# APPENDIX

# B

## PERFORMANCE INDICATOR MONITORING PROGRAM RESULTS

# TABLE B-1
## PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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:**
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- 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-1
## PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION
DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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
- * 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-1
## PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION
DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

**NOTE:**
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- 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-1
## PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION
DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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<br>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 |

**NOTE:**
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- 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
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# TABLE B-1
## PERFORMANCE INDICATOR MONITORING PROGRAM SURFACE WATER LOCATION INFORMATION
DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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
- 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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:**
- 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

**NOTE:**
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- 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
- Flooded indicates quarry floor flooded above top of channel and therefore not able to measure flow

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

**NOTE:**
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- 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
- Flooded indicates quarry floor/stream bank flooded above top of channel and therefore not able to measure flow

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

**NOTE:**
- All surface water flow measurements recorded in L/s
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- 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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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- 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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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- SWO-2 - Stream Flow west of SW1 on Osprey Quarry Property
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- QFSW2 - Stream flow measurement of surface water prior to main sump pond
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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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

**NOTE:**
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- SW1 - 2 Culverts across Townline Road.
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# TABLE B-2
## SURFACE WATER FLOW SUMMARY
## SW1, SW2, SWB-1, SWO-2, QFSW1 AND QFSW2

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

**NOTE:**
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- 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
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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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

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- SWB-1 - Culvert under western berm (represents old sump discharge)
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- 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
- 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

**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

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

**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

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |
| 26-Sep-19 | 0.0 | 0.1 | | 2.3 | | 86.4 |

**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

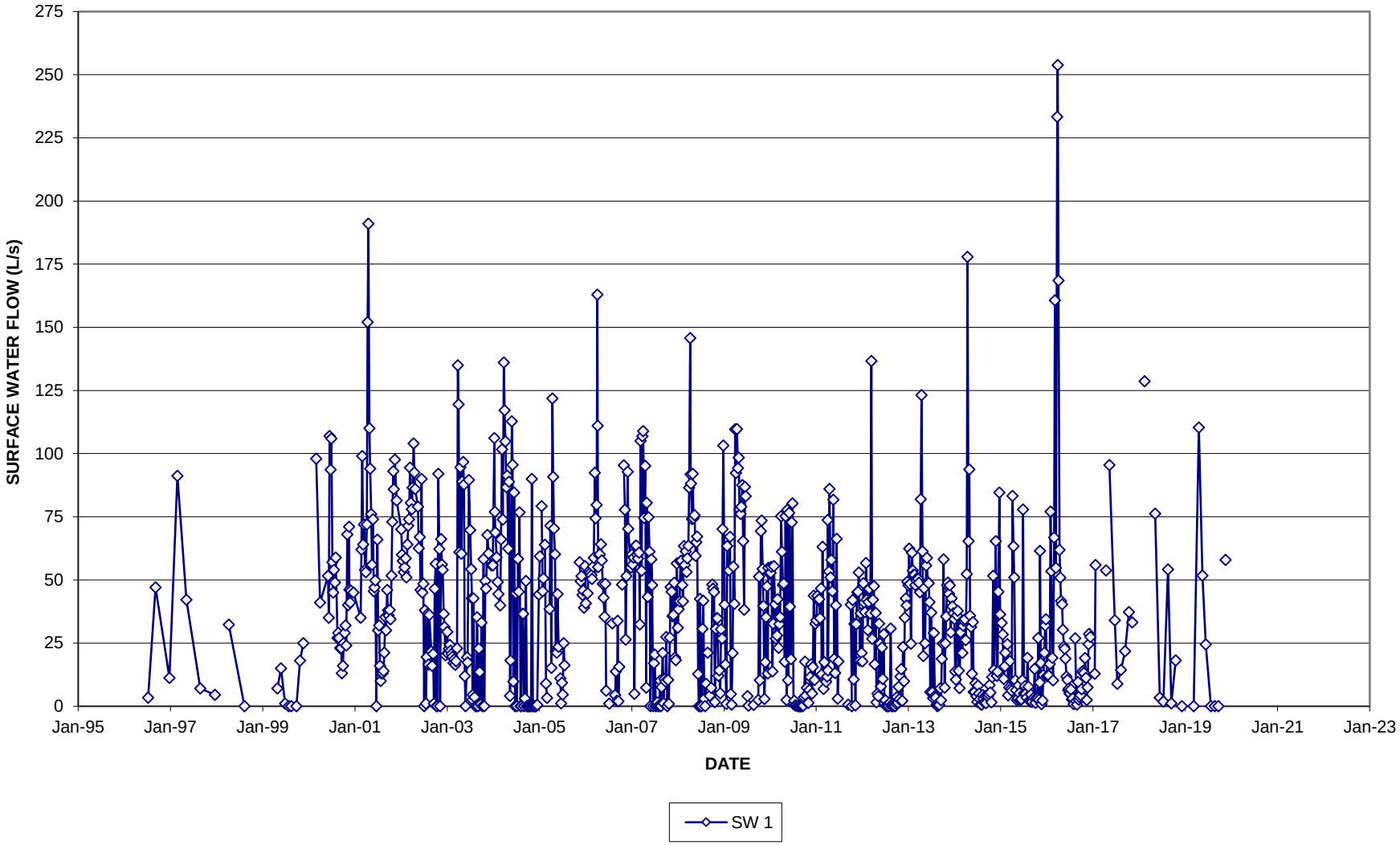


FIGURE B-1 (a)

# SURFACE WATER HYDROGRAPH
# SW1

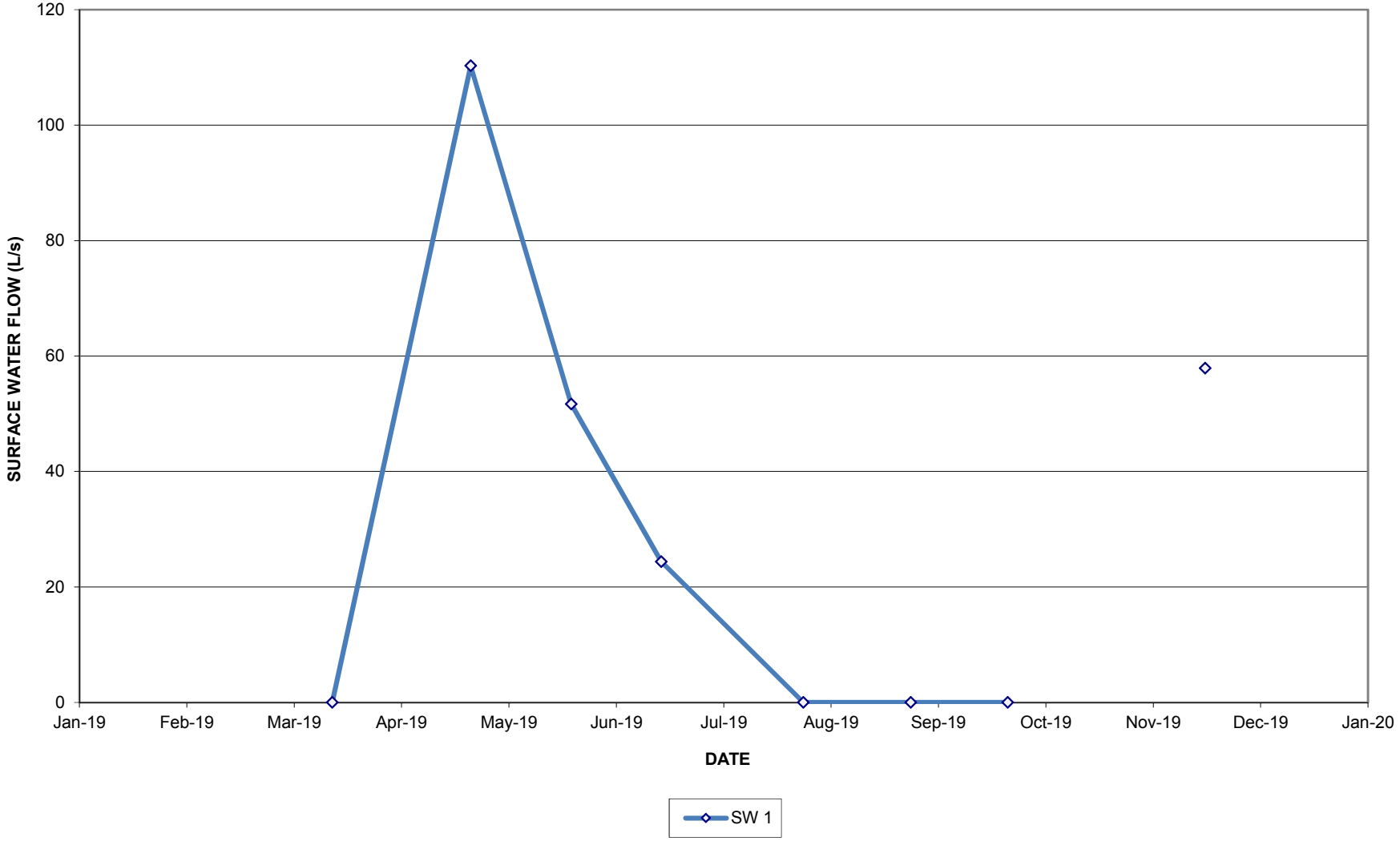


FIGURE B-1 (b)

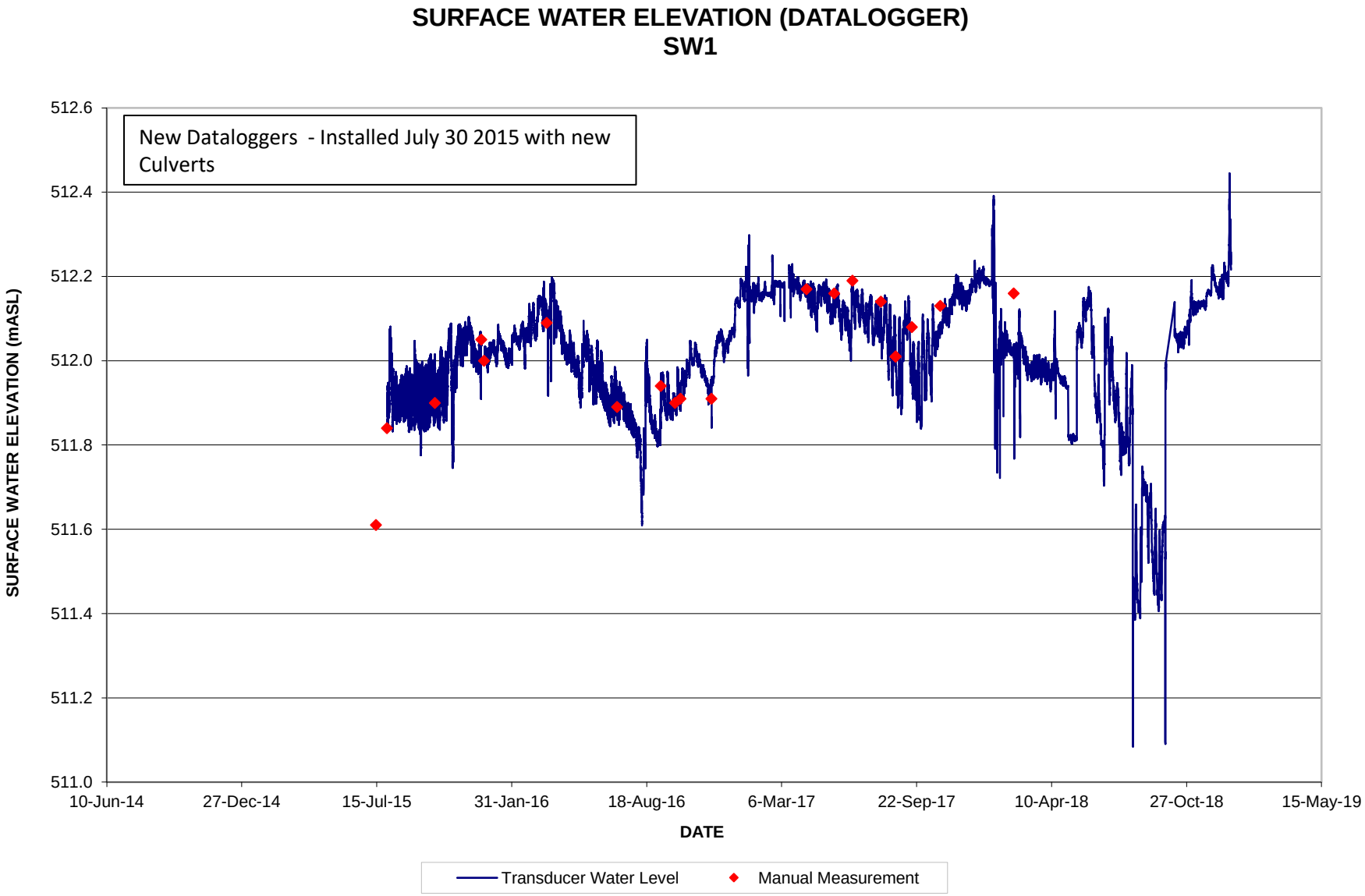

SURFACE WATER ELEVATION (DATALOGGER)
SW1
New Dataloggers - Installed July 30 2015 with new Culverts
SURFACE WATER ELEVATION (mASL)
512.6
512.4
512.2
512.0
511.8
511.6
511.4
511.2
511.0
10-Jun-14
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
DATE
Transducer Water Level
Manual Measurement

FIGURE B-1 (c)

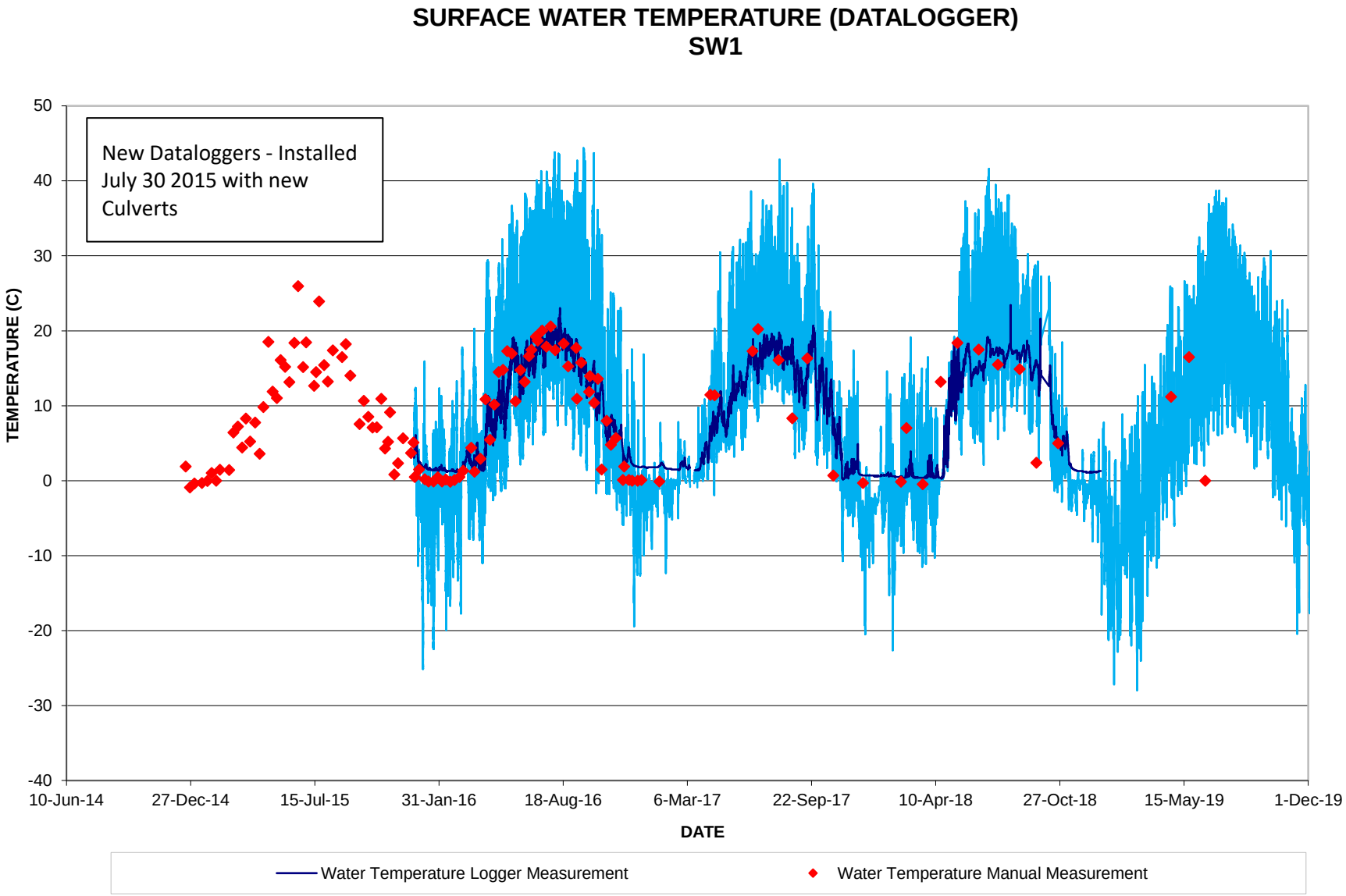

SURFACE WATER TEMPERATURE (DATALOGGER)
SW1
New Dataloggers - Installed July 30 2015 with new Culverts
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
10-Jun-14
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
1-Dec-19
DATE
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-2

# SURFACE WATER HYDROGRAPH
# SW2

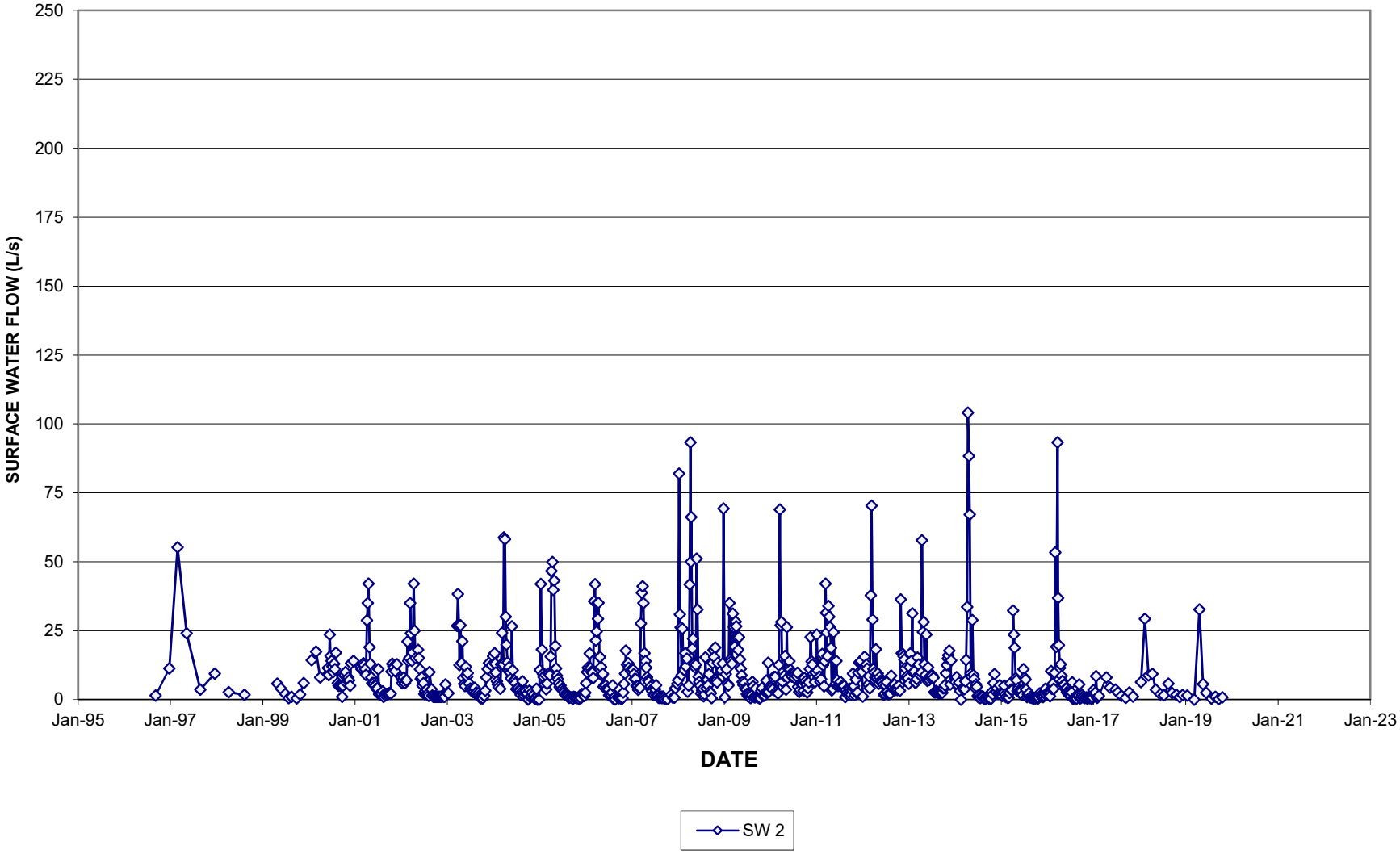


FIGURE B-2 (a)

# SURFACE WATER HYDROGRAPH
# SW2

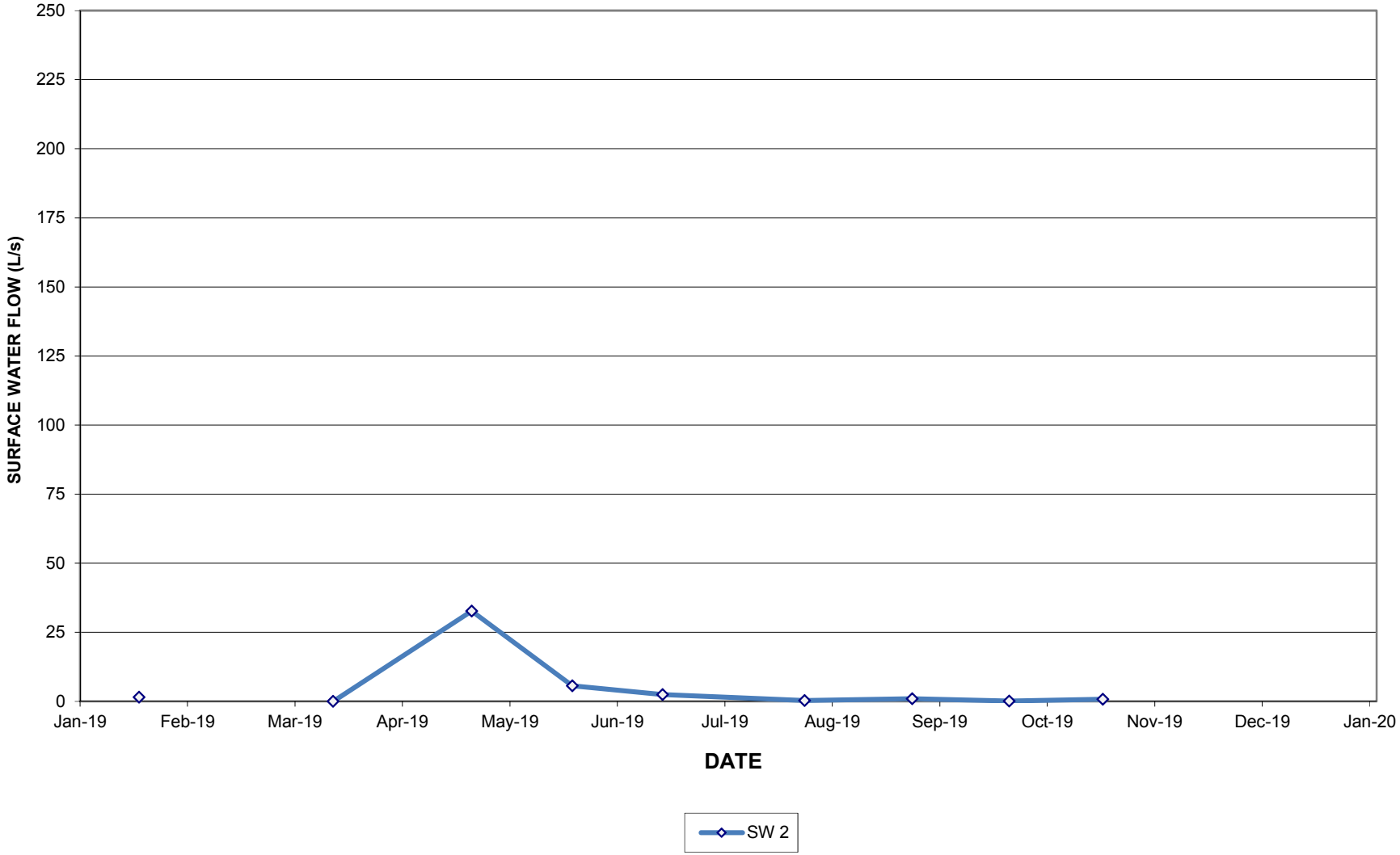


FIGURE B-2 (b)

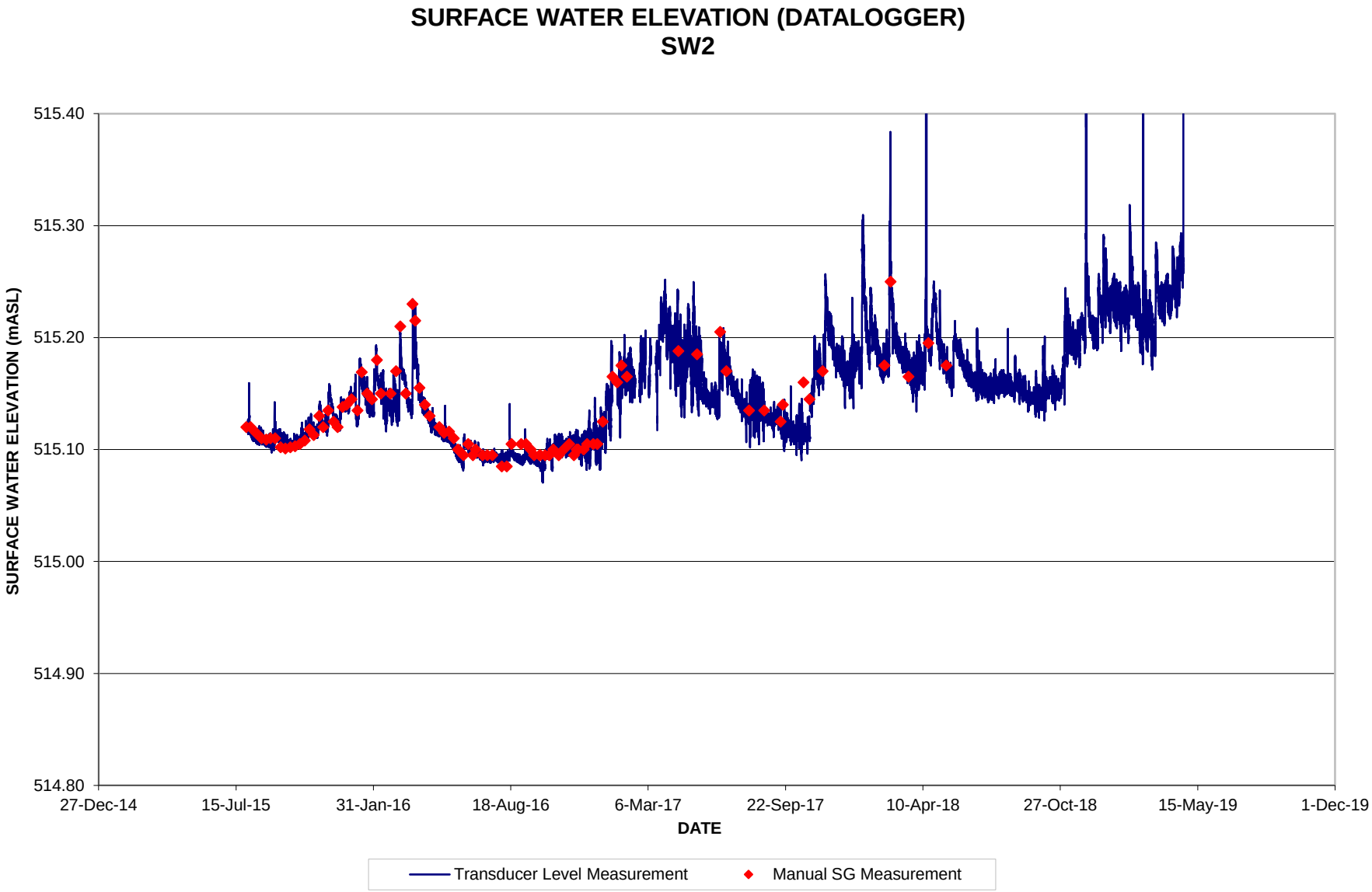

SURFACE WATER ELEVATION (DATALOGGER)
SW2
SURFACE WATER ELEVATION (mASL)
515.40
515.30
515.20
515.10
515.00
514.90
514.80
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
1-Dec-19
DATE
Transducer Level Measurement
Manual SG Measurement

FIGURE B-2 (c)

