Jul-07	12.7	8.1	454	
	19-Aug-07	13.3	8.0	449	9.4
	17-Sep-07	12.7	8.3	426	8.8
	18-Oct-07	12.8	8.0	422	8.5
	19-Nov-07	3.6	7.8	464	11.4
	11-Dec-07	4.3	7.9	440	11.8
	22-Jan-08	3.9	7.8	361	12.7
	20-Feb-08	3.7	8.0	378	
	17-Mar-08	4.5	7.8	400	
	2-Apr-08	4.3	7.8	312	
	23-Apr-08	6.1	7.7	300	10.9
	22-May-08	5.6	7.4	374	11.2
	17-Jun-08	8.7	7.8	434	11.0
	15-Jul-08	12.6	7.3	465	8.6
	19-Aug-08	11.8	7.4	526	6.3
	16-Sep-08	10.1	8.1	477	8.2
	22-Oct-08	6.9	7.9	428	6.8
	23-Nov-08	5.7	8.0	428	8.7
	14-Dec-08	4.8	8.4	336	8.8
	18-Jan-09	3.9	8.1	317	9.0
	8-Feb-09	3.9		344	8.0
	15-Mar-09	4.2	8.3	308	
	12-Apr-09	4.6	8.0	352	
	17-May-09	8.2	8.4	317	
	14-Jun-09	9.4	7.8	809	
	12-Jul-09	9.7	8.6	446	11.5
	9-Aug-09	12.9	8.6	444	10.0
	13-Sep-09	10.0	7.6	413	
	11-Oct-09	6.7	8.2	487	11.5
	15-Nov-09	5.6	8.3	341	12.2
	13-Dec-09	3.3	7.7	454	12.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Jan-10	4.7	8.0	388	12.6
	7-Feb-10	3.3	7.8	431	12.0
	14-Mar-10	4.9	7.4	349	13.1
	11-Apr-10	6.8	8.0	373	
	16-May-10	6.7	8.0	254	12.3
	13-Jun-10	8.3	8.0	276	
	18-Jul-10	9.3	8.0	324	15.2
	15-Aug-10	13.1	8.2	332	10.6
	12-Sep-10	10.3	8.3	352	10.6
	17-Oct-10	7.3	7.9	317	11.3
	14-Nov-10	6.3	7.9	241	10.6
	19-Dec-10	4.8	8.4	182	11.4
	16-Jan-11	4.8	8.3	251	12.6
	20-Feb-11	4.6	8.1	251	11.8
	13-Mar-11	4.9	8.2	242	13.5
	17-Apr-11	5.4	8.1	227	12.7
	15-May-11	5.6	7.8	209	13.5
	12-Jun-11	8.6	8.2	152	11.1
	17-Jul-11	14.2	8.3	280	9.7
	14-Aug-11	15.0	8.6	260	9.9
	18-Sep-11	12.4	8.9	279	10.2
	16-Oct-11	9.2	7.7	279	11.9
	20-Nov-11	5.3	7.9	288	12.0
	18-Mar-12	6.1	8.0	194	9.3
	15-Apr-12	9.1	8.7	279	12.4
	13-May-12	9.3	8.0	279	11.5
	17-Jun-12	12.1	8.2	333	13.5
	16-Jul-12	16.0	8.2	375	7.1
	14-Aug-12	10.0	7.8	495	7.4
	18-Sep-12	11.0	7.7	335	9.9
	14-Oct-12	10.3	6.7	184	7.8
	18-Nov-12	6.8	7.8	280	9.2
	16-Dec-12	5.0	7.7	568	10.3
	13-Jan-13	4.9	8.1	279	11.2
	19-Mar-13	4.2	8.3	203	9.1
	17-Apr-13	4.8	7.9	198	10.2
	14-May-13	5.7	8.0	237	10.7
	19-Jun-13	8.3	8.1	281	12.7
	16-Jul-13	11.0	8.1	338	11.4
	21-Aug-13	13.4	8.4	313	9.9
	18-Sep-13	10.8	8.0	328	11.3
	16-Oct-13	9.6	8.2	312	5.8
	20-Nov-13	6.2	7.5	273	3.8
	17-Apr-14	4.5	8.1	215	11.0
	13-May-14	8.6	6.6	256	12.4
	18-Jun-14	7.8	8.0	281	10.5
	16-Jul-14	9.8	7.9	244	8.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Aug-14	12.0	8.8	388	10.5
	9-Sep-14	13.0	9.0	398	4.1
	23-Oct-14	8.0	8.0	391	5.0
	16-Dec-14	5.0	8.5	315	-
	20-Jan-14	2.5	6.9	293	0.1
	18-Mar-15	2.5	8.3	179	13.4
	22-Apr-15	4.8	8.0	259	13.7
	19-May-15	7.1	8.3	253	-
	15-Jun-15	7.2	8.2	305	11.7
	22-Jul-15	9.8	7.9	321	-
	11-Aug-15	11.0	8.3	352	11.4
	25-Aug-15	11.7	8.3	317	9.5
	8-Sep-15	13.6	8.0	362	9.0
	15-Oct-15	9.4	8.3	311	9.9
	18-Nov-15	8.4	8.0	367	11.5
	9-Dec-15	5.2	7.7	315	13.3
	19-Jan-16	3.3	7.9	247	14.5
	17-Feb-16	4.1	7.7	276	14.0
	15-Mar-16	4.5	7.8	201	13.6
	21-Apr-16	4.6	8.0	227	14.8
	18-May-16	7.2	8.2	294	13.2
	23-Jun-16	8.7	8.4	304	11.8
	5-Jul-16	12.7	8.4	298	15.7
	21-Jul-16	13.9	8.2	365	10.3
	9-Aug-16	16.3	8.5	336	11.4
	24-Aug-16	16.6	8.4	215	10.0
	19-Sep-16	14.9	8.4	366	9.8
	18-Oct-16	13.8	8.3	367	11.6
	16-Nov-16	6.7	7.9	253	9.6
	12-Dec-16	1.9	8.7	467	14.8
	25-Jan-17	5.1	8.1	265	12.0
	17-Feb-17	3.5	8.2	290	14.6
	22-Mar-17	3.3	8.3	279	12.9
	19-Apr-17	4.6	7.3	231	15.6
	16-May-17	8.0	7.8	262	13.2
	28-Jun-17	8.0	7.9	300	12.4
	7-Jul-17	9.3	7.4	301	13.7
	19-Jul-17	9.7	8.1	336	11.9
	2-Aug-17	10.6	8.1	323	10.9
	16-Aug-17	10.6	8.2	348	11.2
	18-Sep-17	10.8	8.1	340	10.7
	18-Oct-17	8.9	8.2	361	11.1
	15-Nov-17	6.2	8.3	335	7.1
	14-Dec-17	3.1	8.5	284	11.1
	18-Jan-18	4.1	7.9	264	8.7
	23-Feb-18	4.3	8.1	225	8.9
	21-Mar-18	3.9	8.3	268	13.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Apr-18	3.9	8.2	243	10.1
	15-May-18	5.9	8.0	358	11.9
	18-Jun-18	8.2	8.2	430.9	10.9
	19-Jun-18	11.9	8.2	244.9	10.1
	24-Aug-18	13.8	8.4	435.4	9.8
	20-Sep-18	13.1	8.5	438.6	9.7
	25-Oct-18	4.9	8.2	430.1	11.0
	22-Nov-18	2.3	8.3		12.9
	13-Dec-18	4.9	8.3	411.9	12.2
	19-Jan-19	3.6	8.2	396.3	12.8
	28-Feb-19	3.9	8.4	341	12.8
	19-Mar-19	4.6	8.2	349.8	12.4
	25-Apr-19	4.2	8.1	266.8	11.9
	27-May-19	7.9	8.3	352.6	12.0
	21-Jun-19	8.1	8.3	384.1	11.4
	30-Jul-19	12.8	8.3	391.9	9.8
	30-Aug-19	13.1	8.4	374	9.8
	27-Sep-19	12.4	8.5	358.4	9.1
	22-Oct-19		8.3	351.6	9.5
	22-Oct-19	10.1	8.3	351.6	9.5
	21-Nov-19	0.1	7.9	378	9.8
	24-Jan-20	4.9	8.2	365.7	12.2
	28-Apr-20	8.0	8.3	340.1	11.3
	28-May-20	7.0	8.8	359.4	11.4
	31-Jul-20	11.4	8.6	417	10.3
	26-Aug-20	12.6	8.3	390.6	10.1
	26-Sep-20	10.5	8.2	390	
	29-Oct-20	9.8	8.1	346.7	9.0
	27-Nov-20	6.1	8.0	416	11.8
	22-Dec-20	5.2	8.1	410	12.3
SW 11A					
	22-May-03	8.0			
	13-Feb-04	4.8		325	11.9
	18-Mar-04	4.7		436	9.1
	21-Apr-04	4.4	7.8	223	
	19-May-04	6.0	7.8	308	
	24-Jun-04	6.9	7.6	345	
	29-Jul-04	9.1	7.5	383	
	29-Mar-05	5.2	7.8	308	
	11-Apr-05	4.3	7.0	208	
	26-May-05	6.0	7.4	291	
	29-Jun-05	7.6	8.2	347	
	12-Jul-05	8.5	7.8	352	
	23-Aug-05	11.0	7.4	373	11.0
	16-Nov-05	7.8	8.2	306	11.4
	13-Dec-05	5.6	8.3	365	11.3
	18-Jan-06	5.7	7.3	230	12.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-Mar-06	4.5	8.2	249	
	19-Apr-06	5.4	8.0	337	
	24-May-06	6.7	7.9	427	
	21-Jun-06	8.6	7.6	430	
	12-Jul-06	9.7	7.6	396	
	24-Aug-06	12.7	7.2	429	
	21-Sep-06	12.1	7.7	419	
	19-Oct-06	9.1	7.5	470	
	23-Nov-06	6.4	7.9	423	
	17-Dec-06	5.8	7.7	406	
	21-Jan-07	4.8	7.9	442	
	17-Apr-07	4.2	8.2	384	
	13-May-07	5.5	8.0	414	
	11-Dec-07	7.0	7.9	459	11.4
	22-Jan-08	5.2	7.8	290	
	20-Feb-08	4.6	8.1	380	
	17-Mar-08	4.7	7.8	409	
	2-Apr-08	4.2	7.7	310	12.9
	23-Apr-08	4.5	7.8	330	12.7
	22-May-08	5.6	8.1	381	10.5
	17-Jun-08	6.5	8.0	444	8.7
	19-Aug-08	8.0	7.7	542	8.3
	16-Sep-08	8.9	8.0	492	8.2
	23-Nov-08	5.8	8.2	427	
	14-Dec-08	5.7	8.1	337	8.2
	18-Jan-09	4.2	8.3	399	9.4
	8-Feb-09	4.8		348	8.9
	15-Mar-09	4.1	8.1	310	
	12-Apr-09	4.0	8.1	355	
	17-May-09	6.4	8.1	321	
	14-Jun-09	12.1	7.9	796	
	12-Jul-09	8.8	8.4	418	
	9-Aug-09	16.0	7.9	432	
	11-Oct-09	8.6	7.6	512	
	13-Dec-09	5.1	7.7	473	12.3
	17-Jan-10	4.8	8.0	439	11.7
	7-Feb-10	4.6	7.7	433	12.1
	14-Mar-10	4.9	7.6	357	13.3
	11-Apr-10	5.2	7.9	201	12.0
	16-May-10	5.8	7.8	201	12.0
	13-Jun-10	8.0	7.8	319	15.3
	18-Jul-10	8.0	7.8	319	15.3
	15-Aug-10	9.0	7.9	308	10.3
	17-Oct-10	7.8	7.9	343	11.6
	14-Nov-10	6.8	7.8	241	10.1
	16-Jan-11	5.5	8.2	182	11.9
	20-Feb-11	5.2	8.2	201	12.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-Mar-11	5.1	8.4	247	13.6
	17-Apr-11	4.5	8.0	229	13.1
	15-May-11	5.5	8.1	209	13.2
	12-Jun-11	7.3	8.0	248	12.5
	16-Oct-11	9.8	7.6	270	11.7
	20-Nov-11	7.0	7.7	238	11.1
	18-Dec-11	6.3	8.1	226	13.3
	18-Mar-12	5.3	7.9	192	10.1
	15-Apr-12	5.9	8.8	259	15.9
	13-May-12	6.1	8.0	257	17.2
	12-Aug-12	9.1	7.8	415	7.4
	18-Nov-12	6.9	7.5	147	9.2
	16-Dec-12	6.1	7.6	589	10.0
	13-Jan-13	5.6	7.9	292	10.8
	19-Mar-13	4.6	8.2	199	9.5
	17-Apr-13	4.5	8.0	191	10.4
	14-May-13	5.5	8.0	289	10.6
	20-Nov-13	6.7	7.8	281	3.7
	17-Apr-14	4.7	8.1	207	10.9
	13-May-14	5.7	7.1	240	10.1
	18-Jun-14	6.9	8.1	284	10.6
	16-Dec-14	6.0	8.4	331	-
	18-Mar-15	4.8	8.1	242	13.1
	22-Apr-15	4.8	7.8	266	13.9
	19-May-15	5.8	8.1	254	-
	15-Jun-15	6.4	7.9	308	11.5
	22-Jul-15	7.5	7.8	310	-
	11-Aug-15	8.8	8.0	344	11.7
	25-Aug-15	9.9	-	-	-
	8-Sep-15	11.9	7.8	347	9.7
	18-Nov-15	8.5	7.8	348	13.4
	9-Dec-15	7.0	7.5	351	12.3
	19-Jan-16	5.7	7.7	268	13.3
	17-Feb-16	5.4	7.7	292	13.1
	15-Mar-16	4.9	7.5	201	13.3
	21-Apr-16	4.4	8.0	230	14.3
	18-May-16	5.2	8.0	283	13.0
	23-Jun-16	7.0	8.0	296	12.3
	5-Jul-16	12.3	8.6	299	13.5
	21-Jul-16	15.0	7.8	375	6.6
	9-Aug-16	22.2	8.1	468	6.3
	24-Aug-16	16.9	7.9	354	3.3
	12-Dec-16	5.4	8.5	447	11.4
	25-Jan-17	5.7	8.0	280	11.6
	17-Feb-17	5.1	8.2	306	13.0
	22-Mar-17	4.0	8.1	290	12.2
	19-Apr-17	5.0	7.2	224	14.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-May-17	6.0	7.9	247	12.8
	28-Jun-17	7.0	7.8	300	12.2
	7-Jul-17	7.6	7.4	292	11.9
	19-Jul-17	7.8	8.0	326	12.1
	2-Aug-17	7.8	7.7	306	11.5
	16-Aug-17	8.8	7.8	336	11.4
	18-Sep-17	10.4	7.8	347	10.5
	18-Oct-17	9.1	7.9	373	11.5
	15-Nov-17	7.2	8.1	351	6.6
	14-Dec-17	6.0	8.3	318	7.6
	18-Jan-18	5.1	7.8	275	8.4
	23-Feb-18	5.0	8.0	166	6.9
	21-Mar-18	4.7	8.1	276	13.7
	19-Apr-18	4.5	8.0	249	9.0
	15-May-18	5.3	7.7	386	11.7
	18-Jun-18	7.8	7.8	437.8	11.7
	19-Jul-18	10.1	7.8	297.6	10.2
	22-Nov-18	2.7	8.3		12.5
	13-Dec-18	5.9	8.2	414	11.7
	19-Jan-19	5.5	8.0	397	12.1
	19-Mar-19	5.0	8.1	348.9	12.1
	25-Apr-19	4.8	7.9	303.5	11.8
	27-May-19	5.7	7.9	360.6	11.9
	21-Jun-19	6.7	8.0	383.7	11.6
	30-Aug-19	10.4	7.8	386	10.5
	27-Sep-19	11.9	7.7	388.2	11.2
	22-Oct-19		8.0	390.5	10.2
	22-Oct-19	9.4	8.0	390.5	10.2
	28-May-20	5.8	8.6	369.8	11.7
	31-Jul-20	8.1	8.1	416	11.5
	27-Nov-20	6.5	7.9	303.3	11.8
SW 11B					
	22-May-03	8.0			
	13-Feb-04	4.9		325	12.3
	18-Mar-04	4.4		431	8.9
	21-Apr-04	4.2	7.8	221	
	19-May-04	5.8	7.7	305	
	24-Jun-04	6.9	7.5	347	
	29-Jul-04	7.6	7.4	367	
	26-Aug-04	7.8	7.6	332	
	18-Nov-04	6.4	7.6	370	
	29-Mar-05	4.8	7.7	301	
	11-Apr-05	3.9	7.0	208	
	26-May-05	6.1	7.2	302	
	29-Jun-05	7.3	7.9	162	
	12-Jul-05	7.5	7.8	253	
	23-Aug-05	8.5	7.5	331	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	25-Sep-06	9.1	7.6	341	10.8
	25-Oct-05	8.1	8.1	439	
	16-Nov-05	7.1	7.9	328	12.0
	13-Dec-05	5.7	8.3	378	11.5
	18-Jan-06	5.4	7.7	260	12.4
	24-Mar-06	4.4	8.2	247	
	19-Apr-06	5.3	8.0	336	
	24-May-06	6.9	7.8	422	
	21-Jun-06	8.1	7.5	450	
	12-Jul-06	8.9	7.6	400	
	24-Aug-06	10.9	7.3	430	
	21-Sep-06	10.7	7.7	451	
	19-Oct-06	7.8	7.6	488	
	23-Nov-06	6.3	7.8	254	11.8
	17-Dec-06	5.7	7.7	440	
	21-Jan-07	5.1	8.0	438	
	17-Apr-07	4.1	8.1	384	13.1
	13-May-07	5.5	7.9	336	12.6
	11-Dec-07	6.2	8.0	335	11.3
	22-Jan-08	5.1	7.8	365	12.5
	20-Feb-08	4.7	8.2		
	17-Mar-08	4.6	7.8	408	
	2-Apr-08	4.5	7.7	309	
	23-Apr-08	4.9	7.9	331	11.8
	22-May-08	5.8	7.8	382	
	17-Jun-08	7.5	7.8	442	11.8
	15-Jul-08	9.1	7.5	479	9.0
	19-Aug-08	9.2	7.3	544	7.0
	16-Sep-08	7.5	7.8	490	9.2
	22-Oct-08	7.0	7.8	439	7.3
	23-Nov-08	6.3		427	8.2
	14-Dec-08	5.7	8.1	338	8.3
	18-Jan-09	2.6	8.3	410	8.6
	8-Feb-09	4.8		351	8.0
	15-Mar-09	4.1	8.4	304	
	12-Apr-09	3.9	7.6	346	
	17-May-09	6.4	8.2	324	
	14-Jun-09	6.3	8.4	846	
	12-Jul-09	7.9	8.4	402	
	9-Aug-09	9.5	8.9	454	
	11-Oct-09	7.5	8.0	512	
	15-Nov-09	6.3	7.7	431	
	13-Dec-09	5.3	7.8	462	12.1
	17-Jan-10	5.0	8.0	435	12.0
	7-Feb-10	5.0	7.5	428	11.9
	14-Mar-10	4.9	7.5	355	13.3
	11-Apr-10	5.4	7.8	386	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-May-10	5.8	7.8	246	12.1
	13-Jun-10	7.7	7.9	231	15.5
	18-Jul-10	8.1	7.7	322	15.4
	15-Aug-10	9.6	331.0	330	11.6
	17-Oct-10	7.5	7.9	337	11.2
	14-Nov-10	7.0	7.8	226	10.5
	20-Feb-11	5.3	8.1	260	11.3
	13-Mar-11	4.9	8.2	199	13.2
	17-Apr-11	4.7	8.0	221	12.9
	15-May-11	5.5	7.9	210	13.1
	12-Jun-11	7.4	7.9	250	11.4
	16-Oct-11	8.3	7.5	315	12.3
	20-Nov-11	6.4	8.0	302	11.1
	18-Dec-11	6.1	8.7	226	13.2
	18-Mar-12	5.5	7.9	198	8.4
	15-Apr-12	6.6	8.6	265	15.2
	13-May-12	6.4	7.7	262	13.1
	17-Jun-12	8.0	8.0	300	12.9
	12-Aug-12	8.6	7.6	491	7.3
	18-Nov-12	6.8	7.5	228	9.1
	16-Dec-12	6.1	7.6	533	9.7
	13-Jan-13	5.7	7.9	292	11.3
	19-Mar-13	3.7	8.2	190	9.9
	17-Apr-13	4.5	7.8	196	10.1
	14-May-13	5.6	7.8	238	10.1
	16-Oct-13	8.3	8.1	304	6.1
	20-Nov-13	6.9	7.9	283	3.8
	17-Apr-14	4.8	8.0	216	10.2
	13-May-14	6.0	7.5	244	10.7
	18-Jun-14	6.8	7.9	288	10.2
	23-Oct-14	7.5	7.9	395	4.2
	16-Dec-14	5.8	8.5	327	-
	18-Mar-15	4.9	8.3	243	12.2
	22-Apr-15	5.0	7.8	267	13.8
	19-May-15	6.0	8.1	257	-
	15-Jun-15	6.4	7.8	308	11.2
	22-Jul-15	7.3	7.7	309	-
	11-Aug-15	8.3	7.8	337	11.8
	25-Aug-15	8.7	-	-	-
	8-Sep-15	10.0	7.6	312	9.8
	18-Nov-15	7.4	7.8	362	13.3
	9-Dec-15	6.1	7.6	324	13.1
	19-Jan-16	5.6	7.9	269	13.7
	17-Feb-16	5.4	7.8	292	13.2
	15-Mar-16	4.7	7.6	202	13.6
	21-Apr-16	4.5	7.9	225	14.0
	18-May-16	5.4	8.0	281	13.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	23-Jun-16	7.0	7.9	298	12.2
	5-Jul-16	10.0	8.3	294	14.5
	21-Jul-16	9.5	7.7	375	11.7
	9-Aug-16	14.4	8.1	371	11.6
	24-Aug-16	11.6	7.9	340	11.2
	18-Oct-16	10.9	8.1	347	13.6
	16-Nov-16	7.8	7.8	331	9.2
	12-Dec-16	4.2	8.4	466	12.4
	17-Feb-17	4.6	8.1	300	13.9
	22-Mar-17	4.6	8.4	289	12.6
	19-Apr-17	5.1	7.1	142	14.3
	16-May-17	6.1	7.9	221	12.8
	28-Jun-17	7.4	7.7	300	12.0
	7-Jul-17	7.7	7.7	281	12.5
	19-Jul-17	7.3	7.9	325	12.2
	2-Aug-17	8.3	7.7	252	11.5
	15-Aug-17	8.5	7.6	266	11.5
	18-Sep-17	8.6	7.7	315	11.4
	18-Oct-17	8.1	7.9	264	11.6
	15-Nov-17	6.7	8.1	346	7.0
	14-Dec-17	5.8	8.4	314	7.6
	18-Jan-18	4.8	7.9	272	8.6
	23-Feb-18	4.7	8.0	219	6.8
	21-Mar-18	4.5	8.2	275	12.1
	19-Apr-18	4.3	8.0	238	9.1
	15-May-18	5.6	7.8	387	11.7
	18-Jun-18	7.7	7.7	440.1	11.2
	19-Jul-18	9.5	7.7	431.7	10.5
	24-Aug-18	11.3	7.8	437.5	9.6
	20-Sep-18	11.6	7.8	437.5	9.5
	25-Oct-18	8.0	8.2	421	10.2
	22-Nov-18	4.7	8.4		11.8
	13-Dec-18	5.9	8.3	414.1	11.8
	19-Jan-19	5.2	8.1	396.8	12.1
	28-Feb-19	5.2	8.2	392	12.3
	19-Mar-19	4.9	8.1	348.3	12.1
	25-Apr-19	4.8	7.9	301.5	11.7
	27-May-19	6.1	7.9	353.8	11.8
	21-Jun-19	6.7	7.8	391.1	11.5
	30-Jul-19	9.7	7.9	397.1	10.2
	28-May-20	6.8	8.5	341.4	11.4
	31-Jul-20	8.1	8.1	271.3	11.1
	27-Nov-20	6.4	7.9	418	12.0
SW 11C					
	22-May-03	8.0			
	18-Mar-04	4.4		431	9.0
	21-Apr-04	4.3	7.8	221	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-May-04	5.9	7.6	307	
	24-Jun-04	8.0	7.8	354	
	29-Mar-05	4.7	7.6	301	12.9
	11-Apr-05	4.1	7.1	203	
	26-May-05	6.1	7.2	300	
	18-Jan-06	5.5	7.3	267	12.3
	24-Mar-06	4.4	8.1	245	
	19-Apr-06	5.4	8.0	330	
	24-May-06	6.4	7.9	421	
	12-Jul-06	15.4	7.4	448	
	19-Oct-06	9.7	7.5	428	
	23-Nov-06	6.3	7.7	431	11.8
	17-Dec-06	5.6	7.6	440	
	21-Jan-07	5.1	8.0	443	12.4
	17-Apr-07	4.1	8.0	384	12.8
	13-May-07	5.5	8.0	403	12.7
	19-Nov-07	6.5	7.8	487	10.8
	11-Dec-07	5.7	7.8	461	11.7
	22-Jan-08	4.9	7.7	359	12.4
	20-Feb-08	4.3	8.0	381	
	17-Mar-08	4.4		404	
	2-Apr-08	3.7	7.7	311	13.1
	23-Apr-08	6.5	7.7	325	10.4
	22-May-08	5.7	7.6	381	11.1
	17-Jun-08	10.6	7.8	440	8.9
	15-Jul-08	7.5	7.2	462	10.1
	19-Aug-08	7.5	7.5	535	7.8
	16-Sep-08	8.5	7.8	486	9.2
	22-Oct-08	7.1	7.9	439	7.3
	23-Nov-08	6.1		357	8.2
	14-Dec-08	5.4	8.1	337	8.9
	18-Jan-09	4.3	8.3	240	9.9
	8-Feb-09	4.1		341	8.2
	15-Mar-09	3.7	8.3	205	
	12-Apr-09	4.3	8.0	356	
	17-May-09	5.7	8.1	308	12.5
	14-Jun-09	6.8	8.1	828	
	12-Jul-09	8.7	8.8	448	
	9-Aug-09	12.7	8.6	458	
	13-Sep-09	8.0	7.1	426	
	11-Oct-09	6.5	8.1	363	12.3
	15-Nov-09	6.1	8.1	424	
	13-Dec-09	3.9	7.6	430	11.7
	17-Jan-10	5.2	8.0	447	12.1
	7-Feb-10	4.8	7.8	436	12.1
	14-Mar-10	4.2	7.5	355	13.6
	11-Apr-10	5.6	7.8	377	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-May-10	5.6	7.9	247	12.2
	13-Jun-10	7.2	7.8	274	15.4
	18-Jul-10	8.6	7.7	321	15.2
	15-Aug-10	10.4	7.8	300	11.0
	12-Sep-10	8.8	8.1	314	11.4
	17-Oct-10	7.5	7.8	335	11.5
	14-Nov-10	6.7	7.7	256	10.5
	20-Feb-11	4.7	8.1	195	12.7
	13-Mar-11	4.6	8.1	243	13.4
	17-Apr-11	4.4	7.9	220	13.1
	15-May-11	5.5	7.9	212	13.3
	12-Jun-11	8.2	7.8	227	11.3
	16-Oct-11	8.9	7.5	320	11.6
	20-Nov-11	6.3	8.1	288	11.3
	18-Dec-11	5.9	8.7	222	13.4
	18-Mar-12	4.9	7.9	194	7.1
	15-Apr-12	5.4	8.6	251	15.8
	13-May-12	6.3	7.7	213	13.1
	17-Jun-12	7.9	7.8	220	12.7
	16-Jul-12	8.8	7.9	318	7.5
	14-Aug-12	9.1	7.6	420	7.3
	16-Sep-12	8.9	7.5	321	10.5
	18-Nov-12	6.7	7.5	280	9.1
	16-Dec-12	5.9	7.5	586	9.9
	13-Jan-13	5.2	7.9	285	11.2
	19-Mar-13	4.3	8.1	206	10.0
	17-Apr-13	4.1	7.8	196	10.1
	14-May-13	5.5	8.0	236	10.0
	16-Oct-13	8.6	7.8	307	5.8
	20-Nov-13	6.4	7.4	280	3.7
	17-Apr-14	4.4	7.8	423	10.3
	13-May-14	6.3	7.5	235	10.8
	18-Jun-14	7.9	8.1	277	10.0
	23-Oct-14	7.7	7.9	357	4.3
	16-Dec-14	5.5	8.4	324	-
	18-Mar-15	3.9	8.2	231	12.1
	22-Apr-15	4.3	7.8	260	13.7
	19-May-15	6.1	7.9	256	-
	15-Jun-15	7.0	7.7	312	11.1
	22-Jul-15	7.9	7.5	245	-
	11-Aug-15	8.6	7.7	341	11.5
	25-Aug-15	8.6	8.2	304	10.0
	8-Sep-15	8.1	7.6	329	11.0
	15-Oct-15	8.3	7.8	295	11.1
	18-Nov-15	6.8	7.7	363	12.5
	9-Dec-15	5.9	7.5	339	13.1
	19-Jan-16	5.1	7.9	264	13.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Feb-16	4.4	7.8	282	12.8
	15-Mar-16	4.3	7.6	204	13.4
	21-Apr-16	4.2	8.0	227	14.5
	18-May-16	5.3	8.0	283	10.0
	23-Jun-16	7.1	7.8	294	12.3
	5-Jul-16	7.7	7.8	307	18.0
	21-Jul-16	8.7	7.6	321	11.4
	9-Aug-16	8.7	7.8	471	14.3
	24-Aug-16	9.3	7.7	308	11.8
	19-Sep-16	9.1	7.6	329	11.5
	18-Oct-16	8.8	7.7	297	14.7
	16-Nov-16	7.3	7.7	319	11.0
	12-Dec-16	5.6	8.2	471	13.3
	25-Jan-17	5.2	7.9	218	11.7
	17-Feb-17	4.7	8.1	304	13.5
	22-Mar-17	4.3	8.0	287	12.7
	19-Apr-17	4.9	7.0	237	14.3
	16-May-17	5.8	7.9	248	12.7
	28-Jun-17	7.4	7.8	298	11.9
	7-Jul-17	8.8	7.5	294	13.1
	19-Jul-17	8.3	7.9	231	11.3
	2-Aug-17	8.5	7.7	314	11.3
	16-Aug-17	8.8	7.5	341	10.5
	18-Sep-17	8.5	7.6	344	11.5
	18-Oct-17	8.5	7.7	367	11.0
	15-Nov-17	6.7	8.1	341	7.0
	14-Dec-17	5.3	8.2	310	8.1
	18-Jan-18	4.6	7.8	269	9.0
	23-Feb-18	4.0	8.0	207	7.1
	21-Mar-18	4.0	8.1	238	12.4
	19-Apr-18	3.9	7.9	245	9.6
	15-May-18	5.5	7.7	386	11.7
	18-Jun-18	7.6	7.6	444.3	11.1
	19-Jul-18	8.5	7.6	437.5	11.0
	24-Aug-18	9.6	7.6	450.6	10.7
	20-Sep-18	9.6	7.6	451.4	10.5
	25-Oct-18	7.7	8.1	453.6	11.3
	22-Nov-18	6.2	8.2		12.4
	13-Dec-18	5.8	8.2	418	11.9
	19-Jan-19	5.1	8.0	390.7	12.3
	28-Feb-19	4.7	8.2	385	12.4
	19-Mar-19	4.3	8.0	349.6	12.3
	25-Apr-19	4.5	7.9	216	11.8
	27-May-19	5.9	7.8	360	11.8
	21-Jun-19	7.0	7.8	392.5	11.4
	30-Jul-19	8.5	8.0	403.5	10.7
	28-May-20	6.2	8.4	370.8	11.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	31-Jul-20	8.9	7.8	428.4	10.6
	26-Aug-20	8.9	7.3	380	10.4
	26-Sep-20	9.1	8.1	400	
	29-Oct-20	8.5	8.2	354	7.5
	27-Nov-20	6.5	7.8	429.9	11.8
SW 11D					
	22-May-03	8.0			
	13-Feb-04	3.9		311	11.9
	18-Mar-04	3.7		421	9.5
	21-Apr-04	4.1	7.9	212	
	19-May-04	3.1	8.2	240	
	24-Jun-04	6.3	7.8	326	
	29-Jul-04	9.7	8.0	327	
	22-Sep-04	12.0	7.9	354	9.4
	20-Oct-04	7.2	7.9	302	10.8
	18-Nov-04	6.2	7.9	302	11.2
	29-Mar-05	4.2	7.7	294	
	11-Apr-05	3.1	7.2	211	
	26-May-05	4.5	7.2	271	
	29-Jun-05	8.6	7.9	309	
	12-Jul-05	9.9	7.5	319	9.4
	23-Aug-05	11.6	7.7	341	9.1
	25-Sep-05	11.4	7.6	342	7.6
	25-Oct-05	7.3	8.0	393	10.9
	16-Nov-05	7.0	7.8	297	11.0
	13-Dec-05	1.1	7.5	264	11.6
	18-Jan-06	5.5	7.0	266	12.6
	24-Mar-06	4.3	8.1	245	
	19-Apr-06	5.0	8.1	329	
	24-May-06	6.0	7.9	415	
	21-Jun-06	8.3	8.0	379	
	12-Jul-06	10.8	8.2	362	
	24-Aug-06	12.8	7.8	412	
	21-Sep-06	11.6	7.9	396	
	19-Oct-06	8.8	8.1	393	
	23-Nov-06	6.2	7.8	425	11.8
	17-Dec-06	5.6	7.8	440	
	21-Jan-07	4.6	8.1	434	12.9
	17-Apr-07	4.0	8.1	385	
	13-May-07	3.6	8.1	379	
	17-Jun-07	7.4	8.5	325	11.9
	19-Aug-07	12.1	8.0	423	9.1
	19-Nov-07	4.2	7.9	457	10.8
	11-Dec-07	3.1	7.9	378	11.9
	22-Jan-08	4.5	7.7	367	12.5
	20-Feb-08	3.7	8.0	383	
	17-Mar-08	4.2	7.7	402	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	2-Apr-08	4.1	7.7	315	
	23-Apr-08	4.7	7.8	326	10.9
	22-May-08	5.7	7.5	381	10.2
	23-Nov-08	3.5	8.1	411	7.7
	14-Dec-08	5.4	8.1	337	
	8-Feb-09	3.6		324	8.2
	15-Mar-09	3.8	8.0	310	
	12-Apr-09	3.4	7.7	350	
	17-May-09	7.2	8.2	320	
	14-Mar-10	2.3	7.5	346	13.4
	11-Apr-10	5.1	7.8	385	
	16-May-10	5.9	7.8	252	11.7
	13-Jun-10	6.9	7.9	270	13.2
	18-Jul-10	8.4	7.7	321	15.2
	17-Oct-10	7.3	8.7	352	8.0
	14-Nov-10	6.7	7.8	258	9.8
	13-Mar-11	4.3	8.0	240	12.9
	17-Apr-11	4.3	7.9	221	12.7
	15-May-11	5.5	7.8	126	13.5
	12-Jun-11	7.0	8.0	239	11.9
	16-Oct-11	10.0	7.4	341	10.8
	20-Nov-11	6.0	8.0	293	11.9
	18-Dec-11	6.1	8.6	229	13.0
	18-Mar-12	5.2	7.8	192	9.8
	15-Apr-12	5.6	8.6	222	15.9
	13-May-12	6.2	7.8	256	11.8
	14-Aug-12	9.0	7.5	498	7.7
	18-Nov-12	6.7	7.5	283	9.1
	16-Dec-12	6.0	7.5	589	9.8
	13-Jan-13	5.2	7.8	283	10.9
	19-Mar-13	4.6	8.1	208	9.8
	17-Apr-13	4.2	7.8	194	9.9
	16-Oct-13	7.8	7.8	300	6.0
	20-Nov-13	6.7	7.4	280	3.7
	17-Apr-14	4.4	7.7	423	10.2
	13-May-14	5.7	7.5	245	10.0
	18-Jun-14	7.8	7.9	273	10.7
	23-Oct-14	7.6	7.9	393	4.3
	16-Dec-14	5.6	8.4	326	-
	22-Apr-15	4.6	7.7	243	13.3
	19-May-15	5.8	8.1	249	-
	15-Jun-15	6.6	7.5	310	11.1
	22-Jul-15	7.7	7.9	271	-
	11-Aug-15	9.4	8.0	309	11.1
	25-Aug-15	11.7	-	-	-
	8-Sep-15	12.0	7.8	306	9.3
	15-Oct-15	8.5	8.1	283	10.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Nov-15	7.3	7.8	327	12.5
	9-Dec-15	4.8	7.7	297	13.1
	19-Jan-16	4.5	7.9	248	13.8
	17-Feb-16	4.3	7.8	277	13.4
	15-Mar-16	4.4	7.7	203	13.4
	21-Apr-16	4.1	8.0	224	14.1
	18-May-16	4.6	8.1	272	13.1
	23-Jun-16	6.9	8.3	266	11.6
	5-Jul-16	8.8	8.1	281	16.9
	21-Jul-16	10.5	7.7	321	10.2
	9-Aug-16	12.1	8.4	351	12.9
	24-Aug-16	12.6	8.1	194	9.2
	19-Sep-16	12.2	8.1	331	11.5
	18-Oct-16	11.5	8.0	302	12.6
	15-Nov-16	6.8	8.0	292	10.6
	12-Dec-16	0.8	8.3	448	13.4
	25-Jan-17	5.3	7.9	276	11.6
	17-Feb-17	4.1	8.1	296	13.5
	22-Mar-17	4.2	8.0	265	12.7
	19-Apr-17	4.4	7.1	232	14.6
	16-May-17	6.0	8.0	243	12.8
	28-Jun-17	6.9	7.9	289	12.3
	7-Jul-17	7.8	7.4	294	12.1
	19-Jul-17	8.3	8.2	314	11.7
	2-Aug-17	9.8	8.0	292	10.6
	16-Aug-17	10.3	7.8	328	10.2
	18-Sep-17	11.0	7.8	325	9.1
	18-Oct-17	9.1	8.0	334	10.8
	15-Nov-17	6.4	8.1	332	7.2
	14-Dec-17	4.6	8.3	289	8.5
	18-Jan-18	4.9	7.7	271	9.0
	23-Feb-18	4.2	8.1	210	10.2
	21-Mar-18	3.7	8.1	268	11.3
	19-Apr-18	4.0	8.0	243	10.1
	15-May-18	4.8	7.9	373	11.9
	18-Jun-18	8.1	8.1	410	10.8
	19-Jul-18	10.1	7.6	384	4.0
	24-Aug-18	11.6	8.1	405.7	9.5
	20-Sep-18	12.9	7.7	394.6	3.0
	25-Oct-18	5.2	7.9	402.9	10.9
	22-Nov-18	3.4	8.1		11.8
	13-Dec-18	5.4	8.2	413.4	11.8
	19-Jan-19	4.7	8.0	397.1	12.2
	28-Feb-19	4.7	8.2	393.4	12.2
	19-Mar-19	4.0	8.1	350.2	12.1
	25-Apr-19	3.6	8.1	278	12.1
	27-May-19	5.6	7.9	360.1	11.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Jun-19	6.7	8.0	391.1	11.4
	30-Jul-19	11.5	8.2	386.8	6.4
	28-May-20	5.4	8.6	359.4	11.7
	31-Jul-20	11.8	7.9	405.1	10.5
	26-Aug-20	11.7	8.1	415	9.8
	26-Sep-20	10.7	8.1	380	
	29-Oct-20	8.7	7.6	374.2	7.1
	27-Nov-20	6.3	7.8	421.3	11.9
SW 11E					
	22-May-03	8.0			
	13-Feb-04	2.6		294	12.9
	18-Mar-04	4.2		421	9.3
	21-Apr-04	6.7	8.2	210	
	19-May-04	9.4	8.3	325	
	24-Jun-04	10.6	8.3	368	
	29-Jul-04	13.3	8.2	399	
	26-Aug-04	13.1	8.2	354	
	20-Oct-04	7.0	8.1	318	#REF!
	18-Nov-04	7.5	8.1	358	#REF!
	16-Dec-04	2.0	8.2	294	
	29-Mar-05	7.8	8.1	308	
	11-Apr-05	5.3	7.2	212	
	24-May-05	10.3	7.7	329	#REF!
	27-Jun-05	12.6	8.0	385	
	12-Jul-05	13.8	7.7	387	9.6
	23-Aug-05	13.3	7.9	371	10.0
	25-Sep-06	12.5	7.9	270	9.7
	25-Oct-05	6.7	8.1	403	
	16-Nov-05	6.5	8.1	275	11.6
	13-Dec-05	1.2	8.1	324	12.4
	18-Jan-06	4.6	7.0	251	
	24-Mar-06	5.4	8.3	246	
	19-Apr-06	8.8	8.5	319	
	24-May-06	9.2	8.3	399	
	21-Jun-06	11.3	8.3	419	
	12-Jul-06	13.4	8.2	356	
	24-Aug-06	14.8	8.1	412	
	21-Sep-06	11.6	8.2	397	
	19-Oct-06	9.4	8.2	425	
	23-Nov-06	5.9	8.2	421	
	17-Dec-06	4.7	8.2	433	
	21-Jan-07	2.0	8.5	433	
	18-Feb-07	3.3	8.5	448	
	18-Mar-07	3.8	8.4	381	
	17-Apr-07	4.3	8.4	377	
	13-May-07	6.7	8.3	395	
	17-Jun-07	11.4	8.4	449	10.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Jul-07	13.8	8.1	436	9.5
	19-Aug-07	13.7	8.0	418	9.2
	17-Sep-07	11.0	8.0	405	
	18-Oct-07	11.8	8.0	408	9.2
	19-Nov-07	2.2	7.9	455	12.4
	11-Dec-07	2.9	8.0	433	12.5
	22-Jan-08	3.6	7.9	358	13.3
	20-Feb-08	3.3	8.1	377	
	17-Mar-08	4.2	8.1	398	13.3
	2-Apr-08	4.3	7.8	313	
	23-Apr-08	7.4	7.9	304	
	22-May-08	5.8	7.3	359	
	17-Jun-08	9.3	7.9	425	9.3
	15-Jul-08	13.2	7.3	454	7.3
	19-Aug-08	12.0	7.7	512	
	16-Sep-08	10.8	8.2	468	9.0
	22-Oct-08	6.5	8.0	419	7.9
	23-Nov-08	5.3	8.1	421	9.0
	14-Dec-08	4.3	8.5	330	9.4
	18-Jan-09	3.1	8.1	412	4.6
	8-Feb-09	3.9		339	7.9
	15-Mar-09	4.5	8.6	298	
	12-Apr-09	5.2	8.2	331	
	17-May-09	10.4	8.3	328	10.5
	14-Jun-09	10.9	8.2	764	
	12-Jul-09	10.9	8.7	431	11.0
	9-Aug-09	14.0	8.7	433	9.3
	13-Sep-09	11.8	7.6	403	10.4
	11-Oct-09	6.3	8.3	474	12.0
	15-Nov-09	4.5	8.3	412	
	13-Dec-09	1.9	8.1	450	12.4
	17-Jan-10	3.5	8.2	427	12.9
	7-Feb-10	2.1	7.7	428	12.3
	14-Mar-10	5.2	7.9	344	13.0
	11-Apr-10	8.6	8.1	365	
	16-May-10	7.7	8.3	258	11.7
	13-Jun-10	9.7	8.4	284	14.6
	18-Jul-10	10.6	8.3	330	14.5
	15-Aug-10	13.7	8.4	248	10.0
	12-Sep-10	10.6	8.4	340	10.7
	17-Oct-10	7.3	8.2	312	11.8
	14-Nov-10	6.3	8.4	235	10.8
	19-Dec-10	4.1	8.5	237	10.5
	16-Jan-11	4.4	8.2	243	12.6
	20-Feb-11	3.7	8.3	240	12.5
	13-Mar-11	5.4	8.3	242	13.3
	17-Apr-11	5.8	8.1	230	12.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-May-11	6.1	8.0	211	13.1
	12-Jun-11	10.5	8.3	263	10.0
	17-Jul-11	16.2	8.4	230	10.5
	14-Aug-11	15.3	8.4	256	8.1
	18-Sep-11	12.3	8.5	268	8.5
	16-Oct-11	9.5	7.9	280	11.9
	20-Nov-11	4.0	8.0	222	12.7
	18-Dec-11	5.6	8.6	214	13.5
	15-Jan-12	3.6	8.4	185	11.5
	19-Feb-12	4.3	8.2	179	12.7
	18-Mar-12	7.5	8.4	202	10.0
	15-Apr-12	9.1	8.9	277	12.6
	13-May-12	11.3	8.3	288	10.2
	17-Jun-12	14.4	8.2	348	13.8
	16-Jul-12	17.1	8.5	381	6.6
	14-Aug-12	10.9	8.4	302	7.3
	18-Sep-12	12.0	7.8	334	9.5
	14-Oct-12	9.2	8.3	298	8.5
	18-Nov-12	6.8	8.1	279	9.1
	16-Dec-12	4.4	7.9	552	10.5
	13-Jan-13	4.6	8.2	279	11.5
	19-Mar-13	3.9	8.3	200	10.2
	17-Apr-13	5.6	8.1	201	10.1
	14-May-13	6.1	8.2	236	8.7
	19-Jun-13	9.7	8.3	277	12.9
	16-Jul-13	13.8	8.3	346	9.8
	21-Aug-13	14.1	8.3	344	9.4
	18-Sep-13	10.6	8.2	312	10.3
	16-Oct-13	10.4	8.6	314	5.7
	20-Nov-13	5.5	7.9	260	3.6
	18-Dec-13	4.0	8.1	217	7.5
	21-Jan-14	0.9	7.7	296	3.9
	19-Feb-14	1.7	7.0	268	3.6
	19-Mar-14	1.6	7.6	268	5.3
	17-Apr-14	4.8	8.0	219	10.7
	13-May-14	11.0	6.8	268	10.5
	18-Jun-14	9.5	8.6	291	10.7
	16-Jul-14	10.4	8.9	348	8.3
	19-Aug-14	12.6	8.8	380	8.1
	9-Sep-14	13.6	8.8	386	4.2
	23-Oct-14	8.2	8.1	387	5.0
	19-Nov-14	3.8	7.5	307	6.9
	16-Dec-14	4.5	8.6	304	-
	20-Jan-15	1.7	7.9	275	1.9
	18-Mar-15	3.6	8.5	227	13.6
	22-Apr-15	4.7	8.2	257	14.3
	19-May-15	9.4	8.6	261	-

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Jun-15	9.2	8.4	315	10.8
	21-Jul-15	12.3	8.3	333	-
	11-Aug-15	12.9	8.3	357	11.0
	25-Aug-15	12.7	8.7	307	9.3
	8-Sep-15	16.1	7.9	363	8.1
	15-Oct-15	9.1	8.2	296	10.4
	18-Nov-15	7.4	8.2	345	13.2
	9-Dec-15	4.7	8.0	315	13.9
	20-Jan-16	2.4	7.9	214	14.3
	17-Feb-16	1.7	8.0	255	14.5
	15-Mar-16	4.2	7.7	190	13.8
	21-Apr-16	5.9	8.0	232	14.6
	18-May-16	9.3	8.6	305	12.0
	23-Jun-16	10.7	8.5	314	11.4
	5-Jul-16	14.4	8.5	328	14.6
	21-Jul-16	16.0	8.4	368	9.3
	9-Aug-16	16.4	8.5	416	11.4
	24-Aug-16	16.3	8.5	361	10.0
	19-Sep-16	15.3	8.1	44	8.4
	18-Oct-16	14.1	8.2	357	12.6
	16-Nov-16	6.5	8.2	301	11.4
	12-Dec-16	1.3	8.1	454	15.7
	25-Jan-17	4.9	8.3	272	12.1
	17-Feb-17	2.9	8.5	282	15.7
	22-Mar-17	2.8	8.5	260	12.9
	19-Apr-17	4.8	7.7	221	14.4
	16-May-17	6.0	8.1	247	12.5
	28-Jun-17	8.2	8.2	299	12.1
	7-Jul-17	10.6	8.0	306	10.5
	19-Jul-17	11.7	8.3	350	11.2
	2-Aug-17	11.9	8.4	327	10.5
	16-Aug-17	11.9	8.4	261	10.7
	17-Sep-17	12.2	8.2	341	9.7
	18-Oct-17	9.7	8.5	359	8.1
	15-Nov-17	5.7	8.6	325	11.2
	14-Dec-17	2.3	8.5	276	11.8
	18-Jan-18	3.6	8.2	257	8.0
	23-Feb-18	4.3	8.4	218	13.5
	21-Mar-18	3.6	8.4	262	11.9
	19-Apr-18	3.9	8.4	233	9.6
	15-May-18	6.5	8.3	352	11.6
	18-Jun-18	8.4	8.4	422.9	10.2
	19-Jul-18	13.5	8.3	422.4	9.5
	24-Aug-18	14.7	8.4	427.4	9.3
	20-Sep-18	13.8	8.4	419.7	9.2
	25-Oct-18	5.0	8.4	416.8	11.8
	22-Nov-18	0.7	8.4		13.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-Dec-18	3.8	8.5	408.8	12.7
	19-Jan-19	2.3	8.3	393.4	13.5
	19-Mar-19	4.4	8.4	348	12.4
	25-Apr-19	4.6	8.2	268.5	11.8
	27-May-19	9.5	8.5	347.3	11.1
	21-Jun-19	9.7	8.5	377.4	10.8
	30-Jul-19	14.6	8.4	377.6	9.2
	30-Aug-19	14.0	8.3	363.6	9.2
	27-Sep-19	13.5	8.1	359.4	9.5
	22-Oct-19		8.3	391.6	7.9
	22-Oct-19	8.9	8.3	391.6	7.9
	21-Nov-19	1.1	8.3	382	8.0
	24-Jan-20	4.3	8.4	363	12.5
	28-Apr-20	5.8	8.5	309.7	12.2
	28-May-20	8.2	9.0	351.4	11.1
	31-Jul-20	12.8	8.8	410	9.8
	26-Aug-20	13.1	8.4	378.8	9.7
	26-Sep-20	11.0	8.2	380	
	29-Oct-20	8.4	8.1	385.5	7.5
	27-Nov-20	6.1	8.4	405.4	12.1
	22-Dec-20	4.8	8.3	407	12.8
SW 12					
	22-May-03	8.0			
	13-Feb-04	1.4		358	12.9
	18-Mar-04	2.5		640	9.9
	21-Apr-04	10.7	8.2	388	
	19-May-04	13.4	8.2	484	
	24-Jun-04	13.1	8.2	470	
	29-Jul-04	14.4	8.1	507	
	26-Aug-04	13.3	8.2	466	
	22-Sep-04	13.7	7.9	457	9.1
	20-Oct-04	7.6	8.1	412	11.1
	18-Nov-04	7.8	7.9	444	11.0
	29-Mar-05	5.1	8.0	390	
	11-Apr-05	7.1	7.2	332	
	26-May-05	13.7	7.7	464	9.7
	29-Jun-05	15.6	8.0	543	
	12-Jul-05	15.5	7.7	554	9.0
	23-Aug-05	13.9	7.8	491	10.1
	28-Sep-06	12.3	7.9	444	9.8
	25-Oct-05	7.1	8.1	534	11.4
	16-Nov-05	7.0	7.8	373	11.2
	13-Dec-05	1.9	8.0	436	12.4
	18-Jan-06	2.6	6.9	383	
	24-Mar-06	3.9	8.4	394	
	19-Apr-06	11.1	8.3	478	
	24-May-06	11.2	8.2	552	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Jun-06	13.7	8.2	571	
	12-Jul-06	15.3	8.1	459	
	24-Aug-06	14.6	8.0	519	
	21-Sep-06	11.9	8.2	515	
	19-Oct-06	9.6	8.0	580	
	23-Nov-06	4.8	8.0	521	
	17-Dec-06	3.5	8.1	651	
	21-Jan-07	1.0	8.3	585	
	18-Mar-07	0.9	8.2	630	
	17-Apr-07	4.2	8.4	531	
	13-May-07	8.8	8.3	505	11.6
	17-Jun-07	14.2	8.2	605	9.1
	15-Jul-07	14.9	8.0	596	8.9
	19-Aug-07	14.1	7.9	540	8.3
	17-Sep-07	11.5	8.0	500	8.4
	18-Oct-07	12.7	7.9	522	8.8
	19-Nov-07	3.9	7.8	629	11.6
	11-Dec-07	3.0	7.8	552	11.9
	22-Jan-08	2.0	7.8	607	13.8
	20-Feb-08	1.8	8.0	566	
	17-Mar-08	0.1	8.0	578	
	2-Apr-08	4.4	7.9	454	12.6
	23-Apr-08	11.5	7.9	460	9.0
	22-May-08	7.2	7.3	489	10.3
	17-Jun-08	11.5	7.7	542	8.9
	15-Jul-08	14.1	7.1	604	7.7
	19-Aug-08	12.9	7.6	661	8.1
	16-Sep-08	11.9	8.2	598	9.2
	22-Oct-08	6.1	7.8	568	8.1
	23-Nov-08	3.5	8.2	608	9.2
	14-Dec-08	2.3	8.3	498	8.9
	8-Feb-09	2.0		405	8.6
	15-Mar-09	5.4	8.7	402	
	12-Apr-09	6.7	8.1	487	
	17-May-09	14.6	8.4	435	10.2
	14-Jun-09	13.1	7.9	981	10.3
	12-Jul-09	12.8	8.5	549	10.2
	9-Aug-09	15.4	8.6	468	8.5
	13-Sep-09	11.1	7.8	520	11.0
	11-Oct-09	6.3	8.1	620	12.1
	15-Nov-09	4.7	8.1	572	
	13-Dec-09	1.6	7.7	589	12.0
	17-Jan-10	2.2	8.0	566	11.3
	14-Mar-10	5.1	7.7	468	12.8
	11-Apr-10	9.2	7.9	543	
	16-May-10	11.4	8.3	354	10.3
	13-Jun-10	13.1	8.2	421	13.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Jul-10	15.5	8.2	481	12.6
	15-Aug-10	15.2	8.3	474	11.5
	17-Oct-10	7.7	7.8	373	11.0
	14-Nov-10	5.3	8.1	278	10.6
	13-Mar-11	3.8	8.3	298	13.7
	20-Mar-11	4.1	8.1	380	12.6
	17-Apr-11	7.3	8.3	355	12.3
	15-May-11	8.8	8.0	326	11.8
	12-Jun-11	13.5	8.3	358	8.6
	17-Jul-11	17.6	8.3	444	9.8
	14-Aug-11	15.6	8.4	320	8.7
	18-Sep-11	12.5	8.7	354	9.9
	16-Oct-11	10.0	7.6	349	11.3
	20-Nov-11	4.1	8.1	259	12.6
	18-Dec-11	3.6	8.6	386	13.0
	15-Jan-12	1.4	8.5	223	12.3
	19-Feb-12	2.5	8.3	258	13.0
	18-Mar-12	11.2	8.2	355	8.3
	15-Apr-12	8.5	8.7	357	13.8
	13-May-12	13.4	8.2	395	4.2
	17-Jun-12	15.9	8.3	453	13.0
	16-Jul-12	18.2	8.3	508	6.9
	14-Aug-12	14.7	8.2	459	7.0
	18-Sep-12	12.5	7.7	486	9.4
	18-Oct-12	9.3	8.0	374	8.4
	20-Nov-12	6.7	8.0	387	9.1
	20-Dec-12	3.3	7.7	803	10.5
	16-Jan-13	2.9	7.9	393	11.6
	19-Mar-13	0.6	7.8	426	9.6
	17-Apr-13	7.2	8.2	328	10.3
	14-May-13	7.0	8.0	337	8.2
	19-Jun-13	11.7	8.2	389	10.8
	16-Jul-13	15.8	8.2	466	8.6
	21-Aug-13	14.9	8.3	459	10.2
	18-Sep-13	10.9	8.0	422	11.2
	16-Oct-13	11.9	8.3	444	5.2
	20-Nov-13	3.5	0.5	382	3.9
	18-Dec-13	2.3	7.9	311	6.3
	17-Apr-14	4.8	8.2	311	10.9
	13-May-14	15.0	7.0	407	10.4
	18-Jun-14	13.8	8.4	375	10.0
	16-Jul-14	12.4	7.8	465	8.2
	19-Aug-14	13.4	8.7	505	8.8
	9-Sep-14	13.0	8.8	-	7.3
	23-Oct-14	8.5	7.9	537	7.0
	16-Dec-14	2.7	8.6	351	-
	20-Jan-15	0.5	7.9	344	2.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-Apr-15	5.7	8.1	394	13.5
	19-May-15	12.3	8.5	257	13.5
	16-Jun-15	13.8	8.2	436	8.3
	22-Jul-15	14.7	8.4	443	-
	11-Aug-15	14.3	8.2	470	8.8
	8-Sep-15	16.9	7.9	471	7.7
	15-Oct-15	9.7	8.1	370	10.5
	18-Nov-15	8.0	8.0	435	12.1
	9-Dec-15	5.2	7.9	426	13.0
	20-Jan-16	1.3	7.9	361	14.0
	17-Feb-16	1.0	7.9	347	14.7
	15-Mar-16	4.1	7.6	289	12.9
	21-Apr-16	8.0	7.9	359	13.9
	18-May-16	10.4	8.6	442	11.9
	23-Jun-16	12.5	8.4	428	10.5
	24-Aug-16	15.5	8.4	433	8.1
	19-Sep-16	14.1	8.3	540	9.4
	18-Oct-16	13.7	8.0	454	12.2
	16-Nov-16	7.6	7.9	402	10.7
	12-Dec-16	2.2	8.0	623	14.4
	25-Jan-17	3.5	8.1	389	12.5
	17-Feb-17	1.6	8.3	372	15.4
	22-Mar-17	0.8	8.3	365	12.4
	19-Apr-17	6.3	7.6	375	12.9
	16-May-17	8.9	8.2	416	10.9
	28-Jun-17	11.2	8.4	478	10.2
	19-Jul-17	14.1	8.4	473	9.5
	16-Aug-17	13.4	8.2	468	9.7
	18-Sep-17	13.7	7.9	4.02	9.4
	18-Oct-17	10.2	8.3	454	8.6
	15-Nov-17	5.5	8.4	427	11.8
	14-Dec-17	0.7	8.2	342	12.9
	18-Jan-18	1.1	8.0	371	9.8
	23-Feb-18	3.6	8.2	307	16.9
	21-Mar-18	0.2	8.4	312	12.7
	19-Apr-18	2.1	8.3	358	12.1
	15-May-18	10.3	8.2	520	10.3
	18-Jun-18	8.8	8.2	256.9	9.9
	19-Jul-18	14.0	8.2	546	9.5
	24-Aug-18	15.1	8.4	570	9.4
	20-Sep-18	13.6	7.9	537	9.3
	25-Oct-18	5.6	8.0	592	11.5
	13-Dec-18	1.0	7.7	808	9.3
	19-Jan-19	0.9	8.1	571	12.9
	19-Mar-19	2.6	8.3	581	12.7
	27-May-19	12.4	8.3	493.5	9.9
	30-Jul-19	16.1	8.3	427.6	7.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	30-Aug-19	13.5	8.1		9.0
	27-Sep-19	13.2	7.9	412	8.6
	22-Oct-19		8.0	445.3	9.3
	22-Oct-19	8.8	8.0	445.3	9.3
	28-Apr-20	6.6	8.4	442.4	11.9
	28-May-20	13.5	8.9	519	9.4
	31-Jul-20	15.3	8.6	556	9.0
	26-Aug-20	14.4	8.3	523	9.4
	26-Sep-20	11.6	8.1	540	9.5
	29-Oct-20	8.2	7.8	433.3	9.2
	27-Nov-20	5.7	8.2	435	11.9
	22-Dec-20	3.0	8.3	616	13.1
SW 12A					
	22-May-03	8.0			#REF!
	21-Apr-04	12.3	8.0	657	
	11-Apr-05	7.4	7.4	476	
	24-Mar-06	1.8	7.9	674	
	19-Apr-06	12.1	7.8	867	
	24-May-06	9.5	7.7	939	
	23-Nov-06	4.4	8.4	968	9.3
	17-Dec-06	3.0	7.7	992	11.2
	18-Mar-07	1.0	8.0	1066	
	17-Apr-07	3.2	8.0	915	12.2
	2-Apr-08	5.0	7.7	621	11.7
	23-Apr-08	14.2	7.8	590	9.0
	22-May-08	7.2	8.4	524	8.7
	23-Nov-08	1.6	7.8	834	8.1
	14-Dec-08	2.2	7.0	694	10.7
	8-Feb-09	1.2		522	9.1
	15-Mar-09	6.1	8.1	570	
	12-Apr-09	8.0	7.9	687	
	17-May-09	14.7	7.9	528	
	14-Mar-10	5.3	7.6	663	11.6
	11-Apr-10	8.8	8.0	848	
	16-May-10	13.7	8.0	670	10.3
	13-Jun-10	15.6	7.8	689	10.7
	18-Jul-10	17.8	7.8	778	10.0
	12-Sep-10	11.2	8.3	466	9.9
	14-Nov-10	5.5	7.9	360	8.5
	20-Mar-11	3.8	7.8	541	12.5
	17-Apr-11	9.0	7.7	628	12.5
	15-May-11	9.6	8.0	466	10.7
	16-Oct-11	10.3	7.7	329	10.9
	18-Dec-11	4.1	8.8	273	14.4
	18-Mar-12	14.5	7.8	589	7.0
	14-Aug-12	15.8	8.0	439	5.0
	20-Nov-12	6.5	7.5	633	6.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	20-Dec-12	2.0	7.3	1130	9.3
	16-Jan-13	1.9	7.6	553	9.7
	19-Mar-13	2.1	8.1	278	10.8
	17-Apr-13	8.3	7.9	497	10.4
	14-May-13	6.4	8.0	581	9.0
	16-Oct-13	13.3	8.0	613	1.5
	20-Nov-13	3.6	7.5	503	3.1
	17-Apr-14	4.1	7.9	441	10.4
	13-May-14	15.7	6.7	664	10.0
	23-Oct-14	7.8	7.2	428	8.3
	22-Apr-15	6.0	7.8	585	13.5
	15-Mar-16	4.2	7.3	413	11.3
	21-Apr-16	8.2	7.6	543	13.1
	18-May-16	10.3	8.0	709	10.8
	21-Jul-16	16.2	8.3	468	8.3
	25-Jan-17	2.7	7.9	494	10.2
	19-Apr-17	5.8	7.1	588	10.0
	16-May-17	9.0	7.7	686	6.4
	28-Jun-17	12.2	8.0	761	6.2
	23-Feb-18	4.0	8.0	421	7.4
	15-May-18	11.4	7.8	828	8.6
	22-Nov-18	1.5	8.4	735.2	11.1
	13-Dec-18	2.9	8.3	592	12.7
	25-Apr-19	6.4	8.2	371.7	11.3
	21-Jun-19	12.2	8.4	482.9	9.8
SW 13					
	22-May-03	13.0			
	13-Feb-04	0.8		287	12.8
	21-Apr-04	8.2	8.3	259	
	19-May-04	15.2	8.3	390	
	24-Jun-04	18.1	8.4	413	
	29-Jul-04	21.8	8.2	434	
	26-Aug-04	20.7	8.2	394	8.1
	22-Sep-04	22.6	8.2	392	8.0
	20-Oct-04	8.6	8.0	288	11.5
	18-Nov-04	6.1	8.0	282	
	11-Apr-05	5.1	7.3	243	
	26-May-05	15.4	8.1	373	
	29-Jun-05	22.2	8.1	491	
	12-Jul-05	23.3	7.8	474	7.9
	23-Aug-05	19.9	7.6	430	6.8
	28-Sep-05	15.8	7.9	362	7.4
	25-Oct-05	8.4	8.9	382	11.6
	16-Nov-05	5.8	8.2	267	
	13-Dec-05	0.8	8.0	455	
	18-Jan-06	2.4	7.7	270	
	24-Mar-06	3.3	8.4	255	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Apr-06	8.7	8.4	342	
	24-May-06	10.2	8.3	420	
	21-Jun-06	19.0	8.3	424	
	12-Jul-06	20.8	8.4	350	
	24-Aug-06	20.2	7.9	382	
	21-Sep-06	16.2	8.1	358	
	19-Oct-06	9.7	8.2	370	
	23-Nov-06	4.6	8.1	445	
	17-Dec-06	3.3	8.2	489	
	21-Jan-07	1.7	8.4	475	
	17-Apr-07	3.8	8.5	427	
	13-May-07	10.5	8.4	404	11.1
	17-Jun-07	20.5	8.4	442	9.0
	15-Jul-07	23.3	8.1	434	7.3
	19-Aug-07	19.0	7.9	428	6.4
	17-Sep-07	15.9	7.9	379	7.2
	18-Oct-07	13.3	7.9	373	8.1
	19-Nov-07	3.9	8.1	400	12.6
	20-Feb-08	2.2	8.1	420	
	17-Mar-08	2.1	8.0	423	
	2-Apr-08	3.2	7.9	372	
	23-Apr-08	9.4	7.9	320	10.5
	22-May-08	8.8	7.8	377	11.1
	17-Jun-08	16.6	7.9	403	8.4
	15-Jul-08	22.0	7.5	425	5.8
	19-Aug-08	21.9	8.0	501	4.4
	16-Sep-08	17.6	8.4	418	6.4
	22-Oct-08	7.4	8.0	437	7.1
	23-Nov-08	3.9	8.5	462	9.0
	14-Dec-08	3.1	8.4	369	9.5
	8-Feb-09	2.5		385	8.2
	15-Mar-09	4.5	8.6	362	
	12-Apr-09	5.6	8.0	403	
	17-May-09	15.0	8.5	338	10.1
	14-Jun-09	19.6	7.9	803	
	12-Jul-09	18.2	8.2	420	9.5
	9-Aug-09	22.3	8.0	341	8.2
	13-Sep-09	16.8	7.7	374	8.6
	11-Oct-09	8.5	8.4	441	11.1
	15-Nov-09	5.6	8.5	429	
	13-Dec-09	1.4	7.7	477	12.7
	17-Jan-10	1.0	8.1	463	12.2
	14-Mar-10	4.1	7.9	410	13.5
	11-Apr-10	8.2	8.0	395	
	16-May-10	12.4	8.4	317	10.4
	13-Jun-10	16.7	8.4	356	12.9
	18-Jul-10	19.1	8.2	395	11.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Aug-10	21.5	8.4	403	7.9
	12-Sep-10	15.4	8.3	391	8.0
	17-Oct-10	8.9	8.1	338	10.5
	13-Mar-11	3.4	8.4	260	13.9
	20-Mar-11	3.6	8.3	277	13.4
	17-Apr-11	5.6	8.4	240	12.5
	15-May-11	7.6	8.4	248	12.9
	12-Jun-11	17.5	8.6	305	8.7
	17-Jul-11	26.0	8.5	423	8.9
	14-Aug-11	22.6	8.5	286	6.4
	18-Sep-11	17.6	8.7	200	7.1
	16-Oct-11	10.1	7.8	274	11.3
	20-Nov-11	4.1	8.1	285	11.9
	18-Dec-11	4.0	8.9	244	14.5
	15-Jan-12	2.2	8.5	207	12.0
	19-Feb-12	2.2	8.2	222	13.2
	18-Mar-12	9.1	8.3	233	9.2
	15-Apr-12	10.6	8.8	285	12.5
	13-May-12	16.0	8.4	331	10.9
	17-Jun-12	24.3	8.6	424	11.9
	16-Jul-12	26.9	8.6	406	6.3
	14-Aug-12	16.7	8.5	337	7.0
	18-Sep-12	16.1	7.9	364	8.6
	18-Oct-12	9.8	8.4	287	8.9
	20-Nov-12	5.3	8.0	297	9.7
	20-Dec-12	3.1	7.8	591	10.6
	16-Jan-13	3.4	8.1	259	11.6
	19-Mar-13	2.3	8.3	215	10.6
	17-Apr-13	5.2	8.0	189	10.2
	14-May-13	7.4	8.2	254	7.9
	19-Jun-13	16.9	8.4	355	9.5
	16-Jul-13	25.3	8.3	369	6.4
	21-Aug-13	21.3	8.4	401	7.2
	18-Sep-13	16.7	8.2	335	9.5
	16-Oct-13	12.1	8.6	347	5.5
	20-Nov-13	4.2	8.6	276	3.9
	18-Dec-13	1.9	7.9	255	8.0
	21-Jan-14	0.8	7.5	220	4.7
	19-Feb-14	0.6	7.8	242	3.7
	19-Mar-14	0.6	7.3	232	8.4
	17-Apr-14	3.5	8.2	236	8.7
	13-May-14	12.4	7.5	277	11.6
	18-Jun-14	12.9	7.5	219	11.0
	16-Jul-14	18.2	7.8	400	8.8
	19-Aug-14	20.1	8.8	424	6.9
	9-Sep-14	19.1	8.8	418	11.9
	23-Oct-14	9.6	8.1	415	9.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Nov-14	2.3	7.4	314	6.3
	16-Dec-14	3.0	8.6	314	-
	20-Jan-15	1.1	7.8	194	2.1
	22-Apr-15	6.0	8.3	292	13.1
	19-May-15	14.8	8.1	317	12.2
	16-Jun-15	16.0	8.2	359	8.3
	22-Jul-15	20.8	8.6	403	-
	11-Aug-15	19.5	8.1	396	7.1
	8-Sep-15	22.4	7.9	396	6.1
	15-Oct-15	12.1	8.1	297	8.5
	18-Nov-15	6.0	8.1	309	13.3
	9-Dec-15	3.6	8.8	305	12.3
	15-Mar-16	4.2	7.7	238	13.6
	21-Apr-16	7.5	8.0	266	13.8
	18-May-16	9.2	8.6	318	11.9
	23-Jun-16	19.1	8.3	396	6.6
	21-Jul-16	22.6	7.6	453	2.2
	24-Aug-16	23.6	8.3	372	8.2
	19-Sep-16	20.8	8.2	384	6.9
	18-Oct-16	15.1	8.3	318	10.4
	16-Nov-16	6.4	8.3	270	11.4
	12-Dec-16	1.3	8.1	433	11.6
	25-Jan-17	3.4	8.2	299	12.4
	17-Feb-17	1.1	8.4	284	14.9
	22-Mar-17	2.8	8.4	295	11.6
	19-Apr-17	6.9	7.8	279	13.6
	16-May-17	10.3	8.5	252	10.7
	28-Jun-17	12.2	8.5	362	11.1
	19-Jul-17	20.4	8.6	436	9.1
	16-Aug-17	19.6	8.3	388	8.6
	18-Sep-17	17.6	8.2	333	9.1
	18-Oct-17	11.3	8.2	345	9.0
	15-Nov-17	3.8	8.5	324	14.0
	14-Dec-17	1.6	8.4	286	13.9
	18-Jan-18	1.8	8.0	275	10.2
	23-Feb-18	3.0	8.3	225	15.3
	21-Mar-18	2.1	8.4	268	12.2
	19-Apr-18	2.4	8.4	259	12.5
	15-May-18	10.5	8.3	394	11.1
	18-Jun-18	7.5	8.3	429	8.2
	19-Jul-18	23.7	8.3	416.8	7.3
	24-Aug-18	20.4	8.3	368	8.2
	20-Sep-18	18.8	8.4	344.3	8.8
	25-Oct-18	6.2	8.6	360.9	11.8
	22-Nov-18	2.1	8.4	452.8	12.6
	12-Dec-18	2.0	8.4	469.5	13.0
	18-Jan-19	1.4	8.2	443.7	13.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Mar-19	2.6	8.3	404.8	12.9
	23-May-19	12.7	8.5	371	10.9
	18-Jun-19	17.0	8.5	373.4	10.1
	29-Jul-19	23.3	8.3	377	7.2
	29-Aug-19	18.2	8.2	487.2	7.2
	26-Sep-19	15.3	8.3	479.2	7.4
	23-Oct-19		8.0	472.7	7.3
	23-Oct-19	9.2	8.0	472.7	7.3
	22-Nov-19	0.6	8.2	402	7.6
	27-Apr-20	6.9	8.7	329.3	12.6
	30-Oct-20	8.4	8.0	460.9	7.3
	26-Nov-20	4.4	8.0	482.9	11.2
	23-Dec-20	3.5	8.3	455	13.0
SW 14					
	22-May-03	15.0			
	10-Feb-04	0.8		292	11.0
	16-Mar-04	1.5	8.0	435	11.9
	19-Apr-04	9.5	8.4	253	
	19-May-04	14.6	8.3	385	
	24-Jun-04	15.8	8.3	385	9.3
	29-Jul-04	18.0	8.0	389	7.7
	26-Aug-04	16.0	7.9	370	
	22-Sep-04	14.7	7.7	355	8.1
	20-Oct-04	7.0	7.5	313	10.3
	16-Nov-04	3.4	7.5	294	12.0
	16-Dec-04	0.4	7.8	235	
	29-Mar-05	3.5	8.0	301	
	11-Apr-05	5.6	7.1	249	
	24-May-05	12.2	7.7	352	10.5
	28-Jun-05	21.8	8.4	488	
	11-Jul-05	21.6	7.2	471	#REF!
	22-Aug-05	16.0	7.8	383	8.2
	27-Sep-05	13.2	7.6	355	9.0
	24-Oct-05	7.9	7.6	580	9.6
	16-Nov-05	6.0	7.6	301	11.7
	12-Dec-05	0.2	8.3	255	3.0
	17-Jan-06	0.6	7.8	243	
	20-Mar-06	3.3	8.3	278	
	18-Apr-06	10.5	6.4	345	
	24-May-06	11.7	8.4	423	
	23-Jun-06	17.6	7.8	362	
	11-Jul-06	18.1	8.5	356	
	23-Aug-06	17.0	7.6	414	
	20-Sep-06	12.5	7.4	539	
	19-Oct-06	9.8	7.7	421	
	27-Nov-06	6.4	8.2	451	12.4
	17-Dec-06	2.9	8.1	505	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Mar-07	2.5	8.3	429	
	17-Apr-07	5.4	8.5	425	
	13-May-07	10.2	8.0	409	11.1
	17-Jun-07	19.1	8.3	451	8.1
	15-Jul-07	19.3	8.3	447	7.2
	19-Aug-07	19.2	8.1	416	6.5
	17-Sep-07	13.4	7.8	402	8.1
	18-Oct-07	12.7	7.7	488	6.4
	21-Nov-07	3.8	7.8	475	10.8
	21-Jan-08	1.2	7.3	385	
	2-Apr-08	2.1	7.8	336	
	21-Apr-08	11.2	7.5	325	9.8
	20-May-08	13.6	7.4	379	9.5
	18-Jun-08	15.0	8.1	379	7.4
	15-Jul-08	18.5	7.6	442	5.5
	19-Aug-08	16.4	7.7	513	4.6
	17-Sep-08	13.9	8.6	444	6.1
	22-Oct-08	5.5	8.0	444	8.7
	23-Nov-08	3.9		472	8.8
	14-Dec-08	2.8	7.3	374	8.1
	15-Mar-09	4.1	8.6	386	
	12-Apr-09	6.8	8.4	346	
	17-May-09	15.5	8.3	342	10.0
	14-Jun-09	15.8	8.6	822	8.9
	12-Jul-09	17.5	9.2	366	8.8
	9-Aug-09	20.5	8.7	384	9.0
	13-Sep-09	16.1	6.5	387	9.2
	11-Oct-09	5.1	7.7	471	11.5
	15-Nov-09	3.6	7.3	446	
	13-Dec-09	1.6	7.5	489	11.9
	14-Mar-10	3.5	8.0	339	13.5
	11-Apr-10	9.4	8.3	400	11.5
	16-May-10	12.9	8.4	323	10.4
	13-Jun-10	14.0	8.3	317	13.0
	18-Jul-10	18.6	8.2	364	11.9
	15-Aug-10	17.2	8.3	387	8.9
	12-Sep-10	14.1	8.2	368	9.2
	17-Oct-10	8.2	8.0	348	11.0
	14-Nov-10	6.4	8.3	288	12.4
	13-Mar-11	3.3	8.1	241	11.5
	20-Mar-11	3.3	8.3	275	13.0
	17-Apr-11	5.9	8.4	247	12.2
	15-May-11	8.0	8.2	248	12.8
	12-Jun-11	16.7	8.4	314	9.8
	17-Jul-11	21.8	8.3	393	8.6
	14-Aug-11	18.7	8.6	264	8.4
	18-Sep-11	14.3	8.8	265	9.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Oct-11	10.0	7.7	251	12.7
	20-Nov-11	2.8	8.0	284	12.9
	18-Dec-11	3.4	9.2	241	13.6
	18-Mar-12	10.4	8.3	247	8.5
	15-Apr-12	8.0	8.9	275	12.9
	13-May-12	16.8	8.4	327	9.2
	17-Jun-12	21.0	8.4	400	13.0
	16-Jul-12	24.0	8.5	378	6.8
	14-Aug-12	16.7	8.6	447	7.0
	18-Sep-12	14.8	7.8	354	8.4
	17-Oct-12	11.1	7.2	320	7.7
	20-Nov-12	5.8	8.1	304	10.7
	18-Dec-12	4.2	7.7	623	9.7
	20-Dec-12	2.6	7.9	585	11.4
	16-Jan-13	3.1	8.3	295	11.5
	19-Mar-13	2.3	8.3	218	10.5
	17-Apr-13	6.2	8.3	241	10.4
	14-May-13	7.3	8.2	247	8.9
	19-Jun-13	15.2	8.4	315	10.1
	16-Jul-13	22.1	8.3	424	7.6
	21-Aug-13	22.2	8.3	419	7.4
	18-Sep-13	12.9	8.3	323	10.2
	16-Oct-13	12.7	8.9	360	5.4
	20-Nov-13	4.0	8.2	277	3.9
	17-Apr-14	4.0	8.2	447	10.3
	13-May-14	15.5	7.0	318	10.3
	18-Jun-14	14.2	7.5	232	8.9
	15-Jul-14	15.7	8.9	391	6.9
	9-Sep-14	16.7	8.7	427	4.3
	23-Oct-14	10.2	8.7	421	4.2
	22-Apr-15	6.2	8.3	297	13.2
	19-May-15	14.0	8.5	286	-
	15-Jun-15	16.0	8.2	351	8.7
	22-Jul-15	18.8	8.5	391	-
	11-Aug-15	17.7	8.2	398	8.6
	25-Aug-15	16.6	8.2	338	7.0
	8-Sep-15	20.3	7.9	403	6.1
	15-Oct-15	10.1	7.9	310	9.7
	18-Nov-15	7.8	7.9	346	12.7
	9-Dec-15	3.8	7.8	269	13.6
	20-Jan-16	-0.1	7.7	268	15.0
	15-Mar-16	4.7	8.3	236	14.1
	21-Apr-16	8.2	7.7	275	13.4
	18-May-16	11.0	8.6	340	11.3
	23-Jun-16	15.0	8.4	367	9.7
	21-Jul-16	19.4	7.8	397	8.6
	24-Aug-16	19.7	5.1	376	7.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Sep-16	17.4	8.0	447	8.2
	18-Oct-16	15.4	7.8	405	11.1
	16-Nov-16	7.1	7.8	315	10.4
	12-Dec-16	0.6	8.2	465	16.1
	25-Jan-17	3.2	8.2	300	13.0
	22-Mar-17	1.2	8.5	292	14.0
	19-Apr-17	6.6	7.8	272	14.4
	16-May-17	10.5	8.0	303	11.4
	28-Jun-17	12.7	8.3	375	10.5
	19-Jul-17	18.8	8.2	430	8.9
	16-Aug-17	17.1	8.2	368	8.4
	18-Sep-17	16.3	7.9	366	8.1
	18-Oct-17	11.1	8.2	354	8.9
	15-Nov-17	4.2	8.3	341	12.6
	14-Dec-17	0.0	8.4	281	-
	18-Jan-18	0.9	7.8	271	10.0
	23-Feb-18	3.1	8.3	234	8.3
	21-Mar-18	0.6	8.3	260	14.6
	19-Apr-18	2.5	8.4	263	11.7
	15-May-18	11.2	8.2	398	10.1
	18-Jun-18	17.2	8.3	438.2	8.7
	19-Jul-18	16.8	8.2	430.5	8.4
	23-Aug-18	17.9	8.1	421.5	8.1
	19-Sep-18	14.5	8.0	395.8	8.4
	25-Oct-18	5.3	7.9	435.9	11.0
	22-Nov-18	0.0	8.1	423.4	13.5
	13-Dec-18	1.9	8.4	474.7	13.3
	19-Jan-19	-0.1	8.1	432.3	14.3
	19-Mar-19	1.8	8.4	410.7	13.1
	25-Apr-19	6.4	8.2	263.1	11.2
	27-May-19	10.8	8.5	373.1	10.7
	21-Jun-19	13.6	8.4	392.5	9.6
	30-Jul-19	19.9	8.2	406.6	7.5
	30-Aug-19	15.2	8.0	365.3	8.1
	27-Sep-19	15.1	7.8	392.4	8.2
	22-Oct-19		7.9	358.5	8.1
	22-Oct-19	7.9	7.9	358.5	8.1
	21-Nov-19	1.1	7.6	349	7.5
	28-May-20	11.5	9.0	393.6	10.3
	24-Jun-20	15.6	8.6	341.8	9.1
	31-Jul-20	20.6	8.6	435	7.7
	26-Aug-20	20.3	8.1	408.5	7.3
	26-Sep-20	12.1	8.0	420	10.1
	29-Oct-20	8.6	7.6	325.6	8.0
	27-Nov-20	4.8	8.3	449.8	11.6
	22-Dec-20	3.0	8.3	465	13.2
SW 15					