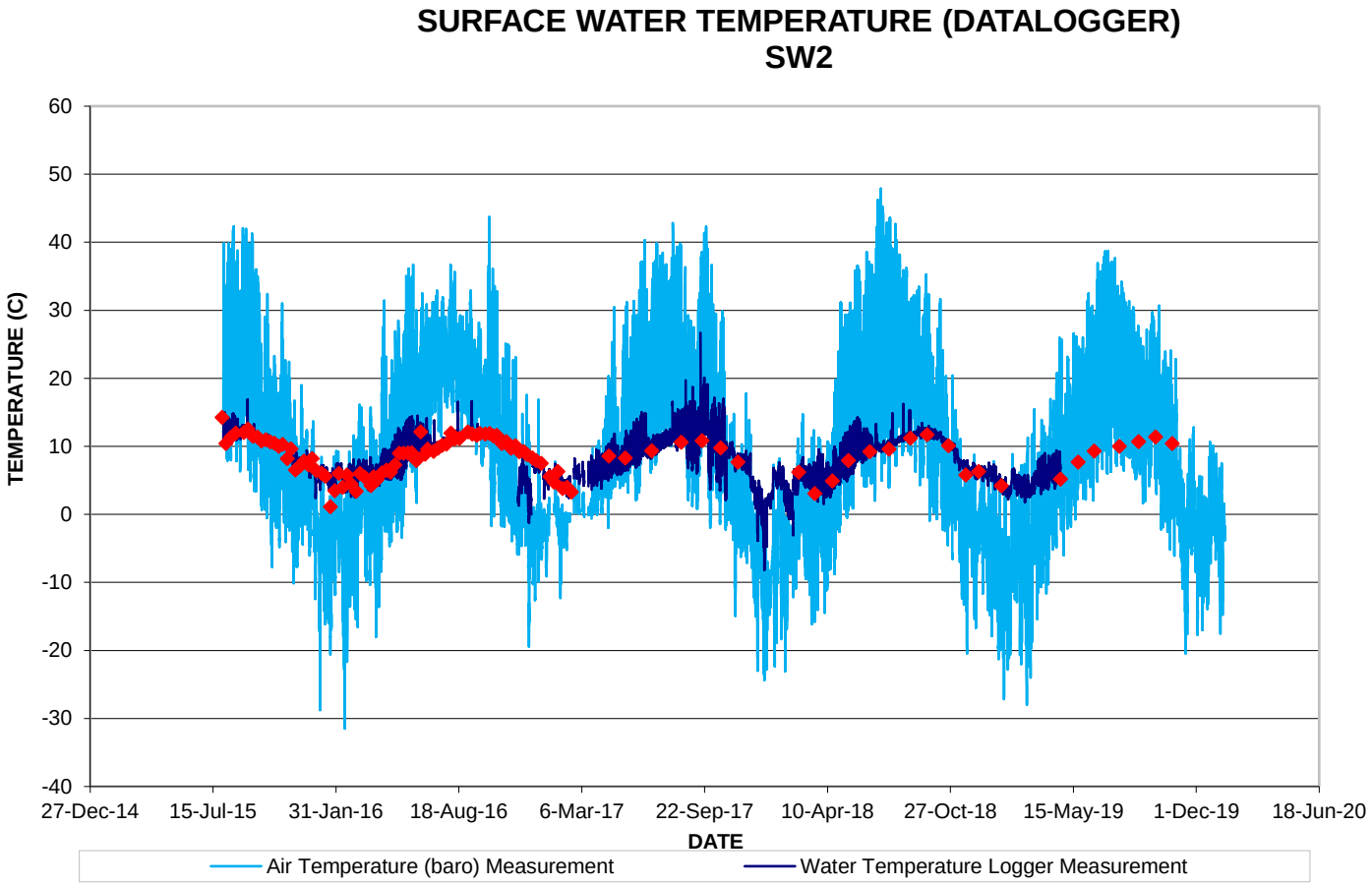

SURFACE WATER TEMPERATURE (DATALOGGER)
SW2
TEMPERATURE (C)
60
50
40
30
20
10
0
-10
-20
-30
-40
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
1-Dec-19
18-Jun-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement

FIGURE B-3

# SURFACE WATER HYDROGRAPH
# SWB-1

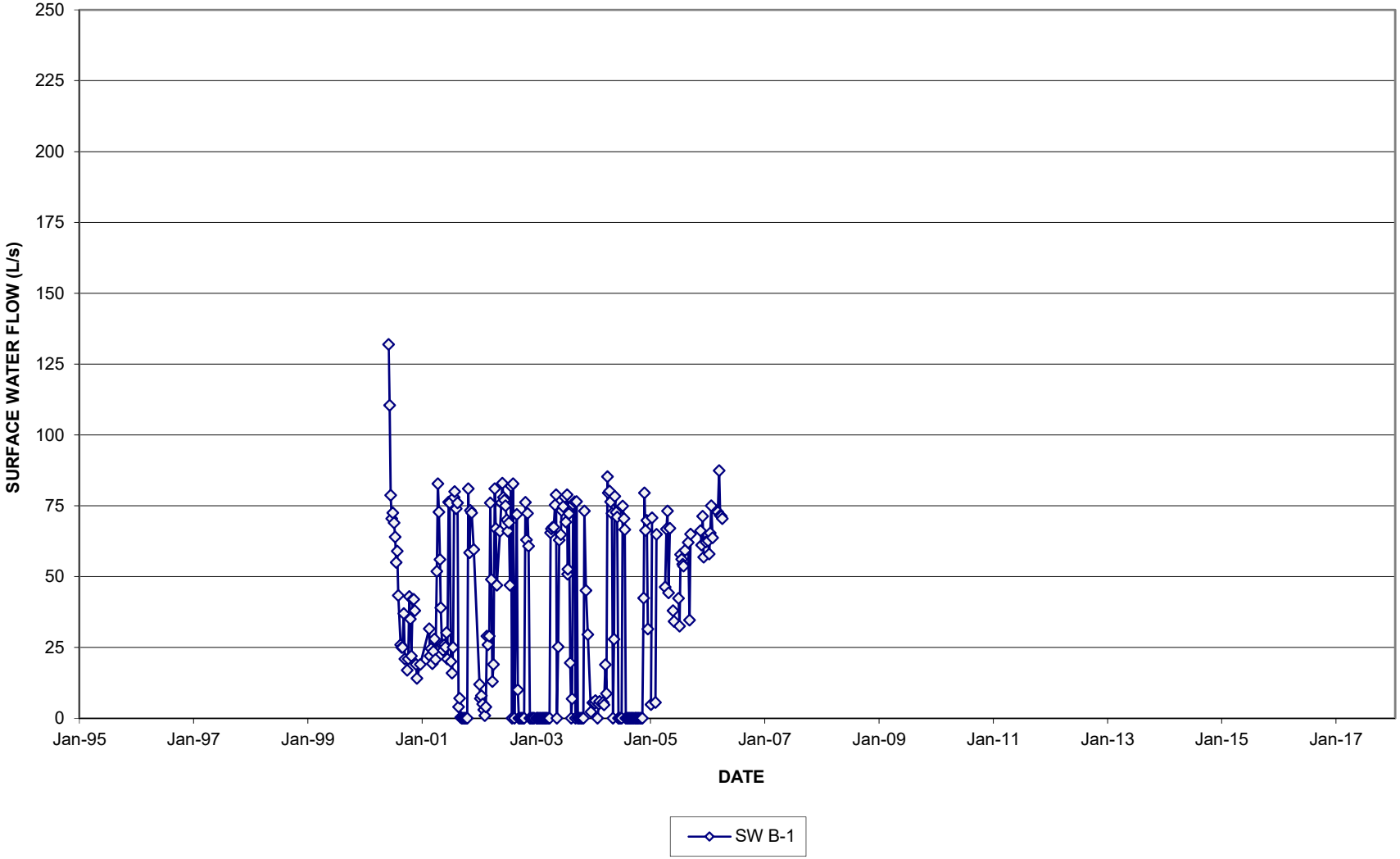


FIGURE B-4

# SURFACE WATER HYDROGRAPH
# SWO-2

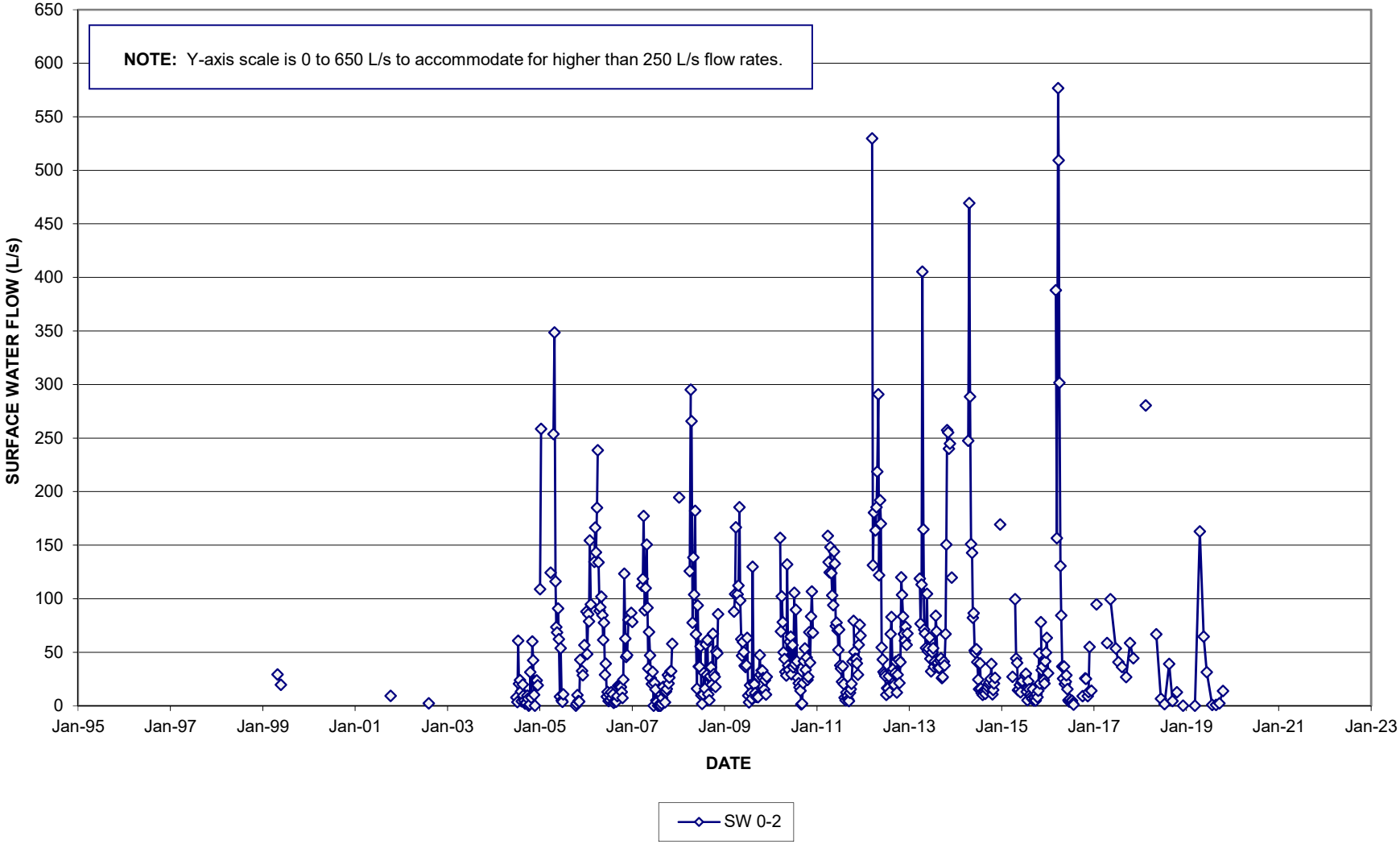


FIGURE B-4 (a)

# SURFACE WATER HYDROGRAPH
# SWO-2

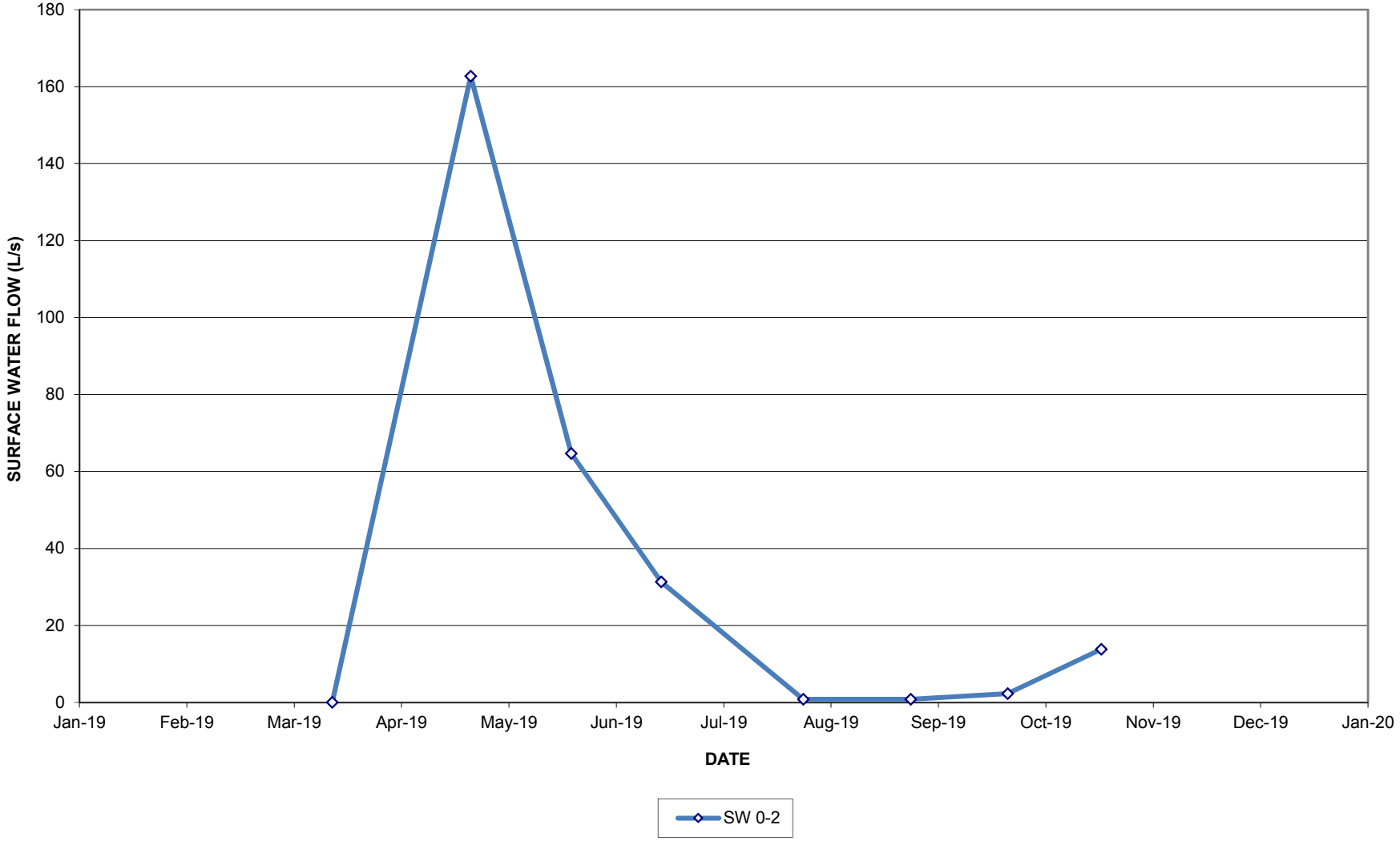


FIGURE B-4 (b)

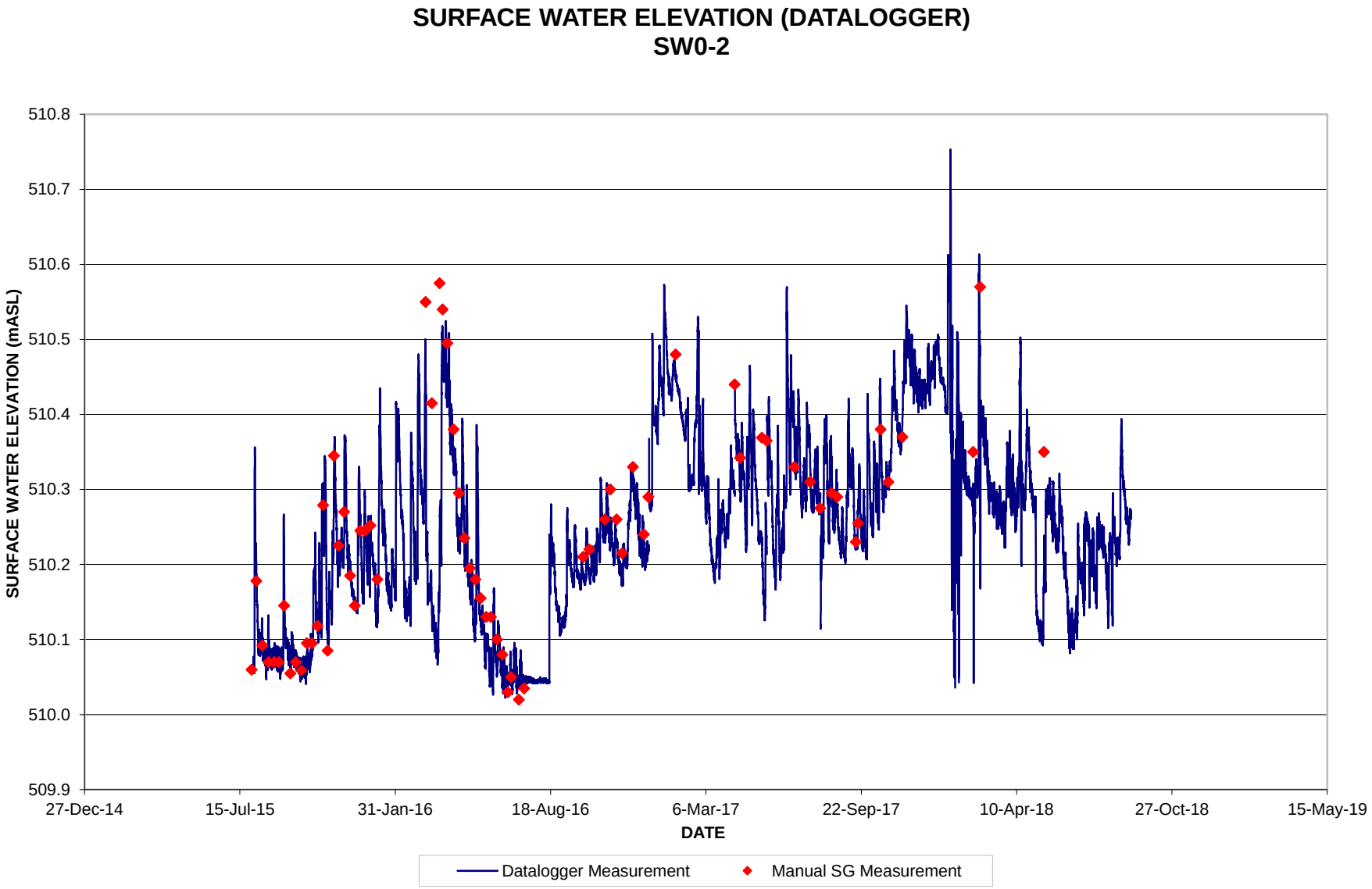

SURFACE WATER ELEVATION (DATALOGGER)
SW0-2
SURFACE WATER ELEVATION (mASL)
510.8
510.7
510.6
510.5
510.4
510.3
510.2
510.1
510.0
509.9
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
DATE
Datalogger Measurement
Manual SG Measurement

FIGURE B-4 (c)

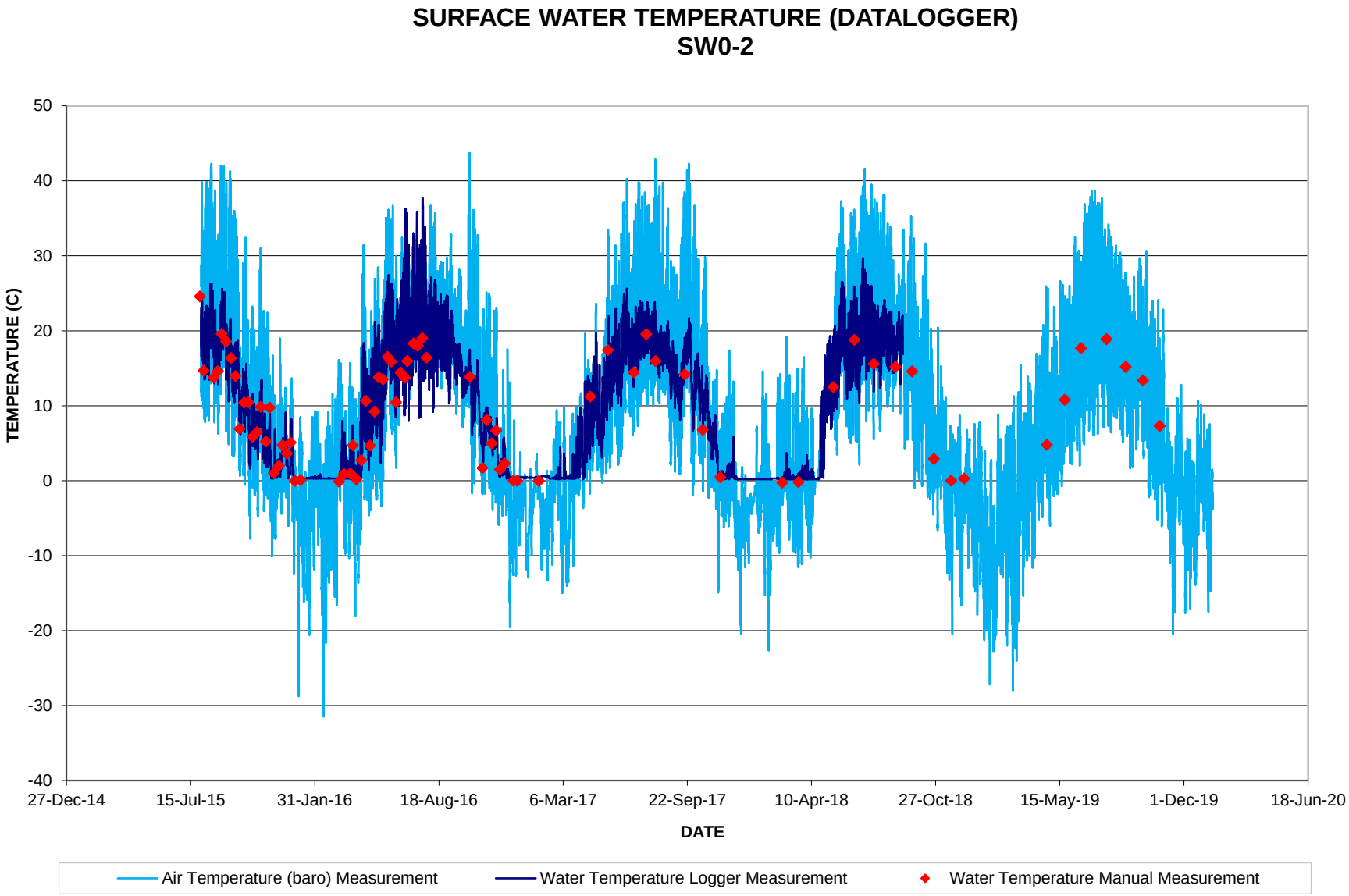

SURFACE WATER TEMPERATURE (DATALOGGER)
SW0-2
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
1-Dec-19
18-Jun-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual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