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-May-04	18.2	8.2	421	9.1
	24-Jun-04	18.9	8.1	412	8.3
	29-Jul-04	20.5	8.0	398	7.5
	26-Aug-04	18.0	8.1	402	9.0
	20-Oct-04	7.9	8.0	316	11.7
	17-Nov-04	6.5	7.9	330	12.0
	16-Dec-04	0.1	7.9	134	5.6
	11-Apr-05	11.2	7.5	340	11.0
	24-May-05	15.2	7.7	389	9.5
	28-Jun-05	23.0	8.3	484	
	11-Jul-05	23.8	7.2	471	7.0
	22-Aug-05	18.4	8.7	383	8.4
	27-Sep-05	14.4	7.6	348	7.9
	24-Oct-05	8.6	7.9	400	
	15-Nov-05	4.5	7.9	285	2.9
	12-Dec-05	0.1	8.3	243	0.6
	18-Apr-06	17.9	8.4	388	
	23-May-06	16.3	8.1	420	
	20-Jun-06	20.1	8.0	399	
	11-Jul-06	21.5	8.0	376	
	23-Aug-06	18.7	7.8	378	
	20-Sep-06	13.6	7.9	345	
	19-Oct-06	10.1	7.8	390	
	27-Nov-06	6.8	8.0	490	11.9
	17-Dec-06	1.6	8.0	556	
	17-Apr-07	8.5	8.5	441	
	13-May-07	12.0	8.1	388	10.5
	17-Jun-07	21.9	8.2	422	7.0
	15-Jul-07	21.8	8.1	419	7.2
	19-Aug-07	21.5	8.0	390	6.6
	17-Sep-07	16.2	8.0	330	8.3
	19-Oct-07	15.2	8.2	371	7.7
	21-Nov-07	4.2	7.9	446	#REF!
	10-Dec-07	0.9	7.7	428	11.3
	1-Apr-08	1.0	7.4	218	14.0
	21-Apr-08	21.1	7.7	406	6.8
	20-May-08	18.8	7.6	394	6.6
	18-Jun-08	16.5	8.2	830	6.9
	19-Aug-08	15.2	7.9	404	4.8
	17-Sep-08	13.9	8.4	471	6.2
	22-Oct-08	5.9	7.7	429	8.0
	23-Nov-08	1.9	7.6	518	8.7
	15-Mar-09	6.3	8.2	384	
	12-Apr-09	11.8	8.4	373	
	17-May-09	19.4	8.0	373	8.2
	14-Jun-09	15.7	8.4	826	9.6
	12-Jul-09	15.9	8.8	486	9.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	9-Aug-09	19.8	8.0	400	8.2
	13-Sep-09	16.7	6.5	319	
	11-Oct-09	6.2	7.5	419	11.6
	15-Nov-09	5.2	7.4	407	
	13-Dec-09	0.5	7.5	508	12.2
	14-Mar-10	3.3	7.7	274	13.0
	16-May-10	19.3	8.2	408	8.5
	13-Jun-10	17.4	8.0	340	10.6
	18-Jul-10	21.4	8.0	443	10.8
	17-Oct-10	8.2	7.9	360	10.5
	14-Nov-10	6.9	8.1	303	11.7
	20-Mar-11	2.3	8.0	245	11.9
	17-Apr-11	8.5	8.1	321	10.9
	15-May-11	12.8	8.0	321	12.8
	12-Jun-11	19.6	8.2	345	8.1
	16-Oct-11	10.8	7.8	368	9.0
	20-Nov-11	3.4	8.0	297	12.0
	18-Dec-11	2.0	8.5	209	11.4
	18-Mar-12	16.9	8.0	369	7.8
	15-Apr-12	7.4	8.4	338	11.5
	13-May-12	13.7	8.0	383	9.4
	14-Aug-12	18.5	8.1	489	5.7
	18-Sep-12	14.8	7.7	426	7.4
	17-Oct-12	10.6	7.3	315	6.9
	20-Nov-12	6.1	7.7	350	8.6
	18-Dec-12	3.8	7.3	720	8.9
	15-Jan-13	1.8	7.7	642	10.9
	16-Apr-13	8.9	8.0	292	9.5
	13-May-13	11.7	8.0	367	5.7
	19-Jun-13	15.8	8.1	400	8.6
	16-Oct-13	13.8	8.6	377	4.8
	19-Nov-13	4.1	8.3	334	2.0
	16-Apr-14	5.7	8.0	307	10.8
	13-May-14	13.8	7.7	398	10.0
	15-Jul-14	15.2	8.8	472	-
	19-Aug-14	17.6	8.7	289	5.1
	9-Sep-14	16.0	8.6	560	4.5
	22-Oct-14	10.1	7.3	416	6.9
	16-Dec-14	0.4	8.3	253	-
	22-Apr-15	8.1	7.9	409	12.0
	19-May-15	12.6	8.2	404	-
	15-Jun-15	16.7	7.8	515	7.8
	21-Jul-15	18.3	8.2	475	-
	18-Nov-15	7.6	8.0	372	10.8
	9-Dec-15	4.5	7.6	341	12.3
	20-Jan-16	0.4	7.6	317	14.0
	15-Mar-16	6.4	7.9	321	12.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Apr-16	7.3	7.9	345	10.6
	18-May-16	9.6	8.1	421	9.2
	24-Aug-16	17.8	8.4	469	9.3
	19-Sep-16	16.9	7.9	395	7.2
	18-Oct-16	14.8	8.1	356	11.5
	15-Nov-16	7.7	7.1	309	10.6
	12-Dec-16	1.6	7.5	481	15.8
	24-Jan-17	2.4	8.0	307	12.2
	21-Mar-17	0.6	7.7	333	13.0
	19-Apr-17	7.4	6.2	348	12.3
	16-May-17	18.0	8.6	429	7.2
	28-Jun-17	17.1	8.2	429	7.8
	19-Jul-17	18.3	8.2	456	7.2
	16-Aug-17	16.7	8.0	386	7.4
	18-Sep-17	16.5	8.0	384	6.7
	18-Oct-17	11.5	8.1	357	9.3
	15-Nov-17	4.3	8.1	348	8.2
	23-Feb-18	0.7	7.9	254	9.9
	21-Mar-18	-0.1	8.1	300	13.7
	19-Apr-18	0.6	8.1	281	12.6
	15-May-18	13.5	7.9	477	8.7
	18-Jun-18	15.9	8.2	526	9.3
	23-Aug-18	17.8	8.1	486.8	8.5
	25-Oct-18	6.6	8.1	471.3	10.7
	22-Nov-18	2.1	8.2	736.1	13.2
	13-Dec-18	2.3	8.0	530	11.7
	25-Apr-19	7.2	8.0	252.8	10.3
	27-May-19	11.0	8.0	464.4	9.5
	21-Jun-19	13.8	8.0	504	9.1
	28-Apr-20	8.0	8.5	340.1	11.3
	28-May-20	13.8	8.6	491.3	8.8
	24-Jun-20	17.2	8.2	493	8.0
	31-Jul-20	19.6	8.3	554	7.9
	26-Aug-20	17.4	8.0	543	8.7
	26-Sep-20	12.1	7.9	430	9.6
	29-Oct-20	8.1	7.5	338	7.6
	27-Nov-20	5.2	8.1	529	11.6
	22-Dec-20	2.1	8.0	529	12.9
SW 16					
	22-May-03	15.0			
	23-Jun-03	19.4			
	19-Apr-04	12.6	8.0	251	
	19-May-04	12.4	7.6	372	7.7
	24-Jun-04	14.9	7.3	423	3.5
	29-Jul-04	16.4	7.3	481	5.1
	20-Oct-04	7.9	7.4	386	8.2
	17-Nov-04	5.9	7.2	337	8.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	29-Mar-05	2.9	7.6	344	11.9
	11-Apr-05	8.5	7.5	232	
	24-May-05	12.3	7.5	359	8.9
	27-Jun-05	19.1	7.6	488	7.8
	11-Jul-05	20.0	6.8	524	5.7
	22-Aug-05	15.2	8.3	492	7.2
	27-Sep-05	13.2	7.5	563	7.0
	24-Oct-05	8.6	8.9	1065	8.4
	14-Nov-05	5.7	8.2	527	10.7
	12-Dec-05	2.0	8.0	303	9.1
	17-Jan-06	0.4	6.4	180	13.4
	22-Mar-06	1.4	8.4	227	
	18-Apr-06	11.5	8.0	334	
	23-May-06	11.5	7.8	417	
	20-Jun-06	16.1	7.4	529	
	11-Jul-06	18.3	7.5	577	
	19-Oct-06	10.4	7.6	277	
	27-Nov-06	6.4	7.6	440	8.2
	17-Dec-06	2.5	7.7	451	12.4
	18-Mar-07	0.2	8.1	409	13.6
	16-Apr-07	2.8	8.3	397	12.4
	13-May-07	10.1	8.0	432	7.0
	19-Nov-07	4.6	7.8	576	8.4
	21-Jan-08	0.1	7.4	355	6.0
	19-Feb-08	0.2	7.7	115	10.7
	17-Mar-08	0.5	6.6	433	14.3
	1-Apr-08	0.7	7.3	207	
	23-Apr-08	13.0	8.0	324	
	21-May-08	8.9	7.7	394	6.4
	18-Jun-08	13.7	7.6	466	4.4
	15-Jul-08	15.2	7.1	537	4.0
	18-Aug-08	10.1	7.5	590	3.0
	17-Sep-08	12.2	8.3	497	5.6
	20-Oct-08	8.8	7.2	445	6.5
	14-Dec-08	1.1	7.8	349	8.7
	8-Feb-09	0.8	8.4	385	10.6
	15-Mar-09	3.5	8.5	343	
	12-Apr-09	12.2	8.8	346	
	17-May-09	20.4	8.1	352	7.1
	14-Jun-09	16.5	7.7	865	6.6
	12-Jul-09	12.1	8.2	484	7.8
	11-Oct-09	6.9	7.2	478	11.0
	15-Nov-09	3.7	7.4	424	
	14-Mar-10	1.5	8.0	357	13.7
	11-Apr-10	11.7	7.7	406	11.1
	16-May-10	15.1	8.2	339	9.0
	13-Jun-10	16.6	8.0	371	9.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Jul-10	17.0	8.0	366	10.4
	15-Aug-10	16.2	7.6	421	4.9
	17-Oct-10	7.4	7.7	328	7.9
	14-Nov-10	5.8	7.8	269	10.1
	19-Dec-10	0.8	8.1	151	11.9
	16-Jan-11	0.3	8.2	225	11.7
	13-Mar-11	1.1	8.1	185	11.8
	17-Apr-11	3.4	8.1	240	14.2
	15-May-11	8.8	8.0	240	12.5
	12-Jun-11	13.8	8.0	298	8.3
	17-Jul-11	20.0	8.2	423	8.3
	14-Aug-11	16.1	8.2	296	5.6
	18-Sep-11	12.8	8.3	302	6.2
	16-Oct-11	9.5	7.7	193	7.3
	20-Nov-11	2.3	8.0	273	11.8
	19-Dec-11	0.3	7.5	134	11.5
	19-Feb-12	1.0	7.9	204	13.2
	18-Mar-12	15.8	8.1	168	8.2
	15-Apr-12	6.6	8.3	285	10.4
	13-May-12	14.2	8.2	333	7.7
	17-Jun-12	9.4	8.2	443	8.9
	16-Jul-12	20.7	8.4	401	1.8
	14-Aug-12	15.4	8.2	320	6.1
	18-Sep-12	13.9	7.4	380	6.7
	17-Oct-12	10.6	6.7	321	6.7
	20-Nov-12	6.0	7.7	293	7.6
	18-Dec-12	4.0	7.2	-	8.0
	16-Jan-13	0.2	7.8	207	10.7
	16-Apr-13	6.6	8.1	227	10.0
	13-May-13	11.3	8.2	266	5.6
	19-Jun-13	13.3	7.9	301	7.3
	16-Jul-13	18.0	8.1	440	4.9
	21-Aug-13	17.0	8.5	400	1.1
	18-Sep-13	11.3	8.9	344	8.4
	16-Oct-13	13.1	8.8	368	5.0
	19-Nov-13	2.7	8.0	263	2.5
	18-Dec-13	0.8	8.1	241	5.6
	16-Apr-14	-0.1	7.9	131	12.6
	13-May-14	13.2	8.0	302	10.1
	17-Jun-14	15.5	7.5	400	8.0
	15-Jul-14	14.0	8.8	259	4.4
	19-Aug-14	13.2	8.3	428	7.5
	9-Sep-14	14.8	8.4	474	4.5
	23-Oct-14	6.8	8.0	369	6.9
	16-Dec-14	1.1	8.6	250	-
	22-Apr-15	6.5	8.2	281	12.2
	19-May-15	13.7	7.8	322	13.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Jun-15	14.9	7.7	381	6.4
	21-Jul-15	16.3	7.9	419	-
	11-Aug-15	15.3	7.6	428	5.8
	25-Aug-15	15.5	8.2	368	5.2
	8-Sep-15	18.3	7.5	469	3.9
	15-Oct-15	9.7	7.4	344	6.4
	18-Nov-15	7.4	7.5	352	9.9
	8-Dec-15	3.7	7.7	312	16.5
	19-Jan-16	-0.1	7.6	234	13.2
	17-Feb-16	0.0	7.6	162	13.4
	15-Mar-16	4.6	7.9	220	13.1
	21-Apr-16	6.7	8.0	263	11.8
	18-May-16	9.0	8.2	345	8.4
	22-Jun-16	14.9	7.7	413	4.8
	20-Jul-16	15.8	7.9	481	4.3
	24-Aug-16	17.2	7.8	483	2.8
	19-Sep-16	15.1	7.4	452	2.9
	18-Oct-16	14.0	7.5	434	5.6
	15-Nov-16	6.8	7.6	337	6.6
	12-Dec-16	0.5	7.3	412	10.8
	24-Jan-17	2.2	8.2	260	12.2
	16-Feb-17	0.1	8.0	272	14.2
	21-Mar-17	3.7	8.3	285	11.5
	19-Apr-17	11.1	7.8	305	11.1
	16-May-17	11.5	8.0	392	6.6
	28-Jun-17	13.9	8.0	398	8.8
	19-Jul-17	15.7	7.9	454	4.6
	15-Aug-17	15.8	8.5	356	5.2
	18-Sep-17	15.6	7.9	425	4.9
	17-Oct-17	10.1	8.0	365	8.1
	14-Nov-17	4.2	8.2	299	8.3
	24-Feb-18	0.6	8.0	199	15.6
	21-Mar-18	-0.4	7.7	262	14.8
	19-Apr-18	0.4	7.6	230	13.3
	15-May-18	12.1	7.9	334	8.6
	18-Jun-18	12.9	7.6	484.9	4.8
	19-Jul-18	13.5	7.5	483.2	5.4
	23-Aug-18	15.6	7.6	465	5.3
	19-Sep-18	14.2	7.6	467.8	5.2
	25-Oct-18	4.2	7.6	460.6	10.9
	22-Nov-18	0.2	7.8	436.9	11.8
	13-Dec-18	0.9	8.1		12.0
	19-Jan-19	0.0	7.9	447.2	12.1
	25-Apr-19	6.6	8.2	209.7	10.8
	27-May-19	11.0	8.0	370.4	8.8
	21-Jun-19	12.3	7.8	412.5	6.8
	30-Jul-19	17.7	7.6	422.4	4.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	30-Aug-19	19.1	7.7	441.5	5.6
	27-Sep-19	18.3	7.5	389.4	6.8
	22-Oct-19		7.6	398.1	5.9
	22-Oct-19	10.2	7.6	398.1	5.9
	21-Nov-19	0.9	8.0	401	8.3
	20-Dec-19	0.3	8.1	416	8.8
	25-Mar-20	6.7	7.9	347.7	11.8
	28-May-20	16.1	8.5	262.7	7.8
	24-Jun-20	15.5	8.1	375.5	7.4
	31-Jul-20	18.8	7.8	480	4.6
	26-Aug-20	18.6	7.4	459.4	3.8
	26-Sep-20	10.9	7.8	360	4.4
	29-Oct-20	9.3	7.3	378.3	6.3
	27-Nov-20	5.2	8.1	449.6	11.1
SW 17					
	22-May-03	15.0			
	10-Feb-04	1.0		315	11.6
	17-Mar-04	2.5		432	10.3
	19-Apr-04	9.9	8.2	276	
	19-May-04	15.6	8.2	386	
	24-Jun-04	17.8	8.1	430	8.2
	29-Jul-04	19.3	7.9	436	7.4
	26-Aug-04	17.2	7.9	435	
	22-Sep-04	16.5	7.9	417	8.7
	20-Oct-04	8.3	7.9	336	11.3
	17-Nov-04	5.3	7.8	320	
	16-Dec-05	1.5	8.0	264	
	29-Mar-05	2.7	7.8	297	
	11-Apr-05	7.2	7.5	284	
	24-May-05	13.4	7.7	350	9.6
	27-Jun-05	21.4	7.5	452	8.5
	11-Jul-05	22.3	6.8	477	6.6
	22-Aug-05	18.5	8.4	431	7.8
	27-Sep-05	15.4	7.4	409	8.5
	24-Oct-05	8.4	7.9	475	11.6
	14-Nov-05	6.3	7.8	353	11.2
	12-Dec-05	1.4	8.5	324	12.3
	17-Jan-06	2.4	7.0	275	13.6
	21-Mar-06	3.5	8.5	348	
	18-Apr-06	10.2	8.4	341	
	23-May-06	10.1	8.1	419	
	20-Jun-06	18.9	7.8	387	
	11-Jul-06	20.4	7.8	369	
	23-Aug-06	17.2	7.3	409	
	20-Sep-06	14.3	7.4	414	
	19-Oct-06	10.8	7.3	413	
	27-Nov-06	6.0	8.1	470	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Dec-06	4.7	7.9	512	
	21-Jan-07	1.8	7.7	504	13.6
	18-Mar-07	2.3	8.3	431	
	16-Apr-07	4.4	8.4	411	
	13-May-07	13.3	8.3	405	10.1
	17-Jun-07	21.1	8.1	472	7.0
	15-Jul-07	19.7	7.8	499	6.9
	19-Aug-07	18.1	7.8	520	6.4
	17-Sep-07	14.0	7.7	397	8.1
	18-Oct-07	12.8	7.8	400	8.3
	19-Nov-07	3.8	7.9	515	11.7
	21-Jan-08	2.8	7.5	423	12.7
	19-Feb-08	2.2	7.9	431	
	17-Mar-08	1.8	6.9	462	
	1-Apr-08	2.6	7.7	301	
	23-Apr-08	12.0	7.8	362	8.5
	6-May-08	9.6	6.7	411	10.6
	21-May-08	10.6	7.3	374	9.3
	17-Jun-08	16.4	7.6	406	6.9
	15-Jul-08	14.9	6.9	563	7.0
	18-Aug-08	21.2	7.3	456	4.1
	16-Sep-08	15.1	8.0	419	7.1
	21-Oct-08	7.7	7.9	424	8.6
	23-Nov-08	3.5	7.8	486	9.8
	14-Dec-08	2.6	7.6	365	7.6
	18-Jan-09		8.5		
	8-Feb-09	1.6	8.5	430	9.9
	15-Mar-09	4.5	8.8	379	
	12-Apr-09	8.7	8.4	407	
	17-May-09	16.0	8.2	349	9.2
	14-Jun-09	17.0	7.7	802	8.5
	12-Jul-09	16.9	8.0	437	8.1
	9-Aug-09	19.7	5.7	424	6.9
	13-Sep-09	17.3	8.4	411	8.3
	11-Oct-09	7.9	7.2	457	
	15-Nov-09	4.6	7.4	439	
	13-Dec-09	1.4	7.7	443	12.9
	7-Feb-10	0.0	7.8	425	11.5
	14-Mar-10	3.6	7.9	424	13.7
	11-Apr-10	7.9	8.0	415	
	16-May-10	12.3	8.2	313	10.1
	13-Jun-10	17.1	8.1	359	11.2
	18-Jul-10	19.5	8.1	404	11.0
	15-Aug-10	19.8	8.1	421	7.7
	12-Sep-10	14.9	7.9	381	8.4
	17-Oct-10	8.7	7.9	320	10.3
	14-Nov-10	5.1	8.2	274	12.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Dec-10	1.7	8.4	244	11.8
	16-Jan-11	1.6	8.0	255	12.7
	13-Mar-11	2.4	8.3	253	12.8
	20-Mar-11	3.6	8.3	291	12.4
	17-Apr-11	4.7	8.3	264	13.7
	15-May-11	9.0	7.6	241	12.0
	12-Jun-11	14.9	8.1	303	4.4
	17-Jul-11	22.9	7.8	415	8.1
	14-Aug-11	18.5	8.2	285	7.3
	18-Sep-11	13.4	8.1	261	8.3
	16-Oct-11	10.2	8.0	300	9.8
	20-Nov-11	3.1	7.6	271	13.2
	18-Dec-11	2.9	8.2	218	12.6
	15-Jan-12	1.6	8.3	201	13.4
	19-Feb-12	1.6	8.1	226	13.7
	18-Mar-12	11.0	8.2	276	10.5
	15-Apr-12	9.2	8.5	301	10.3
	13-May-12	14.0	8.0	322	9.2
	17-Jun-12	20.8	8.1	419	12.6
	16-Jul-12	23.0	8.1	450	5.5
	14-Aug-12	18.6	8.0	279	7.0
	18-Sep-12	15.9	7.3	336	7.2
	17-Oct-12	8.7	6.7	264	7.6
	20-Nov-12	4.6	7.9	299	9.3
	18-Dec-12	4.0	7.4	634	11.1
	16-Jan-13	3.6	7.8	326	10.2
	20-Feb-13	1.8	7.9	258	14.6
	20-Mar-13	2.3	8.0	251	6.0
	16-Apr-13	5.8	7.9	259	9.7
	13-May-13	10.6	8.2	232	8.9
	19-Jun-13	16.4	8.2	344	8.1
	16-Jul-13	22.3	8.0	416	5.9
	21-Aug-13	19.5	8.2	378	6.0
	18-Sep-13	13.6	8.0	322	8.9
	16-Oct-13	11.3	8.3	365	5.7
	19-Nov-13	4.2	8.2	293	2.6
	16-Apr-14	3.2	8.1	274	10.4
	12-May-14	11.0	8.0	346	10.0
	17-Jun-14	17.9	8.1	366	10.6
	15-Jul-14	18.3	8.7	398	4.3
	19-Aug-14	16.0	8.4	412	5.7
	9-Sep-14	17.8	8.5	430	2.1
	23-Oct-14	8.2	8.6	381	8.3
	16-Dec-14	2.5	8.2	317	-
	22-Apr-15	7.6	8.1	328	12.2
	19-May-15	15.1	8.3	404	-
	15-Jun-15	17.7	8.0	387	7.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Jul-15	19.5	8.4	403	-
	11-Aug-15	19.0	8.1	416	7.9
	25-Aug-15	18.8	8.1	373	7.0
	8-Sep-15	21.6	7.8	436	5.6
	15-Oct-15	11.2	7.9	321	9.4
	18-Nov-15	5.6	8.0	330	11.5
	8-Dec-15	3.0	8.2	313	21.2
	19-Jan-16	1.1	8.1	270	15.8
	17-Feb-16	1.6	8.0	301	14.9
	15-Mar-16	5.1	8.0	273	13.6
	21-Apr-16	9.2	7.9	298	11.9
	18-May-16	10.9	8.4	339	11.3
	22-Jun-16	19.4	8.2	393	8.1
	20-Jul-16	20.6	8.4	420	7.7
	24-Aug-16	20.6	8.2	389	7.8
	19-Sep-16	18.3	7.9	382	7.7
	18-Oct-16	14.5	7.6	337	12.5
	15-Nov-16	6.6	7.9	464	11.5
	12-Dec-16	1.6	8.0	398	13.8
	24-Jan-17	2.5	8.0	295	13.7
	16-Feb-17	1.5	8.1	311	15.3
	21-Mar-17	4.2	8.4	333	12.1
	19-Apr-17	9.1	7.9	306	13.3
	16-May-17	16.4	8.8	367	9.6
	28-Jun-17	15.6	8.2	377	9.2
	19-Jul-17	18.9	7.9	428	7.8
	15-Aug-17	19.0	8.6	340	7.3
	18-Sep-17	17.6	8.1	378	7.8
	17-Oct-17	11.6	8.1	355	9.9
	14-Nov-17	3.4	8.3	325	9.4
	14-Dec-17	2.2	8.0	327	14.6
	18-Jan-18	2.0	7.8	304	9.4
	24-Feb-18	3.1	8.0	264	13.1
	21-Mar-18	2.5	8.2	286	14.8
	19-Apr-18	2.2	8.0	264	12.3
	15-May-18	13.8	8.2	411	9.2
	18-Jun-18	18.7	8.1	434.6	7.4
	19-Jul-18	20.1	8.0	444.7	7.0
	23-Aug-18	19.6	8.0	429.1	7.4
	19-Sep-18	17.1	7.8	444	7.1
	25-Oct-18	5.9	8.0	442	10.8
	22-Nov-18	2.4	7.9		11.9
	13-Dec-18	3.5	8.0	496.9	11.6
	19-Jan-19	2.6	8.0	489.9	12.3
	19-Mar-19	2.5	8.3	431.8	12.7
	25-Apr-19	8.2	8.4	352.8	10.7
	27-May-19	12.1	8.3	373.2	9.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Jun-19	15.0	8.1	406.8	8.2
	30-Jul-19	21.5	7.8	423.2	6.6
	30-Aug-19	18.4	7.9	405.3	7.0
	27-Sep-19	16.8	8.0	404.9	5.6
	22-Oct-19		8.0	412.5	5.9
	22-Oct-19	10.7	8.0	412.5	5.9
	21-Nov-19	2.2	7.7	438	6.3
	24-Jan-20	3.3	8.2	446.2	12.5
	25-Mar-20	7.5	8.3	407.4	11.5
	28-Apr-20	6.2	8.5	367.5	12.0
	28-May-20	17.8	8.6	375.2	8.3
	24-Jun-20	18.4	8.4	368.3	7.8
	31-Jul-20	22.1	8.4	432.4	6.9
	26-Aug-20	15.0	8.3	398	9.6
	26-Sep-20	12.9	8.2	370	10.1
	29-Oct-20	7.4	8.0	401.8	5.9
	27-Nov-20	4.9	8.0	500	11.5
	22-Dec-20	3.7	7.9	505	11.9
SW 17A					
	22-May-03	11.0			
	23-Jun-03	12.7			
	10-Feb-04	2.3		295	11.3
	17-Mar-04	4.3		434	9.6
	19-Apr-04	10.8	8.2	266	
	19-May-04	11.0	8.2	341	
	24-Jun-04	11.2	8.2	338	
	29-Jul-04	11.9	8.1	332	10.7
	26-Aug-04	12.1	8.2	341	
	22-Sep-04	12.6	8.1	353	
	20-Oct-04	6.9	8.1	318	
	16-Nov-04	4.4	8.0	310	
	16-Dec-04	1.5	8.1	272	
	29-Mar-05	6.8	8.0	315	
	11-Apr-05	8.9	7.6	275	
	24-May-05	9.2	7.7	324	
	27-Jun-05	13.5	7.7	382	
	11-Jul-05	14.2	6.8	381	10.1
	22-Aug-05	12.7	8.6	360	
	27-Sep-05	11.8	7.7	350	10.7
	24-Oct-05	7.4	7.8	427	
	14-Nov-05	6.3	8.6	323	12.4
	12-Dec-05	0.2	8.6	295	13.6
	17-Jan-06	2.4	7.7	267	13.2
	22-Mar-06	5.5	8.7	264	
	18-Apr-06	10.9	8.4	365	
	23-May-06	10.0	8.3	424	
	20-Jun-06	12.2	8.3	422	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Jul-06	13.9	8.3	409	
	23-Aug-06	12.8	8.1	419	
	20-Sep-06	11.2	8.1	391	
	19-Oct-06	9.9	8.1	432	
	27-Nov-06	7.4	8.2	450	11.9
	17-Dec-06	4.5	8.1	496	
	21-Jan-07	1.0	7.9	473	
	18-Mar-07	3.6	8.3	430	
	16-Apr-07	4.6	8.4	404	
	13-May-07	9.0	8.3	408	
	17-Jun-07	13.3	8.3	452	10.4
	15-Jul-07	13.5	8.1	451	9.8
	19-Aug-07	14.9	8.3	422	9.1
	17-Sep-07	10.9	8.0	418	10.0
	18-Oct-07	11.2	8.0	432	9.6
	19-Nov-07	3.6	8.1	473	
	10-Dec-07	2.9	8.1	429	12.9
	21-Jan-08	3.3	7.6	395	
	19-Feb-08	2.6	7.9	434	#REF!
	17-Mar-08	1.5	6.6	450	
	1-Apr-08	4.4	7.6	355	
	23-Apr-08	10.4	7.9	324	8.3
	6-May-08	7.2	6.8	407	
	21-May-08	7.1	7.3	386	10.6
	17-Jun-08	9.0	7.7	425	9.4
	15-Jul-08	11.2	7.0	454	8.4
	18-Aug-08	14.5	7.4	488	5.2
	16-Sep-08	10.2	8.2	331	8.4
	21-Oct-08	5.8	7.7	423	8.2
	23-Nov-08	4.7	7.8	458	9.6
	14-Dec-08	3.4	7.7	398	8.5
	18-Jan-09	1.9	8.6	445	11.3
	8-Feb-09	3.7	8.8	417	9.8
	15-Mar-09	5.9	8.8	366	
	12-Apr-09	10.9	8.4	396	
	17-May-09	16.3	8.3	338	
	14-Jun-09	12.4	7.7	808	
	12-Jul-09	10.5	8.4	441	
	9-Aug-09	12.9	6.1	443	10.3
	13-Sep-09	12.1	8.6	401	
	11-Oct-09	6.9	7.5	460	
	15-Nov-09	4.1	7.3	414	
	13-Dec-09	1.9	7.8	443	
	17-Jan-10	2.4	8.2	449	14.0
	7-Feb-10	1.3	8.3	459	11.3
	14-Mar-10	4.9	8.0	434	13.2
	11-Apr-10	6.3	8.0	405	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-May-10	11.0	8.3	320	10.9
	13-Jun-10	12.5	8.3	333	13.8
	18-Jul-10	12.8	8.2	351	12.0
	15-Aug-10	12.8	8.3	348	10.6
	12-Sep-10	11.0	8.2	333	10.5
	17-Oct-10	7.5	8.1	314	11.8
	14-Nov-10	5.6	8.3	276	9.1
	19-Dec-10	2.2	8.2	248	12.8
	16-Jan-11	3.3	8.4	263	12.7
	20-Feb-11	1.5	8.1	254	12.2
	13-Mar-11	4.0	8.2	262	11.9
	20-Mar-11	6.2	8.2	302	12.1
	17-Apr-11	6.6	8.4	255	12.4
	15-May-11	7.2	7.5	233	13.0
	12-Jun-11	10.2	8.3	271	8.2
	17-Jul-11	13.9	8.0	250	8.4
	14-Aug-11	13.1	8.5	245	10.3
	18-Sep-11	11.4	8.1	276	10.3
	16-Oct-11	8.7	8.2	320	10.7
	20-Nov-11	3.1	7.5	278	14.1
	18-Dec-11	3.3	8.4	226	11.5
	15-Jan-12	2.0	8.5	216	13.7
	19-Feb-12	3.5	8.1	240	13.8
	20-Mar-12	12.1	8.3	258	10.0
	15-Apr-12	5.9	8.6	280	12.0
	13-May-12	10.6	8.3	311	11.5
	17-Jun-12	14.0	8.3	358	10.8
	16-Jul-12	16.0	8.7	381	7.3
	14-Aug-12	12.8	8.0	304	7.8
	18-Sep-12	11.8	7.2	340	9.8
	17-Oct-12	8.9	6.7	303	8.1
	20-Nov-12	6.7	7.9	317	9.4
	16-Dec-12	5.5	7.6	664	10.7
	16-Jan-13	3.0	8.1	318	11.9
	20-Feb-13	1.4	8.1	245	15.7
	20-Mar-13	3.3	8.2	246	6.6
	16-Apr-13	5.8	7.9	259	9.7
	13-May-13	9.0	8.4	277	6.4
	19-Jun-13	10.2	8.2	276	11.6
	16-Jul-13	13.8	8.0	360	9.5
	21-Aug-13	13.8	8.2	345	9.7
	18-Sep-13	9.7	7.9	314	11.9
	16-Oct-13	10.7	8.5	330	6.7
	19-Nov-13	3.9	7.9	298	2.4
	18-Dec-13	1.8	8.4	257	4.3
	16-Apr-14	4.0	8.0	237	10.5
	13-May-14	9.8	8.2	285	10.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Jun-14	11.5	8.3	312	13.3
	15-Jul-14	12.0	8.8	324	7.0
	19-Aug-14	11.0	8.5	358	8.5
	9-Sep-14	12.5	8.5	375	4.4
	23-Oct-14	6.9	8.0	375	8.1
	16-Dec-14	3.9	8.6	334	-
	20-Jan-15	0.8	7.7	171	0.1
	18-Mar-15	2.1	8.3	229	13.5
	22-Apr-15	6.7	8.2	302	12.7
	19-May-15	11.5	8.4	304	-
	15-Jun-15	12.0	8.1	365	9.8
	21-Jul-15	13.7	8.1	356	-
	11-Aug-15	13.0	8.2	372	10.2
	25-Aug-15	12.8	8.2	323	10.5
	8-Sep-15	14.6	8.0	370	8.7
	15-Oct-15	9.8	8.1	320	10.7
	18-Nov-15	7.8	8.1	365	12.8
	8-Dec-15	5.0	8.2	339	20.5
	19-Jan-16	2.0	8.1	272	15.4
	17-Feb-16	3.0	8.0	292	14.1
	15-Mar-16	6.6	8.1	282	12.8
	21-Apr-16	6.1	8.1	264	13.3
	18-May-16	7.9	8.4	334	12.7
	22-Jun-16	14.0	8.4	367	10.8
	20-Jul-16	15.1	8.5	368	10.6
	24-Aug-16	16.0	8.5	376	10.6
	19-Sep-16	15.1	8.2	384	9.8
	18-Oct-16	13.2	7.8	335	13.5
	15-Nov-16	7.2	8.2	326	12.5
	12-Dec-16	2.6	7.9	422	13.9
	24-Jan-17	4.1	8.3	320	13.0
	16-Feb-17	1.6	8.3	310	15.5
	21-Mar-17	7.1	8.4	353	11.7
	19-Apr-17	9.4	8.0	311	13.2
	16-May-17	12.6	8.8	332	10.8
	28-Jun-17	10.6	8.3	350	11.6
	19-Jul-17	11.2	8.1	363	11.4
	15-Aug-17	11.8	8.8	287	11.8
	18-Sep-17	13.1	8.2	368	10.9
	17-Oct-17	9.4	8.3	357	11.3
	14-Nov-17	5.8	8.3	349	8.7
	14-Dec-17	2.2	8.1	315	14.8
	18-Jan-18	1.9	7.9	299	10.0
	24-Feb-18	3.8	8.1	269	13.0
	21-Mar-18	1.6	8.2	212	14.8
	19-Apr-18	2.8	8.2	277	12.4
	15-May-18	9.2	8.2	413	10.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Jun-18	9.8	8.3	453.3	10.7
	19-Jul-18	9.8	8.2	449.3	10.5
	23-Aug-18	13.0	8.4	452.2	10.1
	19-Sep-18	12.1	8.3	447.6	10.0
	25-Oct-18	5.4	8.3	474	11.9
	22-Nov-18	1.7	8.2	485.9	13.4
	13-Dec-18	3.3	8.3	484.2	12.7
	19-Jan-19	1.2	8.3	476.4	13.6
	19-Mar-19	3.3	8.5	433.4	12.8
	25-Apr-19	6.1	8.4	313.3	11.5
	27-May-19	8.4	8.5	384.2	11.2
	21-Jun-19	9.7	8.4	411.1	11.0
	30-Jul-19	13.3	8.2	412.2	9.7
	30-Aug-19	12.6	8.3	384.6	10.0
	27-Sep-19	14.2	8.2	442.3	8.9
	22-Oct-19		8.1	432.2	9.3
	22-Oct-19	8.9	8.1	432.2	9.3
	21-Nov-19	1.9	8.1	397	7.1
	24-Jan-20	2.0	8.1	431	13.0
	25-Mar-20	5.9	8.2	416.8	11.9
	28-Apr-20	7.9	8.4	354.8	11.0
	28-May-20	12.5	9.0	375	9.8
	24-Jun-20	11.5	8.6	420.5	10.2
	31-Jul-20	14.0	8.7	433.9	9.7
	26-Aug-20	22.0	8.1	405	6.9
	26-Sep-20	12.9	8.2	410	7.7
	29-Oct-20	8.1	7.8	416.7	8.2
	27-Nov-20	6.0	8.4	489.2	12.0
	22-Dec-20	3.9	12.8	492	8.3
SW 17B					
	20-Oct-04	8.1	7.6	313	
	11-Apr-05	5.9	7.4	264	
	24-May-05	10.0	7.3	331	10.7
	27-Jun-05	16.1	7.5	462	
	11-Jul-05	17.2	6.7	502	7.9
	22-Aug-05	15.8	8.4	509	8.0
	27-Sep-05	13.6	7.4	471	8.1
	24-Oct-05	8.9	7.6	480	11.1
	14-Nov-05	6.7	8.3	388	10.6
	17-Jan-06	2.1	7.4	258	13.1
	22-Mar-06	3.4	8.3	261	
	18-Apr-06	9.3	8.2	348	
	23-May-06	9.9	8.0	429	
	20-Jun-06	15.3	7.8	481	
	11-Jul-06	17.6	7.8	532	
	23-Aug-06	15.3	7.4	620	
	19-Oct-06	10.2	7.6	469	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	27-Nov-06	6.8	8.0	476	11.6
	17-Dec-06	4.1	7.9	497	
	16-Apr-07	3.3	8.3	392	13.1
	13-May-07	10.3	8.2	415	10.3
	17-Jun-07	17.7	8.1	524	7.9
	15-Jul-07	17.5	7.7	588	6.9
	19-Aug-07	17.2	7.9	635	6.8
	17-Sep-07	12.1	7.7	547	8.0
	18-Oct-07	12.2	7.7	534	8.1
	19-Nov-07	3.8	7.8	470	11.4
	1-Apr-08	2.0	7.5	326	13.8
	23-Apr-08	10.5	7.9	341	9.2
	6-May-08	7.5	6.6	404	11.2
	21-May-08	8.4	7.2	384	9.4
	17-Jun-08	11.9	8.0	460	8.5
	15-Jul-08	18.9	7.1	425	6.0
	18-Aug-08	17.4	7.3	615	4.5
	16-Sep-08	12.5	7.9	548	7.5
	21-Oct-08	6.4	7.9	449	8.1
	23-Nov-08	4.7	7.7	492	11.2
	14-Dec-08	3.3	7.6	391	7.9
	15-Mar-09	3.7	8.8	356	
	12-Apr-09	8.2	8.8	374	
	17-May-09	15.8	8.1	179	9.1
	14-Jun-09	14.7	7.7	870	9.4
	12-Jul-09	13.6	8.1	513	9.1
	9-Aug-09	16.3	6.1	534	7.7
	13-Sep-09	14.6	8.2	532	9.4
	11-Oct-09	7.8	7.3	504	11.6
	15-Nov-09	3.6	7.4	430	
	14-Mar-10	2.9	7.9	426	13.8
	11-Apr-10	5.5	7.9	418	
	16-May-10	11.3	8.1	323	10.1
	13-Jun-10	13.9	8.0	364	12.3
	18-Jul-10	16.1	7.9	425	11.7
	15-Aug-10	16 .47	7.9	458	7.6
	12-Sep-10	13.3	7.7	442	7.8
	17-Oct-10	7.8	7.8	339	10.1
	14-Nov-10	5.5	8.1	290	13.0
	20-Mar-11	6.1	8.4	298	12.1
	17-Apr-11	4.1	8.2	245	13.3
	15-May-11	7.2	7.7	243	12.6
	12-Jun-11	11.4	8.0	293	5.8
	17-Jul-11	18.0	7.8	450	7.6
	14-Aug-11	16.4	8.2	338	9.5
	18-Sep-11	12.9	8.0	358	8.3
	16-Oct-11	9.9	8.0	364	9.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	20-Nov-11	3.6	7.4	294	12.4
	18-Dec-11	3.3	8.4	221	11.9
	18-Mar-12	9.9	8.1	260	10.2
	15-Apr-12	6.4	8.6	277	11.6
	13-May-12	10.6	8.0	318	10.4
	17-Jun-12	16.3	8.1	430	10.6
	16-Jul-12	18.6	8.2	520	5.8
	14-Aug-12	15.6	8.1	667	7.0
	18-Sep-12	13.9	7.1	410	7.7
	17-Oct-12	9.2	6.5	324	7.5
	20-Nov-12	6.1	7.8	318	8.8
	18-Dec-12	5.0	7.4	655	10.2
	16-Jan-13	2.2	8.0	310	10.7
	16-Apr-13	5.5	8.0	242	9.9
	13-May-13	8.0	8.2	264	6.4
	19-Jun-13	11.1	8.1	334	10.4
	16-Jul-13	16.6	7.9	438	7.6
	21-Aug-13	16.2	8.0	440	7.6
	18-Sep-13	11.6	8.1	380	9.4
	16-Oct-13	12.2	8.6	328	5.8
	19-Nov-13	4.6	8.3	308	2.4
	16-Apr-14	0.9	8.2	233	10.2
	13-May-14	11.0	8.0	292	10.2
	17-Jun-14	14.7	8.0	365	11.2
	15-Jul-14	14.4	8.6	392	4.8
	23-Oct-14	7.5	7.6	408	8.1
	16-Dec-14	3.0	8.5	315	-
	22-Apr-15	5.9	8.1	310	13.2
	19-May-15	13.2	8.2	330	-
	15-Jun-15	14.3	7.9	411	8.5
	21-Jul-15	16.8	8.0	440	-
	11-Aug-15	16.1	7.9	473	8.3
	8-Sep-15	18.8	7.6	524	6.1
	15-Oct-15	10.7	7.6	372	8.7
	18-Nov-15	7.5	7.7	368	11.4
	8-Dec-15	4.0	7.9	332	19.7
	19-Jan-16	1.3	7.9	268	15.0
	17-Feb-16	1.8	7.8	296	14.0
	21-Apr-16	5.8	7.9	260	13.2
	18-May-16	8.3	8.3	335	11.6
	22-Jun-16	16.8	8.0	437	8.5
	20-Jul-16	17.1	8.1	447	10.0
	24-Aug-16	17.9	8.1	495	7.9
	19-Sep-16	15.7	7.7	481	8.2
	18-Oct-16	13.3	7.4	349	12.9
	15-Nov-16	7.4	7.8	356	10.8
	12-Dec-16	3.4	7.7	445	12.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-Jan-17	3.4	8.0	308	12.5
	16-Feb-17	1.9	8.1	309	14.4
	21-Mar-17	4.4	8.2	318	12.3
	19-Apr-17	8.7	7.7	301	12.7
	16-May-17	13.6	8.6	340	9.7
	28-Jun-17	11.9	8.0	383	10.3
	18-Jul-17	14.5	7.8	432	8.9
	15-Aug-17	15.4	8.4	374	8.2
	18-Sep-17	14.3	7.8	447	8.0
	17-Oct-17	10.0	7.9	392	9.9
	14-Nov-17	5.6	8.1	357	8.2
	18-Jan-18	1.5	7.9	285	10.0
	24-Feb-18	2.5	7.9	272	13.2
	21-Mar-18	0.8	8.0	271	15.7
	19-Apr-18	0.3	8.1	244	12.9
	15-May-18	9.8	7.9	409	9.8
	18-Jun-18	7.4	7.9	503	8.7
	15-May-18	9.8	7.9	409	9.8
	18-Jun-18	7.4	7.9	503	8.7
	19-Jul-18	14.7	7.8	561	8.0
	23-Aug-18	15.4	7.8	552	8.1
	20-Sep-18	14.9	7.7	558	7.4
	24-Oct-18	6.6	7.9	521	10.5
	21-Nov-18	3.5	7.9		11.8
	12-Dec-18	3.6	8.0	485.7	11.8
	18-Jan-19	2.0	8.1	482.3	12.7
	15-Mar-19	2.8	8.2	439.2	12.5
	24-Apr-19	5.7	8.2	320.8	11.1
	23-May-19	9.2	8.2	384.9	10.3
	18-Jun-19	11.4	8.1	431.4	9.6
	29-Jul-19	16.9	7.8	504	7.7
	29-Aug-19	19.6	8.0	446.6	7.8
	26-Sep-19	17.6	7.9	425.9	7.4
	23-Oct-19		7.9	451.9	7.9
	23-Oct-19	9.5	7.9	451.9	7.9
	22-Nov-19	0.4	7.9	429	7.5
	26-Mar-20	5.8	8.0	413.5	11.6
	27-Apr-20	5.8	8.2	362.6	11.3
	29-May-20	13.6	8.6	392	9.0
	23-Jun-20	13.4	8.3	438.1	9.0
	30-Jul-20	17.8	8.3	513	7.6
	25-Aug-20	18.1	7.8	516	6.4
	25-Sep-20	11.2	7.9	420	7.3
	30-Oct-20	8.6	7.6	432	7.7
	26-Nov-20	0.0	8.1	504	11.5
	23-Dec-20	3.7	8.0	484	12.2
SW 18					

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-May-03	15.0			
	23-Jun-03	15.7			
	20-Aug-03	16.4			
	22-Oct-03	5.7	7.2	485	
	10-Feb-04	0.9		289	
	16-Mar-04	1.0	8.0	399	12.9
	19-Apr-04	11.1	8.3	272	
	19-May-04	13.4	8.2	365	
	24-Jun-04	13.6	8.2	335	
	29-Jul-04	15.9	8.2	355	
	26-Aug-04	15.2	8.2	341	
	22-Sep-04	14.7	8.2	350	10.1
	20-Oct-04	6.7	8.1	321	
	16-Nov-04	3.7	8.0	312	
	11-Apr-05	8.4	7.6	272	
	24-May-05	10.8	7.5	339	
	27-Jun-05	17.5	8.0	413	
	11-Jul-05	18.8	7.1	401	8.8
	22-Aug-05	15.0	8.7	344	9.6
	27-Sep-06	13.0	7.7	374	10.1
	24-Oct-05	7.6	8.0	482	
	15-Nov-05	3.7	8.0	290	12.9
	17-Jan-06	0.2	7.7	234	
	20-Mar-06	3.4	8.1	275	
	18-Apr-06	12.1	8.5	346	
	23-May-06	10.7	8.3	427	
	20-Jun-06	14.7	7.9	417	
	11-Jul-06	17.3	8.3	391	
	23-Aug-06	15.9	8.1	376	
	20-Sep-06	11.9	8.1	370	
	19-Oct-06	10.3	8.3	463	
	27-Nov-06	7.0	8.2	461	11.9
	17-Dec-06	2.8	8.2	487	
	18-Mar-07	2.6	8.3	421	
	17-Apr-07	6.6	8.5	403	
	13-May-07	8.4	8.2	413	
	17-Jun-07	16.3	8.3	439	9.4
	15-Jul-07	17.7	8.2	426	8.8
	19-Aug-07	19.3	8.2	394	8.0
	17-Sep-07	13.4	8.0	404	9.3
	19-Oct-07	14.9	8.3	437	7.1
	21-Nov-07	4.3	8.6	478	12.3
	12-Dec-07	0.9	8.0	435	14.1
	21-Jan-08	1.1	7.4	406	
	19-Feb-08	0.6	7.8	411	
	17-Mar-08	2.5	8.0	430	
	2-Apr-08	1.4	7.7	356	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	23-Apr-08	14.3	7.8	334	8.8
	6-May-08	8.6	7.4	415	11.2
	21-May-08	12.8	7.6	387	9.2
	18-Jun-08	12.9	8.0	325	8.4
	15-Jul-08	15.6	7.5	447	6.7
	18-Aug-08	18.8	7.8	492	4.5
	17-Sep-08	12.3	8.5	484	6.7
	20-Oct-08	9.0	7.8	440	7.7
	23-Nov-08	3.5	8.6	483	9.8
	14-Dec-08	2.1	7.0	379	8.2
	8-Feb-09	2.3		339	9.4
	15-Mar-09	6.4	8.7	353	
	12-Apr-09	11.1	8.5	356	
	17-May-09	15.0	8.5	345	10.3
	14-Jun-09	12.6	7.9	814	
	12-Jul-09	12.2	8.5	437	
	9-Aug-09	16.3	9.3	420	9.4
	13-Sep-09	14.7	8.0	385	10.3
	11-Oct-09	7.2	7.3	492	
	15-Nov-09	4.0	7.4	433	
	13-Dec-09	2.2	7.9	490	12.4
	14-Mar-10	5.4	8.2	322	12.6
	11-Apr-10	10.9	7.8	419	12.7
	16-May-10	9.8	8.4	311	11.2
	13-Jun-10	14.0	8.3	347	12.9
	18-Jul-10	17.9	8.2	406	12.1
	15-Aug-10	15.5	8.3	370	10.2
	12-Sep-10	12.5	8.3	362	10.2
	17-Oct-10	7.6	8.2	340	12.1
	14-Nov-10	5.7	8.3	279	13.1
	19-Dec-10	1.9	8.3	249	14.1
	13-Mar-11	3.2	8.2	227	12.5
	20-Mar-11	3.5	8.2	279	13.0
	17-Apr-11	5.0	8.2	253	11.7
	20-Apr-11	3.6	8.2	197	10.7
	15-May-11	9.6	8.2	257	13.2
	12-Jun-11	12.1	8.4	284	11.7
	17-Jul-11	18.4	8.4	337	8.2
	14-Aug-11	16.1	8.4	251	9.5
	18-Sep-11	12.8	8.5	290	10.1
	16-Oct-11	9.4	8.2	330	9.8
	20-Nov-11	1.7	7.7	266	15.0
	18-Dec-11	3.0	8.4	210	13.3
	19-Feb-12	1.7	7.7	221	13.4
	18-Mar-12	14.1	8.3	284	9.9
	15-Apr-12	6.8	8.5	234	12.0
	13-May-12	12.8	8.3	325	10.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Jun-12	17.9	8.3	376	8.2
	16-Jul-12	20.7	8.4	400	6.9
	14-Aug-12	16.1	8.3	442	7.6
	18-Sep-12	14.0	7.7	356	9.2
	17-Oct-12	10.1	6.9	328	8.2
	20-Nov-12	6.6	7.8	315	9.6
	18-Dec-12	4.5	7.6	635	10.9
	16-Jan-13	1.8	8.2	301	10.9
	16-Apr-13	8.7	8.3	263	10.0
	13-May-13	10.7	8.4	290	9.2
	19-Jun-13	12.6	8.3	324	10.9
	16-Jul-13	17.6	8.2	383	8.5
	21-Aug-13	17.0	8.2	365	8.7
	18-Sep-13	11.0	8.4	321	11.2
	16-Oct-13	12.5	8.5	336	5.8
	19-Nov-13	3.8	8.6	293	2.8
	16-Apr-14	3.0	8.3	249	10.5
	13-May-14	12.2	8.0	309	11.0
	18-Jun-14	15.7	8.2	338	10.2
	15-Jul-14	-	7.8	325	7.9
	19-Aug-14	13.5	8.7	387	7.0
	9-Sep-14	15.3	8.8	412	4.2
	23-Oct-14	8.0	8.3	416	6.9
	17-Dec-14	2.4	8.9	295	-
	22-Apr-15	7.1	8.2	320	13.0
	19-May-15	12.8	8.5	314	-
	15-Jun-15	14.8	8.2	405	9.4
	21-Jul-15	16.5	8.4	379	-
	11-Aug-15	15.9	8.2	393	8.7
	25-Aug-15	15.5	8.7	330	7.6
	8-Sep-15	18.9	8.0	383	7.2
	15-Oct-15	9.7	8.2	315	10.3
	18-Nov-15	8.0	8.2	373	13.0
	8-Dec-15	4.1	8.3	331	22.5
	19-Jan-16	-0.1	8.1	266	9.0
	17-Feb-16	1.3	8.2	289	15.0
	15-Mar-16	5.1	8.2	264	13.7
	21-Apr-16	7.0	8.2	276	13.2
	18-May-16	8.9	8.6	344	12.0
	22-Jun-16	14.7	8.5	364	10.3
	20-Jul-16	16.4	8.6	373	9.7
	24-Aug-16	18.0	8.6	373	8.9
	19-Sep-16	16.1	8.3	391	7.9
	18-Oct-16	15.1	8.4	411	12.7
	15-Nov-16	7.1	8.2	339	11.7
	12-Dec-16	1.2	8.2	439	14.9
	25-Jan-17	2.6	8.3	288	14.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Feb-17	-0.2	8.3	154	16.1
	21-Mar-17	5.5	8.4	330	12.3
	19-Apr-17	10.0	8.1	316	13.1
	16-May-17	10.6	8.4	441	9.9
	28-Jun-17	13.2	8.2	385	10.7
	19-Jul-17	14.8	8.3	404	10.3
	15-Aug-17	15.4	8.9	321	10.6
	18-Sep-17	15.9	8.3	394	9.7
	17-Oct-17	10.9	8.3	404	10.6
	14-Nov-17	5.1	8.4	351	8.8
	14-Dec-17	0.3	8.1	282	8.9
	18-Jan-18	0.5	7.9	284	10.8
	24-Feb-18	4.0	8.4	274	14.0
	21-Mar-18	0.6	8.3	272	14.4
	19-Apr-18	1.8	8.3	230	12.9
	15-May-18	11.4	8.3	394	10.2
	18-Jun-18	13.7	8.4	449.3	9.8
	19-Jul-18	15.0	8.3	424	9.5
	23-Aug-18	17.0	8.4	448.4	9.3
	19-Sep-18	14.0	8.4	430	9.5
	25-Oct-18	5.7	8.4	464.7	11.8
	22-Nov-18	0.0	8.2	103.1	14.9
	13-Dec-18	2.5	8.4	469.9	13.2
	19-Jan-19	0.5	8.1	407.5	13.6
	19-Mar-19	1.1	8.4	425	13.6
	25-Apr-19	6.7	8.3	262.4	11.3
	27-May-19	10.0	8.5	382.5	10.9
	21-Jun-19	11.8	8.5	414.8	10.4
	30-Jul-19	17.3	8.4	419.9	8.8
	30-Aug-19	14.5	8.3	368.5	9.5
	27-Sep-19	13.8	8.2	367.1	10.4
	22-Oct-19		8.2	385.7	9.9
	22-Oct-19	9.1	8.2	385.7	9.9
	21-Nov-19	1.7	8.3	405	8.6
	28-Apr-20	7.8	8.5	360.1	11.6
	28-May-20	15.8	8.9	311.5	9.3
	24-Jun-20	14.7	8.6	413.9	9.4
	31-Jul-20	18.0	8.7	431.5	8.8
	26-Aug-20	18.3	8.5	388.6	8.7
	26-Sep-20	11.2	8.1	410	9.0
	29-Oct-20	8.2	8.0	364	8.6
	27-Nov-20	5.4	7.9	496	11.2
	22-Dec-20	2.8	8.3	484	13.5
SW 19					
	22-May-03	15.0			
	23-Jun-03	18.5			
	20-Aug-03	21.5			