FIGURE B-5

# SURFACE WATER HYDROGRAPH
# QFSW1

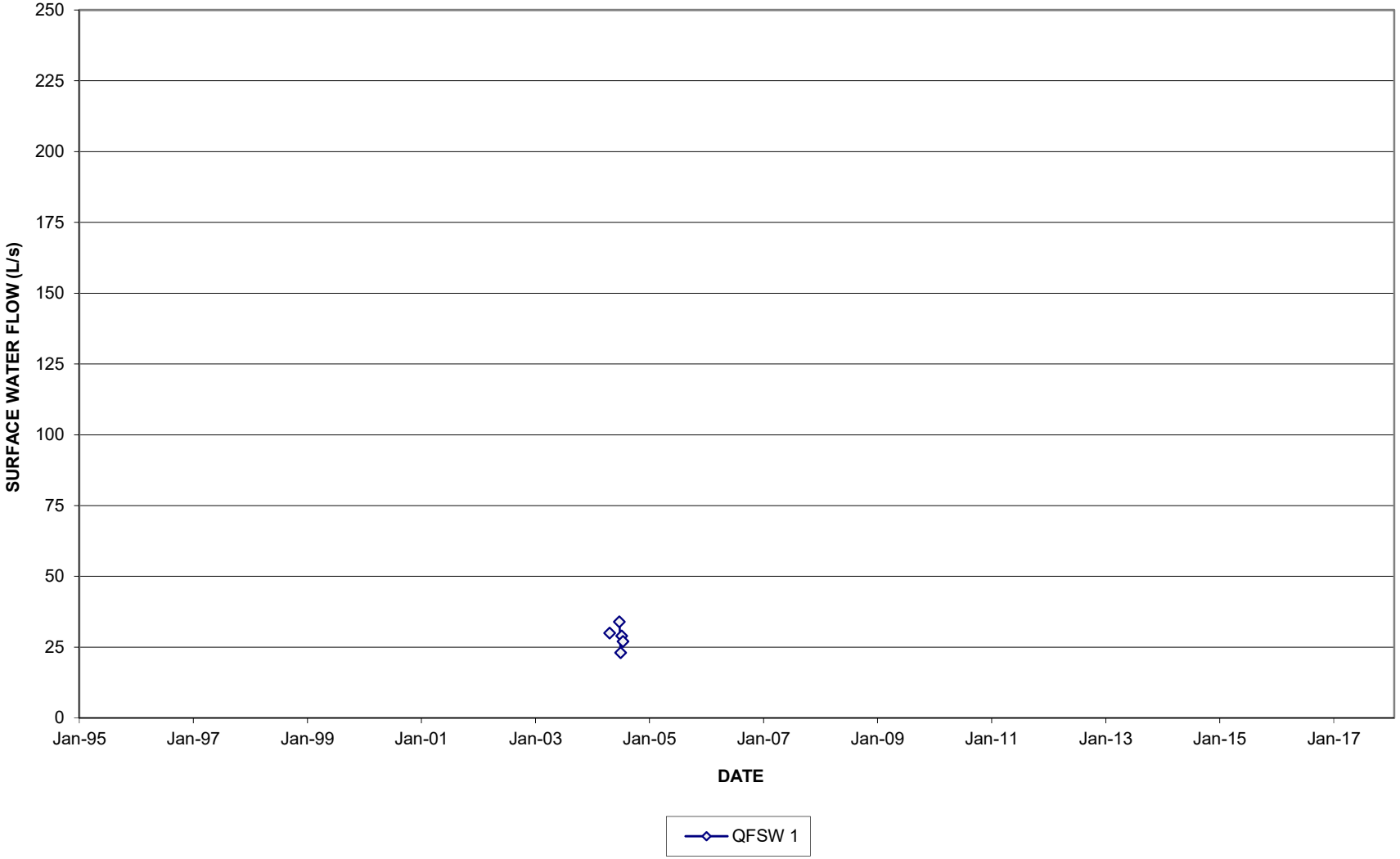


FIGURE B-6

# SURFACE WATER HYDROGRAPH
# QFSW2

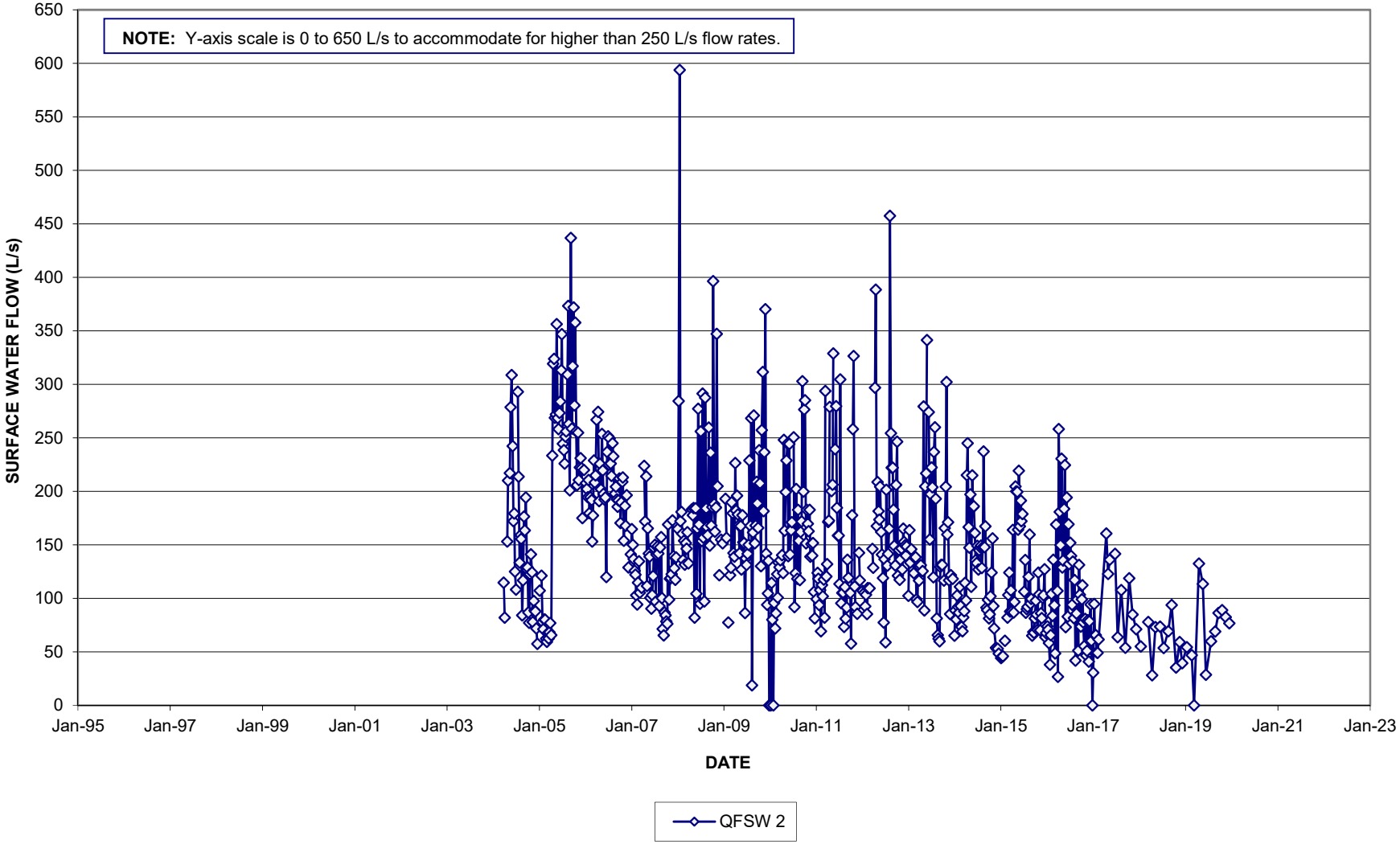
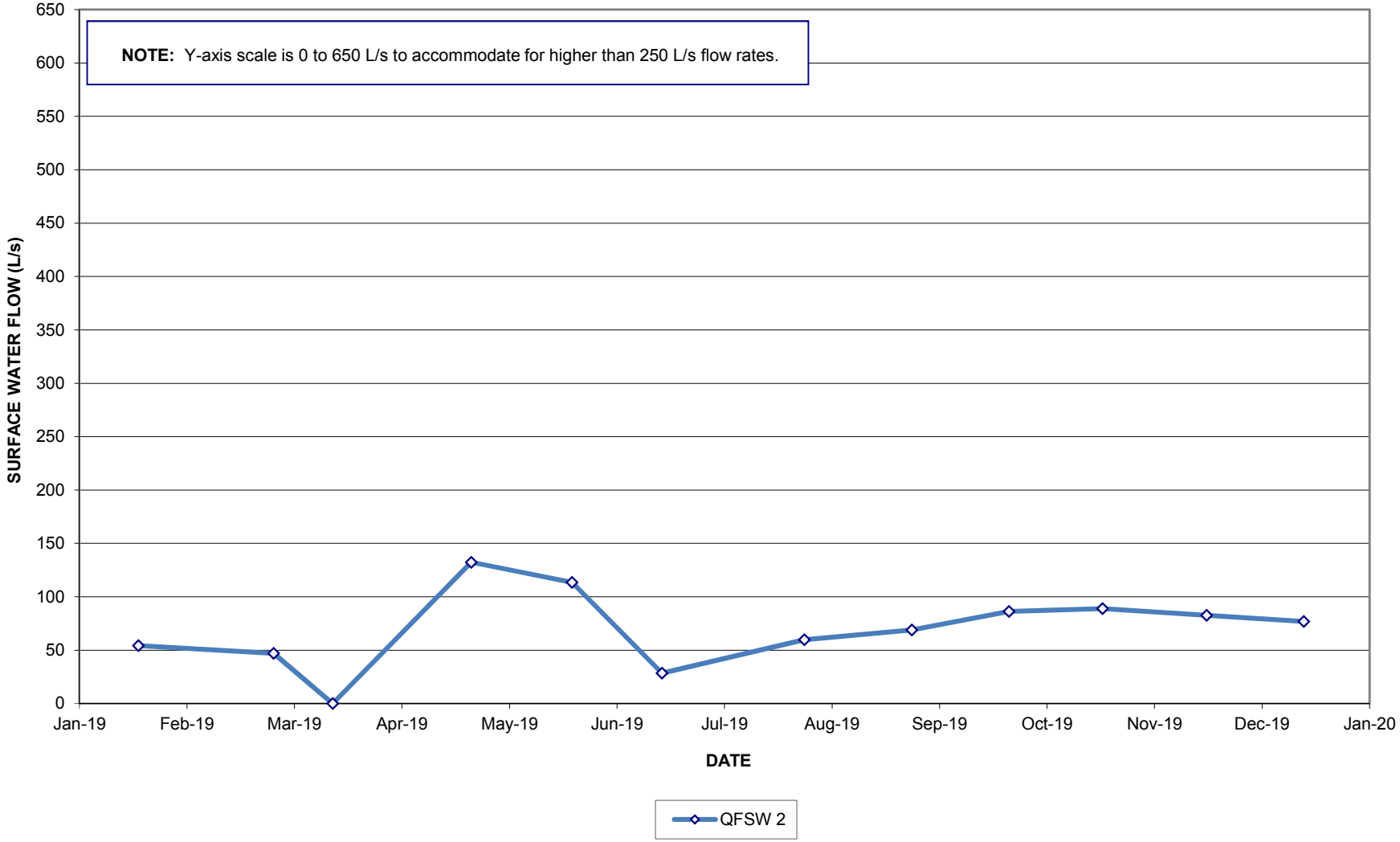


FIGURE B-6 (a)

# SURFACE WATER HYDROGRAPH
# QFSW2



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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | - | - | - | - | - | - | - | - | - | - | - | - |

**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.

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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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

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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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.

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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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.

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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**NOTE:**
- - indicates measurement not available
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- 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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-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 | | | | | | | | | | | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**NOTE:**

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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.
- (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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**NOTE:**

- - indicates measurement not available
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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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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.

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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:**

- - 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 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

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

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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-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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | | | | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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-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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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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- 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**NOTE:**

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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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

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| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**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 - AMP SUMMARY REPORT (2019)

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| 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 |

**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.
- -(**) 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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.
- - (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 - AMP SUMMARY REPORT (2019)

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| 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 |

**NOTE:**
- - indicates measurement not available
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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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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-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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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-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 |

**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.
- - (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 - AMP SUMMARY REPORT (2019)

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| 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 |

**NOTE:**
- - indicates measurement not available
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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

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111-53312-02 100

| 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-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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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-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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**NOTE:**
- - indicates measurement not available
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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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**NOTE:**
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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
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# TABLE B-3
# MONTHLY STATIONS
# SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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.
- 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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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- V indicates valeport electromagnetic flow meter value
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# TABLE B-3
# MONTHLY STATIONS
# SURFACE WATER FLOW SUMMARY SW3 TO SW27

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | - | - |

**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.
- (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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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:**
- - 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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-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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**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 - AMP SUMMARY REPORT (2019)

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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-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 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**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.
- (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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |
| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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-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:**

- - indicates measurement not available
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- 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

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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 |
| 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 | - | - | | | | | | | | |

**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 - AMP SUMMARY REPORT (2019)

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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 |
| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | | | |

**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.
- (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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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
- 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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:**
- - 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | - | - | - | - | - | - | - | - | - | - | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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:**

- - 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.
- (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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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:**
- - 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**NOTE:**
- - indicates measurement not available
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- 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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | | | | | | | | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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.
- (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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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.
- (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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |

**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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 | | | | |

**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 - AMP SUMMARY REPORT (2019)

111-53312-02 100

| 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 |

**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

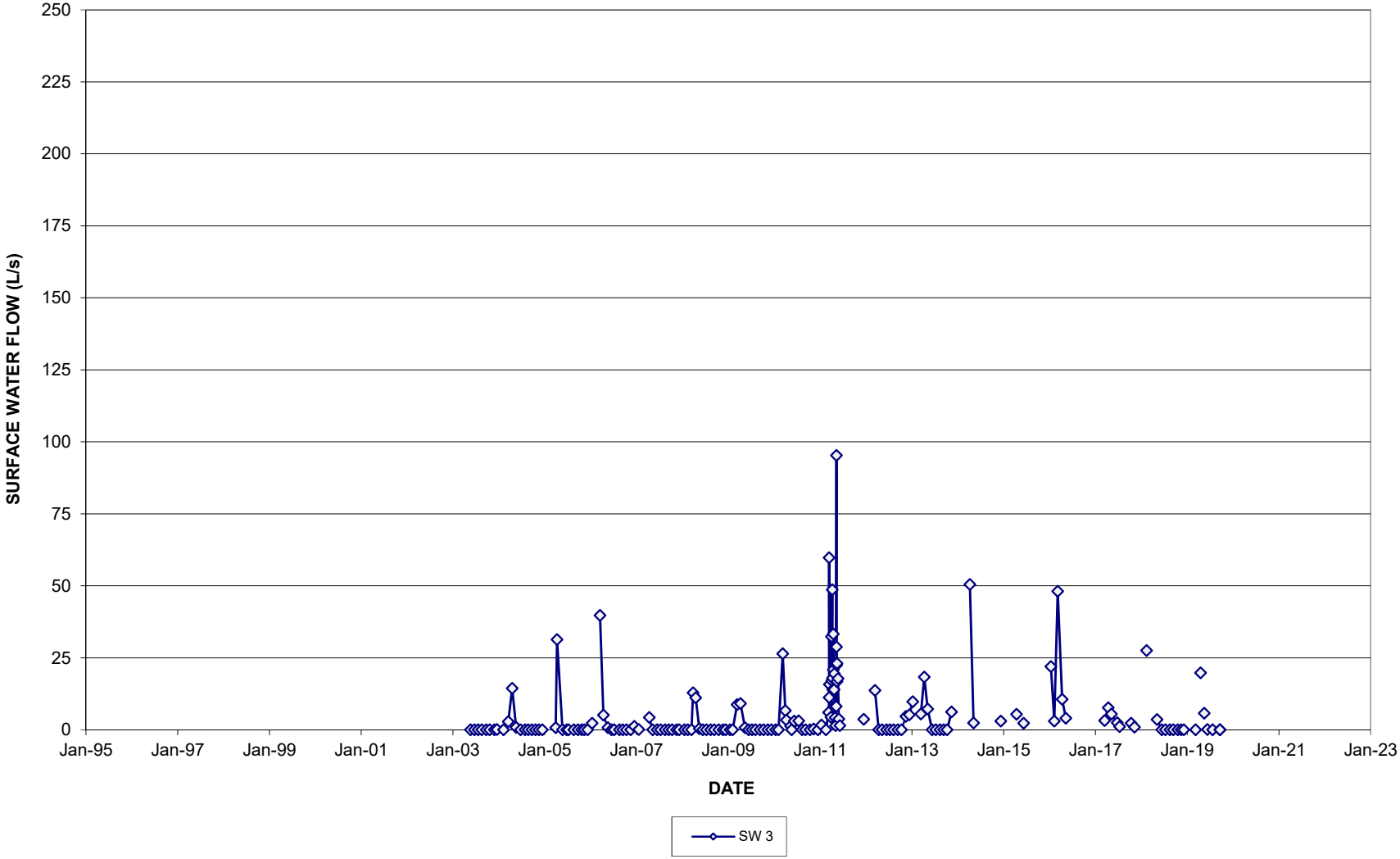


FIGURE B-7 (a)

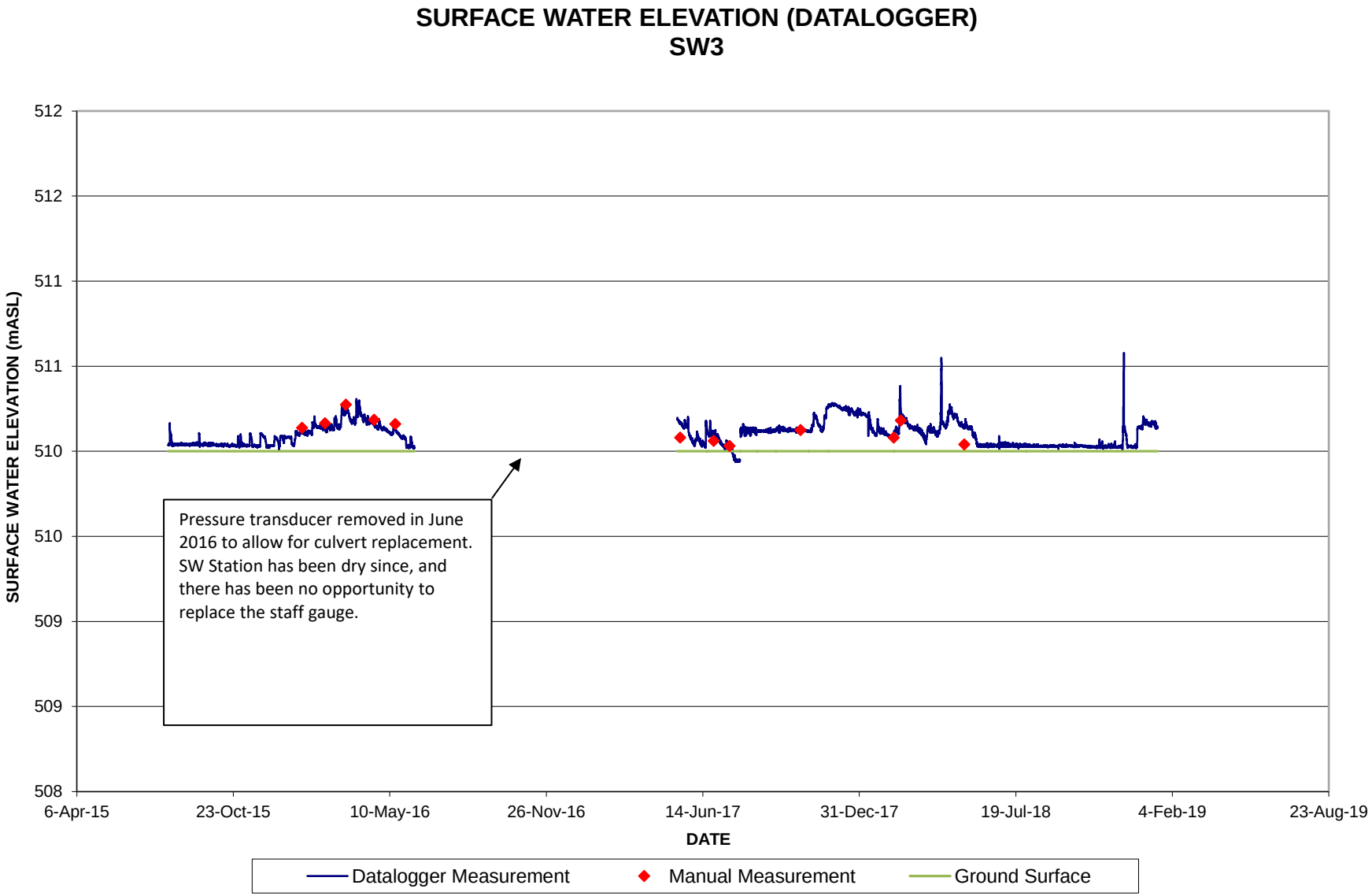

SURFACE WATER ELEVATION (DATALOGGER)
SW3
SURFACE WATER ELEVATION (mASL)
512
512
511
511
510
510
509
509
508
6-Apr-15
23-Oct-15
10-May-16
26-Nov-16
14-Jun-17
31-Dec-17
19-Jul-18
4-Feb-19
23-Aug-19
DATE
Pressure transducer removed in June 2016 to allow for culvert replacement. SW Station has been dry since, and there has been no opportunity to replace the staff gauge.
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-7 (b)

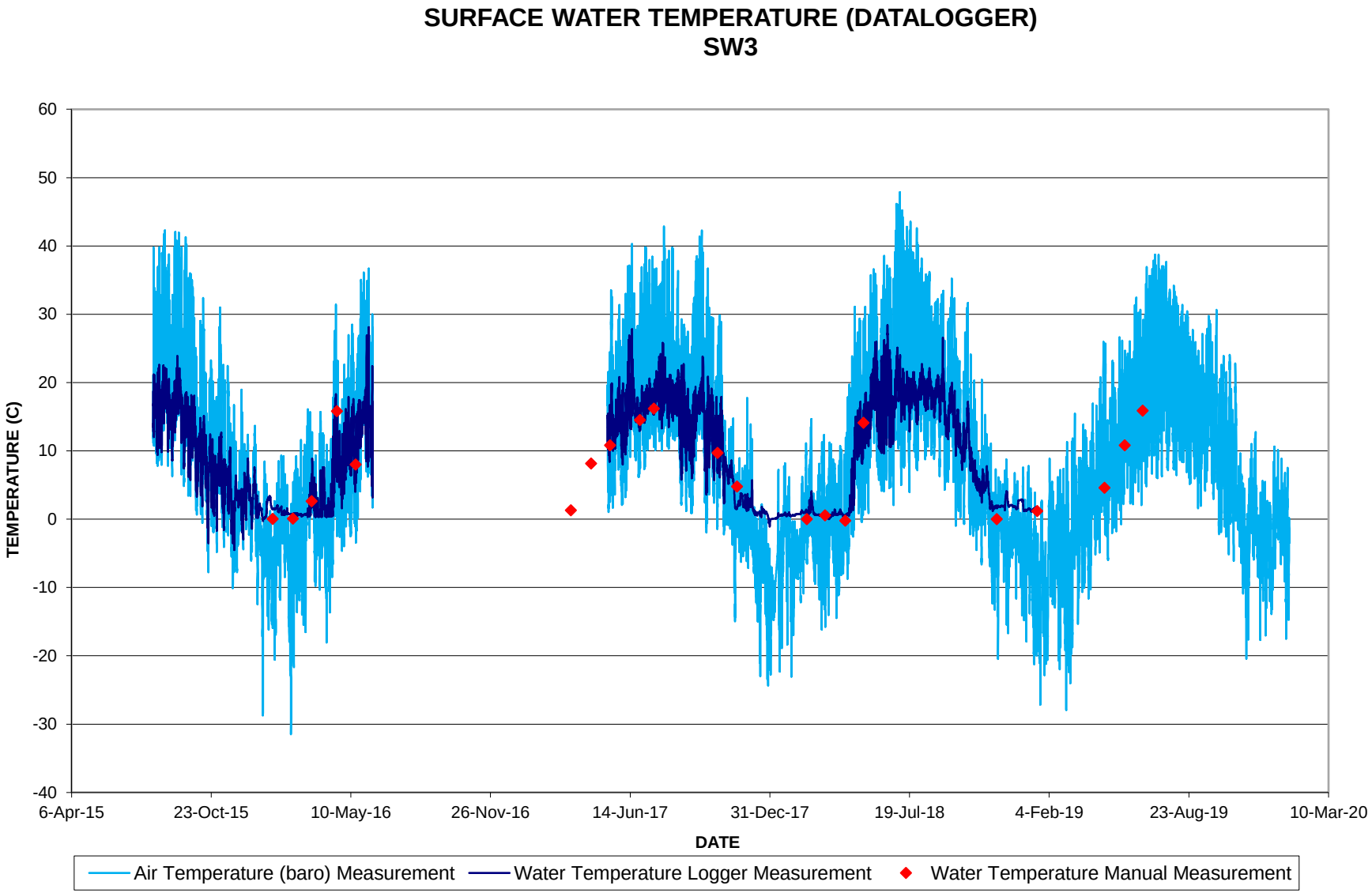

SURFACE WATER TEMPERATURE (DATALOGGER)
SW3
TEMPERATURE (C)
60
50
40
30
20
10
0
-10
-20
-30
-40
6-Apr-15
23-Oct-15
10-May-16
26-Nov-16
14-Jun-17
31-Dec-17
19-Jul-18
4-Feb-19
23-Aug-19
10-Mar-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-8

# SURFACE WATER HYDROGRAPH
# SW3A

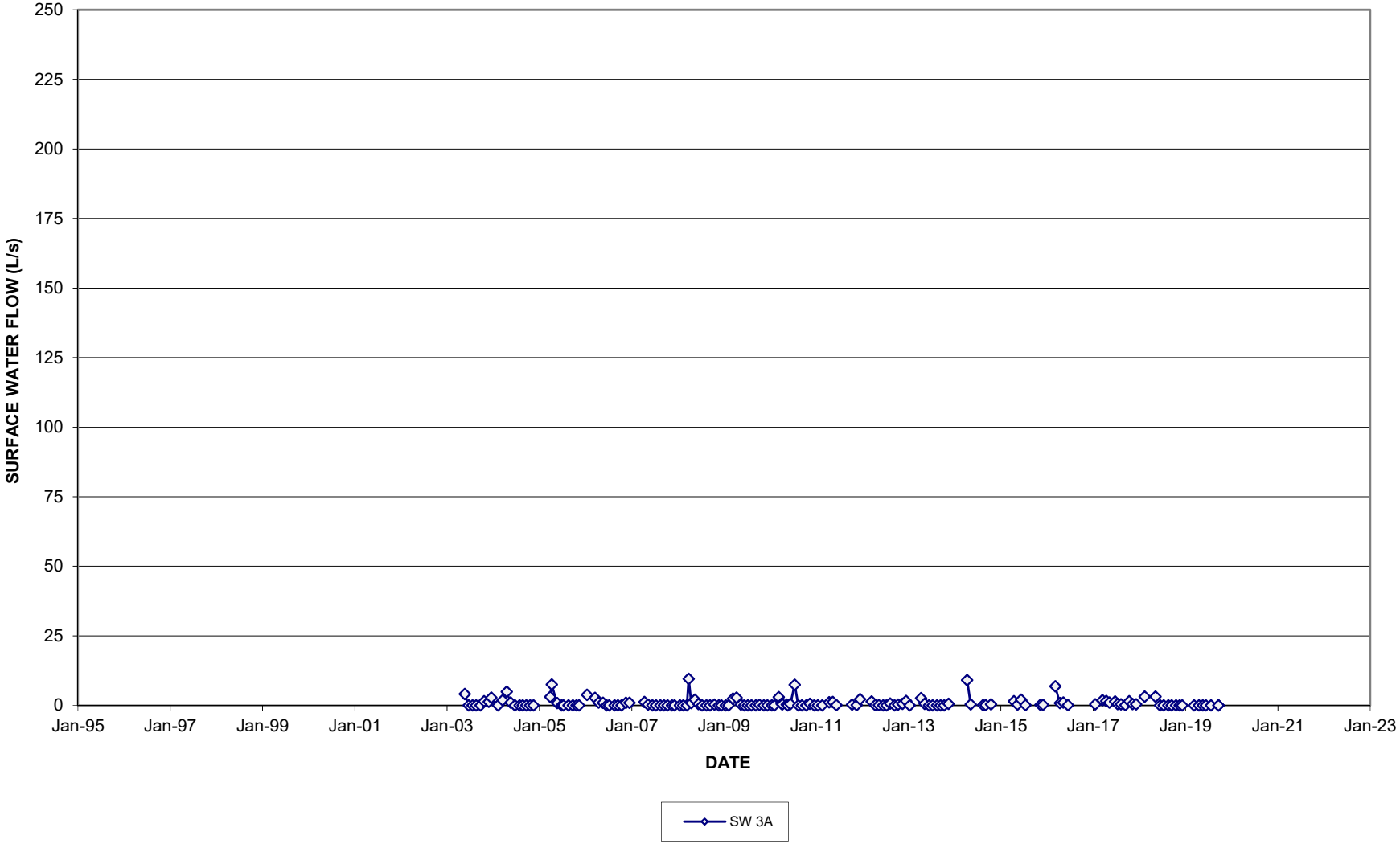


FIGURE B-9

# SURFACE WATER HYDROGRAPH
# SW4

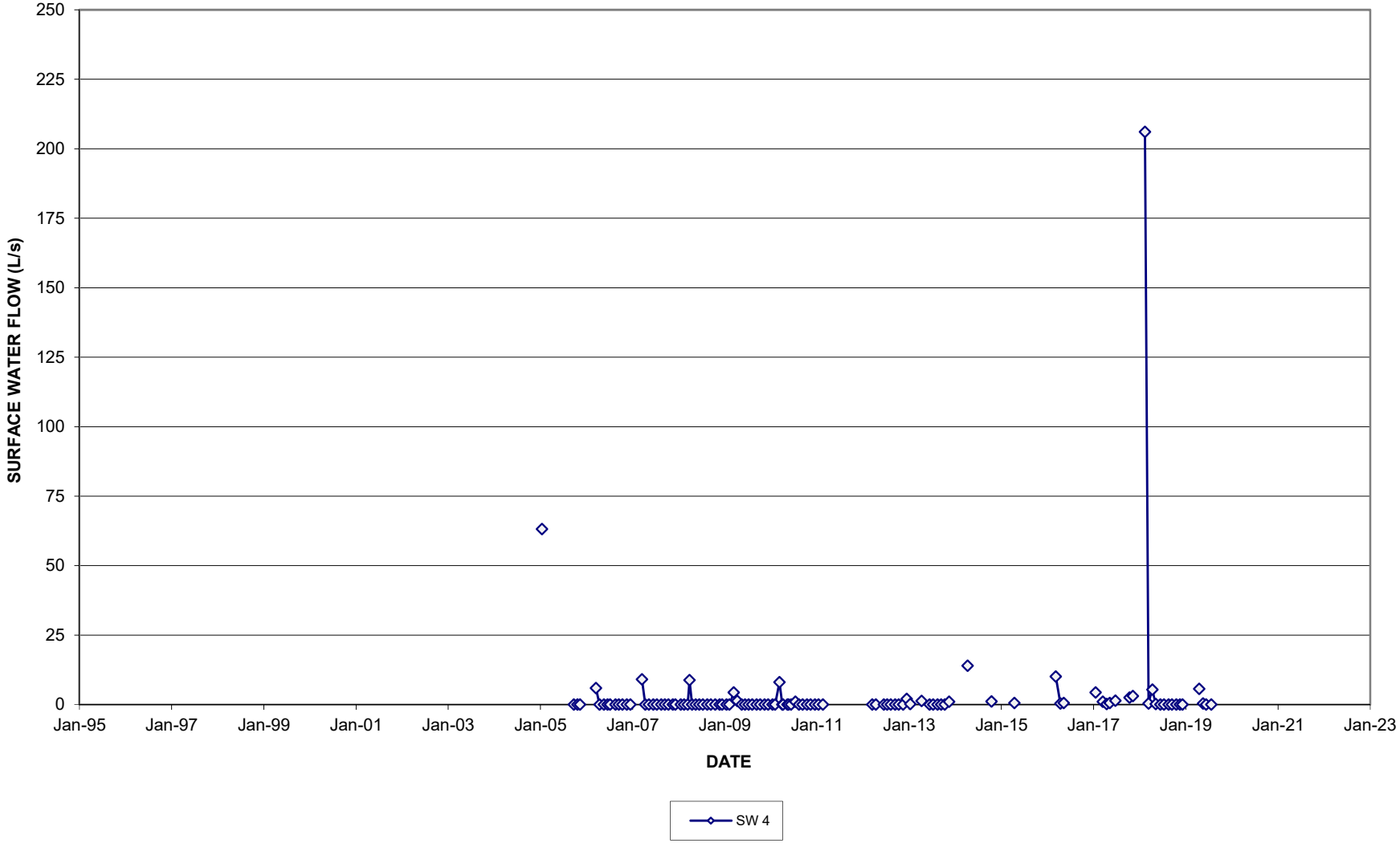


FIGURE B-10

# SURFACE WATER HYDROGRAPH
# SW5

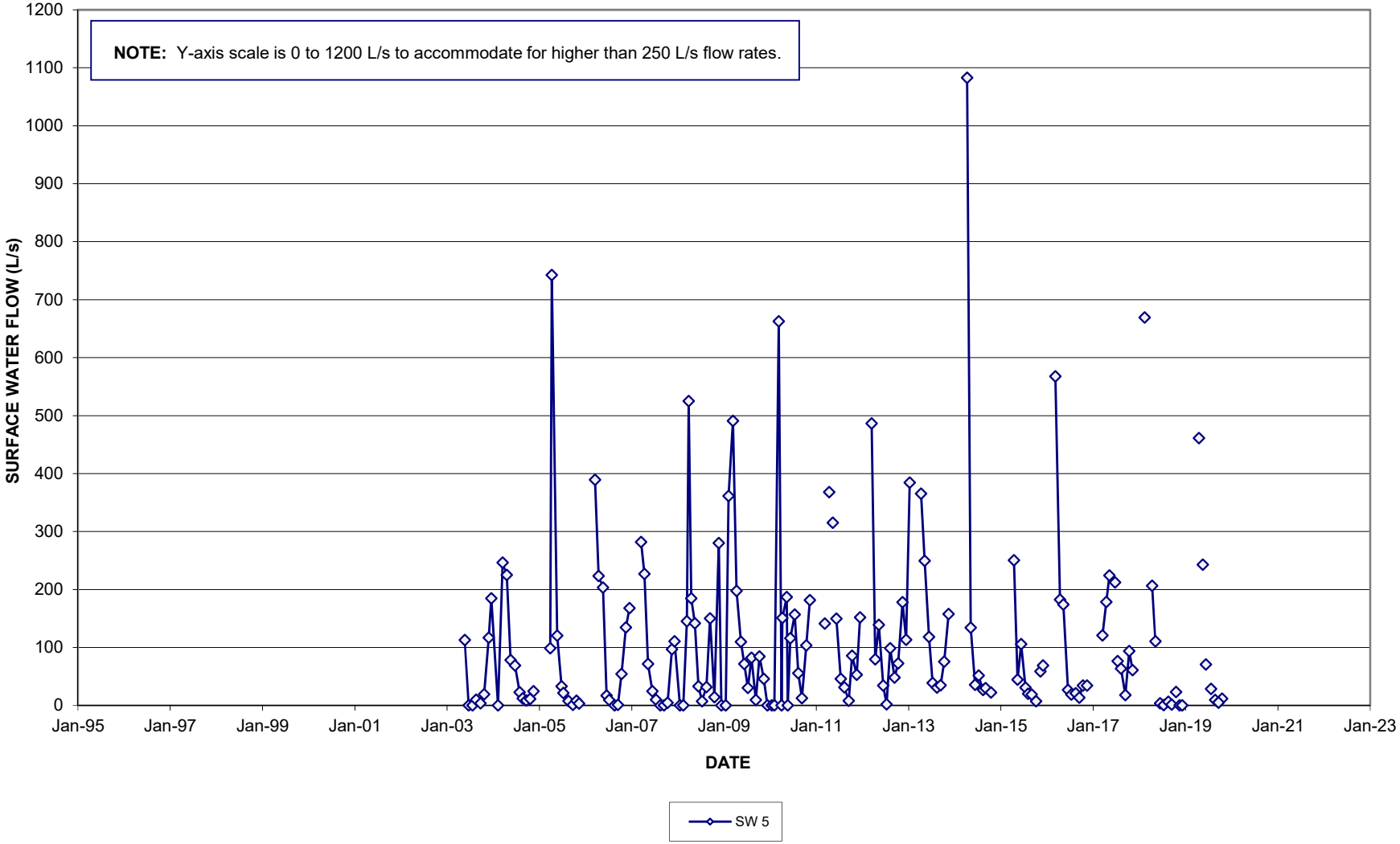


FIGURE B-11

# SURFACE WATER HYDROGRAPH
# SW6

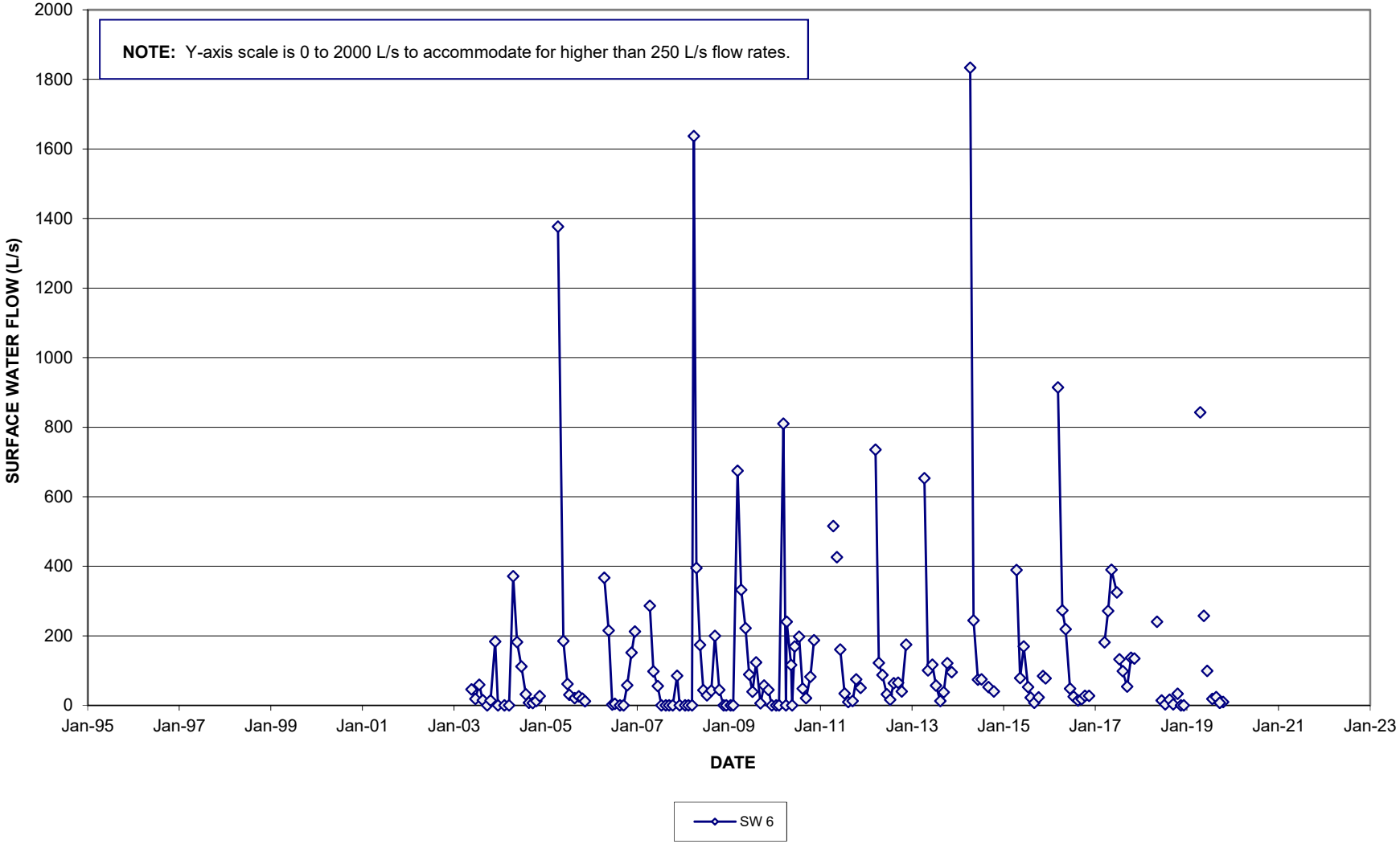


FIGURE B-12

# SURFACE WATER HYDROGRAPH
# SW6A

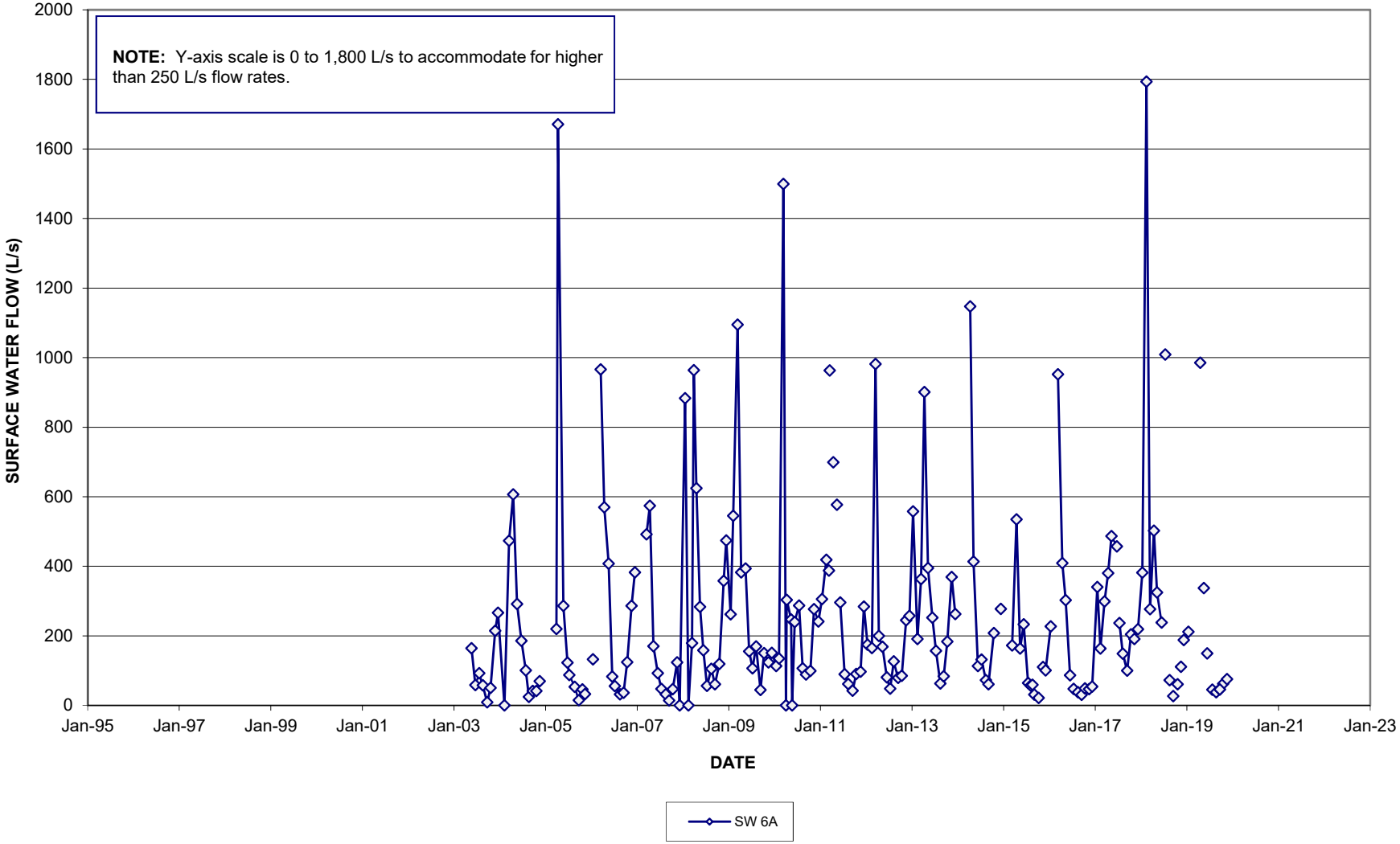


FIGURE B-12 (a)

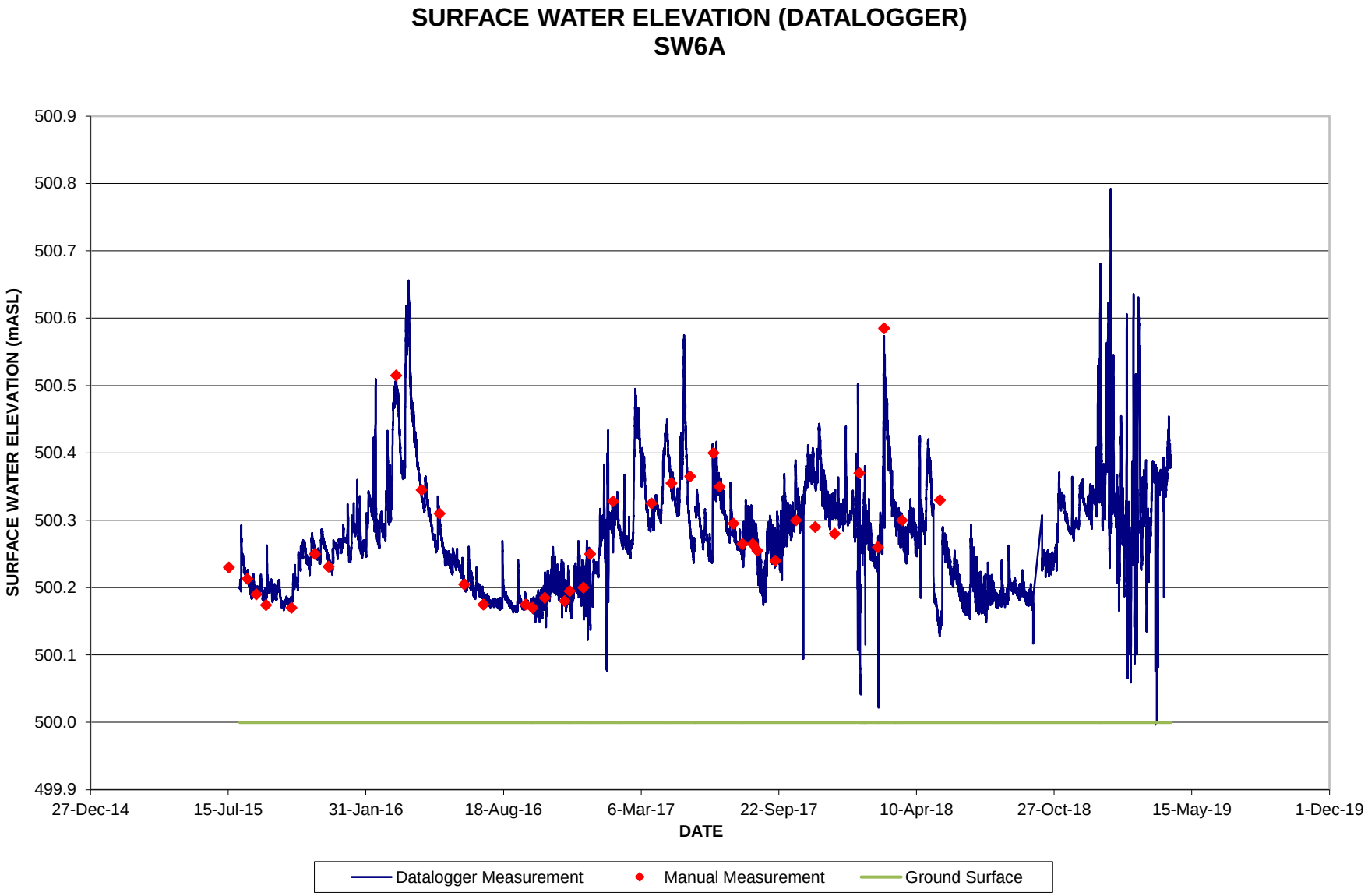

SURFACE WATER ELEVATION (DATALOGGER)
SW6A
SURFACE WATER ELEVATION (mASL)
500.9
500.8
500.7
500.6
500.5
500.4
500.3
500.2
500.1
500.0
499.9
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
1-Dec-19
DATE
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-12 (b)

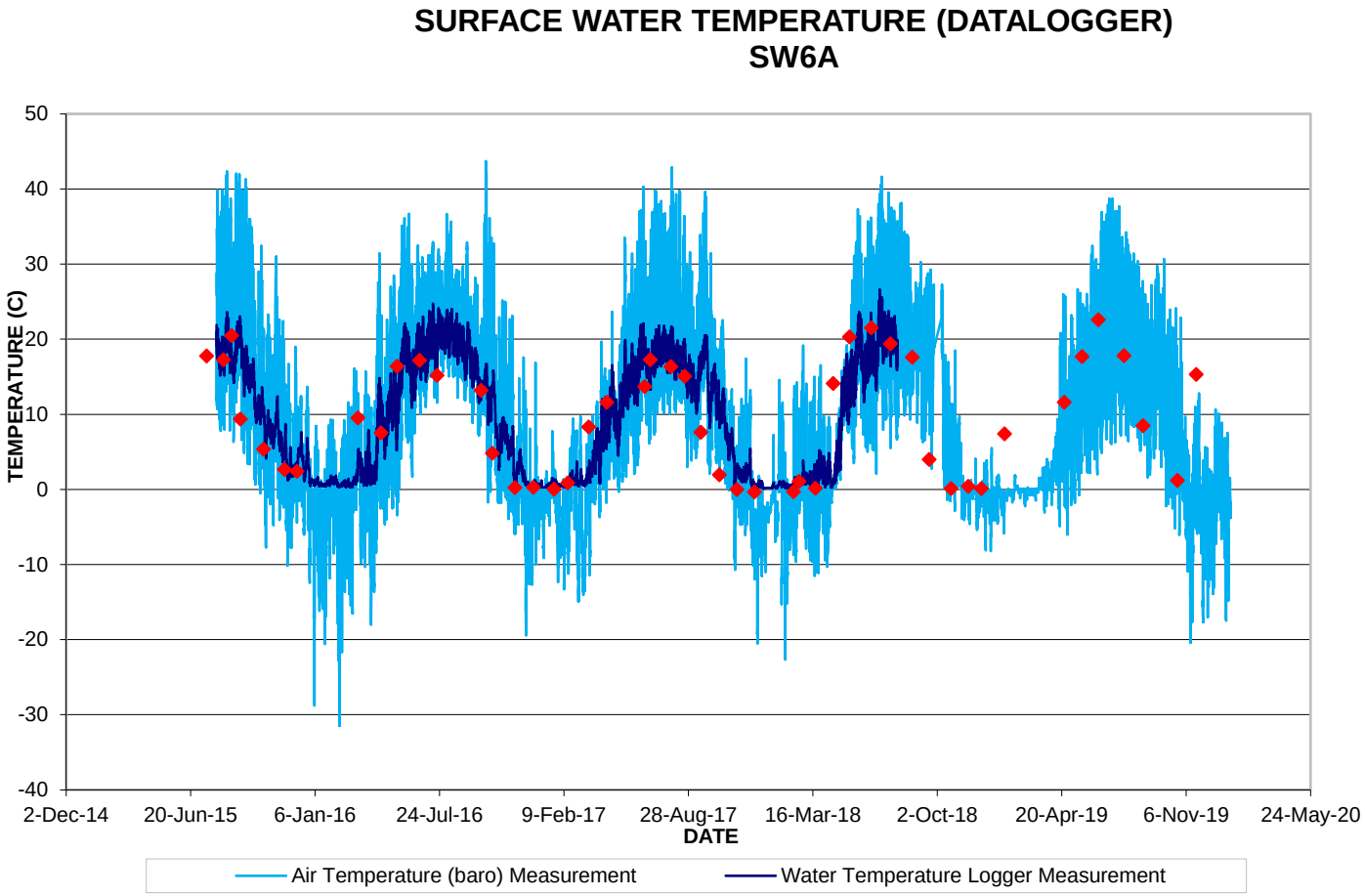

SURFACE WATER TEMPERATURE (DATALOGGER)
SW6A
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
2-Dec-14
20-Jun-15
6-Jan-16
24-Jul-16
9-Feb-17
28-Aug-17
16-Mar-18
2-Oct-18
20-Apr-19
6-Nov-19
24-May-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement

FIGURE B-13

# SURFACE WATER HYDROGRAPH
# SW7

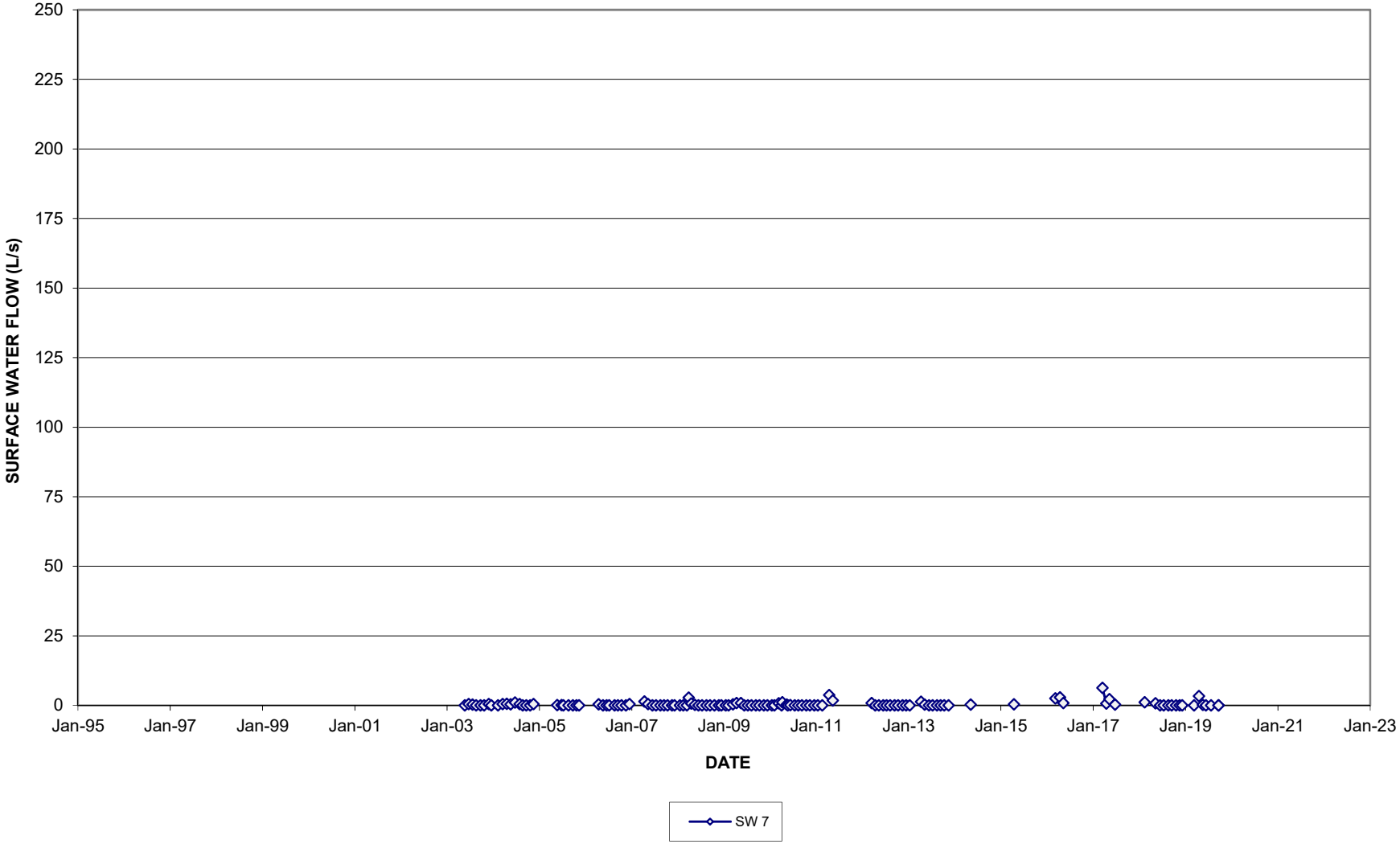


FIGURE B-14

# SURFACE WATER HYDROGRAPH
# SW8

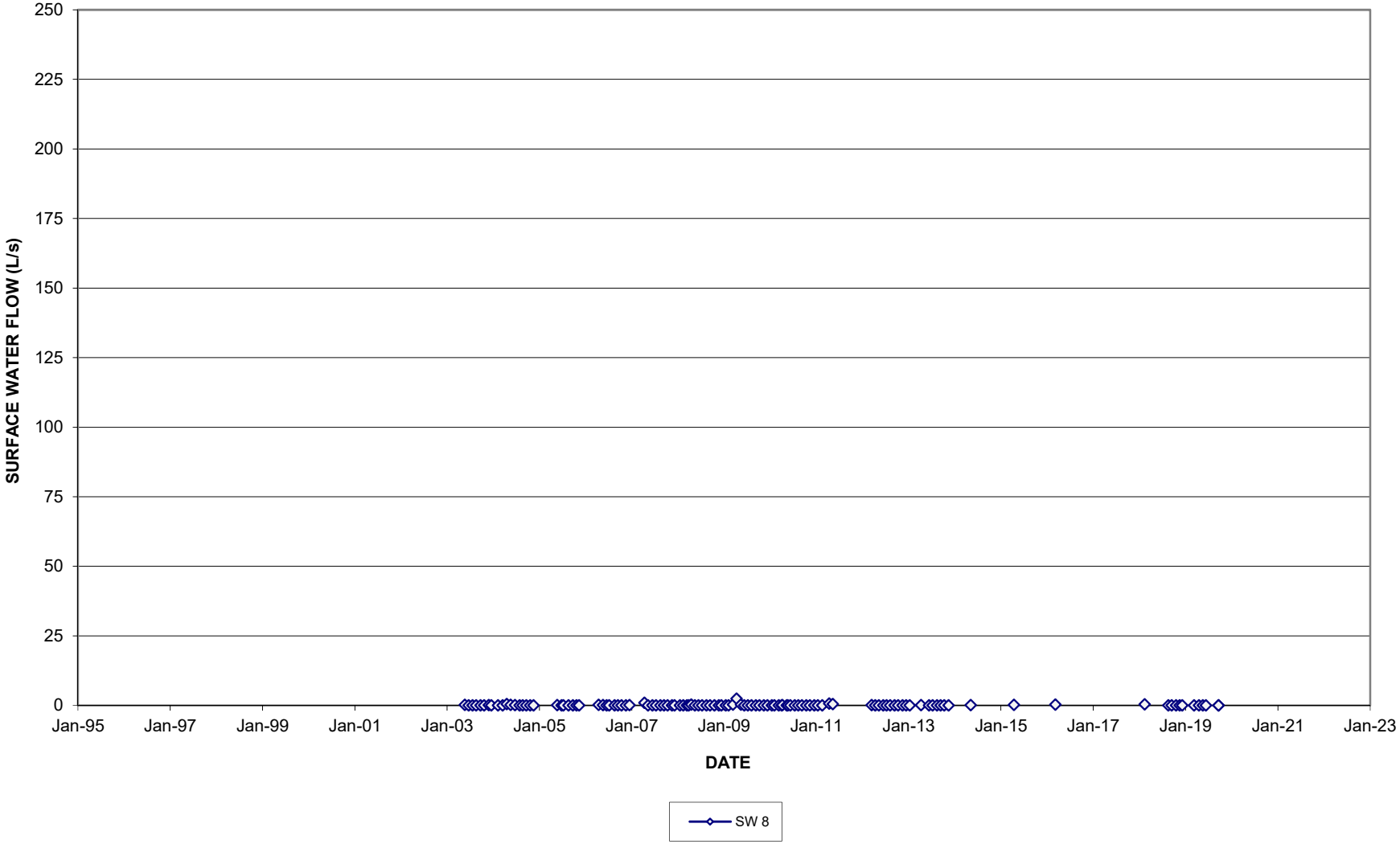


FIGURE B-15

# SURFACE WATER HYDROGRAPH
# SW9

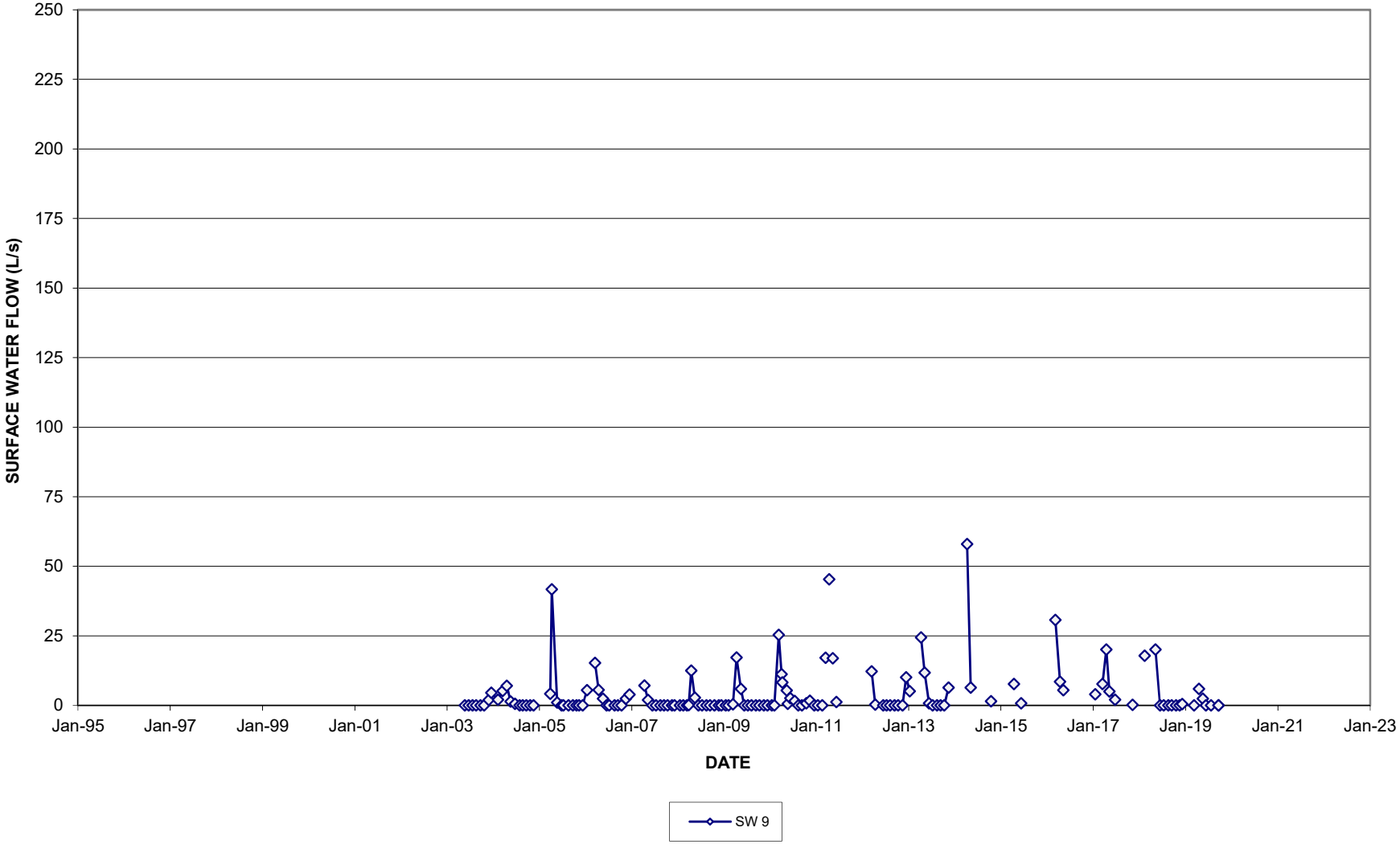


FIGURE B-15 (a)