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	23-Oct-03	5.6	7.4	531	
	12-Feb-04	0.8		318	13.0
	16-Mar-04	0.0	8.1	434	13.4
	19-May-04	15.1	8.3	431	
	24-Jun-04	12.8	7.8	405	
	29-Jul-04	15.4	8.1	410	
	26-Aug-04	16.7	8.2	408	
	22-Sep-04	13.1	8.1	393	
	20-Oct-04	7.6	8.1	370	
	18-Nov-04	8.3	8.1	394	
	16-Dec-04	0.1	8.0	127	
	29-Mar-05	2.5	8.0	322	
	11-Apr-05	8.0	7.4	290	
	24-May-05	11.3	8.0	388	
	28-Jun-05	22.2	8.4	504	
	11-Jul-05	22.7	7.6	493	
	22-Aug-05	16.8	8.6	417	
	27-Sep-05	14.2	7.9	413	
	25-Oct-05	6.6	8.2	481	
	14-Nov-05	5.5	8.1	364	
	12-Dec-05	0.1	8.6	245	1.5
	16-Jan-06	0.1	8.2		1.6
	20-Mar-06	1.5	8.5	289	
	18-Apr-06	11.0	8.5	380	
	23-May-06	12.1	8.4	463	
	20-Jun-06	17.6	8.2	455	
	10-Jul-06	17.9	8.2	428	
	22-Aug-06	20.3	7.9	438	
	21-Sep-06	10.0	8.0	461	
	18-Oct-06	11.3	8.2	497	
	27-Nov-06	6.9	8.3	502	
	17-Dec-06	2.9	8.3	523	
	21-Jan-07	0.1	8.3	413	8.5
	18-Mar-07	0.1	8.3	461	
	16-Apr-07	3.3	8.4	452	
	13-May-07	16.0	8.6	444	9.9
	17-Jun-07	18.9	8.3	498	9.0
	15-Jul-07	16.5	8.0	488	9.6
	19-Aug-07	16.3	8.1	481	9.1
	17-Sep-07	12.1	8.1	503	9.5
	19-Oct-07	13.6	8.0	465	9.4
	21-Nov-07	4.0	8.0	552	12.1
	12-Dec-07	0.5	7.8	495	
	22-Jan-08	0.1	7.8	411	
	20-Feb-08	0.1	7.5	232	6.4
	19-Mar-08	1.0	7.8	484	
	2-Apr-08	2.7	7.7	365	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-Apr-08	9.1	7.2	383	9.1
	21-May-08	9.1	7.8	430	10.0
	18-Jun-08	13.5	8.3	478	8.8
	15-Jul-08	18.4	7.6	505	6.8
	19-Aug-08	16.5	8.0	542	5.6
	16-Sep-08	12.9	8.5	490	7.4
	22-Oct-08	5.0	8.0	493	7.8
	14-Dec-08	1.3	6.9	402	8.3
	15-Mar-09	6.0	8.8	361	
	12-Apr-09	6.9	7.7	433	
	17-May-09	12.5	8.6	407	
	14-Jun-09	14.0	8.4	701	
	12-Jul-09	13.7	8.5	492	10.5
	9-Aug-09	16.4	8.3	478	9.3
	13-Sep-09	11.4	7.0	454	
	11-Oct-09	4.4	7.7	541	12.8
	15-Nov-09	3.2	7.7	483	
	13-Dec-09	0.1	7.7	560	13.1
	17-Jan-10	0.2	8.3	524	12.1
	14-Mar-10	6.0	7.9	412	12.8
	11-Apr-10	10.5	8.2	460	13.7
	16-May-10	13.6	8.5	370	10.3
	13-Jun-10	15.8	8.4	394	12.6
	18-Jul-10	20.2	8.4	455	11.5
	15-Aug-10	15.9	8.3	412	10.2
	12-Sep-10	11.9	8.3	369	10.6
	17-Oct-10	7.4	8.3	373	12.2
	14-Nov-10	5.4	8.3	308	13.4
	19-Dec-10	0.8	8.6	269	14.1
	20-Feb-11	-0.02	8.2	271	10.8
	13-Mar-11	2.63	8.4	271	14.9
	20-Mar-11	3.71	8.4	304	13.5
	17-Apr-11	3.78	8.2	251	10.5
	15-May-11	10.3	8.6	301	12.0
	12-Jun-11	13.8	8.6	338	9.8
	17-Jul-11	21.2	8.4	422	10.4
	14-Aug-11	17.7	8.7	297	9.6
	18-Sep-11	13.3	8.8	324	11.3
	16-Oct-11	9.8	8.2	385	11.0
	20-Nov-11	3.1	8.2	313	13.7
	18-Dec-11	1.3	8.9	223	13.5
	19-Feb-12	1.2	8.2	240	12.4
	18-Mar-12	13.9	8.4	307	7.8
	15-Apr-12	5.2	9.0	303	15.5
	13-May-12	11.6	8.3	345	12.4
	17-Jun-12	21.2	8.4	445	6.8
	16-Jul-12	20.7	8.4	440	8.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Aug-12	15.8	8.6	440	7.0
	19-Sep-12	10.7	7.9	370	10.9
	18-Oct-12	10.6	8.3	359	8.9
	21-Nov-12	5.5	8.5	286	4.5
	18-Dec-12	4.1	7.8	678	9.8
	15-Jan-13	1.4	8.1	314	12.4
	19-Mar-13	0.0	8.2	219	12.8
	16-Apr-13	5.8	8.1	262	10.2
	14-May-13	6.9	8.3	294	9.5
	19-Jun-13	11.3	8.5	323	12.3
	17-Jul-13	20.5	8.2	420	8.8
	20-Aug-13	18.2	8.4	421	10.5
	18-Sep-13	12.5	8.4	421	10.5
	17-Oct-13	11.4	8.5	378	6.0
	20-Nov-13	2.6	8.0	305	4.1
	16-Apr-14	4.4	8.4	282	10.3
	13-May-14	14.2	8.6	354	10.3
	18-Jun-14	15.5	8.3	354	10.7
	15-Jul-14	17.0	7.8	410	8.5
	19-Aug-14	13.8	8.6	445	5.4
	9-Sep-14	15.4	8.5	459	5.0
	21-Oct-14	10.3	8.3	451	6.0
	23-Apr-15	3.2	8.4	306	15.4
	20-May-15	12.2	8.4	334	14.0
	15-Jun-15	16.5	8.4	423	8,95
	21-Jul-15	19.0	8.4	470	-
	12-Aug-15	15.4	8.3	412	10.1
	9-Sep-15	18.7	8.0	409	5.2
	16-Oct-15	8.4	8.1	343	11.9
	19-Nov-15	9.1	8.1	433	13.7
	8-Dec-15	3.8	8.3	356	23.1
	19-Jan-16	-0.1	8.1	266	9.0
	21-Apr-16	9.0	8.4	12.98	312.0
	17-May-16	10.3	8.6	379	11.6
	22-Jun-16	17.3	8.5	413	9.8
	20-Jul-16	18.0	8.5	422	9.4
	25-Aug-16	18.9	8.3	434	11.1
	19-Sep-16	14.7	8.1	414	9.1
	17-Oct-16	12.2	7.7	457	10.6
	15-Nov-16	4.9	7.6	355	13.8
	12-Dec-16	0.1	7.7	311	16.9
	24-Jan-17	1.9	8.2	312	14.4
	17-Feb-17	-0.1	8.3	314	16.1
	22-Mar-17	-0.1	8.6	311	12.1
	19-Apr-17	10.4	7.8	344	12.7
	16-May-17	10.6	8.6	483	8.5
	28-Jun-17	13.1	8.4	415	10.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Jul-17	18.1	8.5	465	9.6
	16-Aug-17	17.3	8.5	445	9.5
	17-Sep-17	16.9	8.4	432	9.3
	18-Oct-17	10.4	8.5	408	8.0
	14-Nov-17	4.8	8.5	383	9.0
	14-Dec-17	-0.4	8.1	213	15.8
	17-Jan-18	-0.4		259	10.6
	24-Feb-18	2.3	8.5	271	15.2
	20-Mar-18	-0.4	8.4	281	17.3
	18-Apr-18	2.8	8.7	492	10.2
	14-May-18	14.3	8.5	461	9.9
	18-Jun-18	8.3	8.4	467.4	9.4
	19-Jul-18	16.1	8.3	474.8	9.5
	23-Aug-18	18.2	8.5	489.1	9.2
	19-Sep-18	13.9	8.3	482.9	9.8
	24-Oct-18	5.0	8.6	523	12.7
	21-Nov-18	0.0	8.2	527	14.3
	13-Dec-18	1.2	8.4		13.6
	19-Jan-19	0.0	8.2	426.7	16.2
	27-May-19	12.1	8.6	417.5	10.5
	21-Jun-19	15.4	8.5	443.2	9.8
	30-Jul-19	21.5	8.4	426.3	8.6
	30-Aug-19	16.3	7.8	939	8.3
	27-Sep-19	17.9	7.9	529.1	7.6
	22-Oct-19		7.7	491.6	7.9
	22-Oct-19	9.3	7.7	491.6	7.9
	21-Nov-19	0.6	8.0	419	7.9
	28-Apr-20	7.5	8.6	390.2	11.9
	28-May-20	12.0	9.2	422.9	10.7
	24-Jun-20	15.2	8.8	425.8	9.7
	31-Jul-20	15.5	7.4	413	10.4
	26-Aug-20	15.6	8.1	441	9.5
	26-Sep-20	12.7	8.1	433	10.2
	29-Oct-20	7.9	7.3	480	7.6
SW 20					
	22-May-03	7.0			
	23-Jun-03	6.9			
	16-Mar-04	6.7	7.6	485	7.5
	21-Apr-04	6.4	7.4	261	
	19-May-04	6.8	7.4	334	
	24-Jun-04	7.0	7.4	331	11.4
	29-Jul-04	7.7	7.1	328	11.8
	26-Aug-04	7.8	7.3	337	
	22-Sep-04	8.9	7.5	358	9.7
	29-Mar-05	6.9	7.7	345	11.9
	11-Apr-05	7.1	7.1	254	
	24-May-05	8.2	7.3	346	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	28-Jun-05	13.4	8.3	421	
	11-Jul-05	12.8	6.8	406	
	22-Aug-05	12.2	7.6	240	10.2
	27-Sep-05	11.7	7.5	367	9.7
	12-Dec-05	2.5	8.2	328	10.6
	17-Jan-06	5.1	6.4	303	11.8
	20-Mar-06	6.9	8.2	323	
	18-Apr-06	9.5	7.9	371	
	23-May-06	10.2	7.8	460	
	20-Jun-06	11.2	7.7	455	
	11-Jul-06	12.1	7.7	438	
	23-Aug-06	11.0	7.5	444	
	20-Sep-06	11.0	7.6	414	
	18-Oct-06	10.1	7.6	441	
	27-Nov-06	7.6	7.7	489	10.9
	17-Dec-06	6.3	7.7	521	12.4
	21-Jan-07	5.7	7.9	498	12.2
	18-Feb-07	5.2	8.1	490	12.2
	18-Mar-07	5.7	8.0	423	12.3
	16-Apr-07	5.8	8.0	435	12.5
	13-May-07	9.8	8.0	446	
	17-Jun-07	12.0	8.1	494	9.7
	15-Jul-07	11.3	7.9	463	9.7
	19-Aug-07	13.4	8.7	469	
	21-Jan-08	5.7	7.5	380	
	19-Feb-08	5.0	7.7	451	12.0
	17-Mar-08	7.2	7.5	476	
	1-Apr-08	4.8	7.6	345	
	23-Apr-08	8.5	7.8	370	10.6
	20-May-08	10.2	6.9	255	
	17-Jun-08	7.9	8.2	462	9.8
	15-Jul-08	9.4	6.9	491	7.7
	18-Aug-08	11.2	5.7	293	5.8
	16-Sep-08	8.5	7.7	508	8.4
	20-Oct-08	8.0	7.5	414	8.5
	23-Nov-08	6.6		513	8.1
	14-Dec-08	5.5	7.2	403	8.3
	18-Jan-09	5.3	7.9	457	9.5
	8-Feb-09	6.9		443	7.9
	15-Mar-09	7.8	8.1	379	
	12-Apr-09	8.4	8.0	430	
	17-May-09	11.3	7.7	375	
	14-Jun-09	10.1	7.3	885	
	12-Jul-09	8.9	8.2	478	10.4
	9-Aug-09	9.6	8.4	481	10.9
	13-Sep-09	10.4	9.1	426	
	11-Oct-09	7.9	6.3	492	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Nov-09	3.9	7.2	426	
	13-Dec-09	2.4	7.4	456	12.1
	17-Jan-10	3.8	7.7		12.1
	7-Feb-10	1.5	7.8	479	12.6
	14-Mar-10	7.8	7.8	423	11.9
	11-Apr-10	8.4	7.7	447	12.8
	16-May-10	9.3	8.0	335	11.4
	13-Jun-10	9.9	7.8	347	14.1
	18-Jul-10	9.8	7.7	351	11.7
	15-Aug-10	11.7	8.1	349	9.6
	12-Sep-10	8.7	7.7	300	11.0
	17-Oct-10	7.4	7.6	295	10.4
	14-Nov-10	6.8	7.6	287	
	19-Dec-10	5.4	8.1	261	11.3
	16-Jan-11	5.2	8.0	295	12.4
	20-Feb-11	5.5	7.9	284	12.0
	13-Mar-11	7.2	8.0	309	11.0
	17-Apr-11	6.8	8.0	282	12.0
	15-May-11	6.8	7.9	256	13.4
	12-Jun-11	8.4	7.7	240	7.8
	17-Jul-11	10.2	7.9	331	11.2
	14-Aug-11	12.3	8.0	256	11.6
	18-Sep-11	10.0	7.5	213	10.3
	16-Oct-11	7.7	8.0	324	11.4
	20-Nov-11	3.5	7.8	288	12.7
	18-Dec-11	0.3	6.8	261	10.9
	15-Jan-11	6.0	7.8	262	11.4
	19-Feb-12	5.1	7.1	272	12.7
	18-Mar-12	7.9	7.7	251	10.8
	15-Apr-12	6.0	8.7	306	10.8
	13-May-12	12.1	7.8	360	9.2
	17-Jun-12	12.3	7.7	383	8.4
	16-Jul-12	17.2	7.9	425	5.8
	14-Aug-12	12.8	7.6	451	6.6
	18-Sep-12	10.9	6.8	355	10.6
	17-Oct-12	8.0	6.8	456	7.4
	20-Nov-12	7.4	7.8	339	8.7
	18-Dec-12	6.6	7.5	728	10.1
	15-Jan-13	5.7	7.7	352	11.4
	20-Feb-13	4.1	8.1	282	13.4
	19-Mar-13	5.0	7.9	241	9.7
	16-Apr-13	6.5	7.1	265	9.7
	13-May-13	7.6	7.5	271	10.9
	18-Jun-13	9.7	7.8	334	8.4
	16-Jul-13	9.7	7.9	357	10.0
	21-Aug-13	11.0	8.0	356	10.1
	18-Sep-13	8.3	8.5	317	12.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Oct-13	9.2	8.7	337	7.0
	19-Nov-13	5.9	7.4	329	6.0
	17-Dec-13	5.0	7.8	316	4.0
	21-Jan-14	3.5	7.9	201	3.4
	20-Feb-14	5.0	7.7	314	7.8
	18-Mar-14	2.8	7.3	324	4.1
	15-Apr-14	5.9	7.7	267	11.9
	12-May-14	9.2	7.5	320	10.3
	17-Jun-14	9.4	8.1	336	11.5
	14-Jul-14	10.8	8.9	403	2.0
	18-Aug-14	10.9	8.4	192	6.6
	8-Sep-14	10.4	8.8	398	8.9
	23-Oct-14	7.9	7.9	410	4.6
	16-Dec-14	5.9	8.2	383	-
	20-Jan-15	4.4	6.9	255	1.2
	18-Mar-15	5.3	8.3	195	12.1
	21-Apr-15	6.8	7.7	260	11.8
	19-May-15	9.6	8.0	321	15.6
	15-Jun-15	10.6	7.8	387	10.0
	21-Jul-15	11.1	8.0	376	-
	11-Aug-15	12.4	8.0	404	10.3
	8-Sep-15	11.6	7.8	372	11.4
	15-Oct-15	8.4	7.4	323	7.1
	18-Nov-15	8.0	7.9	383	11.8
	8-Dec-15	5.8	8.0	370	16.3
	19-Jan-16	1.8	7.9	287	15.1
	17-Feb-16	4.5	7.7	344	13.6
	15-Mar-16	7.1	7.5	284	12.9
	20-Apr-16	7.0	7.4	300	12.9
	17-May-16	9.7	7.9	393	11.9
	22-Jun-16	9.3	7.9	357	11.1
	20-Jul-16	10.3	8.0	372	11.0
	24-Aug-16	12.8	8.3	379	11.1
	19-Sep-16	13.0	8.2	388	9.8
	17-Oct-16	13.7	7.5	353	5.9
	15-Nov-16	6.9	7.9	500	11.4
	12-Dec-16	0.0	7.8	442	15.5
	24-Jan-17	6.2	7.8	328	12.1
	16-Feb-17	3.7	8.1	357	13.5
	21-Mar-17	7.0	7.9	388	12.1
	19-Apr-17	8.4	7.6	344	14.2
	16-May-17	9.9	8.4	349	12.5
	28-Jun-17	8.4	7.7	309	11.5
	18-Jul-17	9.4	8.1	339	11.6
	15-Aug-17	9.6	8.3	309	11.8
	17-Sep-17	9.9	7.8	379	10.3
	17-Oct-17	8.8	8.0	377	10.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	14-Nov-17	6.8	8.0	391	8.0
	14-Dec-17	4.7	7.9	367	12.5
	17-Jan-18	5.2	7.9	341	7.8
	23-Feb-18	6.4	7.9	299	9.0
	20-Mar-18	6.3	8.0	356	13.4
	18-Apr-18	6.4	8.1	544	7.3
	14-May-18	9.3	7.7	478	11.6
	18-Jun-18	10.9	7.8	501	10.4
	19-Jul-18	9.0	7.7	500	10.1
	24-Aug-18	12.3	8.1	488.1	9.8
	19-Sep-18	10.7	8.2	476.9	9.9
	25-Oct-18	3.7	7.9	453.4	8.2
	22-Nov-18	3.1	8.1		12.1
	13-Dec-18	5.5	8.0		10.8
	19-Jan-19	5.0	7.8	500	11.4
	19-Mar-19	6.0	7.9	432.6	11.6
	25-Apr-19	6.3	7.4	373.1	10.4
	27-May-19	10.4	8.0	427.8	10.7
	21-Jun-19	7.8	7.7	457.3	10.2
	30-Jul-19	10.6	7.9	457.3	9.6
	30-Aug-19	10.8	8.1	904	10.0
	21-Nov-19	0.0	dry		
	25-Mar-20	6.7	7.7	420	11.1
	28-Apr-20	7.6	7.8	384.7	11.1
	28-May-20	9.4	8.4	433.8	9.9
	24-Jun-20	9.3	8.1	409.4	10.2
	31-Jul-20	9.7	8.1	500	9.6
	29-Oct-20	8.8	7.3	392	7.5
SW 21					
	11-Feb-04	0.3	8.5	283	10.3
	17-Mar-04	0.2	7.5	286	8.1
	21-Apr-04	10.8	8.0	310	
	19-May-04	17.5	8.1	395	
	24-Jun-04	18.9	8.1	419	
	29-Jul-04	23.1	8.0	418	8.2
	26-Aug-04	18.4	7.9	411	
	22-Sep-04	20.5	7.6	417	8.7
	20-Oct-04	9.2	7.9	321	10.8
	18-Nov-04	6.1	8.0	317	
	29-Mar-05	6.9	7.7	345	11.9
	11-Apr-05	7.1	7.1	264	
	26-May-05	19.6	8.2	418	
	28-Jun-05	25.9	8.4	432	8.0
	12-Jul-05	24.7	7.9	471	6.9
	23-Aug-05	19.9	7.3	342	8.5
	28-Sep-05	16.6	7.7	344	8.9
	25-Oct-05	8.6	8.0	319	11.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Nov-05	6.3	8.0	298	11.9
	13-Dec-05	0.5	7.6	185	12.7
	17-Jan-06	1.6	6.8	245	12.7
	22-Mar-06	1.4	8.0	247	
	19-Apr-06	13.5	8.2	388	
	23-May-06	12.4	8.1	405	
	20-Jun-06	21.8	8.1	399	
	11-Jul-06	23.3	8.1	373	
	23-Aug-06	21.3	7.9	375	
	20-Sep-06	16.3	8.0	350	
	19-Oct-06	10.0	8.0	368	
	23-Nov-06	2.4	8.3	457	13.6
	17-Dec-06	3.0	7.7	515	
	16-Apr-07	4.4	8.3	435	
	13-May-07	15.0	8.5	383	
	17-Jun-07	24.4	8.3	415	
	15-Jul-07	22.0	8.0	418	8.0
	19-Aug-07	20.1	8.0	385	8.6
	18-Oct-07	10.3	7.9	365	8.7
	21-Nov-07	4.5	8.2	418	11.7
	9-Dec-07	1.5	7.2	393	12.5
	21-Jan-08	1.3	7.5	390	
	19-Feb-08	1.6	7.7	425	12.7
	17-Mar-08	1.1	7.4	444	
	1-Apr-08	2.0	7.4	326	
	23-Apr-08	16.6	7.9	394	8.2
	21-May-08	14.0	7.9	357	9.3
	17-Jun-08	19.6	7.9	336	6.7
	15-Jul-08	22.7	7.4	309	5.7
	19-Aug-08	22.1	8.1	325	4.2
	16-Sep-08	10.5	8.7	272	6.5
	21-Oct-08	10.6	8.0	332	7.6
	23-Nov-08	2.2		462	9.6
	14-Dec-08	1.8	7.3	394	9.7
	18-Jan-09	0.2	7.9	460	12.6
	8-Feb-09	1.0	8.9	429	9.0
	15-Mar-09	3.9	8.1	375	
	12-Apr-09	9.8	8.5	433	
	17-May-09	17.0	8.2	311	
	14-Jun-09	19.3	7.9	621	
	12-Jul-09	21.2	7.8	362	7.5
	9-Aug-09	20.1	6.8	361	8.8
	13-Sep-09	20.5	8.0	389	9.0
	11-Oct-09	8.5	8.5	342	11.2
	15-Nov-09	6.6	7.4	369	
	13-Dec-09	0.4	7.5	463	12.3
	7-Feb-10	0.7	7.4	502	10.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	14-Mar-10	4.3	7.4	305	11.5
	11-Apr-10	10.6	7.9	459	14.1
	16-May-10	14.5	8.0	345	8.9
	13-Jun-10	20.7	8.0	394	10.1
	18-Jul-10	24.2	8.1	401	10.1
	12-Sep-10	18.0	8.2	362	7.5
	17-Oct-10	11.4	8.0	302	10.3
	14-Nov-10	6.8	8.1	281	12.6
	20-Feb-11	0.8	8.0	262	11.8
	13-Mar-11	1.1	8.1	233	10.9
	17-Apr-11	6.5	8.2	303	12.2
	15-May-11	12.2	8.0	283	12.1
	12-Jun-11	20.8	8.3	332	9.8
	16-Oct-11	12.1	8.2	230	9.3
	18-Dec-11	3.7	8.7	230	10.7
	18-Mar-12	15.6	8.0	304	9.2
	15-Apr-12	12.0	8.6	319	10.9
	13-May-12	17.6	8.2	347	8.8
	14-Aug-12	21.5	8.4	459	6.2
	18-Sep-12	17.8	7.9	322	7.4
	17-Oct-12	10.8	7.0	254	8.2
	20-Nov-12	5.7	8.0	316	9.4
	18-Dec-12	4.3	7.2	680	9.0
	15-Jan-13	3.5	7.4	345	9.5
	16-Apr-13	7.2	7.8	299	9.9
	13-May-13	14.5	8.0	339	5.2
	19-Jun-13	22.5	8.2	409	7.2
	16-Jul-13	28.2	8.1	444	4.3
	16-Oct-13	14.9	8.7	331	4.8
	19-Nov-13	5.3	8.7	301	2.0
	16-Apr-14	5.9	7.7	194	10.6
	13-May-14	16.0	7.9	312	9.1
	16-Dec-14	2.0	9.4	313	-
	22-Apr-15	10.2	8.0	406	11.6
	19-May-15	17.1	8.2	346	13.7
	15-Jun-15	20.5	8.0	393	7.4
	21-Jul-15	23.2	8.4	422	7.6
	11-Aug-15	21.1	7.6	396	6.9
	18-Nov-15	6.7	7.9	248	13.2
	8-Dec-15	3.5	7.4	289	13.9
	19-Jan-16	1.4	7.5	270	11.9
	17-Feb-16	1.2	7.2	3.15	11.3
	15-Mar-16	6.2	7.5	334	11.4
	21-Apr-16	11.3	7.9	345	11.5
	18-May-16	13.7	8.3	382	10.8
	21-Jul-16	23.9	8.3	288	8.5
	24-Aug-16	24.7	8.1	326	8.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Sep-16	22.0	8.2	330	8.0
	18-Oct-16	15.3	8.2	289	12.7
	16-Nov-16	6.9	7.9	264	11.3
	12-Dec-16	1.2	8.1	430	15.8
	25-Jan-17	2.1	7.5	315	10.7
	17-Feb-17	0.6	7.9	303	12.5
	22-Mar-17	4.3	8.1	350	12.1
	19-Apr-17	9.7	7.1	335	14.6
	16-May-17	20.7	8.7	427	8.7
	28-Jun-17	21.2	8.2	429	9.4
	19-Jul-17	24.0	8.1	428	7.4
	16-Aug-17	20.6	8.1	351	8.8
	19-Sep-17	19.4	8.1	343	8.0
	18-Oct-17	12.5	8.0	341	9.0
	15-Nov-17	3.8	8.1	327	8.1
	14-Dec-17	1.1	8.2	294	10.4
	23-Feb-18	1.8	7.6	237	7.2
	21-Mar-18	3.2	7.9	328	10.6
	19-Apr-18	1.7	8.0	274	11.3
	15-May-18	16.9	8.1	458	9.5
	18-Jun-18	13.6	8.2	442.7	7.4
	19-Jul-18	9.0	8.0	430	5.8
	24-Aug-18	22.7	8.2	375.8	7.5
	20-Sep-18	18.8	8.0	365.2	5.9
	25-Oct-18	7.3	8.2	378.6	10.0
	13-Dec-18	1.9	7.7	497.3	10.1
	19-Mar-19	1.5	7.6	441.3	9.9
	25-Apr-19	9.9	8.0	409.2	10.7
	27-May-19	18.0	8.1	427.5	8.7
	21-Jun-19	22.5	8.2	408.2	8.0
	30-Jul-19	24.9	8.2	355.4	7.2
	30-Aug-19	15.9	8.0	411.1	7.2
	27-Sep-19	15.2	8.2	387.8	7.2
	22-Oct-19		8.0	328.8	7.5
	22-Oct-19	9.1	8.0	328.8	7.5
	21-Nov-19	0.1	8.0	395	7.7
	29-Oct-20	8.5	7.8	311.4	7.6
	27-Nov-20	4.7	8.0	487.4	11.4
	22-Dec-20	2.9	7.6	503	10.9
SW 21A					
	19-May-04	15.7	8.0	378	
	24-Jun-04	17.2	8.1	384	
	29-Jul-04	22.7	8.0	416	8.2
	26-Aug-04	15.7	8.0	377	
	20-Oct-04	6.6	8.0	301	12.0
	18-Nov-04	7.9	7.9	332	11.2
	16-Dec-04	0.2	7.9	243	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	29-Mar-05	2.1	7.7	224	
	11-Apr-05	9.9	7.4	328	11.1
	26-May-05	22.0	8.2	429	8.8
	28-Jun-05	26.2	8.2	496	
	12-Jul-05	18.2	7.7	423	8.3
	23-Aug-05	13.6	7.4	363	10.1
	28-Sep-05	11.9	7.7	346	10.2
	25-Oct-05	6.2	7.9	392	
	15-Nov-05	3.9	8.0	280	12.5
	13-Dec-05	0.3	7.9	278	13.0
	17-Jan-06	0.3	6.4	219	13.8
	22-Mar-06	0.4	8.2	255	
	19-Apr-06	17.9	8.3	358	
	23-May-06	15.6	8.3	403	
	20-Jun-06	17.1	8.4	405	
	11-Jul-06	19.4	8.1	390	
	23-Aug-06	16.9	7.9	390	
	20-Sep-06	11.3	8.1	362	
	19-Oct-06	9.7	8.0	396	
	23-Nov-06	1.9	8.2	430	13.6
	17-Dec-06	1.6	8.0	497	
	16-Apr-07	2.4	8.3	420	13.6
	13-May-07	15.2	8.5	387	
	17-Jun-07	20.8	8.3	426	8.3
	15-Jul-07	19.1	8.0	419	8.7
	19-Aug-07	16.7	7.8	345	9.3
	18-Oct-07	12.8	7.9	396	9.0
	21-Nov-07	3.6	8.0	423	11.2
	9-Dec-07	0.9	7.9	395	13.0
	21-Oct-08	5.0	8.3	380	
	23-Nov-08	1.3		481	9.0
	14-Dec-08	0.3	7.6	379	9.2
	15-Mar-09	6.4	8.1	369	
	12-Apr-09	11.5	8.4	401	
	17-May-09	21.5	8.3	308	
	13-Sep-09	16.6	7.9	358	
	11-Oct-09	5.2	8.4	413	12.4
	15-Nov-09	5.6	7.6	334	
	14-Mar-10	7.0	7.4	284	11.1
	11-Apr-10	12.6	8.0	434	12.5
	16-May-10	14.3	8.1	356	9.8
	12-Sep-10	14.0	8.1	322	8.7
	14-Nov-10	6.1	8.1	268	12.0
	17-Apr-11	8.4	8.1	343	10.7
	15-May-11	9.3	8.0	267	12.3
	12-Jun-11	18.0	8.3	319	8.3
	16-Oct-11	9.4	8.0	304	9.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Dec-11	1.7	8.6	222	11.9
	18-Mar-12	18.1	7.9	351	7.9
	15-Apr-12	9.4	8.7	272	10.7
	13-May-12	19.5	8.0	368	7.3
	17-Oct-12	9.4	7.0	296	8.0
	20-Nov-12	5.6	7.9	323	8.9
	18-Dec-12	3.3	7.2	617	8.8
	15-Jan-13	0.7	7.8	306	11.0
	16-Apr-13	8.6	7.9	227	8.7
	16-Apr-14	3.2	7.2	187	10.5
	13-May-14	15.6	7.9	366	8.1
	16-Dec-14	0.0	9.7	283	-
	22-Apr-15	8.2	7.8	381	10.1
	15-Mar-16	6.8	7.7	296	10.7
	21-Apr-16	9.0	7.9	370	8.5
	21-Jul-16	17.9	7.8	401	7.0
	24-Aug-16	19.5	7.9	362	6.7
	19-Sep-16	17.8	8.0	381	7.0
	18-Oct-16	14.8	8.0	380	10.6
	16-Nov-16	6.7	7.9	301	10.3
	12-Dec-16	0.7	8.3	465	14.5
	25-Jan-17	1.8	7.8	298	11.5
	17-Feb-17	0.2	7.8	271	13.7
	22-Mar-17	0.0	8.0	383	11.3
	19-Apr-17	6.8	6.7	326	11.8
	16-May-17	20.7	8.7	404	6.9
	28-Jun-17	16.7	7.8	401	7.3
	19-Jul-17	18.4	7.7	408	6.9
	16-Aug-17	15.4	7.9	290	7.6
	19-Sep-17	15.3	7.9	374	7.7
	18-Oct-17	9.4	8.1	333	10.4
	15-Nov-17	3.7	8.2	307	8.4
	14-Dec-17	-0.3	8.3	265	11.1
	23-Feb-18	-0.1	7.9	261	7.9
	15-May-18	14.5	8.0	432	7.6
	18-Jun-18	16.5	8.1	429.4	7.9
	19-Jul-18	18.3	8.1	408.1	7.5
	24-Aug-18	18.2	8.1	399.9	7.9
	20-Sep-18	15.6	8.1	395.7	7.3
	25-Oct-18	4.1	8.1	429.3	0.8
	22-Nov-18	0.5	8.2		12.7
	13-Dec-18	1.4	7.9	483.7	11.5
	25-Apr-19	7.7	8.0	277.5	10.1
	27-May-19	19.8	8.0	429.6	5.7
	21-Jun-19	17.5	7.9	362.8	363.1
	30-Jul-19	20.5	8.1		6.6
	30-Aug-19	17.6	8.1	397.2	8.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	27-Sep-19	13.0	8.6	415	8.0
	22-Oct-19		8.3	401.5	8.8
	22-Oct-19	10.1	8.3	401.5	8.8
	21-Nov-19	0.2	8.4	445	8.3
	29-Oct-20	9.3	8.3	398.5	9.0
	27-Nov-20	4.1	8.0	471.2	11.9
	22-Dec-20	1.1	7.8	474	12.3
SW 21B					
	19-May-04	9.6	8.2	318	
	24-Jun-04	10.5	8.2	330	
	29-Jul-04	11.4	8.1	284	
	26-Aug-04	10.3	8.1	322	
	23-Sep-04	11.0	8.1	335	
	20-Oct-04	7.5	8.1	307	11.9
	18-Nov-04	6.6	8.0	309	11.8
	29-Mar-05	2.1	7.7	224	
	11-Apr-05	2.3	7.0	231	13.6
	26-May-05	10.0	7.6	322	
	12-Jul-05	12.1	7.6	343	10.4
	23-Aug-05	11.2	7.6	341	
	28-Sep-06	10.5	7.8	330	10.9
	25-Oct-05	7.2	8.2	399	
	15-Nov-05	3.9	8.0	280	12.5
	13-Dec-05	2.6	8.3	296	12.6
	17-Jan-06	3.2	7.0	244	12.9
	19-Apr-06	9.2	8.3	340	
	23-May-06	9.4	8.3	395	
	20-Jun-06	12.1	8.2	401	
	11-Jul-06	12.9	8.2	385	
	23-Aug-06	12.6	8.0	400	
	20-Sep-06	10.7	8.0	393	
	19-Oct-06	8.8	8.0	399	
	23-Dec-06	4.9	8.4	417	
	17-Dec-06	3.7	8.2	432	
	21-Jan-07	2.7	8.1	419	
	16-Apr-07	3.7	8.4	396	13.0
	13-May-07	9.1	8.4	384	
	17-Jun-07	12.0	8.3	430	10.6
	15-Jul-07	11.6	8.2	430	10.5
	19-Aug-07	11.3	7.9	422	10.0
	17-Sep-07	10.1	8.0	401	10.4
	18-Oct-07	10.0	7.9	404	9.2
	21-Nov-07	5.2	8.0	425	10.9
	9-Dec-07	3.9	8.1	392	11.8
	21-Jan-08	2.6	7.8	378	12.4
	19-Feb-08	2.9	8.1	399	
	23-Apr-08	8.5	7.9	343	10.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-May-08	8.0	7.9	365	9.8
	17-Jun-08	11.7	7.9	401	8.6
	15-Jul-08	12.8	7.5	432	#REF!
	19-Aug-08	14.5	8.1	466	5.3
	16-Sep-08	14.3	8.4	419	6.4
	21-Oct-08	9.1	7.9	309	8.8
	23-Nov-08	4.7		427	8.4
	14-Dec-08	3.4	7.4	350	8.2
	12-Apr-09	2.9	8.7	375	
	17-May-09	12.0	8.3	331	10.1
	14-Jun-09	12.0	7.4	773	10.5
	12-Jul-09	13.2	8.5	417	9.6
	9-Aug-09	12.4	8.3	435	
	13-Sep-09	11.3	7.7	387	
	11-Oct-09	7.1	8.6	429	
	15-Nov-09	5.9	7.6	362	
	11-Apr-10	6.2	8.2	402	
	16-May-10	9.3	8.2	284	10.6
	12-Sep-10	11.5	8.2	340	10.3
	17-Oct-10	8.8	8.0	294	10.9
	14-Nov-10	6.1	8.3	254	12.1
	17-Apr-11	2.9	8.3	186	15.8
	15-May-11	7.7	8.1	240	12.8
	12-Jun-11	10.3	8.4	257	12.3
	17-Jul-11	14.2	8.3	328	10.9
	14-Aug-11	14.2	8.5	245	10.1
	18-Sep-11	11.1	8.6	272	10.0
	16-Oct-11	10.3	8.0	314	10.5
	20-Nov-11	5.2	8.1	270	13.5
	18-Mar-12	7.8	8.1	251	11.7
	15-Apr-12	7.6	8.7	281	10.1
	13-May-12	10.7	8.2	294	10.1
	17-Jun-12	15.1	8.4	290	7.4
	16-Jul-12	16.0	8.3	363	7.1
	14-Aug-12	16.2	8.4	478	6.9
	18-Sep-12	12.9	7.9	342	9.4
	17-Oct-12	8.7	7.0	280	9.0
	20-Nov-12	5.5	7.8	284	9.2
	18-Dec-12	3.8	7.6	560	9.4
	13-May-13	7.2	8.2	259	6.0
	19-Jun-13	11.1	8.7	299	11.6
	16-Jul-13	15.8	8.2	360	9.0
	20-Aug-13	14.3	8.3	332	9.5
	18-Sep-13	11.6	8.0	310	11.1
	16-Oct-13	11.0	8.6	304	5.5
	13-May-14	13.7	8.2	144	10.6
	17-Jun-14	14.2	8.2	322	10.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Jul-14	12.3	11.9	260	10.9
	19-Aug-14	12.7	8.8	372	5.8
	22-Oct-14	9.5	8.3	376	6.9
	22-Apr-15	4.0	7.9	263	11.0
	11-Aug-15	14.8	8.0	361	8.6
	8-Sep-15	17.4	7.8	380	7.0
	15-Oct-15	11.8	8.0	320	9.4
	18-Nov-15	8.3	7.7	334	11.2
	8-Dec-15	5.3	7.5	310	12.0
	18-May-16	8.0	8.3	324	11.4
	23-Jun-16	14.0	8.2	347	9.6
	21-Jul-16	12.3	8.5	345	11.2
	24-Aug-16	13.0	8.3	342	10.9
	19-Sep-16	12.3	8.3	341	10.9
	18-Oct-16	11.4	8.2	341	13.6
	16-Nov-16	7.1	8.1	307	11.3
	12-Dec-16	3.7	8.7	446	15.2
	25-Jan-17	4.0	8.3	298	12.3
	22-Mar-17	1.9	8.3	296	12.5
	19-Apr-17	6.6	7.4	280	13.9
	16-May-17	10.4	8.4	304	10.7
	28-Jun-17	10.3	8.3	322	11.4
	19-Jul-17	11.9	8.2	345	11.1
	16-Aug-17	11.6	8.2	310	10.9
	19-Sep-17	11.6	8.1	341	10.6
	18-Oct-17	9.1	8.3	323	11.2
	15-Nov-17	5.3	8.4	309	7.6
	14-Dec-17	3.0	8.5	283	9.4
	21-Mar-18	1.4	8.4	241	13.8
	15-May-18	9.9	8.1	386	11.0
	18-Jun-18	20.2	8.3	431.1	10.3
	19-Jul-18	12.5	8.2	427.4	10.2
	24-Aug-18	13.6	8.4	431.4	10.0
	20-Sep-18	12.5	8.3	427.6	10.0
	25-Oct-18	6.8	8.4	429.7	11.4
	22-Nov-18	3.5	8.4	435	12.6
	13-Dec-18	3.2	8.4	427.7	12.5
	30-Jul-19	13.6	8.3	387.5	9.7
	30-Aug-19	12.4	8.3	370.3	10.0
	22-Oct-19		8.3	417.5	8.9
	22-Oct-19	10.4	8.3	417.5	8.9
	21-Nov-19	0.1	8.1	406	8.5
	27-Sep-19	16.3	8.2	412.4	8.5
SW 21C					
	11-Feb-04	3.7	8.2	291	8.5
	17-Mar-04	4.0		409	9.4
	21-Apr-04	7.7	8.2	246	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-May-04	9.5	8.2	316	
	24-Jun-04	9.9	8.2	320	
	29-Jul-04	10.5	8.1	312	
	26-Aug-04	9.8	8.2	318	
	22-Sep-04	10.3	8.0	329	10.8
	20-Oct-04	7.3	8.1	305	11.9
	18-Nov-04	7.4	8.0	317	11.6
	29-Mar-05	5.4	8.1	281	
	11-Apr-05	5.8	7.4	251	
	26-May-05	10.0	8.0	240	
	28-Jun-05	12.0	8.3	327	
	12-Jul-05	11.2	7.6	345	10.8
	23-Aug-05	10.7	7.8	335	
	28-Sep-05	9.9	8.0	326	11.0
	25-Oct-05	7.1	8.2	397	
	15-Nov-05	5.7	8.3	272	12.3
	13-Dec-05	2.5	8.7	295	12.2
	17-Jan-06	3.6	7.4	246	13.0
	22-Mar-06	5.0	8.6	262	
	19-Apr-06	9.2	8.4	339	
	23-May-06	9.4	8.3	397	
	20-Jun-06	11.2	8.3	399	
	11-Jul-06	12.4	8.3	389	
	23-Aug-06	12.0	8.1	400	
	20-Sep-06	10.0	8.2	394	
	19-Oct-06	8.4	8.1	396	
	23-Nov-06	5.3	8.5	313	12.7
	17-Dec-06	4.6	8.2	427	
	21-Jan-07	3.0	8.5	420	
	18-Mar-07	4.7	8.3	377	
	16-Apr-07	5.2	8.4	396	
	13-May-07	8.9	8.4	383	
	17-Jun-07	11.6	8.4	428	
	15-Jul-07	11.0	8.1	431	
	19-Aug-07	10.6	7.9	425	10.4
	17-Sep-07	9.8	8.2	401	10.9
	18-Oct-07	9.9	8.0	404	9.6
	21-Nov-07	5.5	8.1	430	11.0
	9-Dec-07	4.6	8.1	394	11.8
	21-Jan-08	3.9	7.8	381	12.4
	19-Feb-08	4.2	8.0	400	
	17-Mar-08	4.1	7.7	409	
	1-Apr-08	3.9	7.7	314	
	23-Apr-08	8.8	8.0	343	10.4
	21-May-08	7.8	7.8	356	10.3
	17-Jun-08	9.0	7.8	400	
	15-Jul-08	10.2	7.3	430	9.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Aug-08	9.9	7.9	463	6.4
	16-Sep-08	9.8	8.5	428	8.0
	21-Oct-08	6.4	8.2	369	7.7
	23-Nov-08	4.2	8.5	427	8.2
	14-Dec-08	4.8	7.2	350	7.0
	18-Jan-09	3.7	8.6	402	10.3
	8-Feb-09	4.7		333	8.6
	15-Mar-09	5.8	8.6	265	
	12-Apr-09	6.9	8.6	383	
	17-May-09	13.5	8.2	325	
	14-Jun-09	9.4	7.4	764	
	12-Jul-09	9.6	8.2	409	
	9-Aug-09	11.4	8.1	410	10.4
	13-Sep-09	10.7	7.6	379	10.6
	11-Oct-09	6.2	8.2	431	
	15-Nov-09	5.7	7.7	375	
	13-Dec-09	2.9	7.9	420	12.3
	17-Jan-10	3.9	8.5	397	12.1
	7-Feb-10	3.0	8.0	408	12.3
	14-Mar-10	5.1	7.8	393	12.1
	11-Apr-10	6.4	7.9	403	
	16-May-10	8.8	8.3	274	11.3
	13-Jun-10	9.6	8.3	280	11.9
	18-Jul-10	11.4	8.2	299	14.1
	15-Aug-10	10.9	8.4	282	11.0
	12-Sep-10	9.3	8.3	229	10.9
	17-Oct-10	7.7	8.1	286	10.7
	14-Nov-10	6.4	8.1	256	11.8
	19-Dec-10	3.7	8.3	223	12.8
	16-Jan-11	4.6	8.6	165	11.9
	20-Feb-11	3.7	8.1	240	12.1
	13-Mar-11	4.9	8.3	239	11.3
	17-Apr-11	5.7	8.3	266	12.3
	15-May-11	7.3	7.9	238	12.3
	12-Jun-11	9.7	8.3	255	12.4
	17-Jul-11	11.3	8.2	295	9.0
	14-Aug-11	11.3	8.6	218	10.4
	18-Sep-11	9.7	8.5	261	10.4
	16-Oct-11	8.3	8.1	288	10.2
	20-Nov-11	5.0	7.7	183	12.4
	20-Dec-11	4.5	8.3	199	11.6
	15-Jan-12	3.7	8.4	212	11.8
	19-Feb-12	4.4	8.0	213	12.8
	18-Mar-12	8.1	8.0	213	12.8
	15-Apr-12	6.4	8.8	268	12.0
	13-May-12	9.0	8.2	265	7.5
	17-Jun-12	11.6	8.3	322	11.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Jul-12	13.0	8.3	333	7.3
	14-Aug-12	11.0	8.1	456	7.6
	18-Sep-12	10.2	7.5	311	10.2
	17-Oct-12	8.6	6.7	217	8.2
	20-Nov-12	6.8	7.8	293	9.2
	18-Dec-12	5.7	7.7	609	9.5
	16-Jan-13	4.3	7.9	300	10.8
	20-Mar-13	4.1	8.4	238	7.7
	16-Apr-13	6.4	8.1	238	9.9
	13-May-13	7.6	8.1	260	6.7
	19-Jun-13	9.3	8.1	273	11.6
	16-Jul-13	11.8	8.1	324	10.1
	21-Aug-13	11.3	8.2	305	10.4
	18-Sep-13	9.0	7.9	291	12.0
	16-Oct-13	9.6	8.4	294	6.6
	19-Nov-13	5.4	8.5	270	2.5
	16-Apr-14	5.1	8.2	263	10.6
	13-May-14	8.8	8.1	265	10.5
	17-Jun-14	10.1	8.3	298	12.0
	15-Jul-14	10.9	7.7	330	8.7
	19-Aug-14	10.4	8.6	353	8.3
	9-Sep-14	10.8	8.8	356	4.3
	22-Oct-14	7.6	8.2	353	6.8
	16-Dec-14	4.9	9.3	313	-
	20-Jan-15	1.6	7.7	143	1.2
	18-Mar-15	2.8	8.4	214	13.8
	22-Apr-15	6.0	8.0	304	14.5
	19-May-15	8.8	8.3	267	-
	15-Jun-15	10.0	8.1	325	10.4
	21-Jul-15	10.9	8.1	323	-
	11-Aug-15	10.7	8.3	339	10.6
	25-Aug-15	10.7	8.3	297	10.9
	8-Sep-15	12.1	7.4	337	10.6
	15-Oct-15	8.7	8.1	297	10.0
	18-Nov-15	7.5	8.1	332	11.1
	8-Dec-15	5.7	7.9	316	12.9
	19-Jan-16	2.1	8.2	249	13.8
	17-Feb-16	3.6	8.0	288	13.7
	15-Mar-16	6.2	7.9	275	12.4
	21-Apr-16	7.3	8.1	283	13.4
	18-May-16	7.9	8.5	328	12.3
	23-Jun-16	9.5	8.5	316	11.6
	5-Jul-16	10.9	8.4	324	16.6
	21-Jul-16	11.9	8.5	342	10.5
	9-Aug-16	11.6	8.4	426	13.1
	24-Aug-16	12.2	8.4	336	11.1
	19-Sep-16	11.4	8.4	334	10.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	18-Oct-16	11.7	8.3	340	13.6
	16-Nov-16	7.3	8.2	308	10.7
	12-Dec-12	3.3	8.4	442	14.7
	25-Jan-17	4.8	8.3	296	11.7
	17-Feb-17	3.3	8.3	307	14.5
	22-Mar-17	2.6	8.5	304	12.2
	19-Apr-17	6.3	7.4	270	13.2
	16-May-17	10.8	8.5	197	10.8
	28-Jun-17	9.8	8.3	318	11.5
	7-Jul-17	10.9	8.2	288	11.6
	19-Jul-17	10.9	8.2	336	11.1
	2-Aug-17	10.5	8.0	311	12.0
	16-Aug-17	10.3	8.3	330	11.1
	19-Sep-17	10.4	8.2	326	11.0
	18-Oct-17	8.6	8.3	320	11.4
	15-Nov-17	5.5	8.4	311	12.9
	14-Dec-17	3.0	8.4	281	12.2
	18-Jan-18	3.4	8.0	269	9.2
	23-Feb-18	5.2	8.4	259	6.7
	21-Mar-18	3.2	8.3	270	12.5
	19-Apr-18	3.1	8.4	247	11.1
	15-May-18	8.2	8.2	398	10.8
	18-Jun-18	9.8	8.3	431.9	10.5
	19-Jul-18	10.4	8.2	428.8	10.5
	24-Aug-18	11.5	8.4	433.2	10.4
	20-Sep-18	11.0	8.4	430.6	10.2
	25-Oct-18	5.9	8.4	433.5	11.5
	22-Nov-18	2.7	8.5		12.8
	13-Dec-18	4.4	8.5	422.9	12.2
	19-Jan-19	3.0	8.3	418.9	12.8
	19-Mar-19	4.4	8.4	377	12.2
	25-Apr-19	6.6	8.3	317.8	11.0
	27-May-19	9.4	8.4	372.6	10.9
	21-Jun-19	9.8	8.4	381.5	10.7
	30-Jul-19	11.6	8.4	392.1	10.0
	24-Jan-20	4.3	8.4	391.6	12.2
	28-Apr-20	6.6	8.5	343.9	11.7
	28-May-20	10.7	10.0	375.9	10.4
	31-Jul-20	11.9	8.7	407.1	10.1
	26-Aug-20	11.3	8.3	380.1	10.4
	26-Sep-20	10.3	8.2	380	
	29-Oct-20	9.4	7.1	401	8.1
	27-Nov-20	5.9	8.2	414.5	11.9
	22-Dec-20	4.8	8.3	417	12.4
SW 21D					
	21-Apr-04	9.7	7.5	162	
	19-Apr-06	15.7	7.8	241	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	23-May-06	16.1	7.8	272	
	16-Apr-07	4.2	8.3	244	
	23-Apr-08	12.4	8.0	209	8.1
	12-Apr-09	15.4	8.0	260	9.5
	17-May-09	19.0	7.9	250	4.6
	11-Apr-10	9.2	7.8	261	13.0
	16-May-10	14.4	7.5	232	6.0
	13-Jun-10	18.2	7.5	251	7.8
	18-Jul-10	19.9	7.5	237	8.2
	14-Nov-10	5.9	8.0	199	7.9
	17-Apr-11	5.8	8.2	186	12.9
	15-May-11	8.6	8.0	159	10.2
	18-Mar-12	11.0	7.6	159	9.8
	14-Aug-12	17.2	8.2	394	3.9
	20-Nov-12	4.3	7.4	209	6.6
	18-Dec-12	1.2	7.2	376	7.2
	15-Jan-13	0.5	7.6	188	6.6
	16-Apr-13	1.1	8.2	114	9.4
	13-May-13	12.9	7.8	212	4.2
	16-Oct-13	12.4	8.5	240	3.5
	19-Nov-13	3.0	8.8	184	1.7
	13-May-14	14.6	7.4	211	5.2
	22-Oct-14	7.1	8.0	172	7.0
	16-Dec-14	-0.1	9.5	233	-
	22-Apr-15	7.2	7.6	178	11.9
	19-May-15	15.4	7.6	223	7.4
	15-Jun-15	17.3	7.4	258	2.2
	15-Mar-16	1.6	7.3	156	10.5
	21-Apr-16	8.3	7.7	195	9.7
	18-May-16	11.7	7.9	245	8.0
	25-Jan-17	-0.1	7.8	119	4.1
	19-Apr-17	7.8	7.1	194	8.1
	16-May-17	20.9	8.2	299	6.2
	28-Jun-17	18.0	7.8	279	6.9
	15-Nov-17	5.5	8.4	311	12.9
	23-Feb-18	0.3	7.8	161	5.9
	15-May-18	14.1	7.4	253	4.9
	24-Apr-19	6.1	7.8	198.3	10.1
	23-May-19	18.4	7.6	275.6	5.5
	27-Apr-20	7.8	7.4	248.4	5.7
	29-May-20	21.9	7.9	261.6	6.0
SW 22					
	26-Jun-03	9.7			
	11-Feb-04	6.0	7.9	382	9.8
	17-Mar-04	6.7		566	9.2
	21-Apr-04	6.5	7.4	301	
	19-May-04	7.1	7.3	374	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	24-Jun-04	7.1	7.3	386	
	29-Jul-04	7.2	7.2	354	
	26-Aug-04	7.5	7.3	362	
	22-Sep-04	8.6	7.7	376	
	20-Oct-04	7.9	7.2	373	10.8
	17-Nov-04	7.9	7.7	383	11.2
	16-Dec-04	7.1	7.4	369	12.1
	29-Mar-05	6.7	7.5	369	
	11-Apr-05	6.9	6.8	329	
	26-May-05	7.6	6.8	383	
	28-Jun-05	8.1	8.2	396	
	11-Jul-05	8.4	7.3	390	11.8
	22-Aug-05	8.6	9.0	380	
	27-Sep-05	8.8	7.7	373	11.6
	25-Oct-05	7.7	8.0	479	
	15-Nov-05	7.5	7.9	367	11.7
	14-Dec-05	4.9	8.1	372	12.0
	18-Jan-06	6.4	8.0	338	12.1
	21-Mar-06	6.8	8.0	380	11.9
	19-Apr-06	7.6	7.8	416	
	23-May-06	8.4	7.9	478	
	20-Jun-06	8.8	7.7	467	
	11-Jul-06	9.5	8.1	457	
	23-Aug-06	10.2	7.9	467	
	20-Sep-06	9.2	8.0	455	
	19-Oct-06	8.6	8.0	462	
	23-Nov-06	7.4	7.9	483	11.8
	17-Dec-06	7.3	7.6	515	
	21-Jan-07	5.7	7.9	495	12.2
	18-Feb-07	5.0	8.1	490	
	18-Mar-07	5.8	7.7	480	
	17-Apr-07	6.8	8.0	471	12.0
	13-May-07	8.4	8.1	426	
	17-Jun-07	8.1	8.0	505	
	15-Jul-07	8.4	7.9	506	11.3
	19-Aug-07	8.5	7.9	500	11.2
	17-Sep-07	8.5	7.9	465	10.1
	18-Oct-07	9.1	8.0	465	10.0
	21-Nov-07	7.0	7.9	503	
	11-Dec-07	6.1	8.0	435	11.3
	22-Jan-08	7.1	7.7	463	
	20-Feb-08	6.5	7.9	484	
	18-Mar-08	6.4	7.9	488	
	2-Apr-08	6.8	7.8	450	11.3
	23-Apr-08	7.1	8.0	393	10.9
	21-May-08	6.9	7.4	430	9.2
	17-Jun-08	7.3	8.1	466	10.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-Jul-08	8.3	7.7	490	9.4
	19-Aug-08	8.1	7.7	533	7.0
	16-Sep-08	8.0	7.8	476	6.7
	22-Oct-08	7.4	7.9	438	6.7
	14-Dec-08	6.9	7.4	402	7.1
	18-Jan-09	6.6	8.0	468	7.2
	8-Feb-09	6.4		427	7.9
	15-Mar-09	7.1	8.1	410	
	12-Apr-09	7.1	8.2	429	
	17-May-09	8.0	7.9	376	11.8
	14-Jun-09	7.9	8.2	890	
	12-Jul-09	8.7	7.6	474	
	9-Aug-09	8.4	8.8	491	
	13-Sep-09	9.0	7.7	451	
	11-Oct-09	7.5	8.6	501	
	15-Nov-09	7.2	7.9	428	
	13-Dec-09	6.3	7.9	475	11.8
	17-Jan-10	6.1	8.3	462	12.3
	7-Feb-10	6.0	7.7	468	12.3
	14-Mar-10	7.1	7.6	465	12.1
	11-Apr-10	7.3	8.2	455	
	16-May-10	7.6	7.9	283	11.8
	13-Jun-10	7.4	7.8	300	15.2
	18-Jul-10	8.0	8.0	317	15.2
	15-Aug-10	8.4	8.2	325	12.6
	12-Sep-10	8.2	8.2	350	11.4
	17-Oct-10	7.9	7.8	346	11.3
	14-Nov-10	7.7	7.9	263	10.1
	19-Dec-10	7.1	8.1	290	10.7
	16-Jan-11	6.9	8.0	304	11.6
	20-Feb-11	3.8	7.8	298	8.6
	13-Mar-11	7.3	8.2	205	12.2
	20-Mar-11	7.0	7.9	166	11.5
	17-Apr-11	6.7	8.1	310	8.5
	15-May-11	7.1	7.1	283	12.4
	12-Jun-11	8.4	8.0	267	12.7
	17-Jul-11	8.6	8.0	242	14.0
	14-Aug-11	8.8	8.7	225	11.2
	18-Sep-11	8.9	8.8	292	11.8
	16-Oct-11	8.3	8.0	341	11.4
	20-Nov-11	7.1	8.4	329	10.1
	18-Dec-11	7.2	8.5	262	10.3
	15-Jan-12	6.7	8.3	262	9.8
	19-Feb-12	6.9	8.2	280	11.4
	18-Mar-12	7.5	7.7	251	9.2
	15-Apr-12	7.4	8.7	314	13.1
	13-May-12	7.4	8.2	401	13.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Jun-12	8.6	7.8	344	7.8
	16-Jul-12	8.6	8.3	346	7.9
	15-Aug-12	8.7	8.2	420	6.9
	18-Sep-12	8.6	7.7	340	10.8
	18-Oct-12	8.9	8.2	313	8.7
	21-Nov-12	7.9	7.7	291	4.0
	20-Dec-12	7.2	7.5	716	10.4
	16-Jan-13	7.2	7.9	365	10.6
	20-Feb-13	6.8	8.0	301	12.1
	20-Mar-13	6.2	7.8	300	13.0
	17-Apr-13	7.1	7.6	310	9.9
	14-May-13	7.0	7.7	295	10.0
	19-Jun-13	7.6	8.1	310	12.4
	17-Jul-13	8.4	7.9	309	8.9
	21-Aug-13	8.4	8.0	338	11.8
	19-Sep-13	8.7	8.0	331	6.8
	17-Oct-13	8.2	8.3	313	6.3
	20-Nov-13	7.3	8.4	331	2.8
	22-Jan-14	1.7	7.6	220	3.9
	19-Mar-14	3.4	7.7	256	6.5
	17-Apr-14	6.8	7.9	345	10.3
	13-May-14	8.6	7.2	322	10.5
	17-Jun-14	8.7	7.7	300	12.3
	15-Jul-14	9.0	8.8	387	4.0
	19-Aug-14	9.4	8.6	380	10.4
	9-Sep-14	9.2	9.0	386	4.2
	20-Oct-14	9.0	8.8	380	4.9
	17-Dec-14	7.1	8.4	377	-
	21-Jan-15	6.3	7.8	367	1.4
	19-Mar-15	5.4	7.9	268	11.0
	23-Apr-15	6.7	7.7	358	13.5
	20-May-15	7.6	7.9	293	15.0
	15-Jun-15	7.8	7.9	348	10.9
	22-Jul-15	8.2	7.8	296	11.4
	12-Aug-15	8.4	8.1	357	11.6
	9-Sep-15	9.1	7.8	352	8.9
	16-Oct-15	7.9	7.8	330	11.2
	19-Nov-15	8.3	7.6	387	13.2
	8-Dec-15	7.0	7.9	371	12.4
	20-Jan-16	6.1	7.8	350	11.7
	18-Feb-16	4.3	7.7	332	12.6
	15-Mar-16	6.9	7.5	339	12.1
	21-Apr-16	7.1	7.6	324	13.4
	18-May-16	7.7	8.0	373	11.8
	22-Jun-16	8.0	7.9	343	12.3
	21-Jul-16	8.7	8.0	365	12.7
	25-Aug-16	9.6	8.1	358	12.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Sep-16	9.4	8.1	515	8.9
	17-Oct-16	9.5	8.0	420	10.3
	15-Nov-16	8.1	8.1	361	11.4
	12-Dec-16	5.5	8.4	503	14.1
	25-Jan-17	7.3	7.6	381	10.0
	16-Feb-17	4.9	8.1	361	13.2
	21-Mar-17	7.2	8.1	384	11.1
	19-Apr-17	7.2	7.1	333	12.9
	16-May-17	6.4	8.3	444	12.6
	28-Jun-17	7.1	7.8	340	12.4
	20-Jul-17	7.3	8.1	344	11.8
	16-Aug-17	7.3	7.7	350	11.0
	19-Sep-17	8.1	7.8	356	11.6
	17-Oct-17	8.1	8.1	358	11.1
	15-Nov-17	7.5	8.0	372	11.7
	14-Dec-17	7.4	7.4	371	12.3
	17-Jan-18	6.5	7.7	342	10.9
	23-Feb-18	6.7	7.8	330	8.4
	20-Mar-18	6.4	7.7	341	15.0
	18-Apr-18	6.4	8.1	541	10.7
	15-May-18	7.6	7.6	473	11.2
	18-Jun-18	17.9	7.7	486.5	11.2
	18-Jul-18	8.9	7.7	494.6	10.9
	23-Aug-18	8.8	8.0	503	10.7
	20-Sep-18	8.9	8.0	501	10.8
	24-Oct-18	3.5	8.3	711	12.0
	21-Nov-18	6.3	8.1		11.0
	12-Dec-18	7.1	8.1	501	11.5
	18-Jan-19	7.0	7.7	490	11.3
	26-Feb-19	6.3	7.9	484.1	11.6
	15-Mar-19	6.7	7.8	473	11.3
	24-Apr-19	6.8	7.7	419.8	11.5
	23-May-19	7.3	7.7	416.3	11.2
	18-Jun-19	7.7	7.8	444.3	11.3
	29-Jul-19	8.2	7.9	472.4	11.0
	29-Aug-19	10.1	7.9	510.8	10.2
	26-Sep-19	11.4	8.2	534.2	10.2
	23-Oct-19		8.1	454.1	10.2
	23-Oct-19	9.6	8.1	454.1	10.2
	22-Nov-19	0.2	7.7	399	10.2
	29-May-20	7.3	8.2	444.7	11.2
	23-Jun-20	8.8	8.6	639	10.6
	30-Jul-20	14.9	8.7	646	9.2
	25-Aug-20	15.4	8.1	588	9.1
	25-Sep-20	13.6	8.0	590	10.2
	30-Oct-20	9.0	8.0	443.8	10.3
	26-Nov-20	5.0	8.1	565	11.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
SW 22A					
	11-Feb-04	2.4	8.7	453	10.8
	17-Mar-04	2.0	8.7	618	10.1
	21-Apr-04	5.6	7.9	393	
	19-May-04	5.6	7.8	496	
	24-Jun-04	7.6	8.2	548	
	29-Jul-04	10.3	8.1	607	
	26-Aug-04	7.4	8.1	586	
	22-Sep-04	13.5	8.1	690	10.4
	20-Oct-04	6.5	7.9	582	11.8
	17-Nov-04	7.7	7.9	642	10.9
	29-Mar-05	4.9	8.1	676	
	11-Apr-05	5.1	7.4	389	
	26-May-05	7.5	7.1	390	
	28-Jun-05	10.0	8.4	629	
	11-Jul-05	11.5	7.3	655	10.7
	22-Aug-05	11.3	9.0	640	
	27-Sep-05	8.5	7.8	597	
	25-Oct-05	6.1	8.7	750	#REF!
	15-Nov-05	5.9	7.8	506	11.7
	14-Dec-05	4.2	8.3	646	12.6
	18-Jan-06	3.2	7.4	469	
	21-Mar-06	5.5	8.3	545	
	19-Apr-06	6.5	8.1	581	
	23-May-06	11.9	8.3	724	
	20-Jun-06	11.6	8.2	695	
	11-Jul-06	13.8	8.4	700	
	23-Aug-06	13.3	8.2	733	
	20-Sep-06	10.8	8.3	732	
	19-Oct-06	8.9	8.2	751	
	23-Nov-06	6.1	8.4	680	12.4
	17-Dec-06	6.0	8.2	713	
	21-Jan-07	2.3	8.4	689	
	18-Mar-07	1.9	8.4	703	
	17-Apr-07	4.8	8.4	649	
	13-May-07	9.3	8.4	614	
	17-Jun-07	8.8	8.2	615	
	15-Jul-07	10.0	8.0	402	10.8
	17-Sep-07	9.1	8.2	697	10.6
	18-Oct-07	10.4	8.6		
	21-Nov-07	4.6	7.9	779	11.1
	11-Dec-07	2.3	8.1	372	13.1
	20-Feb-08	3.5	8.1	654	
	18-Mar-08	3.5	7.9	688	
	2-Apr-08	5.1	7.7	526	12.5
	23-Apr-08	8.6	7.7	523	10.2
	21-May-08	6.6	7.7	576	10.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Jun-08	9.5	8.1	656	9.8
	16-Jul-08	10.0	7.7	709	
	19-Aug-08	9.9	7.8	816	6.7
	16-Sep-08	8.5	7.7	724	10.8
	22-Oct-08	5.8	7.9	606	7.4
	23-Nov-08	5.3	8.1	625	8.3
	14-Dec-08	2.5	7.3	503	8.5
	18-Jan-09	0.2	8.5	631	12.8
	8-Feb-09	4.5		525	9.0
	15-Mar-09	5.5	8.6	520	
	12-Apr-09	7.1	8.2	429	
	17-May-09	11.5	8.5	494	
	14-Jun-09	10.0	8.3	1259	
	12-Jul-09	10.3	8.3	593	
	9-Aug-09	7.5	7.5	725	
	13-Sep-09	12.0	8.1	605	
	11-Oct-09	6.4	8.3	719	12.1
	15-Nov-09	6.4	7.7	569	12.4
	13-Dec-09	0.9	7.9	507	11.8
	17-Jan-10	0.7	8.4	518	11.4
	7-Feb-10	0.0	7.6	586	11.6
	14-Mar-10	6.1	7.4	575	12.6
	11-Apr-10	7.8	8.1	607	
	16-May-10	9.3	8.3	396	11.8
	13-Jun-10	9.8	8.3	439	14.6
	18-Jul-10	8.8	8.3	438	15.2
	15-Aug-10	10.0	8.3	368	10.5
	12-Sep-10	9.3	8.4	467	11.1
	17-Oct-10	7.0	8.1	424	11.4
	14-Nov-10	6.5	8.2	262	10.1
	19-Dec-10	3.6	8.3	363	11.5
	16-Jan-11	2.7	8.3	354	12.7
	20-Feb-11	3.6	8.0	383	10.6
	13-Mar-11	5.8	8.4	314	13.1
	20-Mar-11	5.1	7.6	407	12.0
	17-Apr-11	4.6	8.3	347	9.1
	15-May-11	6.9	7.6	273	12.7
	12-Jun-11	8.2	8.4	375	12.5
	17-Jul-11	11.8	8.4	484	13.3
	14-Aug-11	11.9	8.7	338	10.0
	18-Sep-11	11.0	8.6	392	10.6
	16-Oct-11	8.5	8.1	483	10.9
	20-Nov-11	4.4	8.3	396	11.6
	18-Dec-11	5.2	8.6	302	11.0
	15-Jan-12	2.5	8.6	325	11.2
	19-Feb-12	4.0	8.3	329	12.1
	18-Mar-12	9.2	8.2	358	8.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Apr-12	7.0	8.7	407	12.9
	13-May-12	7.4	7.8	308	13.3
	17-Jun-12	11.8	8.4	506	7.1
	16-Jul-12	11.9	8.5	508	7.5
	15-Aug-12	9.6	8.4	486	6.8
	18-Sep-12	9.7	7.8	491	10.2
	18-Oct-12	8.8	8.4	379	8.2
	21-Nov-12	8.3	7.9	350	4.1
	20-Dec-12	4.6	7.8	889	11.1
	16-Jan-13	6.4	8.1	383	10.8
	20-Feb-13	2.9	8.3	203	14.0
	20-Mar-13	4.4	8.2	375	7.3
	17-Apr-13	6.6	7.9	335	10.5
	14-May-13	6.2	8.0	375	9.2
	19-Jun-13	9.4	8.2	443	11.0
	17-Jul-13	11.0	8.2	469	8.6
	21-Aug-13	10.7	8.2	467	11.6
	19-Sep-13	12.0	8.2	506	6.5
	17-Oct-13	9.2	8.6	422	6.2
	20-Nov-13	5.6	8.3	429	2.0
	17-Apr-14	5.2	8.0	489	11.3
	13-May-14	8.4	7.3	322	10.4
	17-Jun-14	9.4	8.4	410	10.4
	15-Jul-14	9.8	8.7	540	6.9
	19-Aug-14	10.0	8.7	542	11.0
	21-Jan-15	2.2	8.0	446	1.3
	19-Mar-15	1.3	7.7	369	14.8
	23-Apr-15	4.1	8.1	443	13.7
	20-May-15	9.5	8.5	411	14.6
	15-Jun-15	8.4	8.3	484	11.3
	22-Jul-15	8.3	8.3	484	11.8
	12-Aug-15	9.4	8.3	509	11.0
	16-Oct-15	6.9	8.0	418	11.6
	19-Nov-15	8.3	7.8	553	13.2
	8-Dec-15	4.5	8.1	476	12.7
	20-Jan-16	2.7	8.1	391	13.5
	18-Feb-16	3.2	7.9	441	14.1
	15-Mar-16	5.3	7.8	348	12.8
	21-Apr-16	7.3	7.9	407	13.7
	18-May-16	10.1	8.6	517	12.0
	22-Jun-16	11.0	8.5	496	11.3
	21-Jul-16	11.6	8.4	513	11.4
	25-Aug-16	13.1	8.5	525	11.0
	19-Sep-16	11.7	8.3	690	8.2
	17-Oct-16	8.3	8.2	508	11.0
	15-Nov-16	8.3	8.1	496	10.9
	12-Dec-16	1.1	8.0	730	14.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-Jan-17	5.3	8.1	495	11.7
	16-Feb-17	3.2	8.4	436	14.6
	21-Mar-17	4.9	8.2	488	12.1
	19-Apr-17	8.9	7.8	492	13.1
	16-May-17	7.0	8.1	3.16	11.7
	28-Jun-17	8.6	8.2	471	12.1
	20-Jul-17	8.3	8.4	517	12.0
	16-Aug-17	10.3	8.3	506	11.3
	19-Sep-17	10.1	8.2	557	10.8
	17-Oct-17	9.8	8.3	529	10.5
	15-Nov-17	5.4	8.3	465	13.6
	14-Dec-17	5.7	7.8	465	13.5
	17-Jan-18	2.2	7.9	421	13.2
	23-Feb-18	4.0	8.2	361	10.4
	20-Mar-18	2.7	8.2	420	17.7
	18-Apr-18	4.5	8.6	655	12.2
	15-May-18	5.8	7.9	611	11.6
	18-Jun-18	9.8	8.1	693	11.0
	18-Jul-18	14.7	8.2	652	9.3
	23-Aug-18	8.8	8.3	677	10.5
	19-Sep-18	10.8	8.3	704	10.3
	24-Oct-18	7.6	8.2	495.8	11.2
	21-Nov-18	1.7	8.4	483.8	12.9
	12-Dec-18	3.9	8.4	657	12.7
	18-Jan-19	3.6	8.2	672	12.6
	15-Mar-19	3.5	8.3	584	12.5
	24-Apr-19	6.1	8.3	482.7	12.0
	23-May-19	11.0	8.4	570	10.6
	18-Jun-19	7.6	8.4	612	11.3
	29-Jul-19	11.3	8.3	632	10.1
	29-Aug-19	11.1	8.3	553.5	10.7
	26-Sep-19	12.2	8.0	478.6	10.1
	23-Oct-19		8.0	501.8	10.3
	23-Oct-19	9.1	8.0	501.8	10.3
	22-Nov-19	0.3	8.1	407	9.5
	27-Apr-20	6.8	8.4	569	11.7
	29-May-20	8.3	8.9	354.6	11.0
	23-Jun-20	7.5	7.9	451.6	10.8
	30-Jul-20	11.3	8.1	465.7	10.4
	25-Aug-20	9.4	7.6	439	10.7
	25-Sep-20	8.8	7.5	425	10.9
	30-Oct-20	8.5	7.9	475.6	10.6
	26-Nov-20	7.7	7.6	484	10.9
SW 22B					
	18-Oct-07	11.4	8.2	629	9.3
	22-Jan-08	2.0	7.7	574	
SW 22C					

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Apr-07	3.2	8.4	547	13.3
	15-May-07	11.6	8.3	548	10.3
	18-Jun-07	13.3	8.5	697	
	18-Jul-07	14.0	8.0	681	9.9
	22-Aug-07	14.5	8.0	704	9.5
	17-Sep-07	11.0	8.0	651	9.9
	18-Oct-07	11.4	8.2	629	9.3
	21-Nov-07	4.6	7.8	625	10.9
	22-Jan-08	2.0	7.7	574	
	20-Feb-08	1.5	8.1	531	
	18-Mar-08	1.7	7.8	598	
	2-Apr-08	2.5	7.5	440	13.0
	23-Apr-08	10.5	7.8	461	8.7
	21-May-08	7.4	7.5	518	10.6
	17-Jun-08	12.1	8.0	583	8.6
	16-Jul-08	14.9	7.7	529	6.8
	19-Aug-08	13.7	7.6	746	5.5
	16-Sep-08	11.0	7.7	654	9.2
	22-Oct-08	5.9	7.8	497	7.2
	23-Nov-08	3.6	7.8	571	9.0
	14-Dec-08	2.5	6.9	448	8.1
	18-Jan-09	1.3	8.1	554	12.5
	8-Feb-09	1.8		419	9.3
	15-Mar-09	3.3	8.1	419	
	12-Apr-09	6.8	8.5	471	
	17-May-09	14.5	8.4	462	
	14-Jun-09	12.5	8.4	1141	
	12-Jul-09	14.0	8.0	652	10.4
	9-Aug-09	11.6	8.4	634	9.7
	13-Sep-09	14.6	8.2	617	
	11-Oct-09	6.6	8.3	610	12.0
	15-Nov-09	4.7	7.7	533	
	13-Dec-09	0.1	8.1	354	12.5
	17-Jan-10	0.1	8.2	315	15.9
	7-Feb-10	0.7	8.3	426	11.5
	14-Mar-10	4.0	7.5	468	13.5
	11-Apr-10	6.9	8.1	545	
	16-May-10	10.9	8.2	406	10.4
	13-Jun-10	12.9	8.2	450	12.6
	18-Jul-10	13.6	8.1	470	13.0
	15-Aug-10	13.5	8.3	486	9.7
	12-Sep-10	11.1	8.4	478	10.2
	17-Oct-10	7.3	7.8	7.89	10.6
	14-Nov-10	6.0	8.2	271	9.4
	19-Dec-10	2.4	8.4	300	11.9
	16-Jan-11	1.4	8.2	270	12.3
	20-Feb-11	1.7	8.0	315	10.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-Mar-11	2.8	8.3	279	13.8
	20-Mar-11	2.8	7.2	340	12.8
	17-Apr-11	3.0	8.5	266	12.1
	15-May-11	8.5	7.3	280	11.8
	12-Jun-11	12.9	8.3	375	10.5
	17-Jul-11	16.1	8.4	498	10.8
	14-Aug-11	15.1	8.8	333	9.5
	18-Sep-11	12.8	8.8	403	6.8
	16-Oct-11	9.2	7.9	413	9.6
	20-Nov-11	3.6	8.2	332	11.7
	18-Dec-11	1.0	8.4	241	12.6
	15-Jan-12	0.8	8.6	262	11.9
	19-Feb-12	2.1	8.0	182	12.9
	18-Mar-12	11.4	7.8	318	7.4
	15-Apr-12	6.3	8.6	347	13.4
	13-May-12	10.2	8.1	394	11.9
	17-Jun-12	16.1	8.3	526	7.1
	16-Jul-12	16.1	8.8	530	7.6
	15-Aug-12	13.9	8.6	492	6.3
	18-Sep-12	12.5	7.8	468	8.3
	18-Oct-12	9.3	8.7	392	9.0
	21-Nov-12	6.4	8.1	325	4.2
	20-Dec-12	2.9	7.6	735	11.4
	16-Jan-13	2.8	8.0	344	11.1
	20-Feb-13	1.3	8.2	249	14.1
	20-Mar-13	2.2	8.1	308	8.9
	17-Apr-13	4.8	7.9	284	9.6
	14-May-13	6.7	8.0	319	8.7
	19-Jun-13	11.3	8.4	436	10.9
	17-Jul-13	15.8	8.2	483	8.8
	19-Sep-13	13.4	8.3	484	3.8
	17-Oct-13	10.6	9.2	419	6.0
	20-Nov-13	3.6	8.6	351	2.2
	22-Jan-14	-0.1	7.1	236	3.5
	17-Apr-14	2.9	7.4	324	11.7
	13-May-14	10.6	7.2	316	10.4
	17-Jun-14	14.5	8.0	440	9.2
	15-Jul-14	15.0	8.6	509	6.9
	19-Aug-14	13.4	8.7	363	9.7
	9-Sep-14	14.3	8.6	584	5.0
	20-Oct-14	11.3	8.3	542	4.9
	17-Dec-14	2.5	8.4	350	-
	21-Jan-15	0.5	7.3	346	0.3
	23-Apr-15	3.5	8.2	363	14.3
	20-May-15	10.5	8.3	386	13.9
	15-Jun-15	12.6	8.0	487	9.7
	22-Jul-15	12.9	8.1	524	10.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-Aug-15	14.2	8.1	528	9.3
	9-Sep-15	17.2	7.8	506	4.8
	16-Oct-15	8.6	8.0	417	10.2
	19-Nov-15	8.3	7.7	451	12.6
	8-Dec-15	3.8	7.9	413	12.5
	20-Jan-16	1.3	8.0	352	13.8
	18-Feb-16	1.2	7.8	364	14.4
	15-Mar-16	3.7	7.7	278	13.1
	21-Apr-16	7.6	7.8	368	12.8
	18-May-16	9.5	8.4	456	11.0
	22-Jun-16	13.3	8.4	494	10.7
	21-Jul-16	14.9	8.1	534	10.5
	25-Aug-16	16.8	8.5	552	10.8
	19-Sep-16	14.6	8.2	644	8.0
	18-Oct-16	12.5	7.9	619	9.0
	15-Nov-16	7.5	8.0	427	11.2
	12-Dec-16	1.7	8.1	584	15.0
	25-Jan-17	2.8	8.2	397	12.5
	16-Feb-17	1.1	8.1	206	14.7
	21-Mar-17	3.7	8.4	391	12.2
	19-Apr-17	8.0	7.6	402	13.0
	16-May-17	13.4	8.1	456	9.0
	28-Jun-17	11.1	8.2	476	10.2
	20-Jul-17	12.4	8.3	527	10.3
	16-Aug-17	13.5	8.3	432	9.9
	19-Sep-17	13.4	8.2	519	8.7
	17-Oct-17	10.3	8.3	497	9.8
	15-Nov-17	4.5	8.2	414	12.9
	14-Dec-17	1.4	7.8	361	15.6
	17-Jan-18	0.8	7.8	342	14.5
	23-Feb-18	2.1	8.0	295	11.1
	20-Mar-18	0.4	8.1	279	18.5
	18-Apr-18	2.1	8.5	529	12.9
	14-May-18	8.7	8.1	539	10.6
	18-Jun-18	22.8	8.2	632	9.9
	18-Jul-18	10.9	8.2	674	10.0
	23-Aug-18	13.7	8.2	626	9.2
	19-Sep-18	13.8	8.3	658	9.4
	24-Oct-18	5.9	8.2	589	11.2
	21-Nov-18	1.7	8.2	616	12.7
	13-Dec-18	2.8	8.2	616	12.6
	19-Jan-19	2.1	8.1	626	12.9
	19-Mar-19	1.6	8.0	465	12.5
	25-Apr-19	5.0	8.2	474.6	11.6
	27-May-19	10.8	8.2	501	10.0
	21-Jun-19	10.7	8.3	550	10.3
	30-Jul-19	15.0	8.2	600	9.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	30-Aug-19	18.6	8.3	498.6	10.0
	27-Sep-19	16.5	8.3	498.2	10.1
	22-Oct-19		8.1	495.1	10.1
	22-Oct-19	9.7	8.1	495.1	10.1
	21-Nov-19	0.3	8.3	422	9.4
	28-Apr-20	6.3	8.3	486.9	11.5
	28-May-20	11.9	8.8	535	9.8
	24-Jun-20	13.3	8.5	599	9.2
	31-Jul-20	10.1	8.7	678	10.3
	26-Aug-20	11.8	8.0	625	10.0
	26-Sep-20	12.5	8.0	600	11.1
	29-Oct-20	8.8	8.0	475.4	10.5
	27-Nov-20	6.0	8.1	280	11.7
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	17-Mar-04	0.1		385	10.2
	19-May-04	16.9	8.1	521	9.7
	24-Jun-04	14.8	8.2	521	9.0
	29-Jul-04	14.8	8.1	508	8.6
	26-Aug-04	15.7	8.2	500	8.2
	22-Sep-04	15.6	8.0	519	7.9
	20-Oct-04	7.4	7.9	422	11.3
	17-Nov-04	6.0	7.8	407	11.6
	29-Mar-05	1.2	7.5	293	
	11-Apr-05	9.2	7.5	274	11.4
	24-May-05	13.5	7.8	468	8.7
	27-Jun-05	18.8	7.9	610	9.2
	11-Jul-05	18.2	6.9	565	6.8
	22-Aug-05	15.3	8.4	492	7.1
	27-Sep-05	13.3	7.6	517	5.8
	24-Oct-05	8.0	7.9	609	10.6
	14-Nov-05	5.8	8.4	425	10.5
	12-Dec-05	0.2	8.3	277	11.0
	18-Jan-06	0.2	7.2	192	#REF!
	22-Mar-06	0.2	8.5	245	
	18-Apr-06	13.3	8.0	422	
	23-May-06	12.0	8.0	508	
	20-Jun-06	15.4	8.0	590	
	11-Jul-06	17.7	8.2	584	
	23-Aug-06	15.6	7.8	538	#REF!
	19-Sep-06	14.2	8.0	612	
	19-Oct-06	10.0	7.6	487	
	27-Nov-06	6.5	7.9	478	11.6
	17-Dec-06	2.3	7.9	492	
	18-Mar-07	0.2	8.2	456	14.4
	16-Apr-07	2.8	8.3	454	13.3
	13-May-07	12.0	8.3	520	9.8
	17-Jun-07	16.2	8.1	651	5.8

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Nov-07	3.1	7.7	594	11.9
	10-Dec-07	2.5	8.4	407	12.8
	19-Feb-08	0.1	7.9	278	
	2-Apr-08	0.2	7.0	156	
	23-Apr-08	14.4	8.0	441	7.1
	21-May-08	9.5	7.5	473	9.2
	17-Jun-08	13.0	7.6	590	
	15-Jul-08	14.9	7.1	665	6.5
	18-Aug-08	18.3	7.5	645	4.5
	17-Sep-08	12.8	8.3	582	6.5
	20-Oct-08	9.4	7.6	539	7.1
	15-Mar-09	0.7	8.3	384	
	12-Apr-09	9.4	8.3	415	
	17-May-09	20.4	8.3	478	9.2
	14-Jun-09	15.9	7.6	1154	9.9
	12-Jul-09	12.8	8.4	635	
	9-Aug-09	16.9	8.3	633	8.5
	13-Sep-09	14.4	7.7	552	9.7
	11-Oct-09	7.3	7.2	553	
	15-Nov-09	3.5	7.4	481	
	13-Dec-09	0.7	7.9	504	12.8
	14-Mar-10	0.4	8.2	349	15.5
	11-Apr-10	11.1	7.8	495	12.1
	16-May-10	17.0	8.3	440	8.6
	13-Jun-10	19.2	8.2	492	11.3
	18-Jul-10	15.6	8.1	333	11.8
	15-Aug-10	16.6	8.1	533	9.1
	17-Oct-10	7.9	7.9	393	10.9
	14-Nov-10	5.1	8.0	291	12.8
	13-Mar-11	0.1	8.4	189	13.1
	17-Apr-11	2.5	8.1	282	14.7
	15-May-11	9.9	7.9	315	12.8
	12-Jun-11	14.4	8.2	373	9.8
	17-Jul-11	18.5	8.1	501	5.7
	14-Aug-11	16.5	8.4	248	6.1
	18-Sep-11	12.7	8.2	370	9.1
	16-Oct-11	9.7	7.9	361	7.7
	20-Nov-11	1.8	7.8	297	13.1
	18-Dec-11	0.7	8.1	164	11.9
	18-Mar-12	17.6	8.3	342	9.0
	15-Apr-12	6.8	8.3	332	11.7
	13-May-12	14.9	8.2	402	11.7
	17-Jun-12	19.0	8.3	533	14.1
	16-Jul-12	18.6	8.2	513	3.5
	14-Aug-12	16.8	8.2	438	6.6
	18-Sep-12	14.3	7.2	429	8.5
	17-Oct-12	10.4	6.9	350	7.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	20-Nov-12	5.6	7.7	326	8.0
	18-Dec-12	3.9	7.4	620	10.7
	16-Jan-13	0.0	8.2	246	11.4
	16-Apr-13	8.3	8.1	232	10.1
	14-May-13	13.0	8.2	348	5.8
	19-Jun-13	14.2	7.9	305	8.1
	16-Jul-13	19.3	8.0	563	7.4
	16-Oct-13	12.3	8.4	406	5.8
	19-Nov-13	2.9	7.8	268	2.7
	13-May-14	14.1	8.0	396	11.0
	17-Jun-14	17.2	8.0	510	9.9
	15-Jul-14	5.6	8.9	245	4.3
	19-Aug-14	13.2	8.5	533	10.5
	9-Sep-14	15.2	8.7	477	4.0
	23-Oct-14	9.9	7.3	420	6.9
	16-Dec-14	0.8	8.7	251	-
	22-Apr-15	7.1	8.1	358	12.3
	19-May-15	14.8	8.4	416	-
	15-Jun-15	17.5	8.1	499	7.9
	21-Jul-15	17.3	8.2	512	-
	11-Aug-15	16.3	8.1	542	8.2
	8-Sep-15	18.7	7.8	544	6.5
	15-Oct-15	9.4	8.0	426	9.2
	18-Nov-15	8.0	7.9	402	11.0
	8-Dec-15	3.9	8.0	347	21.2
	15-Mar-16	5.5	7.9	258	13.0
	21-Apr-16	7.0	8.0	336	12.5
	18-May-16	10.0	8.3	427	11.5
	22-Jun-16	15.6	8.3	490	8.1
	20-Jul-16	17.4	831.0	503	7.5
	24-Aug-16	18.4	8.4	527	7.6
	19-Sep-16	16.3	8.2	579	8.2
	18-Oct-16	14.1	7.9	537	10.9
	15-Nov-16	7.3	8.1	408	11.6
	12-Dec-16	1.1	7.7	453	14.2
	24-Jan-17	1.8	8.1	246	14.1
	16-Feb-17	0.5	8.1	293	15.9
	21-Mar-17	3.0	8.1	306	12.8
	19-Apr-17	11.0	8.0	385	13.2
	16-May-17	18.0	8.1	457	9.4
	28-Jun-17	18.7	8.4	531	8.1
	19-Jul-17	18.4	8.4	576	7.5
	15-Aug-17	17.7	8.7	463	8.6
	17-Sep-17	15.8	8.0	550	8.3
	17-Oct-17	9.9	8.0	384	10.3
	14-Nov-17	4.2	8.1	333	9.7
SW 24					

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Apr-04	8.1	8.0	243	
	19-May-04	12.9	8.0	357	10.5
	24-Jun-04	12.3	8.0	370	
	29-Mar-05	5.7	7.8	274	12.2
	11-Apr-05	5.9	7.5	249	
	26-May-05	12.0	7.7	329	10.6
	28-Jun-05	16.0	8.1	383	
	11-Jul-05	18.7	6.8	374	7.7
	17-Jan-06	2.0	6.4	216	
	22-Mar-06	3.4	8.3	238	
	18-Apr-06	9.5	8.0	335	
	23-May-06	8.6	8.0	412	
	20-Jun-06	14.7	7.7	473	
	19-Oct-06	10.3	7.5	394	
	27-Nov-06	7.2	7.8	420	10.2
	17-Dec-06	3.6	7.8	428	12.6
	21-Jan-07	1.0	8.0	412	
	18-Mar-07	3.5	8.1	369	
	17-Apr-07	3.4	8.2	380	12.7
	19-Feb-08	1.5	7.9	379	
	17-Mar-08	0.4	7.5	399	
	2-Apr-08	2.8	7.6	267	
	23-Apr-08	9.6	7.8	339	8.7
	6-May-08	7.6	7.1	403	10.1
	21-May-08	7.5	7.6	366	9.5
	17-Jun-08	10.4	7.6	444	9.0
	15-Jul-08	13.4	7.1	491	7.3
	18-Aug-08	17.8	7.4	541	4.3
	16-Sep-08	11.3	7.9	493	7.4
	21-Oct-08	6.4	7.7	396	7.7
	23-Nov-08	4.1	7.8	420	8.0
	14-Dec-08	2.3	7.6	337	
	18-Jan-09	0.8	8.4	394	11.9
	8-Feb-09	2.6	8.8	299	9.5
	15-Mar-09	4.0	8.6	340	
	12-Apr-09	8.4	8.4	372	
	17-May-09	14.8	8.1	350	
	14-Jun-09	7.2	7.3	682	10.2
	12-Jul-09	11.6	8.2	442	10.4
	9-Aug-09	15.2	8.7	451	8.9
	13-Sep-09	14.2	7.8	307	7.1
	11-Oct-09	5.2	8.4	489	12.6
	15-Nov-09	4.6	7.3	378	
	13-Dec-09	0.9	7.9	425	14.0
	17-Jan-10	1.5	8.5	391	11.4
	14-Mar-10	3.7	7.8	383	13.5
	11-Apr-10	5.7	7.9	400	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	16-May-10	11.2	8.1	292	9.5
	13-Jun-10	12.1	8.0	289	12.2
	18-Jul-10	14.5	7.8	372	12.0
	15-Aug-10	15.3	8.2	358	8.9
	12-Sep-10	11.2	8.2	334	10.3
	17-Oct-10	8.9	7.8	310	9.5
	14-Nov-10	5.7	8.1	242	11.9
	19-Dec-10	2.1	8.2	210	12.7
	16-Jan-11	1.6	8.5	219	11.3
	20-Feb-11	0.4	8.1	216	11.9
	13-Mar-11	0.3	8.3	221	12.0
	17-Apr-11	5.0	8.3	254	12.7
	15-May-11	7.5	7.8	238	12.5
	12-Jun-11	11.6	8.1	272	10.8
	17-Jul-11	16.4	8.2	344	7.9
	14-Aug-11	15.6	8.3	264	8.7
	18-Sep-11	11.9	8.3	283	9.6
	16-Oct-11	8.7	8.0	323	8.7
	20-Nov-11	1.9	7.9	252	13.6
	18-Dec-11	2.0	8.3	196	12.7
	15-Jan-12	0.9	8.3	183	13.3
	19-Feb-12	1.9	8.0	192	12.3
	18-Mar-12	11.5	8.1	274	10.1
	15-Apr-12	5.6	8.7	256	11.1
	13-May-12	11.5	7.1	304	5.1
	17-Jun-12	16.6	8.2	370	12.2
	16-Jul-12	19.2	8.4	400	6.5
	14-Aug-12	14.3	8.0	422	6.7
	18-Sep-12	13.3	7.4	349	8.7
	17-Oct-12	10.1	7.0	297	7.2
	20-Nov-12	5.9	287.0	7.75	9.0
	18-Dec-12	4.3	7.5	581	9.6
	16-Jan-13	1.0	8.1	264	11.9
	20-Feb-13	0.0	8.1	216	15.3
	20-Mar-13	0.8	8.1	209	8.8
	16-Apr-13	6.1	7.9	221	9.7
	13-May-13	10.9	8.2	274	10.0
	19-Jun-13	11.6	8.1	279	10.2
	16-Jul-13	17.1	8.0	354	8.0
	21-Aug-13	15.8	8.1	360	7.7
	18-Sep-13	10.3	7.8	306	11.0
	16-Oct-13	12.0	8.3	321	5.5
	19-Nov-13	3.4	8.5	261	2.6
	16-Apr-14	2.7	8.3	187	10.4
	13-May-14	11.4	8.2	282	11.1
	17-Jun-14	13.2	8.3	222	10.0
	15-Jul-14	13.0	8.3	284	5.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Aug-14	9.1	8.4	410	10.0
	9-Sep-14	13.7	8.7	384	2.8
	23-Oct-14	7.8	8.3	367	6.4
	16-Dec-14	2.4	9.0	280	-
	20-Jan-15	-0.1	7.7	251	1.4
	18-Mar-15	0.4	8.2	197	13.6
	22-Apr-15	6.5	8.1	295	12.3
	19-May-15	11.0	8.3	286	-
	15-Jun-15	12.8	8.1	313	8.9
	21-Jul-15	14.6	8.2	349	-
	11-Aug-15	14.1	8.3	363	10.0
	8-Sep-15	16.9	7.8	370	8.6
	15-Oct-15	8.8	8.0	293	10.5
	18-Nov-15	8.0	7.9	337	10.7
	8-Dec-15	4.3	8.1	302	19.7
	19-Jan-16	0.0	7.9	230	15.6
	17-Feb-16	0.5	7.9	248	14.5
	15-Mar-16	6.2	8.0	270	12.7
	21-Apr-16	6.4	8.1	273	13.0
	18-May-16	9.0	8.4	333	11.5
	22-Jun-16	13.9	8.4	349	9.7
	20-Jul-16	15.7	8.2	371	7.6
	24-Aug-16	17.7	8.6	382	9.9
	19-Sep-16	15.9	8.3	381	8..88
	18-Oct-16	14.7	7.7	374	10.9
	15-Nov-16	8.1	8.1	323	10.4
	12-Dec-16	0.5	7.4	412	10.8
	24-Jan-17	2.7	8.1	230	12.9
	16-Feb-17	-0.1	8.2	265	16.0
	21-Mar-17	3.9	8.2	23	12.3
	19-Apr-17	10.4	8.2	302	13.2
	16-May-17	14.8	8.6	343	7.5
	28-Jun-17	13.4	8.4	357	9.9
	19-Jul-17	15.7	8.5	248	9.6
	15-Aug-17	16.3	8.8	310	9.7
	17-Sep-17	16.1	8.2	385	9.5
	17-Oct-17	10.5	8.1	365	9.4
	14-Nov-17	6.0	8.2	316	8.2
	14-Dec-17	-0.1	8.2	251	-
	18-Jan-18	0.5	7.9	235	11.0
	24-Feb-18	2.2	8.3	236	16.3
	15-May-18	10.1	8.1	384	10.1
	18-Jun-18	16.5	8.2	431.1	8.9
	19-Jul-18	15.1	7.9	423.7	8.7
	24-Aug-18	16.3	8.2	453.5	6.5
	19-Sep-18	14.4	8.2	452.5	4.0
	25-Oct-18	5.7	7.9	419.5	8.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-Nov-18	0.7	8.2		12.7
	13-Dec-18	2.0	8.0	417.3	12.4
	19-Mar-19	1.6	8.3	372	13.0
	25-Apr-19	6.0	8.2	299	11.1
	27-May-19	12.6	8.3	376.6	9.7
	21-Jun-19	13.5	8.2	404.4	9.1
	30-Jul-19	18.6	8.0	395.7	8.1
	30-Aug-19	14.5	8.2	391	9.0
	27-Sep-19	15.8	8.2	366.1	8.1
	22-Oct-19		8.1	488.2	10.0
	22-Oct-19	8.9	8.1	488.2	10.0
	21-Nov-19	0.4	8.1	375	9.6
	24-Jan-20	4.9	8.1	476.2	12.4
	28-Apr-20	6.3	8.3	374.2	11.8
	28-May-20	9.3	8.8	403.3	10.7
	24-Jun-20	13.0	8.1	443	9.3
	31-Jul-20	17.3	8.9	408	8.8
	26-Aug-20	15.2	8.4	380	9.3
	26-Sep-20	9.0	8.3	500	
	29-Oct-20	8.1	7.8	467.9	10.0
	27-Nov-20	6.8	8.1	546	11.6
	22-Dec-20	5.2	8.1	531	12.2
SW 24A					
	21-Apr-04	6.6	7.5	274	
	19-May-04	7.4	8.0	357	
	24-Jun-04	7.4	7.5	396	
	29-Jul-04	7.8	7.6	416	
	26-Aug-04	8.2	7.5	432	
	22-Sep-04	7.8	7.6	455	
	20-Oct-04	7.2	7.7	432	11.7
	17-Nov-04	7.4	7.7	440	11.1
	16-Dec-04	6.7	7.7	382	
	29-Mar-05	5.6	7.8	369	12.6
	11-Apr-05	6.0	7.4	298	
	26-May-05	7.4	7.7	345	12.1
	28-Jun-05	8.3	8.2	404	
	11-Jul-05	9.1	6.9	427	
	22-Aug-05	10.2	8.3	397	
	28-Sep-05	10.4	7.7	480	10.9
	15-Nov-05	6.6	7.9	419	
	12-Dec-05	5.4	8.3	405	11.2
	17-Jan-06	3.0	7.9	305	13.4
	22-Mar-06	4.3	8.5	284	
	18-Apr-06	9.0	8.3	351	
	24-May-06	8.9	8.3	447	
	20-Jun-06	11.3	8.2	492	
	11-Jul-06	12.4	8.3	468	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	23-Aug-06	11.8	8.0	492	
	20-Sep-06	10.5	7.9	475	
	19-Oct-06	9.3	8.0	508	
	27-Nov-06	7.0	8.1	518	12.2
	17-Dec-06	4.0	8.1	515	
	21-Jan-07	2.9	8.2	520	
	18-Mar-07	3.9	8.3	459	
	17-Apr-07	4.2	8.4	417	
	13-May-07	9.3	8.3	441	11.2
	17-Jun-07	8.5	8.1	522	11.5
	15-Jul-07	11.0	8.0	507	9.9
	19-Aug-07	13.0	8.1	519	
	17-Sep-07	9.8	7.9	506	9.7
	18-Oct-07	10.7	7.8	525	9.0
	19-Nov-07	4.8	7.9	572	11.6
	10-Dec-07	4.2	8.0	505	12.6
	21-Jan-08	2.9	7.6	390	
	19-Feb-08	3.0	7.9	453	
	17-Mar-08	2.0	7.1	466	
	2-Apr-08	2.0	7.1	466	
	23-Apr-08	9.6	8.0	351	
	6-May-08	6.8	7.1	421	11.3
	21-May-08	7.2	7.6	403	10.5
	17-Jun-08	8.1	7.9	479	9.8
	15-Jul-08	10.3	7.0	511	8.5
	18-Aug-08	12.8	7.4	574	5.5
	16-Sep-08	9.8	8.1	542	8.2
	21-Oct-08	5.9	7.9	480	7.9
	23-Nov-08	3.5	7.5	461	8.3
	14-Dec-08	2.8	7.2	426	8.0
	18-Jan-09	4.1	8.3	252	9.5
	8-Feb-09	3.5	8.9	452	10.2
	15-Mar-09	4.8	8.4	395	
	12-Apr-09	7.1	8.4	413	
	17-May-09	14.0	7.8	378	
	14-Jun-09	9.1	7.6	911	
	12-Jul-09	9.6	8.5	502	
	9-Aug-09	11.2	6.8	362	10.3
	13-Sep-09	10.4	7.8	472	
	11-Oct-09	7.0	8.4	554	
	15-Nov-09	4.8	7.3	488	
	13-Dec-09	3.4	7.7	545	
	17-Jan-10	3.5	8.7	508	11.0
	7-Feb-10	2.4	7.7	368	12.6
	14-Mar-10	4.9	8.0	460	12.9
	11-Apr-10	5.4	7.8	430	
	16-May-10	9.8	8.2	318	10.6

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-Jun-10	9.8	8.2	334	12.6
	18-Jul-10	12.5	8.2	399	12.7
	15-Aug-10	12.3	8.3	336	9.8
	12-Sep-10	10.1	8.2	403	10.5
	17-Oct-10	7.7	8.0	290	11.0
	14-Nov-10	5.9	8.3	303	12.4
	19-Dec-10	4.0	8.2	201	11.8
	16-Jan-11	3.7	8.3	292	12.9
	20-Feb-11	4.3	8.0	277	12.4
	13-Mar-11	4.3	8.1	272	11.5
	17-Apr-11	5.4	8.2	280	12.9
	15-May-11	6.9	7.7	180	12.3
	12-Jun-11	8.6	8.1	290	6.7
	17-Jul-11	9.6	7.8	356	9.4
	14-Aug-11	10.6	8.5	278	10.7
	18-Sep-11	10.5	8.1	333	9.3
	16-Oct-11	8.0	7.9	356	11.0
	20-Nov-11	5.0	7.5	348	12.3
	18-Dec-11	3.7	8.3	139	12.0
	15-Jan-12	3.1	8.4	238	12.5
	19-Feb-12	3.2	8.0	261	14.1
	18-Mar-12	9.1	8.1	264	10.9
	15-Apr-12	5.7	8.5	303	10.0
	13-May-12	10.2	8.1	309	10.5
	17-Jun-12	13.5	8.3	410	12.9
	16-Jul-12	15.0	8.4	427	6.8
	14-Aug-12	12.5	8.1	454	7.4
	18-Sep-12	11.4	7.3	398	9.6
	17-Oct-12	9.4	7.4	354	7.9
	20-Nov-12	6.7	7.8	348	9.1
	18-Dec-12	6.6	7.5	743	9.5
	16-Jan-13	2.9	8.0	317	11.5
	20-Feb-13	1.9	8.0	247	14.6
	20-Mar-13	2.6	8.1	254	7.0
	16-Apr-13	6.2	8.1	248	10.0
	13-May-13	7.2	8.1	239	10.1
	19-Jun-13	9.8	8.3	339	11.4
	16-Jul-13	12.4	8.1	406	9.8
	21-Aug-13	12.5	8.2	406	9.7
	18-Sep-13	8.3	7.8	370	12.0
	16-Oct-13	10.4	8.4	379	6.5
	19-Nov-13	4.3	8.1	324	2.5
	18-Dec-13	3.7	8.6	321	4.2
	21-Jan-14	1.1	7.6	1.56	3.3
	16-Apr-14	3.4	8.2	279	10.4
	13-May-14	9.4	8.3	246	10.4
	17-Jun-14	10.8	8.4	359	10.0

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Jul-14	12.0	7.8	366	4.7
	23-Oct-14	7.3	8.2	428	4.3
	16-Dec-14	4.0	8.7	370	-
	20-Jan-15	1.8	7.9	344	1.4
	18-Mar-15	1.5	8.4	252	13.2
	22-Apr-15	5.5	8.1	308	12.8
	19-May-15	9.5	8.4	314	-
	15-Jun-15	10.4	8.1	373	9.3
	21-Jul-15	10.9	7.5	382	-
	11-Aug-15	11.4	8.2	414	10.0
	25-Aug-15	11.9	8.2	366	10.2
	8-Sep-15	13.1	7.8	416	9.5
	15-Oct-15	8.4	8.0	277	11.0
	18-Nov-15	7.9	8.0	421	10.3
	8-Dec-15	5.2	8.1	389	19.4
	19-Jan-16	3.4	8.1	322	14.6
	17-Feb-16	3.3	8.0	339	14.3
	15-Mar-16	5.9	7.9	276	12.6
	21-Apr-16	5.7	8.1	268	13.6
	18-May-16	7.9	8.4	304	12.4
	22-Jun-16	12.2	8.3	394	10.6
	5-Jul-16	13.5	8.4	401	14.7
	20-Jul-16	13.1	7.8	385	9.7
	9-Aug-16	14.0	8.3	246	10.9
	24-Aug-16	17.7	8.6	382	9.9
	19-Sep-16	12.7	8.1	545	
	18-Oct-16	12.9	7.8	445	12.3
	15-Nov-16	7.2	8.1	382	11.5
	12-Dec-16	0.9	7.9	481	13.9
	24-Jan-17	3.9	8.2	319	13.2
	16-Feb-17	1.4	8.3	323	15.2
	21-Mar-17	4.8	8.4	343	12.4
	19-Apr-17	8.8	8.2	286	15.7
	16-May-17	12.2	8.8	344	10.5
	28-Jun-17	8.9	8.3	351	11.7
	7-Jul-17	12.1	8.1	382	11.1
	19-Jul-17	11.6	8.4	422	10.4
	2-Aug-17	12.7	8.4	401	10.0
	15-Aug-17	12.1	8.7	347	10.5
	17-Sep-17	12.2	8.2	428	10.2
	17-Oct-17	8.9	8.2	399	10.5
	14-Nov-17	6.1	8.3	394	8.0
	14-Dec-17	3.1	8.3	360	13.4
	18-Jan-18	2.7	7.9	299	9.3
	24-Feb-18	3.3	8.2	280	13.9
	21-Mar-18	1.1	8.2	293	14.4
	18-Apr-18	0.2	8.2	255	11.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-May-18	7.4	7.9	457	11.1
	18-Jun-18	8.2	8.2	504	10.1
	19-Jul-18	10.7	8.2	516	10.2
	24-Aug-18	11.9	8.3	529	9.9
	20-Sep-18	11.8	8.2	526	9.3
	25-Oct-18	6.0	8.2	539	11.4
	22-Nov-18	1.1	8.3		12.4
	13-Dec-18	4.0	8.2	516	12.1
	19-Jan-19	1.3	8.2	479.4	13.1
	19-Mar-19	3.6	8.3	438.7	12.4
	25-Apr-19	5.8	8.2	333.3	11.3
	27-May-19	10.0	8.3	409	10.7
	21-Jun-19	10.8	8.3	448.4	10.1
	30-Jul-19	12.7	8.2	467.7	9.5
	30-Aug-19	14.4	8.2	424.8	9.7
	27-Sep-19	15.6	8.0	451	8.9
	22-Oct-19		8.1	394.8	8.2
	22-Oct-19	8.8	8.1	394.8	8.2
	28-May-20	8.2	8.6	401.4	11.0
	24-Jun-20	12.5	8.3	408	9.9
	31-Jul-20	8.8	8.3	497.2	10.6
	26-Aug-20	11.7	8.1	470.1	9.8
	26-Sep-20	10.4	8.1	470	
	29-Oct-20	7.9	7.9	362.7	9.9
	27-Nov-20	7.1	8.0	549	11.4
	22-Dec-20	4.2	8.1	524	12.4
SW 24B					
	10-Feb-04	2.1	8.6	338	11.4
	17-Mar-04	3.7		471	9.6
	19-Apr-04	7.1	8.1	255	
	19-May-04	11.6	8.2	380	
	24-Jun-04	12.0	8.2	437	
	29-Jul-04	12.4	8.2	453	
	26-Aug-04	10.0	8.1	386	
	22-Sep-04	10.1	8.0	412	
	20-Oct-04	7.4	8.0	387	
	17-Nov-04	6.6	8.0	416	12.0
	16-Dec-04	2.9	8.2	358	
	29-Mar-05	5.2	8.0	338	
	11-Apr-05	4.6	7.3	254	
	26-May-05	11.2	8.2	368	
	28-Jun-05	13.6	8.4	450	
	11-Jul-05	12.8	7.1	440	10.3
	22-Aug-05	10.8	8.5	410	
	28-Sep-05	9.9	7.9	415	
	24-Oct-05	7.7	8.0	536	
	15-Nov-06	7.1	8.5	235	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-Dec-05	2.8	8.5	393	11.8
	17-Jan-06	5.8	7.7	328	12.1
	22-Mar-06	3.9	8.4	330	
	18-Apr-06	7.4	8.3	389	
	23-May-06	7.0	8.1	458	
	20-Jun-06	9.6	7.9	495	
	11-Jul-06	10.8	7.8	519	
	23-Aug-06	11.0	7.6	577	
	20-Sep-06	10.3	7.6	564	
	19-Oct-06	8.3	7.7	533	
	27-Nov-06	7.0	7.8	534	
	17-Dec-06	5.9	7.8	533	
	21-Jan-07	4.8	8.2	542	
	18-Mar-07	5.5	8.2	480	
	17-Apr-07	5.7	8.3	462	
	13-May-07	7.4	8.2	442	11.7
	17-Jun-07	12.2	8.3	526	10.0
	15-Jul-07	9.2	7.8	569	11.3
	17-Sep-07	10.0	7.7	420	
	18-Oct-07	11.4	8.2	629	9.3
	19-Nov-07	5.9	7.8	581	11.3
	10-Dec-07	5.8	7.9	488	11.2
	21-Jan-08	5.6	7.6	471	
	19-Feb-08	5.4	7.9	486	
	17-Mar-08	4.7	7.2	500	
	2-Apr-08	5.8	7.7	307	
	23-Apr-08	7.5	7.8	386	10.9
	6-May-08	6.5	6.8	452	11.7
	21-May-08	6.5	7.6	427	10.6
	17-Jun-08	8.9	7.8	479	9.6
	15-Jul-08	8.7	7.0	562	8.7
	18-Aug-08	9.1	7.2	619	6.6
	16-Sep-08	8.5	8.1	568	9.1
	21-Oct-08	7.0	7.9	521	8.0
	23-Nov-08	6.5	7.6	538	8.5
	14-Dec-08	5.9	7.1	433	7.0
	18-Jan-09	4.7	8.3	487	10.7
	8-Feb-09	5.4	8.7	481	9.6
	15-Mar-09	6.0	8.4	413	
	12-Apr-09	6.7	8.4	426	
	17-May-09	8.1	8.1	380	11.7
	14-Jun-09	7.9	7.4	880	
	12-Jul-09	8.0	8.4	519	12.0
	9-Aug-09	9.7	8.8	545	11.0
	13-Sep-09	9.3	8.2	532	
	11-Oct-09	6.5	8.5	548	
	15-Nov-09	6.3	7.3	512	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-Dec-09	5.7	7.6	572	
	17-Jan-10	5.2	8.1	555	12.1
	7-Feb-10	4.8	7.6	552	12.2
	14-Mar-10	5.9	7.8	471	12.3
	11-Apr-10	6.1	7.8	473	
	16-May-10	7.5	8.1	309	11.5
	13-Jun-10	7.5	8.0	313	14.9
	18-Jul-10	9.3	8.0	365	12.9
	15-Aug-10	9.0	8.1	377	11.6
	12-Sep-10	8.9	8.1	377	11.6
	17-Oct-10	7.4	8.0	371	11.0
	14-Nov-10	6.6	8.2	320	12.2
	19-Dec-10	4.0	8.1	283	11.7
	16-Jan-11	5.6	8.3	323	11.9
	20-Feb-11	4.4	8.0	218	11.5
	13-Mar-11	5.2	8.1	299	11.0
	17-Apr-11	5.9	8.2	302	12.7
	15-May-11	6.8	7.6	254	12.4
	12-Jun-11	8.4	7.9	230	7.8
	17-Jul-11	11.0	7.8	293	9.1
	14-Aug-11	10.5	8.3	292	11.0
	18-Sep-11	9.7	8.2	352	11.1
	16-Oct-11	8.4	7.1	358	10.6
	20-Nov-11	5.8	7.5	356	12.3
	18-Dec-11	5.9	8.1	236	11.1
	15-Jan-12	5.3	8.3	262	11.5
	19-Feb-12	5.1	7.8	286	12.7
	18-Mar-12	7.5	8.0	274	11.4
	15-Apr-12	6.2	8.5	315	10.8
	13-May-12	7.5	8.0	306	11.5
	17-Jun-12	9.1	8.1	359	14.2
	16-Jul-12	11.0	8.2	415	7.8
	14-Aug-12	9.4	7.9	486	7.7
	18-Sep-12	9.1	7.1	385	10.4
	17-Oct-12	8.4	7.4	344	8.2
	20-Nov-12	6.9	7.6	363	9.1
	18-Dec-12	5.6	7.7	720	9.6
	16-Jan-13	5.7	7.9	336	11.1
	20-Feb-13	4.8	8.0	303	12.9
	20-Mar-13	4.5	8.0	253	5.5
	16-Apr-13	6.1	8.0	256	10.0
	13-May-13	7.2	8.2	241	10.2
	19-Jun-13	9.2	8.2	314	11.9
	16-Jul-13	9.0	7.9	284	10.9
	21-Aug-13	9.2	8.0	324	11.1
	18-Sep-13	8.8	7.8	383	12.3
	16-Oct-13	8.7	8.3	362	7.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Nov-13	6.5	8.3	354	2.3
	18-Dec-13	4.5	8.6	334	7.5
	21-Jan-14	4.5	8.1	320	6.5
	16-Apr-14	5.8	8.2	352	10.2
	13-May-14	7.9	8.0	306	10.2
	17-Jun-14	8.2	8.0	247	10.2
	15-Jul-14	9.1	7.7	351	4.7
	23-Oct-14	7.5	8.1	437	9.0
	16-Dec-14	5.9	8.6	412	-
	20-Jan-15	4.2	7.8	378	1.3
	18-Mar-15	3.8	8.2	281	13.2
	22-Apr-15	6.3	8.0	350	12.9
	19-May-15	7.6	8.3	290	-
	15-Jun-15	10.4	8.1	373	9.3
	21-Jul-15	8.6	7.9	357	-
	11-Aug-15	8.9	8.1	388	11.4
	8-Sep-15	10.9	7.8	417	10.5
	15-Oct-15	8.2	8.0	384	11.2
	18-Nov-15	7.1	7.9	417	12.0
	8-Dec-15	6.1	8.0	403	19.4
	19-Jan-16	4.8	7.9	338	12.8
	17-Feb-16	5.0	7.9	374	13.1
	15-Mar-16	6.4	7.8	311	12.6
	21-Apr-16	6.3	8.0	295	13.1
	18-May-16	6.6	8.3	337	12.4
	22-Jun-16	8.4	8.1	347	11.9
	20-Jul-16	9.5	8.1	393	11.2
	24-Aug-16	13.5	8.3	405	10.3
	19-Sep-16	11.1	7.9	422	10.5
	18-Oct-16	10.2	7.7	439	14.2
	15-Nov-16	6.5	8.1	381	12.6
	12-Dec-16	4.6	7.9	482	12.4
	24-Jan-17	6.1	8.1	358	11.9
	16-Feb-17	4.7	8.2	380	13.8
	21-Mar-17	5.6	8.2	365	12.1
	19-Apr-17	7.3	7.8	323	14.2
	16-May-17	8.0	8.5	336	11.9
	28-Jun-17	7.2	7.9	356	12.1
	7-Jul-17	8.3	7.9	350	12.3
	19-Jul-17	8.2	7.9	384	11.7
	15-Aug-17	8.8	8.6	329	12.5
	17-Sep-17	9.3	8.0	403	11.0
	17-Oct-17	8.0	8.0	419	11.6
	14-Nov-17	6.5	8.2	415	8.0
	14-Dec-17	5.6	8.2	398	12.5
	18-Jan-18	5.4	7.8	241	8.3
	24-Feb-18	5.6	8.1	325	12.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	21-Mar-18	4.3	8.1	343	12.1
	19-Apr-18	5.0	8.1	318	8.9
	15-May-18	8.5	8.1	430	10.9
	18-Jun-18	11.1	8.0	490.2	10.9
	19-Jul-18	9.1	8.0	512	10.8
	24-Aug-18	10.7	8.0	506	10.4
	20-Sep-18	12.1	8.3	528	9.7
	25-Oct-18	6.6	8.1	527	11.4
	22-Nov-18	6.0	8.2		12.2
	13-Dec-18	6.3	8.1	537	11.6
	19-Jan-19	5.3	8.0	525	12.2
	19-Mar-19	5.8	8.1	454.1	11.8
	25-Apr-19	6.4	8.2	371.7	11.2
	27-May-19	7.5	8.1	45.9	11.4
	21-Jun-19	7.9	8.2	435.4	11.1
	30-Jul-19	10.0	8.1	479	10.4
	30-Aug-19	11.0	8.2	469.8	9.7
	27-Sep-19	12.3	8.1	408.4	9.1
	22-Oct-19		7.9	411.5	8.6
	22-Oct-19	9.3	7.9	411.5	8.6
	24-Jan-20	3.3	8.1	459.9	12.4
	28-May-20	12.0	8.9	418.4	9.9
	24-Jun-20	11.5	8.6	445.2	10.0
	31-Jul-20	13.0	8.6	498	9.5
	26-Aug-20	9.1	7.8	491.1	10.7
	26-Sep-20	8.9	8.1	300	
	29-Oct-20	8.4	8.0	400.1	8.5
	27-Nov-20	6.0	8.2	538	11.5
	22-Dec-20	6.0	8.0	539	12.0
SW 24C					
	19-Feb-08	4.5	8.0	475	#REF!
	17-Mar-08	3.6	7.4	491	
	2-Apr-08	3.6	7.4	491	
	23-Apr-08	8.1	7.8	377	10.2
	6-May-08	6.6	7.0	443	12.1
	21-May-08	6.8	7.6	423	11.1
	17-Jun-08	8.3	7.6	453	10.3
	15-Jul-08	9.4	7.0	552	9.5
	18-Aug-08	10.4	7.3	604	6.5
	16-Sep-08	9.0	8.2	559	9.6
	21-Oct-08	6.5	7.9	588	8.4
	23-Nov-08	5.5	7.9	285	9.6
	14-Dec-08	5.1	7.5	429	7.1
	18-Jan-09	3.9	8.5	491	11.7
	8-Feb-09	4.8		472	9.4
	15-Mar-09	5.6	8.6	412	
	12-Apr-09	6.8	8.4	426	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-May-09	9.7	8.2	337	11.2
	14-Jun-09	8.6	7.6	907	
	12-Jul-09	8.5	8.3	514	
	9-Aug-09	10.5	8.4	530	10.6
	13-Sep-09	9.9	8.1	506	
	11-Oct-09	6.3	8.4	549	
	15-Nov-09	5.6	7.3	499	
	13-Dec-09	4.2	7.7	540	
	17-Jan-10	3.7	8.2	533	12.9
	7-Feb-10	2.9	7.7	506	12.1
	14-Mar-10	5.5	7.8	470	12.8
	11-Apr-10	5.9	7.3	462	
	16-May-10	8.2	8.2	313	11.4
	13-Jun-10	8.4	8.1	327	14.1
	18-Jul-10	10.5	8.1	381	12.7
	15-Aug-10	10.2	8.2	378	11.0
	17-Oct-10	7.2	8.0	374	11.5
	14-Nov-10	6.5	8.2	317	12.3
	19-Dec-10	4.8	8.1	306	12.3
	16-Jan-11	4.9	8.4	311	12.3
	20-Feb-11	4.4	8.1	219	11.6
	13-Mar-11	4.9	8.2	242	11.5
	17-Apr-11	5.7	8.2	278	12.9
	15-May-11	6.8	7.7	252	13.3
	12-Jun-11	8.3	8.0	288	6.5
	17-Jul-11	11.1	7.9	364	12.6
	14-Aug-11	10.5	8.3	284	10.8
	18-Sep-11	9.5	8.3	344	10.6
	16-Oct-11	8.2	7.9	349	11.2
	20-Nov-11	5.1	7.6	219	12.7
	15-Jan-12	4.3	8.3	257	12.2
	19-Feb-12	4.4	8.1	276	12.3
	18-Mar-12	7.8	8.1	273	11.4
	15-Apr-12	5.9	8.4	309	11.1
	13-May-12	8.3	8.0	310	11.4
	17-Jun-12	10.3	8.1	369	14.6
	16-Jul-12	12.4	8.2	419	7.3
	14-Aug-12	10.1	7.8	472	7.5
	18-Sep-12	10.0	7.4	392	9.9
	17-Oct-12	8.3	7.2	349	8.2
	20-Nov-12	6.9	7.8	357	9.3
	18-Dec-12	6.2	7.5	741	9.6
	16-Jan-13	4.8	8.1	349	11.6
	20-Feb-13	3.1	8.1	284	14.2
	20-Mar-13	4.1	8.0	277	6.4
	16-Apr-13	6.1	8.0	253	10.1
	14-May-13	7.2	8.2	238	10.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Jun-13	8.2	8.1	329	12.0
	16-Jul-13	10.4	7.9	371	10.1
	21-Aug-13	10.4	7.9	393	10.4
	18-Sep-13	8.5	7.8	375	11.9
	16-Oct-13	8.9	8.1	289	7.0
	19-Nov-13	5.6	8.3	324	2.4
	18-Dec-13	3.5	8.6	297	7.0
	22-Jan-14	2.6	7.3	304	3.1
	18-Mar-14	3.8	7.1	330	5.4
	16-Apr-14	5.2	8.2	338	11.3
	13-May-14	8.7	8.0	207	10.4
	17-Jun-14	9.7	8.2	324	12.0
	15-Jul-14	10.5	8.7	366	5.2
	19-Aug-14	9.1	8.4	410	10.0
	9-Sep-14	10.4	8.4	437	4.0
	23-Oct-14	7.5	8.1	435	8.7
	16-Dec-14	5.0	8.8	392	-
	20-Jan-15	3.3	7.8	367	1.4
	18-Mar-15	2.5	8.3	266	13.2
	22-Apr-15	6.1	8.0	317	13.1
	19-May-15	8.1	8.3	296	-
	15-Jun-15	10.4	8.1	373	9.3
	21-Jul-15	9.6	7.9	368	-
	11-Aug-15	9.6	8.2	396	11.3
	8-Sep-15	12.1	7.8	422	9.6
	15-Oct-15	8.2	8.0	374	10.5
	18-Nov-15	7.4	7.9	350	12.5
	8-Dec-15	5.7	8.1	397	19.5
	19-Jan-16	4.1	8.0	329	14.6
	17-Feb-16	4.2	7.7	358	13.2
	15-Mar-16	6.4	7.9	307	12.9
	21-Apr-16	6.4	8.0	299	12.9
	18-May-16	6.8	8.4	338	11.7
	22-Jun-16	10.2	8.3	367	11.3
	20-Jul-16	11.1	8.1	357	10.4
	24-Aug-16	10.8	8.1	388	11.2
	19-Sep-16	12.2	8.1	567	10.2
	18-Oct-16	11.6	7.8	438	12.0
	15-Nov-16	6.7	8.1	386	11.8
	12-Dec-16	3.8	7.8	482	12.6
	24-Jan-17	5.7	8.1	350	12.1
	16-Feb-17	3.6	8.2	336	13.7
	21-Mar-17	5.2	8.2	356	12.1
	19-Apr-17	7.6	7.9	321	13.7
	16-May-17	9.2	8.6	340	11.4
	28-Jun-17	8.0	8.1	354	12.0
	19-Jul-17	9.3	8.1	385	11.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Aug-17	9.8	8.6	334	11.0
	17-Sep-17	10.5	8.0	418	10.7
	17-Oct-17	8.3	8.1	413	11.4
	14-Nov-17	6.4	8.2	410	8.3
	14-Dec-17	4.2	8.0	376	13.5
	18-Jan-18	4.4	7.9	348	9.3
	24-Feb-18	5.3	8.3	322	13.6
	21-Mar-18	2.8	8.2	327	13.6
	19-Apr-18	3.9	8.2	307	10.7
	15-May-18	7.9	8.0	450	11.0
	18-Jun-18	9.8	8.1	493.6	10.6
	19-Jun-18	9.9	8.1	514	10.4
	23-Aug-18	11.4	8.1	530	9.9
	20-Sep-18	11.8	8.2	539	9.5
	25-Oct-18	6.0	8.3	548	11.2
	22-Nov-18	4.0	8.3		12.4
	12-Dec-18	5.5	8.1	531	11.9
	18-Jan-19	4.0	8.2	513	12.4
	15-Mar-19	5.3	8.3	451.4	11.9
	24-Apr-19	6.3	8.2	364	11.3
	23-May-19	8.6	8.2	426.3	11.1
	18-Jun-19	9.0	8.3	438.4	10.7
	29-Jul-19	11.4	8.2	478.8:	11.4
	29-Aug-19	15.1	7.9	396.8	8.9
	26-Sep-19	15.2	7.9	422.8	8.8
	23-Oct-19		7.8	406.2	9.0
	23-Oct-19	9.1	7.8	406.2	9.0
	22-Nov-19	0.1	7.7	406	8.5
	15-Jan-20	1.8	8.2	384	12.8
	27-Apr-20	5.8	8.3	335	11.7
	29-May-20	15.2	8.8	393.9	8.6
	23-Jun-20	14.5	8.4	404.8	9.2
	30-Jul-20	10.1	8.5	493	10.2
	25-Aug-20	10.3	8.1	488.9	10.1
	25-Sep-20	11.9	8.1	389	
	30-Oct-20	8.2	7.5	373	9.2
	26-Nov-20	5.6	8.0	425.1	11.3
SW 25					
	11-Feb-04	1.2	8.5	220	10.1
	17-Mar-04	1.6	8.6	353	6.2
	19-Apr-04	9.0	8.3	254	
	19-May-04	17.3	8.4	344	
	24-Jun-04	18.9	8.5	308	9.0
	29-Jul-04	22.4	8.7	564	7.6
	20-Oct-04	9.5	8.1	244	10.3
	11/17/2004	4.0	8.2	204	
	16-Dec-04	1.0	7.8	182	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	29-Mar-05	1.1	7.3	258	6.4
	11-Apr-05	2.6	6.4	222	7.2
	24-May-05	14.0	8.0	327	10.2
	28-Jun-05	24.7	8.2	389	
	11-Jul-05	19.4	6.7	304	#REF!
	22-Aug-05	17.2	7.1	290	8.1
	14-Nov-05	7.1	8.5	235	
	12-Dec-05	0.6	8.7	218	13.3
	20-Mar-06	1.9	8.0	260	3.7
	18-Apr-06	9.9	8.2	365	
	23-May-06	10.3	8.7	408	
	20-Jun-06	19.5	8.4	354	
	11-Jul-06	19.3	8.4	302	
	18-Oct-06	9.4	7.9	363	
	27-Nov-06	4.0	8.5	329	
	17-Dec-06	1.0	8.2	374	
	21-Jan-07	2.3	8.4	472	
	15-Apr-07	2.4	8.3	410	13.7
	13-May-07	15.9	8.6	371	9.8
	17-Jun-07	23.5	8.6	342	8.2
	12-Dec-07	1.1	8.3	347	12.9
	21-Jan-08	1.9	7.2	369	9.2
	20-Feb-08	1.4	7.9	424	12.5
	18-Mar-08	1.3	7.8	432	5.4
	2-Apr-08	0.9	7.6	428	5.3
	21-Apr-08	13.1	7.6	385	7.9
	21-May-08	11.8	7.9	364	8.7
	17-Jun-08	19.6	7.8	340	6.4
	15-Jul-08	19.3	7.4	394	6.5
	17-Sep-08	16.2	8.8	343	5.8
	20-Oct-08	10.3	8.1	304	8.5
	23-Nov-08	2.2	8.5	344	8.6
	14-Dec-08	1.8	7.5	305	7.2
	18-Jan-09	1.2	8.4	348	9.2
	8-Feb-09	1.3		410	7.2
	15-Mar-09	3.1	7.7	352	9.7
	12-Apr-09	7.8	8.2	437	
	17-May-09	16.0	8.5	337	9.5
	14-Jun-09	19.1	8.2	697	8.9
	12-Jul-09	19.0	7.7	355	7.9
	9-Aug-09	21.6	9.0	327	8.7
	13-Sep-09	17.0	8.3	299	8.9
	11-Oct-09	7.1	8.1	329	12.2
	15-Nov-09	6.3	8.3	309	
	13-Dec-09	0.5	7.6	352	
	17-Jan-10	0.8	7.5		12.9
	7-Feb-10	0.8	7.5	368	11.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	14-Mar-10	1.5	8.1	395	8.6
	11-Apr-10	10.7	8.0	392	12.2
	16-May-10	14.7	8.5	298	10.4
	13-Jun-10	21.6	8.5	353	12.0
	18-Jul-10	23.7	7.7	358	9.5
	15-Aug-10	24.2	8.7	298	6.6
	12-Sep-10	16.0	8.7	276	8.3
	17-Oct-10	9.7	8.5	222	10.7
	14-Nov-10	5.2	8.2	189	8.8
	19-Dec-10	0.8	8.5	182	12.6
	16-Jan-11	1.3	8.3	205	9.6
	20-Feb-11	1.1	8.2	227	6.8
	13-Mar-11	1.3	7.8	158	6.5
	17-Apr-11	4.0	8.0	263	11.8
	15-May-11	12.4	8.2	278	11.5
	12-Jun-11	18.5	8.6	267	10.3
	17-Jul-11	23.7	8.6	293	6.6
	14-Aug-11	20.3	8.8	209	8.0
	18-Sep-11	14.4	9.0	215	9.1
	16-Oct-11	10.2	8.4	240	9.7
	20-Nov-11	2.5	8.3	181	12.0
	18-Dec-11	1.1	8.2	161	13.7
	15-Jan-12	1.3	8.2	164	11.3
	19-Feb-12	1.5	8.1	198	11.4
	18-Mar-12	7.5	7.6	244	8.6
	15-Apr-12	9.5	8.6	286	10.5
	13-May-12	16.9	8.3	323	8.6
	17-Jun-12	21.1	8.5	322	5.7
	16-Jul-12	21.8	8.7	291	6.0
	14-Aug-12	21.3	9.0	420	7.1
	18-Sep-12	16.8	8.3	257	8.4
	17-Oct-12	9.5	7.0	220	8.2
	20-Nov-12	4.4	7.9	191	4.4
	17-Dec-12	1.7	7.7	213	-
	15-Jan-13	1.7	7.7	258	10.1
	20-Feb-13	1.9	7.7	218	9.0
	19-Mar-13	2.2	7.7	213	6.3
	15-Apr-13	4.8	7.5	284	6.3
	13-May-13	12.2	8.4	302	6.5
	18-Jun-13	21.4	8.5	337	7.6
	16-Jul-13	26.9	8.3	345	5.7
	20-Aug-13	21.3	8.5	258	6.6
	18-Sep-13	15.4	8.4	268	8.8
	16-Oct-13	14.1	9.4	258	6.8
	19-Nov-13	2.9	8.6	210	2.1
	18-Dec-13	0.9	8.2	214	8.4
	15-Apr-14	1.6	7.6	182	10.3

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	12-May-14	15.0	8.2	352	8.7
	17-Jun-14	20.9	8.5	346	8.7
	14-Jul-14	22.1	9.4	363	0.2
	18-Aug-14	20.5	8.8	327	6.4
	8-Sep-14	21.0	9.4	331	9.0
	22-Oct-14	8.6	7.5	416	6.9
	19-Nov-14	0.2	7.9	166	6.2
	16-Dec-14	0.6	8.4	176	-
	22-Apr-15	8.1	8.1	340	12.0
	19-May-15	18.2	8.6	311	-
	15-Jun-15	21.8	8.5	342	9.3
	21-Jul-15	23.3	9.0	310	-
	12-Aug-15	20.4	8.6	320	8.3
	8-Sep-15	21.0	8.1	315	8.9
	15-Oct-15	11.8	8.0	259	10.1
	18-Nov-15	5.7	8.1	254	12.2
	8-Dec-15	2.4	8.4	236	19.4
	19-Jan-16	0.4	8.1	205	17.1
	17-Feb-16	1.2	7.8	243	15.2
	15-Mar-16	2.4	7.9	230	11.7
	20-Apr-16	11.7	7.9	315	12.4
	17-May-16	11.7	8.5	355	10.6
	22-Jun-16	17.7	8.5	340	8.5
	24-Aug-16	11.5	8.1	402	10.3
	15-Nov-16	7.6	8.3	396	11.4
	12-Dec-16	0.6	7.9	340	15.3
	24-Jan-17	1.2	8.3	258	13.0
	15-Feb-17	1.1	8.2	266	11.7
	21-Mar-17	3.4	8.0	301	10.3
	19-Apr-17	9.4	8.0	313	14.0
	16-May-17	12.8	8.6	436	12.4
	28-Jun-17	19.1	8.5	341	9.7
	18-Jul-17	23.1	7.3	365	7.8
	15-Aug-17	21.0	8.5	278	10.0
	17-Sep-17	19.6	8.6	328	10.1
	17-Oct-17	11.8	8.4	279	10.5
	14-Nov-17	2.4	8.1	235	14.3
	14-Dec-17	-0.2	8.0	229	19.5
SW 26					
	11-Feb-04	0.2	8.2	157	11.9
	18-Mar-04	0.2	7.3		8.9
	19-Apr-04	5.7	7.5	96	
	19-May-04	13.1	7.6	200	9.7
	24-Jun-04	13.4	8.0	263	9.9
	29-Jul-04	15.1	7.9	521	8.6
	17-Nov-04	5.5	7.6	192	10.0
	29-Mar-05	2.3	7.4	159	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	11-Apr-05	0.6	7.0	115	11.0
	26-May-05	10.1	7.3	182	10.3
	28-Jun-05	19.1	8.0	314	9.2
	14-Dec-05	0.1	7.7	122	2.7
	21-Mar-06	0.3	8.0	195	12.1
	19-Apr-06	6.7	7.7	147	
	23-May-06	10.0	7.7	201	
	21-Jun-06	13.2	7.4	336	
	19-Oct-06	9.3	7.6	292	
	23-Nov-06	3.0	7.5	232	12.5
	17-Dec-06	1.4	7.4	221	12.7
	16-Apr-07	0.5	8.0	206	12.6
	13-May-07	9.6	8.2	225	10.3
	17-Jun-07	15.5	8.1	334	8.2
	10-Dec-07	1.4	9.0	257	13.2
	19-Feb-08	0.3	7.9	198	10.3
	17-Mar-08	0.6	7.2	233	
	1-Apr-08	0.2	7.7	198	13.6
	21-Apr-08	7.0	7.2	134	9.0
	21-May-08	6.2	7.8	201	8.5
	17-Jun-08	11.9	7.8	250	7.6
	15-Jul-08	13.8	6.9	372	6.4
	19-Aug-08	13.2	7.9	347	5.6
	16-Sep-08	11.4	7.5	235	6.6
	21-Oct-08	4.6	7.9	158	8.1
	8-Feb-09	1.0	9.2	232	8.9
	15-Mar-09	0.8	7.7	155	
	12-Apr-09	2.5	8.0	215	13.3
	17-May-09	14.1	7.8	207	9.5
	14-Jun-09	13.0	7.3	528	8.0
	12-Jul-09	11.5	8.4	347	8.1
	11-Oct-09	4.3	7.5	450	11.4
	15-Nov-09	4.3	7.7	237	9.7
	14-Mar-10	2.3	8.2	218	11.1
	11-Apr-10	7.5	8.2	199	12.6
	16-May-10	8.6	7.2	147	7.9
	13-Jun-10	14.1	7.6	202	9.4
	18-Jul-10	17.9	7.4	246	7.1
	15-Aug-10	17.4	7.7	364	6.0
	12-Sep-10	12.6	7.9	251	8.1
	17-Oct-10	8.5	7.5	225	6.9
	14-Nov-10	4.2	7.7	127	9.2
	13-Mar-11	0.7	8.3	132	9.2
	17-Apr-11	2.6	8.2	117	12.0
	15-May-11	8.0	7.6	121	9.8
	12-Jun-11	13.7	7.5	166	7.6
	16-Oct-11	9.4	7.4	196	6.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	20-Nov-11	2.1	8.2	162	10.7
	18-Mar-12	5.6	7.5	107	7.1
	15-Apr-12	7.1	8.7	158	10.8
	13-May-12	13.7	7.6	191	7.7
	17-Jun-12	18.7	8.0	280	7.9
	19-Sep-12	9.6	7.8	174	8.8
	17-Oct-12	9.6	7.0	170	5.8
	21-Nov-12	3.2	8.0	100	4.4
	18-Dec-12	1.3	7.0	243	8.0
	15-Jan-13	0.1	7.2	122	7.9
	16-Apr-13	0.3	7.5	116	6.4
	13-May-13	8.6	7.5	263	9.0
	19-Jun-13	11.9	8.0	195	8.2
	17-Jul-13	18.4	7.7	267	4.3
	20-Aug-13	16.7	8.1	317	8.0
	19-Sep-13	13.0	8.2	269	4.9
	17-Oct-13	10.9	8.3	209	3.7
	19-Nov-13	1.8	8.7	126	1.8
	16-Apr-14	-0.1	8.2	214	8.2
	12-May-14	12.5	7.5	149	4.5
	18-Jun-14	13.6	7.7	220	8.0
	15-Jul-14	15.0	7.8	240	7.1
	19-Aug-14	12.9	8.5	220	4.0
	8-Sep-14	15.0	8.6	283	7.0
	20-Oct-14	10.2	8.4	378	6.7
	21-Apr-15	3.5	7.4	-	9.6
	19-May-15	11.7	8.0	181	11.9
	15-Jun-15	13.7	7.6	189	6.6
	22-Jul-15	13.8	7.8	283	8.3
	12-Aug-15	14.2	7.8	245	7.9
	9-Sep-15	17.2	7.8	284	5.3
	19-Nov-15	8.0	7.2	187	10.2
	8-Dec-15	2.5	7.1	152	12.2
	15-Mar-16	0.2	6.5	101	10.7
	21-Apr-16	5.2	7.8	109	10.8
	18-May-16	9.3	7.8	155	9.2
	23-Jun-16	12.6	7.9	289	6.0
	15-Nov-16	4.0	7.5	245	6.8
	12-Dec-16	0.0	7.2	287	11.3
	25-Jan-17	1.0	7.6	140	11.1
	21-Mar-17	0.8	7.8	162	10.0
	19-Apr-17	6.4	7.8	125	9.7
	16-May-17	12.9	7.6	156	7.1
	28-Jun-17	13.8	7.5	214	6.6
	20-Jul-17	15.1	7.7	282	6.7
	16-Aug-17	15.4	7.7	338	6.4
	17-Sep-17	15.7	7.6	271	7.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Oct-17	10.0	7.6	210	6.1
	14-Nov-17	3.0	7.9	178	7.1
SW 26A					
	11-Feb-04	0.3	8.4	159	10.5
	18-Mar-04	0.3		191	6.9
	19-Apr-04	5.6	7.3	93	11.7
	19-May-04	12.8	7.3	195	7.3
	24-Jun-04	11.6	7.6	255	8.3
	29-Jul-04	15.2	7.6	523	7.7
	17-Nov-04	6.0	7.3	180	10.1
	29-Mar-05	2.3	7.4	156	12.0
	11-Apr-05	0.3	6.9	113	9.4
	26-May-05	9.7	6.8	177	8.2
	28-Jun-05	18.8	8.1	301	8.9
	14-Dec-05	0.2	7.7	140	5.9
	17-Jan-06	0.4	7.4	106	11.0
	21-Mar-06	0.3	7.9	120	10.7
	19-Apr-06	6.1	7.7	147	
	23-May-06	9.9	7.9	201	
	21-Jun-06	12.8	7.3	319	
	19-Oct-06	8.9	7.5	268	
	23-Nov-06	2.8	7.6	224	10.6
	17-Dec-06	1.3	7.3	210	11.3
	16-Apr-07	0.4	8.2	203	10.9
	13-May-07	9.0	8.4	217	8.1
	17-Jun-07	15.4	8.0	332	7.5
	19-Feb-08	0.3	7.7	220	11.4
	17-Mar-08	0.6	7.6	228	
	1-Apr-08	0.2	7.3	195	10.5
	21-Apr-08	6.8	6.9	145	8.1
	21-May-08	6.6	7.9	99	6.6
	17-Jun-08	12.1	7.9	268	6.9
	15-Jul-08	13.6	7.3	358	6.3
	19-Aug-08	13.4	8.1	201	5.4
	16-Sep-08	11.3	7.6	233	5.6
	21-Oct-08	5.2	8.3	204	8.5
	15-Mar-09	0.6	7.9	201	12.0
	12-Apr-09	1.6	7.5	226	12.6
	17-May-09	13.5	7.3	267	7.3
	14-Jun-09	13.8	7.3	411	9.7
	12-Jul-09	11.6	8.4	354	8.4
	9-Aug-09	15.4	8.4	256	6.0
	11-Oct-09	4.5	7.6	440	12.0
	15-Nov-09	4.1	7.6	230	9.9
	14-Mar-10	1.0	8.4	226	13.3
	11-Apr-10	7.0	8.6	216	12.9
	16-May-10	8.6	7.4	142	7.1

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	13-Jun-10	14.4	7.6	178	4.5
	18-Jul-10	17.4	7.5	2.46	8.2
	15-Aug-10	16.9	7.5	355	7.4
	12-Sep-10	12.7	7.8	284	7.1
	17-Oct-10	8.4	7.6	218	6.9
	13-Mar-11	0.4	8.2	120	8.4
	17-Apr-11	2.5	7.8	128	9.9
	15-May-11	8.0	7.6	127	8.2
	12-Jun-11	13.6	7.7	188	7.4
	16-Oct-11	9.5	7.6	196	6.0
	20-Nov-11	3.7	8.4	183	7.0
	18-Mar-12	5.6	8.1	99	7.5
	15-Apr-12	6.7	9.0	152	9.4
	13-May-12	12.6	7.8	187	7.5
	17-Jun-12	17.4	8.3	278	7.7
	19-Sep-12	9.9	8.0	209	8.1
	17-Oct-12	9.8	7.7	171	5.5
	21-Nov-12	3.6	8.2	116	4.7
	18-Dec-12	1.1	7.1	210	7.8
	15-Jan-13	0.0	7.4	119	7.3
	16-Apr-13	0.1	7.6	115	5.9
	13-May-13	8.5	7.5	255	9.2
	19-Jun-13	12.1	8.4	224	8.1
	17-Jul-13	18.5	7.4	264	4.1
	20-Aug-13	16.4	8.1	318	7.0
	19-Sep-13	12.7	8.5	276	4.2
	17-Oct-13	10.9	8.7	305	3.5
	19-Nov-13	1.7	8.7	123	1.8
	12-May-14	12.3	7.2	138	4.5
	18-Jun-14	13.9	7.5	220	7.3
	15-Jul-14	15.0	7.8	231	8.2
	19-Aug-14	18.2	8.6	241	5.3
	8-Sep-14	15.1	8.6	334	7.1
	20-Oct-14	10.3	8.3	385	6.9
	21-Apr-15	3.3	7.6	-	8.9
	19-May-15	11.6	7.9	176	12.0
	15-Jun-15	13.7	7.5	187	5.9
	22-Jul-15	14.1	7.8	280	8.6
	12-Aug-15	14.2	7.9	270	8.2
	9-Sep-15	17.1	7.6	288	4.9
	19-Nov-15	8.0	7.3	177	10.3
	8-Dec-15	2.5	7.1	148	12.5
	20-Jan-16	0.0	7.2	129	9.5
	17-Feb-16	0.0	8.0	133	8.2
	15-Mar-16	0.1	6.6	114	10.3
	21-Apr-16	5.2	7.6	109	10.6
	18-May-16	9.0	7.9	149	8.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	23-Jun-16	12.9	8.2	263	8.6
	15-Nov-16	4.3	8.0	215	9.4
	12-Dec-16	0.0	7.6	259	12.4
	24-Jan-17	0.9	7.9	138	11.2
	17-Feb-17	0.4	8.3	159	12.6
	21-Mar-17	0.4	8.1	157	10.1
	19-Apr-17	6.3	7.3	124	9.4
	16-May-17	12.7	7.7	170	6.9
	28-Jun-17	13.8	7.6	208	6.0
	20-Jul-17	15.1	7.6	270	6.1
	16-Aug-17	15.4	7.9	213	5.9
	17-Sep-17	15.7	7.9	310	7.0
	17-Oct-17	9.8	8.1	197	6.3
	14-Nov-17	2.8	8.1	173	7.4
	14-Dec-17	-0.4	8.2	81	8.6
SW 27					
	20-Oct-04	3.7	8.0	300	12.9
	15-Dec-04	0.1	7.9	232	9.3
	29-Mar-05	5.8	8.1	312	
	11-Apr-05	7.3	7.5	250	
	24-May-05	8.4	7.8	313	
	28-Jun-05	14.5	8.3	392	#REF!
	11-Jul-05	13.1	6.5	372	10.3
	22-Aug-05	11.7	8.3	336	
	27-Sep-05	10.5	7.6	323	10.7
	24-Oct-05	6.1	8.0	399	
	14-Nov-05	5.0	8.4	305	12.0
	12-Dec-05	0.1	8.6	263	7.9
	17-Jan-06	1.0	7.9	268	
	20-Mar-06	5.9	8.7	276	12.3
	18-Apr-06	10.0	8.4	296	
	23-May-06	8.7	8.3	415	
	20-Jun-06	11.2	8.3	424	
	11-Jul-06	12.7	8.3	405	
	23-Aug-06	12.2	7.9	412	
	20-Sep-06	9.9	8.1	351	
	18-Oct-06	11.1	7.8	428	
	27-Nov-06	7.6	8.2	468	11.7
	17-Dec-06	4.6	8.2	497	
	16-Apr-07	5.1	8.4	383	
	13-May-07	9.8	8.3	406	
	17-Jun-07	11.6	8.3	441	10.7
	15-Jul-07	11.4	8.0	463	10.6
	19-Aug-07	12.6	8.3	444	9.9
	17-Sep-07	9.5	7.9	417	10.4
	18-Oct-07	10.8	8.0	429	9.2
	19-Nov-07	3.7	8.5	455	