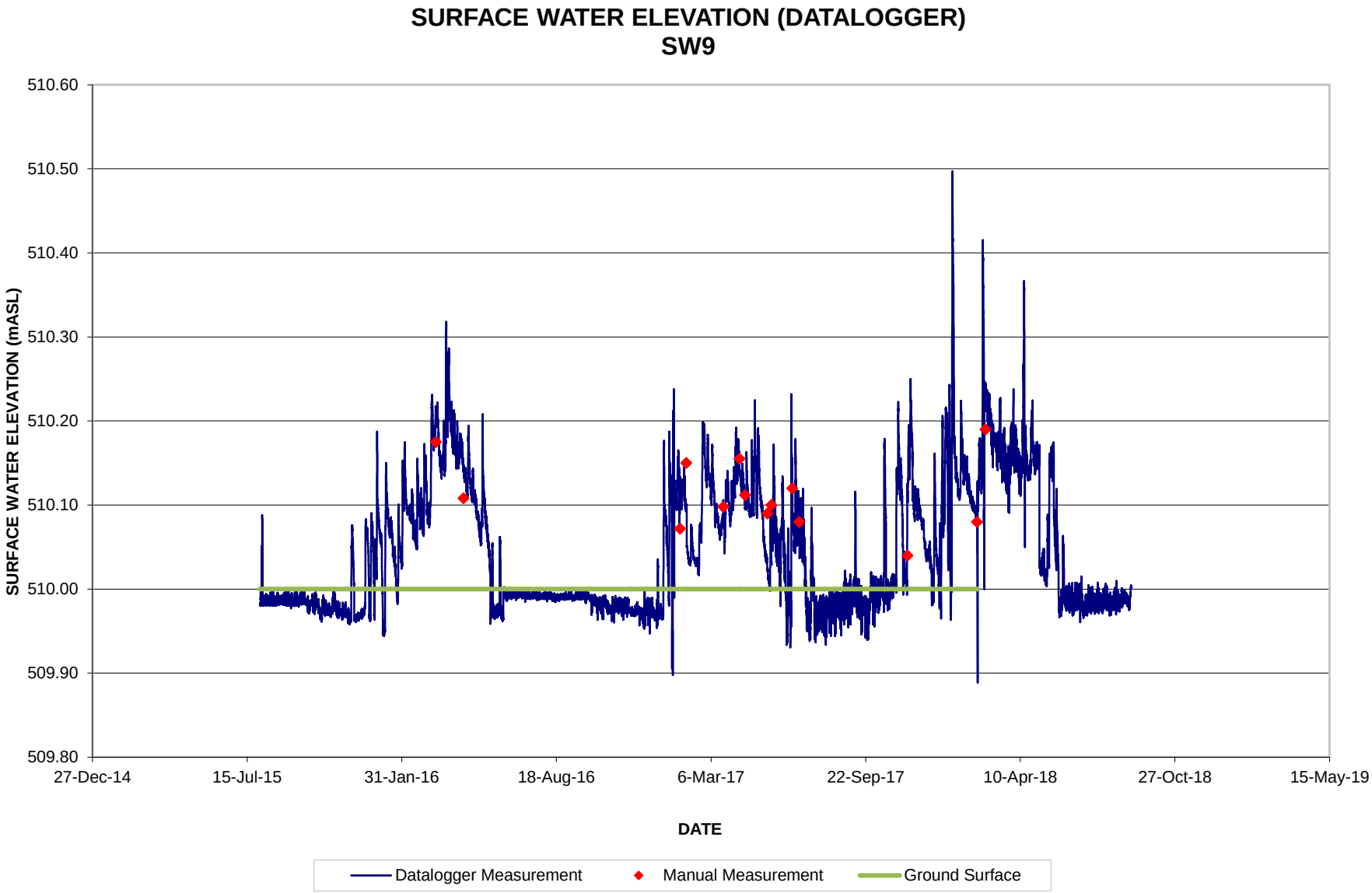

SURFACE WATER ELEVATION (DATALOGGER)
SW9
510.60
510.50
510.40
510.30
510.20
510.10
510.00
509.90
509.80
SURFACE WATER ELEVATION (mASL)
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
DATE
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-15 (b)

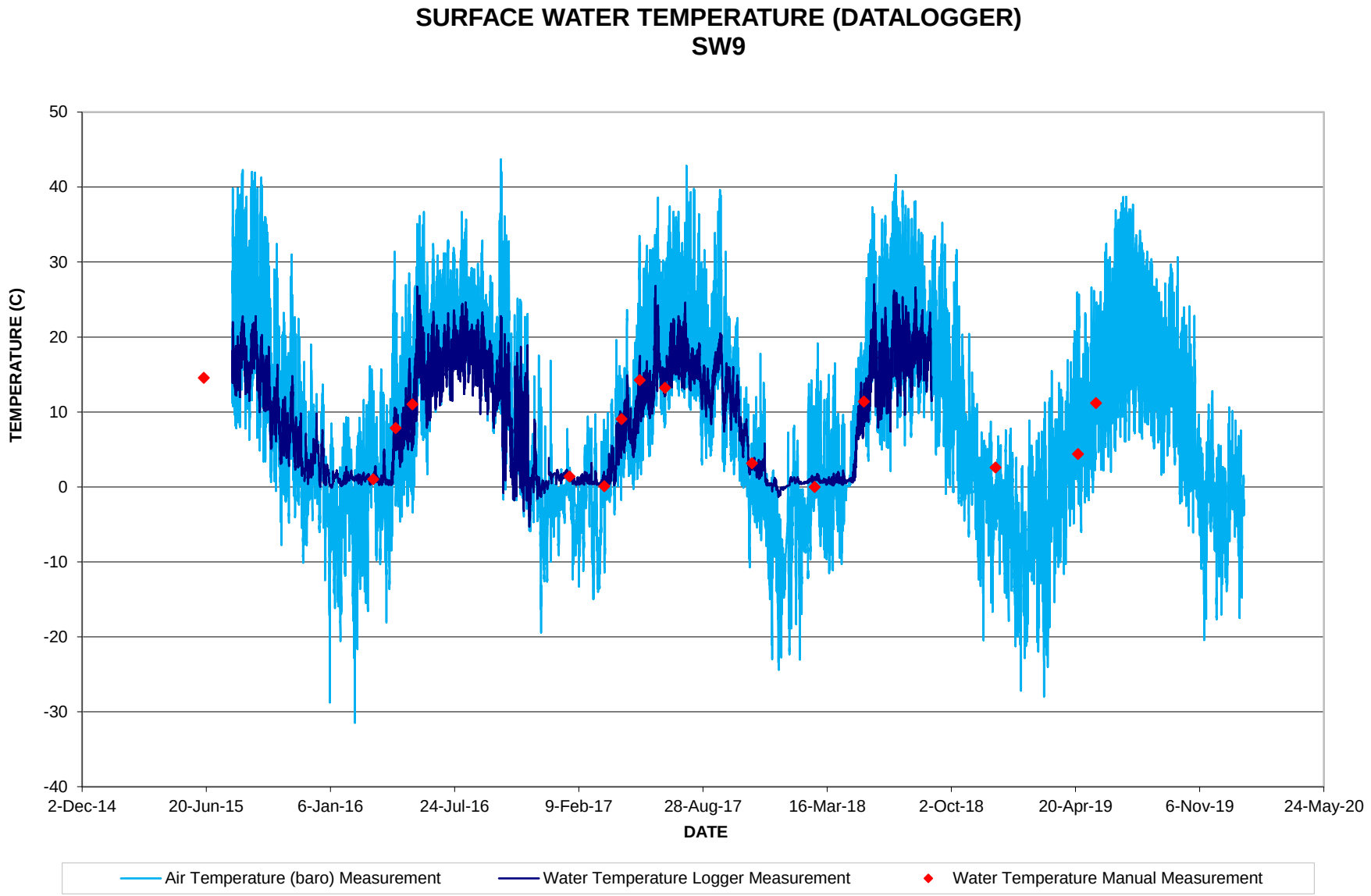

SURFACE WATER TEMPERATURE (DATALOGGER)
SW9
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
2-Dec-14
20-Jun-15
6-Jan-16
24-Jul-16
9-Feb-17
28-Aug-17
16-Mar-18
2-Oct-18
20-Apr-19
6-Nov-19
24-May-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-16