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	22-Jan-08	4.6	7.3	389	
	20-Feb-08	4.0	8.0	436	
	17-Mar-08	5.6	7.8	454	
	1-Apr-08	5.7	7.8	399	
	23-Apr-08	7.9	7.9	295	10.6
	21-May-08	9.3	6.7	384	10.5
	17-Jun-08	7.5	7.8	443	9.9
	15-Jul-08	9.2	6.9	415	9.0
	18-Aug-08	11.0	6.6	524	5.8
	16-Sep-08	8.7	8.0	484	8.9
	20-Oct-08	7.9	7.5	436	8.0
	23-Nov-08	6.2		508	8.3
	14-Dec-08	5.7	7.4	413	7.7
	18-Jan-09	4.3	8.4	392	8.8
	8-Feb-09	6.6		351	8.1
	15-Mar-09	7.4	8.2	367	
	12-Apr-09	7.5	8.3	329	
	17-May-09	10.1	8.3	352	
	14-Jun-09	9.1	7.2	825	
	12-Jul-09	8.7	8.1	466	
	9-Aug-09	7.6	8.3	485	
	13-Sep-09	9.4	8.9	419	
	11-Oct-09	6.0	7.4	466	
	15-Nov-09	5.8	7.8	419	
	13-Dec-09	3.8	7.9	484	12.5
	17-Jan-10	4.7	7.7		12.2
	7-Feb-10	3.0	7.8	470	13.0
	14-Mar-10	7.2	7.9	447	12.1
	11-Apr-10	7.4	7.6	413	12.9
	16-May-10	8.1	8.1	301	11.5
	13-Jun-10	8.7	8.1	217	14.9
	18-Jul-10	9.2	8.0	332	12.1
	15-Aug-10	10.2	8.1	344	10.3
	12-Sep-10	8.8	8.0	163	11.1
	17-Oct-10	7.6	7.9	323	11.4
	14-Nov-10	6.8	8.0	273	17.6
	19-Dec-10	5.0	8.2	245	11.9
	16-Jan-11	4.6	8.1	244	11.3
	20-Feb-11	4.7	8.1	288	11.6
	13-Mar-11	7.0	8.2	311	10.7
	17-Apr-11	6.5	8.2	213	11.8
	15-May-11	6.6	7.3	216	13.4
	12-Jun-11	8.2	7.8	262	7.3
	17-Jul-11	9.9	7.7	316	9.3
	14-Aug-11	10.9	8.1	240	11.3
	18-Sep-11	9.3	7.9	278	10.9
	16-Oct-11	8.2	8.0	300	10.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	20-Nov-11	4.6	7.4	296	12.8
	18-Dec-11	5.5	8.3	245	11.2
	15-Jan-12	5.6	8.1	251	12.0
	19-Feb-12	5.4	7.4	264	12.1
	18-Mar-12	8.1	7.9	210	11.1
	15-Apr-12	6.3	8.7	289	11.6
	13-May-12	10.3	8.0	320	9.6
	17-Jun-12	10.5	8.1	348	8.7
	16-Jul-12	12.2	8.1	336	6.3
	14-Aug-12	10.2	7.8	464	9.2
	18-Sep-12	9.9	7.0	339	10.3
	17-Oct-12	8.3	6.8	300	7.9
	20-Nov-12	7.6	7.8	337	9.1
	18-Dec-12	6.7	7.7	651	10.4
	15-Jan-13	6.0	7.9	357	11.4
	20-Feb-13	5.0	8.3	282	13.0
	19-Mar-13	5.5	8.1	243	11.5
	16-Apr-13	6.8	7.5	262	9.8
	13-May-13	7.5	7.9	268	10.5
	18-Jun-13	8.6	7.9	292	8.7
	16-Jul-13	10.0	7.9	347	10.5
	21-Aug-13	10.3	8.0	339	10.8
	19-Sep-13	8.5	7.9	317	12.1
	16-Oct-13	9.0	8.5	333	7.1
	19-Nov-13	5.9	7.7	322	4.0
	17-Dec-13	5.4	8.1	298	4.2
	21-Jan-14	3.6	7.5	286	3.1
	20-Feb-14	3.3	7.5	277	8.5
	18-Mar-14	2.3	7.6	285	4.0
	15-Apr-14	5.1	8.0	192	12.2
	12-May-14	9.1	7.1	265	10.2
	17-Jun-14	8.9	8.2	315	10.0
	14 ju;y 14	9.2	8.9	370	2.6
	18-Aug-14	9.5	8.8	371	7.2
	8-Sep-14	10.3	8.9	379	11.0
	23-Oct-14	7.9	8.0	403	4.3
	16-Dec-14	5.7	8.7	371	-
	20-Jan-15	3.9	7.2	342	2.0
	18-Mar-15	4.9	8.4	250	12.2
	21-Apr-15	6.6	8.0	219	11.3
	19-May-15	8.2	8.3	290	14.6
	15-Jun-15	11.8	8.2	356	9.8
	21-Jul-15	12.6	8.2	340	-
	11-Aug-15	13.0	8.2	356	10.0
	8-Sep-15	13.1	7.9	356	9.2
	15-Oct-15	8.1	8.0	299	10.5
	18-Nov-15	7.6	8.0	357	12.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	8-Dec-15	5.3	8.2	341	15.9
	19-Jan-16	1.8	8.0	276	15.3
	17-Feb-16	4.0	8.0	326	13.8
	15-Mar-16	7.0	7.9	276	12.7
	20-Apr-16	6.3	7.9	149	13.4
	17-May-16	10.2	8.5	348	11.7
	22-Jun-16	10.5	8.5	342	10.9
	20-Jul-16	12.3	8.5	361	10.4
	24-Aug-16	14.4	8.1	368	5.2
	19-Sep-16	13.3	8.0	360	6.6
	17-Oct-16	11.5	8.1	373	8.5
	15-Nov-16	7.2	8.2	471	11.9
	12-Dec-16	2.0	7.7	421	12.5
	24-Jan-17	4.9	8.3	247	13.0
	16-Feb-17	2.1	8.2	318	15.1
	21-Mar-17	7.2	8.3	357	12.0
	19-Apr-17	8.7	8.2	292	13.9
	16-May-17	9.9	8.8	293	12.0
	28-Jun-17	8.5	8.1	336	11.8
	18-Jul-17	9.9	8.3	355	11.7
	15-Aug-17	10.1	8.7	287	11.8
	17-Sep-17	11.5	8.1	361	10.2
	17-Oct-17	8.4	8.2	348	11.0
	14-Nov-17	6.3	8.3	360	8.6
	14-Dec-17	3.6	8.2	335	14.1
SW 77					
	13-Dec-09				
	17-Jan-10	5.6	8.2	164	11.3
	7-Feb-10	5.7	8.4	449	12.6
	14-Mar-10	6.0	-	383	12.5
	11-Apr-10	5.9	7.5	407	12.9
	16-May-10	7.0	7.6	264	10.5
	13-Jun-10	7.9	7.5	286	12.7
	18-Jul-10	9.2	7.3	298	12.7
	15-Aug-10	10.0	7.6	326	8.6
	12-Sep-10	10.6	7.7	261	11.1
	17-Oct-10	10.2	7.0	327	8.6
	21-Oct-10	10.0	6.9	354	8.7
	14-Nov-10	9.4	7.5	294	13.7
	17-Apr-11	5.4	8.1	253	12.0
	15-May-11	6.0	7.7	219	12.8
	12-Jun-11	7.7	7.5	253	5.8
	17-Jul-11	9.4	7.3	306	10.1
	14-Aug-11	10.6	8.7	240	10.9
	16-Oct-11	10.5	8.0	353	9.1
	20-Nov-11	8.7	8.3	321	10.1
	18-Dec-11	8.2	8.6	225	9.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Jan-12	7.0	8.2	242	10.3
	19-Feb-12	6.5	7.1	244	12.5
	18-Mar-12	5.9	7.5	214	13.3
	15-Apr-12	6.3	8.8	287	12.5
	13-May-12	7.0	7.5	281	9.5
	17-Jun-12	8.3	7.6	274	6.6
	16-Jul-12	10.8	7.8	346	6.1
	14-Aug-12	10.1	7.7	225	9.0
	18-Sep-12	11.0	6.6	348	8.2
	17-Oct-12	10.6	7.9	318	7.5
	20-Nov-12	9.3	8.0	343	8.5
	18-Dec-12	8.4	7.7	713	9.2
	15-Jan-13	7.4	7.9	306	10.3
	20-Feb-13	6.4	7.8	234	10.1
	19-Mar-13	5.9	8.1	214	12.2
	16-Apr-13	0.2	6.9	194	10.0
	13-May-13	6.1	7.4	265	11.0
	18-Jun-13	8.2	7.9	296	8.7
	16-Jul-13	9.9	8.2	333	9.9
	16-Oct-13	10.1	9.9	336	6.3
	19-Nov-13	8.9	7.3	338	6.3
	17-Dec-13	8.0	8.1	269	6.9
	18-Mar-14	4.3	6.8	280	6.0
	15-Apr-14	4.6	7.8	191	10.2
	12-May-14	6.8	7.8	252	3.3
	17-Jun-14	7.8	7.8	306	11.2
	14-Jul-14	8.7	8.9	341	1.9
	18-Aug-14	9.6	8.5	341	4.3
	8-Sep-14	10.4	8.5	378	9.9
	23-Oct-14	9.3	8.1	435	8.5
	18-Mar-15	5.7	7.6	253	10.6
	21-Apr-15	5.4	7.5	202	11.9
	19-May-15	6.4	7.9	268	14.5
	15-Jun-15	7.3	7.6	329	9.6
	21-Jul-15	13.0	8.0	358	-
	11-Aug-15	13.0	7.9	342	9.4
	25-Aug-15	10.3	7.7	325	11.4
	8-Sep-15	14.2	7.8	372	9.6
	15-Oct-15	8.8	7.8	304	9.9
	18-Nov-15	8.3	7.8	360	10.0
	8-Dec-15	6.3	7.9	344	14.6
	19-Jan-16	4.1	7.9	259	13.4
	17-Feb-16	5.1	7.9	321	12.3
	15-Mar-16	6.3	7.7	237	13.0
	20-Apr-16	6.5	7.3	291	12.6
	17-May-16	10.0	8.0	353	11.9
	22-Jun-16	9.1	7.9	336	10.9

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	5-Jul-16	10.7	8.0	267	16.3
	20-Jul-16	11.4	8.3	355	10.3
	9-Aug-16	14.9	8.1	345	11.8
	24-Aug-16	12.9	8.2	356	11.0
	19-Sep-16	13.1	8.2	374	9.4
	17-Oct-16	12.1	7.9	340	8.9
	15-Nov-16	8.7	7.4	480	9.7
	12-Dec-16	5.0	8.0	431	12.1
	24-Jan-17	6.5	7.6	267	12.0
	16-Feb-17	4.4	8.1	331	13.6
	21-Mar-17	6.5	8.0	349	12.1
	19-Apr-17	8.4	7.7	309	14.4
	16-May-17	9.2	8.1	323	11.3
	28-Jun-17	10.9	7.7	362	11.1
	7-Jul-17	11.9	8.0	334	11.5
	18-Jul-17	11.5	8.0	363	10.5
	2-Aug-17	10.9	8.2	255	10.1
	15-Aug-17	11.0	8.5	294	10.8
	17-Sep-17	11.4	7.8	356	10.3
	17-Oct-17	9.7	8.0	269	10.6
	14-Nov-17	8.1	8.0	377	7.8
	14-Dec-17	4.6	8.1	334	13.2
	17-Jan-18	5.3	8.0	311	7.9
	23-Feb-18	6.4	7.9	299	9.0
	20-Mar-18	5.3	8.1	315	14.0
	18-Apr-18	5.5	8.2	457	7.4
	14-May-18	9.3	7.8	440	10.8
	18-Jun-18	9.4	7.7	466	9.8
	23-Aug-18	12.3	7.4	481.4	10.3
	19-Sep-18	11.6	7.4	401.6	6.3
	24-Oct-18	9.3	7.7	456.3	7.0
	12-Dec-18	7.1	8.0	482.5	10.3
	15-Mar-19	4.9	7.9	392	11.3
	24-Apr-19	5.4	7.2	366.3	10.3
	23-May-19	6.1	7.5	396.9	9.2
	18-Jun-19	7.1	7.4	415.8	8.8
	29-Jul-19	9.2	7.5	411.7	9.0
	29-Aug-19	15.7	8.3		8.8
	29-May-20	6.4	8.0	403.7	9.6
	23-Jun-20	9.3	8.0	462.8	10.0
	30-Jul-20	0.0	n/a		
	25-Aug-20	10.4	7.8	455.2	9.7
	25-Sep-20	10.1	8.1	310	9.9
	30-Oct-20	8.9	7.3	384.2	8.7
RR3 OUT					
	18-Nov-15	8.2	6.9	494	4.9
	8-Dec-15	7.0	7.1	439	6.2

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	19-Jan-16	4.6	6.7	335	7.3
	17-Feb-16	4.1	6.9	329	6.7
	15-Mar-16	5.3	7.1	349	8.2
	20-Apr-16	8.3	7.3	309	7.9
	17-May-16	7.6	7.4	358	4.9
	23-Jun-16	12.5	7.6	387	5.0
	24-Jan-17	6.2	7.5	436	6.9
	15-Feb-17	4.9	7.7	343	7.2
	21-Mar-17	4.5	7.4	320	5.7
	19-Apr-17	7.1	7.4	273	7.8
	16-May-17	9.1	7.8	457	6.2
	28-Jun-17	11.3	7.2	379	4.4
	18-Jul-17	11.6	7.7	395	5.1
	15-Aug-17	11.0	8.0	329	1.2
	17-Sep-17	12.5	7.3	454	1.1
	17-Oct-17	11.0	7.3	474	2.5
	14-Nov-17	9.0	7.3	436	4.1
	14-Dec-17	6.9	7.2	377	5.8
	17-Jan-18	4.2	7.5	332	5.8
	22-Feb-18	4.2	7.3	407	7.5
	20-Mar-18	4.7	7.4	329	6.1
	18-Apr-18	3.3	7.5	491	5.6
	21-Nov-18	5.4	7.6	569	6.0
	12-Dec-18	7.3	7.5	529	5.3
	18-Jan-19	5.1	7.2	457.4	5.1
	15-Mar-19	4.5	7.4	279	4.5
	24-Apr-19	6.5	7.4	400.2	5.9
	23-May-19	8.1	7.3	399.2	4.0
	18-Jun-19	9.2	7.2	442.1	3.1
	26-Mar-20	4.1	7.5	325.4	8.7
	23-Jun-20	10.8	7.3	440.1	3.1
RR3 KARST					
	18-Nov-15	8.2	7.0	493	5.2
	8-Dec-15	6.8	7.2	438	8.1
	19-Jan-16	4.2	6.9	325	9.1
	17-Feb-16	4.3	7.1	333	7.6
	15-Mar-16	4.5	7.3	289	9.6
	20-Apr-16	8.7	7.5	310	9.0
	17-May-16	8.1	7.5	364	6.2
	23-Jun-16	12.7	7.5	391	4.0
	24-Jan-17	6.0	7.4	437	7.6
	15-Feb-17	4.5	7.6	204	8.7
	21-Mar-17	4.5	7.5	323	6.6
	19-Apr-17	7.3	7.2	300	8.3
	16-May-17	8.9	7.8	457	6.4
	28-Jun-17	11.4	7.4	378	6.3
	18-Jul-17	11.9	7.7	396	5.7

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Aug-17	11.4	7.9	331	2.4
	17-Sep-17	13.0	7.2	462	1.6
	17-Oct-17	11.0	7.3	470	4.1
	14-Nov-17	8.8	7.3	383	5.5
	14-Dec-17	6.1	7.2	365	8.2
	17-Jan-18	4.1	7.4	332	6.4
	22-Feb-18	3.2	7.4	306	8.0
	20-Mar-18	4.7	7.5	326	8.6
	18-Apr-18	3.0	7.6	480	6.5
	15-May-18	-	7.3	467	7.0
	21-Nov-18	4.2	7.6	569	8.1
	12-Dec-18	6.7	7.5	526	6.6
	24-Apr-19	6.3	7.4	399.2	6.6
	23-May-19	8.3	7.4	396.9	4.6
	18-Jun-19	9.6	7.2	438.7	3.5
	27-Apr-20	6.2	7.3	365.2	5.7
	23-Jun-20	10.9	7.4	440.2	4.0
PR CONTROL					
	25-Aug-15	14.6	8.4	307	8.0
	9-Sep-15	18.4	8.3	365	9.4
	15-Oct-15	8.6	8.0	291	11.3
	18-Nov-15	6.9	8.0	335	11.3
	8-Dec-15	3.5	8.3	305	15.7
	19-Jan-16	-0.1	7.7	239	16.1
	17-Feb-16	0.6	8.2	276	15.8
	15-Mar-16	4.2	8.3	256	13.8
	20-Apr-16	9.7	7.7	310	12.2
	17-May-16	7.5	8.6	328	12.5
	22-Jun-16	12.5	8.5	330	11.1
	20-Jul-16	14.2	8.5	344	10.2
	24-Aug-16	16.6	8.4	252	11.5
	19-Sep-16	15.2	8.4	440	9.7
	17-Oct-16	12.6	8.1	340	9.6
	15-Nov-16	6.1	8.2	468	12.9
	12-Dec-16	0.0	7.6	405	13.4
	24-Jan-17	1.9	8.2	268	14.3
	16-Feb-17	0.4	8.4	284	16.4
	21-Mar-17	2.2	8.4	303	13.8
	19-Apr-17	7.8	7.7	305	14.1
	16-May-17	9.2	8.4	456	8.5
	28-Jun-17	11.7	8.3	358	11.1
	18-Jul-17	13.7	6.4	368	11.3
	15-Aug-17	14.4	8.8	297	11.0
	17-Sep-17	14.9	8.2	366	10.3
	17-Oct-17	8.8	8.3	338	11.5
	14-Nov-17	4.4	8.2	320	11.3
	14-Dec-17	-0.1	7.9	277	19.5

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	17-Jan-18	0.2	8.1	269	12.6
	22-Feb-18	1.9	8.4	243	12.8
	20-Mar-18	-0.4	8.5	247	18.8
	18-Apr-18	2.5	8.6	430	10.7
	14-May-18	12.9	8.5	418	10.1
	18-Jun-18	14.4	8.4	423.6	9.8
	19-Jul-18	15.6	8.4	417.2	9.4
	23-Aug-18	16.3	8.5	426.1	9.2
	19-Sep-18	14.9	8.5	422.1	9.5
	24-Oct-18	5.0	8.4	449.2	12.3
	21-Nov-18	0.0	8.3	456.3	13.9
	12-Dec-18	1.1	8.3	456.3	13.4
	18-Jan-19	0.1	8.3	454	14.0
	24-Apr-19	6.4	8.5	374.6	11.9
	23-May-19	10.8	8.6	381.4	10.6
	18-Jun-19	12.1	8.4	396.3	10.2
	29-Jul-19	18.6	8.4	383.4	8.8
	29-Aug-19	15.4	8.0	384.4	7.7
	26-Sep-19	14.0	8.2	420.6	9.6
	23-Oct-19		8.0	377	8.3
	23-Oct-19	9.4	8.0	377	8.3
	22-Nov-19	1.1	7.6	320	8.9
	20-Dec-19	0.0	7.9	329	8.7
	15-Jan-20	2.2	7.9	394.1	11.6
	27-Apr-20	3.4	8.5	432.7	12.6
	29-May-20	14.2	9.0	393.2	9.7
	23-Jun-20	12.2	8.7	379.5	10.0
	30-Jul-20	17.2	8.7	400.4	9.0
	25-Aug-20	17.6	8.4	372.8	8.9
	25-Sep-20	10.6	8.3	385	9.1
	30-Oct-20	8.0	7.8	364	8.1
	26-Nov-20	4.7	7.8	465	11.8
	23-Dec-20	0.2	8.3	486.4	14.3
BC CONTROL					
	25-Aug-15	14.6	8.3	436	7.9
	9-Sep-15	17.9	8.0	400	5.9
	16-Oct-15	8.1	7.8	436	9.1
	19-Nov-15	9.4	8.0	405	11.7
	8-Dec-15	3.2	7.9	348	18.0
	15-Mar-16	6.2	8.1	259	13.4
	21-Apr-16	9.7	8.5	316	12.2
	17-May-16	5.8	8.5	334	12.6
	22-Jun-16	15.7	8.4	465	8.5
	20-Jul-16	13.6	7.9	457	9.1
	25-Aug-16	17.7	8.3	577	7.3
	19-Sep-16	14.6	8.1	275	8.3
	17-Oct-16	12.3	7.9	648	8.4

TABLE B-5
SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

LOCATION	DATE	TEMPERATURE (^oC)	pH (pH units)	CONDUCTIVITY (µS/cm)	DISSOLVED OXYGEN (mg/L)
	15-Nov-16	5.2	8.0	439	11.1
	12-Dec-16	0.0	7.6	318	14.5
	24-Jan-17	2.1	8.2	287	13.6
	22-Mar-17	0.0	8.9	475	6.0
	19-Apr-17	10.8	7.5	345	12.4
	16-May-17	18.0	8.6	320	7.9
	28-Jun-17	12.4	8.4	415	10.8
	19-Jul-17	17.2	8.5	485	8.6
	16-Aug-17	15.9	8.4	457	8.0
	17-Sep-17	14.6	7.1	477	8.6
	18-Oct-17	9.4	8.3	404	10.4
	14-Nov-17	5.3	8.3	375	10.3
	14-Dec-17	-0.1	8.0	203	18.8
	18-Jan-18	0.4	8.1	286	11.5
	24-Feb-18	2.2	8.3	271	14.8
	20-Mar-18	-0.4	8.5	269	17.3
	18-Apr-18	2.5	8.6	462	10.4
	14-May-18	15.2	8.4	469	9.5
	18-Jun-18	16.0	8.4	539	9.3
	19-Jul-18	14.8	8.2	633	9.6
	23-Aug-18	17.0	8.3	596	9.0
	19-Sep-18	13.6	8.2	675	9.0
	24-Oct-18	5.0	8.3	597	11.9
	21-Nov-18	0.2	8.2		13.9
	12-Dec-18	1.7	8.3	473.3	13.3
	18-Jan-19	0.1	7.9	382.6	14.9
	24-Apr-19	7.8	8.4	369.6	11.5
	23-May-19	12.4	8.5	412.5	10.3
	18-Jun-19	14.0	8.5	457	9.7
	29-Jul-19	18.6	8.3	575	10.0
	29-Aug-19	17.0	8.3	499	8.0
	26-Sep-19	15.2	8.3	522	7.8
	23-Oct-19	8.2	7.5	438	10.3
	22-Nov-19	0.5	7.7	384	9.3
	15-Jan-20	2.6	7.9	377	9.4
	26-Mar-20	4.7	8.2	403.1	12.3
	27-Apr-20	2.9	8.4	441.5	13.1
	29-May-20	11.1	9.1	442.7	10.6
	23-Jun-20	14.3	8.7	441.4	9.6
	30-Jul-20	18.4	8.6	535	8.4
	25-Aug-20	15.8	8.1	525	9.4
	25-Sep-20	12.8	8.1	530	10.2
	30-Oct-20	7.7	7.3	427	9.6
	26-Nov-20	4.5	7.6	469.6	12.2
	23-Dec-20	0.0	8.2	470.7	14.6

NOTE:
- Blank indicates parameter value not available.
- Monitoring dates where surface water station was observed as frozen, dry or where insufficient

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 1					
			Q1 2016		Q2 2016		Q3 2016	Q4 2016
			23-Mar-16		25-May-16		10-Aug-16	18-Oct-16
PARAMETERS	UNITS	PWQO	SUMP 1	DUP	SUMP 1	DUP	SUMP 1	SUMP 1
Total Coliform	cfu/100mL		330	48	26	20	16	NDOGT
E.Coli	cfu/100mL		131	0	13	14	5	NDOGT
Heterotrophic Plate Count	cfu/mL		-	610	>2000	>2000	>2000	>2000
Temperature (field)	°C		13.9	-	12.8	-	19	13.2
pH @25°C (lab)	pH units	6.5 - 8.5	-	7.79	8.25	8.26	7.92	7.95
pH (field)	pH units	6.5 - 8.5	8.6	-	7.8	-	8.8	8.0
Conductivity @25°C (lab)	µS/cm		-	593	700	702	925	825
Conductivity (field)	µS/cm		614	-	487	-	750	651
Dissolved Oxygen (field)	mg/L		-	-	7.6	-	-	-
Alkalinity (CaCO3)	mg/L		-	236	235	235	236	120
Hardness (CaCO3)	mg/L		-	284	324	328	364	359
Chloride	mg/L		-	36.3	76.1	76.4	139	117
Fluoride	mg/L		0.2	0.3	0.2	0.2	0.2	0.3
Nitrate (N)	mg/L		1	1.9	2	2	0.8	1
Nitrite (N)	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L		-	8	7	7	6	6
Colour	TCU		-	13	5	5	5	25
Total Suspended Solids	mg/L		-	3	21	18	8	12
Ammonia (N) - Total	mg/L		-	0.05	0.09	0.09	0.09	0.62
Unionized Ammonia as NH_3	mg/L	0.02	-	0.0003	0.0013	0.0016	0.017	0.0144
Total Kjeldahl Nitrogen	mg/L		0.16	0.1	0.3	0.2	0.3	0.8
Phosphorus - Total	mg/L	0.03	0.01	0.02	0.01	<0.01	0.01	0.02
Turbidity (field)	NTU		-	-	-	-	-	11.8
Turbidity (lab)	NTU		-	-	-	-	-	-
Silica	mg/L		-	-	-	-	-	4.59
Silicon	mg/L		-	-	-	-	-	2.15
Phenolics	mg/L	0.005	-	-	-	-	-	<0.001
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-	-	<1.0
Oil and Grease - Mineral	mg/L		-	-	-	-	-	<1.0
Oil & Grease - Total	mg/L		-	-	-	-	-	<1.0
Calcium	mg/L		-	62	64	64.9	64.6	71
Magnesium	mg/L		-	31.4	40	40.4	49.4	44.2
Potassium	mg/L		-	1.2	2.5	2.4	3.8	2.8
Sodium	mg/L		-	13.9	23.2	23.1	33.2	29.4
Aluminum	mg/L		-	0.02	0.14	0.13	0.06	0.04
Antimony	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	0.0003	0.0001
Arsenic	mg/L		0.0013	0.001	0.0014	0.0013	0.0017	0.0026
Barium	mg/L		0.013	0.009	0.011	0.012	0.013	0.015
Beryllium	mg/L		-	<0.002	<0.002	<0.002	<0.002	<0.002
Boron	mg/L	0.2	0.084	0.016	0.029	0.029	0.049	0.037
Cadmium	mg/L	0.0002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Chromium	mg/L	0.0089	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	mg/L		-	<0.0001	0.0002	0.0002	0.0003	0.0003
Copper	mg/L	0.005	-	<0.002	<0.002	<0.002	<0.002	<0.002
Iron	mg/L	0.3	-	0.011	0.139	0.116	0.026	0.046
Lead	mg/L	0.025	0.00033	0.00007	0.00021	0.0002	0.0001	0.00004
Manganese	mg/L		-	0.002	0.015	0.015	0.035	0.141
Molybdenum	mg/L		-	0.0004	0.0004	0.0004	0.0008	0.0006
Nickel	mg/L		-	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 1					
			Q1 2016		Q2 2016		Q3 2016	Q4 2016
			23-Mar-16		25-May-16		10-Aug-16	18-Oct-16
PARAMETERS	UNITS	PWQO	SUMP 1	DUP	SUMP 1	DUP	SUMP 1	SUMP 1
Selenium	mg/L		0.002	0.002	0.004	0.004	0.005	0.006
Silver	mg/L		-	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Strontium	mg/L		-	0.185	0.356	0.348	0.555	0.395
Thallium	mg/L		-	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Titanium	mg/L		-	<0.005	<0.005	<0.005	<0.005	<0.005
Tungsten	mg/L		-	0.03	0.02	0.02	0.05	<0.01
Uranium	mg/L		0.00017	0.00014	0.00016	0.00014	0.00018	0.00017
Vanadium	mg/L		-	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	0.02	-	<0.005	<0.005	<0.005	<0.005	<0.005
Zirconium	mg/L		-	<0.003	<0.003	<0.003	<0.003	<0.003
Anion Sum	meq/L		-	6.06	7.15	7.16	8.84	5.93
Cation Sum	meq/L		-	6.31	7.57	7.64	8.83	8.58
Ion Ratio	AS/CS		-	0.960	0.944	0.937	1.00	0.70
TDS (Calc)	mg/L		-	303	363	365	442	349
Benzene	µg/L		-	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		-	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		-	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		-	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		-	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		-	<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		-	<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		-	<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		-	<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		-	<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 1			
			Q1 2017	Q2 2017	Q3 2017	Q4 2017
PARAMETERS	UNITS	PWQO	1-Feb-17 SUMP 1	5-Apr-17 SUMP 1	17-Jul-17 SUMP 1	4-Oct-17 SUMP 1
Total Coliform	cfu/100mL		NDOGT	<10	>200	NDOGT
E.Coli	cfu/100mL		NDOGT	0	61	NDOGT
Heterotrophic Plate Count	cfu/mL		>2000	16	>2000	>2000
Temperature (field)	°C		2.7	6.9	16.2	15.3
pH @25°C (lab)	pH units	6.5 - 8.5	7.7	8.17	7.99	8.16
pH (field)	pH units	6.5 - 8.5	8.6	8.2	7.9	7.7
Conductivity @25°C (lab)	µS/cm		734	603	801	809
Conductivity (field)	µS/cm		-	583	828	824
Dissolved Oxygen (field)	mg/L		-	-	-	-
Alkalinity (CaCO3)	mg/L		227	208	211	202
Hardness (CaCO3)	mg/L		285	271	302	327
Chloride	mg/L		75.4	59.3	92.0	115.0
Fluoride	mg/L		0.2	0.2	0.2	0.3
Nitrate (N)	mg/L		1.5	1.8	1.7	1
Nitrite (N)	mg/L		<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L		8	7	6	6
Colour	TCU		<2	10	6	<2
Total Suspended Solids	mg/L		24	<3	<3	<3
Ammonia (N) - Total	mg/L		0.1	0.02	0.03	0.06
Unionized Ammonia as NH_3	mg/L	0.02	0.0038	0.0004	0.0008	0.0008
Total Kjeldahl Nitrogen	mg/L		0.2	0.2	0.3	0.2
Phosphorus - Total	mg/L	0.03	<0.01	0.02	0.01	<0.01
Turbidity (field)	NTU		6	6	5	5
Turbidity (lab)			-	-	-	-
Silica	mg/L		-	-	-	-
Silicon	mg/L		-	-	-	-
Phenolics	mg/L	0.005	-	-	-	-
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-
Oil and Grease - Mineral	mg/L		-	-	-	-
Oil & Grease - Total	mg/L		-	-	-	-
Calcium	mg/L		55.6	56.8	57.0	53.4
Magnesium	mg/L		35.5	31.5	38.8	47.1
Potassium	mg/L		1.7	1.6	2.8	3.6
Sodium	mg/L		18.4	19.9	26.6	30.9
Aluminum	mg/L		0.03	0.07	0.06	0.03
Antimony	mg/L		<0.0001	<0.0001	0.0001	<0.0001
Arsenic	mg/L		0.0006	0.0006	0.0009	0.0011
Barium	mg/L		0.001	0.013	0.034	0.014
Beryllium	mg/L		<0.002	<0.002	<0.002	<0.002
Boron	mg/L	0.2	0.017	0.018	0.052	0.052
Cadmium	mg/L	0.0002	<0.00002	<0.00002	<0.000014	<0.000014
Chromium	mg/L	0.0089	<0.002	<0.002	<0.002	<0.002
Cobalt	mg/L		0.0001	<0.0001	0.0002	<0.0001
Copper	mg/L	0.005	<0.002	0.005	0.004	0.003
Iron	mg/L	0.3	0.027	0.052	0.105	0.044
Lead	mg/L	0.025	0.00008	<0.00002	0.00005	0.00004
Manganese	mg/L		0.011	0.005	0.018	0.051
Molybdenum	mg/L		0.0004	0.0004	0.0005	<0.01
Nickel	mg/L		<0.01	<0.01	<0.01	<0.01

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 1			
			Q1 2017	Q2 2017	Q3 2017	Q4 2017
PARAMETERS	UNITS	PWQO	1-Feb-17 SUMP 1	5-Apr-17 SUMP 1	17-Jul-17 SUMP 1	4-Oct-17 SUMP 1
Selenium	mg/L		0.001	<0.001	<0.001	<0.001
Silver	mg/L		<0.00002	<0.00002	<0.00002	<0.00002
Strontium	mg/L		0.249	0.222	0.396	0.407
Thallium	mg/L		<0.00005	<0.00005	<0.00005	<0.00005
Titanium	mg/L		<0.005	<0.005	<0.005	<0.005
Tungsten	mg/L		<0.01	<0.01	<0.01	<0.01
Uranium	mg/L		0.00014	0.00016	0.00013	0.00011
Vanadium	mg/L		<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	0.02	<0.005	<0.005	0.16	0.007
Zirconium	mg/L		<0.003	<0.003	<0.003	<0.003
Anion Sum	meq/L		6.94	6.12	7.06	7.48
Cation Sum	meq/L		6.54	6.34	7.28	7.98
Ion Ratio	AS/CS		1.06	0.97	0.97	0.94
TDS (Calc)	mg/L		338	309	357	382
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 1			
			Q1 2018	Q2 2018	Q3 2018	Q4 2018
PARAMETERS	UNITS	PWQO	6-Mar-18 SUMP 1	9-May-18 SUMP 1	5-Sep-18 SUMP 1	6-Dec-18 SUMP 1
Total Coliform	cfu/100mL		34	21	69	18
E.Coli	cfu/100mL		0	1	53	4
Heterotrophic Plate Count	cfu/mL		13	81	470	33
Temperature (field)	°C		3.5	9.2	19.7	3.2
pH @25°C (lab)	pH units	6.5 - 8.5	8.08	8.21	8.06	8.01
pH (field)	pH units	6.5 - 8.5	7.4	7.7	7.8	7.8
Conductivity @25°C (lab)	µS/cm		605	555	710	690
Conductivity (field)	µS/cm		561	582	734	688
Dissolved Oxygen (field)	mg/L		-	8.79	7.69	9.64
Alkalinity (CaCO3)	mg/L		229	217	210	230
Hardness (CaCO3)	mg/L		272	259	300	330
Chloride	mg/L		53.7	47.6	100	82
Fluoride	mg/L		0.185	0.18	0.27	0.23
Nitrate (N)	mg/L		1.04	1.16	0.68	1.32
Nitrite (N)	mg/L		<0.010	<0.010	<0.010	<0.01
Sulphate	mg/L		5.56	5.24	6.1	6.8
Colour	TCU		5.56	2.5	3	3
Total Suspended Solids	mg/L		<2.0	<2.0	<10.0	<10.0
Ammonia (N) - Total	mg/L		0.098	0.048	<0.05	0.13
Unionized Ammonia as NH_3	mg/L	0.02	0.0003	0.0004	<0.0013	0.0009
Total Kjeldahl Nitrogen	mg/L		<0.15	<0.15	0.1	0.16
Phosphorus - Total	mg/L	0.03	0.0586	0.0031	<0.02	<0.02
Turbidity (field)	NTU		0.77	-	-	-
Turbidity (lab)	NTU		-	1.24	0.5	1.4
Silica	mg/L		-	-	-	-
Silicon	mg/L		55.1	1.42	-	-
Phenolics	mg/L	0.005	-	-	<0.001	<0.001
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-
Oil and Grease - Mineral	mg/L		-	-	-	-
Oil & Grease - Total	mg/L		-	-	-	-
Calcium	mg/L		55.1	53.7	50	59
Magnesium	mg/L		29.3	28.8	40	37
Potassium	mg/L		1.61	1.62	2.8	2.1
Sodium	mg/L		18.1	17.1	27	22
Aluminum	mg/L		0.012	0.027	0.01	0.023
Antimony	mg/L		<0.00010	<0.00010	<0.0005	<0.0005
Arsenic	mg/L		0.00025	0.00027	<0.001	<0.001
Barium	mg/L		0.00994	0.0098	0.012	0.011
Beryllium	mg/L		<0.00010	<0.00010	<0.0005	<0.0005
Boron	mg/L	0.2	0.018	0.02	0.044	0.031
Cadmium	mg/L	0.0002	<0.000010	<0.000010	<0.0001	<0.0001
Chromium	mg/L	0.0089	<0.00050	<0.00050	<0.005	<0.005
Cobalt	mg/L		<0.00010	<0.00010	<0.0005	<0.0005
Copper	mg/L	0.005	<0.0010	<0.0010	0.0012	<0.001
Iron	mg/L	0.3	<0.050	<0.050	<0.1	<0.10
Lead	mg/L	0.025	<0.00010	<0.00010	<0.0005	<0.0005
Manganese	mg/L		0.0178	0.00403	0.097	<0.12
Molybdenum	mg/L		0.000341	0.000314	0.00058	<0.0005
Nickel	mg/L		<0.00050	<0.00050	<0.001	0.0017

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

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			SUMP 1			
			Q1 2018	Q2 2018	Q3 2018	Q4 2018
PARAMETERS	UNITS	PWQO	6-Mar-18 SUMP 1	9-May-18 SUMP 1	5-Sep-18 SUMP 1	6-Dec-18 SUMP 1
Selenium	mg/L		<0.000050	0.000062	<0.002	<0.002
Silver	mg/L		<0.000050	<0.000050	<0.0001	<0.0001
Strontium	mg/L		0.222	0.208	0.31	0.28
Thallium	mg/L		0.000015	0.000012	<0.00005	<0.00005
Titanium	mg/L		<0.00030	0.00071	<0.005	<0.005
Tungsten	mg/L		<0.00010	<0.00010	<0.001	<0.001
Uranium	mg/L		0.000123	0.000119	0.00011	0.00011
Vanadium	mg/L		<0.00050	<0.00050	<0.0005	<0.0005
Zinc	mg/L	0.02	0.0031	<0.0030	<0.0005	<0.0005
Zirconium	mg/L		<0.00030	<0.00030	<0.001	<0.001
Anion Sum	meq/L		-	-	-	-
Cation Sum	meq/L		-	-	-	-
Ion Ratio	AS/CS		-	-	-	-
TDS (Calc)	mg/L		328	291	385	355
Benzene	µg/L		<0.5	<0.5	<0.20	<0.20
Toluene	µg/L		<0.5	<0.5	0.22	<0.20
Ethylbenzene	µg/L		<0.5	<0.5	<0.20	<0.20
Xylene, m, p-	µg/L		<0.4	<0.4	<0.40	<0.40
Xylene, o-	µg/L		<0.3	<0.3	<0.20	<0.20
Xylene, total	µg/L		<0.5	<0.5	<0.40	<0.40
PHC F1 (C6-C10)	µg/L		<25	<25	<25	<25
PHC F2 (>C10-C16)	µg/L		<100	<100	<100	<100
PHC F3 (>C16-C34)	µg/L		<250	<250	<200	<200
PHC F4 (<C34-C50)	µg/L		<250	<250	<200	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 1			
			Q1 2019	Q2 2019	Q3 2019	Q4 2019
PARAMETERS	UNITS	PWQO	9-Mar-19 SUMP 1	10-May-19 SUMP 1	4-Sep-19 SUMP 1	19-Dec-19 SUMP 1
Total Coliform	cfu/100mL		7	41	49	20
E.Coli	cfu/100mL		9	9	22	10
Heterotrophic Plate Count	cfu/mL		7	20	180	120
Temperature (field)	°C		0.9	10.7		
pH @25°C (lab)	pH units	6.5 - 8.5	7.84	8.22	8	7.88
pH (field)	pH units	6.5 - 8.5	7.9	8.0		
Conductivity @25°C (lab)	µS/cm		650	550		
Conductivity (field)	µS/cm		648	488		
Dissolved Oxygen (field)	mg/L		8.68	9.14		
Alkalinity (CaCO3)	mg/L		250	200	210	220
Hardness (CaCO3)	mg/L		290	260	320	350
Chloride	mg/L		58	43	120	120
Fluoride	mg/L		0.22	0.18	0.24	0.25
Nitrate (N)	mg/L		1.08	1.27	0.77	1.49
Nitrite (N)	mg/L		<0.010	<0.010	<0.010	<0.010
Sulphate	mg/L		6.5	5.3	5.9	7.3
Colour	TCU		2	<2	4	3
Total Suspended Solids	mg/L		<10	<10	<10	<10
Ammonia (N) - Total	mg/L		<0.05	<0.05	0.099	0.081
Unionized Ammonia as NH_3	mg/L	0.02	<0.0003	<0.001	0.000	0.0000
Total Kjeldahl Nitrogen	mg/L		0.12	0.12	0.29	0.16
Phosphorus - Total	mg/L	0.03	<0.02	<0.02	<0.004	<0.020
Turbidity (field)	NTU		-	-	-	-
Turbidity (lab)	NTU		0.6	1.3	1.2	1.4
Silica	mg/L		-	-	-	-
Silicon	mg/L		55.1			
Phenolics	mg/L	0.005	-	<0.0010	0.043	<0.0010
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-
Oil and Grease - Mineral	mg/L		-	-	-	-
Oil & Grease - Total	mg/L		<0.5	3.7	<0.5	0.8
Calcium	mg/L		60.0	56	59	63
Magnesium	mg/L		34	31	46	45
Potassium	mg/L		1.7	1.5	3.3	2.9
Sodium	mg/L		19	17	30	29
Aluminum	ug/L		12	27	10	19
Antimony	ug/L		<0.50	<0.50	<0.5	<0.5
Arsenic	ug/L		<1.0	<1.0	<1.0	<1.0
Barium	ug/L		12	9.5	15	14
Beryllium	ug/L		<0.50	<0.50	<0.5	<0.5
Boron	ug/L	200	20	19	46	36
Cadmium	ug/L	0.2	<0.10	<0.10	<0.1	<0.1
Chromium	ug/L	8.9	<5.0	<5.0	<5.0	<5.0
Cobalt	ug/L		<0.50	<0.50	<0.5	<0.5
Copper	ug/L	5	1.4	1	1.8	<1.0
Iron	ug/L	300	<100	<100	<100	<100
Lead	ug/L	25	<0.50	<0.50	<0.5	<0.5
Manganese	ug/L		73	11	89	100
Molybdenum	ug/L		<0.50	<0.50	0.64	0.52
Nickel	ug/L		<1.0	<1.0	<1.0	<1.0

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SUMP 1			
			Q1 2019	Q2 2019	Q3 2019	Q4 2019
PARAMETERS	UNITS	PWQO	9-Mar-19 SUMP 1	10-May-19 SUMP 1	4-Sep-19 SUMP 1	19-Dec-19 SUMP 1
Selenium	ug/L		<2.0	<2.0	<2.0	<2.0
Silver	ug/L		<0.10	<0.10	<0.10	<0.10
Strontium	ug/L		240	200	330	370
Thallium	ug/L		<0.050	<0.050	<0.05	<0.05
Titanium	ug/L		<5.0	<5.0	<5.0	<5.0
Tungsten	ug/L		<1.0	<1.0	<1.0	<1.0
Uranium	ug/L		0.14	0.12	0.12	0.11
Vanadium	ug/L		<0.50	<0.50	<0.50	<0.50
Zinc	ug/L	20	<5.0	<5.0	<5.0	<5.0
Zirconium	ug/L		<1.0	<1.0	<1.0	<1.0
Anion Sum	meq/L		-	-	-	-
Cation Sum	meq/L		-	-	-	-
Ion Ratio	AS/CS		-	-	-	-
TDS (Calc)	mg/L		315	310	465	455
Benzene	µg/L		<25	<25	<0.20	<0.20
Toluene	µg/L		<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L		<0.20	<0.20	<0.20	<0.20
Xylene, m, p-	µg/L		<0.20	<0.20	<0.4	<0.4
Xylene, o-	µg/L		<0.40	<0.40	<0.2	<0.2
Xylene, total	µg/L		<0.40	<0.40	<0.4	<0.4
PHC F1 (C6-C10)	µg/L		<25	<25	<25	<25
PHC F2 (>C10-C16)	µg/L		<100	<100	<100	<100
PHC F3 (>C16-C34)	µg/L		<200	<200	<200	<200
PHC F4 (<C34-C50)	µg/L		<200	<200	<200	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SUMP 1			
			Q1 2020	Q2 2020	Q3 2020	Q4 2020
PARAMETERS	UNITS	PWQO	2-Mar-20 SUMP 1	11-Jun-20 SUMP 1	27-Aug-20 SUMP 1	25-Nov-20 SUMP 1
Total Coliform	cfu/100mL		66	22	NDOGT (1)	84
E.Coli	cfu/100mL		27	13	NDOGT (1)	<2
Heterotrophic Plate Count	cfu/mL		34	970	>5700	410
Temperature (field)	°C					
pH @25°C (lab)	pH units	6.5 - 8.5	7.96	7.98	8.1	
pH (field)	pH units	6.5 - 8.5				8.0
Conductivity @25°C (lab)	µS/cm		690	690	830	
Conductivity (field)	µS/cm					
Dissolved Oxygen (field)	mg/L				9.6	9.81
Alkalinity (CaCO3)	mg/L		240	220	180	198
Hardness (CaCO3)	mg/L		280	310	330	366
Chloride	mg/L		79	82	130	134
Fluoride	mg/L		0.25	0.22	0.21	0.1
Nitrate (N)	mg/L		1.33	1.49	1.04	2.3
Nitrite (N)	mg/L		<0.01	<0.01	0.017	< 0.1
Sulphate	mg/L		7.4	7	6.9	8
Colour	TCU		<2	<2	3	4
Total Suspended Solids	mg/L		<10	<10	<10	<3
Ammonia (N) - Total	mg/L		0.27	0.13	0.12	0.14
Unionized Ammonia as NH_3	mg/L	0.02				
Total Kjeldahl Nitrogen	mg/L		0.13	0.19	0.28	0.3
Phosphorus - Total	mg/L	0.03	<0.02	<0.02	<0.004	<.01
Turbidity (field)	NTU					
Turbidity (lab)	NTU		0.8	2.1	0.9	2.7
Silica	mg/L					
Silicon	mg/L			1500	1700	1.71
Phenolics	mg/L	0.005	<0.001	<0.001	<0.001	<0.002
Oil and Grease - Anim/Veg.	mg/L		<0.5	<0.5	<0.5	<1.0
Oil and Grease - Mineral	mg/L		<0.5	<0.5	<0.5	<1.0
Oil & Grease - Total	mg/L		<0.5	<0.5	<0.5	<1.0
Calcium	mg/L		63.0	60	47	65.8
Magnesium	mg/L		39	39	51	49.1
Potassium	mg/L		2.2	2.3	4.8	3.4
Sodium	mg/L		23	25	36	31.3
Aluminum	ug/L		10	36	22	50
Antimony	ug/L		<0.5	<0.5	<0.50	0.1
Arsenic	ug/L		<1	<1	<1.0	0.6
Barium	ug/L		14	14	12	17
Beryllium	ug/L		<0.5	<0.5	<0.40	< 2
Boron	ug/L	200	26	32	66	49
Cadmium	ug/L	0.2	<0.1	<0.1	<0.090	< 0.015
Chromium	ug/L	8.9	<5	<5	<5.0	< 2
Cobalt	ug/L		<0.5	<0.5	<0.50	< 5
Copper	ug/L	5	<1	<1	<0.90	0.4
Iron	ug/L	300	<100	<100	<100	58
Lead	ug/L	25	<0.5	<0.5	<0.50	0.1
Manganese	ug/L		85	44	73	107
Molybdenum	ug/L		<0.5	<0.5	0.67	< 10
Nickel	ug/L		<1	<1	<1.0	< 10

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SUMP 1			
			Q1 2020	Q2 2020	Q3 2020	Q4 2020
PARAMETERS	UNITS	PWQO	2-Mar-20 SUMP 1	11-Jun-20 SUMP 1	27-Aug-20 SUMP 1	25-Nov-20 SUMP 1
Selenium	ug/L		<2	<2	<2.0	< 1
Silver	ug/L		<0.1	<0.1	<0.090	< 0.1
Strontium	ug/L		300	280	370	433
Thallium	ug/L		<0.05	<0.05	<0.050	< 0.05
Titanium	ug/L		<5	<5	<5.0	<5.0
Tungsten	ug/L		<1	<1	<1.0	< 10
Uranium	ug/L		0.12	0.13	<0.10	0.1
Vanadium	ug/L		<0.5	<0.5	<0.50	< 5.0
Zinc	ug/L	20	<5	<5	<5.0	6
Zirconium	ug/L		<1	<1	<1.0	<3.0
Anion Sum	meq/L		-	-	-	
Cation Sum	meq/L		-	-	-	
Ion Ratio	AS/CS		-	-	-	
TDS (Calc)	mg/L		375	420	585	423
Benzene	µg/L		<0.2	<0.2	<0.20	
Toluene	µg/L		<0.2	<0.2	<0.20	
Ethylbenzene	µg/L		<0.2	<0.2	<0.20	
Xylene, m, p-	µg/L		<0.4	<0.4	<0.40	
Xylene, o-	µg/L		<0.2	<0.2	<0.20	
Xylene, total	µg/L		<0.4	<0.4	<0.40	
PHC F1 (C6-C10)	µg/L		<25	<25	<25	<25
PHC F2 (>C10-C16)	µg/L		<100	<100	<100	< 50
PHC F3 (>C16-C34)	µg/L		<200	<200	<200	< 400
PHC F4 (<C34-C50)	µg/L		<200	<200	<200	< 400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SUMP 2					
			Q1 2016	Q2 2016	Q3 2016		Q4 2016	
			23-Mar-16	25-May-16	10-Aug-16		18-Oct-16	
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	SUMP 2	DUP	SUMP 2	DUP
Total Coliform	cfu/100mL		16	50	102	92	NDOGT	NDOGT
E.Coli	cfu/100mL		0	21	15	15	NDOGT	NDOGT
Heterotrophic Plate Count	cfu/mL		1360	>2000	>2000	>2000	>2000	>2000
Temperature (field)	°C		4.1	15.2	20.4	-	14.4	-
pH @25°C (lab)	pH units	6.5 - 8.5	7.94	8.36	8.09	8.08	7.82	7.82
pH (field)	pH units	6.5 - 8.5	7.8	8.3	8.6	-	8.1	-
Conductivity @25°C (lab)	µS/cm		594	711	947	944	833	847
Conductivity (field)	µS/cm		307	575	684	-	415	-
Dissolved Oxygen (field)	mg/L		8.1	7.9	-	-	-	-
Alkalinity (CaCO3)	mg/L		208	235	231	227	120	120
Hardness (CaCO3)	mg/L		252	339	384	388	377	359
Chloride	mg/L		52.2	80.7	159	158	120	121
Fluoride	mg/L		0.3	0.2	0.2	0.2	0.3	0.2
Nitrate (N)	mg/L		1.5	2	0.8	0.8	0.2	0.2
Nitrite (N)	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L		6	7	7	6	5	5
Colour	TCU		8	5	4	5	42	27
Total Suspended Solids	mg/L		2	21	31	22	20	9
Ammonia (N) - Total	mg/L		0.03	0.08	0.09	0.09	0.14	0.05
Unionized Ammonia as NH_3	mg/L	0.02	0.0002	0.0042	0.0126	0.0126	0.0045	0.0016
Total Kjeldahl Nitrogen	mg/L		0.1	0.2	0.4	0.3	0.3	0.2
Phosphorus - Total	mg/L	0.03	0.01	0.01	0.03	0.01	0.02	0.01
Turbidity	NTU		-	-	-	-	-	-
Silica	mg/L		-	-	-	-	-	-
Silicon	mg/L		-	-	-	-	-	-
Phenolics	mg/L	0.005	-	-	-	-	-	-
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-	-	-
Oil and Grease - Mineral	mg/L		-	-	-	-	-	-
Oil & Grease - Total	mg/L		-	-	-	-	-	-
Calcium	mg/L		53	64.8	64	64.5	73.2	69.3
Magnesium	mg/L		29.1	43	54.5	55.2	47.3	45.3
Potassium	mg/L		1.4	2.8	4.5	4.6	3.1	3.1
Sodium	mg/L		18	24.1	37.1	37.2	31.6	31.0
Aluminum	mg/L		0.02	0.14	0.06	0.06	0.11	0.07
Antimony	mg/L		<0.0001	<0.0001	0.0003	0.0002	<0.0001	<0.0001
Arsenic	mg/L		0.0013	0.0015	0.002	0.002	0.0032	0.0032
Barium	mg/L		0.009	0.011	0.016	0.015	0.018	0.018
Beryllium	mg/L		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Boron	mg/L	0.20	0.015	0.033	0.058	0.059	0.039	0.038
Cadmium	mg/L	0.0002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Chromium	mg/L	0.0089	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	mg/L		<0.0001	0.0002	0.0003	0.0003	0.0002	0.0002
Copper	mg/L	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Iron	mg/L	0.3	0.013	0.122	0.035	0.035	0.264	0.214
Lead	mg/L	0.025	0.00004	0.0002	0.00012	0.00013	0.00009	<0.00002
Manganese	mg/L		0.003	0.017	0.01	0.01	0.091	0.086
Molybdenum	mg/L		0.0004	0.0004	0.0008	0.0008	0.0007	0.0006
Nickel	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SUMP 2					
			Q1 2016	Q2 2016	Q3 2016		Q4 2016	
			23-Mar-16	25-May-16	10-Aug-16		18-Oct-16	
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	SUMP 2	DUP	SUMP 2	DUP
Selenium	mg/L		0.002	0.004	0.006	0.006	0.007	0.007
Silver	mg/L		<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Strontium	mg/L		0.197	0.404	0.688	0.708	0.446	0.432
Thallium	mg/L		<0.00005	<0.00005	<0.000005	<0.00005	<0.00005	<0.00005
Titanium	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tungsten	mg/L		0.04	0.02	0.04	0.04	<0.01	<0.01
Uranium	mg/L		0.00017	0.00014	0.00017	0.00016	0.00018	0.00017
Vanadium	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zirconium	mg/L		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Anion Sum	meq/L		5.87	7.27	9.33	9.19	5.91	5.93
Cation Sum	meq/L		5.86	7.9	9.41	9.5	9.03	8.63
Ion Ratio	AS/CS		1.00	0.92	0.992	0.968	0.655	0.687
TDS (Calc)	mg/L		292	373	469	466	354	347
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SUMP 2					
			Q1 2017	Q2 2017		Q3 2017	Q4 2017	
			1-Feb-17	5-Apr-17		17-Jul-17	4-Oct-17	
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	DUP	SUMP 2	SUMP 2	DUP 1
Total Coliform	cfu/100mL		4	<10	<10	>200	NDOGT	NDOGT
E.Coli	cfu/100mL		0	0	0	50	NDOGT	NDOGT
Heterotrophic Plate Count	cfu/mL		50	60	8	>200	>2000	>2000
Temperature (field)	°C		1.5	6.9	-	18.8	15.9	-
pH @25°C (lab)	pH units	6.5 - 8.5	7.79	8.25	8.23	7.98	8.25	8.27
pH (field)	pH units	6.5 - 8.5	8.7	8.2	-	8.0	8.0	-
Conductivity @25°C (lab)	µS/cm		734	540	533	794	815	823
Conductivity (field)	µS/cm		-	583	-	816	824	-
Dissolved Oxygen (field)	mg/L		-	-	-	-	-	-
Alkalinity (CaCO3)	mg/L		217	194	194	203	207	189
Hardness (CaCO3)	mg/L		285	222	218	297	327	322
Chloride	mg/L		82.1	45.6	45.7	94.1	124	124
Fluoride	mg/L		0.2	0.3	0.2	0.2	0.2	0.2
Nitrate (N)	mg/L		1.0	1.5	1.5	1.8	0.9	0.9
Nitrite (N)	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L		7	6	7	6	5	5
Colour	TCU		5	8	8	3	6	8
Total Suspended Solids	mg/L		<2	5	5	<3	<3	<3
Ammonia (N) - Total	mg/L		0.02	0.03	0.02	0.05	0.03	0.03
Unionized Ammonia as NH_3	mg/L	0.02	0.0008	0.0007	0.0005	0.0019	0.0008	0.0008
Total Kjeldahl Nitrogen	mg/L		0.2	0.2	0.1	0.2	0.2	0.2
Phosphorus - Total	mg/L	0.03	<0.01	0.02	0.02	0.01	<0.01	<0.01
Turbidity (field)	NTU		-	-	-	3.0	5.0	-
Silica	mg/L		-	-	-	-	-	-
Silicon	mg/L		-	-	-	-	-	-
Phenolics	mg/L	0.005	-	-	-	-	-	-
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-	-	-
Oil and Grease - Mineral	mg/L		-	-	-	-	-	-
Oil & Grease - Total	mg/L		-	-	-	-	-	-
Calcium	mg/L		55.1	49.5	48.7	52.3	48.8	47.9
Magnesium	mg/L		35.9	24.0	23.5	40.4	49.8	49.3
Potassium	mg/L		1.7	1.1	1.1	3.0	4.1	4.1
Sodium	mg/L		23.4	18.7	18.3	31.6	32.5	32.3
Aluminum	mg/L		0.03	0.07	0.09	0.04	0.05	0.05
Antimony	mg/L		0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001
Arsenic	mg/L		0.0006	0.0005	0.0006	0.0008	0.0013	0.0013
Barium	mg/L		0.011	0.011	0.011	0.014	0.012	0.012
Beryllium	mg/L		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Boron	mg/L	0.20	0.014	0.033	0.020	0.052	0.059	0.059
Cadmium	mg/L	0.0002	<0.00002	<0.00002	<0.00002	<0.000014	<0.000014	<0.000014
Chromium	mg/L	0.0089	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cobalt	mg/L		0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0001
Copper	mg/L	0.005	<0.002	<0.002	0.002	<0.002	<0.002	<0.002
Iron	mg/L	0.3	0.014	0.063	0.074	0.014	0.048	0.046
Lead	mg/L	0.025	0.00009	<0.00002	<0.00002	0.00003	0.00007	0.00006
Manganese	mg/L		0.005	0.004	0.004	0.001	0.013	0.013
Molybdenum	mg/L		0.0005	0.0003	0.0003	0.0005	<0.01	<0.01
Nickel	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SUMP 2					
			Q1 2017	Q2 2017		Q3 2017	Q4 2017	
			1-Feb-17	5-Apr-17		17-Jul-17	4-Oct-17	
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	DUP	SUMP 2	SUMP 2	DUP 1
Selenium	mg/L		0.001	0.001	0.001	<0.001	0.001	<0.001
Silver	mg/L		<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Strontium	mg/L		0.234	0.147	0.145	0.414	0.465	0.464
Thallium	mg/L		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Titanium	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tungsten	mg/L		<0.01	0.21	0.13	<0.01	<0.01	<0.01
Uranium	mg/L		0.00016	0.00014	0.00014	0.00012	0.00009	0.00009
Vanadium	mg/L		<0.005	0.005	<0.005	<0.005	<0.005	<0.005
Zinc	mg/L	0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zirconium	mg/L		<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Anion Sum	meq/L		6.88	5.42	5.42	6.98	7.83	7.48
Cation Sum	meq/L		6.76	5.29	5.19	7.39	8.06	7.96
Ion Ratio	AS/CS		1.02	1.03	1.04	0.94	0.97	0.94
TDS (Calc)	mg/L		340	269	268	357	393	381
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	µg/L		<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<50	<50	<50
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<50	<50	<50
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<400	<400	<400
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<400	<400	<400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 2				
			Q1 2018	Q2 2018	Q3 2018	Q4 2018	
			6-Mar-18	9-May-18	5-Sep-18	6-Dec-18	
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	SUMP 2	SUMP 2	DUP
Total Coliform	cfu/100mL		6	9	95	13	36
E.Coli	cfu/100mL		1	117	53	2	1
Heterotrophic Plate Count	cfu/mL		14	55	150	46	7
Temperature (field)	°C		2.9	13	21.6	4.1	4.1
pH @25°C (lab)	pH units	6.5 - 8.5	8.22	8.31	-	-	-
pH (field)	pH units	6.5 - 8.5	7.9	8.1	8.2	7.7	7.7
Conductivity @25°C (lab)	µS/cm		471	503	-	-	-
Conductivity (field)	µS/cm		510	513	682	615	615
Dissolved Oxygen (field)	mg/L		-	9.85	6.68	8.05	8.05
Alkalinity (CaCO3)	mg/L		185	200	170	230	220
Hardness (CaCO3)	mg/L		214	234	270	300	300
Chloride	mg/L		32.9	39.2	110	72	73
Fluoride	mg/L		0.108	0.132	0.19	0.19	0.18
Nitrate (N)	mg/L		0.9	1.19	0.51	1.00	0.99
Nitrite (N)	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Sulphate	mg/L		3.7	4.46	5.1	5.5	6.2
Colour	TCU		4.3	<2.0	<2	9	5
Total Suspended Solids	mg/L		<2.0	<2.0	<10	<10	<10
Ammonia (N) - Total	mg/L		0.149	0.135	<0.05	0.085	0.11
Unionized Ammonia as NH_3	mg/L	0.02	0.0013	0.0042	<0.003	0.0005	0.0006
Total Kjeldahl Nitrogen	mg/L		0.16	<0.15	0.16	0.13	0.23
Phosphorus - Total	mg/L	0.03	<0.0030	0.0041	<0.020	<0.020	<0.020
Turbidity (lab)	NTU		1.95	2.27	-	-	-
Turbidity (field)	NTU		-	-	-	-	-
Silica	mg/L		-	-	-	-	-
Silicon	mg/L		-	1.1	-	-	-
Phenolics	mg/L	0.005	-	-	-	-	-
Oil and Grease - Anim/Veg.	mg/L		-	-	-	-	-
Oil and Grease - Mineral	mg/L		-	-	-	-	-
Oil & Grease - Total	mg/L		-	-	-	-	-
Calcium	mg/L		49.2	50.9	35	56	58
Magnesium	mg/L		21.8	25.8	41	34	35
Potassium	mg/L		1.1	1.38	3.3	2	2.1
Sodium	mg/L		12.4	16.1	29	22	23
Aluminum	mg/L		0.077	0.063	0.015	0.051	0.023
Antimony	mg/L		<0.00010	<0.00010	<0.0005	<0.0005	<0.0005
Arsenic	mg/L		0.00021	0.00024	<0.001	<0.001	<0.001
Barium	mg/L		0.00803	0.00869	0.0086	0.0096	0.0098
Beryllium	mg/L		<0.00010	<0.00010	<0.0005	<0.0005	<0.0005
Boron	mg/L	0.20	0.011	0.016	0.049	0.028	0.027
Cadmium	mg/L	0.0002	<0.0000050	<0.000010	<0.0001	<0.0001	<0.0001
Chromium	mg/L	0.0089	<0.00050	<0.00050	<0.005	<0.005	<0.005
Cobalt	mg/L		<0.00010	<0.00010	<0.0005	<0.0005	<0.0005
Copper	mg/L	0.005	0.00047	<0.0010	0.0011	0.002	0.0026
Iron	mg/L	0.3	0.039	<0.050	<0.1	<0.1	<0.1
Lead	mg/L	0.025	<0.000050	<0.00010	<0.0005	<0.0005	<0.0005
Manganese	mg/L		0.00255	0.00346	0.0032	0.002	0.0021
Molybdenum	mg/L		0.000223	0.000244	0.00054	<0.0005	<0.0005
Nickel	mg/L		<0.00050	<0.00050	<0.001	<0.001	<0.001

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 2				
			Q1 2018	Q2 2018	Q3 2018	Q4 2018	
			6-Mar-18	9-May-18	5-Sep-18	6-Dec-18	
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	SUMP 2	SUMP 2	DUP
Selenium	mg/L		<0.000050	<0.000050	<0.002	<0.002	<0.002
Silver	mg/L		<0.000050	<0.000050	<0.0001	<0.0001	<0.0001
Strontium	mg/L		0.137	0.169	0.29	0.25	0.25
Thallium	mg/L		<0.000010	0.00001	<0.00005	<0.00005	<0.00005
Titanium	mg/L		<0.0025	0.00149	<0.005	<0.005	<0.005
Tungsten	mg/L		<0.00010	<0.00010	<0.001	<0.001	<0.001
Uranium	mg/L		0.000091	0.000114	<0.0001	<0.0001	0.0001
Vanadium	mg/L		<0.00050	<0.00050	<0.0005	<0.0005	<0.0005
Zinc	mg/L	0.02	<0.0010	<0.0030	<0.005	<0.005	0.005
Zirconium	mg/L		<0.00030	<0.00030	<0.001	<0.001	<0.001
Anion Sum	meq/L		-	-	-	-	-
Cation Sum	meq/L		-	-	-	-	-
Ion Ratio	AS/CS		-	-	-	-	-
TDS (Calc)	mg/L		244	268	-	-	-
Benzene	µg/L		<0.5	<0.5	<0.20	<0.20	<0.20
Toluene	µg/L		<0.5	<0.5	<0.20	<0.20	<0.20
Ethylbenzene	µg/L		<0.5	<0.5	<0.20	<0.20	<0.20
Xylene, m, p-	µg/L		<0.4	<0.4	<0.40	<0.40	<0.40
Xylene, o-	µg/L		<0.3	<0.3	<0.20	<0.20	<0.20
Xylene, total	µg/L		<0.5	<0.5	<0.40	<0.40	<0.40
PHC F1 (C6-C10)	µg/L		<25	<25	<25	<25	<25
PHC F2 (>C10-C16)	µg/L		<100	<100	<100	<100	<100
PHC F3 (>C16-C34)	µg/L		<250	<250	<200	<200	<200
PHC F4 (<C34-C50)	µg/L		<250	<250	<200	<200	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 2				
			Q1 2019	Q2 2019	Q3 2019		Q4 2019
			9-Mar-19	17-May-19	4-Sep-19		19-Dec-19
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	SUMP 2	DUP	SUMP 2
Total Coliform	cfu/100mL			4			
E.Coli	cfu/100mL			2			
Heterotrophic Plate Count	cfu/mL			8	160	150	
Temperature (field)	°C		FROZEN	10.8			NO SAMPLE
pH @25°C (lab)	pH units	6.5 - 8.5			-	-	
pH (field)	pH units	6.5 - 8.5		8.3			
Conductivity @25°C (lab)	µS/cm						
Conductivity (field)	µS/cm			455			
Dissolved Oxygen (field)	mg/L			10.2			
Alkalinity (CaCO3)	mg/L			190	190	190	
Hardness (CaCO3)	mg/L			230	310	320	
Chloride	mg/L			38	130	130	
Fluoride	mg/L			0.11	0.18	0.19	
Nitrate (N)	mg/L			0.86	1.34	1.34	
Nitrite (N)	mg/L			0.011	0.011	0.01	
Sulphate	mg/L			4.8	5.8	5.8	
Colour	TCU			<2	<2	<2	
Total Suspended Solids	mg/L			<10	<10	<10	
Ammonia (N) - Total	mg/L			<0.05	<0.05	0.071	
Unionized Ammonia as NH_3	mg/L	0.02		<0.002			
Total Kjeldahl Nitrogen	mg/L			<0.10	0.22	0.21	
Phosphorus - Total	mg/L	0.03		0.006	<0.004	<0.004	
Turbidity (lab)	NTU						
Turbidity (field)	NTU						
Silica	mg/L						
Silicon	mg/L						
Phenolics	mg/L	0.005					
Oil and Grease - Anim/Veg.	mg/L						
Oil and Grease - Mineral	mg/L						
Oil & Grease - Total	mg/L						
Calcium	mg/L			47	45	44	
Magnesium	mg/L			28.0	49	48	
Potassium	mg/L			1.5	4	4.1	
Sodium	mg/L			13	35	35	
Aluminum	ug/L			28	9.4	10	
Antimony	ug/L			<0.50	<0.5	<0.5	
Arsenic	ug/L			<1.0	<1.0	<1.0	
Barium	ug/L			8.5	13	12	
Beryllium	ug/L			<0.50	<0.5	<0.5	
Boron	ug/L	200.00		18	55	54	
Cadmium	ug/L	0.2		<0.10	<0.10	<0.10	
Chromium	ug/L	8.9		<5.0	<5.0	<5.0	
Cobalt	ug/L			<0.50	<0.50	<0.50	
Copper	ug/L	5		<1.0	<1.0	<1.0	
Iron	ug/L	300		<100	<100	<100	
Lead	ug/L	25		<0.50	<0.50	<0.50	
Manganese	ug/L			4.4	<2.0	<2.0	
Molybdenum	ug/L			<0.50	24	24	
Nickel	ug/L			<1.0	<1.0	<1.0	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 2				
			Q1 2019	Q2 2019	Q3 2019		Q4 2019
			9-Mar-19	17-May-19	4-Sep-19		19-Dec-19
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	SUMP 2	DUP	SUMP 2
Selenium	ug/L			<2.0	<2.0	<2.0	
Silver	ug/L			<0.10	<0.10	<0.10	
Strontium	ug/L			210	290	300	
Thallium	ug/L			<0.050	<0.050	<0.050	
Titanium	ug/L			<5.0	6.9	<5.0	
Tungsten	ug/L			<1.0	<1.0	<1.0	
Uranium	ug/L			<0.10	<0.10	<0.10	
Vanadium	ug/L			<0.50	<0.50	<0.50	
Zinc	ug/L	0.02		<5.0	<5.0	<5.0	
Zirconium	ug/L			<1.0	<1.0	<1.0	
Anion Sum	meq/L						
Cation Sum	meq/L						
Ion Ratio	AS/CS						
TDS (Calc)	mg/L						
Benzene	µg/L			<0.20	<0.20	<0.20	
Toluene	µg/L			<0.20	<0.20	<0.20	
Ethylbenzene	µg/L			<0.20	<0.20	<0.20	
Xylene, m, p-	µg/L			<0.40	<0.40	<0.40	
Xylene, o-	µg/L			<0.20	<0.20	<0.20	
Xylene, total	µg/L			<0.40	<0.40	<0.40	
PHC F1 (C6-C10)	µg/L			<25	<25	<25	
PHC F2 (>C10-C16)	µg/L			<100	<100	<100	
PHC F3 (>C16-C34)	µg/L			<200	<200	<200	
PHC F4 (<C34-C50)	µg/L			<200	<200	<200	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 2				
			Q1 2020	Q2 2020	Q3 2020		Q4 2020
			2-Mar-20	30-Jun-20	27-Aug-20		25-Nov-20
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	SUMP 2	DUP	SUMP 2
Total Coliform	cfu/100mL			120	600	930	18
E.Coli	cfu/100mL			20	600	930	<2
Heterotrophic Plate Count	cfu/mL			220	5500	>5700	530
Temperature (field)	°C		FROZEN				
pH @25°C (lab)	pH units	6.5 - 8.5					
pH (field)	pH units	6.5 - 8.5		8.1	8.6	8.6	8.4
Conductivity @25°C (lab)	µS/cm						
Conductivity (field)	µS/cm			657	781	781	903
Dissolved Oxygen (field)	mg/L			8.05	8.54	8.54	10.63
Alkalinity (CaCO3)	mg/L			130	150	160	180
Hardness (CaCO3)	mg/L			230	350	350	388
Chloride	mg/L				160	170	173
Fluoride	mg/L			0.14	0.16	0.15	<0.1
Nitrate (N)	mg/L			0.81	0.5	0.52	1.7
Nitrite (N)	mg/L			0.034	0.028	0.028	<0.1
Sulphate	mg/L			4.8	6.5	6.6	7
Colour	TCU			<2	<2	<2	5
Total Suspended Solids	mg/L			10	<10	<10	<3
Ammonia (N) - Total	mg/L			0.075	<0.050	0.074	0.1
Unionized Ammonia as NH_3	mg/L	0.02					
Total Kjeldahl Nitrogen	mg/L			0.34	0.29	0.35	0.4
Phosphorus - Total	mg/L	0.03		0.025	0.006	0.006	<.01
Turbidity (lab)	NTU						2.9
Turbidity (field)	NTU						
Silica	mg/L						
Silicon	mg/L						
Phenolics	mg/L	0.005					
Oil and Grease - Anim/Veg.	mg/L						
Oil and Grease - Mineral	mg/L						
Oil & Grease - Total	mg/L						
Calcium	mg/L			31	35	36	59
Magnesium	mg/L			44	60	60	58.6
Potassium	mg/L			4.3			5.5
Sodium	mg/L			28			37
Aluminum	ug/L			27	18	22	40
Antimony	ug/L				<0.50	<0.50	0.3
Arsenic	ug/L			<1	<1.0	<1.0	0.7
Barium	ug/L			6	6.2	5.4	10
Beryllium	ug/L			<.4	<0.40	<0.40	< 2
Boron	ug/L	200.00		57	81	82	71
Cadmium	ug/L	0.2		<.09	<0.090	<0.090	< 0.015
Chromium	ug/L	8.9		<5	<5.0	<5.0	< 2
Cobalt	ug/L			<.5	<0.50	<0.50	< 5
Copper	ug/L	5		<.9	<0.90	<0.90	0.5
Iron	ug/L	300		<100	<100	<100	54
Lead	ug/L	25		0.5	<0.50	<0.50	0.11
Manganese	ug/L			4.7	5.7	6.6	15
Molybdenum	ug/L			0.5	0.65	0.68	< 10
Nickel	ug/L			1	<1.0	<1.0	< 10

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SUMP 2				
			Q1 2020	Q2 2020	Q3 2020		Q4 2020
			2-Mar-20	30-Jun-20	27-Aug-20		25-Nov-20
PARAMETERS	UNITS	PWQO	SUMP 2	SUMP 2	SUMP 2	DUP	SUMP 2
Selenium	ug/L			<2	<2.0	<2.0	< 1
Silver	ug/L			<.09	<0.090	<0.090	< 0.1
Strontium	ug/L				380	380	643
Thallium	ug/L			<.05	0.052	<0.050	< 0.05
Titanium	ug/L			<5	<5.0	<5.0	<5.0
Tungsten	ug/L			<1	<1.0	<1.0	< 10
Uranium	ug/L			<.1	<0.10	<0.10	0.06
Vanadium	ug/L			<.5	<0.50	<0.50	< 5.0
Zinc	ug/L	20.00		<5	<5.0	<5.0	8
Zirconium	ug/L			<1	<1.0	<1.0	<3.0
Anion Sum	meq/L						
Cation Sum	meq/L						
Ion Ratio	AS/CS						
TDS (Calc)	mg/L						456
Benzene	µg/L			<0.20	<0.20	<0.20	
Toluene	µg/L			<0.2	<0.20	<0.20	
Ethylbenzene	µg/L			<0.2	<0.20	<0.20	
Xylene, m, p-	µg/L			<0.4	<0.40	<0.40	
Xylene, o-	µg/L			<0.2	<0.20	<0.20	
Xylene, total	µg/L			<0.4	<0.40	<0.40	
PHC F1 (C6-C10)	µg/L			<25	<25	<25	<25
PHC F2 (>C10-C16)	µg/L			<100	<100	<100	< 50
PHC F3 (>C16-C34)	µg/L			<200	<200	<200	< 400
PHC F4 (<C34-C50)	µg/L			<200	<200	<200	< 400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			QFSW2					
			Q1 2018		Q2 2018	Q3 2018		Q4 2018
			6-Mar-18		9-May-18	5-Sep-18		6-Dec-18
PARAMETERS	UNITS	PWQO	QFSW2	DUP	QFSW2	QFSW2	DUP	QFSW2
Total Coliform	cfu/100mL		34	32	32	53	68	9
E.Coli	cfu/100mL		0	0	5	14	17	2
Heterotrophic Plate Count	cfu/mL		9	9	72	270	250	5
Temperature (field)	°C		3.7	-	11.2	18.8	18.8	5.5
pH @25°C (lab)	pH units	6.5 - 8.5	8.05	8.07	8.24	-	-	-
pH (field)	pH units	6.5 - 8.5	7.6	-	7.86	8.0	8.0	7.6
Conductivity @25°C (lab)	µS/cm		607	608	554	-	-	-
Conductivity (field)	µS/cm		562	-	564	700	700	687
Dissolved Oxygen (field)	mg/L		-	-	8.18	6.84	6.84	8.21
Alkalinity (CaCO3)	mg/L		230	233	220	200	200	230
Hardness (CaCO3)	mg/L		270	273	256	290	290	330
Chloride	mg/L		54.3	54.3	48.7	110	110	87
Fluoride	mg/L		0.182	0.179	0.172	0.23	0.22	0.24
Nitrate (N)	mg/L		0.93	0.928	1.05	0.38	0.37	1.15
Nitrite (N)	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Sulphate	mg/L		5.19	5.15	4.72	5.0	4.9	6.1
Colour	TCU		4.3	2.7	3.1	3	3	5
Total Suspended Solids	mg/L		<2.0	<2.0	<2.0	<10	<10	<10
Ammonia (N) - Total	mg/L		0.133	0.328	0.084	<0.05	<0.05	0.12
Unionized Ammonia as NH_3	mg/L	0.02	0.0005	0.0013	0.0012	<0.0016	<0.0016	0.0006
Total Kjeldahl Nitrogen	mg/L		0.19	0.37	0.16	0.23	0.19	0.24
Phosphorus - Total	mg/L	0.03	<0.0030	<0.0030	<0.0030	<0.020	<0.020	<0.020
Turbidity (lab)	NTU		-	-	1.36	-	-	-
Calcium	mg/L		55.1	54.2	55.2	45	44	59
Magnesium	mg/L		29.6	29.8	28.4	42	41	38
Potassium	mg/L		1.59	1.58	1.58	3	3	2.2
Sodium	mg/L		17.9	18.1	18.1	28	28	25
Aluminum	mg/L		0.01	0.012	0.027	0.011	0.011	0.02
Antimony	mg/L		<0.00010	<0.00010	<0.00010	<0.0005	<0.0005	<0.0005
Arsenic	mg/L		0.00024	0.00024	0.00027	<0.001	<0.001	<0.001
Barium	mg/L		0.0101	0.00987	0.00936	0.011	0.011	0.013
Beryllium	mg/L		<0.00010	<0.00010	<0.00010	<0.0005	<0.0005	<0.0005
Boron	mg/L	0.20	0.018	0.018	0.020	0.044	0.046	0.031
Cadmium	mg/L	0.0002	<0.000010	<0.000010	<0.000010	<0.0001	<0.0001	<0.0001
Chromium	mg/L	0.0089	<0.00050	<0.00050	<0.00050	<0.005	<0.005	<0.005
Cobalt	mg/L		<0.00010	<0.00010	<0.00010	<0.0005	<0.0005	<0.0005
Copper	mg/L	0.005	<0.0010	<0.0010	<0.0010	<0.001	<0.001	<0.001
Iron	mg/L	0.3	<0.050	<0.050	<0.050	<0.1	0.12	<0.1
Lead	mg/L	0.025	<0.00010	<0.00010	<0.00010	<0.0005	<0.0005	<0.0005
Manganese	mg/L		0.0192	0.0188	0.00419	0.094	0.094	0.14
Molybdenum	mg/L		0.000311	0.000325	0.000326	0.00061	0.00059	0.00052
Nickel	mg/L		<0.00050	<0.00050	<0.00050	<0.001	<0.001	0.0011
Selenium	mg/L		<0.000050	0.000054	<0.000050	<0.002	<0.002	<0.002
Silver	mg/L		<0.000050	<0.000050	<0.000050	<0.0001	<0.0001	<0.0001
Strontium	mg/L		0.218	0.211	0.213	0.31	0.3	0.29
Thallium	mg/L		0.000016	0.000015	0.000014	<0.00005	<0.00005	<0.00005
Titanium	mg/L		0.00036	0.00037	0.00049	<0.0005	<0.0005	<0.0005
Tungsten	mg/L		<0.00010	<0.00010	<0.00010	<0.001	<0.001	<0.001
Uranium	mg/L		0.000127	0.000124	0.00013	0.00011	0.00011	0.00012

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			QFSW2					
			Q1 2018		Q2 2018	Q3 2018		Q4 2018
			6-Mar-18		9-May-18	5-Sep-18		6-Dec-18
PARAMETERS	UNITS	PWQO	QFSW2	DUP	QFSW2	QFSW2	DUP	QFSW2
Vanadium	mg/L		<0.00050	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005
Zinc	mg/L	0.02	0.0043	0.0038	<0.0030	<0.005	<0.005	<0.005
Zirconium	mg/L		<0.00030	<0.00030	<0.00030	<0.001	<0.001	<0.001
Anion Sum	meq/L		-	-	-	-	-	-
Cation Sum	meq/L		-	-	-	-	-	-
Ion Ratio	AS/CS		-	-	-	-	-	-
TDS (Calc)	mg/L		337	327	299	-	-	-
Benzene	µg/L		<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Toluene	µg/L		<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Xylene, m, p-	µg/L		<0.4	<0.4	<0.4	<0.40	<0.40	<0.40
Xylene, o-	µg/L		<0.3	<0.3	<0.3	<0.20	<0.20	<0.20
Xylene, total	µg/L		<0.5	<0.5	<0.5	<0.40	<0.40	<0.40
PHC F1 (C6-C10)	µg/L		<25	<25	<25	<25	<25	<25
PHC F2 (>C10-C16)	µg/L		<100	<100	<100	<100	<100	<100
PHC F3 (>C16-C34)	µg/L		<250	<250	<250	<200	<200	<200
PHC F4 (<C34-C50)	µg/L		<250	<250	<250	<200	<200	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			QFSW2						
			Q1 2019		Q2 2019		Q3 2019	Q4 2019	
			8-Mar-19		17-May-19		4-Sep-19	19-Dec-19	
PARAMETERS	UNITS	PWQO	QFSW2	DUP	QFSW2	DUP	QFSW2	QFSW2	DUP
Total Coliform	cfu/100mL		1	2	6	8	31	24	2
E.Coli	cfu/100mL		1	2	0	5	13	13	2
Heterotrophic Plate Count	cfu/mL		3	0	2	6	130	60	13
Temperature (field)	°C		2.7	2.7	9.6	9.6			
pH @25°C (lab)	pH units	6.5 - 8.5	8.05						
pH (field)	pH units	6.5 - 8.5	7.75		7.97	8.0			
Conductivity @25°C (lab)	µS/cm		607						
Conductivity (field)	µS/cm		670		495.8	495.8			
Dissolved Oxygen (field)	mg/L		8.68		8.27	8.27			
Alkalinity (CaCO3)	mg/L		230		210	210	210	230	220
Hardness (CaCO3)	mg/L		270		260	250	320	350	350
Chloride	mg/L		54.3		44	44	120	120	120
Fluoride	mg/L		0.182		0.17	0.17	0.23	0.21	0.22
Nitrate (N)	mg/L		0.93		1.04	1.04	0.42	1.47	1.54
Nitrite (N)	mg/L		<0.010		<0.010	<0.010	<0.010	<0.010	<0.010
Sulphate	mg/L		5.19		5.5	5.5	5	7.3	7.4
Colour	TCU		4.3		<2	<2	5	3	3
Total Suspended Solids	mg/L		<2.0		<10	<10	<10	<10	<10
Ammonia (N) - Total	mg/L		0.133		<0.05	<0.05	0.13	0.09	0.084
Unionized Ammonia as NH_3	mg/L	0.02	0.0005	0	<0.0008	<0.0008	1.07E-11	7.42E-12	0.0000
Total Kjeldahl Nitrogen	mg/L		0.19		<0.010	<0.010	0.25	0.21	0.18
Phosphorus - Total	mg/L	0.03	<0.0030		0.005	0.004	<0.004	<0.020	<0.020
Turbidity (lab)	NTU		-						
Calcium	mg/L		55.1		53	53	55	63	60
Magnesium	mg/L		29.6		30	31	46	44	45
Potassium	mg/L		1.59		1.5	1.5	3.2	2.9	3
Sodium	mg/L		17.9		18.0	19	31	29	31
Aluminum	ug/L		0.01		14	14	7.4	20	8.1
Antimony	ug/L		<0.00010		<0.50	<0.50	<0.50	<0.50	<0.50
Arsenic	ug/L		0.00024		<1.0	<1.0	<1.0	<1.0	<1.0
Barium	ug/L		0.0101		10	10	14	14	15
Beryllium	ug/L		<0.00010		<0.50	<0.50	<0.50	<0.50	<0.50
Boron	ug/L	200.00	0.018		19	20	46	37	37
Cadmium	ug/L	0.2	<0.000010		<0.10	<0.10	<0.10	<0.10	<0.10
Chromium	ug/L	8.9	<0.00050		<5.0	<5.0	<5.0	<5.0	<5.0
Cobalt	ug/L		<0.00010		<0.50	<0.50	<0.50	<0.50	<0.50
Copper	ug/L	5	<0.0010		<1.0	<1.0	<1.0	<1.0	<1.0
Iron	ug/L	300	<0.050		<100	<100	<100	<100	<100
Lead	ug/L	25	<0.00010		<0.50	<0.50	<0.50	<0.50	<0.50
Manganese	ug/L		0.0192		14	14	130	100	110
Molybdenum	ug/L		0.000311		<0.50	<0.50	0.69	<0.50	0.5
Nickel	ug/L		<0.00050		<1.0	<1.0	<1.0	<1.0	<1.0
Selenium	ug/L		<0.000050		<2.0	<2.0	<2.0	<2.0	<2.0
Silver	ug/L		<0.000050		<0.10	<0.10	<0.10	<0.10	<0.10
Strontium	ug/L		0.218		210	210	310	370	380
Thallium	ug/L		0.000016		<0.050	<0.050	0.064	<0.050	<0.050
Titanium	ug/L		0.00036		<5.0	<5.0	<5.0	<5.0	<5.0
Tungsten	ug/L		<0.00010		<1.0	<1.0	<1.0	<1.0	<1.0
Uranium	ug/L		0.000127		0.12	0.1	0.11	0.11	0.11

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			QFSW2						
			Q1 2019		Q2 2019		Q3 2019	Q4 2019	
			8-Mar-19		17-May-19		4-Sep-19	19-Dec-19	
PARAMETERS	UNITS	PWQO	QFSW2	DUP	QFSW2	DUP	QFSW2	QFSW2	DUP
Vanadium	ug/L		<0.00050		<0.50	<0.50	<0.50	<0.50	<0.50
Zinc	ug/L	0.02	0.0043		<5.0	<5.0	<5.0	<5.0	<5.0
Zirconium	ug/L		<0.00030		<1.0	<1.0	<1.0	<1.0	<1.0
Anion Sum	meq/L		-						
Cation Sum	meq/L		-						
Ion Ratio	AS/CS		-						
TDS (Calc)	mg/L		337						
Benzene	µg/L		<0.5		<0.20	<0.20	<0.20	<0.20	<0.20
Toluene	µg/L		<0.5		<0.20	<0.20	<0.20	<0.20	<0.20
Ethylbenzene	µg/L		<0.5		<0.20	<0.20	<0.20	<0.20	<0.20
Xylene, m, p-	µg/L		<0.4		<0.40	<0.40	<0.40	<0.40	<0.40
Xylene, o-	µg/L		<0.3		<0.20	<0.20	<0.20	<0.20	<0.20
Xylene, total	µg/L		<0.5		<0.40	<0.40	<0.40	<0.40	<0.40
PHC F1 (C6-C10)	µg/L		<25		<25	<25	<25	<25	<25
PHC F2 (>C10-C16)	µg/L		<100		<100	<100	<100	<100	<100
PHC F3 (>C16-C34)	µg/L		<250		<200	<200	<200	<200	<200
PHC F4 (<C34-C50)	µg/L		<250		<200	<200	<200	<200	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			QFSW2						
			Q1 2020		Q2 2020		Q3 2020	Q4 2020	
			2-Mar-20		11-Jun-20		27-Aug-20	25-Nov-20	
PARAMETERS	UNITS	PWQO	QFSW2	DUP	QFSW2	DUP	QFSW2	QFSW2	DUP
Total Coliform	cfu/100mL		22	72	12	13	NDOGT (1)	46	46
E.Coli	cfu/100mL		16	32	3	2	NDOGT (1)	<2	2
Heterotrophic Plate Count	cfu/mL		11	26	900	1200	>5700	370	470
Temperature (field)	°C								
pH @25°C (lab)	pH units	6.5 - 8.5							
pH (field)	pH units	6.5 - 8.5					8.2	7.9	7.9
Conductivity @25°C (lab)	µS/cm								
Conductivity (field)	µS/cm						779	821	821
Dissolved Oxygen (field)	mg/L						7.14	7.12	7.12
Alkalinity (CaCO3)	mg/L		230	240	220	230	160	201	199
Hardness (CaCO3)	mg/L		270	270	300	300	330	382	391
Chloride	mg/L		84	83	87	88	150	134	134
Fluoride	mg/L		0.21	0.21	0.27	0.24	0.17	<0.1	0.1
Nitrate (N)	mg/L		1.07	1.26	1.54	1.53	1.45	2	1.9
Nitrite (N)	mg/L		<0.01	<0.01	<0.01	<0.01	0.026	<0.1	<0.1
Sulphate	mg/L		6.5	7.2	6.8	6.9	7.2	7	7
Colour	TCU		<2	<2	<2	2	<2	5	5
Total Suspended Solids	mg/L		<10	<10	15	18	<10	18	17
Ammonia (N) - Total	mg/L		0.094	<0.05	0.11	0.14	<0.050	0.2	0.2
Unionized Ammonia as NH_3	mg/L	0.02							
Total Kjeldahl Nitrogen	mg/L		0.55	0.19	0.21	0.19	0.34	0.4	0.4
Phosphorus - Total	mg/L	0.03	<0.02	<0.02	<0.02	<0.02	0.005	<.01	0.01
Turbidity (lab)	NTU							18.7	19.6
Calcium	mg/L		59	61	60	63	38	68.7	70.4
Magnesium	mg/L		37	36	42	43	56	51.1	52.3
Potassium	mg/L		2.1	2.2	2.4	2.5		3.5	3.6
Sodium	mg/L		23	22	29.0	29		32	32.8
Aluminum	ug/L		6.4	9.6	37	46	33	60	60
Antimony	ug/L		<0.5	<0.5	<0.5	<0.5	<0.50	0.3	0.2
Arsenic	ug/L		<1	<1	<1	<1	<1.0	0.6	0.6
Barium	ug/L		13	14	15	15	8.2	18	18
Beryllium	ug/L		<0.5	<0.5	<0.5	<0.5	<0.40	< 2	< 2
Boron	ug/L	200.00	22	23	32.000	32	79	50	50
Cadmium	ug/L	0.2	<0.1	0.1	<0.1	<0.1	<0.090	< 0.015	< 0.015
Chromium	ug/L	8.9	<5	<5	<5	<5	<5.0	< 2	< 2
Cobalt	ug/L		<0.5	<0.5	<0.5	<0.5	<0.50	< 5	< 5
Copper	ug/L	5	<1	<1	<1	<1	<0.90	0.5	0.6
Iron	ug/L	300	<100	<100	<100	<100	<100	134	126
Lead	ug/L	25	<0.5	<0.5	<0.5	<0.5	<0.50	0.21	0.21
Manganese	ug/L		97	83	56	57	4.8	146	140
Molybdenum	ug/L		<0.5	<0.5	0.56	<0.5	0.64	< 10	< 10
Nickel	ug/L		<1	<1	<1	<1	<1.0	< 10	< 10
Selenium	ug/L		<2	<2	<2	<2	<2.0	< 1	< 1
Silver	ug/L		<0.1	<0.1	<0.1	<0.1	<0.090	< 0.1	< 0.1
Strontium	ug/L		280	290	300	310	370	451	441
Thallium	ug/L		<0.05	<0.05	<0.05	<0.05	<0.050	< 0.05	< 0.05
Titanium	ug/L		<5	<5	<5	<5	<5.0	<5.0	<5.0
Tungsten	ug/L		<1	<1	<1	<1	<1.0	< 10	< 10
Uranium	ug/L		0.11	0.11	0.13	0.14	<0.10	0.1	0.1

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			QFSW2						
			Q1 2020		Q2 2020		Q3 2020	Q4 2020	
			2-Mar-20		11-Jun-20		27-Aug-20	25-Nov-20	
PARAMETERS	UNITS	PWQO	QFSW2	DUP	QFSW2	DUP	QFSW2	QFSW2	DUP
Vanadium	ug/L		<0.5	<0.5	<0.5	0.5	<0.50	< 5.0	< 5.0
Zinc	ug/L	0.02	<5	<5	6	<5	<5.0	5	7
Zirconium	ug/L		<1	<1	<1	<1	<1.0	<3.0	<3.0
Anion Sum	meq/L								
Cation Sum	meq/L								
Ion Ratio	AS/CS								
TDS (Calc)	mg/L							426	428
Benzene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.20		
Toluene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.20		
Ethylbenzene	µg/L		<0.2	<0.2	<0.2	<0.2	<0.20		
Xylene, m, p-	µg/L		<0.4	<0.4	<0.4	<0.4	<0.40		
Xylene, o-	µg/L		<0.2	<0.2	<0.2	<0.2	<0.20		
Xylene, total	µg/L		<0.4	<0.4	<0.4	<0.4	<0.40		
PHC F1 (C6-C10)	µg/L		<25	<25	<25	<25	<25	<25	<25
PHC F2 (>C10-C16)	µg/L		<100	<100	<100	<100	<100	< 50	< 50
PHC F3 (>C16-C34)	µg/L		<200	<200	<200	<200	<200	< 400	< 400
PHC F4 (<C34-C50)	µg/L		<200	<200	<200	<200	<200	< 400	< 400

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW1			
			SW1	SW1	SW1	SW-DUP1
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	8-May-18	8-May-18
Total Coliform	cfu/100mL		-	-	-	-
E.Coli	cfu/100mL		-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-
Temperature (field)	°C		6.2	9.5	9.8	-
pH @25°C (lab)	pH units	6.5 - 8.5	8.08	8.18	7.97	8.01
pH (field)	pH units	6.5 - 8.5	7.3	8.3	7.4	-
Conductivity @25°C (lab)	µS/cm		809	528	525	525
Conductivity (field)	µS/cm		544	352	533	-
Dissolved Oxygen (field)	mg/L		10.0	14.1	3.7	-
Alkalinity (CaCO3)	mg/L		236	171	211	207
Hardness (CaCO3)	mg/L		322	237	243	245
Chloride	mg/L		116	50.3	46.1	45.9
Fluoride	mg/L		0.3	<0.1	0.175	0.174
Nitrate (N)	mg/L		0.2	1.3	0.262	0.257
Nitrite (N)	mg/L		<0.1	<0.1	<0.010	<0.010
Sulphate	mg/L		6	4	4.1	4.1
Colour	TCU		31	13	15.2	14.2
Total Suspended Solids	mg/L		8	<3	<2.0	<2.0
Ammonia (N) - Total	mg/L		0.02	0.01	0.035	0.065
Unionized Ammonia as NH_3	mg/L	0.02	0.0001	0.0003	0.0002	0.0003
Total Kjeldahl Nitrogen	mg/L		0.3	1.1	<0.15	0.19
Phosphorus - Total	mg/L	0.03	0.02	0.02	0.099	0.0095
Turbidity (lab)	NTU		-	-	0.31	0.33
Calcium	mg/L		60.7	49.3	50.5	53.3
Magnesium	mg/L		41.4	27.7	27.3	27.8
Potassium	mg/L		2.5	1.6	1.89	1.89
Sodium	mg/L		26.8	18.2	17.7	17
Aluminum	mg/L		0.03	0.03	<0.010	17.8
Antimony	mg/L		<0.0001	0.0001	<0.00010	<0.00010
Arsenic	mg/L		0.0004	0.0003	0.00028	0.0003
Barium	mg/L		0.011	0.009	0.0097	0.00946
Beryllium	mg/L		<0.002	<0.002	<0.00010	<0.00010
Boron	mg/L	0.20	0.016	0.014	0.023	0.024
Cadmium	mg/L	0.0002	<0.00002	<0.000014	<0.000010	<0.000010
Chromium	mg/L	0.0089	0.002	<0.002	<0.00050	<0.0005
Cobalt	mg/L		0.0002	0.0002	<0.00010	<0.00010
Copper	mg/L	0.005	<0.002	<0.002	<0.0010	<0.0010
Iron	mg/L	0.3	0.101	0.024	<0.050	<0.050
Lead	mg/L	0.025	0.00006	<0.00002	<0.00010	<0.00010
Manganese	mg/L		0.019	0.001	0.00407	0.00413
Molybdenum	mg/L		0.0005	0.0004	0.000336	0.000322
Nickel	mg/L		<0.01	<0.01	<0.00050	<0.00050
Selenium	mg/L		0.006	<0.001	<0.000050	<0.000050
Silver	mg/L		<0.00002	<0.00002	<0.000050	<0.000050
Strontium	mg/L		0.32	0.229	0.21	0.208
Thallium	mg/L		<0.00005	<0.00005	0.000017	0.000014
Titanium	mg/L		<0.005	<0.005	<0.00030	<0.00030
Tungsten	mg/L		0.02	<0.01	<0.00010	<0.00010
Uranium	mg/L		0.00009	0.00011	0.000086	0.000093

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW1			
			SW1	SW1	SW1	SW-DUP1
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	8-May-18	8-May-18
Vanadium	mg/L		<0.005	<0.005	<0.00050	<0.00050
Zinc	mg/L	0.02	0.012	0.005	<0.0030	<0.0030
Zirconium	mg/L		<0.003	0.004	<0.00030	<0.00030
Anion Sum	meq/L		8.12	5.02	-	-
Cation Sum	meq/L		7.67	5.57	-	-
Ion Ratio	AS/CS		1.06	0.902	-	-
TDS (Calc)	mg/L		396	260	298	294
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.50	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.50	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<0.40	<0.4
Xylene, o-	µg/L		<0.5	<0.5	<0.30	<0.3
Xylene, total	µg/L		<1.1	<1.1	<0.50	<0.5
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<250
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW1			
			SW1	SW1		
PARAMETERS	UNITS	PWQO	14-May-19	19-May-20		
Total Coliform	cfu/100mL		-	-		
E.Coli	cfu/100mL		-	-		
Heterotrophic Plate Count	cfu/mL		-	-		
Temperature (field)	°C		6.3	10.1		
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	7.7	7.88		
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		446.9	620		
Dissolved Oxygen (field)	mg/L		8.9	6.4		
Alkalinity (CaCO3)	mg/L		190	240		
Hardness (CaCO3)	mg/L		230	200		
Chloride	mg/L		41	70		
Fluoride	mg/L		0.18	0.17		
Nitrate (N)	mg/L		<0.010	0.26		
Nitrite (N)	mg/L		0.37	<0.010		
Sulphate	mg/L		<1.0	<1.0		
Colour	TCU		16	24		
Total Suspended Solids	mg/L		<10	<10		
Ammonia (N) - Total	mg/L		<0.05	<0.050		
Unionized Ammonia as NH_3	mg/L	0.02	<0.0003	<0.0007		
Total Kjeldahl Nitrogen	mg/L		0.22	0.23		
Phosphorus - Total	mg/L	0.03	<0.02	0.026		
Turbidity (lab)	NTU			0.3		
Calcium	mg/L		49	47		
Magnesium	mg/L		27	31		
Potassium	mg/L		1.6	2.1		
Sodium	mg/L		19	21		
Aluminum	µg/L		23	<5.0		
Antimony	µg/L		<0.50	<0.50		
Arsenic	µg/L		<1.0	<1.0		
Barium	µg/L		8.0	9.4		
Beryllium	µg/L		<0.50	<0.50		
Boron	µg/L	200.00	17	26		
Cadmium	µg/L	0.2	<0.10	<0.10		
Chromium	µg/L		<5.0	<5.0		
Cobalt	µg/L	0.9	<0.50	<0.50		
Copper	µg/L	5	<1.0	<1.0		
Iron	µg/L	300	<100	<100		
Lead	µg/L	25	<0.50	<0.50		
Manganese	µg/L		3.2	<2.0		
Molybdenum	µg/L		<0.50	<0.50		
Nickel	µg/L		<1.0	<1.0		
Selenium	µg/L		<2.0	<2.0		
Silver	µg/L		<0.10	<0.10		
Strontium	µg/L		180	250		
Thallium	µg/L		<0.050	<0.050		
Titanium	µg/L		<5.0	<5.0		
Tungsten	µg/L		<1.0	<1.0		
Uranium	µg/L		<0.10	<0.10		

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW1			
			SW1	SW1		
PARAMETERS	UNITS	PWQO	14-May-19	19-May-20		
Vanadium	µg/L		<0.50	<0.50		
Zinc	µg/L	20.00	<5.0	<5.0		
Zirconium	µg/L		<1.0	<1.0		
Anion Sum	meq/L		-	-		
Cation Sum	meq/L		-	-		
Ion Ratio	AS/CS		-	-		
TDS (Calc)	mg/L		396	395		
Benzene	µg/L		<0.20	<0.20		
Toluene	µg/L		<0.20	<0.20		
Ethylbenzene	µg/L		<0.20	<0.20		
Xylene, m, p-	µg/L		<0.20	<0.40		
Xylene, o-	µg/L		<0.40	<0.20		
Xylene, total	µg/L		<0.40	<0.40		
PHC F1 (C6-C10)	µg/L		<25	<25		
PHC F2 (>C10-C16)	µg/L		<100	<100		
PHC F3 (>C16-C34)	µg/L		<200	<200		
PHC F4 (<C34-C50)	µg/L		<200	<200		

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW2			SW0-2		
			SW2	SW2	SW2	SW0-2	SW0-2	SW0-2
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	8-May-18	24-Oct-16	10-May-17	8-May-18
Total Coliform	cfu/100mL		-	-	-	-	-	-
E.Coli	cfu/100mL		-	-	-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-	-	-
Temperature (field)	°C		11.0	8.1	5.9	7.0	11.4	9.3
pH @25°C (lab)	pH units	6.5 - 8.5	8.08	8.12	8.01	8.2	8.2	8.0
pH (field)	pH units	6.5 - 8.5	7.4	8.1	7.26	7.5	8.3	7.5
Conductivity @25°C (lab)	µS/cm		643	529	617	762	527	515
Conductivity (field)	µS/cm		496	328	633	529	353	527
Dissolved Oxygen (field)	mg/L		8.6	14.9	10.3	11.0	12.8	5.1
Alkalinity (CaCO3)	mg/L		259	219	269	239	188	211
Hardness (CaCO3)	mg/L		269	231	283	302	256	246
Chloride	mg/L		42.8	29.8	45.7	95.8	45.7	44.7
Fluoride	mg/L		0.1	<0.1	0.043	0.2	<0.1	0.133
Nitrate (N)	mg/L		1.1	0.4	0.453	<0.1	0.3	0.037
Nitrite (N)	mg/L		<0.1	<0.1	<0.010	<0.1	<0.1	<0.010
Sulphate	mg/L		7	4	4.24	10	4	3.22
Colour	TCU		<2	3	2.2	49	38	36.8
Total Suspended Solids	mg/L		7	<3	<2.0	<3	<3	<2.0
Ammonia (N) - Total	mg/L		0.03	<0.01	0.048	0.03	<0.01	0.085
Unionized Ammonia as NH_3	mg/L	0.02	0.0002	<0.0002	0.0001	0.0001	<0.0004	0.0005
Total Kjeldahl Nitrogen	mg/L		0.2	0.2	<0.15	1.5	1.6	0.26
Phosphorus - Total	mg/L	0.03	0.010	0.01	0.039	0.02	0.03	0.526
Turbidity (lab)	NTU		-	-	0.19	-	-	0.41
Calcium	mg/L		64.1	59	66.9	62.2	57	54.1
Magnesium	mg/L		26.4	20.3	25.8	35.6	27.5	26.2
Potassium	mg/L		0.8	0.6	0.934	2.4	2.5	2.89
Sodium	mg/L		22.9	19.8	27.2	22.7	20	17.6
Aluminum	mg/L		0.03	0.03	<0.010	0.03	0.04	0.011
Antimony	mg/L		<0.0001	<0.0001	<0.00010	<0.0001	<0.0001	<0.00010
Arsenic	mg/L		0.0003	0.0001	0.00012	0.0014	0.0005	0.00032
Barium	mg/L		0.007	0.007	0.00797	0.011	0.008	0.0102
Beryllium	mg/L		<0.002	<0.002	<0.00010	<0.002	<0.002	<0.00010
Boron	mg/L	0.20	0.009	<0.005	<0.010	0.017	0.01	0.02
Cadmium	mg/L	0.0002	<0.00002	<0.000014	<0.000010	<0.00002	<0.000014	<0.000010
Chromium	mg/L	0.0089	<0.002	<0.002	<0.00050	<0.002	<0.002	<0.00050
Cobalt	mg/L		0.0001	<0.0001	<0.00010	0.0002	<0.0001	<0.00010
Copper	mg/L	0.005	<0.002	<0.002	<0.0010	<0.002	<0.002	<0.0010
Iron	mg/L	0.3	0.102	0.012	<0.050	0.097	0.061	0.089
Lead	mg/L	0.025	0.00011	<0.00002	<0.00010	0.00004	0.00002	<0.00010
Manganese	mg/L		0.018	0.004	0.0087	0.019	0.005	0.0393
Molybdenum	mg/L		0.0001	<0.0001	0.000075	0.0003	0.0003	0.000234
Nickel	mg/L		<0.01	<0.01	<0.00050	<0.01	<0.01	0.00056
Selenium	mg/L		<0.001	<0.001	0.000062	0.004	<0.001	0.000059
Silver	mg/L		<0.00002	<0.00002	<0.000050	<0.00002	<0.00002	<0.000050
Strontium	mg/L		0.076	0.052	0.0658	0.228	0.178	0.181
Thallium	mg/L		<0.00005	<0.00005	<0.000010	<0.00005	<0.00005	<0.000010
Titanium	mg/L		<0.005	<0.005	<0.00030	<0.005	<0.005	<0.00030
Tungsten	mg/L		<0.01	<0.01	<0.00010	0.01	<0.01	<0.00010
Uranium	mg/L		0.00009	0.00009	0.000082	0.00011	0.0001	0.000075

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW2			SW0-2		
			SW2	SW2	SW2	SW0-2	SW0-2	SW0-2
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	8-May-18	24-Oct-16	10-May-17	8-May-18
Vanadium	mg/L		<0.005	<0.005	<0.00050	<0.005	<0.005	<0.00050
Zinc	mg/L	0.02	<0.005	<0.005	<0.0030	<0.005	0.005	<0.0030
Zirconium	mg/L		<0.003	0.006	<0.00030	<0.003	0.006	<0.00030
Anion Sum	meq/L		6.62	5.31	-	7.7	5.16	-
Cation Sum	meq/L		6.4	5.49	-	7.09	6.04	-
Ion Ratio	AS/CS		1.03	0.967	-	1.09	0.854	-
TDS (Calc)	mg/L		325	266	346	373	271	302
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<0.40	<1.0	<1.0	<0.4
Xylene, o-	µg/L		<0.5	<0.5	<0.30	<0.5	<0.5	<0.3
Xylene, total	µg/L		<1.1	<1.1	<0.50	<1.1	<1.1	<0.5
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<50	<50	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<50	<50	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<400	<400	<250
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<400	<400	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW2			SW0-2		
			SW2	SW2	SW2	SW0-2	SW0-2	
PARAMETERS	UNITS	PWQO	14-May-19	19-May-20		14-May-19	19-May-20	
Total Coliform	cfu/100mL		-	-		-	-	
E.Coli	cfu/100mL		-	-		-	-	
Heterotrophic Plate Count	cfu/mL		-	-		-	-	
Temperature (field)	°C		6.7			6.1	8.9	
pH @25°C (lab)	pH units	6.5 - 8.5						
pH (field)	pH units	6.5 - 8.5	7.79	8.03		7.7	7.9	
Conductivity @25°C (lab)	µS/cm							
Conductivity (field)	µS/cm		554	<2		380.6	570	
Dissolved Oxygen (field)	mg/L		11.2			8.9	6.7	
Alkalinity (CaCO3)	mg/L		250	240		180	230	
Hardness (CaCO3)	mg/L		280	260		220	200	
Chloride	mg/L		44	76		36	49	
Fluoride	mg/L		<0.10	<0.10		0.11	<0.10	
Nitrate (N)	mg/L		0.35	0.44		<0.10	<0.10	
Nitrite (N)	mg/L		<0.10	<0.10		<0.010	<0.010	
Sulphate	mg/L		5.2	6.5		<1.0	<1.0	
Colour	TCU		2	<2		47	44	
Total Suspended Solids	mg/L		<10	<10		<10	<10	
Ammonia (N) - Total	mg/L		<0.05	<0.050		<0.05	<0.50	
Unionized Ammonia as NH_3	mg/L	0.02	<0.00044			<0.0003	<0.0007	
Total Kjeldahl Nitrogen	mg/L		<0.10	<0.10		0.44	<0.10	
Phosphorus - Total	mg/L	0.03	0.007	<0.20		0.054	0.034	
Turbidity (lab)	NTU			430			0.3	
Calcium	mg/L		69	66		49	49	
Magnesium	mg/L		25	23		23	23	
Potassium	mg/L		0.86	0.76		4.5	2.8	
Sodium	mg/L		29	41		16	17	
Aluminum	µg/L		21	22		8.5	17	
Antimony	µg/L		<0.50	<0.50		<0.50	<0.50	
Arsenic	µg/L		<1.0	<1.0		<1.0	<1.0	
Barium	µg/L		8.2	8.2		8.5	9.4	
Beryllium	µg/L		<0.50	<0.50		<0.50	<0.50	
Boron	µg/L	200.00	<10	<10		14	19	
Cadmium	µg/L	0.2	<0.10	<0.10		<0.10	<0.10	
Chromium	µg/L		<5.0	<5.0		<5.0	<5.0	
Cobalt	µg/L	0.9	<0.50	<0.50		<0.50	<0.50	
Copper	µg/L	5	<1.0	<1.0		<1.0	<1.0	
Iron	µg/L	300	<100	<100		<100	<100	
Lead	µg/L	25	<0.50	<0.50		<0.50	<0.50	
Manganese	µg/L		8.1	5.9		7.9	36	
Molybdenum	µg/L		<0.50	<0.50		<0.50	<0.50	
Nickel	µg/L		<1.0	<1.0		<1.0	<1.0	
Selenium	µg/L		<2.0	<2.0		<2.0	<2.0	
Silver	µg/L		<0.10	<0.10		<0.10	<0.10	
Strontium	µg/L		61	65		120	160	
Thallium	µg/L		<0.050	<0.050		<0.050	<0.050	
Titanium	µg/L		<5.0	<5.0		<5.0	<5.0	
Tungsten	µg/L		<1.0	<1.0		<1.0	<1.0	
Uranium	µg/L		<0.10	<0.10		<0.10	<0.10	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW2			SW0-2		
			SW2	SW2	SW2	SW0-2	SW0-2	
PARAMETERS	UNITS	PWQO	14-May-19	19-May-20		14-May-19	19-May-20	
Vanadium	µg/L		<0.50	<0.50		<0.50	<0.50	
Zinc	µg/L	20.00	<5.0	<5.0		<5.0	<5.0	
Zirconium	µg/L		<1.0	<1.0		<1.0	<1.0	
Anion Sum	meq/L		-	-		-	-	
Cation Sum	meq/L		-	-		-	-	
Ion Ratio	AS/CS		-	-		-	-	
TDS (Calc)	mg/L		-	750		-	325	
Benzene	µg/L		<0.20	<0.20		<0.20	<0.20	
Toluene	µg/L		<0.20	<0.20		<0.20	<0.20	
Ethylbenzene	µg/L		<0.20	<0.20		<0.20	<0.20	
Xylene, m, p-	µg/L		<0.40	<0.40		<0.40	<0.40	
Xylene, o-	µg/L		<0.20	<0.20		<0.20	<0.20	
Xylene, total	µg/L		<0.40	<0.40		<0.40	<0.40	
PHC F1 (C6-C10)	µg/L		<25	<25		<25	<25	
PHC F2 (>C10-C16)	µg/L		<100	<100		<100	<100	
PHC F3 (>C16-C34)	µg/L		<200	<200		<200	<200	
PHC F4 (<C34-C50)	µg/L		<200	<200		<200	<200	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW3				SW3B		
			SW3	SW3	DUP 2	SW3	SW3B	SW3B	SW3B
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	9-May-17	8-May-18	24-Oct-16	9-May-17	8-May-18
Total Coliform	cfu/100mL			-	-	-		-	-
E.Coli	cfu/100mL			-	-	-		-	-
Heterotrophic Plate Count	cfu/mL			-	-	-		-	-
Temperature (field)	°C		**DRY**	7.0	-	10.4	**DRY**	7.2	8.8
pH @25°C (lab)	pH units	6.5 - 8.5		7.86	7.94	8.01		7.8	7.9
pH (field)	pH units	6.5 - 8.5		7.9	-	7.52		7.8	7.3
Conductivity @25°C (lab)	µS/cm			315	312	381		456	447
Conductivity (field)	µS/cm			188	-	407		260	450
Dissolved Oxygen (field)	mg/L			10.8	-	6.2		10.0	5.9
Alkalinity (CaCO3)	mg/L			166	164	212		205	230
Hardness (CaCO3)	mg/L			176	176	229		229	236
Chloride	mg/L			0.9	0.9	1.74		17.6	10.8
Fluoride	mg/L			<0.1	<0.1	0.029		<0.1	0.038
Nitrate (N)	mg/L			<0.1	<0.1	<0.020		0.3	0.175
Nitrite (N)	mg/L			<0.1	<0.1	<0.010		<0.1	<0.010
Sulphate	mg/L			2	1	1.08		3	1.97
Colour	TCU			27	27	33.3		9	11
Total Suspended Solids	mg/L			<3	<3	<2.0		<3	<2.0
Ammonia (N) - Total	mg/L			<0.01	<0.01	0.053		<0.01	0.022
Unionized Ammonia as NH_3	mg/L	0.02		<0.0001	<0.0001	0.0003		<0.0001	0.0001
Total Kjeldahl Nitrogen	mg/L			0.3	0.3	0.2		0.2	<0.15
Phosphorus - Total	mg/L	0.03		0.01	0.02	0.0082		0.01	0.0031
Turbidity (lab)	NTU			-	-	0.57		-	0.39
Calcium	mg/L			47.6	47.4	61.1		60.6	61.7
Magnesium	mg/L			13.8	14.1	17.5		18.9	19
Potassium	mg/L			0.2	0.2	0.456		0.3	0.439
Sodium	mg/L			0.9	0.9	1.05		13.2	6.47
Aluminum	mg/L			0.05	0.03	0.03		0.05	<0.010
Antimony	mg/L			<0.0001	<0.0001	<0.00010		<0.0001	<0.00010
Arsenic	mg/L			<0.0001	<0.0001	0.00028		<0.0001	0.00014
Barium	mg/L			0.009	0.009	0.0117		0.012	0.0123
Beryllium	mg/L			<0.002	<0.002	<0.00010		<0.002	<0.00010
Boron	mg/L	0.20		<0.005	<0.005	<0.010		<0.005	<0.010
Cadmium	mg/L	0.0002		<0.000014	<0.000014	<0.000010		<0.000014	<0.000010
Chromium	mg/L	0.0089		<0.002	<0.002	<0.00050		<0.002	<0.00050
Cobalt	mg/L			<0.0001	<0.0001	<0.00010		<0.0001	<0.00010
Copper	mg/L	0.005		<0.002	<0.002	<0.0010		<0.002	<0.0010
Iron	mg/L	0.3		0.086	0.054	0.055		0.014	<0.050
Lead	mg/L	0.025		<0.00002	<0.00002	<0.00010		<0.00002	<0.00010
Manganese	mg/L			0.011	0.01	0.0219		0.005	0.0107
Molybdenum	mg/L			<0.0001	<0.0001	0.000051		<0.0001	0.000053
Nickel	mg/L			<0.01	<0.01	<0.00050		<0.01	<0.00050
Selenium	mg/L			<0.001	<0.001	0.000068		<0.001	0.00006
Silver	mg/L			<0.00002	<0.00002	<0.000050		<0.00002	<0.000050
Strontium	mg/L			0.043	0.044	0.0628		0.055	0.061
Thallium	mg/L			<0.00005	<0.00005	<0.000010		<0.00005	<0.000010
Titanium	mg/L			<0.005	<0.005	0.00069		<0.005	<0.00030
Tungsten	mg/L			<0.01	<0.01	<0.00010		<0.01	<0.00010
Uranium	mg/L			0.00014	0.00014	0.000176		0.00019	0.000157

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW3				SW3B		
			SW3	SW3	DUP 2	SW3	SW3B	SW3B	SW3B
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	9-May-17	8-May-18	24-Oct-16	9-May-17	8-May-18
Vanadium	mg/L			<0.005	<0.005	<0.00050		<0.005	<0.00050
Zinc	mg/L	0.02		<0.005	<0.005	<0.0030		<0.005	<0.0030
Zirconium	mg/L		DRY	0.005	0.004	<0.00030	DRY	0.006	<0.00030
Anion Sum	meq/L			3.37	3.32	-		4.69	-
Cation Sum	meq/L			3.56	3.57	-		5.16	-
Ion Ratio	AS/CS			0.948	0.929	-		0.908	-
TDS (Calc)	mg/L			165	163	240		238	269
Benzene	µg/L			<0.5	<0.5	<0.5		<0.5	<0.5
Toluene	µg/L			<0.5	<0.5	<0.5		<0.5	<0.5
Ethylbenzene	µg/L			<0.5	<0.5	<0.5		<0.5	<0.5
Xylene, m, p-	µg/L			<1.0	<1.0	<0.4		<1.0	<0.4
Xylene, o-	µg/L			<0.5	<0.5	<0.3		<0.5	<0.3
Xylene, total	µg/L			<1.1	<1.1	<0.5		<1.1	<0.5
PHC F1 (C6-C10)	µg/L			<50	<50	<25		<50	<25
PHC F2 (>C10-C16)	µg/L			<50	<50	<100		<50	<100
PHC F3 (>C16-C34)	µg/L			<400	<400	<250		<400	<250
PHC F4 (<C34-C50)	µg/L			<400	<400	<250		<400	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW3			SW3B		
			SW3	SW3 - DUP	SW3	SW3B	SW3B	SW3B
PARAMETERS	UNITS	PWQO	14-May-19	14-May-19	19-May-20	14-May-19	19-May-20	
Total Coliform	cfu/100mL		-	-	-	-	-	-
E.Coli	cfu/100mL		-	-	-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-	-	-
Temperature (field)	°C		7.1	7.1	7.3	7.1	6.4	
pH @25°C (lab)	pH units	6.5 - 8.5						
pH (field)	pH units	6.5 - 8.5	7.71	7.71	7.92	7.49	7.8	
Conductivity @25°C (lab)	µS/cm							
Conductivity (field)	µS/cm		324.5	324.5	390	385.7	500	
Dissolved Oxygen (field)	mg/L		7.54	7.54	6.3	6.19	5.8	
Alkalinity (CaCO3)	mg/L		190	190	200	210	230	
Hardness (CaCO3)	mg/L		210	210	210	220	240	
Chloride	mg/L		2.2	2.3	2.1	15	18	
Fluoride	mg/L		<0.10	<0.10	0.15	<0.10	<0.10	
Nitrate (N)	mg/L		<0.10	<0.10	<0.10	0.15	0.26	
Nitrite (N)	mg/L		<0.01	<0.01	<0.010	<0.010	<0.010	
Sulphate	mg/L		<1.0	<1.0	<1.0	<1.0	4.4	
Colour	TCU		36	35	19	11	2	
Total Suspended Solids	mg/L		<10	<10	<10	<10	<10	
Ammonia (N) - Total	mg/L		<0.05	<0.05	<0.050	<0.05	<0.050	
Unionized Ammonia as NH_3	mg/L	0.02	<0.0004	<0.0004	<0.0006	<0.0002	<0.0005	
Total Kjeldahl Nitrogen	mg/L		0.26	0.29	0.33	0.17	0.41	
Phosphorus - Total	mg/L	0.03	0.019	0.013	<0.020	0.007	<0.020	
Turbidity (lab)	NTU				0.9		0.1	
Calcium	mg/L		55	55	52	61	62	
Magnesium	mg/L		16	16	16	19	19	
Potassium	mg/L		0.44	0.39	0.5	0.42	0.31	
Sodium	mg/L		1.2	1.3	1.4	9.6	9.2	
Aluminum	µg/L		26	26	30	18	6.4	
Antimony	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	
Arsenic	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	
Barium	µg/L		10	9.9	9.4	12	12	
Beryllium	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	
Boron	µg/L	200.00	<10	<10	<10	<10	<10	
Cadmium	µg/L	0.2	<0.10	<0.10	<0.10	<0.10	<0.10	
Chromium	µg/L		<5.0	<5.0	<5.0	<5.0	<5.0	
Cobalt	µg/L	0.9	<0.50	<0.50	<0.50	<0.50	<0.50	
Copper	µg/L	5	<1.0	<1.0	<1.0	<1.0	<1.0	
Iron	µg/L	300	<100	<100	<100	<100	<100	
Lead	µg/L	25	<0.50	<0.50	<0.50	<0.50	<0.50	
Manganese	µg/L		11	11	9.4	5.2	7.5	
Molybdenum	µg/L		<0.50	1.1	<0.50	<0.50	<0.50	
Nickel	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	
Selenium	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0	
Silver	µg/L		<0.10	<0.10	<0.10	<0.10	<0.10	
Strontium	µg/L		51	53	47	55	58	
Thallium	µg/L		<0.050	<0.050	<0.050	<0.050	<0.050	
Titanium	µg/L		<5.0	<5.0	<5.0	<5.0	<5.0	
Tungsten	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	
Uranium	µg/L		0.13	0.14	0.17	0.16	0.16	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW3			SW3B		
			SW3	SW3 - DUP	SW3	SW3B	SW3B	SW3B
PARAMETERS	UNITS	PWQO	14-May-19	14-May-19	19-May-20	14-May-19	19-May-20	
Vanadium	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50	
Zinc	µg/L	20.00	<5.0	<5.0	<5.0	<5.0	<5.0	
Zirconium	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0	
Anion Sum	meq/L		-	-	-	-	-	
Cation Sum	meq/L		-	-	-	-	-	
Ion Ratio	AS/CS		-	-	-	-	-	
TDS (Calc)	mg/L		-	-	260	-	325	
Benzene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	
Toluene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	
Ethylbenzene	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	
Xylene, m, p-	µg/L		<0.40	<0.40	<0.40	<0.40	<0.40	
Xylene, o-	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20	
Xylene, total	µg/L		<0.40	<0.40	<0.40	<0.40	<0.40	
PHC F1 (C6-C10)	µg/L		<25	<25	<25	<25	<25	
PHC F2 (>C10-C16)	µg/L		<100	<100	<100	<100	<100	
PHC F3 (>C16-C34)	µg/L		<200	<200	<200	<200	<200	
PHC F4 (<C34-C50)	µg/L		<200	<200	<200	<200	<200	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW6A				SW9		
			SW6A	DUP2	SW6A	SW6A	SW9	SW9	SW9
PARAMETERS	UNITS	PWQO	25-Oct-16	25-Oct-16	8-May-17	8-May-18	25-Oct-16	8-May-17	8-May-18
Total Coliform	cfu/100mL		-	-	-	-	-	-	-
E.Coli	cfu/100mL		-	-	-	-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-	-	-	-
Temperature (field)	°C		4.8	-	9.0	11.2	**DRY**	8.3	14.2
pH @25°C (lab)	pH units	6.5 - 8.5	8.3	8.3	8.3	8.1		8.21	8.16
pH (field)	pH units	6.5 - 8.5	7.9	-	8.0	7.8		8.2	7.77
Conductivity @25°C (lab)	µS/cm		558	556	387	454		308	342
Conductivity (field)	µS/cm		363	-	243	464		189	364
Dissolved Oxygen (field)	mg/L		12.9	-	12.5	7.6		12.2	8.6
Alkalinity (CaCO3)	mg/L		240	241	181	237		159	192
Hardness (CaCO3)	mg/L		295	306	205	244		169	200
Chloride	mg/L		29.6	29.6	10.5	14.4		< 0.5	1.09
Fluoride	mg/L		0.2	0.2	< 0.1	0.05		< 0.1	0.035
Nitrate (N)	mg/L		0.3	0.3	0.2	0.126		0.2	<0.020
Nitrite (N)	mg/L		<0.1	<0.1	< 0.1	<0.010		< 0.1	<0.010
Sulphate	mg/L		8	8	3	2.4		2	1.69
Colour	TCU		26	29	31	26.2		26	25.3
Total Suspended Solids	mg/L		10	14	<3	2.9		3	3.1
Ammonia (N) - Total	mg/L		0.02	0.02	0.03	<0.020		<0.01	0.039
Unionized Ammonia as NH_3	mg/L	0.02	0.0002	0.0002	0.0005	<0.0002		<0.0003	0.0006
Total Kjeldahl Nitrogen	mg/L		0.5	0.6	0.3	0.2		2.3	<0.15
Phosphorus - Total	mg/L	0.03	0.02	0.03	<0.01	0.0075		<0.01	0.0089
Turbidity	NTU		-	-	-	0.82		-	0.9
Calcium	mg/L		68.1	70.8	49.5	61.8		44.4	55.6
Magnesium	mg/L		30.4	31.4	19.8	22.1		14.1	15.3
Potassium	mg/L		1.4	1.4	0.9	1.57		0.7	1.52
Sodium	mg/L		10	10.3	5.8	6.06		0.8	0.86
Aluminum	mg/L		0.04	0.05	0.03	0.014		0.03	0.024
Antimony	mg/L		0.0002	<0.0001	< 0.0001	<0.00010		< 0.0001	<0.00010
Arsenic	mg/L		0.0005	0.0006	0.0002	0.00022		0.0001	0.0002
Barium	mg/L		0.014	0.015	0.01	0.0133		0.01	0.0144
Beryllium	mg/L		<0.002	<0.002	< 0.002	<0.00010		< 0.002	<0.00010
Boron	mg/L	0.20	0.007	0.007	0.012	0.011		0.01	<0.010
Cadmium	mg/L	0.0002	<0.00002	<0.00002	< 0.000014	<0.000010		< 0.000014	<0.000010
Chromium	mg/L	0.0089	<0.002	<0.002	< 0.002	<0.00050		< 0.002	<0.00050
Cobalt	mg/L		0.0002	0.0002	< 0.0001	<0.00010		< 0.0001	<0.00010
Copper	mg/L	0.005	<0.002	<0.002	< 0.002	<0.0010		< 0.002	<0.0010
Iron	mg/L	0.3	0.104	0.136	0.085	0.068		0.058	<0.050
Lead	mg/L	0.025	0.00017	0.00022	< 0.00002	<0.00010		0.00003	<0.00010
Manganese	mg/L		0.081	0.101	0.007	0.0269		0.001	0.00211
Molybdenum	mg/L		<0.0001	<0.0001	0.0001	0.000106		< 0.0001	0.000104
Nickel	mg/L		<0.01	<0.01	< 0.01	<0.00050		< 0.01	<0.00050
Selenium	mg/L		0.002	0.002	< 0.001	<0.000050		< 0.001	0.000061
Silver	mg/L		<0.00002	<0.00002	< 0.00002	<0.000050		< 0.00002	<0.000050
Strontium	mg/L		0.1	0.102	-	0.0846		-	0.066
Thallium	mg/L		<0.00005	<0.00005	< 0.00005	<0.000010		< 0.00005	<0.000010
Titanium	mg/L		<0.005	<0.005	< 0.005	<0.00030		< 0.005	0.0008
Tungsten	mg/L		<0.01	<0.01	< 0.01	<0.00010		< 0.01	<0.00010
Uranium	mg/L		0.00012	0.00012	0.0001	0.000103		0.00015	0.000216

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW6A				SW9		
			SW6A	DUP2	SW6A	SW6A	SW9	SW9	SW9
PARAMETERS	UNITS	PWQO	25-Oct-16	25-Oct-16	8-May-17	8-May-18	25-Oct-16	8-May-17	8-May-18
Vanadium	mg/L		<0.005	<0.005	< 0.005	<0.00050		< 0.005	<0.00050
Zinc	mg/L	0.02	<0.005	<0.005	0.006	<0.0030		< 0.005	<0.0030
Zirconium	mg/L		<0.003	<0.003	< 0.003	<0.00030	DRY	< 0.003	<0.00030
Anion Sum	meq/L		5.85	5.87	3.97	-		3.25	-
Cation Sum	meq/L		6.38	6.62	4.38	-		3.43	-
Ion Ratio	AS/CS		0.916	0.887	0.907	-		0.945	-
TDS (Calc)	mg/L		294	299	198	262		159	198
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<0.4		<1.0	<0.4
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.3		<0.5	<0.3
Xylene, total	µg/L		<1.1	<1.1	<1.1	<0.5		<1.1	<0.5
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<25		<50	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<100		<50	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<250		<400	<250
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<250		<400	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW6A				SW9		
			SW6A	SW6A	SW6A	SW6A	SW9	SW9	
PARAMETERS	UNITS	PWQO	14-May-19	19-May-20			14-May-19	19-May-20	
Total Coliform	cfu/100mL		-	-	-	-	-	-	
E.Coli	cfu/100mL		-	-	-	-	-	-	
Heterotrophic Plate Count	cfu/mL		-	-	-	-	-	-	
Temperature (field)	°C		7.0	10.2			6.6	7.3	
pH @25°C (lab)	pH units	6.5 - 8.5							
pH (field)	pH units	6.5 - 8.5	7.9	8.1			7.82	7.94	
Conductivity @25°C (lab)	µS/cm								
Conductivity (field)	µS/cm		381	460			296.9	390	
Dissolved Oxygen (field)	mg/L		8.9	9.5			8.73	10.5	
Alkalinity (CaCO3)	mg/L		210	220			180	200	
Hardness (CaCO3)	mg/L		240	220			200	200	
Chloride	mg/L		13	16			<1.0	1.3	
Fluoride	mg/L		<0.10	<0.10			<0.10	<0.10	
Nitrate (N)	mg/L		0.11	0.11			<0.10	0.1	
Nitrite (N)	mg/L		<0.010	<0.010			<0.010	<0.010	
Sulphate	mg/L		<1.0	<1.0			<1.0	<1.0	
Colour	TCU		26	28			25	22	
Total Suspended Solids	mg/L		<10	<10			<10	<10	
Ammonia (N) - Total	mg/L		0.05	<0.050			0.05	<0.050	
Unionized Ammonia as NH_3	mg/L	0.02	<0.0006	<0.001			<0.0005	<0.0006	
Total Kjeldahl Nitrogen	mg/L		0.28	<0.10			0.25	0.25	
Phosphorus - Total	mg/L	0.03	0.008	<0.020			0.009	<0.020	
Turbidity	NTU			0.3				0.4	
Calcium	mg/L		56	52			51	54	
Magnesium	mg/L		21	19			16	15	
Potassium	mg/L		1.2	1			0.87	1.5	
Sodium	mg/L		5.5	5.2			0.76	0.9	
Aluminum	µg/L		10	20			29	38	
Antimony	µg/L		<0.50	<0.50			<0.50	<0.50	
Arsenic	µg/L		<1.0	<1.0			<1.0	<1.0	
Barium	µg/L		11	10			11	13	
Beryllium	µg/L		<0.50	<0.50			<0.50	<0.50	
Boron	µg/L	200.00	<10	<10			<10	<10	
Cadmium	µg/L	0.2	<0.10	<0.10			<0.10	<0.10	
Chromium	µg/L		<5.0	<5.0			<5.0	<5.0	
Cobalt	µg/L	0.9	<0.50	<0.50			<0.50	<0.50	
Copper	µg/L	5	<1.0	<1.0			<1.0	<1.0	
Iron	µg/L	300	<100	<100			<100	<100	
Lead	µg/L	25	<0.50	<0.50			<0.50	<0.50	
Manganese	µg/L		12	31			<2.0	2.5	
Molybdenum	µg/L		<0.50	<0.50			<0.50	<0.50	
Nickel	µg/L		<1.0	<1.0			<1.0	<1.0	
Selenium	µg/L		<2.0	<2.0			<2.0	<2.0	
Silver	µg/L		<0.10	<0.10			<0.10	<0.10	
Strontium	µg/L		68	65			52	61	
Thallium	µg/L		<0.050	<0.050			<0.050	<0.050	
Titanium	µg/L		<5.0	<5.0			<5.0	<5.0	
Tungsten	µg/L		<1.0	<1.0			<1.0	<1.0	
Uranium	µg/L		<0.10	<0.10			0.18	0.21	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW6A				SW9		
			SW6A	SW6A	SW6A	SW6A	SW9	SW9	
PARAMETERS	UNITS	PWQO	14-May-19	19-May-20			14-May-19	19-May-20	
Vanadium	µg/L		<0.50	<0.50			<0.50	<0.50	
Zinc	µg/L	20.00	<5.0	<5.0			<5.0	<5.0	
Zirconium	µg/L		<1.0	<1.0			<1.0	<1.0	
Anion Sum	meq/L		-	-			-		
Cation Sum	meq/L		-	-			-		
Ion Ratio	AS/CS		-	-			-		
TDS (Calc)	mg/L		-	270			-	230	
Benzene	µg/L		<0.20	<0.20			<0.20	<0.20	
Toluene	µg/L		<0.20	<0.20			<0.20	<0.20	
Ethylbenzene	µg/L		<0.20	<0.20			<0.20	<0.20	
Xylene, m, p-	µg/L		<0.40	<0.40			<0.40	<0.40	
Xylene, o-	µg/L		<0.20	<0.20			<0.20	<0.20	
Xylene, total	µg/L		<0.40	<0.40			<0.40	<0.40	
PHC F1 (C6-C10)	µg/L		<25	<25			<25	<25	
PHC F2 (>C10-C16)	µg/L		<100	<100			<100	<100	
PHC F3 (>C16-C34)	µg/L		<200	<200			<200	<200	
PHC F4 (<C34-C50)	µg/L		<200	<200			<200	<200	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW10			SW11		
			SW10	SW10	SW10	SW11	SW11	SW11
PARAMETERS	UNITS	PWQO	24-Oct-16	8-May-17	9-May-18	16-Nov-16	8-May-17	9-May-18
Total Coliform	cfu/100mL		>2000	60	160	-	-	20
E.Coli	cfu/100mL		108	1	14	-	-	0
Heterotrophic Plate Count	cfu/mL		>2000	270	63	-	-	31
Temperature (field)	°C		7.9	6.8	11.8	6.7	5.5	6.1
pH @25°C (lab)	pH units	6.5 - 8.5	8.09	8.32	8.34	7.95	8.3	8.3
pH (field)	pH units	6.5 - 8.5	8.0	8.0	8.2	7.9	8.0	8.0
Conductivity @25°C (lab)	µS/cm		495	365	393	484	315	341
Conductivity (field)	µS/cm		331	206	424	253	179	360
Dissolved Oxygen (field)	mg/L		9.8	12.7	10.3	9.6	14.7	12.2
Alkalinity (CaCO3)	mg/L		242	183	223	236	164	201
Hardness (CaCO3)	mg/L		566	195	231	255	175	200
Chloride	mg/L		5.1	0.9	2.55	2.4	< 0.5	1.03
Fluoride	mg/L		<0.1	< 0.1	0.04	<0.1	< 0.1	0.034
Nitrate (N)	mg/L		1.4	1.2	2.72	0.3	0.3	0.266
Nitrite (N)	mg/L		0.3	< 0.1	<0.010	<0.1	< 0.1	<0.010
Sulphate	mg/L		7	2	3.63	7	3	2.49
Colour	TCU		38	6	3.3	13	9	7.3
Total Suspended Solids	mg/L		1110	32	<2.0	195	<3	<2.0
Ammonia (N) - Total	mg/L		0.22	<0.01	0.135	<0.01	<0.01	0.025
Unionized Ammonia as NH_3	mg/L	0.02	0.0034	<0.0001	0.004	<0.0001	<0.0001	0.0004
Total Kjeldahl Nitrogen	mg/L		24.8	0.3	0.25	0.3	1.6	<0.15
Phosphorus - Total	mg/L	0.03	3.16	0.03	0.0134	0.02	0.01	0.0104
Turbidity	NTU		-	-	0.43	-	-	0.68
Calcium	mg/L		174	55	66	69.8	47.2	55.3
Magnesium	mg/L		31.6	13.9	15.5	19.7	13.8	15.4
Potassium	mg/L		1	0.4	0.456	0.7	0.7	0.866
Sodium	mg/L		3.4	1.2	1.82	1.9	0.9	0.88
Aluminum	mg/L		3.02	0.11	0.028	0.16	0.03	0.021
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.0001	< 0.0001	<0.00010
Arsenic	mg/L		0.0015	0.0002	0.00013	0.0001	0.0001	0.00015
Barium	mg/L		0.065	0.007	0.00821	0.012	0.007	0.00864
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.002	< 0.002	<0.00010
Boron	mg/L	0.20	0.022	0.008	<0.010	<0.005	0.008	<0.010
Cadmium	mg/L	0.0002	0.00068	< 0.000014	<0.000010	0.00009	< 0.000014	<0.000010
Chromium	mg/L	0.0089	0.003	0.002	<0.00050	0.099	< 0.002	<0.00050
Cobalt	mg/L		0.0034	< 0.0001	<0.00010	0.0009	< 0.0001	<0.00010
Copper	mg/L	0.005	0.016	< 0.002	<0.0010	0.002	< 0.002	<0.0010
Iron	mg/L	0.3	3.53	0.181	<0.050	0.86	0.051	<0.050
Lead	mg/L	0.025	0.0175	0.00032	<0.00010	0.00022	< 0.00002	<0.00010
Manganese	mg/L		0.697	0.008	0.00168	0.036	0.001	0.00071
Molybdenum	mg/L		<0.0001	< 0.0001	<0.000050	0.0083	< 0.0001	0.000066
Nickel	mg/L		<0.01	< 0.01	<0.00050	0.1	< 0.01	<0.00050
Selenium	mg/L		<0.001	< 0.001	<0.000050	<0.001	< 0.001	<0.000050
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.00002	< 0.00002	<0.000050
Strontium	mg/L		0.165	-	0.086	0.092	-	0.0623
Thallium	mg/L		0.00006	< 0.00005	<0.000010	<0.00005	< 0.00005	<0.000010
Titanium	mg/L		0.012	< 0.005	0.00075	<0.005	< 0.005	0.00061
Tungsten	mg/L		0.02	< 0.01	<0.00010	<0.01	< 0.01	<0.00010
Uranium	mg/L		0.00017	0.00007	0.000085	0.00012	0.00011	0.000129