# SURFACE WATER HYDROGRAPH
# SW10

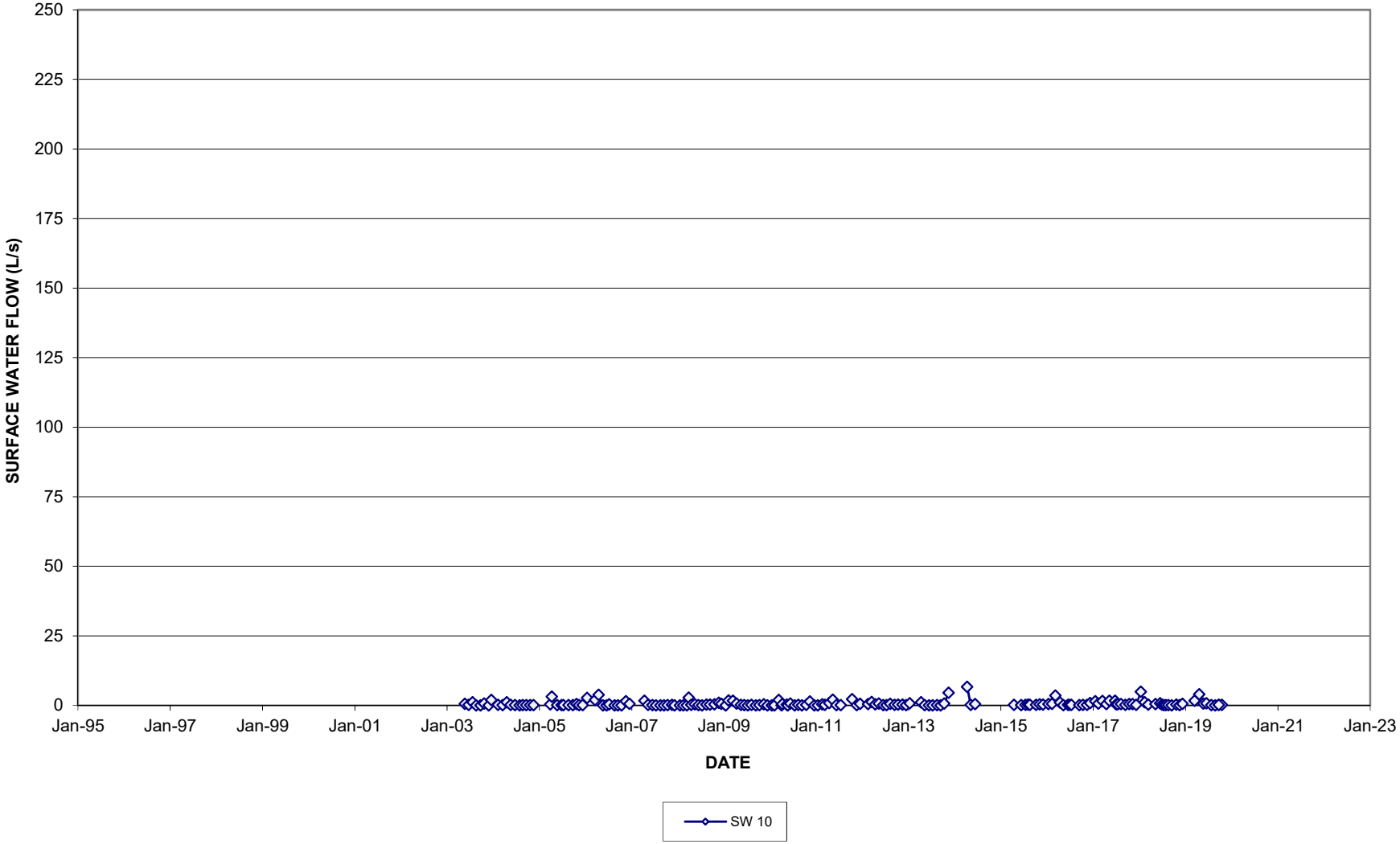


FIGURE B-17

# SURFACE WATER HYDROGRAPH
# SW11

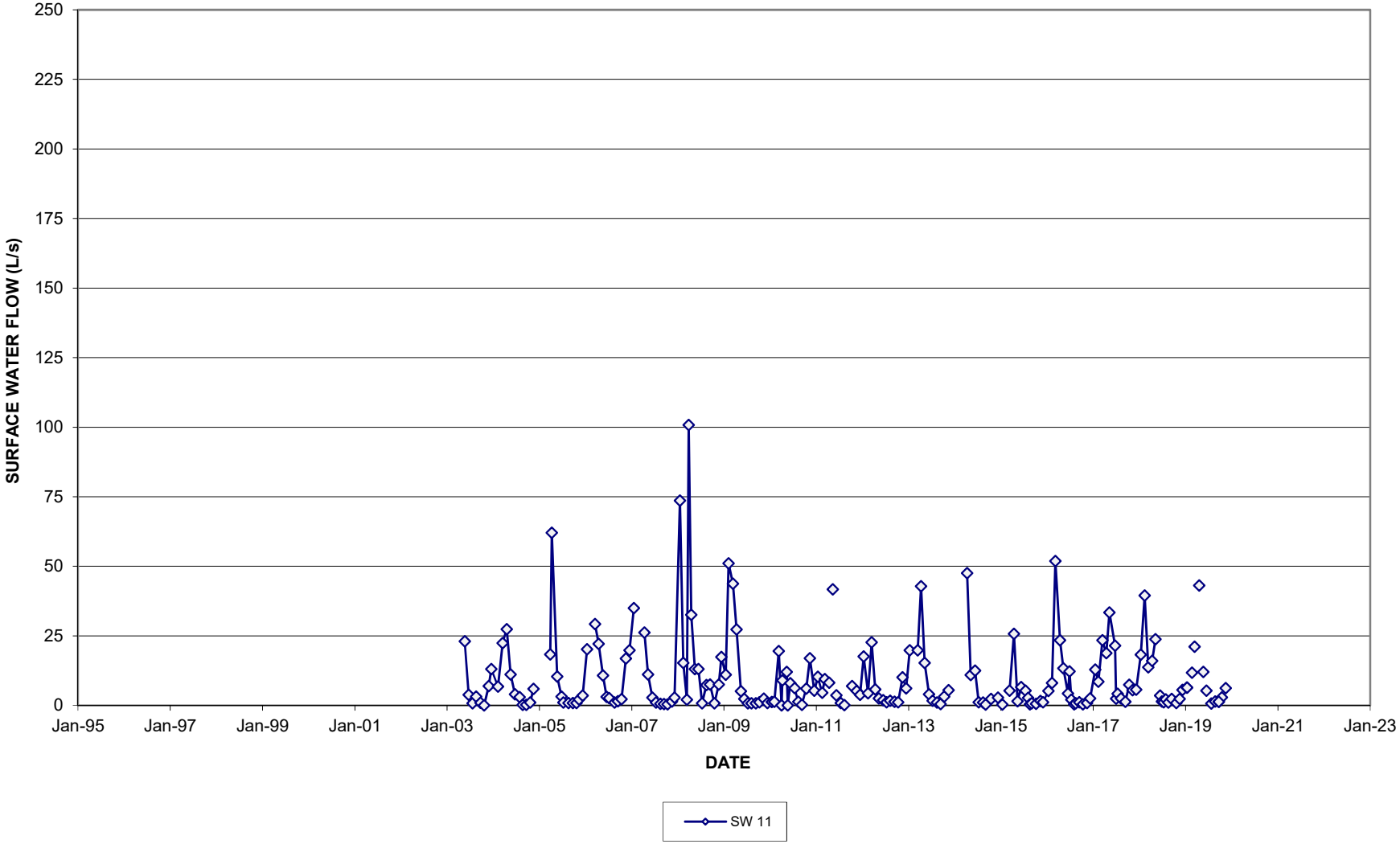


FIGURE B-18

# SURFACE WATER HYDROGRAPH
# SW11A

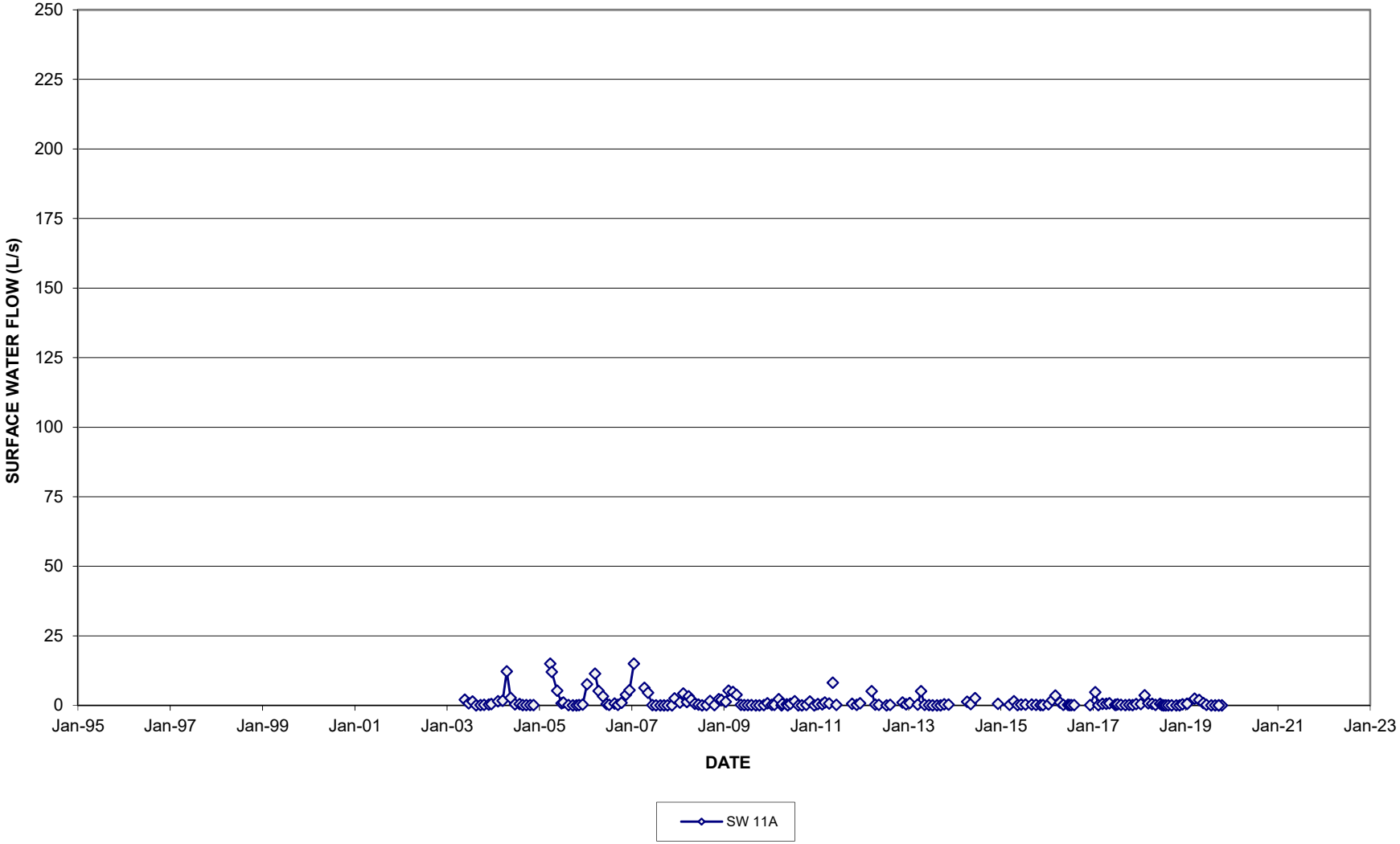


FIGURE B-19

# SURFACE WATER HYDROGRAPH
# SW11B

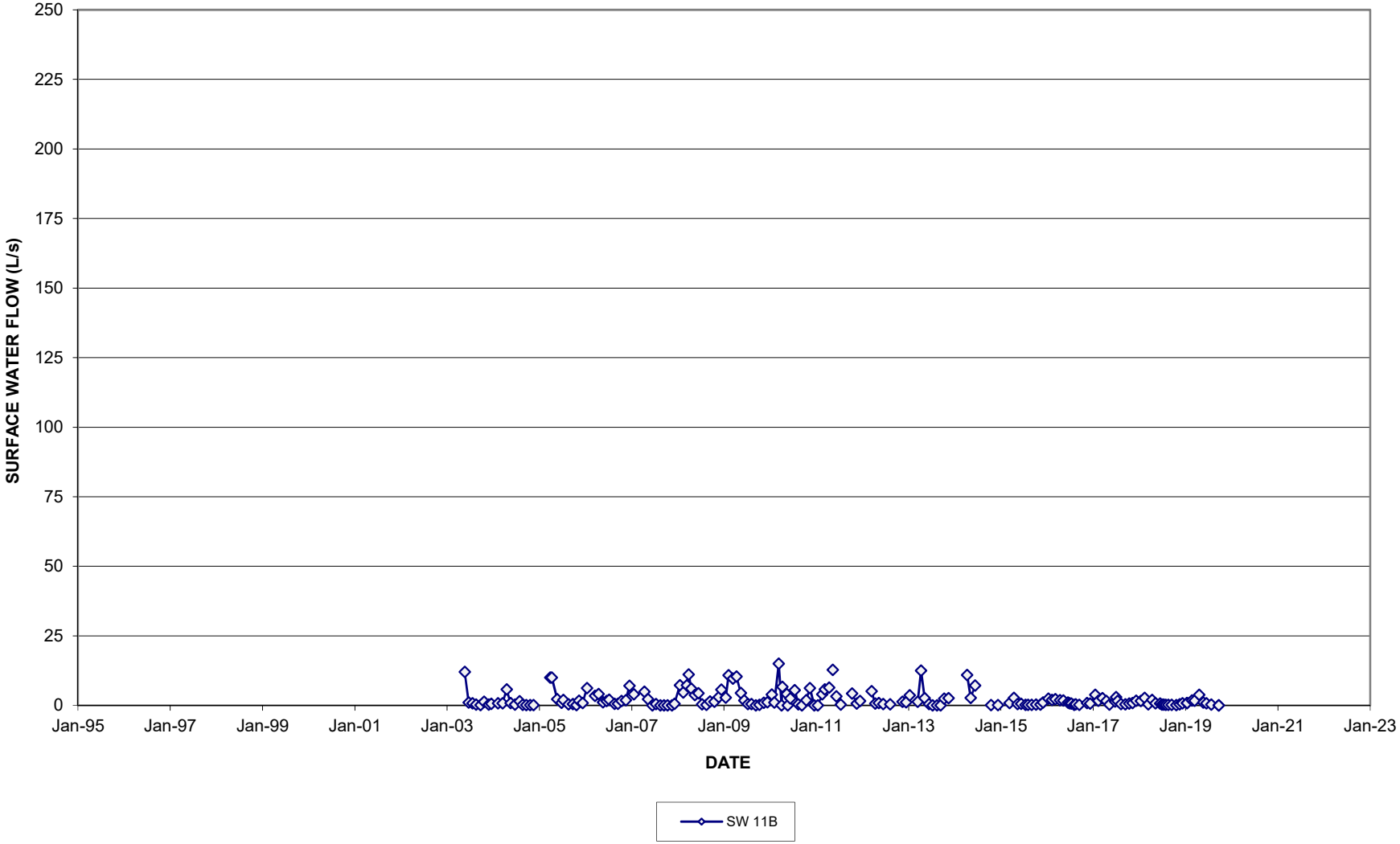


FIGURE B-20

# SURFACE WATER HYDROGRAPH
# SW11C

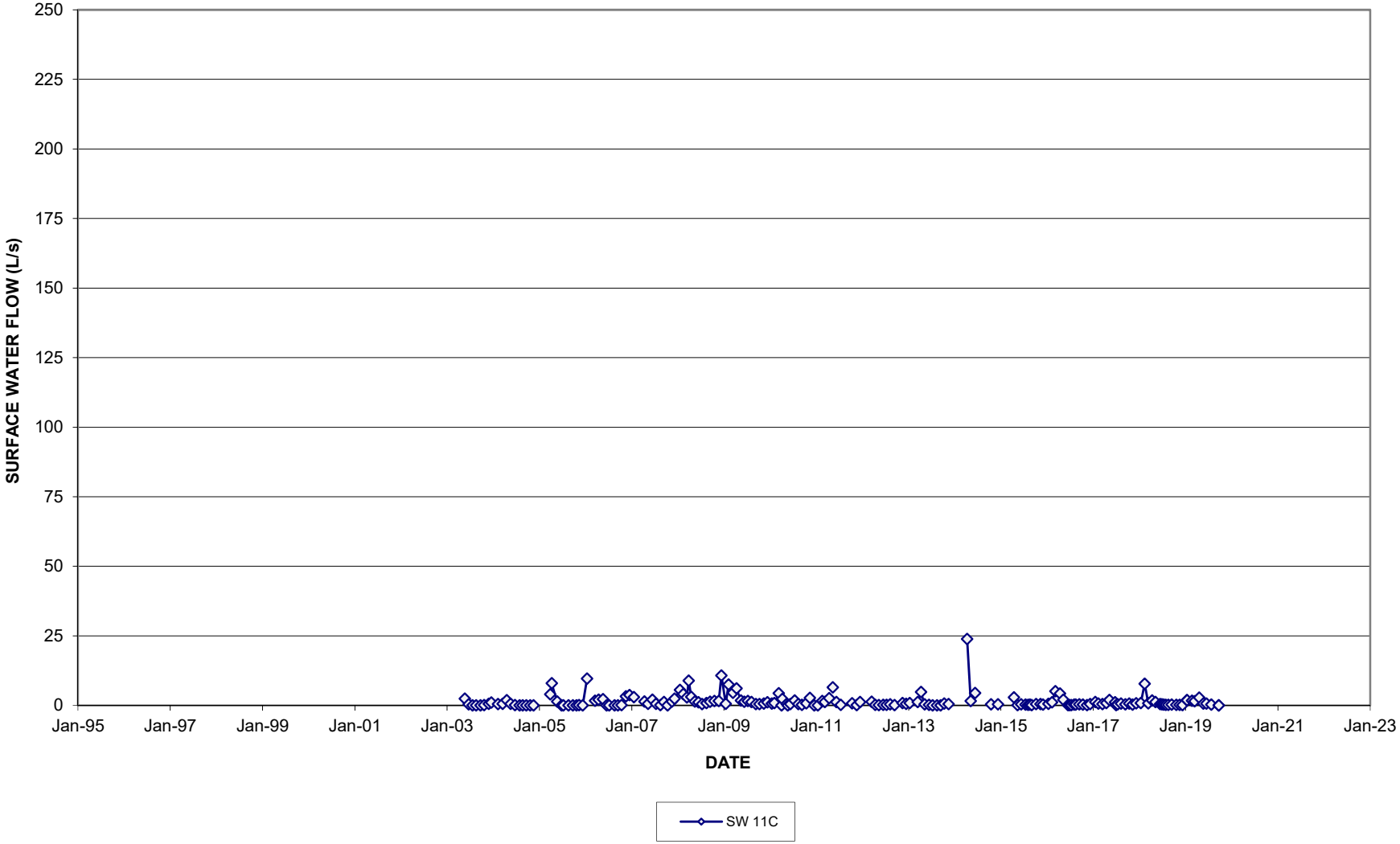


FIGURE B-21

# SURFACE WATER HYDROGRAPH
# SW11D

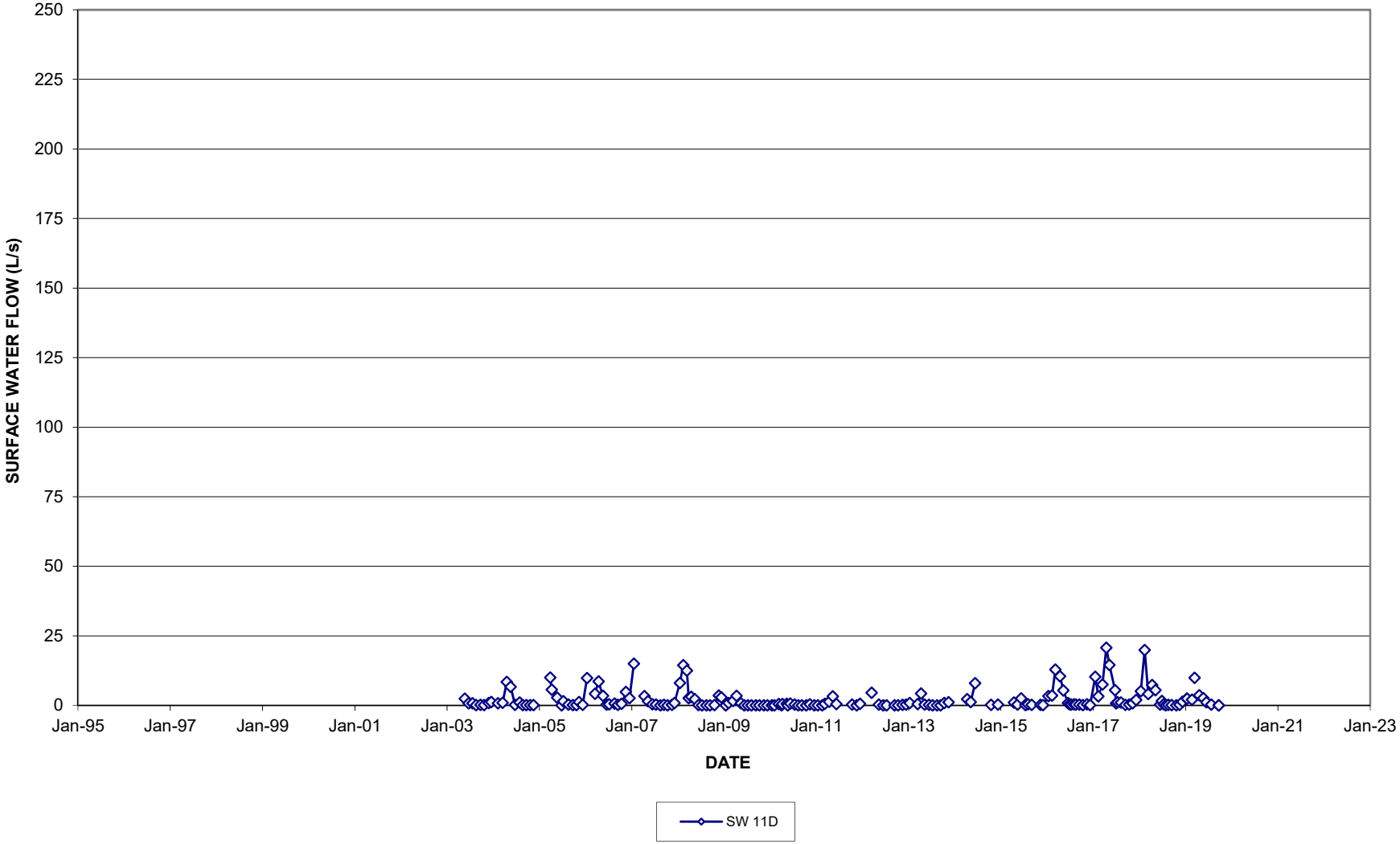


FIGURE B-22

# SURFACE WATER HYDROGRAPH
# SW11E

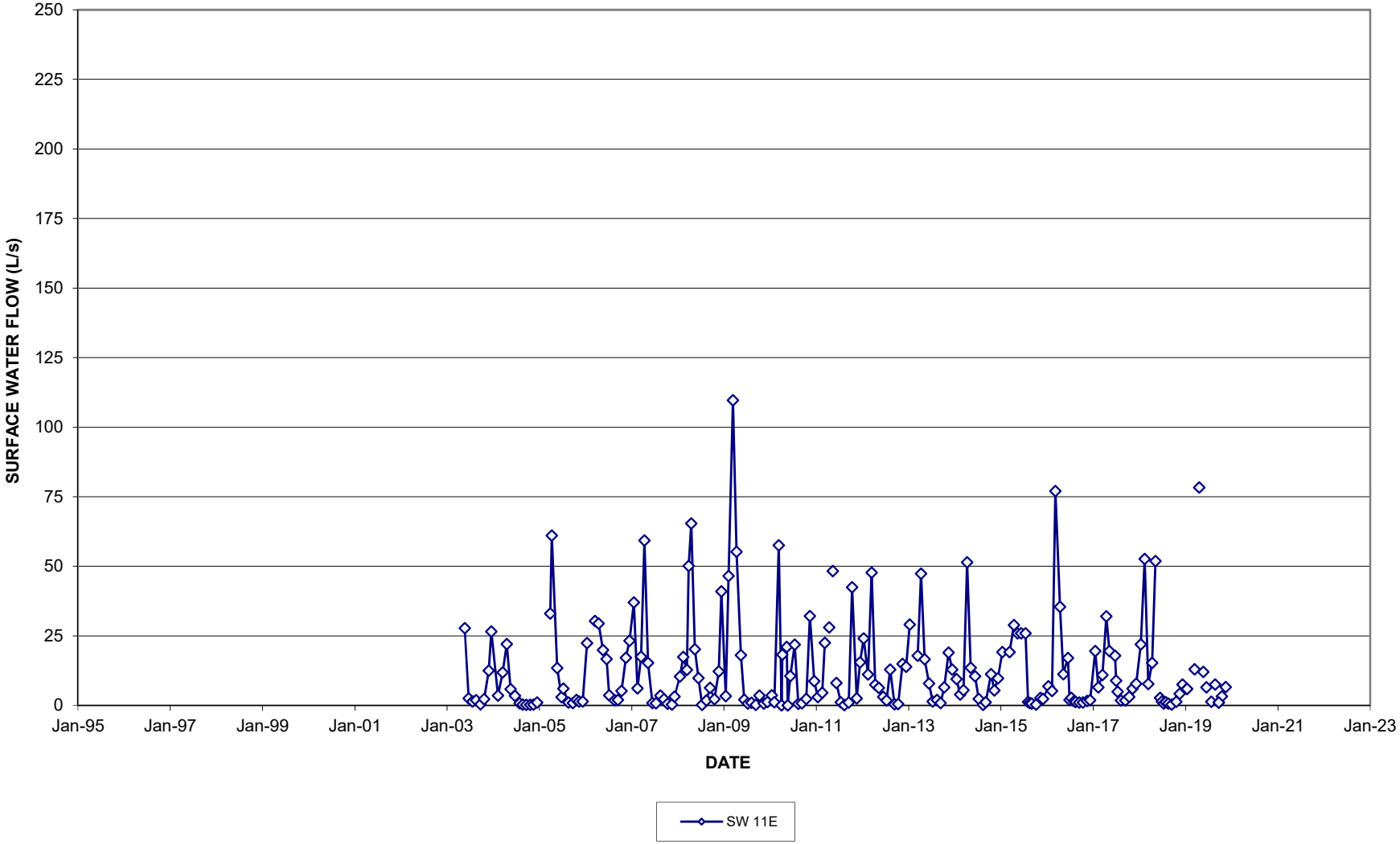


FIGURE B-23

# SURFACE WATER HYDROGRAPH
# SW12

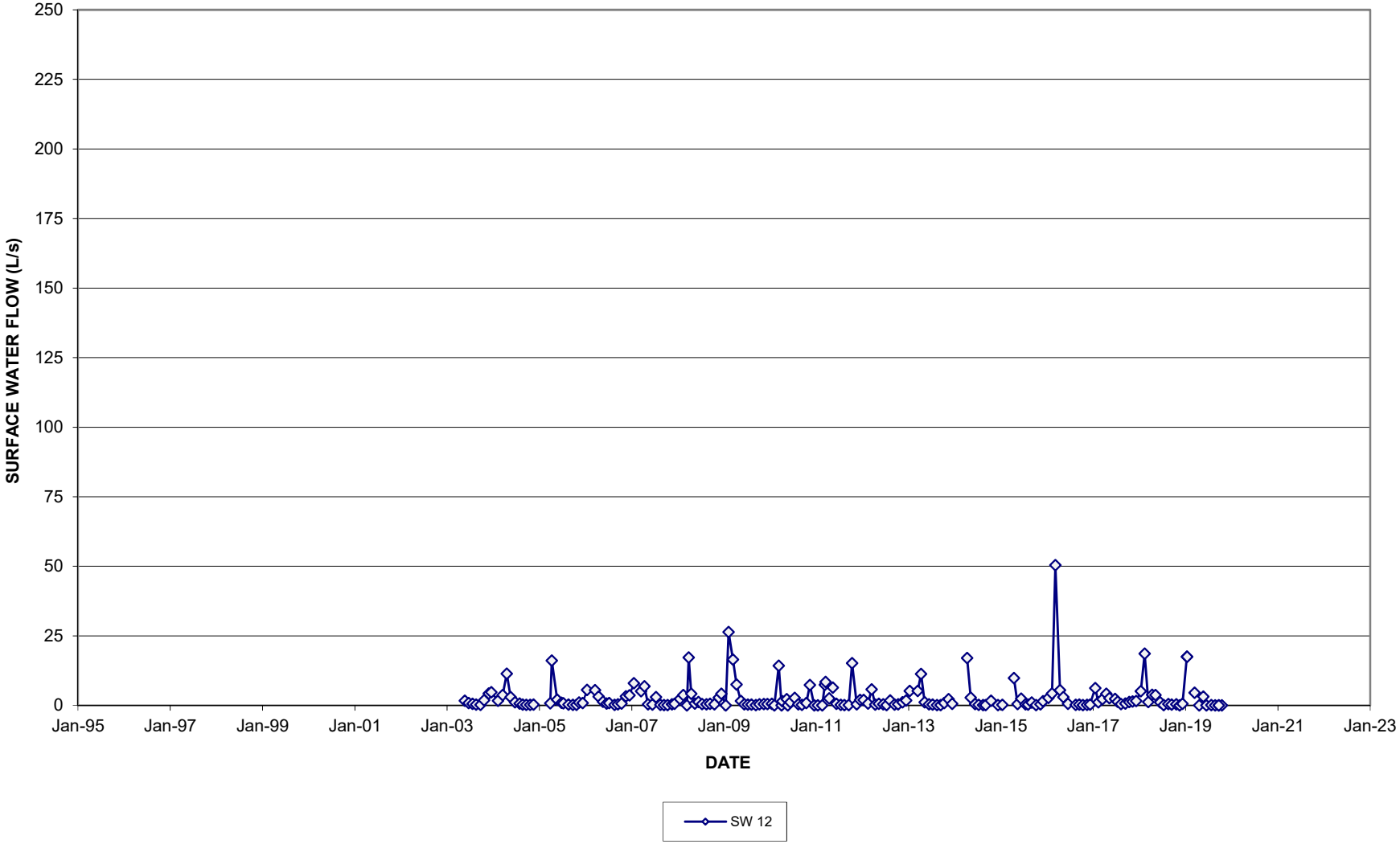


FIGURE B-24

# SURFACE WATER HYDROGRAPH
# SW12A

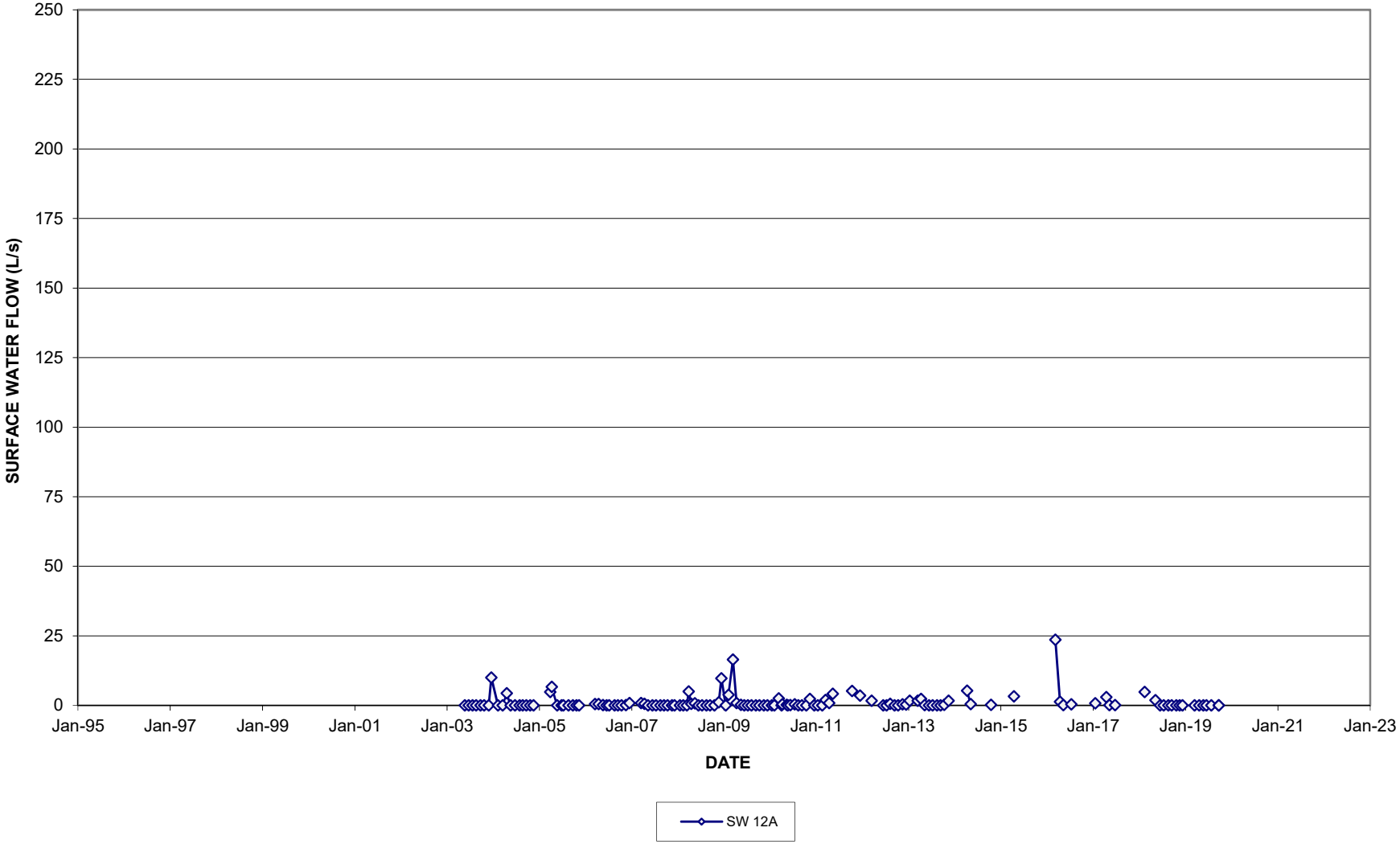


FIGURE B-25

# SURFACE WATER HYDROGRAPH
# SW13

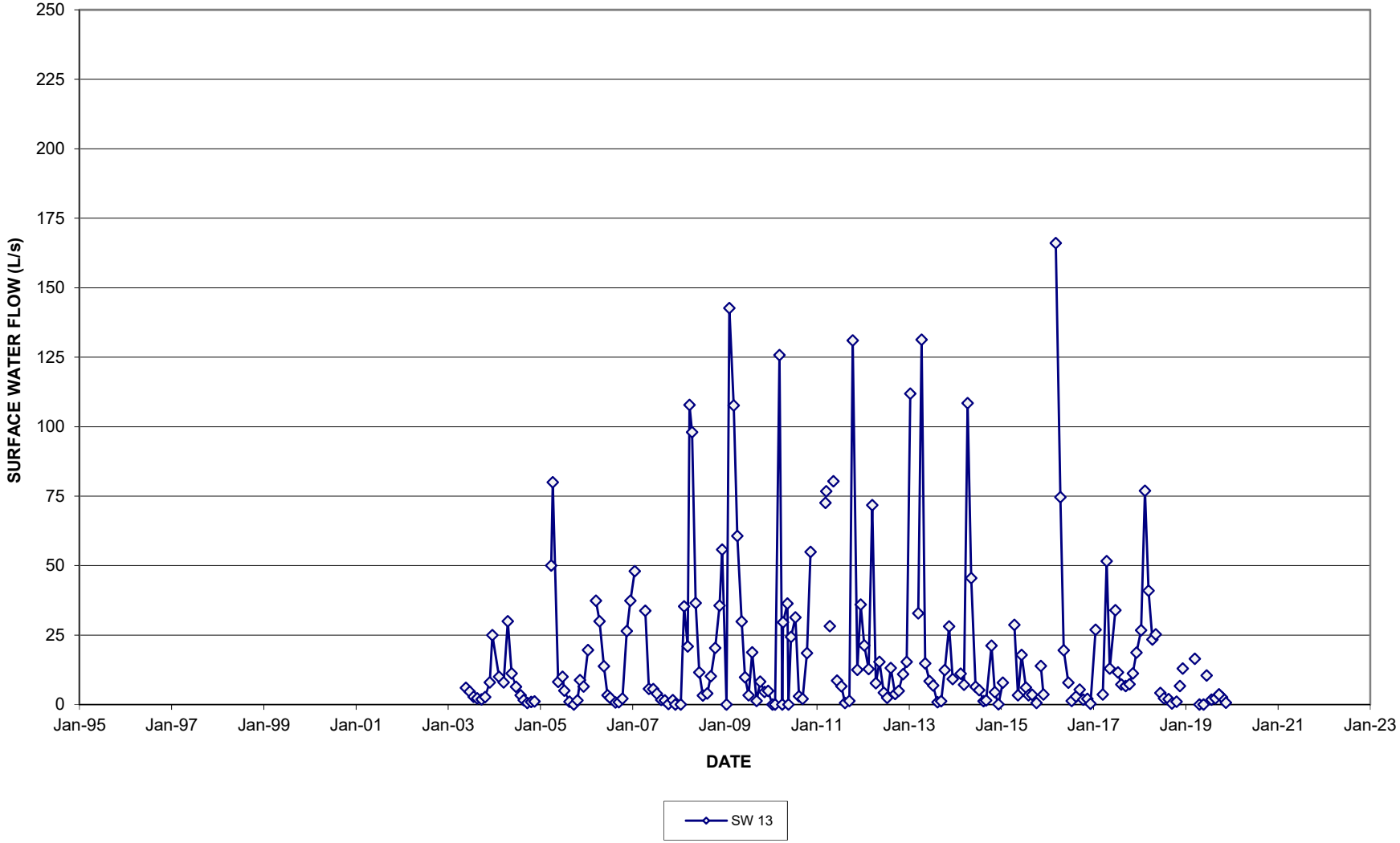


FIGURE B-26

# SURFACE WATER HYDROGRAPH
# SW14

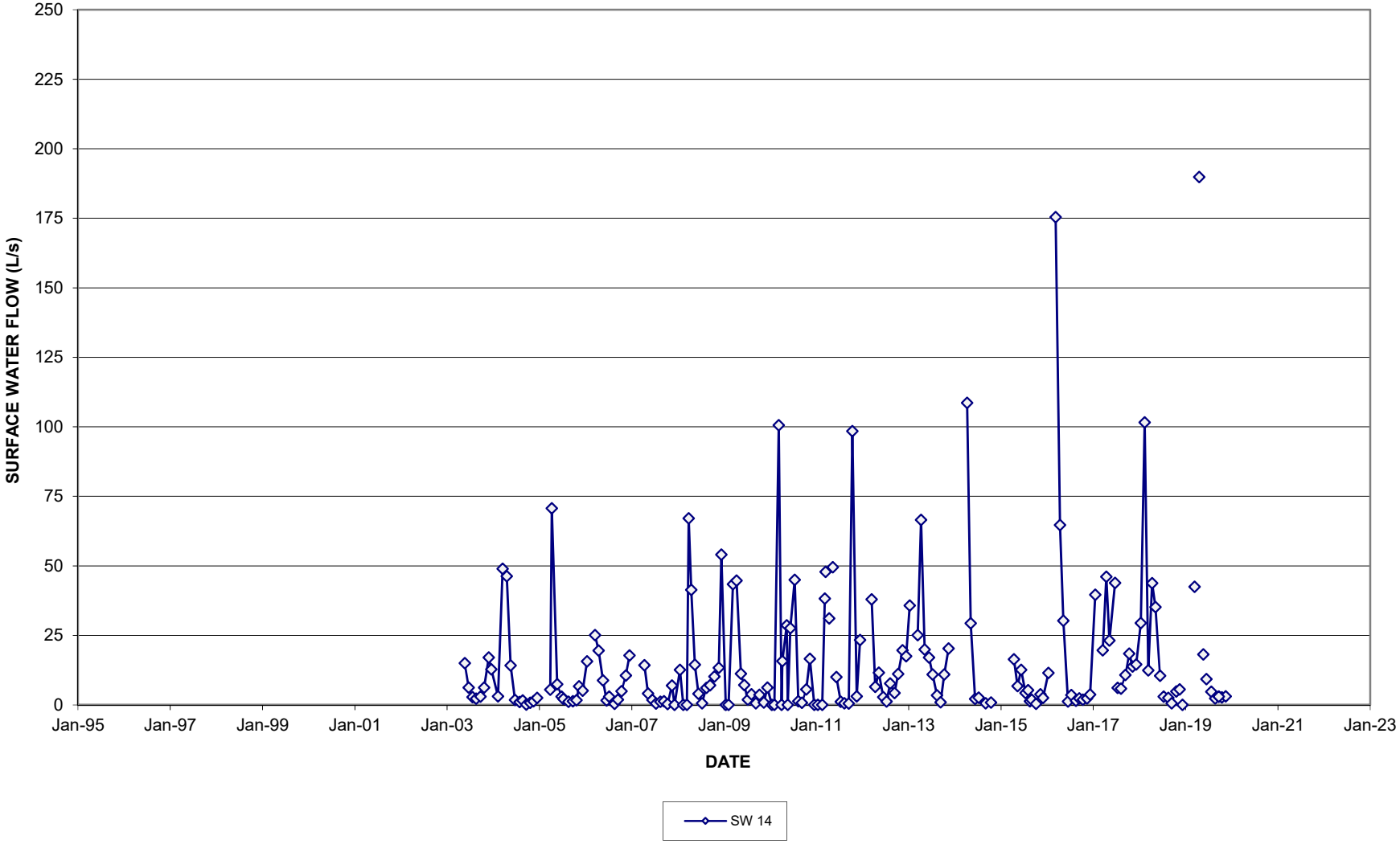


FIGURE B-27

# SURFACE WATER HYDROGRAPH
# SW15

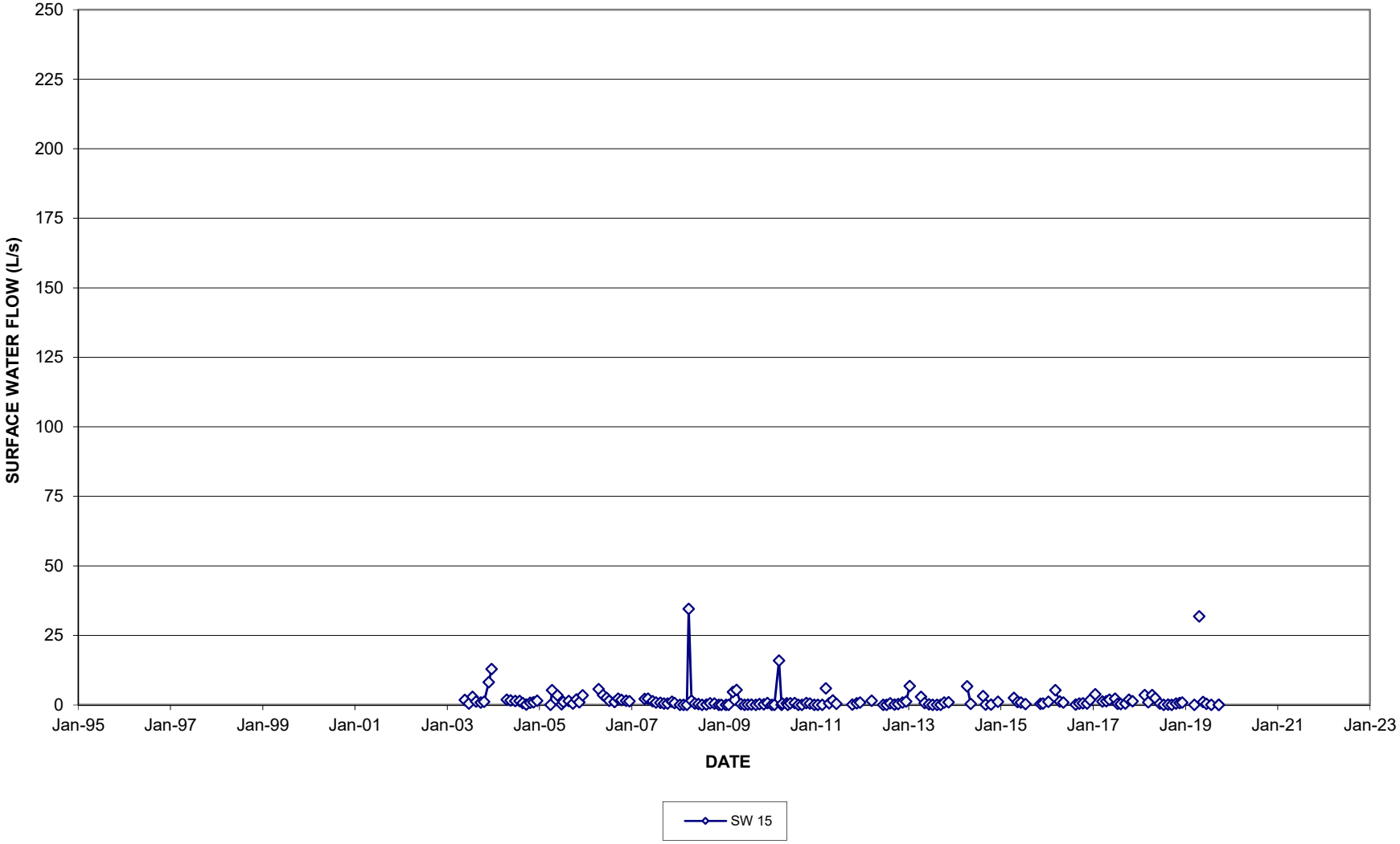


FIGURE B-27 (a)

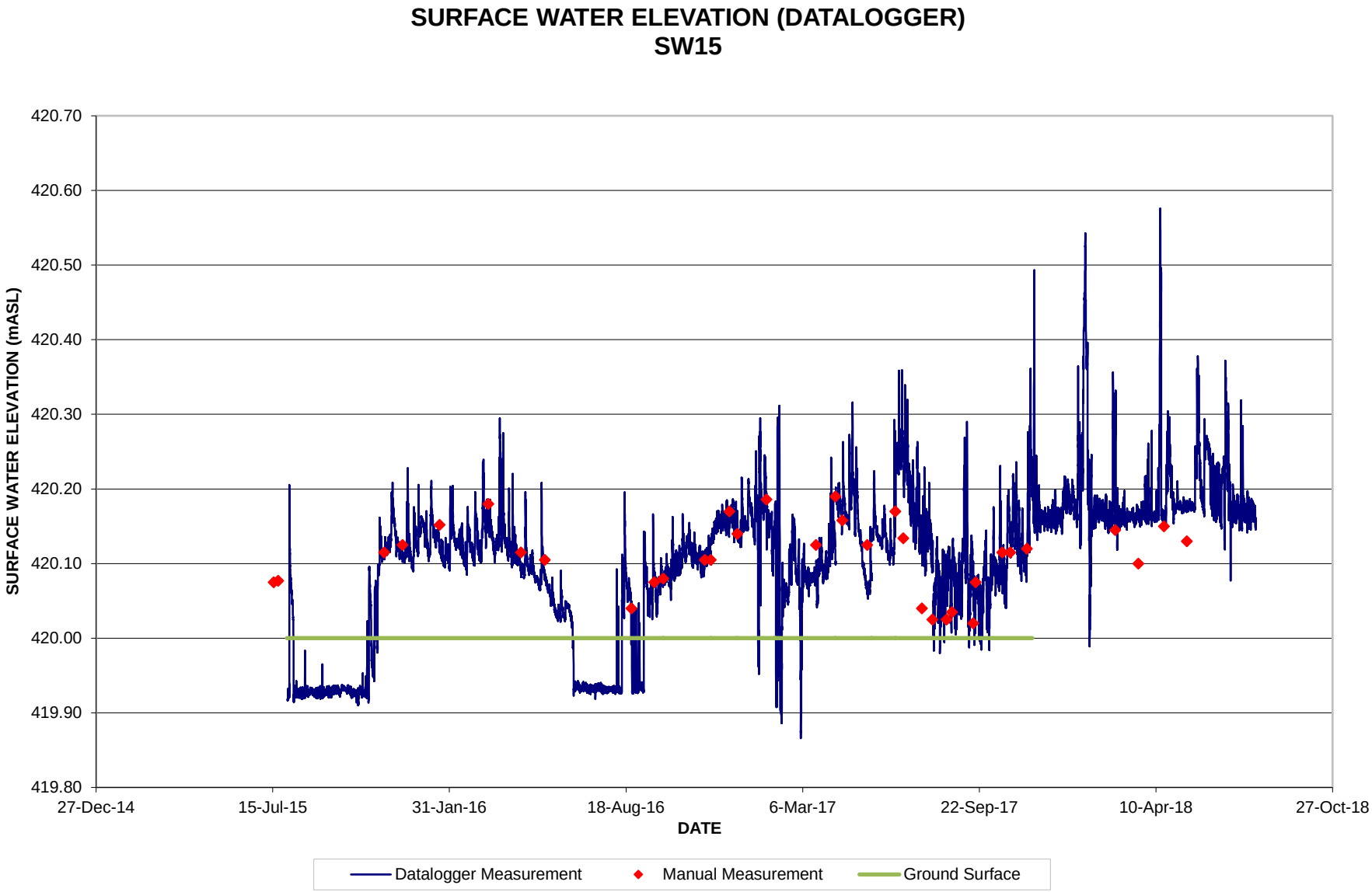

SURFACE WATER ELEVATION (DATALOGGER)
SW15
SURFACE WATER ELEVATION (mASL)
420.70
420.60
420.50
420.40
420.30
420.20
420.10
420.00
419.90
419.80
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
DATE
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-27 (b)