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW10			SW11		
			SW10	SW10	SW10	SW11	SW11	SW11
PARAMETERS	UNITS	PWQO	24-Oct-16	8-May-17	9-May-18	16-Nov-16	8-May-17	9-May-18
Vanadium	mg/L		0.005	< 0.005	<0.00050	<0.005	< 0.005	<0.00050
Zinc	mg/L	0.02	0.049	< 0.005	<0.0030	<0.005	< 0.005	<0.0030
Zirconium	mg/L		<0.003	< 0.003	<0.00030	<0.003	< 0.003	<0.00030
Anion Sum	meq/L		5.25	3.81	-	4.95	3.36	-
Cation Sum	meq/L		11.7	3.96	-	5.25	3.55	-
Ion Ratio	AS/CS		0.449	0.961	-	0.944	0.945	-
TDS (Calc)	mg/L		380	189	235	245	165	196
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<1.0	<1.0	<0.4
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.5	<0.5	<0.3
Xylene, total	µg/L		<1.1	<1.1	<0.5	<1.1	<1.1	<0.5
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<50	<50	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<50	<50	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<400	<400	<250
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<400	<400	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW10			SW11		
			SW10	SW10	SW10	SW11	SW11	SW11
PARAMETERS	UNITS	PWQO	16-May-19	20-May-20		16-May-19	20-May-20	
Total Coliform	cfu/100mL		-	NDOGT		-	-	
E.Coli	cfu/100mL		-	NDOGT		-	-	
Heterotrophic Plate Count	cfu/mL		-	140		-	-	
Temperature (field)	°C		7.5			5.7		
pH @25°C (lab)	pH units	6.5 - 8.5		8.16			8.2	
pH (field)	pH units	6.5 - 8.5	8.2			8.2		
Conductivity @25°C (lab)	µS/cm			440			380	
Conductivity (field)	µS/cm		378.8			321.1		
Dissolved Oxygen (field)	mg/L		11.1			12.5		
Alkalinity (CaCO3)	mg/L		210	220		200	200	
Hardness (CaCO3)	mg/L		240	230		200	200	
Chloride	mg/L		3.3	4.7		1.5	1.3	
Fluoride	mg/L		<0.10	<0.1		<0.10	<0.1	
Nitrate (N)	mg/L		2.29	1.93		0.24	0.37	
Nitrite (N)	mg/L		<0.010	<0.01		<0.010	<0.01	
Sulphate	mg/L		4.3	4.9		1	2	
Colour	TCU		4	5		7	7	
Total Suspended Solids	mg/L		<10	<10		<10	<10	
Ammonia (N) - Total	mg/L		<0.05	<0.05		<0.05	<0.05	
Unionized Ammonia as NH_3	mg/L	0.02	<0.001			<0.001		
Total Kjeldahl Nitrogen	mg/L		0.11	0.27		0.11	0.17	
Phosphorus - Total	mg/L	0.03	0.019	<0.02		0.11	<0.02	
Turbidity	NTU			0.2			0.5	
Calcium	mg/L		69	70		57	55	
Magnesium	mg/L		15	17		15	16	
Potassium	mg/L		0.46	0.49		0.87	0.85	
Sodium	mg/L		1.8	2.5		0.94	1	
Aluminum	µg/L		52	19		82	86	
Antimony	µg/L		<0.50	<0.5		<0.50	<0.5	
Arsenic	µg/L		<1.0	<1		<1.0	<1	
Barium	µg/L		8.6	8.3		9.0	8.5	
Beryllium	µg/L		<0.50	<0.5		<0.50	<0.5	
Boron	µg/L	200.00	<10	<10		<10	10	
Cadmium	µg/L	0.2	<0.10	<0.1		<0.10	<0.1	
Chromium	µg/L		<5.0	<5		<5.0	<5	
Cobalt	µg/L	0.9	<0.50	<0.5		<0.50	<0.5	
Copper	µg/L	5	<1.0	2.6		<1.0	<1	
Iron	µg/L	300	<100	<100		<100	<100	
Lead	µg/L	25	<0.50	<0.5		<0.50	<0.5	
Manganese	µg/L		2.8	<2		2.8	4.6	
Molybdenum	µg/L		<0.50	<0.5		<0.50	<0.5	
Nickel	µg/L		<1.0	<1		<1.0	<1	
Selenium	µg/L		<2.0	<2		<2.0	<2	
Silver	µg/L		<0.10	<0.1		<0.10	<0.1	
Strontium	µg/L		79	79		58	55	
Thallium	µg/L		<0.050	<0.05		<0.050	<0.05	
Titanium	µg/L		<5.0	5.2		<5.0	<5	
Tungsten	µg/L		<1.0	<1		<1.0	<1	
Uranium	µg/L		<0.10	<0.1		0.11	0.12	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW10			SW11		
			SW10	SW10	SW10	SW11	SW11	SW11
PARAMETERS	UNITS	PWQO	16-May-19	20-May-20		16-May-19	20-May-20	
Vanadium	µg/L		<0.50	<0.5		<0.50	<0.5	
Zinc	µg/L	20.00	<5.0	<5		<5.0	<5	
Zirconium	µg/L		<1.0	<1		<1.0	<1	
Anion Sum	meq/L		-	-		-	-	
Cation Sum	meq/L		-	-		-	-	
Ion Ratio	AS/CS		-	-		-	-	
TDS (Calc)	mg/L		-	235		-	195	
Benzene	µg/L		<0.20	<0.2		<0.20	<0.2	
Toluene	µg/L		<0.20	<0.2		<0.20	<0.2	
Ethylbenzene	µg/L		<0.20	<0.2		<0.20	<0.2	
Xylene, m, p-	µg/L		<0.40	<0.4		<0.40	<0.4	
Xylene, o-	µg/L		<0.20	<0.2		<0.20	<0.2	
Xylene, total	µg/L		<0.40	<0.4		<0.40	<0.4	
PHC F1 (C6-C10)	µg/L		<25	<25		<25	<25	
PHC F2 (>C10-C16)	µg/L		<100	<100		<100	<100	
PHC F3 (>C16-C34)	µg/L		<200	<200		<200	<200	
PHC F4 (<C34-C50)	µg/L		<200	<200		<200	<200	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW11A			
			SW11A	SW11A	SW11A	SW11A
PARAMETERS	UNITS	PWQO	25-Oct-16	8-May-17	9-May-18	16-May-19
Total Coliform	cfu/100mL		-	52	3	0
E.Coli	cfu/100mL		-	4	0	7
Heterotrophic Plate Count	cfu/mL		-	200	3	4
Temperature (field)	°C		**DRY**	5.2	5	5.4
pH @25°C (lab)	pH units	6.5 - 8.5		8.26	8.28	
pH (field)	pH units	6.5 - 8.5		7.8	7.78	7.9
Conductivity @25°C (lab)	µS/cm			310	349	
Conductivity (field)	µS/cm			166	372	326.2
Dissolved Oxygen (field)	mg/L			15.0	12.0	12.2
Alkalinity (CaCO3)	mg/L			161	210	190
Hardness (CaCO3)	mg/L			169	209	200
Chloride	mg/L			0.6	1.12	1.4
Fluoride	mg/L			< 0.1	0.034	<0.10
Nitrate (N)	mg/L			0.3	0.222	0.21
Nitrite (N)	mg/L			< 0.1	<0.010	<0.010
Sulphate	mg/L			2	2.4	<1.0
Colour	TCU			8	5.4	5
Total Suspended Solids	mg/L			<3	2.3	<10
Ammonia (N) - Total	mg/L			<0.01	0.045	<0.05
Unionized Ammonia as NH_3	mg/L	0.02		<0.0001	0.0003	<0.0005
Total Kjeldahl Nitrogen	mg/L			1.4	<0.15	0.15
Phosphorus - Total	mg/L	0.03		0.01	0.0053	0.006
Turbidity	NTU		-	-	0.85	
Calcium	mg/L			45.4	55.1	56
Magnesium	mg/L			13.5	15.7	15
Potassium	mg/L			0.7	0.925	0.89
Sodium	mg/L			0.9	0.92	0.88
Aluminum	mg/L			0.02	0.027	0.019
Antimony	mg/L			< 0.0001	<0.00010	<0.0005
Arsenic	mg/L			0.0001	0.00014	<0.001
Barium	mg/L			0.008	0.00918	0.092
Beryllium	mg/L			< 0.002	<0.00010	<0.0005
Boron	mg/L	0.20		0.008	<0.010	<0.010
Cadmium	mg/L	0.0002		< 0.000014	<0.000010	<0.001
Chromium	mg/L	0.0089		< 0.002	<0.00050	<0.005
Cobalt	mg/L			< 0.0001	<0.00010	<0.00050
Copper	mg/L	0.005		< 0.002	<0.0010	<0.0010
Iron	mg/L	0.3		0.031	<0.050	<0.1
Lead	mg/L	0.025		< 0.00002	<0.00010	<0.0005
Manganese	mg/L			< 0.001	0.00069	<0.002
Molybdenum	mg/L			< 0.0001	0.000066	<0.0005
Nickel	mg/L			< 0.01	<0.00050	<0.1
Selenium	mg/L		**DRY**	< 0.001	0.000063	<0.002
Silver	mg/L			< 0.00002	<0.000050	<0.0001
Strontium	mg/L			-	0.0594	0.055
Thallium	mg/L			< 0.00005	<0.000010	<0.00005
Titanium	mg/L			< 0.005	0.00048	<0.005
Tungsten	mg/L			< 0.01	<0.00010	<0.001
Uranium	mg/L			0.0001	0.000137	0.00011

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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PARAMETERS	UNITS	PWQO	SW11A			
			SW11A	SW11A	SW11A	SW11A
			25-Oct-16	8-May-17	9-May-18	16-May-19
Vanadium	mg/L			< 0.005	<0.00050	<0.0005
Zinc	mg/L	0.02		< 0.005	<0.0030	<0.005
Zirconium	mg/L			< 0.003	<0.00030	<0.001
Anion Sum	meq/L			3.29	-	-
Cation Sum	meq/L			3.44	-	-
Ion Ratio	AS/CS			0.957	-	-
TDS (Calc)	mg/L			161	200	-
Benzene	µg/L			<0.5	<0.5	<0.20
Toluene	µg/L			<0.5	<0.5	<0.20
Ethylbenzene	µg/L			<0.5	<0.5	<0.20
Xylene, m, p-	µg/L			<1.0	<0.4	<0.40
Xylene, o-	µg/L			<0.5	<0.3	<0.02
Xylene, total	µg/L			<1.1	<0.5	<0.40
PHC F1 (C6-C10)	µg/L			<50	<25	<25
PHC F2 (>C10-C16)	µg/L			<50	<100	<100
PHC F3 (>C16-C34)	µg/L			<400	<250	<200
PHC F4 (<C34-C50)	µg/L			<400	<250	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW11A			
			SW11A	SW11A	SW11A	SW11A
PARAMETERS	UNITS	PWQO	20-May-20			
Total Coliform	cfu/100mL		6			
E.Coli	cfu/100mL		0			
Heterotrophic Plate Count	cfu/mL		0			
Temperature (field)	°C		**5.3**			
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	8.05			
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		390			
Dissolved Oxygen (field)	mg/L		12.12			
Alkalinity (CaCO3)	mg/L		210			
Hardness (CaCO3)	mg/L		210			
Chloride	mg/L		1.9			
Fluoride	mg/L		<0.10			
Nitrate (N)	mg/L		0.28			
Nitrite (N)	mg/L		<0.010			
Sulphate	mg/L		3.2			
Colour	TCU		4			
Total Suspended Solids	mg/L		<10			
Ammonia (N) - Total	mg/L		<0.050			
Unionized Ammonia as NH_3	mg/L	0.02	<0.0007			
Total Kjeldahl Nitrogen	mg/L		0.15			
Phosphorus - Total	mg/L	0.03	<0.020			
Turbidity	NTU		0.2			
Calcium	mg/L		58			
Magnesium	mg/L		18			
Potassium	mg/L		0.88			
Sodium	mg/L		1.1			
Aluminum	µg/L		57			
Antimony	µg/L		<0.50			
Arsenic	µg/L		<1.0			
Barium	µg/L		9.4			
Beryllium	µg/L		<0.50			
Boron	µg/L	200.00	<10			
Cadmium	µg/L	0.2	<0.10			
Chromium	µg/L		<5.0			
Cobalt	µg/L	0.9	<0.50			
Copper	µg/L	5	<1.0			
Iron	µg/L	300	<100			
Lead	µg/L	25	<0.50			
Manganese	µg/L		3.2			
Molybdenum	µg/L		<0.50			
Nickel	µg/L		<1.0			
Selenium	µg/L		<2.0			
Silver	µg/L		<0.10			
Strontium	µg/L		57			
Thallium	µg/L		<0.050			
Titanium	µg/L		<5.0			
Tungsten	µg/L		<1.0			
Uranium	µg/L		0.14			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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PARAMETERS	UNITS	PWQO	SW11A			
			SW11A	SW11A	SW11A	SW11A
			20-May-20			
Vanadium	µg/L		<0.50			
Zinc	µg/L	20.00	<5.0			
Zirconium	µg/L		<1.0			
Anion Sum	meq/L		-			
Cation Sum	meq/L		-			
Ion Ratio	AS/CS		-			
TDS (Calc)	mg/L		205			
Benzene	µg/L		<0.20			
Toluene	µg/L		<0.20			
Ethylbenzene	µg/L		<0.20			
Xylene, m, p-	µg/L		<0.40			
Xylene, o-	µg/L		<0.20			
Xylene, total	µg/L		<0.40			
PHC F1 (C6-C10)	µg/L		<25			
PHC F2 (>C10-C16)	µg/L		<100			
PHC F3 (>C16-C34)	µg/L		<200			
PHC F4 (<C34-C50)	µg/L		<200			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW11B			SW11C		
			SW11B	SW11B	SW11B	SW11C	SW11C	SW11C
PARAMETERS	UNITS	PWQO	24-Oct-16	8-May-17	9-May-18	24-Oct-16	8-May-17	9-May-18
Total Coliform	cfu/100mL		230	68	3	230	74	5
E.Coli	cfu/100mL		9	0	2	4	1	0
Heterotrophic Plate Count	cfu/mL		>2000	40	1	500	40	4
Temperature (field)	°C		9.3	5.1	5.1	8.5	4.9	5
pH @25°C (lab)	pH units	6.5 - 8.5	8.41	8.27	8.26	8.24	8.31	8.23
pH (field)	pH units	6.5 - 8.5	7.6	7.7	7.8	7.8	7.8	7.8
Conductivity @25°C (lab)	µS/cm		439	318	349	466	317	350
Conductivity (field)	µS/cm		328	164	372	336	175	371
Dissolved Oxygen (field)	mg/L		11.0	15.0	11.9	11.0	14.8	12.0
Alkalinity (CaCO3)	mg/L		230	160	195	239	317	200
Hardness (CaCO3)	mg/L		248	165	198	246	164	200
Chloride	mg/L		2.2	< 0.5	1.11	2.4	170	1.11
Fluoride	mg/L		<0.1	< 0.1	0.033	<0.1	< 0.5	0.035
Nitrate (N)	mg/L		0.2	0.3	0.217	0.4	< 0.1	0.231
Nitrite (N)	mg/L		0.2	< 0.1	<0.010	0.2	0.3	<0.010
Sulphate	mg/L		7	2	2.39	7	< 0.1	2.43
Colour	TCU		7	8	5.4	<2	2	5.5
Total Suspended Solids	mg/L		100	<3	<2.0	16	<3	<2.0
Ammonia (N) - Total	mg/L		0.02	<0.01	0.053	0.02	<0.01	0.072
Unionized Ammonia as NH_3	mg/L	0.02	0.0001	<0.0001	0.00041	0.0002	<0.0001	0.0005
Total Kjeldahl Nitrogen	mg/L		0.4	2.2	<0.15	0.2	1.1	<0.15
Phosphorus - Total	mg/L	0.03	0.08	<0.01	0.0046	0.03	<0.01	0.0057
Turbidity (lab)	NTU		-	-	0.42	-	-	0.36
Calcium	mg/L		67.8	44.1	56.2	65.9	45.6	54.1
Magnesium	mg/L		19.2	13.3		19.8	13.5	15.7
Potassium	mg/L		0.8	0.7		0.5	0.7	0.896
Sodium	mg/L		1.6	0.9		1.9	0.9	0.9
Aluminum	mg/L		0.2	0.03	0.014	0.06	0.02	<0.010
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.0001	< 0.0001	<0.00010
Arsenic	mg/L		0.0003	0.0001	0.00011	0.0002	0.0001	0.00012
Barium	mg/L		0.013	0.007	0.00914	0.01	0.007	0.009
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.002	< 0.002	<0.00010
Boron	mg/L	0.20	0.007	0.008	<0.010	0.005	0.007	<0.010
Cadmium	mg/L	0.0002	0.0001	< 0.000014	<0.000010	<0.00002	< 0.000014	<0.000010
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.00050	<0.002	< 0.002	<0.00050
Cobalt	mg/L		0.0032	< 0.0001	<0.00010	0.0002	< 0.0001	<0.00010
Copper	mg/L	0.005	0.009	< 0.002	<0.0010	<0.002	< 0.002	<0.0010
Iron	mg/L	0.3	0.759	0.05	<0.050	0.037	0.033	<0.050
Lead	mg/L	0.025	0.00335	< 0.00002	<0.00010	0.00011	< 0.00002	<0.00010
Manganese	mg/L		0.489	0.002	<0.00050	0.009	< 0.001	<0.00050
Molybdenum	mg/L		<0.0001	< 0.0001	0.000066	0.0001	< 0.0001	0.000075
Nickel	mg/L		<0.01	< 0.01	<0.00050	<0.01	< 0.01	<0.00050
Selenium	mg/L		<0.001	< 0.001	0.00007	<0.001	< 0.001	0.000078
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.00002	< 0.00002	<0.000050
Strontium	mg/L		0.102	-	0.0626	0.087	-	0.0627
Thallium	mg/L		<0.00005	< 0.00005	<0.000010	<0.00005	< 0.00005	<0.000010
Titanium	mg/L		0.007	< 0.005	0.00045	<0.005	< 0.005	<0.00030
Tungsten	mg/L		<0.01	< 0.01	<0.00010	<0.01	< 0.01	<0.00010
Uranium	mg/L		0.00025	0.0001	0.000136	0.00016	0.00011	0.000137

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW11B			SW11C		
			SW11B	SW11B	SW11B	SW11C	SW11C	SW11C
PARAMETERS	UNITS	PWQO	24-Oct-16	8-May-17	9-May-18	24-Oct-16	8-May-17	9-May-18
Vanadium	mg/L		<0.005	< 0.005	<0.00050	<0.005	< 0.005	<0.00050
Zinc	mg/L	0.02	0.008	< 0.005	<0.0030	<0.005	< 0.005	<0.0030
Zirconium	mg/L		<0.003	< 0.003	<0.00030	<0.003	< 0.003	<0.00030
Anion Sum	meq/L		4.98	3.27	-	5.02	3.37	-
Cation Sum	meq/L		6.46	3.35	-	5.02	3.45	-
Ion Ratio	AS/CS		0.771	0.976	-	1	0.976	-
TDS (Calc)	mg/L		268	159	210	243	164	210
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<1.0	<1.0	<0.4
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.5	<0.5	<0.3
Xylene, total	µg/L		<1.1	<1.1	<0.5	<1.1	<1.1	<0.5
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<50	<50	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<50	<50	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<400	<400	<250
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<400	<400	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW11B			SW11C		
			SW11B	SW11B	SW11B	SW11C	SW11C	SW11C
PARAMETERS	UNITS	PWQO	16-May-19	20-May-20		16-May-19	20-May-20	
Total Coliform	cfu/100mL		93	7		7	52	
E.Coli	cfu/100mL		0	0		0	12	
Heterotrophic Plate Count	cfu/mL		36	0		4	1	
Temperature (field)	°C		5.7	5.6		5.2	5.2	
pH @25°C (lab)	pH units	6.5 - 8.5						
pH (field)	pH units	6.5 - 8.5	7.9	8.0		7.3	8.0	
Conductivity @25°C (lab)	µS/cm							
Conductivity (field)	µS/cm		322.3	390		325.1	390	
Dissolved Oxygen (field)	mg/L		12.3	11.9		12.2	12.3	
Alkalinity (CaCO3)	mg/L		200	210		190	210	
Hardness (CaCO3)	mg/L		200	210		200	210	
Chloride	mg/L		1.1	1.7		1.3	1.8	
Fluoride	mg/L		<0.10	<0.10		<0.10	<0.10	
Nitrate (N)	mg/L		0.2	0.27		0.21	0.29	
Nitrite (N)	mg/L		<0.010	<0.010		<0.010	<0.010	
Sulphate	mg/L		<1.0	3.1		<1.0	3.5	
Colour	TCU		6	5		5	4	
Total Suspended Solids	mg/L		<10	18		<10	<10	
Ammonia (N) - Total	mg/L		<0.050	<0.050		<0.050	0.056	
Unionized Ammonia as NH_3	mg/L	0.02	<0.0005	<0.0007		<0.0001	0.0007	
Total Kjeldahl Nitrogen	mg/L		0.15	0.13		0.16	0.14	
Phosphorus - Total	mg/L	0.03	0.006	<0.020		0.005	<0.020	
Turbidity (lab)	NTU			0.2			0.4	
Calcium	mg/L		57	57		56	57	
Magnesium	mg/L		15	18		15	17	
Potassium	mg/L		0.91	0.93		0.87	0.89	
Sodium	mg/L		0.95	1.1		0.92	1	
Aluminum	µg/L		0.021	160		0.011	130	
Antimony	µg/L		<0.50	<0.50		<0.50	<0.50	
Arsenic	µg/L		<1.0	<1.0		<1.0	<1.0	
Barium	µg/L		9.4	10		9.2	11	
Beryllium	µg/L		<0.50	<0.50		<0.50	<0.50	
Boron	µg/L	200.00	<10	<10		<10	<10	
Cadmium	µg/L	0.2	<0.10	<0.10		<0.10	<0.10	
Chromium	µg/L		<5.0	<5.0		<5.0	<5.0	
Cobalt	µg/L	0.9	<0.50	<0.50		<0.50	<0.50	
Copper	µg/L	5	<1.0	1.2		<1.0	1.4	
Iron	µg/L	300	<10	230		<10	140	
Lead	µg/L	25	<0.50	<0.50		<0.50	1.7	
Manganese	µg/L		<2.0	16		<2.0	45	
Molybdenum	µg/L		<0.50	<0.50		<0.50	<0.50	
Nickel	µg/L		<1.0	<1.0		<1.0	<1.0	
Selenium	µg/L		<2.0	<2.0		<2.0	<2.0	
Silver	µg/L		<0.10	<0.10		<0.10	<0.10	
Strontium	µg/L		0.058	58		0.057	57	
Thallium	µg/L		<0.050	<0.050		<0.050	<0.050	
Titanium	µg/L		<5.0	6.2		<5.0	5.4	
Tungsten	µg/L		<1.0	<1.0		<1.0	<1.0	
Uranium	µg/L		<0.1	0.13		<0.1	0.13	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW11B			SW11C		
			SW11B	SW11B	SW11B	SW11C	SW11C	SW11C
PARAMETERS	UNITS	PWQO	16-May-19	20-May-20		16-May-19	20-May-20	
Vanadium	µg/L		<0.5	0.57		<0.5	<0.50	
Zinc	µg/L	20.00	<5.0	<5.0		<5.0	<5.0	
Zirconium	µg/L		<1.0	<1.0		<1.0	<1.0	
Anion Sum	meq/L		-	-		-	-	
Cation Sum	meq/L		-	-		-	-	
Ion Ratio	AS/CS		-	-		-	-	
TDS (Calc)	mg/L		-	165		-	210	
Benzene	µg/L		<0.20	<0.20		<0.20	<0.20	
Toluene	µg/L		<0.20	<0.20		<0.20	<0.20	
Ethylbenzene	µg/L		<0.20	<0.20		<0.20	<0.20	
Xylene, m, p-	µg/L		<0.40	<0.40		<0.40	<0.40	
Xylene, o-	µg/L		<0.20	<0.20		<0.20	<0.20	
Xylene, total	µg/L		<0.40	<0.40		<0.40	<0.40	
PHC F1 (C6-C10)	µg/L		<25	<25		<25	<25	
PHC F2 (>C10-C16)	µg/L		<100	<100		<100	<100	
PHC F3 (>C16-C34)	µg/L		<200	<200		<200	<200	
PHC F4 (<C34-C50)	µg/L		<200	<200		<200	<200	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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PARAMETERS	UNITS	PWQO	SW11D			
			SW11D	SW11D	SW11D	SW11D
			24-Oct-16	8-May-17	9-May-18	16-May-19
Total Coliform	cfu/100mL		390	28	6	3
E.Coli	cfu/100mL		81	0	0	0
Heterotrophic Plate Count	cfu/mL		>2000	10	5	4
Temperature (field)	°C		8.0	4.6	4.9	5.6
pH @25°C (lab)	pH units	6.5 - 8.5	8.35	8.28	8.28	
pH (field)	pH units	6.5 - 8.5	8.0	7.9	7.9	7.9
Conductivity @25°C (lab)	µS/cm		435	317	317	
Conductivity (field)	µS/cm		222	153	363	360.1
Dissolved Oxygen (field)	mg/L		11.3	14.9	12.1	11.9
Alkalinity (CaCO3)	mg/L		226	162	194	190
Hardness (CaCO3)	mg/L		242	161	198	200
Chloride	mg/L		1.2	0.8	0.97	1.5
Fluoride	mg/L		<0.1	< 0.1	0.037	<0.10
Nitrate (N)	mg/L		0.4	0.4	0.364	0.25
Nitrite (N)	mg/L		0.2	< 0.1	<0.010	<0.010
Sulphate	mg/L		7	2	2.55	<1.0
Colour	TCU		4	9	6.1	6
Total Suspended Solids	mg/L		38	3	2.3	<10
Ammonia (N) - Total	mg/L		0.01	<0.01	0.1	<0.050
Unionized Ammonia as NH_3	mg/L	0.02	0.0002	<0.0001	0.0007	<0.0005
Total Kjeldahl Nitrogen	mg/L		1	0.7	<0.15	0.13
Phosphorus - Total	mg/L	0.03	0.12	0.03	0.0103	0.006
Turbidity (lab)	NTU		-	-	0.79	-
Calcium	mg/L		66.3	43.3	53.1	55
Magnesium	mg/L		18.6	12.9	15.1	15
Potassium	mg/L		0.5	0.7	0.871	0.85
Sodium	mg/L		1	0.9	0.885	0.86
Aluminum	mg/L		0.22	0.03	0.021	0.016
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.0005
Arsenic	mg/L		0.0005	0.0001	0.00014	<0.001
Barium	mg/L		0.01	0.007	0.00866	0.0097
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.0005
Boron	mg/L	0.20	0.009	0.007	<0.010	<0.010
Cadmium	mg/L	0.0002	0.00004	< 0.000014	<0.000010	<0.0001
Chromium	mg/L	0.0089	<0.002	0.003	<0.00050	<0.005
Cobalt	mg/L		0.0004	< 0.0001	<0.00010	<0.0005
Copper	mg/L	0.005	0.002	0.002	<0.0010	0.0013
Iron	mg/L	0.3	0.232	0.054	<0.050	<0.1
Lead	mg/L	0.025	0.0015	< 0.00002	<0.00010	<0.0005
Manganese	mg/L		0.051	0.002	0.00072	<0.002
Molybdenum	mg/L		<0.0001	< 0.0001	0.000071	<0.0005
Nickel	mg/L		<0.01	< 0.01	<0.00050	0.0022
Selenium	mg/L		<0.001	< 0.001	0.000059	<0.002
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.0001
Strontium	mg/L		0.086	-	0.0626	0.054
Thallium	mg/L		<0.00005	< 0.00005	<0.000010	<0.00005
Titanium	mg/L		<0.005	< 0.005	0.00061	<0.005
Tungsten	mg/L		0.01	< 0.01	<0.00010	<0.001
Uranium	mg/L		0.00012	0.00011	0.000127	0.0001

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

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PARAMETERS	UNITS	PWQO	SW11D			
			SW11D	SW11D	SW11D	SW11D
			24-Oct-16	8-May-17	9-May-18	16-May-19
Vanadium	mg/L		<0.005	< 0.005	<0.00050	<0.0005
Zinc	mg/L	0.02	<0.005	< 0.005	<0.0030	<0.005
Zirconium	mg/L		<0.003	< 0.003	<0.00030	<0.001
Anion Sum	meq/L		4.74	3.35	-	-
Cation Sum	meq/L		4.91	3.28	-	-
Ion Ratio	AS/CS		0.966	1.02	-	-
TDS (Calc)	mg/L		233	160	215	-
Benzene	µg/L		<0.5	<0.5	<0.5	<0.20
Toluene	µg/L		<0.5	<0.5	<0.5	<0.20
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.20
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<0.40
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.20
Xylene, total	µg/L		<1.1	<1.1	<0.5	<0.40
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<200
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

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			SW11D			
			SW11D	SW11D	SW11D	SW11D
PARAMETERS	UNITS	PWQO	20-May-20			
Total Coliform	cfu/100mL		80			
E.Coli	cfu/100mL		20			
Heterotrophic Plate Count	cfu/mL		0			
Temperature (field)	°C		5.4			
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	8.1			
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		380			
Dissolved Oxygen (field)	mg/L		12.1			
Alkalinity (CaCO3)	mg/L		200			
Hardness (CaCO3)	mg/L		200			
Chloride	mg/L		1.5			
Fluoride	mg/L		<0.10			
Nitrate (N)	mg/L		0.47			
Nitrite (N)	mg/L		<0.010			
Sulphate	mg/L		1.1			
Colour	TCU		6			
Total Suspended Solids	mg/L		<10			
Ammonia (N) - Total	mg/L		<0.050			
Unionized Ammonia as NH_3	mg/L	0.02	<0.0008			
Total Kjeldahl Nitrogen	mg/L		0.16			
Phosphorus - Total	mg/L	0.03	0.022			
Turbidity (lab)	NTU		0.3			
Calcium	mg/L		56			
Magnesium	mg/L		16			
Potassium	mg/L		0.8			
Sodium	mg/L		0.94			
Aluminum	µg/L		58			
Antimony	µg/L		<0.50			
Arsenic	µg/L		<1.0			
Barium	µg/L		8.6			
Beryllium	µg/L		<0.50			
Boron	µg/L	200.00	10			
Cadmium	µg/L	0.2	<0.10			
Chromium	µg/L		<5.0			
Cobalt	µg/L	0.9	<0.50			
Copper	µg/L	5	<1.0			
Iron	µg/L	300	<100			
Lead	µg/L	25	<0.50			
Manganese	µg/L		2.5			
Molybdenum	µg/L		<0.50			
Nickel	µg/L		<1.0			
Selenium	µg/L		<2.0			
Silver	µg/L		<0.10			
Strontium	µg/L		57			
Thallium	µg/L		<0.050			
Titanium	µg/L		<5.0			
Tungsten	µg/L		<1.0			
Uranium	µg/L		0.12			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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PARAMETERS	UNITS	PWQO	SW11D			
			SW11D	SW11D	SW11D	SW11D
			20-May-20			
Vanadium	µg/L		<0.50			
Zinc	µg/L	20.00	<5.0			
Zirconium	µg/L		<1.0			
Anion Sum	meq/L		-			
Cation Sum	meq/L		-			
Ion Ratio	AS/CS		-			
TDS (Calc)	mg/L		190			
Benzene	µg/L		<0.20			
Toluene	µg/L		<0.20			
Ethylbenzene	µg/L		<0.20			
Xylene, m, p-	µg/L		<0.40			
Xylene, o-	µg/L		<0.20			
Xylene, total	µg/L		<0.40			
PHC F1 (C6-C10)	µg/L		<25			
PHC F2 (>C10-C16)	µg/L		<100			
PHC F3 (>C16-C34)	µg/L		<200			
PHC F4 (<C34-C50)	µg/L		<200			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW11E			SW14		
			SW11E	SW11E	SW11E	SW14	SW14	SW14
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	9-May-18	24-Oct-16	9-May-17	8-May-18
Total Coliform	cfu/100mL		230	60	41	-	-	-
E.Coli	cfu/100mL		9	0	0	-	-	-
Heterotrophic Plate Count	cfu/mL		>2000	160	30	-	-	-
Temperature (field)	°C		7.8	6.4	6.9	7.7	7.0	10.3
pH @25°C (lab)	pH units	6.5 - 8.5	8.41	8.26	8.39	8.22	8.21	8.38
pH (field)	pH units	6.5 - 8.5	7.9	8.5	8.29	7.5	8.3	8.4
Conductivity @25°C (lab)	µS/cm		439	323	336	460	458	366
Conductivity (field)	µS/cm		311	190	357	464	223	390
Dissolved Oxygen (field)	mg/L		12.5	15.5	11.77	10.1	15.1	11.0
Alkalinity (CaCO3)	mg/L		230	171	196	220	246	193
Hardness (CaCO3)	mg/L		248	190	194	219	253	200
Chloride	mg/L		2.2	< 0.5	1.04	10.2	1.2	8.54
Fluoride	mg/L		<0.1	< 0.1	0.035	<0.1	< 0.1	0.038
Nitrate (N)	mg/L		0.2	0.4	0.26	<0.1	0.4	0.51
Nitrite (N)	mg/L		0.2	< 0.1	<0.010	<0.1	< 0.1	<0.010
Sulphate	mg/L		7	3	2.52	8	3	3.89
Colour	TCU		7	8	8.1	12	7	8.2
Total Suspended Solids	mg/L		100	5	3.2	14	11	3.9
Ammonia (N) - Total	mg/L		0.02	<0.01	<0.020	0.03	<0.01	0.027
Unionized Ammonia as NH_3	mg/L	0.02	0.0002	<0.0004	<0.0006	0.0001	<0.0003	0.0011
Total Kjeldahl Nitrogen	mg/L		0.4	0.2	<0.15	0.3	0.3	<0.15
Phosphorus - Total	mg/L	0.03	0.08	0.02	0.012	0.01	0.03	0.0115
Turbidity (lab)	NTU		-	-	2.21	-	-	3.06
Calcium	mg/L		67.8	52.4	54.2	55.6	74.5	56.6
Magnesium	mg/L		19.2	14.3	14.8	19.4	16.3	15.4
Potassium	mg/L		0.8	0.8	0.885	1	0.9	1.12
Sodium	mg/L		1.6	0.8	0.881	4.4	1.4	5.87
Aluminum	mg/L		0.2	0.07	0.068	0.04	0.22	0.124
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.0001	< 0.0001	<0.00010
Arsenic	mg/L		0.0003	< 0.0001	0.00017	0.0005	< 0.0001	0.00025
Barium	mg/L		0.013	0.008	0.00914	0.012	0.016	0.0105
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.002	< 0.002	<0.00010
Boron	mg/L	0.20	0.007	< 0.005	<0.010	0.042	0.011	0.017
Cadmium	mg/L	0.0002	0.00004	< 0.000014	<0.000010	<0.00002	< 0.000014	<0.000010
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.00050	<0.002	< 0.002	<0.00050
Cobalt	mg/L		0.0004	< 0.0001	<0.00010	0.0001	< 0.0001	<0.00010
Copper	mg/L	0.005	0.003	0.002	<0.0010	<0.002	< 0.002	<0.0010
Iron	mg/L	0.3	0.239	0.066	0.068	0.212	0.251	0.142
Lead	mg/L	0.025	0.00086	< 0.00002	<0.00010	0.00004	0.00015	<0.00010
Manganese	mg/L		0.092	0.004	0.00418	0.112	0.032	0.0231
Molybdenum	mg/L		<0.0001	< 0.0001	0.000078	<0.0001	0.0003	0.000124
Nickel	mg/L		<0.01	< 0.01	<0.00050	<0.01	< 0.01	<0.00050
Selenium	mg/L		<0.001	< 0.001	0.000074	<0.001	< 0.001	0.000066
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.00002	< 0.00002	<0.000050
Strontium	mg/L		0.089	0.057	0.063	0.178	0.146	0.0951
Thallium	mg/L		<0.00005	< 0.00005	<0.000010	<0.00005	< 0.00005	<0.000010
Titanium	mg/L		<0.005	< 0.005	0.00131	<0.005	0.005	0.00289
Tungsten	mg/L		0.01	< 0.01	<0.00010	0.01	< 0.01	<0.00010
Uranium	mg/L		0.00017	0.00013	0.000138	0.0003	0.00045	0.000262

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW11E			SW14		
			SW11E	SW11E	SW11E	SW14	SW14	SW14
PARAMETERS	UNITS	PWQO	24-Oct-16	9-May-17	9-May-18	24-Oct-16	9-May-17	8-May-18
Vanadium	mg/L		<0.005	< 0.005	<0.00050	<0.005	< 0.005	<0.00050
Zinc	mg/L	0.02	<0.005	< 0.005	<0.0030	<0.005	< 0.005	<0.0030
Zirconium	mg/L		<0.003	0.005	<0.00030	<0.003	0.007	<0.00030
Anion Sum	meq/L		4.84	3.52	-	4.85	5.04	-
Cation Sum	meq/L		5.07	3.85	-	4.61	5.16	-
Ion Ratio	AS/CS		0.955	0.914	-	1.05	0.977	-
TDS (Calc)	mg/L		239	176	214	231	247	230
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<1.0	<1.0	<0.4
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.5	<0.5	<0.3
Xylene, total	µg/L		<1.1	<1.1	<0.5	<1.1	<1.1	<0.5
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<50	<50	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<50	<50	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<400	<400	<250
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<400	<400	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW11E			SW14		
			SW11E	SW11E	SW11E	SW14	SW14	SW14
PARAMETERS	UNITS	PWQO	16-May-19	20-May-20		14-May-19	20-May-20	
Total Coliform	cfu/100mL		-	88	-	-	-	-
E.Coli	cfu/100mL		-	42	-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	1	-	-	-	-
Temperature (field)	°C		6.6	10.8		6.9	9.5	
pH @25°C (lab)	pH units	6.5 - 8.5						
pH (field)	pH units	6.5 - 8.5	8.5	8.27		8.5	8.2	
Conductivity @25°C (lab)	µS/cm							
Conductivity (field)	µS/cm		315	380		338.5	400	
Dissolved Oxygen (field)	mg/L		12.0	10.79		11.7	10.8	
Alkalinity (CaCO3)	mg/L		190	200		190	210	
Hardness (CaCO3)	mg/L		200	200		210	210	
Chloride	mg/L		1.2	1.4		9	6.4	
Fluoride	mg/L		<0.10	<0.10		<0.10	<0.10	
Nitrate (N)	mg/L		0.23	0.29		0.41	0.39	
Nitrite (N)	mg/L		<0.010	<0.010		<0.010	<0.010	
Sulphate	mg/L		<1.0	1.6		4	5.2	
Colour	TCU		8	7		8	7	
Total Suspended Solids	mg/L		<10	10		<10	11	
Ammonia (N) - Total	mg/L		<0.050	<0.050		0.05	<0.050	
Unionized Ammonia as NH_3	mg/L	0.02	<0.002	<0.002		<0.002	<0.001	
Total Kjeldahl Nitrogen	mg/L		0.24	0.21		0.13	0.2	
Phosphorus - Total	mg/L	0.03	0.012	<0.020		0.016	<0.020	
Turbidity (lab)	NTU		-	0.6			1.2	
Calcium	mg/L		57	59		61	58	
Magnesium	mg/L		15	17		16	17	
Potassium	mg/L		0.91	1		1.1	1	
Sodium	mg/L		0.95	1		5.9	3.5	
Aluminum	µg/L		66	310		210	100	
Antimony	µg/L		<0.5	<0.50		<0.50	<0.50	
Arsenic	µg/L		<1.0	<1.0		<1.0	<1.0	
Barium	µg/L		9.4	11		11	10	
Beryllium	µg/L		<0.5	<0.50		<0.50	<0.50	
Boron	µg/L	200.00	<10	12		17	24	
Cadmium	µg/L	0.2	<0.10	<0.10		<0.10	<0.10	
Chromium	µg/L		<5.0	<5.0		<5.0	<5.0	
Cobalt	µg/L	0.9	<0.5	<0.50		<0.50	<0.50	
Copper	µg/L	5	<1.0	<1.0		<1.0	<1.0	
Iron	µg/L	300	<100	340		210	140	
Lead	µg/L	25	<0.5	<0.50		<0.50	<0.50	
Manganese	µg/L		3.4	19		20	29	
Molybdenum	µg/L		<0.5	<0.50		<0.50	<0.50	
Nickel	µg/L		<1.0	<1.0		<1.0	<1.0	
Selenium	µg/L		<2.0	<2.0		<2.0	<2.0	
Silver	µg/L		<0.10	<0.10		<0.10	<0.10	
Strontium	µg/L		60	62		81	91	
Thallium	µg/L		<0.050	<0.050		<0.050	<0.050	
Titanium	µg/L		<5.0	7.2		10	<5.0	
Tungsten	µg/L		<1.0	<1.0		<1.0	<1.0	
Uranium	µg/L		0.11	0.15		0.22	0.25	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW11E			SW14		
			SW11E	SW11E	SW11E	SW14	SW14	SW14
PARAMETERS	UNITS	PWQO	16-May-19	20-May-20		14-May-19	20-May-20	
Vanadium	µg/L		<0.5	0.74		0.76	<0.50	
Zinc	µg/L	20.00	<5.0	<5.0		<5.0	<5.0	
Zirconium	µg/L		<1.0	<1.0		<1.0	<1.0	
Anion Sum	meq/L		-	-		-	-	
Cation Sum	meq/L		-	-		-	-	
Ion Ratio	AS/CS		-	-		-	-	
TDS (Calc)	mg/L		-	185		-	205	
Benzene	µg/L		<0.20	<0.20		<0.20	<0.20	
Toluene	µg/L		<0.20	<0.20		<0.20	<0.20	
Ethylbenzene	µg/L		<0.20	<0.20		<0.20	<0.20	
Xylene, m, p-	µg/L		<0.40	<0.40		<0.40	<0.40	
Xylene, o-	µg/L		<0.20	<0.20		<0.20	<0.20	
Xylene, total	µg/L		<0.40	<0.40		<0.40	<0.40	
PHC F1 (C6-C10)	µg/L		<25	<25		<25	<25	
PHC F2 (>C10-C16)	µg/L		<100	<100		<100	<100	
PHC F3 (>C16-C34)	µg/L		<200	<200		<200	<200	
PHC F4 (<C34-C50)	µg/L		<200	<200		<200	<200	

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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PARAMETERS	UNITS	PWQO	SW15			
			SW15	SW15	SW15	SW15
			24-Oct-16	9-May-17	8-May-18	14-May-19
Total Coliform	cfu/100mL		-	-	-	-
E.Coli	cfu/100mL		-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-
Temperature (field)	°C		9.5	12.2	14	9.1
pH @25°C (lab)	pH units	6.5 - 8.5	8.27	8.27	8.28	
pH (field)	pH units	6.5 - 8.5	7.7	8.4	8.0	8.1
Conductivity @25°C (lab)	µS/cm		437	365	491	
Conductivity (field)	µS/cm		323	320	504	433.2
Dissolved Oxygen (field)	mg/L		9.8	11.5	9.2	10.0
Alkalinity (CaCO3)	mg/L		226	183	262	260
Hardness (CaCO3)	mg/L		220	220	288	280
Chloride	mg/L		3	5.8	2.06	3
Fluoride	mg/L		0.1	< 0.1	0.043	<0.10
Nitrate (N)	mg/L		0.3	0.8	0.412	0.43
Nitrite (N)	mg/L		0.2	< 0.1	<0.010	<0.010
Sulphate	mg/L		5	3	2.96	3.9
Colour	TCU		7	7	6.6	5
Total Suspended Solids	mg/L		<3	14.7	3.8	15
Ammonia (N) - Total	mg/L		0.04	<0.01	<0.020	<0.05
Unionized Ammonia as NH_3	mg/L	0.02	0.0004	<0.0005	<0.0005	<0.001
Total Kjeldahl Nitrogen	mg/L		0.2	0.2	<0.15	0.2
Phosphorus - Total	mg/L	0.03	0.01	0.03	0.0178	0.036
Turbidity (lab)	NTU		-	-	2.19	
Calcium	mg/L		58.2	60.4	84.6	85
Magnesium	mg/L		18.3	16.8	17.4	18
Potassium	mg/L		0.8	0.9	1.43	2.1
Sodium	mg/L		1.7	5.2	1.65	1.9
Aluminum	mg/L		0.03	0.09	0.082	0.4
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.0005
Arsenic	mg/L		0.0003	< 0.0001	0.00025	<0.001
Barium	mg/L		0.016	0.009	0.0216	0.022
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.0005
Boron	mg/L	0.20	0.016	0.008	0.02	0.017
Cadmium	mg/L	0.0002	<0.00002	< 0.000014	<0.000010	<0.0001
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.00050	<0.005
Cobalt	mg/L		0.0001	< 0.0001	<0.00010	<0.0005
Copper	mg/L	0.005	<0.002	< 0.002	<0.0010	0.0011
Iron	mg/L	0.3	0.028	0.104	0.096	0.48
Lead	mg/L	0.025	<0.00002	0.00005	<0.00010	<0.0005
Manganese	mg/L		0.066	0.013	0.0488	0.046
Molybdenum	mg/L		0.0001	0.0001	0.000121	<0.0005
Nickel	mg/L		<0.01	< 0.01	<0.00050	<0.001
Selenium	mg/L		<0.001	< 0.001	0.000059	<0.002
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.0001
Strontium	mg/L		0.145	0.084	0.186	0.16
Thallium	mg/L		<0.00005	< 0.00005	<0.000010	<0.00005
Titanium	mg/L		<0.005	< 0.005	0.00268	0.015
Tungsten	mg/L		0.01	< 0.01	<0.00010	<0.001
Uranium	mg/L		0.00032	0.00025	0.000422	0.00045

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

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PARAMETERS	UNITS	PWQO	SW15			
			SW15	SW15	SW15	SW15
			24-Oct-16	9-May-17	8-May-18	14-May-19
Vanadium	mg/L		<0.005	< 0.005	<0.00050	0.00013
Zinc	mg/L	0.02	<0.005	< 0.005	<0.0030	<0.0005
Zirconium	mg/L		<0.003	0.005	<0.00030	<0.0001
Anion Sum	meq/L		4.74	3.95	-	
Cation Sum	meq/L		4.51	4.65	-	
Ion Ratio	AS/CS		1.05	0.849	-	
TDS (Calc)	mg/L		224	206	290	
Benzene	µg/L		<0.5	<0.5	<0.5	<0.20
Toluene	µg/L		<0.5	<0.5	<0.5	<0.20
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.20
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<0.40
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.20
Xylene, total	µg/L		<1.1	<1.1	<0.5	<0.40
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<200
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW15			
			SW15	SW15	SW15	SW15
PARAMETERS	UNITS	PWQO	20-May-20			
Total Coliform	cfu/100mL		-			
E.Coli	cfu/100mL		-			
Heterotrophic Plate Count	cfu/mL		-			
Temperature (field)	°C		10.1			
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	8.1			
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		500			
Dissolved Oxygen (field)	mg/L		10.1			
Alkalinity (CaCO3)	mg/L		280			
Hardness (CaCO3)	mg/L		270			
Chloride	mg/L		5			
Fluoride	mg/L		<0.10			
Nitrate (N)	mg/L		0.64			
Nitrite (N)	mg/L		<0.010			
Sulphate	mg/L		5.6			
Colour	TCU		5			
Total Suspended Solids	mg/L		<10			
Ammonia (N) - Total	mg/L		<0.050			
Unionized Ammonia as NH_3	mg/L	0.02	<0.001			
Total Kjeldahl Nitrogen	mg/L		0.29			
Phosphorus - Total	mg/L	0.03	<0.020			
Turbidity (lab)	NTU		0.7			
Calcium	mg/L		82			
Magnesium	mg/L		18			
Potassium	mg/L		1.7			
Sodium	mg/L		2.1			
Aluminum	µg/L		95			
Antimony	µg/L		<0.50			
Arsenic	µg/L		<1.0			
Barium	µg/L		23			
Beryllium	µg/L		<0.50			
Boron	µg/L	200.00	27			
Cadmium	µg/L	0.2	<0.10			
Chromium	µg/L		<5.0			
Cobalt	µg/L	0.9	<0.50			
Copper	µg/L	5	<1.0			
Iron	µg/L	300	<100			
Lead	µg/L	25	<0.50			
Manganese	µg/L		11			
Molybdenum	µg/L		<0.50			
Nickel	µg/L		<1.0			
Selenium	µg/L		<2.0			
Silver	µg/L		<0.10			
Strontium	µg/L		170			
Thallium	µg/L		<0.050			
Titanium	µg/L		<5.0			
Tungsten	µg/L		<1.0			
Uranium	µg/L		0.5			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW15			
			SW15	SW15	SW15	SW15
PARAMETERS	UNITS	PWQO	20-May-20			
Vanadium	µg/L		0.63			
Zinc	µg/L	20.00	<5.0			
Zirconium	µg/L		3.8			
Anion Sum	meq/L		-			
Cation Sum	meq/L		-			
Ion Ratio	AS/CS		-			
TDS (Calc)	mg/L		295			
Benzene	µg/L		<0.20			
Toluene	µg/L		<0.20			
Ethylbenzene	µg/L		<0.20			
Xylene, m, p-	µg/L		<0.40			
Xylene, o-	µg/L		<0.20			
Xylene, total	µg/L		<0.40			
PHC F1 (C6-C10)	µg/L		<25			
PHC F2 (>C10-C16)	µg/L		<100			
PHC F3 (>C16-C34)	µg/L		<200			
PHC F4 (<C34-C50)	µg/L		<200			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW16			
			SW16	SW16	SW16	SW16
PARAMETERS	UNITS	PWQO	25-Oct-16	9-May-17	8-May-18	14-May-19
Total Coliform	cfu/100mL		-	-	-	-
E.Coli	cfu/100mL		-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-
Temperature (field)	°C		4.2	9.2	13.8	8.9
pH @25°C (lab)	pH units	6.5 - 8.5	8.15	8.21	8.27	
pH (field)	pH units	6.5 - 8.5	7.5	8.3	8.1	8.4
Conductivity @25°C (lab)	µS/cm		461	378	363	
Conductivity (field)	µS/cm		283	283	388	319.3
Dissolved Oxygen (field)	mg/L		9.9	11.8	8.75	10.73
Alkalinity (CaCO3)	mg/L		235	193	211	180
Hardness (CaCO3)	mg/L		277	207	211	220
Chloride	mg/L		4.3	1.6	2.52	2.4
Fluoride	mg/L		0.2	< 0.1	0.047	<0.10
Nitrate (N)	mg/L		0.1	0.5	0.386	0.3
Nitrite (N)	mg/L		<0.1	< 0.1	<0.010	<0.010
Sulphate	mg/L		6	4	4.03	1.5
Colour	TCU		11	10	9.5	11
Total Suspended Solids	mg/L		20	5	<2.0	<10
Ammonia (N) - Total	mg/L		0.01	<0.01	0.046	<0.05
Unionized Ammonia as NH_3	mg/L	0.02	0.00004	<0.0003	0.0013	<0.002
Total Kjeldahl Nitrogen	mg/L		0.4	0.2	<0.15	0.14
Phosphorus - Total	mg/L	0.03	0.12	0.02	0.0118	0.023
Turbidity (lab)	NTU		-	-	1.69	
Calcium	mg/L		73.4	57.6	57.2	56
Magnesium	mg/L		22.7	15.4	15.9	15
Potassium	mg/L		2	0.4	0.705	0.66
Sodium	mg/L		1.6	1.3	1.42	1.3
Aluminum	mg/L		0.06	0.08	0.053	0.15
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.0005
Arsenic	mg/L		0.0033	< 0.0001	0.00028	<0.001
Barium	mg/L		0.026	0.007	0.00778	0.0069
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.0005
Boron	mg/L	0.20	0.043	0.012	0.022	0.018
Cadmium	mg/L	0.0002	<0.00002	< 0.000014	<0.000010	<0.00010
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.00050	<0.005
Cobalt	mg/L		0.0005	< 0.0001	<0.00010	<0.0005
Copper	mg/L	0.005	<0.002	< 0.002	<0.0010	<0.001
Iron	mg/L	0.3	7.37	0.142	0.078	0.16
Lead	mg/L	0.025	0.00015	0.00004	<0.00010	0.0057
Manganese	mg/L		1.45	0.021	0.0227	0.024
Molybdenum	mg/L		<0.0001	0.0001	0.000095	0.0057
Nickel	mg/L		<0.01	< 0.01	<0.00050	<0.001
Selenium	mg/L		<0.001	< 0.001	0.000052	<0.002
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.0001
Strontium	mg/L		0.221	0.103	0.113	0.1
Thallium	mg/L		<0.00005	< 0.00005	<0.000010	<0.00005
Titanium	mg/L		<0.005	< 0.005	0.00136	<0.005
Tungsten	mg/L		<0.01	< 0.01	<0.00010	<0.001
Uranium	mg/L		0.00026	0.00035	0.000266	0.00025

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

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PARAMETERS	UNITS	PWQO	SW16			
			SW16	SW16	SW16	SW16
			25-Oct-16	9-May-17	8-May-18	14-May-19
Vanadium	mg/L		<0.005	< 0.005	<0.00050	0.00061
Zinc	mg/L	0.02	0.011	< 0.005	<0.0030	<0.005
Zirconium	mg/L		<0.003	0.006	<0.00030	<0.001
Anion Sum	meq/L		4.96	4.03	-	
Cation Sum	meq/L		6.11	4.22	-	
Ion Ratio	AS/CS		0.813	0.956	-	
TDS (Calc)	mg/L		260	199	227	
Benzene	µg/L		<0.5	<0.5	<0.5	<0.20
Toluene	µg/L		<0.5	<0.5	<0.5	<0.20
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.20
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<0.40
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.20
Xylene, total	µg/L		<1.1	<1.1	<0.5	<0.40
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<200
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW16			
			SW16	SW16	SW16	SW16
PARAMETERS	UNITS	PWQO	20-May-20			
Total Coliform	cfu/100mL		-			
E.Coli	cfu/100mL		-			
Heterotrophic Plate Count	cfu/mL		-			
Temperature (field)	°C		10.3			
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	8.1			
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		420			
Dissolved Oxygen (field)	mg/L		9.29			
Alkalinity (CaCO3)	mg/L		220			
Hardness (CaCO3)	mg/L		220			
Chloride	mg/L		3			
Fluoride	mg/L		<0.10			
Nitrate (N)	mg/L		0.22			
Nitrite (N)	mg/L		<0.010			
Sulphate	mg/L		3.6			
Colour	TCU		9			
Total Suspended Solids	mg/L		<10			
Ammonia (N) - Total	mg/L		<0.050			
Unionized Ammonia as NH_3	mg/L	0.02	<0.001			
Total Kjeldahl Nitrogen	mg/L		<0.10			
Phosphorus - Total	mg/L	0.03	<0.020			
Turbidity (lab)	NTU		0.7			
Calcium	mg/L		63			
Magnesium	mg/L		17			
Potassium	mg/L		0.63			
Sodium	mg/L		1.6			
Aluminum	µg/L		52			
Antimony	µg/L		<0.50			
Arsenic	µg/L		<1.0			
Barium	µg/L		7.8			
Beryllium	µg/L		<0.50			
Boron	µg/L	200.00	30			
Cadmium	µg/L	0.2	<0.10			
Chromium	µg/L		<5.0			
Cobalt	µg/L	0.9	<0.50			
Copper	µg/L	5	<1.0			
Iron	µg/L	300	160			
Lead	µg/L	25	<0.50			
Manganese	µg/L		56			
Molybdenum	µg/L		<0.50			
Nickel	µg/L		<1.0			
Selenium	µg/L		<2.0			
Silver	µg/L		<0.10			
Strontium	µg/L		110			
Thallium	µg/L		<0.050			
Titanium	µg/L		<5.0			
Tungsten	µg/L		<1.0			
Uranium	µg/L		0.29			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW16			
			SW16	SW16	SW16	SW16
PARAMETERS	UNITS	PWQO	20-May-20			
Vanadium	µg/L		<0.50			
Zinc	µg/L	20.00	<5.0			
Zirconium	µg/L		<1.0			
Anion Sum	meq/L		-			
Cation Sum	meq/L		-			
Ion Ratio	AS/CS		-			
TDS (Calc)	mg/L		205			
Benzene	µg/L		<0.20			
Toluene	µg/L		<0.20			
Ethylbenzene	µg/L		<0.20			
Xylene, m, p-	µg/L		<0.40			
Xylene, o-	µg/L		<0.20			
Xylene, total	µg/L		<0.40			
PHC F1 (C6-C10)	µg/L		<25			
PHC F2 (>C10-C16)	µg/L		<100			
PHC F3 (>C16-C34)	µg/L		<200			
PHC F4 (<C34-C50)	µg/L		<200			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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PARAMETERS	UNITS	PWQO	SW17			
			SW17	SW17	SW17	SW DUP2
			25-Oct-16	9-May-17	8-May-18	8-May-18
Total Coliform	cfu/100mL		-	-	-	-
E.Coli	cfu/100mL		-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-
Temperature (field)	°C		8.4	7.1	12.3	-
pH @25°C (lab)	pH units	6.5 - 8.5	8.29	8.26	8.34	8.34
pH (field)	pH units	6.5 - 8.5	7.9	8.3	8.3	-
Conductivity @25°C (lab)	µS/cm		428	399	389	385
Conductivity (field)	µS/cm		309	234	413	-
Dissolved Oxygen (field)	mg/L		11.5	14.1	10.3	-
Alkalinity (CaCO3)	mg/L		196	199	219	212
Hardness (CaCO3)	mg/L		234	215	219	220
Chloride	mg/L		11.4	3.4	5.81	5.73
Fluoride	mg/L		0.2	< 0.1	0.046	0.047
Nitrate (N)	mg/L		0.2	0.7	0.436	0.434
Nitrite (N)	mg/L		<0.1	< 0.1	<0.010	<0.010
Sulphate	mg/L		10	6	7.12	7.11
Colour	TCU		6	5	3.2	2.9
Total Suspended Solids	mg/L		8	5	<2.0	<2.0
Ammonia (N) - Total	mg/L		<0.01	<0.01	<0.020	0.034
Unionized Ammonia as NH_3	mg/L	0.02	<0.0001	<0.0003	<0.0008	0.0013
Total Kjeldahl Nitrogen	mg/L		0.4	0.2	<0.15	<0.15
Phosphorus - Total	mg/L	0.03	0.02	0.01	0.0114	0.0057
Turbidity (lab)	NTU		-	-	0.86	1.08
Calcium	mg/L		56.5	60	60.5	62.6
Magnesium	mg/L		22.5	15.7	17	16.9
Potassium	mg/L		1.2	0.5	0.757	0.758
Sodium	mg/L		7.7	2.6	4.07	4.27
Aluminum	mg/L		0.05	0.04	0.036	0.03
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.00010
Arsenic	mg/L		0.0005	< 0.0001	0.00021	0.00018
Barium	mg/L		0.01	0.008	0.00992	0.00999
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.00010
Boron	mg/L	0.20	0.057	0.01	0.024	0.025
Cadmium	mg/L	0.0002	<0.00002	< 0.000014	<0.000010	<0.000010
Chromium	mg/L	0.0089	0.01	0.005	<0.00050	0.00084
Cobalt	mg/L		0.0002	< 0.0001	<0.00010	<0.00010
Copper	mg/L	0.005	<0.002	< 0.002	<0.0010	<0.0010
Iron	mg/L	0.3	0.29	0.046	<0.050	<0.050
Lead	mg/L	0.025	0.00015	< 0.00002	<0.00010	<0.00010
Manganese	mg/L		0.077	0.006	0.00871	0.00733
Molybdenum	mg/L		0.0013	0.0001	0.000146	0.000175
Nickel	mg/L		<0.01	< 0.01	<0.00050	<0.00050
Selenium	mg/L		<0.001	< 0.001	0.000054	<0.000050
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.000050
Strontium	mg/L		0.508	0.276	0.378	0.374
Thallium	mg/L		<0.00005	< 0.00005	<0.000010	<0.000010
Titanium	mg/L		<0.005	< 0.005	0.00072	0.00055
Tungsten	mg/L		0.01	< 0.01	<0.00010	<0.00010
Uranium	mg/L		0.00018	0.00023	0.000217	0.000213

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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PARAMETERS	UNITS	PWQO	SW17			
			SW17	SW17	SW17	SW DUP2
			25-Oct-16	9-May-17	8-May-18	8-May-18
Vanadium	mg/L		<0.005	< 0.005	<0.00050	<0.00050
Zinc	mg/L	0.02	<0.005	0.007	<0.0030	<0.00030
Zirconium	mg/L		<0.003	0.007	<0.00030	<0.00030
Anion Sum	meq/L		4.47	4.24	-	-
Cation Sum	meq/L		5.06	4.41	-	-
Ion Ratio	AS/CS		0.884	0.961	-	-
TDS (Calc)	mg/L		228	211	217	227
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<0.4
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.3
Xylene, total	µg/L		<1.1	<1.1	<0.5	<0.5
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<250
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW17			
			SW17	SW17	SW17	SW17
PARAMETERS	UNITS	PWQO	14-May-19	20-May-20		
Total Coliform	cfu/100mL		-	-		
E.Coli	cfu/100mL		-	-		
Heterotrophic Plate Count	cfu/mL		-	-		
Temperature (field)	°C		8.8	11.1		
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	8.4	8.2		
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		361.6	450		
Dissolved Oxygen (field)	mg/L		10.8	10.3		
Alkalinity (CaCO3)	mg/L		200	240		
Hardness (CaCO3)	mg/L		220	230		
Chloride	mg/L		7.1	3.7		
Fluoride	mg/L		<0.1	<0.10		
Nitrate (N)	mg/L		0.26	0.16		
Nitrite (N)	mg/L		<.01	<0.010		
Sulphate	mg/L		7.5	5.9		
Colour	TCU		3	4		
Total Suspended Solids	mg/L		<10	10		
Ammonia (N) - Total	mg/L		0.05	<0.050		
Unionized Ammonia as NH_3	mg/L	0.02	0.002	<0.002		
Total Kjeldahl Nitrogen	mg/L		0.13	<0.10		
Phosphorus - Total	mg/L	0.03	0.008	<0.020		
Turbidity (lab)	NTU			0.2		
Calcium	mg/L		59	74		
Magnesium	mg/L		16	16		
Potassium	mg/L		0.67	0.58		
Sodium	mg/L		4.3	2.2		
Aluminum	ug/L		41	92		
Antimony	ug/L		<0.50	<0.50		
Arsenic	ug/L		<1.0	<1.0		
Barium	ug/L		9.0	12		
Beryllium	ug/L		<0.50	<0.50		
Boron	ug/L	200.00	24	31		
Cadmium	ug/L	0.2	<0.10	<0.10		
Chromium	ug/L	8.9	<5.0	<5.0		
Cobalt	ug/L		<0.50	<0.50		
Copper	ug/L	5	<1.0	<1.0		
Iron	ug/L	300	<100	250		
Lead	ug/L	25	<0.50	<0.50		
Manganese	ug/L		15	43		
Molybdenum	ug/L		<0.50	<0.50		
Nickel	ug/L		<1.0	<1.0		
Selenium	ug/L		<2.0	<2.0		
Silver	ug/L		<0.10	<0.10		
Strontium	ug/L		380	240		
Thallium	ug/L		<0.050	<0.050		
Titanium	ug/L		<5.0	5.3		
Tungsten	ug/L		<1.0	<1.0		
Uranium	ug/L		0.21	0.32		

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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PARAMETERS	UNITS	PWQO	SW17			
			SW17	SW17	SW17	SW17
			14-May-19	20-May-20		
Vanadium	ug/L		<0.50	<0.50		
Zinc	ug/L	20.00	<5.0	<5.0		
Zirconium	ug/L		<1.0	<1.0		
Anion Sum	meq/L		-	-		
Cation Sum	meq/L		-	-		
Ion Ratio	AS/CS		-	-		
TDS (Calc)	mg/L		-	210		
Benzene	µg/L		<0.20	<0.20		
Toluene	µg/L		<0.20	<0.20		
Ethylbenzene	µg/L		<0.20	<0.20		
Xylene, m, p-	µg/L		<0.40	<0.40		
Xylene, o-	µg/L		<0.20	<0.20		
Xylene, total	µg/L		<0.40	<0.40		
PHC F1 (C6-C10)	µg/L		<25	<25		
PHC F2 (>C10-C16)	µg/L		<100	<100		
PHC F3 (>C16-C34)	µg/L		<200	<200		
PHC F4 (<C34-C50)	µg/L		<200	<200		

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW17A				
			SW17A	SW17A	SW17A	SW17A	SW17A DUP
PARAMETERS	UNITS	PWQO	25-Oct-16	9-May-17	8-May-18	14-May-19	14-May-19
Total Coliform	cfu/100mL		-	-	-	-	-
E.Coli	cfu/100mL		-	-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-	-
Temperature (field)	°C		5.3	8.7	12.1	7.8	7.8
pH @25°C (lab)	pH units	6.5 - 8.5	8.41	8.38	8.39		
pH (field)	pH units	6.5 - 8.5	8.0	8.4	8.4	8.5	8.5
Conductivity @25°C (lab)	µS/cm		443	377	370		
Conductivity (field)	µS/cm		294	238	393	370.9	370.9
Dissolved Oxygen (field)	mg/L		13.3	13.5	10.3	11.3	11.3
Alkalinity (CaCO3)	mg/L		229	195	216	220	220
Hardness (CaCO3)	mg/L		263	210	214	240	240
Chloride	mg/L		2.9	1.7	3.2	3.6	3.3
Fluoride	mg/L		<0.1	< 0.1	0.039	<0.10	<0.10
Nitrate (N)	mg/L		0.6	1	0.828	0.75	0.74
Nitrite (N)	mg/L		<0.1	< 0.1	<0.010	3.6	3.3
Sulphate	mg/L		7	3	3.9	4.1	4.3
Colour	TCU		5	4	3.4	<2	<2
Total Suspended Solids	mg/L		8	7	7.6	<10	<10
Ammonia (N) - Total	mg/L		0.01	<0.01	0.064	<0.05	<0.05
Unionized Ammonia as NH_3	mg/L	0.02	0.0001	<0.0004	0.003	<0.002	<0.002
Total Kjeldahl Nitrogen	mg/L		0.2	0.2	<0.15	<0.10	<0.10
Phosphorus - Total	mg/L	0.03	0.01	0.01	0.009	<0.02	<0.02
Turbidity (lab)	NTU		-	-	2.56		
Calcium	mg/L		71.1	60.7	62.6	68	68
Magnesium	mg/L		20.8	14.2	14.9	17	17
Potassium	mg/L		1.1	0.7	0.916	0.85	0.85
Sodium	mg/L		1.6	1	1.77	1.3	1.2
Aluminum	mg/L		0.05	0.06	0.052	0.033	0.054
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.0005	<0.0005
Arsenic	mg/L		0.0002	< 0.0001	0.00016	<0.001	<0.001
Barium	mg/L		0.01	0.009	0.01	0.00092	0.00092
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.0005	<0.0005
Boron	mg/L	0.20	0.01	< 0.005	0.011	<0.010	<0.010
Cadmium	mg/L	0.0002	<0.00002	< 0.000014	<0.000010	<0.0001	<0.0001
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.00050	<0.005	<0.005
Cobalt	mg/L		0.0002	< 0.0001	<0.00010	<0.0005	<0.0005
Copper	mg/L	0.005	<0.002	< 0.002	<0.0010	<0.001	<0.001
Iron	mg/L	0.3	0.152	0.085	0.074	<0.10	<0.10
Lead	mg/L	0.025	0.00011	0.00023	0.00011	<0.0005	<0.0005
Manganese	mg/L		0.055	0.01	0.00973	<0.0054	<0.0054
Molybdenum	mg/L		0.0001	0.0005	0.000087	<0.0005	<0.0005
Nickel	mg/L		<0.01	< 0.01	<0.00050	<0.001	<0.001
Selenium	mg/L		<0.001	< 0.001	<0.000050	<0.002	<0.002
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.0001	<0.0001
Strontium	mg/L		0.118	0.071	0.137	0.082	0.085
Thallium	mg/L		<0.0005	< 0.00005	<0.000010	<0.00005	<0.00005
Titanium	mg/L		<0.005	< 0.005	0.00187	<0.0005	<0.0005
Tungsten	mg/L		<0.01	0.02	<0.00010	<0.001	<0.001
Uranium	mg/L		0.00015	0.00014	0.000152	0.00014	0.00013

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	SW17A				
			SW17A	SW17A	SW17A	SW17A	SW17A DUP
			25-Oct-16	9-May-17	8-May-18	14-May-19	14-May-19
Vanadium	mg/L		<0.005	< 0.005	<0.00050	<0.0005	<0.0005
Zinc	mg/L	0.02	<0.005	< 0.005	<0.0030	<0.005	<0.005
Zirconium	mg/L		<0.003	0.007	<0.00030	<0.001	<0.001
Anion Sum	meq/L		4.84	4.09	-		-
Cation Sum	meq/L		5.37	4.27	-		-
Ion Ratio	AS/CS		0.901	0.958	-		-
TDS (Calc)	mg/L		244	203	230		-
Benzene	µg/L		<0.5	<0.5	<0.5	<0.20	<0.20
Toluene	µg/L		<0.5	<0.5	<0.5	<0.20	<0.20
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.20	<0.20
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<0.40	<0.40
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.20	<0.20
Xylene, total	µg/L		<1.1	<1.1	<0.5	<0.40	<0.40
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<25	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<100	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<200	<200
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<200	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW17A			
			SW17A	SW17A	SW17A	SW17A
PARAMETERS	UNITS	PWQO	20-May-20			
Total Coliform	cfu/100mL		-			
E.Coli	cfu/100mL		-			
Heterotrophic Plate Count	cfu/mL		-			
Temperature (field)	°C		9.6			
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	8.3			
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		440			
Dissolved Oxygen (field)	mg/L		11.1			
Alkalinity (CaCO3)	mg/L		240			
Hardness (CaCO3)	mg/L		240			
Chloride	mg/L		3.6			
Fluoride	mg/L		<0.10			
Nitrate (N)	mg/L		0.72			
Nitrite (N)	mg/L		<0.010			
Sulphate	mg/L		5.4			
Colour	TCU		2			
Total Suspended Solids	mg/L		11			
Ammonia (N) - Total	mg/L		<0.050			
Unionized Ammonia as NH_3	mg/L	0.02	<0.002			
Total Kjeldahl Nitrogen	mg/L		0.16			
Phosphorus - Total	mg/L	0.03	<0.020			
Turbidity (lab)	NTU		0.3			
Calcium	mg/L		72			
Magnesium	mg/L		19			
Potassium	mg/L		0.91			
Sodium	mg/L		1.5			
Aluminum	mg/L		76			
Antimony	mg/L		<0.50			
Arsenic	mg/L		<1.0			
Barium	mg/L		11			
Beryllium	mg/L		<0.50			
Boron	mg/L	0.20	0.013			
Cadmium	mg/L	0.0002	<0.0001			
Chromium	mg/L	0.0089	<0.005			
Cobalt	mg/L		<0.0005			
Copper	mg/L	0.005	<0.001			
Iron	mg/L	0.3	<0.10			
Lead	mg/L	0.025	<0.0005			
Manganese	mg/L		0.012			
Molybdenum	mg/L		<0.0005			
Nickel	mg/L		<0.001			
Selenium	mg/L		<0.002			
Silver	mg/L		<0.0001			
Strontium	mg/L		0.086			
Thallium	mg/L		<0.00005			
Titanium	mg/L		0.00056			
Tungsten	mg/L		<0.001			
Uranium	mg/L		0.00016			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW17A			
			SW17A	SW17A	SW17A	SW17A
PARAMETERS	UNITS	PWQO	20-May-20			
Vanadium	mg/L		0.00051			
Zinc	mg/L	0.02	<0.005			
Zirconium	mg/L		<0.001			
Anion Sum	meq/L					
Cation Sum	meq/L					
Ion Ratio	AS/CS					
TDS (Calc)	mg/L		220			
Benzene	µg/L		<0.20			
Toluene	µg/L		<0.20			
Ethylbenzene	µg/L		<0.20			
Xylene, m, p-	µg/L		<0.40			
Xylene, o-	µg/L		<0.20			
Xylene, total	µg/L		<0.40			
PHC F1 (C6-C10)	µg/L		<25			
PHC F2 (>C10-C16)	µg/L		<100			
PHC F3 (>C16-C34)	µg/L		<200			
PHC F4 (<C34-C50)	µg/L		<200			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW18			
			SW18	SW18 DUP	SW18	SW18
PARAMETERS	UNITS	PWQO	24-Oct-16	24-Oct-16	9-May-17	8-May-18
Total Coliform	cfu/100mL		-	-	-	-
E.Coli	cfu/100mL		-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-
Temperature (field)	°C		7.3	-	8.8	12.3
pH @25°C (lab)	pH units	6.5 - 8.5	8.42	8.41	8.39	8.41
pH (field)	pH units	6.5 - 8.5	7.9	-	8.5	8.4
Conductivity @25°C (lab)	µS/cm		494	497	395	379
Conductivity (field)	µS/cm		341	-	248	406
Dissolved Oxygen (field)	mg/L		11.5	-	13.3	10.3
Alkalinity (CaCO3)	mg/L		253	251	206	231
Hardness (CaCO3)	mg/L		257	250	240	222
Chloride	mg/L		4.4	4.4	1.4	2.5
Fluoride	mg/L		0.1	<0.1	< 0.1	0.042
Nitrate (N)	mg/L		0.2	0.2	0.6	0.564
Nitrite (N)	mg/L		0.2	0.2	< 0.1	<0.010
Sulphate	mg/L		10	10	4	4.06
Colour	TCU		10	7	5	8.2
Total Suspended Solids	mg/L		4	<3	5	7.1
Ammonia (N) - Total	mg/L		0.04	0.02	<0.01	0.065
Unionized Ammonia as NH_3	mg/L	0.02	0.0005	0.0002	<0.0005	0.0032
Total Kjeldahl Nitrogen	mg/L		0.2	0.2	0.2	<0.15
Phosphorus - Total	mg/L	0.03	<0.01	<0.01	0.01	0.0081
Turbidity (lab)	NTU		-	-	-	3.39
Calcium	mg/L		68.6	66.5	69.5	63.7
Magnesium	mg/L		20.8	20.2	16	15.8
Potassium	mg/L		0.8	0.8	0.7	0.835
Sodium	mg/L		2.8	2.7	1.4	1.58
Aluminum	mg/L		0.03	0.03	0.07	0.135
Antimony	mg/L		<0.0001	<0.0001	< 0.0001	<0.00010
Arsenic	mg/L		0.0002	0.0003	< 0.0001	0.0002
Barium	mg/L		0.012	0.011	0.011	0.0119
Beryllium	mg/L		<0.002	<0.002	< 0.002	<0.00010
Boron	mg/L	0.20	0.026	0.025	0.005	0.014
Cadmium	mg/L	0.0002	<0.00002	<0.00002	< 0.000014	<0.000010
Chromium	mg/L	0.0089	<0.002	<0.002	< 0.002	<0.00050
Cobalt	mg/L		0.0001	0.0001	< 0.0001	<0.00010
Copper	mg/L	0.005	<0.002	<0.002	< 0.002	<0.0010
Iron	mg/L	0.3	0.014	0.013	0.086	0.203
Lead	mg/L	0.025	<0.00002	<0.00002	0.00006	0.00017
Manganese	mg/L		0.004	0.004	0.018	0.038
Molybdenum	mg/L		<0.0001	<0.0001	< 0.0001	0.000093
Nickel	mg/L		<0.01	<0.01	< 0.01	0.00053
Selenium	mg/L		<0.001	<0.001	< 0.001	0.000053
Silver	mg/L		<0.00002	<0.00002	< 0.00002	<0.000050
Strontium	mg/L		0.244	0.212	0.134	0.142
Thallium	mg/L		<0.00005	<0.00005	< 0.00005	<0.000010
Titanium	mg/L		<0.005	<0.005	< 0.005	0.00343
Tungsten	mg/L		0.02	<0.01	< 0.01	<0.00010
Uranium	mg/L		0.00026	0.00026	0.00023	0.000191

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	SW18			
			SW18	SW18 DUP	SW18	SW18
			24-Oct-16	24-Oct-16	9-May-17	8-May-18
Vanadium	mg/L		<0.005	<0.005	< 0.005	<0.00050
Zinc	mg/L	0.02	<0.005	<0.005	0.007	<0.0030
Zirconium	mg/L		<0.003	<0.003	0.006	<0.00030
Anion Sum	meq/L		5.43	5.39	4.27	-
Cation Sum	meq/L		5.28	5.13	4.87	-
Ion Ratio	AS/CS		1.03	1.05	0.878	-
TDS (Calc)	mg/L		261	257	219	229
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<0.4
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.3
Xylene, total	µg/L		<1.1	<1.1	<1.1	<0.5
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<250
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW18			
			SW18	SW18	SW18	SW18
PARAMETERS	UNITS	PWQO	14-May-19	20-May-20		
Total Coliform	cfu/100mL		-	-		
E.Coli	cfu/100mL		-	-		
Heterotrophic Plate Count	cfu/mL		-	-		
Temperature (field)	°C		7.9	9.4		
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	8.5	8.26		
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		360.9	440		
Dissolved Oxygen (field)	mg/L		11.4	11.07		
Alkalinity (CaCO3)	mg/L		220	230		
Hardness (CaCO3)	mg/L		230	230		
Chloride	mg/L		3.1	3.4		
Fluoride	mg/L		<0.10	<0.10		
Nitrate (N)	mg/L		0.35	0.33		
Nitrite (N)	mg/L		<0.010	<0.010		
Sulphate	mg/L		4.9	6.3		
Colour	TCU		3	3		
Total Suspended Solids	mg/L		<10	<10		
Ammonia (N) - Total	mg/L		<0.05	<0.050		
Unionized Ammonia as NH_3	mg/L	0.02	<0.002	<0.002		
Total Kjeldahl Nitrogen	mg/L		0.13	0.15		
Phosphorus - Total	mg/L	0.03	<0.020	<0.020		
Turbidity (lab)	NTU			0.4		
Calcium	mg/L		63	69		
Magnesium	mg/L		16	17		
Potassium	mg/L		0.69	0.69		
Sodium	mg/L		1.5	2		
Aluminum	ug/L		63	57		
Antimony	ug/L		<0.50	<0.50		
Arsenic	ug/L		<1.0	<1.0		
Barium	ug/L		10	13		
Beryllium	ug/L		<0.50	<0.50		
Boron	ug/L	200.00	14	25		
Cadmium	ug/L	0.2	<0.10	<0.10		
Chromium	ug/L	8.9	<5.0	<5.0		
Cobalt	ug/L		<0.50	<0.50		
Copper	ug/L	5	<1.0	<1.0		
Iron	ug/L	300	<100	<100		
Lead	ug/L	25	<0.50	<0.50		
Manganese	ug/L		16	23		
Molybdenum	ug/L		<0.50	<0.50		
Nickel	ug/L		<1.0	<1.0		
Selenium	ug/L		<2.0	<2.0		
Silver	ug/L		<0.10	<0.10		
Strontium	ug/L		140	160		
Thallium	ug/L		<0.050	<0.050		
Titanium	ug/L		<5.0	<5.0		
Tungsten	ug/L		<1.0	<1.0		
Uranium	ug/L		0.22	0.24		

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW18			
			SW18	SW18	SW18	SW18
PARAMETERS	UNITS	PWQO	14-May-19	20-May-20		
Vanadium	ug/L		<0.50	<0.50		
Zinc	ug/L	20.00	<5.0	<5.0		
Zirconium	ug/L		<1.0	<1.0		
Anion Sum	meq/L		-	-		
Cation Sum	meq/L		-	-		
Ion Ratio	AS/CS		-	-		
TDS (Calc)	mg/L		-	225		
Benzene	µg/L		<0.20	<0.20		
Toluene	µg/L		<0.20	<0.20		
Ethylbenzene	µg/L		<0.20	<0.20		
Xylene, m, p-	µg/L		<0.40	<0.40		
Xylene, o-	µg/L		<0.20	<0.20		
Xylene, total	µg/L		<0.40	<0.40		
PHC F1 (C6-C10)	µg/L		<25	<25		
PHC F2 (>C10-C16)	µg/L		<100	<100		
PHC F3 (>C16-C34)	µg/L		<200	<200		
PHC F4 (<C34-C50)	µg/L		<200	<200		

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	SW21C			
			SW21C	SW21C	SW21C	SW21C
			24-Oct-16	8-May-17	9-May-18	9-May-18
Total Coliform	cfu/100mL		160	46	140	94
E.Coli	cfu/100mL		1	11	0	1
Heterotrophic Plate Count	cfu/mL		460	110	70	78
Temperature (field)	°C		7.3	6.9	8.0	-
pH @25°C (lab)	pH units	6.5 - 8.5	8.42	8.37	8.39	8.34
pH (field)	pH units	6.5 - 8.5	7.6	8.2	8.3	-
Conductivity @25°C (lab)	µS/cm		445	379	376	377
Conductivity (field)	µS/cm		311	224	403	-
Dissolved Oxygen (field)	mg/L		13.1	14.2	11.2	-
Alkalinity (CaCO3)	mg/L		225	189	211	206
Hardness (CaCO3)	mg/L		236	202	221	222
Chloride	mg/L		2.2	1.5	2.31	2.32
Fluoride	mg/L		<0.1	< 0.1	0.034	0.035
Nitrate (N)	mg/L		1.8	1.6	1.86	1.86
Nitrite (N)	mg/L		0.2	< 0.1	<0.010	<0.010
Sulphate	mg/L		6	4	3.85	3.87
Colour	TCU		3	5	9.7	<2.0
Total Suspended Solids	mg/L		12	12	6.9	7.5
Ammonia (N) - Total	mg/L		0.01	<0.01	<0.020	<0.020
Unionized Ammonia as NH_3	mg/L	0.02	0.0001	<0.0002	<0.0006	<0.0006
Total Kjeldahl Nitrogen	mg/L		0.2	2	<0.15	<0.15
Phosphorus - Total	mg/L	0.03	<0.01	0.02	0.0134	0.0145
Turbidity (lab)	NTU		-	-	2.01	2.48
Calcium	mg/L		57.9	55.9	61.3	60.2
Magnesium	mg/L		22.3	15.2	17.3	17.5
Potassium	mg/L		0.3	0.3	0.376	0.371
Sodium	mg/L		0.9	0.9	0.89	0.9
Aluminum	mg/L		0.03	0.07	0.082	0.055
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.00010
Arsenic	mg/L		0.0001	0.0002	0.00018	0.00016
Barium	mg/L		0.005	0.005	0.00557	0.00567
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.00010
Boron	mg/L	0.20	<0.005	0.005	<0.010	<0.010
Cadmium	mg/L	0.0002	<0.00002	< 0.000014	<0.000010	<0.000010
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.00050	<0.00050
Cobalt	mg/L		<0.0001	< 0.0001	<0.00010	<0.00010
Copper	mg/L	0.005	<0.002	< 0.002	<0.0010	<0.0010
Iron	mg/L	0.3	0.021	0.096	0.076	0.051
Lead	mg/L	0.025	0.00006	0.00015	0.00013	<0.00010
Manganese	mg/L		0.002	0.004	0.00279	0.00191
Molybdenum	mg/L		<0.0001	< 0.0001	<0.000050	<0.000050
Nickel	mg/L		<0.01	< 0.01	<0.00050	<0.00050
Selenium	mg/L		<0.001	< 0.001	<0.000050	0.000063
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.000050
Strontium	mg/L		0.063	-	0.067	0.0668
Thallium	mg/L		<0.00005	< 0.00005	<0.000010	<0.000010
Titanium	mg/L		<0.005	< 0.005	<0.0020	0.00142
Tungsten	mg/L		<0.01	< 0.01	<0.00010	<0.00010
Uranium	mg/L		0.00007	0.00006	0.000059	0.000059

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	SW21C			
			SW21C	SW21C	SW21C	SW21C
			24-Oct-16	8-May-17	9-May-18	9-May-18
Vanadium	mg/L		<0.005	< 0.005	<0.00050	<0.00050
Zinc	mg/L	0.02	<0.005	< 0.005	<0.0030	<0.0030
Zirconium	mg/L		<0.003	< 0.003	<0.00030	<0.00030
Anion Sum	meq/L		4.83	4.02	-	-
Cation Sum	meq/L		4.77	4.09	-	-
Ion Ratio	AS/CS		1.01	0.983	-	-
TDS (Calc)	mg/L		233	198	234	234
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<0.4
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.3
Xylene, total	µg/L		<1.1	<1.1	<0.5	<0.5
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<250
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW21C			
			SW21C	SW21C	SW21C	SW21C
PARAMETERS	UNITS	PWQO	16-May-19	20-May-20		
Total Coliform	cfu/100mL		19	72		
E.Coli	cfu/100mL		0	27		
Heterotrophic Plate Count	cfu/mL		6	19		
Temperature (field)	°C		7.8	8.7		
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	8.4	8.3		
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		357.5	410		
Dissolved Oxygen (field)	mg/L		11.5	11.2		
Alkalinity (CaCO3)	mg/L		210	220		
Hardness (CaCO3)	mg/L		230	220		
Chloride	mg/L		2	1.6		
Fluoride	mg/L		<0.10	<0.10		
Nitrate (N)	mg/L		1.26	1.09		
Nitrite (N)	mg/L		<0.010	<0.010		
Sulphate	mg/L		4.1	4.7		
Colour	TCU		2	2		
Total Suspended Solids	mg/L		<10	<10		
Ammonia (N) - Total	mg/L		<0.050	<0.050		
Unionized Ammonia as NH_3	mg/L	0.02	<0.002	<0.002		
Total Kjeldahl Nitrogen	mg/L		0.13	0.16		
Phosphorus - Total	mg/L	0.03	0.007	<0.020		
Turbidity (lab)	NTU		-	0.3		
Calcium	mg/L		61	60		
Magnesium	mg/L		17	19		
Potassium	mg/L		0.36	0.39		
Sodium	mg/L		0.91	0.85		
Aluminum	ug/L		32	72		
Antimony	ug/L		<0.50	<0.50		
Arsenic	ug/L		<1.0	<1.0		
Barium	ug/L		5.2	5.2		
Beryllium	ug/L		<0.50	<0.50		
Boron	ug/L	200.00	<10	10		
Cadmium	ug/L	0.2	<0.10	<0.10		
Chromium	ug/L	8.9	<5.0	<5.0		
Cobalt	ug/L		<0.50	<0.50		
Copper	ug/L	5	<1.0	<1.0		
Iron	ug/L	300	<100	<100		
Lead	ug/L	25	<0.50	<0.50		
Manganese	ug/L		<2.0	3.9		
Molybdenum	ug/L		<0.50	<0.50		
Nickel	ug/L		<1.0	<1.0		
Selenium	ug/L		<2.0	<2.0		
Silver	ug/L		<0.10	<0.10		
Strontium	ug/L		60	60		
Thallium	ug/L		<0.050	<0.050		
Titanium	ug/L		<5.0	<5.0		
Tungsten	ug/L		<1.0	<1.0		
Uranium	ug/L		<0.10	<0.10		

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	SW21C			
			SW21C	SW21C	SW21C	SW21C
			16-May-19	20-May-20		
Vanadium	ug/L		<0.50	<0.50		
Zinc	ug/L	20.00	<5.0	<5.0		
Zirconium	ug/L		<1.0	<1.0		
Anion Sum	meq/L		-	-		
Cation Sum	meq/L		-	-		
Ion Ratio	AS/CS		-	-		
TDS (Calc)	mg/L		-	220		
Benzene	µg/L		<0.20	<0.20		
Toluene	µg/L		<0.20	<0.20		
Ethylbenzene	µg/L		<0.20	<0.20		
Xylene, m, p-	µg/L		<0.40	<0.40		
Xylene, o-	µg/L		<0.20	<0.20		
Xylene, total	µg/L		<0.40	<0.40		
PHC F1 (C6-C10)	µg/L		<25	<25		
PHC F2 (>C10-C16)	µg/L		<100	<100		
PHC F3 (>C16-C34)	µg/L		<200	<200		
PHC F4 (<C34-C50)	µg/L		<200	<200		

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW24A			
			SW24A	SW24A	SW24A	SW24A
PARAMETERS	UNITS	PWQO	25-Oct-16	9-May-17	8-May-18	16-May-19
Total Coliform	cfu/100mL		-	-	-	38
E.Coli	cfu/100mL		-	-	-	0
Heterotrophic Plate Count	cfu/mL		-	-	-	42
Temperature (field)	°C		4.3	8.1	10.3	10
pH @25°C (lab)	pH units	6.5 - 8.5	8.35	8.3	8.34	
pH (field)	pH units	6.5 - 8.5	7.9	8.5	8.2	8.2
Conductivity @25°C (lab)	µS/cm		533	388	398	
Conductivity (field)	µS/cm		336	239	423	409
Dissolved Oxygen (field)	mg/L		13.8	13.4	10.5	10.7
Alkalinity (CaCO3)	mg/L		234	194	233	220
Hardness (CaCO3)	mg/L		290	223	223	230
Chloride	mg/L		17.5	1.5	5.18	6.7
Fluoride	mg/L		0.2	< 0.1	0.05	<0.10
Nitrate (N)	mg/L		0.3	1.4	0.264	0.25
Nitrite (N)	mg/L		<0.1	< 0.1	<0.010	<0.010
Sulphate	mg/L		19	4	6.33	7.7
Colour	TCU		13	5	15.4	3
Total Suspended Solids	mg/L		46	5	35.8	<10
Ammonia (N) - Total	mg/L		<0.01	<0.01	<0.020	<0.050
Unionized Ammonia as NH_3	mg/L	0.02	<0.0001	<0.0005	<0.0005	
Total Kjeldahl Nitrogen	mg/L		0.3	0.2	<0.15	<0.10
Phosphorus - Total	mg/L	0.03	0.03	0.01	0.0085	0.008
Turbidity (lab)	NTU		-	-	13.2	-
Calcium	mg/L		79.8	61.9	67.3	70
Magnesium	mg/L		22	16.7	15.4	15
Potassium	mg/L		1.5	0.3	0.71	0.68
Sodium	mg/L		11.6	0.8	3.89	4
Aluminum	ug/L		0.07	0.08	0.173	0.067
Antimony	ug/L		<0.0001	< 0.0001	<0.00010	<0.0005
Arsenic	ug/L		0.0002	< 0.0001	0.00022	<0.001
Barium	ug/L		0.015	0.006	0.0123	0.012
Beryllium	ug/L		<0.002	< 0.002	<0.00010	<0.0005
Boron	ug/L	200.00	0.079	< 0.005	0.025	0.024
Cadmium	ug/L	0.2	<0.00002	< 0.000014	<0.000010	<0.0001
Chromium	ug/L	8.9	<0.002	< 0.002	<0.00050	<0.005
Cobalt	ug/L		0.0003	< 0.0001	0.00012	<0.0005
Copper	ug/L	5	<0.002	<0.002	0.0014	<0.001
Iron	ug/L	300	0.123	0.089	0.226	<0.1
Lead	ug/L	25	0.00022	0.00012	0.0002	<0.0005
Manganese	ug/L		0.052	0.012	0.0155	0.0052
Molybdenum	ug/L		0.0001	< 0.0001	0.000143	<0.0005
Nickel	ug/L		<0.01	< 0.01	<0.00050	<0.001
Selenium	ug/L		<0.001	< 0.001	0.000059	<0.002
Silver	ug/L		<0.00002	< 0.00002	<0.000050	<0.0001
Strontium	ug/L		0.872	0.064	0.456	0.44
Thallium	ug/L		<0.00005	< 0.00005	<0.000010	<0.00005
Titanium	ug/L		<0.005	< 0.005	0.00357	<0.005
Tungsten	ug/L		0.01	< 0.01	<0.00010	<0.001
Uranium	ug/L		0.00026	0.0001	0.000195	0.00018

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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			SW24A			
			SW24A	SW24A	SW24A	SW24A
PARAMETERS	UNITS	PWQO	25-Oct-16	9-May-17	8-May-18	16-May-19
Vanadium	ug/L		<0.005	< 0.005	<0.00050	<0.0005
Zinc	ug/L	20.00	<0.005	< 0.005	<0.0030	<0.005
Zirconium	ug/L		0.003	0.008	<0.00030	<0.001
Anion Sum	meq/L		5.61	4.09	-	-
Cation Sum	meq/L		6.35	4.51	-	-
Ion Ratio	AS/CS		0.883	0.908	-	-
TDS (Calc)	mg/L		294	208	232	-
Benzene	µg/L		<0.5	<0.5	<0.5	
Toluene	µg/L		<0.5	<0.5	<0.5	
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	
Xylene, o-	µg/L		<0.5	<0.5	<0.3	
Xylene, total	µg/L		<1.1	<1.1	<0.5	
PHC F1 (C6-C10)	µg/L		<50	<50	<25	
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<200
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW24A			
			SW24A	SW24A	SW24A	SW24A
PARAMETERS	UNITS	PWQO	20-May-20			
Total Coliform	cfu/100mL		-			
E.Coli	cfu/100mL		-			
Heterotrophic Plate Count	cfu/mL		-			
Temperature (field)	°C		10.2			
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	8.2			
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		460			
Dissolved Oxygen (field)	mg/L		10.5			
Alkalinity (CaCO3)	mg/L		230			
Hardness (CaCO3)	mg/L		230			
Chloride	mg/L		10			
Fluoride	mg/L		<0.10			
Nitrate (N)	mg/L		0.3			
Nitrite (N)	mg/L		<0.010			
Sulphate	mg/L		10			
Colour	TCU		4			
Total Suspended Solids	mg/L		<10			
Ammonia (N) - Total	mg/L		0.061			
Unionized Ammonia as NH_3	mg/L	0.02	0.0019			
Total Kjeldahl Nitrogen	mg/L		0.15			
Phosphorus - Total	mg/L	0.03	0.02			
Turbidity (lab)	NTU		0.5			
Calcium	mg/L		70			
Magnesium	mg/L		16			
Potassium	mg/L		0.79			
Sodium	mg/L		5.9			
Aluminum	ug/L		100			
Antimony	ug/L		<0.50			
Arsenic	ug/L		<1.0			
Barium	ug/L		14			
Beryllium	ug/L		<0.50			
Boron	ug/L	200.00	49			
Cadmium	ug/L	0.2	<0.10			
Chromium	ug/L	8.9	<5.0			
Cobalt	ug/L		<0.50			
Copper	ug/L	5	2.1			
Iron	ug/L	300	140			
Lead	ug/L	25	<0.50			
Manganese	ug/L		9.1			
Molybdenum	ug/L		<0.50			
Nickel	ug/L		<1.0			
Selenium	ug/L		<2.0			
Silver	ug/L		<0.10			
Strontium	ug/L		530			
Thallium	ug/L		<0.050			
Titanium	ug/L		<5.0			
Tungsten	ug/L		<1.0			
Uranium	ug/L		0.21			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW24A			
			SW24A	SW24A	SW24A	SW24A
PARAMETERS	UNITS	PWQO	20-May-20			
Vanadium	ug/L		<0.50			
Zinc	ug/L	20.00	<5.0			
Zirconium	ug/L		<1.0			
Anion Sum	meq/L		-			
Cation Sum	meq/L		-			
Ion Ratio	AS/CS		-			
TDS (Calc)	mg/L		220			
Benzene	µg/L		<0.20			
Toluene	µg/L		<0.20			
Ethylbenzene	µg/L		<0.20			
Xylene, m, p-	µg/L		<0.40			
Xylene, o-	µg/L		<0.20			
Xylene, total	µg/L		<0.40			
PHC F1 (C6-C10)	µg/L		<25			
PHC F2 (>C10-C16)	µg/L		<100			
PHC F3 (>C16-C34)	µg/L		<200			
PHC F4 (<C34-C50)	µg/L		<200			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW77			
			SW77	SW77	SW77	SW77
PARAMETERS	UNITS	PWQO	25-Oct-16	9-May-17	8-May-18	14-May-19
Total Coliform	cfu/100mL		-	-	-	-
E.Coli	cfu/100mL		-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-
Temperature (field)	°C		6.4	6.3	8.7	5.9
pH @25°C (lab)	pH units	6.5 - 8.5	8.32	8.16	8.23	
pH (field)	pH units	6.5 - 8.5	7.8	7.8	7.7	7.5
Conductivity @25°C (lab)	µS/cm		460	398	400	
Conductivity (field)	µS/cm		295	223	427	380.5
Dissolved Oxygen (field)	mg/L		12.7	14.1	11.0	9.7
Alkalinity (CaCO3)	mg/L		233	195	230	220
Hardness (CaCO3)	mg/L		345	209	226	240
Chloride	mg/L		2.2	2.8	3.85	3.6
Fluoride	mg/L		<0.1	< 0.1	0.035	<0.10
Nitrate (N)	mg/L		1.5	1.9	2.34	1.44
Nitrite (N)	mg/L		<0.1	< 0.1	<0.010	<0.010
Sulphate	mg/L		7	3	2.99	3.6
Colour	TCU		<2	3	<2.0	<2
Total Suspended Solids	mg/L		184	38	<2.0	<10
Ammonia (N) - Total	mg/L		0.01	<0.01	0.024	<0.05
Unionized Ammonia as NH_3	mg/L	0.02	0.0001	<0.0001	0.0002	<0.0002
Total Kjeldahl Nitrogen	mg/L		5.4	0.2	<0.15	<0.10
Phosphorus - Total	mg/L	0.03	0.81	0.02	0.0045	<0.020
Turbidity (lab)	NTU		-	-	0.26	-
Calcium	mg/L		108	62.2	72.5	69
Magnesium	mg/L		18.1	12.9	13.3	13
Potassium	mg/L		0.6	< 0.1	0.207	<0.2
Sodium	mg/L		1.3	1	1.26	1.1
Aluminum	mg/L		0.92	0.07	<0.010	0.017
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.0005
Arsenic	mg/L		0.0005	< 0.0001	<0.00010	<0.001
Barium	mg/L		0.026	0.006	0.00706	0.0064
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.0005
Boron	mg/L	0.20	0.006	< 0.005	<0.010	<0.010
Cadmium	mg/L	0.0002	0.00008	< 0.000014	<0.000010	<0.0001
Chromium	mg/L	0.0089	<0.002	< 0.002	0.00077	<0.005
Cobalt	mg/L		0.001	< 0.0001	<0.00010	<0.0005
Copper	mg/L	0.005	0.005	< 0.002	<0.0010	<0.001
Iron	mg/L	0.3	1.33	0.051	<0.050	<0.10
Lead	mg/L	0.025	0.00289	0.00006	<0.00010	<0.0005
Manganese	mg/L		0.381	0.005	0.00106	<0.002
Molybdenum	mg/L		<0.0001	< 0.0001	<0.000050	<0.0005
Nickel	mg/L		<0.01	< 0.01	<0.00050	<0.001
Selenium	mg/L		<0.001	< 0.001	<0.000050	<0.002
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.0001
Strontium	mg/L		0.147	0.077	0.0994	0.091
Thallium	mg/L		<0.00005	< 0.00005	<0.000010	<0.00005
Titanium	mg/L		0.009	< 0.005	0.00036	<0.005
Tungsten	mg/L		<0.01	< 0.01	<0.00010	<0.001
Uranium	mg/L		0.00015	0.00008	0.000085	<0.0001

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
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PARAMETERS	UNITS	PWQO	SW77			
			SW77	SW77	SW77	SW77
			25-Oct-16	9-May-17	8-May-18	14-May-19
Vanadium	mg/L		<0.005	< 0.005	<0.00050	<0.0005
Zinc	mg/L	0.02	0.01	< 0.005	<0.0030	<0.005
Zirconium	mg/L		<0.003	0.006	<0.00030	<0.001
Anion Sum	meq/L		4.97	4.17	-	-
Cation Sum	meq/L		7.05	4.21	-	-
Ion Ratio	AS/CS		0.705	0.989	-	-
TDS (Calc)	mg/L		285	207	248	-
Benzene	µg/L		<0.5	<0.5	<0.5	<0.20
Toluene	µg/L		<0.5	<0.5	<0.5	<0.20
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.20
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<0.40
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.20
Xylene, total	µg/L		<1.1	<1.1	<0.5	<0.40
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<200
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			SW77			
			SW77	SW77	SW77	SW77
PARAMETERS	UNITS	PWQO	19-May-20			
Total Coliform	cfu/100mL		-			
E.Coli	cfu/100mL		-			
Heterotrophic Plate Count	cfu/mL		-			
Temperature (field)	°C		6.0			
pH @25°C (lab)	pH units	6.5 - 8.5				
pH (field)	pH units	6.5 - 8.5	7.9			
Conductivity @25°C (lab)	µS/cm					
Conductivity (field)	µS/cm		460			
Dissolved Oxygen (field)	mg/L		8.8			
Alkalinity (CaCO3)	mg/L		230			
Hardness (CaCO3)	mg/L		230			
Chloride	mg/L		1.7			
Fluoride	mg/L		<0.10			
Nitrate (N)	mg/L		0.95			
Nitrite (N)	mg/L		<0.010			
Sulphate	mg/L		3.7			
Colour	TCU		<2			
Total Suspended Solids	mg/L		<10			
Ammonia (N) - Total	mg/L		<0.050			
Unionized Ammonia as NH_3	mg/L	0.02	<0.0005			
Total Kjeldahl Nitrogen	mg/L		<0.10			
Phosphorus - Total	mg/L	0.03	<0.020			
Turbidity (lab)	NTU		<0.1			
Calcium	mg/L		70			
Magnesium	mg/L		14			
Potassium	mg/L		0.29			
Sodium	mg/L		1.2			
Aluminum	ug/L		36			
Antimony	ug/L		<0.50			
Arsenic	ug/L		<1.0			
Barium	ug/L		7.4			
Beryllium	ug/L		<0.50			
Boron	ug/L	200.00	<10			
Cadmium	ug/L	0.2	<0.10			
Chromium	ug/L	8.9	<5.0			
Cobalt	ug/L		<0.50			
Copper	ug/L	5	<1.0			
Iron	ug/L	300	<100			
Lead	ug/L	25	<0.50			
Manganese	ug/L		2.5			
Molybdenum	ug/L		<0.50			
Nickel	ug/L		<1.0			
Selenium	ug/L		<2.0			
Silver	ug/L		<0.10			
Strontium	ug/L		94			
Thallium	ug/L		<0.050			
Titanium	ug/L		<5.0			
Tungsten	ug/L		<1.0			
Uranium	ug/L		0.1			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	SW77			
			SW77	SW77	SW77	SW77
			19-May-20			
Vanadium	ug/L		<0.50			
Zinc	ug/L	20.00	<5.0			
Zirconium	ug/L		<1.0			
Anion Sum	meq/L		-			
Cation Sum	meq/L		-			
Ion Ratio	AS/CS		-			
TDS (Calc)	mg/L		315			
Benzene	µg/L		<0.20			
Toluene	µg/L		<0.20			
Ethylbenzene	µg/L		<0.20			
Xylene, m, p-	µg/L		<0.40			
Xylene, o-	µg/L		<0.20			
Xylene, total	µg/L		<0.40			
PHC F1 (C6-C10)	µg/L		<25			
PHC F2 (>C10-C16)	µg/L		<100			
PHC F3 (>C16-C34)	µg/L		<200			
PHC F4 (<C34-C50)	µg/L		<200			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	BC CONTROL			
			BC CONT	BC CONT	BC CONT	BC CONT
			25-Oct-16	9-May-17	8-May-18	14-May-19
Total Coliform	cfu/100mL		-	-	-	-
E.Coli	cfu/100mL		-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-
Temperature (field)	°C		6.1	5.2	9.3	7.3
pH @25°C (lab)	pH units	6.5 - 8.5	8.26	8.32	8.36	
pH (field)	pH units	6.5 - 8.5	7.7	8.4	8.3	8.5
Conductivity @25°C (lab)	µS/cm		714	429	446	
Conductivity (field)	µS/cm		480	243	455	365.8
Dissolved Oxygen (field)	mg/L		13.5	15.6	11.0	11.6
Alkalinity (CaCO3)	mg/L		228	199	240	200
Hardness (CaCO3)	mg/L		362	237	247	220
Chloride	mg/L		57.1	8.3	11.3	12
Fluoride	mg/L		0.2	< 0.1	0.046	<0.10
Nitrate (N)	mg/L		0.5	1.6	0.83	0.48
Nitrite (N)	mg/L		<0.1	< 0.1	<0.010	<0.010
Sulphate	mg/L		61	6	6.31	<1.0
Colour	TCU		20	13	15.6	15
Total Suspended Solids	mg/L		<3	9	6.7	<10
Ammonia (N) - Total	mg/L		<0.01	<0.01	0.033	<0.05
Unionized Ammonia as NH_3	mg/L	0.02	0.0001	<0.0003	0.0012	<0.002
Total Kjeldahl Nitrogen	mg/L		0.2	9	<0.15	0.25
Phosphorus - Total	mg/L	0.03	0.02	0.02	0.011	0.014
Turbidity (lab)	NTU		-	-	4.4	-
Calcium	mg/L		105	70.1	70.6	62
Magnesium	mg/L		24.2	15	15.7	14
Potassium	mg/L		3.5	0.8	1.14	0.84
Sodium	mg/L		15.4	4	5.08	5.4
Aluminum	mg/L		0.04	0.09	0.154	0.11
Antimony	mg/L		<0.0001	< 0.0001	<0.00010	<0.0005
Arsenic	mg/L		0.0014	< 0.0001	0.00024	<0.001
Barium	mg/L		0.051	0.02	0.0217	0.018
Beryllium	mg/L		<0.002	< 0.002	<0.00010	<0.0005
Boron	mg/L	0.20	0.231	0.01	0.026	0.017
Cadmium	mg/L	0.0002	<0.00002	< 0.000014	<0.000010	<0.0001
Chromium	mg/L	0.0089	<0.002	< 0.002	<0.00050	<0.005
Cobalt	mg/L		0.0003	< 0.0001	0.0001	<0.0005
Copper	mg/L	0.005	<0.002	< 0.002	<0.0010	<0.001
Iron	mg/L	0.3	0.023	0.091	0.18	220
Lead	mg/L	0.025	<0.00002	0.00003	<0.00010	<0.0005
Manganese	mg/L		0.044	0.009	0.0136	0.013
Molybdenum	mg/L		0.0001	0.0001	0.000125	<0.0005
Nickel	mg/L		<0.01	< 0.01	<0.00050	<0.001
Selenium	mg/L		0.006	< 0.001	<0.000050	<0.002
Silver	mg/L		<0.00002	< 0.00002	<0.000050	<0.0001
Strontium	mg/L		0.913	0.156	0.19	0.14
Thallium	mg/L		<0.00005	< 0.00005	<0.000010	<0.00005
Titanium	mg/L		<0.005	< 0.005	0.00345	<0.005
Tungsten	mg/L		<0.01	< 0.01	<0.00010	<0.001
Uranium	mg/L		0.00038	0.00024	0.000227	0.00018

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	BC CONTROL			
			BC CONT	BC CONT	BC CONT	BC CONT
			25-Oct-16	9-May-17	8-May-18	14-May-19
Vanadium	mg/L		<0.005	< 0.005	<0.00050	<0.0005
Zinc	mg/L	0.02	<0.005	0.005	<0.0030	<0.005
Zirconium	mg/L		<0.003	0.009	<0.00030	<0.001
Anion Sum	meq/L		7.49	4.44	-	-
Cation Sum	meq/L		8	4.93	-	-
Ion Ratio	AS/CS		0.935	0.901	-	-
TDS (Calc)	mg/L		406	231	269	-
Benzene	µg/L		<0.5	<0.5	<0.5	<0.20
Toluene	µg/L		<0.5	<0.5	<0.5	<0.20
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.20
Xylene, m, p-	µg/L		<1.0	<1.0	<0.4	<0.40
Xylene, o-	µg/L		<0.5	<0.5	<0.3	<0.20
Xylene, total	µg/L		<1.1	<1.1	<0.5	<0.40
PHC F1 (C6-C10)	µg/L		<50	<50	<25	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<100	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<250	<200
PHC F4 (<C34-C50)	µg/L		<400	<400	<250	<200

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	BC CONTROL			
			BC CONT	BC CONT	BC CONT	BC CONT
			19-May-20			
Total Coliform	cfu/100mL		-			
E.Coli	cfu/100mL		-			
Heterotrophic Plate Count	cfu/mL		-			
Temperature (field)	°C		9.6			
pH @25°C (lab)	pH units	6.5 - 8.5	8.27			
pH (field)	pH units	6.5 - 8.5				
Conductivity @25°C (lab)	µS/cm		450			
Conductivity (field)	µS/cm					
Dissolved Oxygen (field)	mg/L		11.17			
Alkalinity (CaCO3)	mg/L		210			
Hardness (CaCO3)	mg/L		210			
Chloride	mg/L		14			
Fluoride	mg/L		<0.10			
Nitrate (N)	mg/L		0.51			
Nitrite (N)	mg/L		<0.010			
Sulphate	mg/L		1.9			
Colour	TCU		17			
Total Suspended Solids	mg/L		13			
Ammonia (N) - Total	mg/L		<0.050			
Unionized Ammonia as NH_3	mg/L	0.02	<0.002			
Total Kjeldahl Nitrogen	mg/L		0.2			
Phosphorus - Total	mg/L	0.03	<0.020			
Turbidity (lab)	NTU		1.7			
Calcium	mg/L		63			
Magnesium	mg/L		14			
Potassium	mg/L		0.9			
Sodium	mg/L		6.2			
Aluminum	ug/L		160			
Antimony	ug/L		<0.50			
Arsenic	ug/L		<1.0			
Barium	ug/L		20			
Beryllium	ug/L		<0.50			
Boron	ug/L	200.00	23			
Cadmium	ug/L	0.2	<0.10			
Chromium	ug/L	8.9	<5.0			
Cobalt	ug/L		<0.50			
Copper	ug/L	5	1			
Iron	ug/L	300	160			
Lead	ug/L	25	<0.50			
Manganese	ug/L		10			
Molybdenum	ug/L		<0.50			
Nickel	ug/L		<1.0			
Selenium	ug/L		<2.0			
Silver	ug/L		<0.10			
Strontium	ug/L		160			
Thallium	ug/L		<0.050			
Titanium	ug/L		22			
Tungsten	ug/L		<1.0			
Uranium	ug/L		0.22			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	BC CONTROL			
			BC CONT	BC CONT	BC CONT	BC CONT
			19-May-20			
Vanadium	ug/L		0.52			
Zinc	ug/L	20.00	<5.0			
Zirconium	ug/L		<1.0			
Anion Sum	meq/L		-			
Cation Sum	meq/L		-			
Ion Ratio	AS/CS		-			
TDS (Calc)	mg/L		315			
Benzene	µg/L		<0.20			
Toluene	µg/L		<0.20			
Ethylbenzene	µg/L		<0.20			
Xylene, m, p-	µg/L		<0.40			
Xylene, o-	µg/L		<0.20			
Xylene, total	µg/L		<0.40			
PHC F1 (C6-C10)	µg/L		<25			
PHC F2 (>C10-C16)	µg/L		<100			
PHC F3 (>C16-C34)	µg/L		<200			
PHC F4 (<C34-C50)	µg/L		<200			

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			PR CONTROL			
			PR CONT	PR CONT	DUP 1	PR CONT
PARAMETERS	UNITS	PWQO	25-Oct-16	8-May-17	8-May-17	8-May-18
Total Coliform	cfu/100mL		-	-	-	-
E.Coli	cfu/100mL		-	-	-	-
Heterotrophic Plate Count	cfu/mL		-	-	-	-
Temperature (field)	°C		5.4	7.8	-	8.2
pH @25°C (lab)	pH units	6.5 - 8.5	8.4	8.46	8.47	8.43
pH (field)	pH units	6.5 - 8.5	7.9	8.4	-	8.36
Conductivity @25°C (lab)	µS/cm		456	408	405	398
Conductivity (field)	µS/cm		287	246	-	428
Dissolved Oxygen (field)	mg/L		15.1	14.0	-	11.32
Alkalinity (CaCO3)	mg/L		225	208	212	250
Hardness (CaCO3)	mg/L		261	226	227	233
Chloride	mg/L		4.1	1.7	1.8	2.47
Fluoride	mg/L		<0.1	< 0.1	< 0.1	0.04
Nitrate (N)	mg/L		0.3	0.5	0.5	0.447
Nitrite (N)	mg/L		<0.1	< 0.1	< 0.1	<0.010
Sulphate	mg/L		11	5	5	6.98
Colour	TCU		10	8	7	9.7
Total Suspended Solids	mg/L		<3	10	8	5.7
Ammonia (N) - Total	mg/L		<0.01	<0.01	<0.01	0.101
Unionized Ammonia as NH_3	mg/L	0.02	<0.0001	<0.0004	<0.0004	0.0036
Total Kjeldahl Nitrogen	mg/L		1	2	3.5	<0.15
Phosphorus - Total	mg/L	0.03	0.01	0.02	0.05	0.0071
Turbidity (lab)	NTU		-	-	-	3.58
Calcium	mg/L		65.5	61.5	61.6	64.5
Magnesium	mg/L		23.6	17.5	17.6	18.6
Potassium	mg/L		1.3	0.7	0.7	0.869
Sodium	mg/L		3	1.7	1.6	
Aluminum	mg/L		0.02	0.08	0.08	0.091
Antimony	mg/L		0.0002	< 0.0001	< 0.0001	<0.00010
Arsenic	mg/L		0.0001	0.0001	0.0001	0.00019
Barium	mg/L		0.022	0.019	0.018	0.0183
Beryllium	mg/L		<0.002	< 0.002	< 0.002	<0.00010
Boron	mg/L	0.20	0.025	0.02	0.022	<0.021
Cadmium	mg/L	0.0002	<0.00002	< 0.000014	< 0.000014	<0.000010
Chromium	mg/L	0.0089	<0.002	0.004	< 0.002	0.00061
Cobalt	mg/L		0.0002	< 0.0001	< 0.0001	<0.00010
Copper	mg/L	0.005	<0.002	< 0.002	< 0.002	<0.0010
Iron	mg/L	0.3	<0.005	0.161	0.118	0.102
Lead	mg/L	0.025	<0.00002	0.00006	0.00006	<0.00010
Manganese	mg/L		0.008	0.012	0.01	0.00746
Molybdenum	mg/L		<0.0001	0.0001	0.0001	0.000158
Nickel	mg/L		<0.01	< 0.01	< 0.01	<0.00050
Selenium	mg/L		<0.001	< 0.001	< 0.001	<0.000050
Silver	mg/L		<0.00002	< 0.00002	< 0.00002	<0.000050
Strontium	mg/L		0.19	-	-	0.135
Thallium	mg/L		<0.00005	< 0.00005	< 0.00005	<0.000010
Titanium	mg/L		<0.005	< 0.005	0.006	0.00207
Tungsten	mg/L		<0.01	< 0.01	< 0.01	<0.00010
Uranium	mg/L		0.00024	0.00027	0.00025	0.000241

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	PR CONTROL			
			PR CONT	PR CONT	DUP 1	PR CONT
			25-Oct-16	8-May-17	8-May-17	8-May-18
Vanadium	mg/L		<0.005	< 0.005	< 0.005	<0.00050
Zinc	mg/L	0.02	<0.005	< 0.005	< 0.005	<0.0030
Zirconium	mg/L		<0.003	< 0.003	< 0.003	<0.00030
Anion Sum	meq/L		4.86	4.36	4.42	-
Cation Sum	meq/L		5.37	4.61	4.62	-
Ion Ratio	AS/CS		0.905	0.945	0.958	-
TDS (Calc)	mg/L		245	216	218	245
Benzene	µg/L		<0.5	<0.5	<0.5	<0.5
Toluene	µg/L		<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L		<0.5	<0.5	<0.5	<0.5
Xylene, m, p-	µg/L		<1.0	<1.0	<1.0	<0.4
Xylene, o-	µg/L		<0.5	<0.5	<0.5	<0.3
Xylene, total	µg/L		<1.1	<1.1	<1.1	<0.5
PHC F1 (C6-C10)	µg/L		<50	<50	<50	<25
PHC F2 (>C10-C16)	µg/L		<50	<50	<50	<100
PHC F3 (>C16-C34)	µg/L		<400	<400	<400	<250
PHC F4 (<C34-C50)	µg/L		<400	<400	<400	<250

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

PARAMETERS	UNITS	PWQO	PR CONTROL			
			PR CONT	PR CONT	PR CONT	PR CONT
			14-May-19	19-May-20		
Total Coliform	cfu/100mL			-		
E.Coli	cfu/100mL			-		
Heterotrophic Plate Count	cfu/mL			-		
Temperature (field)	°C		5.9	8.6		
pH @25°C (lab)	pH units	6.5 - 8.5		8.31		
pH (field)	pH units	6.5 - 8.5	8.5			
Conductivity @25°C (lab)	µS/cm			430		
Conductivity (field)	µS/cm		364.1			
Dissolved Oxygen (field)	mg/L		12.0	11.4		
Alkalinity (CaCO3)	mg/L		210	220		
Hardness (CaCO3)	mg/L		250	220		
Chloride	mg/L		2.9	3		
Fluoride	mg/L		<0.10	<0.10		
Nitrate (N)	mg/L		<0.010	0.39		
Nitrite (N)	mg/L		0.36	<0.010		
Sulphate	mg/L		7.6	7.6		
Colour	TCU		8	4		
Total Suspended Solids	mg/L		<10	18		
Ammonia (N) - Total	mg/L		<0.05	<0.050		
Unionized Ammonia as NH_3	mg/L	0.02	<0.002	<0.002		
Total Kjeldahl Nitrogen	mg/L		0.11	0.12		
Phosphorus - Total	mg/L	0.03	0.009	<0.020		
Turbidity (lab)	NTU			0.9		
Calcium	mg/L		60	62		
Magnesium	mg/L		17	17		
Potassium	mg/L		0.77	0.99		
Sodium	mg/L		1.5	1.8		
Aluminum	ug/L		110	210		
Antimony	ug/L		<0.50	<0.50		
Arsenic	ug/L		<1.0	<1.0		
Barium	ug/L		17	22		
Beryllium	ug/L		<0.50	<0.50		
Boron	ug/L	200.00	17	20		
Cadmium	ug/L	0.2	<0.10	<0.10		
Chromium	ug/L	8.9	<5.0	<5.0		
Cobalt	ug/L		<0.50	<0.50		
Copper	ug/L	5	<1.0	1.2		
Iron	ug/L	300	100	260		
Lead	ug/L	25	<0.50	<0.50		
Manganese	ug/L		5.6	21		
Molybdenum	ug/L		<0.50	<0.50		
Nickel	ug/L		<1.0	<1.0		
Selenium	ug/L		<2.0	<2.0		
Silver	ug/L		<0.10	<0.10		
Strontium	ug/L		120	140		
Thallium	ug/L		<0.050	<0.050		
Titanium	ug/L		<5.0	7.6		
Tungsten	ug/L		<1.0	<1.0		
Uranium	ug/L		0.22	0.26		

TABLE B-6
SURFACE WATER LABORATORY ANALYSIS

DUNTROON QUARRY - 2020 AMP SUMMARY REPORT
111-53312-03 100

			PR CONTROL			
			PR CONT	PR CONT	PR CONT	PR CONT
PARAMETERS	UNITS	PWQO	14-May-19	19-May-20		
Vanadium	ug/L		0.54	0.63		
Zinc	ug/L	20.00	<5.0	<5.0		
Zirconium	ug/L		<1.0	<1.0		
Anion Sum	meq/L		-	-		
Cation Sum	meq/L		-	-		
Ion Ratio	AS/CS		-	-		
TDS (Calc)	mg/L			285		
Benzene	µg/L		<0.20	<0.20		
Toluene	µg/L		<0.20	<0.20		
Ethylbenzene	µg/L		<0.20	<0.20		
Xylene, m, p-	µg/L		<0.40	<0.40		
Xylene, o-	µg/L		<0.20	<0.20		
Xylene, total	µg/L		<0.40	<0.40		
PHC F1 (C6-C10)	µg/L		<25	<25		
PHC F2 (>C10-C16)	µg/L		<100	<100		
PHC F3 (>C16-C34)	µg/L		<200	<200		
PHC F4 (<C34-C50)	µg/L		<200	<200		

APPENDIX B – PERFORMANCE INDICATOR MONITORING PROGRAM RESULTS MONTHLY MONITORNG DATA AND TRIGGER VALUES

TABLE B7: ESCARPMENT SPRING STATIONS JANUARY 2020

Escarpment Spring Stations	January Monthly		January PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11	4.9	Frozen	NO TRIGGER	NO TRIGGER	11	1.2
SW 11A	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	4.3	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	4.3	Frozen	NO TRIGGER	NO TRIGGER	2.8	0.5
SW 24A	0	Frozen	NO TRIGGER	NO TRIGGER	1.70	1.5
SW 77	0	Frozen	NO TRIGGER	NO TRIGGER	0.23	0.2

TABLE B8: SURFACE WATER STATIONS JANUARY 2020

Surface Water Stations	January Monthly		January PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	0	Frozen	NO TRIGGER	NO TRIGGER	13.8	0.9
SW 2	1.2	0.8	NO TRIGGER	NO TRIGGER	3.7 (unfrozen)	1.5 (unfrozen)
SW 0-2	0	Frozen	NO TRIGGER	NO TRIGGER	78.8 (unfrozen)	48.2 (unfrozen)
SW 3	0	Frozen	NO TRIGGER	NO TRIGGER	1.7 (unfrozen)	NO TRIGGER
SW 6A	0	Frozen	NO TRIGGER	NO TRIGGER	174.6	113
SW 9	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 14	0	Frozen	NO TRIGGER	NO TRIGGER	35.7	12.6
SW 15	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 16	0	Frozen	NO TRIGGER	NO TRIGGER	7.0 (unfrozen)	6.1 (unfrozen)
SW 17	3.3	Frozen	NO TRIGGER	NO TRIGGER	2.4	1.4
SW 17A	2.0	Frozen	NO TRIGGER	NO TRIGGER	15.5	0.6
SW 18	0	Frozen	NO TRIGGER	NO TRIGGER	36.3 (unfrozen)	31.6 (unfrozen)
RR3 KARST	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	2.2	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	2.6	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B9: ESCARPMENT SPRING STATIONS FEBRUARY 2020

Escarpment Spring Stations	February Monthly		February PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	0	Frozen	NO TRIGGER	NO TRIGGER	0.5	0.3
SW 11	0	Frozen	NO TRIGGER	NO TRIGGER	4.6	1.4
SW 11A	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	0	Frozen	NO TRIGGER	NO TRIGGER	2	0.7
SW 24A	0	Frozen	NO TRIGGER	NO TRIGGER	1.40	0.7
SW 77	0	Frozen	NO TRIGGER	NO TRIGGER	0.23	0.2

TABLE B10: SURFACE WATER STATIONS FEBRUARY 2020

Surface Water Stations	February Monthly		February PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	0	Frozen	NO TRIGGER	NO TRIGGER	12.6	4.8
SW 2	0	Frozen	NO TRIGGER	NO TRIGGER	3.8	3
SW 0-2	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 3	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 6A	0	Frozen	NO TRIGGER	NO TRIGGER	190.7	134.9
SW 9	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 14	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 15	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 16	0	Frozen	NO TRIGGER	NO TRIGGER	7.5	6.5
SW 17	0	Frozen	NO TRIGGER	NO TRIGGER	1.9	0.9
SW 17A	0	Frozen	NO TRIGGER	NO TRIGGER	9.2	2.4
SW 18	0	Frozen	NO TRIGGER	NO TRIGGER	15.5	10
RR3 KARST	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B11: ESCARPMENT SPRING STATIONS MARCH 2020

Escarpment Spring Stations	March Monthly		March PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	0	Frozen	NO TRIGGER	NO TRIGGER	0.4	0.2
SW 11	0	0	NO TRIGGER	NO TRIGGER	11.5	2.1
SW 11A	0	Ponded	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	0	Ponded	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	0	Ponded	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	0	Ponded	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	0	Ponded	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	0	Frozen	NO TRIGGER	NO TRIGGER	1.7	0.7
SW 24A	0	Frozen	NO TRIGGER	NO TRIGGER	1.50	0.2
SW 77	0	Frozen	NO TRIGGER	NO TRIGGER	0.35	0.3

TABLE B12: SURFACE WATER STATIONS MARCH 2020

Surface Water Stations	March Monthly		March PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	1.6	114.2	NO TRIGGER	NO TRIGGER	6.8	0.6
SW 2	6.1	4.9	NO TRIGGER	NO TRIGGER	2.8	2.2
SW 0-2	0	Ponded	NO TRIGGER	NO TRIGGER	104.3	69.3
SW 3	4.1	9.6	NO TRIGGER	NO TRIGGER	5.5	0.8
SW 6A	1.9	563.3	NO TRIGGER	NO TRIGGER	363.3	178.8
SW 9	0	Frozen	NO TRIGGER	NO TRIGGER	5.2	0.4
SW 14	0	Frozen	NO TRIGGER	NO TRIGGER	25.1	5.5
SW 15	0	Frozen	NO TRIGGER	NO TRIGGER	1.7	1.5
SW 16	6.7	Ponded	NO TRIGGER	NO TRIGGER	12.1	2
SW 17	7.5	42.3	NO TRIGGER	NO TRIGGER	4.3	1.8
SW 17A	5.9	11.8	NO TRIGGER	NO TRIGGER	14.7	11.7
SW 18	0	Frozen	NO TRIGGER	NO TRIGGER	66	48.7
RR3 KARST	0	Ponded	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	0	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	4.7	44.8	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B13: ESCARPMENT SPRING STATIONS APRIL 2020

Escarpment Spring Stations	April Monthly		April PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	0	-	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11	8	7.1	NO TRIGGER	NO TRIGGER	11	1.2
SW 11A	0	-	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	0	-	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	0	-	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	0	-	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	5.8	10.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	6.6	4.4	NO TRIGGER	NO TRIGGER	2.8	0.5
SW 24A	0	-	NO TRIGGER	NO TRIGGER	1.70	1.5
SW 77	0	Dry	NO TRIGGER	NO TRIGGER	0.23	0.2

TABLE B14: SURFACE WATER STATIONS APRIL 2020

Surface Water Stations	April Monthly		April PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	2.3	268.3	NO TRIGGER	NO TRIGGER	13.8	0.9
SW 2	6.7	7.5	NO TRIGGER	NO TRIGGER	3.7 (unfrozen)	1.5 (unfrozen)
SW 0-2	6.2	37.9	NO TRIGGER	NO TRIGGER	78.8 (unfrozen)	48.2 (unfrozen)
SW 3	0	Dry	NO TRIGGER	NO TRIGGER	1.7 (unfrozen)	NO TRIGGER
SW 6A	6.7	237.6	NO TRIGGER	NO TRIGGER	174.6	113
SW 9	0	-	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 14	0	-	NO TRIGGER	NO TRIGGER	35.7	12.6
SW 15	8	27.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 16	0	-	NO TRIGGER	NO TRIGGER	7.0 (unfrozen)	6.1 (unfrozen)
SW 17	6.2	21.7	NO TRIGGER	NO TRIGGER	2.4	1.4
SW 17A	7.9	7.4	NO TRIGGER	NO TRIGGER	15.5	0.6
SW 18	7.8	54.5	NO TRIGGER	NO TRIGGER	36.3 (unfrozen)	31.6 (unfrozen)
RR3 KARST	6.2	12.7	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	3.4	84	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	2.9	34.3	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B15: ESCARPMENT SPRING STATIONS MAY 2020

Escarpment Spring Stations	May Monthly		May PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	0	Blocked	NO TRIGGER	NO TRIGGER	0.2	0.1
SW 11	7	14.7	NO TRIGGER	NO TRIGGER	10.4	2.5
SW 11A	5.8	0.9	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	6.8	1.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	6.2	0.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	5.4	2.7	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	8.2	10.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	10.7	4.2	NO TRIGGER	NO TRIGGER	3.7	2.6
SW 24A	8.2	0.5	NO TRIGGER	NO TRIGGER	1.4	0.8
SW 77	6.4	0.3	NO TRIGGER	NO TRIGGER	0.3	0.2

TABLE B16: SURFACE WATER STATIONS MAY 2020

Surface Water Stations	May Monthly		May PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) "YELLOW'	Flow (L/s) 'RED'
SW 1	20.8	141.6	NO TRIGGER	NO TRIGGER	5	2.5
SW 2	9.2	8.5	NO TRIGGER	NO TRIGGER	3.9	3.3
SW 0-2	18.8	27.8	NO TRIGGER	NO TRIGGER	33.5	16.1
SW 3	13.9	5	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 6A	20.5	166.9	NO TRIGGER	NO TRIGGER	189.1	164.4
SW 9	0	0	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 14	11.5	19.5	NO TRIGGER	NO TRIGGER	8.8	4.1
SW 15	13.8	0.9	NO TRIGGER	NO TRIGGER	0.6	0.1
SW 16	16.1	29.9	NO TRIGGER	NO TRIGGER	2.4	1
SW 17	17.8	4.1	NO TRIGGER	NO TRIGGER	2	1.3
SW 17A	12.5	17	NO TRIGGER	NO TRIGGER	12	9.6
SW 18	15.8	147.3	NO TRIGGER	NO TRIGGER	29.1	25.3
RR3 KARST	0	0	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	14.2	13.3	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	11.1	7.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B17: ESCARPMENT SPRING STATIONS JUNE 2020

Escarpment Spring Stations	June Monthly		June PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	12.6	1.7	16.4	18.3	0.09	0.09
SW 11	0	0	10.9	12.1	2.8	1.9
SW 11A	0	0	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	0	0	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	0	0	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	0	0	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	0	0	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	0	0	10.8	12	2.1	0.6
SW 24A	12.5	0	12.1	13.5	0.40	0.2
SW 77	9.3	3.9	7.5	8.3	0.12	0.1

TABLE B18: SURFACE WATER STATIONS JUNE 2020

Surface Water Stations	June Monthly		June PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	20.4	14	21	23.4	3	1.1
SW 2	8.7	31.9	12.2	13.5	1.9	1.6
SW 0-2	19	18.5	22.9	25.4	4.9	3.6
SW 3	15	4.3	16.7	18.5	NO TRIGGER	NO TRIGGER
SW 6A	16.2	393.6	22.7	25.2	83.4	58.3
SW 9	Dry	Dry	14.8	16.4	NO TRIGGER	NO TRIGGER
SW 14	15.6	81.6	19.6	21.8	1.8	1.6
SW 15	17.2	0.7	20.7	23	0.2	NO TRIGGER
SW 16	15.5	6.4	17.5	19.4	0.6	0.1
SW 17	18.4	8.3	19.2	21.4	0.5	0.3
SW 17A	11.5	12.7	12.6	14	6.9	3.9
SW 18	14.7	7	16.1	17.9	13.3	11.5
RR3 KARST	10.9	3.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	12.2	79.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	14.3	3.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B19: ESCARPMENT SPRING STATIONS JULY 2020

Escarpment Spring Stations	July Monthly		July PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	18.1	0.3	19.2	21.3	0.09	0.09
SW 11	11.4	2.8	14.4	16	0.09	0.08
SW 11A	8.1	0.3	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	8.1	0.2	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	8.9	0.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	11.8	0.3	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	12.8	3.5	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	11.9	3.3	11.7	13	1.2	0.7
SW 24A	8.8	1.3	13.5	15	0.40	0.3
SW 77	0	N/A	9.7	10.8	0.12	0.1

TABLE B20: SURFACE WATER STATIONS JULY 2020

Surface Water Stations	July Monthly		July PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	19.6	10.7	21.7	24.1	0.3	0.2
SW 2	11	5.5	15.7	17.4	1.3	0.5
SW 0-2	18.8	12.7	26.3	29.2	3.6	1.7
SW 3	18.8	No Flow	17.8	19.8	NO TRIGGER	NO TRIGGER
SW 6A	20	134.5	21.1	23.4	55.6	47.5
SW 9	0	0	17.3	19.2	NO TRIGGER	NO TRIGGER
SW 14	20.6	7.2	21.6	24	1.1	0.5
SW 15	19.6	0.1	21.4	23.8	0.1	NO TRIGGER
SW 16	18.8	0.4	18.6	20.7	0.3	NO TRIGGER
SW 17	22.1	2.7	20.7	23	0.3	0.2
SW 17A	14	4.4	14.4	16	2.9	1.7
SW 18	18	15.6	18.6	20.7	7.1	3.8
RR3 KARST	0	Dry	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	17.2	32.8	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	18.4	1.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B21: ESCARPMENT SPRING STATIONS AUGUST 2020

Escarpment Spring Stations	August Monthly		August PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	Dry	Dry	15.8	17.5	0.09	NO TRIGGER
SW 11	12.6	1.5	13.5	15	0.8	0.1
SW 11A	N/A	Low Flow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	N/A	Low Flow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	8.9	0.3	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	11.7	0.5	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	13.1	2.7	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	11.3	1.7	10.8	12	0.8	0.7
SW 24A	11.7	0.6	11.7	13	0.30	0.1
SW 77	10.4	2.7	9.5	10.6	0.1	0.09

TABLE B22: SURFACE WATER STATIONS AUGUST 2020

Surface Water Stations	August Monthly		August PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	N/A	Low Flow	17.7	19.7	0.5	0.1
SW 2	11.3	0.7	15.6	17.3	0.3	0.1
SW 0-2	19.2	9.1	22.4	24.9	3.8	2.1
SW 3	Dry	Dry	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 6A	22	57.8	19.1	21.2	32.1	24.9
SW 9	Dry	Dry	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 14	20.3	3.1	20	22.2	1.1	0.4
SW 15	17.4	0	19.4	21.5	0.1	NO TRIGGER
SW 16	18.6	Ponded	15.3	17	0.1	NO TRIGGER
SW 17	15	4.4	19.1	21.2	0.3	0.1
SW 17A	22	1.1	13.4	14.9	2.5	0.5
SW 18	18.3	8.4	17.4	19.3	3.5	3
RR3 KARST	Dry	Dry	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	17.6	7.3	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	15.8	0.5	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B23: ESCARPMENT SPRING STATIONS SEPTEMBER 2020

Escarpment Spring Stations	September Monthly		September PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	Dry	Dry	12.8	14.2	0.09	0.09
SW 11	10.5	1.3	11.4	12.7	0.2	0.1
SW 11A	N/A	Low Flow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	N/A	Low Flow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	9.1	0.2	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	10.7	0.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	11	0.7	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	10.3	1.5	9.6	10.7	0.8	0.7
SW 24A	10.4	0.7	10.2	11.4	0.30	0.1
SW 77	10.07	0.2	9.9	11	0.1	0.09

TABLE B24: SURFACE WATER STATIONS SEPTEMBER 2020

Surface Water Stations	September Monthly		September PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	Dry	Dry	17.1	19	0.6	0.2
SW 2	11	3.7	12.8	14.2	0.1	NO TRIGGER
SW 0-2	10.4	28.1	20.8	23.1	1.9	0.4
SW 3	Dry	Dry	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 6A	11.7	54.1	14.4	16	14.7	9
SW 9	Dry	Dry	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 14	12.1	4	14.5	16.1	0.8	0.1
SW 15	12.1	1.3	15	16.7	0.1	NO TRIGGER
SW 16	10.9	2.3	12.5	13.9	0.1	NO TRIGGER
SW 17	12.9	6.3	15.6	17.3	0.3	0.1
SW 17A	12.9	5.9	10.9	12.1	1.2	1.1
SW 18	11.2	27.6	13.2	14.7	3.1	1.6
RR3 KARST	Dry	Dry	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	10.6	6.7	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	12.8	0.6	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B25: ESCARPMENT SPRING STATIONS OCTOBER 2020

Escarpment Spring Stations	October Monthly		October PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	Dry	Dry	NO TRIGGER	NO TRIGGER	0.09	0.09
SW 11	9.8	2.5	NO TRIGGER	NO TRIGGER	0.2	0.1
SW 11A	Low Flow	Low Flow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	Low Flow	Low Flow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	8.5	0.2	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	8.7	0.6	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	8.4	1.7	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	9.4	1.5	NO TRIGGER	NO TRIGGER	0.8	0.7
SW 24A	7.9	0.8	NO TRIGGER	NO TRIGGER	0.30	0.1
SW 77	8.9	0.3	NO TRIGGER	NO TRIGGER	0.1	0.09

TABLE B26: SURFACE WATER STATIONS OCTOBER 2020

Surface Water Stations	October Monthly		October PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	Dry	Dry	NO TRIGGER	NO TRIGGER	1.3	0.9
SW 2	9.4	1.1	NO TRIGGER	NO TRIGGER	0.12	0.1
SW 0-2	7	10	NO TRIGGER	NO TRIGGER	6.6	1.2
SW 3	Dry	Dry	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 6A	7.6	68.8	NO TRIGGER	NO TRIGGER	14.7	9
SW 9	Dry	Dry	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 14	8.6	24.3	NO TRIGGER	NO TRIGGER	0.8	0.1
SW 15	8.1	1.4	NO TRIGGER	NO TRIGGER	0.1	NO TRIGGER
SW 16	9.3	6.1	NO TRIGGER	NO TRIGGER	0.1	NO TRIGGER
SW 17	7.4	6.8	NO TRIGGER	NO TRIGGER	0.3	0.1
SW 17A	8.1	6.3	NO TRIGGER	NO TRIGGER	1.2	1.1
SW 18	8.2	20.1	NO TRIGGER	NO TRIGGER	3.1	1.6
RR3 KARST	No Flow	No Flow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	8	9	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	7.7	2.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B27: ESCARPMENT SPRING STATIONS NOVEMBER 2020

Escarpment Spring Stations	November Monthly		November PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	Frozen	Snow	12.8	14.2	0.09	0.09
SW 11	6.1	12.6	11.4	12.7	0.2	0.1
SW 11A	6.5	8.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	6.4	1.3	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	6.5	0.1	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	6.3	7.9	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	6.1	25.5	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	5.9	4.1	9.6	10.7	0.8	0.7
SW 24A	7.1	1.8	10.2	11.4	0.30	0.1
SW 77	Frozen	Snow	9.9	11	0.1	0.09

TABLE B28: SURFACE WATER STATIONS NOVEMBER 2020

Surface Water Stations	November Monthly		November PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	Frozen	Snow	17.1	19	0.6	0.2
SW 2	5.3	2	12.8	14.2	0.1	NO TRIGGER
SW 0-2	4.9	14.2	20.8	23.1	1.9	0.4
SW 3	Frozen	Snow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 6A	5.1	66.5	14.4	16	14.7	9
SW 9	Dry	Dry	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 14	4.8	45.4	14.5	16.1	0.8	0.1
SW 15	5.2	3.9	15	16.7	0.1	NO TRIGGER
SW 16	5.2	4.3	12.5	13.9	0.1	NO TRIGGER
SW 17	4.9	1.1	15.6	17.3	0.3	0.1
SW 17A	6	10.7	10.9	12.1	1.2	1.1
SW 18	5.4	7.6	13.2	14.7	3.1	1.6
RR3 KARST	Frozen	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	4.7	15.2	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	4.5	11.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B29: ESCARPMENT SPRING STATIONS DECEMBER 2020

Escarpment Spring Stations	December Monthly		December PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 10	Frozen	Frozen	12.8	14.2	0.09	0.09
SW 11	5.2	3.9	11.4	12.7	0.2	0.1
SW 11A	Snow	Snow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11B	Snow	Snow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11C	Snow	Snow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11D	Snow	Snow	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 11E	4.8	13.4	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 21C	4.8	2.8	9.6	10.7	0.8	0.7
SW 24A	4.2	5.5	10.2	11.4	0.30	0.1
SW 77	Frozen	Frozen	9.9	11	0.1	0.09

TABLE B30: SURFACE WATER STATIONS DECEMBER 2020

Surface Water Stations	December Monthly		December PITM Trigger Values			
	Temperature (°C)	Flow (L/s)	Temperature (°C) 'YELLOW'	Temperature (°C) 'RED'	Flow (L/s) 'YELLOW'	Flow (L/s) 'RED'
SW 1	Frozen	Frozen	17.1	19	0.6	0.2
SW 2	5.5	0.1	12.8	14.2	0.1	NO TRIGGER
SW 0-2	0	4.7	20.8	23.1	1.9	0.4
SW 3	Frozen	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 6A	Frozen	Frozen	14.4	16	14.7	9
SW 9	Frozen	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
SW 14	3	44.8	14.5	16.1	0.8	0.1
SW 15	2.1	1.1	15	16.7	0.1	NO TRIGGER
SW 16	Frozen	Frozen	12.5	13.9	0.1	NO TRIGGER
SW 17	3.7	4.7	15.6	17.3	0.3	0.1
SW 17A	3.9	15	10.9	12.1	1.2	1.1
SW 18	2.8	7.8	13.2	14.7	3.1	1.6
RR3 KARST	Frozen	Frozen	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
PR CONTROL	0.2	37.9	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER
BC CONTROL	0.01	9.9	NO TRIGGER	NO TRIGGER	NO TRIGGER	NO TRIGGER

TABLE B-31: Bi-Weekly Drivepoint Monitoring 2020

Location	2020 Measurement Water Level (m ASL)					
	May 5	May 27	June 9	June 26	July 7	July 28
RW PSW #2						
DP5 (in)	510.0	509.9	510.0	510.0	509.9	509.9
DP5 (out)	510.0	510.0	510.0	510.0	509.9	509.9
DP7 (in)	509.3	509.1	509.3	509.4	509.3	509.3
DP7 (out)	509.3	509.1	509.3	509.3	509.3	509.3
RR PSW#6						
DP2 (in)	512.2	512.2	512.3	512.0	512.0	512.0
DP2 (out)	512.2	512.3	512.2	512.0	512.0	512.0
DP4 (in)	511.2	511.2	511.2	511.2	511.2	511.2
DP4 (out)	511.2	511.2	511.2	511.2	511.2	511.2
DP8 (in)	511.4	511.4	511.4	511.4	511.4	511.4
DP8 (out)	511.4	511.4	511.4	511.4	511.4	511.4
RR PSW #3						
DP10 (in)	506.1	506.6	506.4	507.7	506.5	506.5
DP10 (out)				508.6		
ANSI A						
DP6 (in)	511.8	511.8	511.7	511.8	511.7	511.6
DP6 (out)	511.8	511.8	511.7	511.8	511.7	511.6
ANSI B						
Bridson DP (in)	510.4	510.4	510.3	510.4	509.7	510.3
Bridson DP (out)						
DP9 (in)	507.7	507.7	507.7	507.7	507.8	507.8
DP9 (out)	507.7	507.7	507.6			