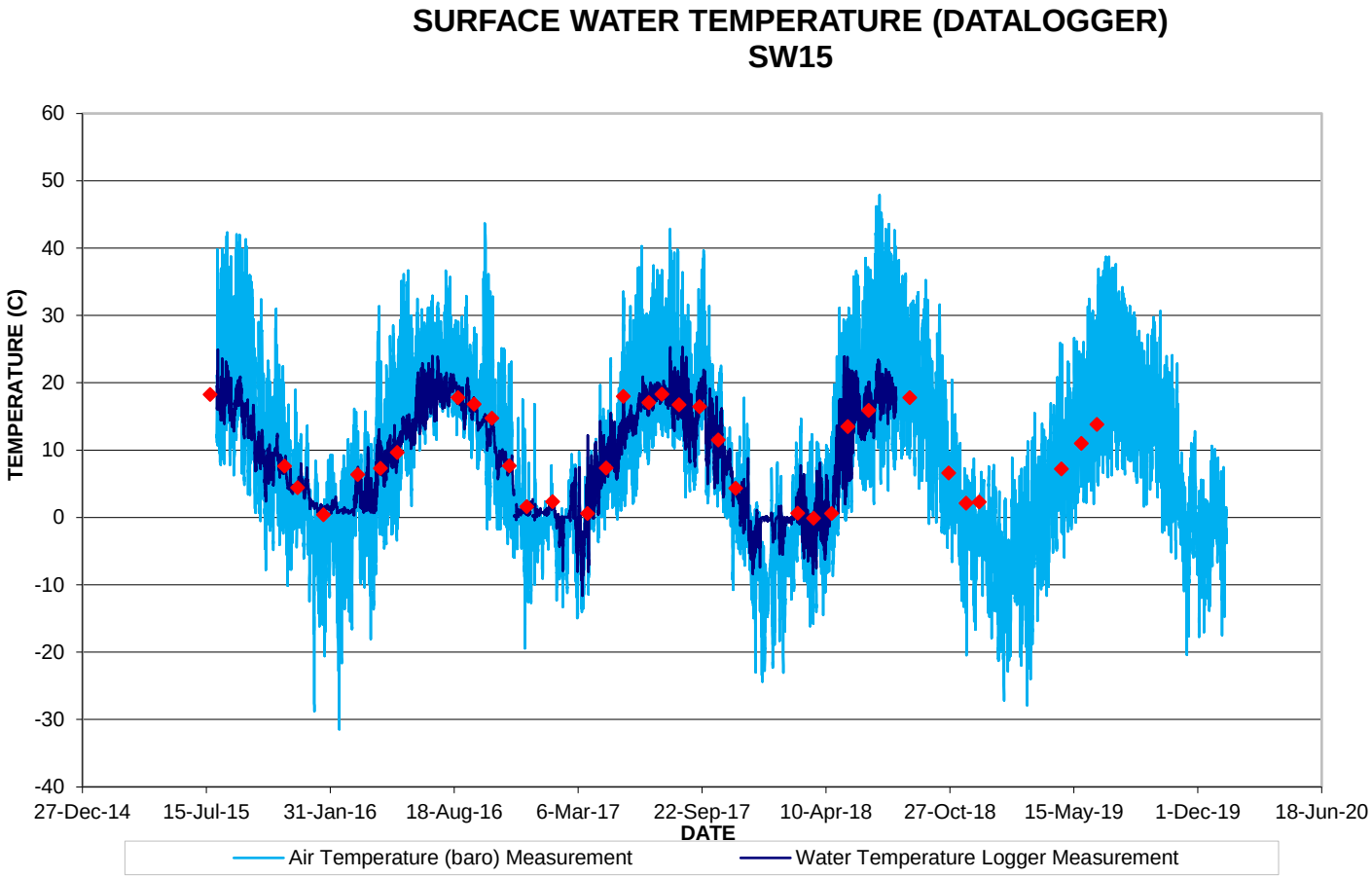

SURFACE WATER TEMPERATURE (DATALOGGER)
SW15
TEMPERATURE (C)
60
50
40
30
20
10
0
-10
-20
-30
-40
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
1-Dec-19
18-Jun-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement

FIGURE B-28

# SURFACE WATER HYDROGRAPH
# SW16

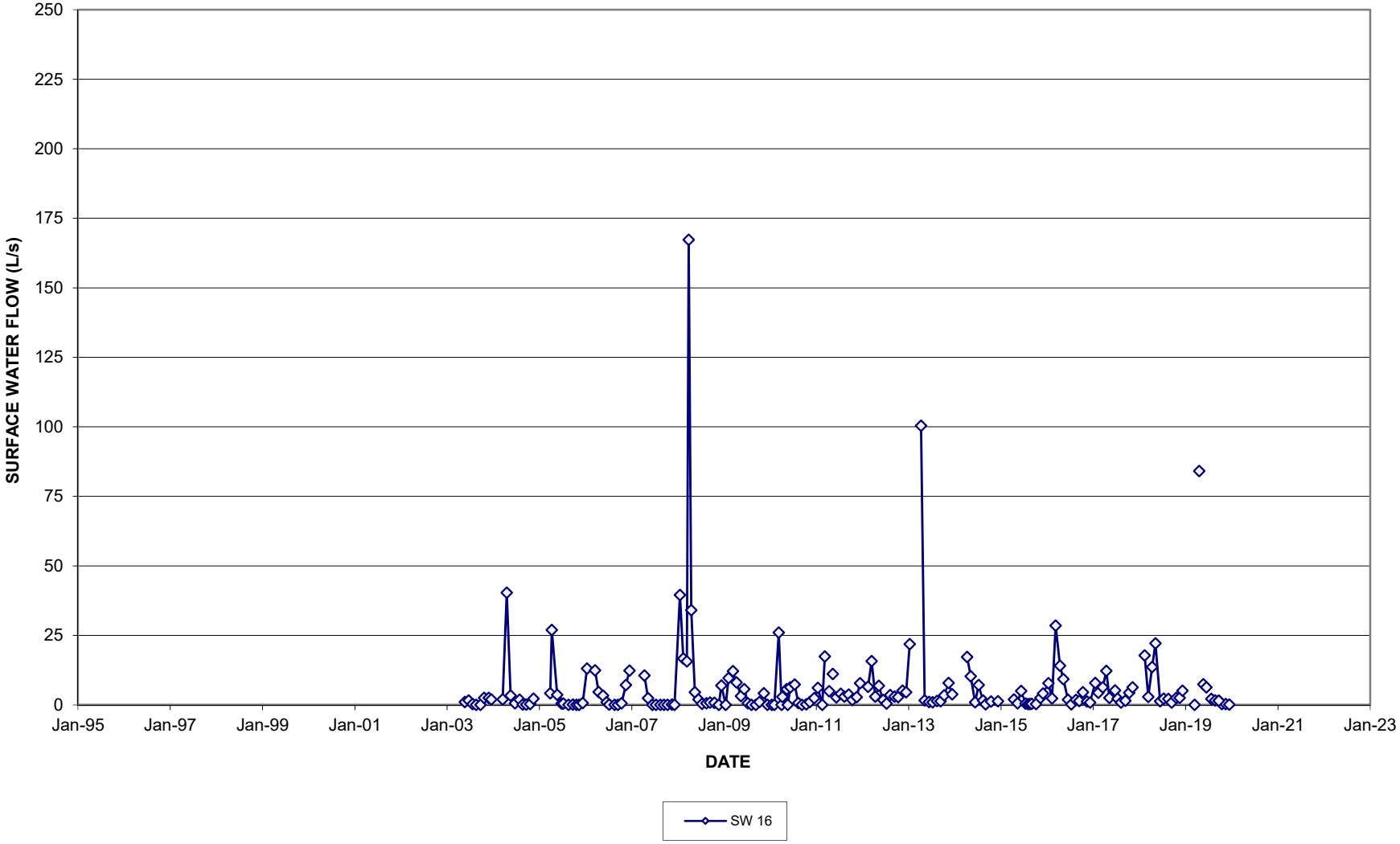


FIGURE B-28 (a)

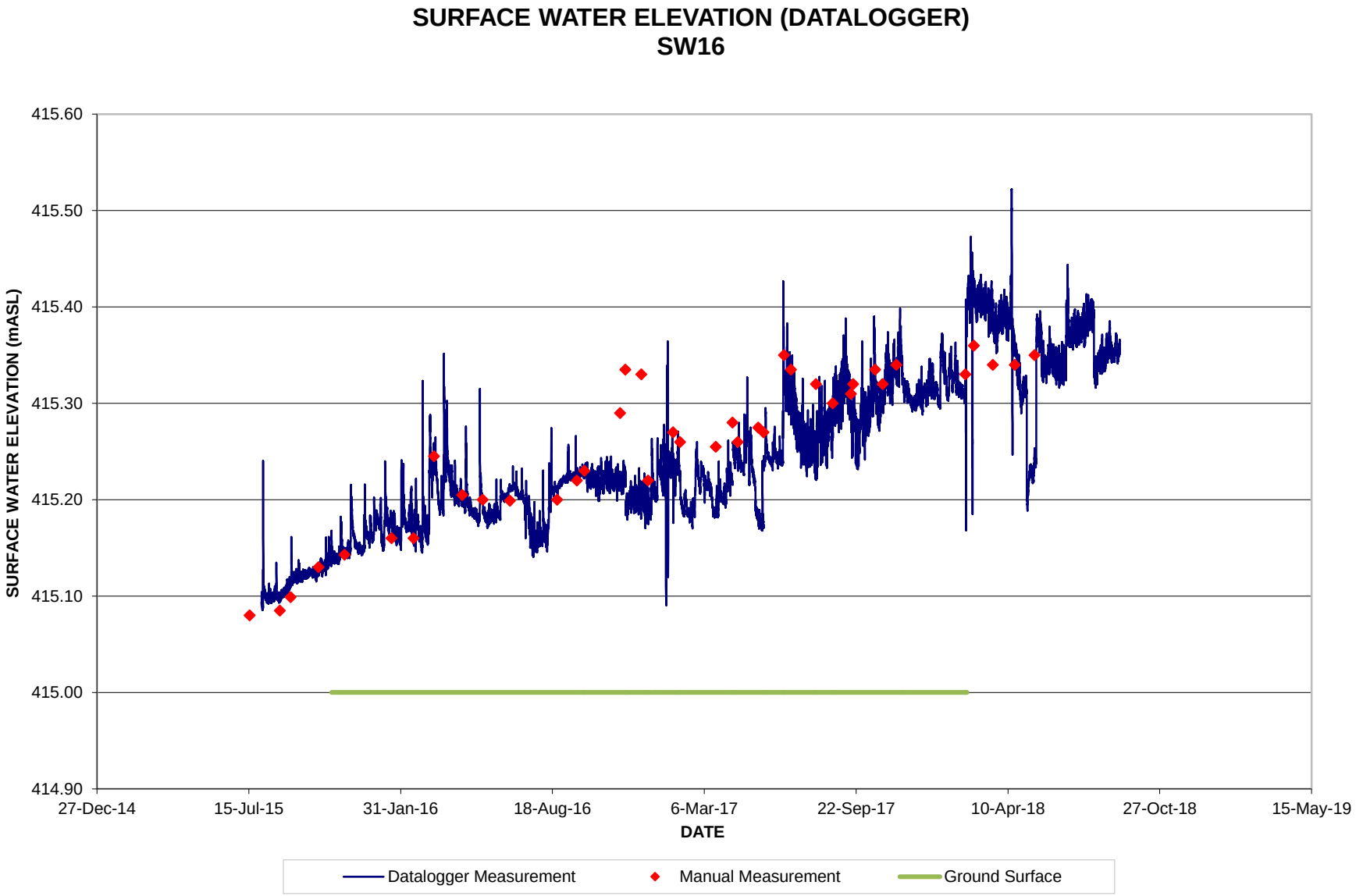

SURFACE WATER ELEVATION (DATALOGGER)
SW16
SURFACE WATER ELEVATION (mASL)
415.60
415.50
415.40
415.30
415.20
415.10
415.00
414.90
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
DATE
Datalogger Measurement
Manual Measurement
Ground Surface

FIGURE B-28 (b)

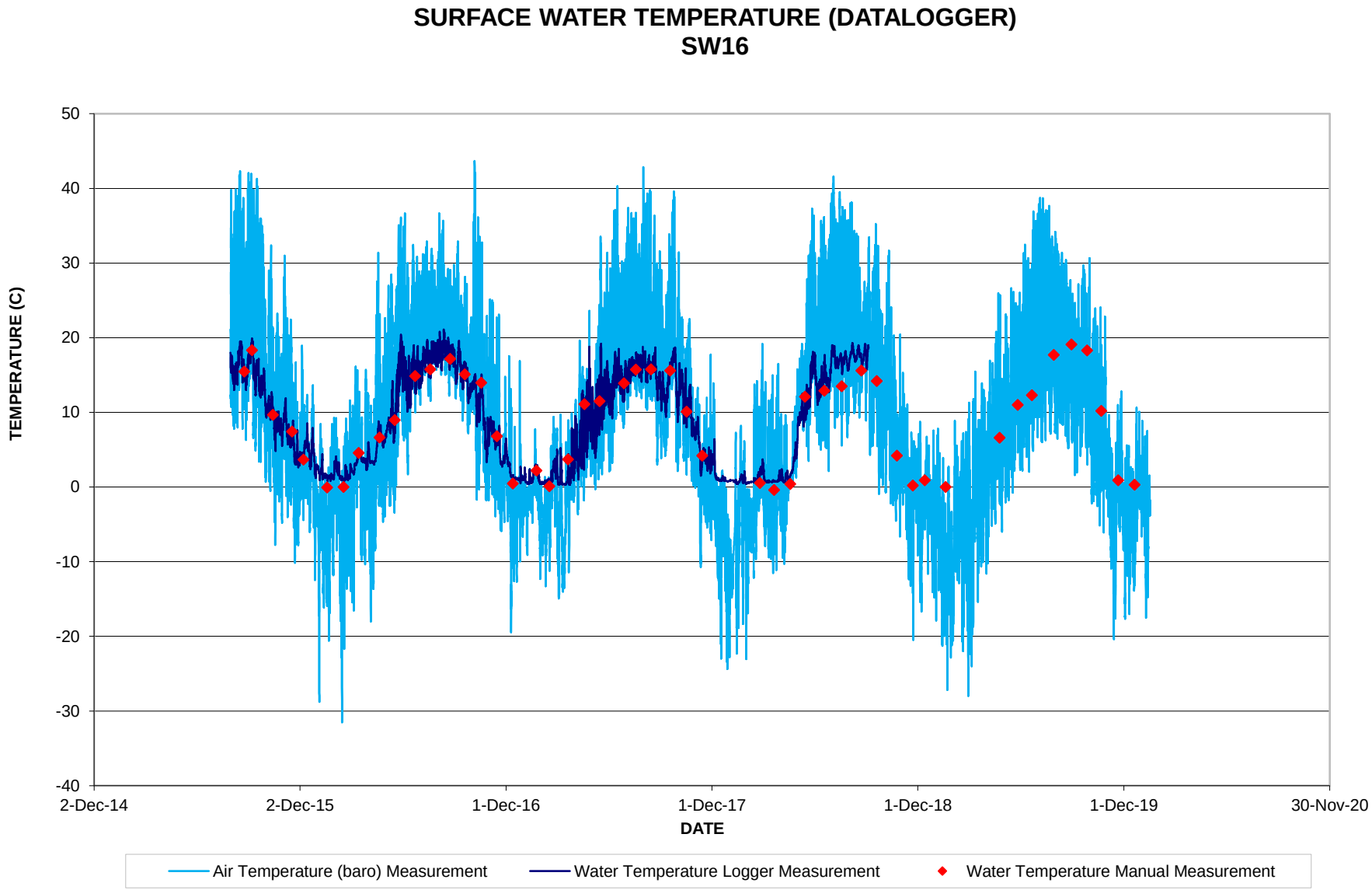

SURFACE WATER TEMPERATURE (DATALOGGER)
SW16
TEMPERATURE (C)
50
40
30
20
10
0
-10
-20
-30
-40
2-Dec-14
2-Dec-15
1-Dec-16
1-Dec-17
1-Dec-18
1-Dec-19
30-Nov-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-29

# SURFACE WATER HYDROGRAPH
# SW17

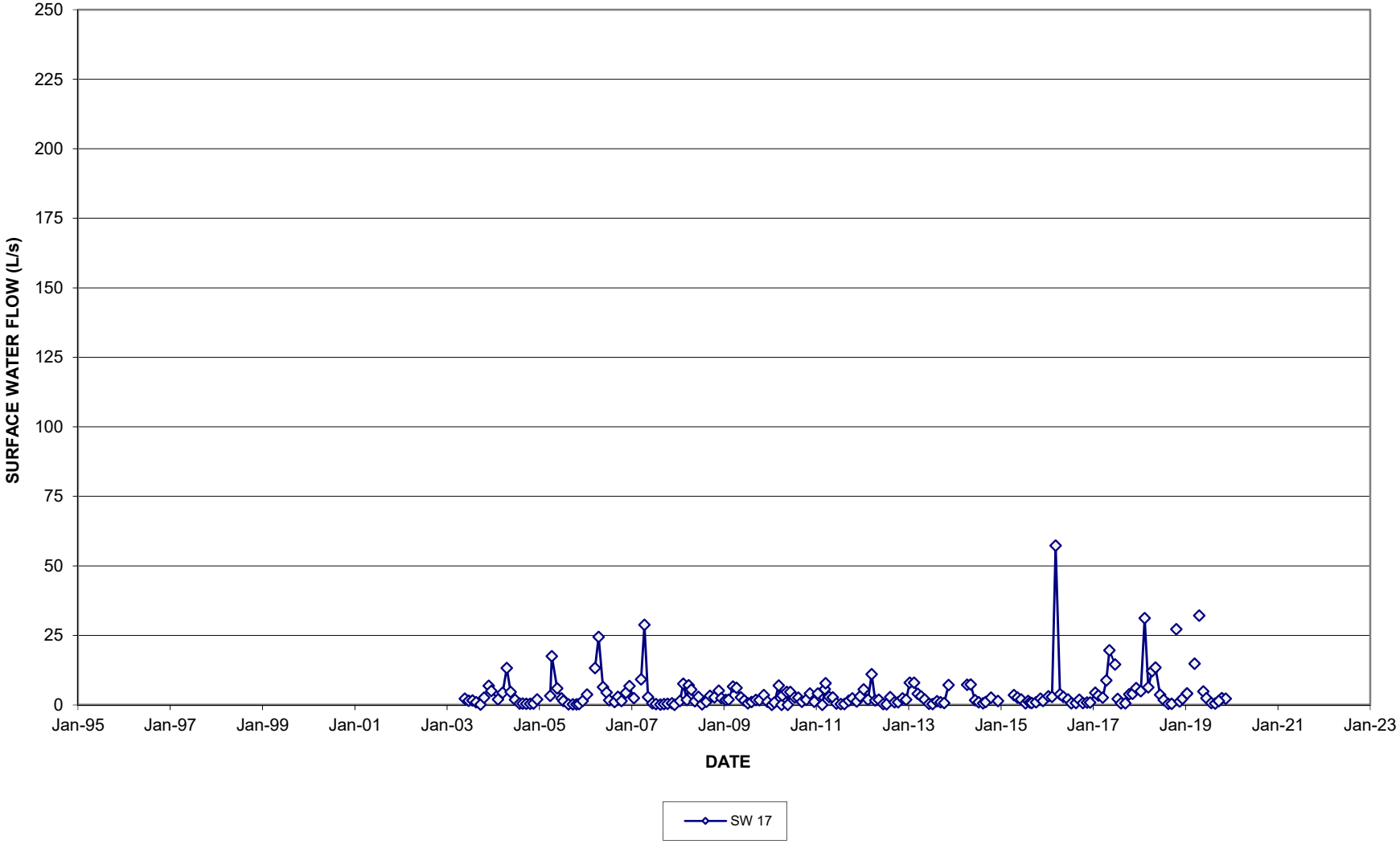


FIGURE B-30

# SURFACE WATER HYDROGRAPH
# SW17A

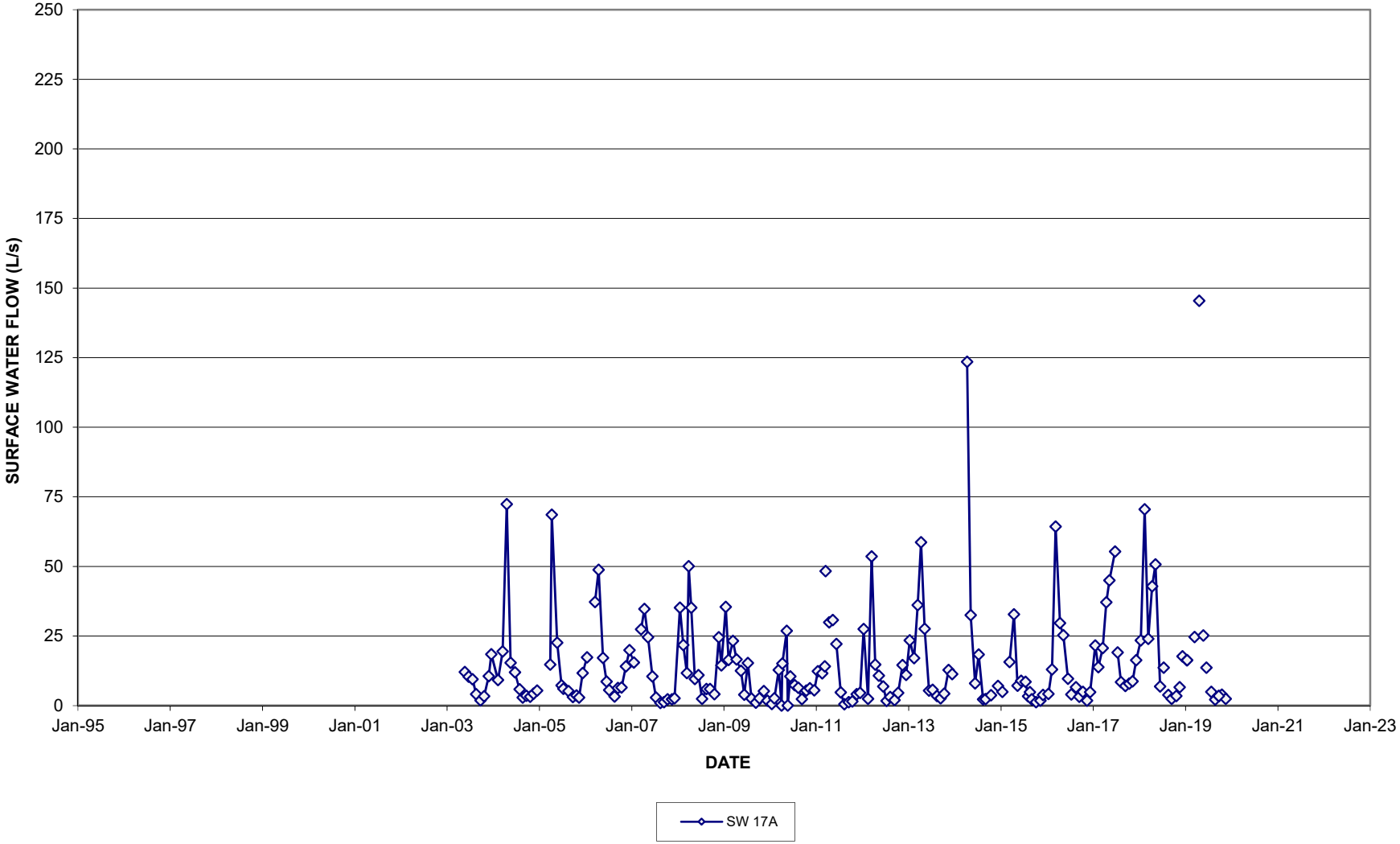


FIGURE B-31

# SURFACE WATER HYDROGRAPH
# SW17B

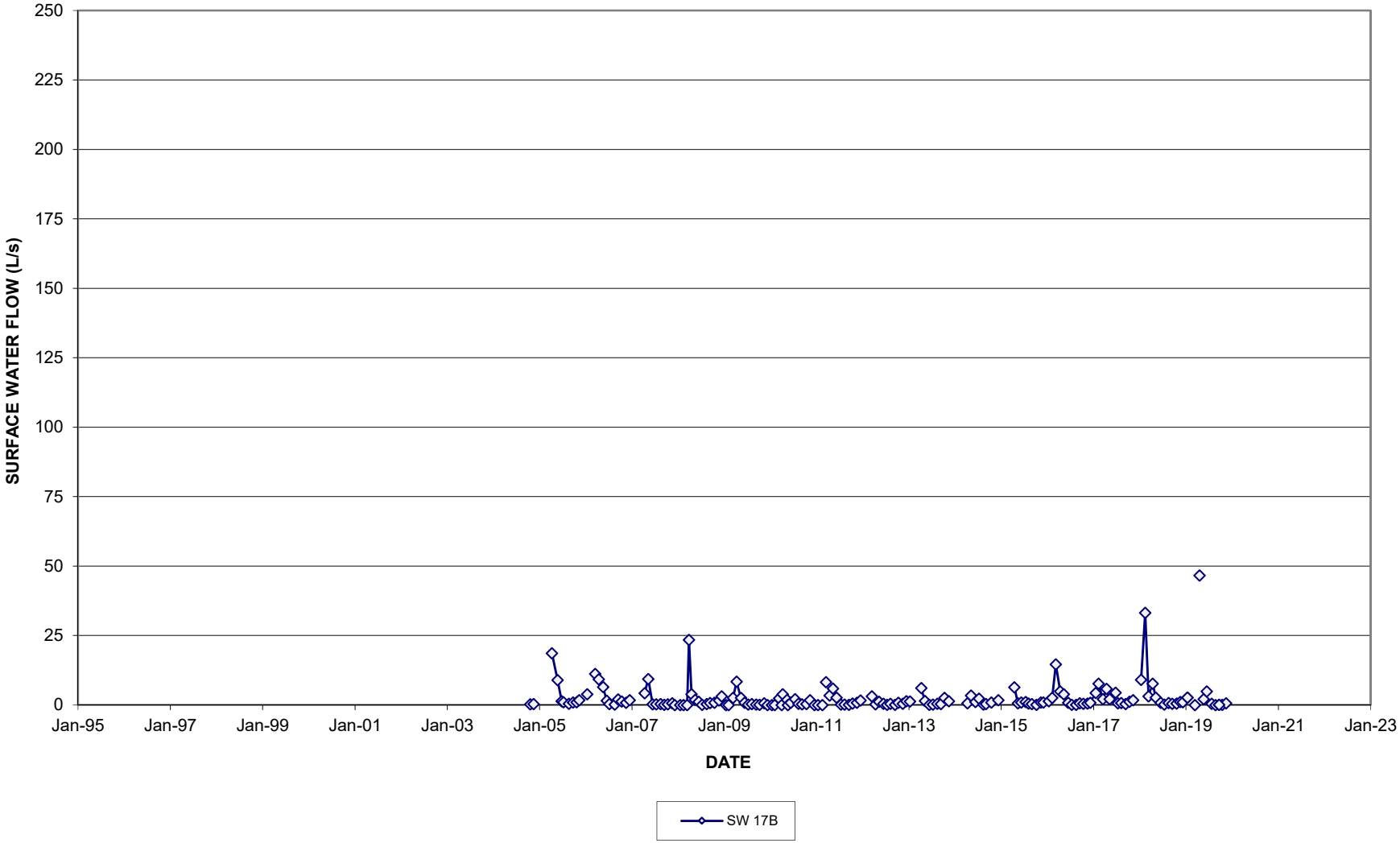


FIGURE B-32

# SURFACE WATER HYDROGRAPH
# SW18

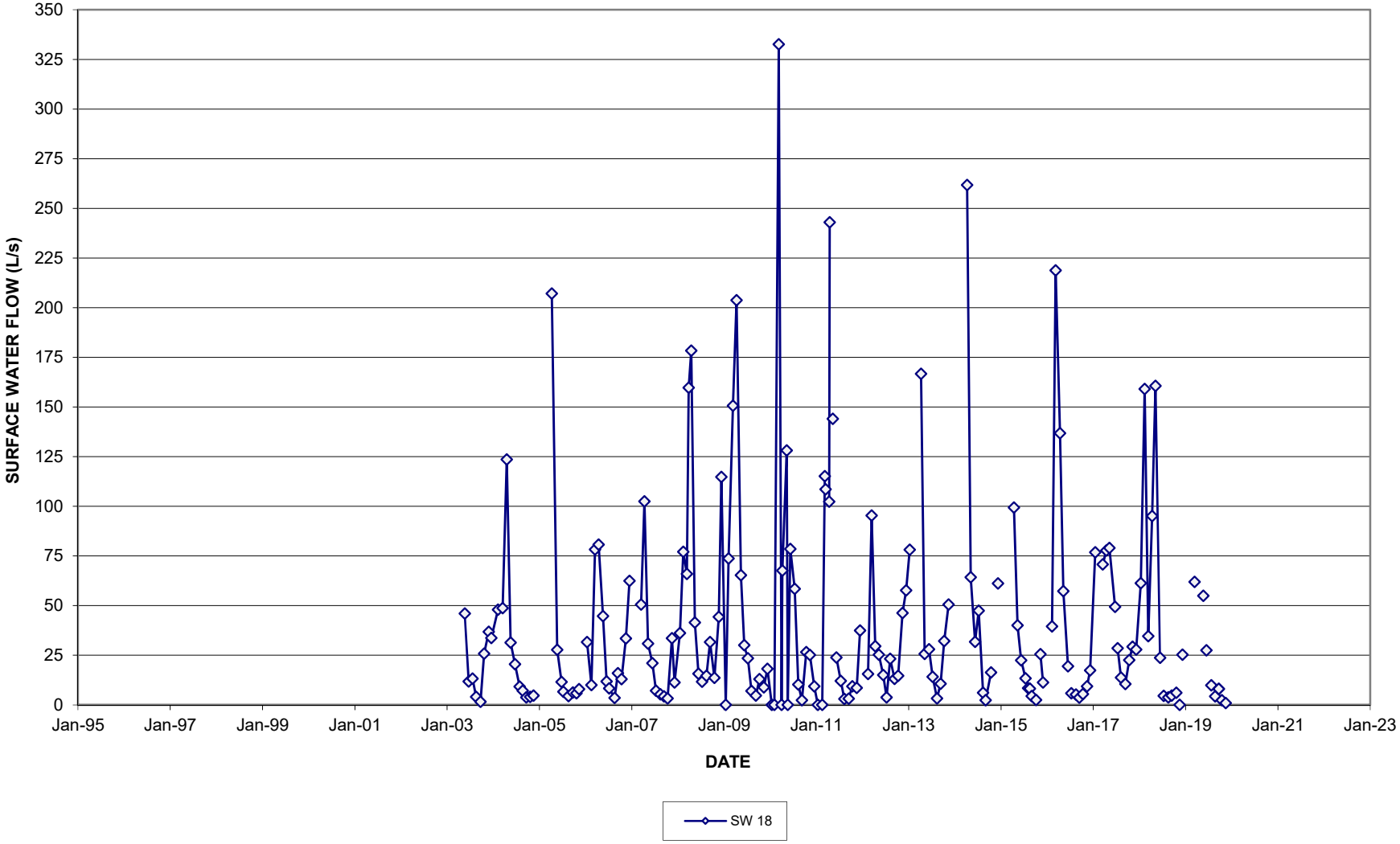


FIGURE B-33

# SURFACE WATER HYDROGRAPH
# SW19

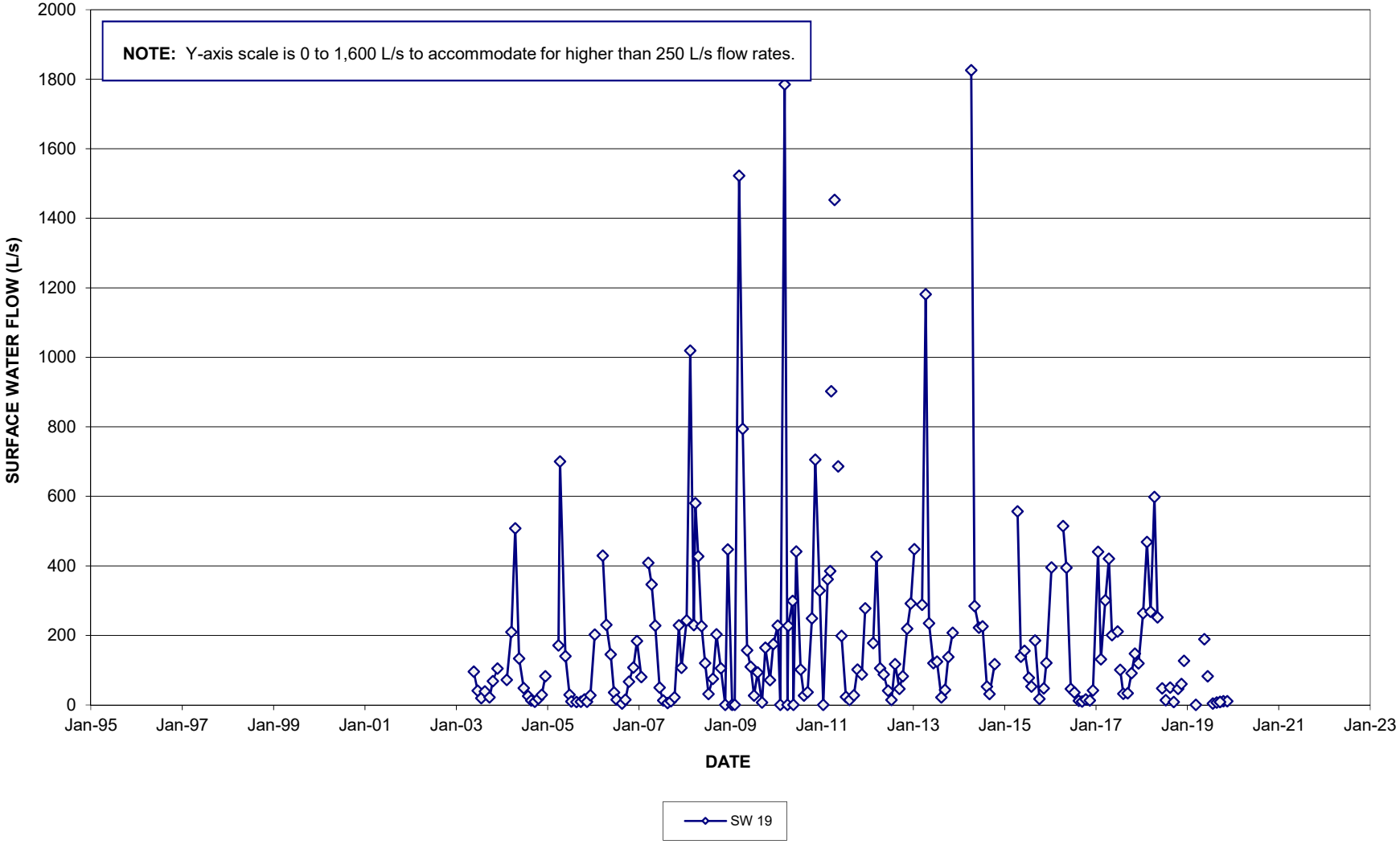


FIGURE B-34

# SURFACE WATER HYDROGRAPH
# SW20

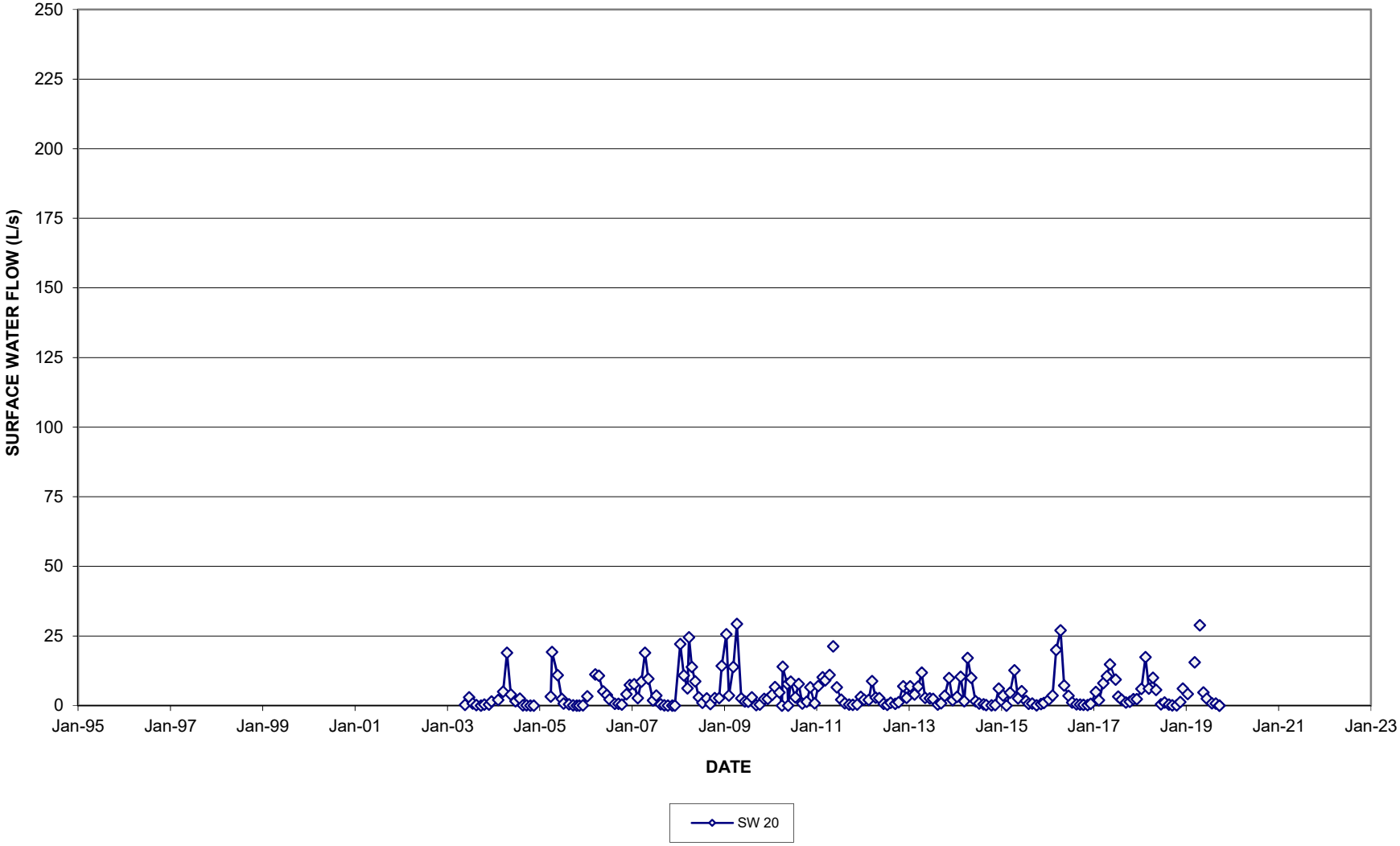


FIGURE B-35

# SURFACE WATER HYDROGRAPH
# SW21

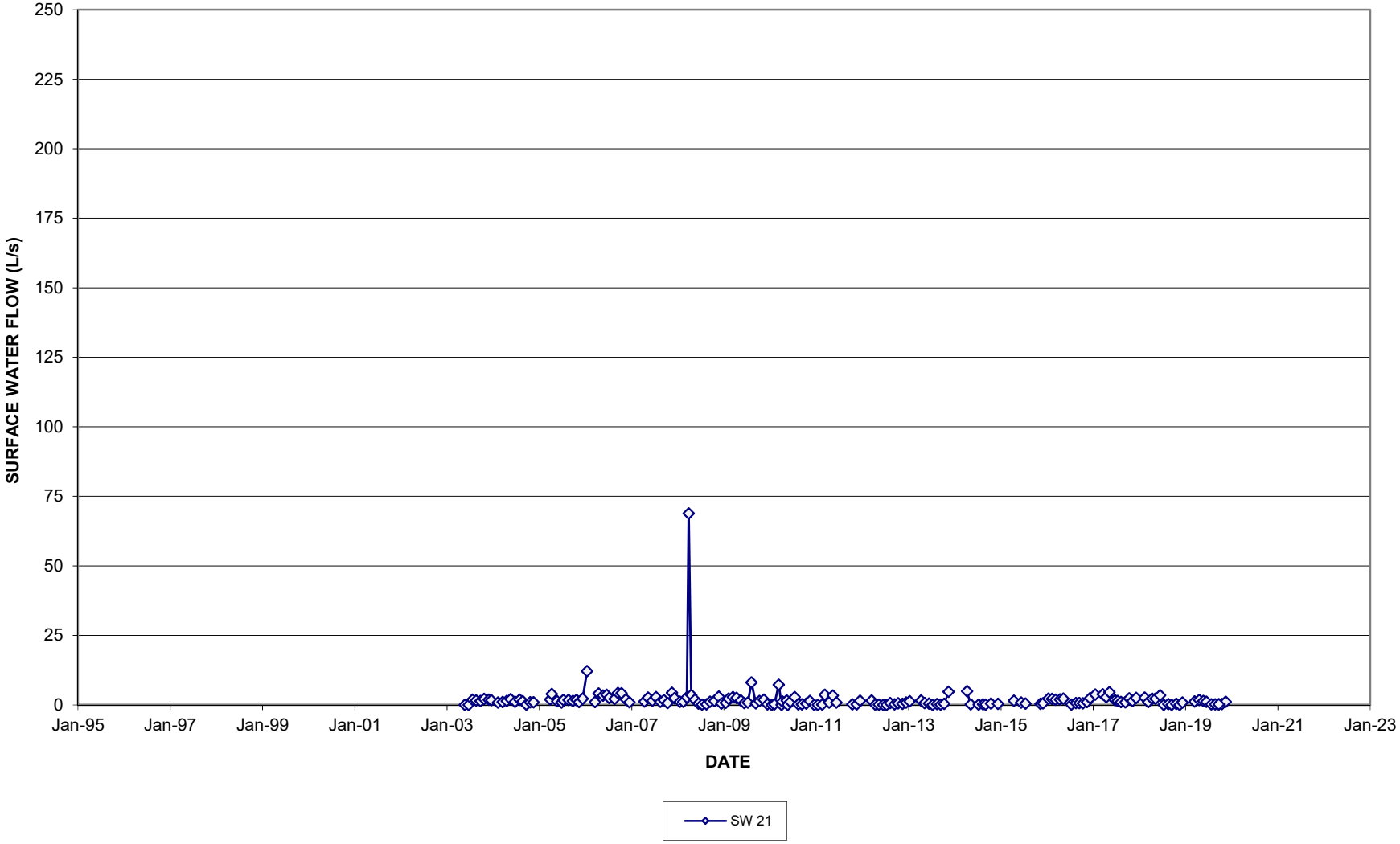


FIGURE B-36

# SURFACE WATER HYDROGRAPH
# SW21A

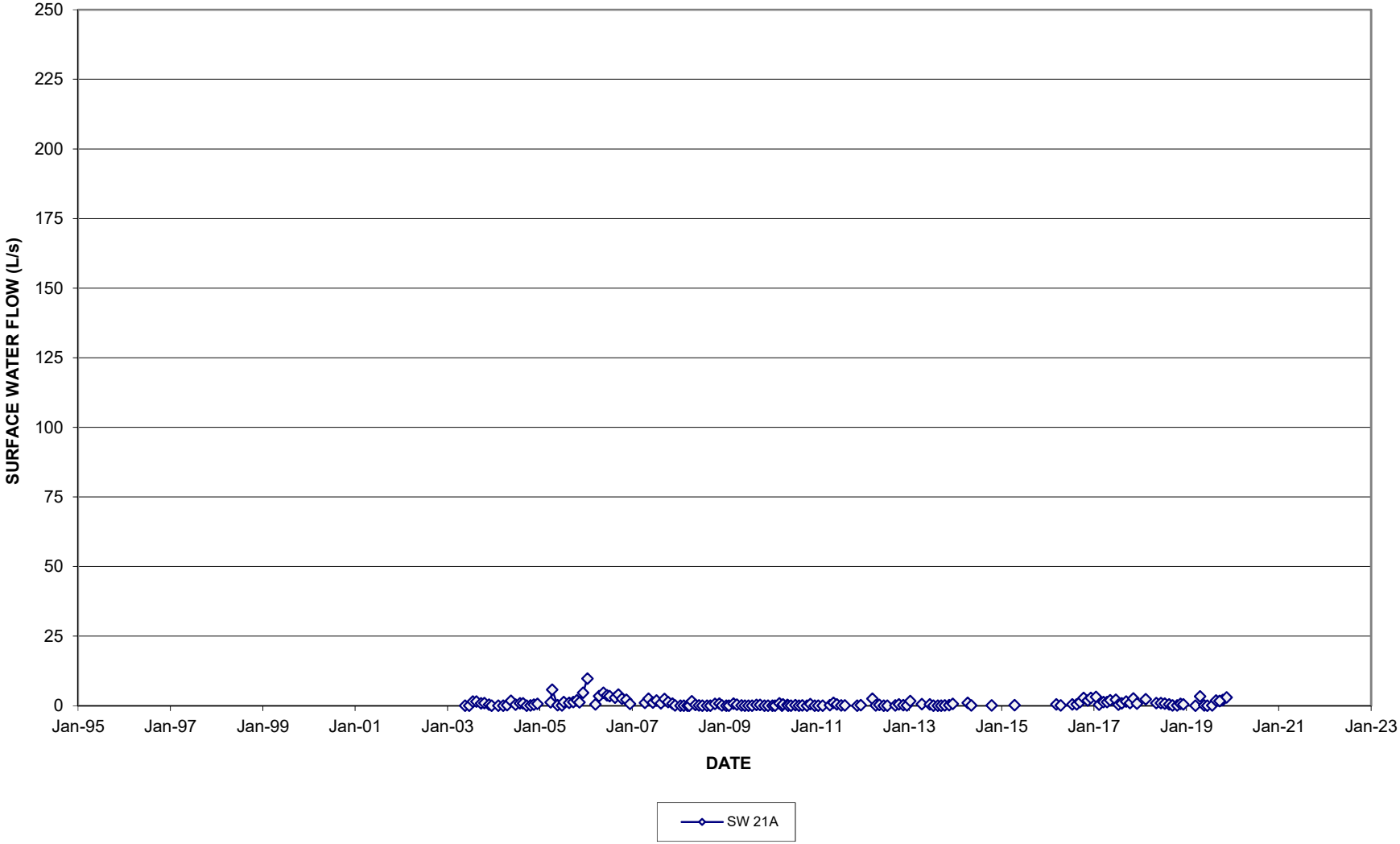


FIGURE B-37

# SURFACE WATER HYDROGRAPH
# SW21B

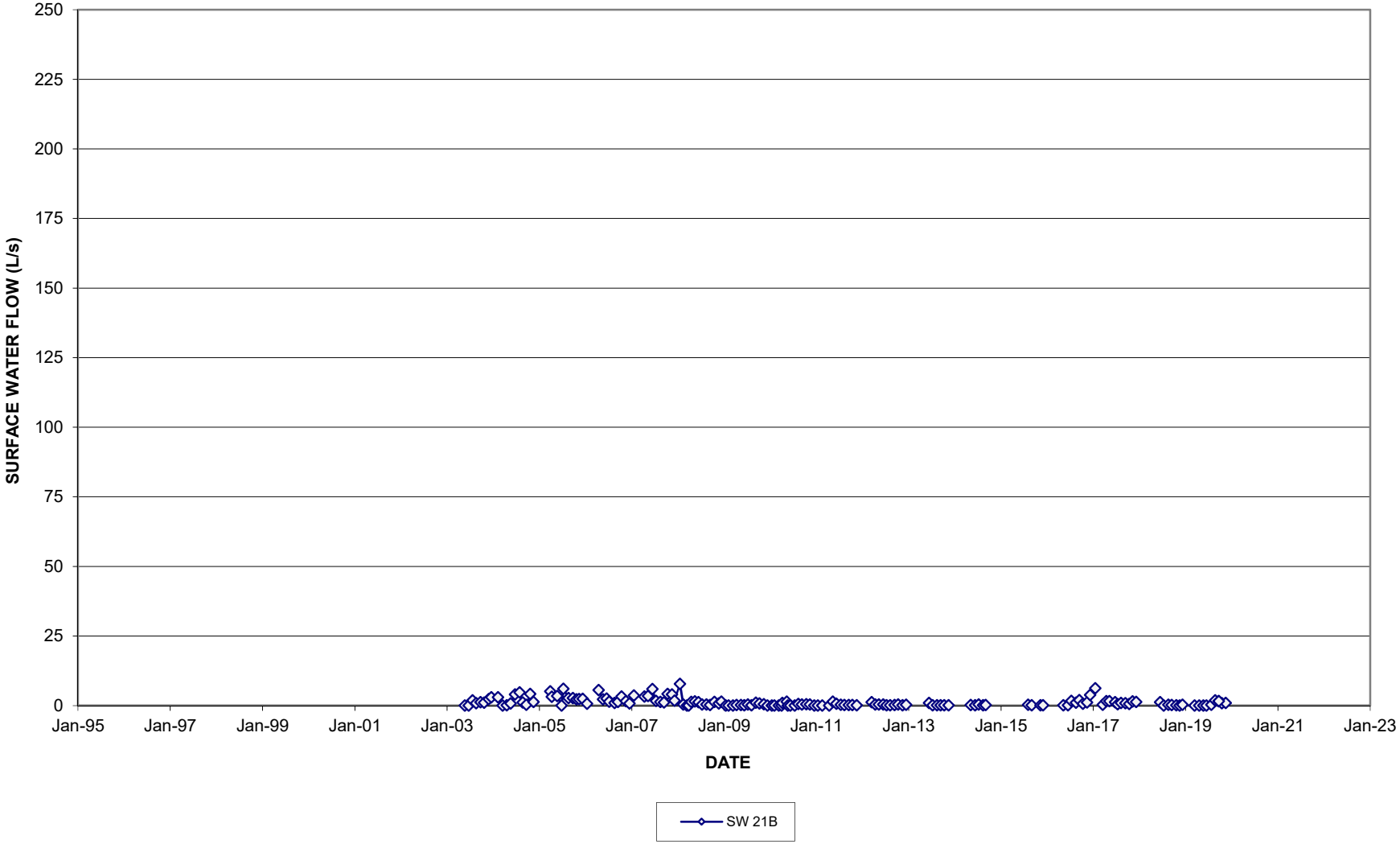


FIGURE B-38

# SURFACE WATER HYDROGRAPH
# SW21C

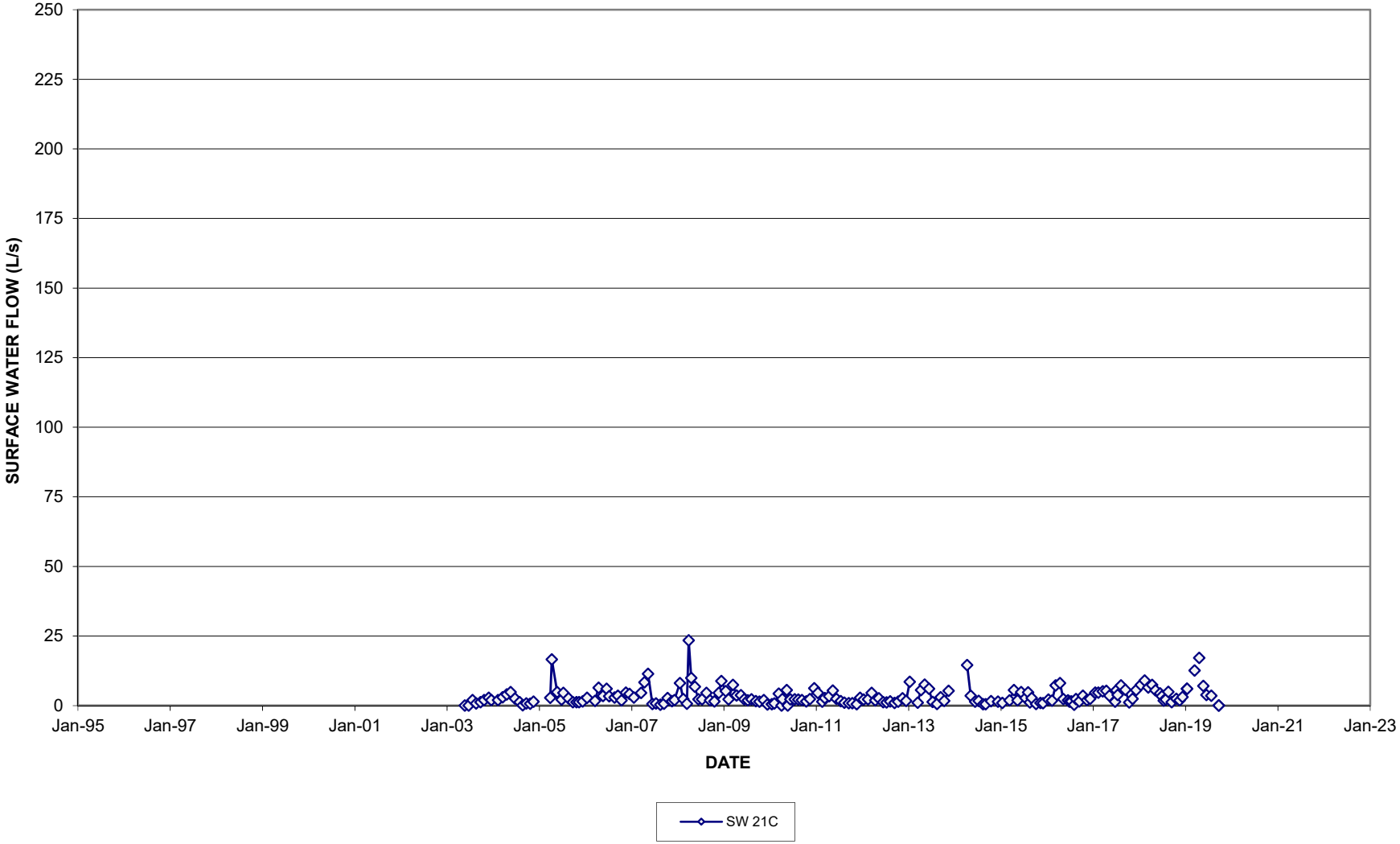


FIGURE B-39

# SURFACE WATER HYDROGRAPH
# SW21D

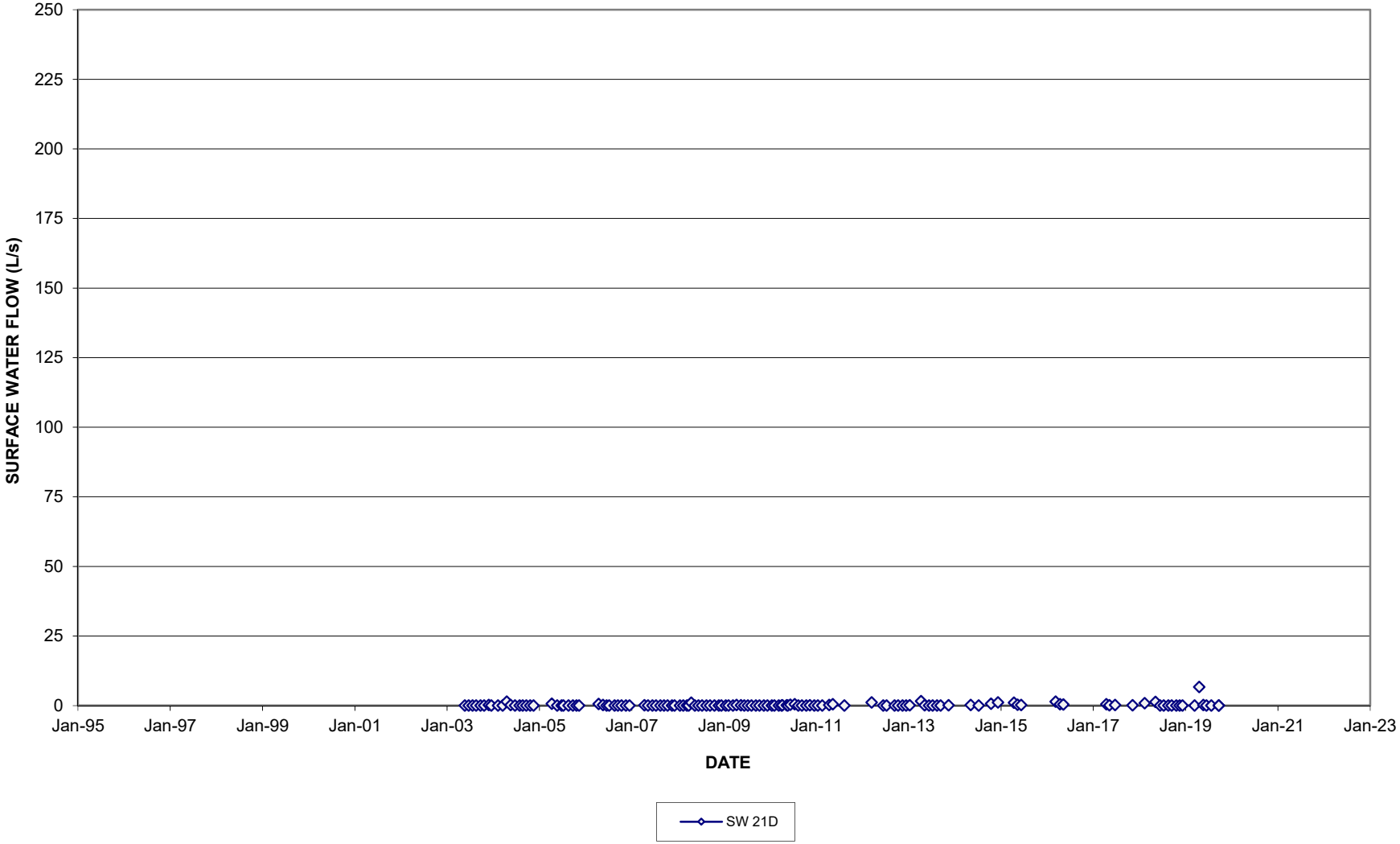


FIGURE B-40

# SURFACE WATER HYDROGRAPH
# SW22

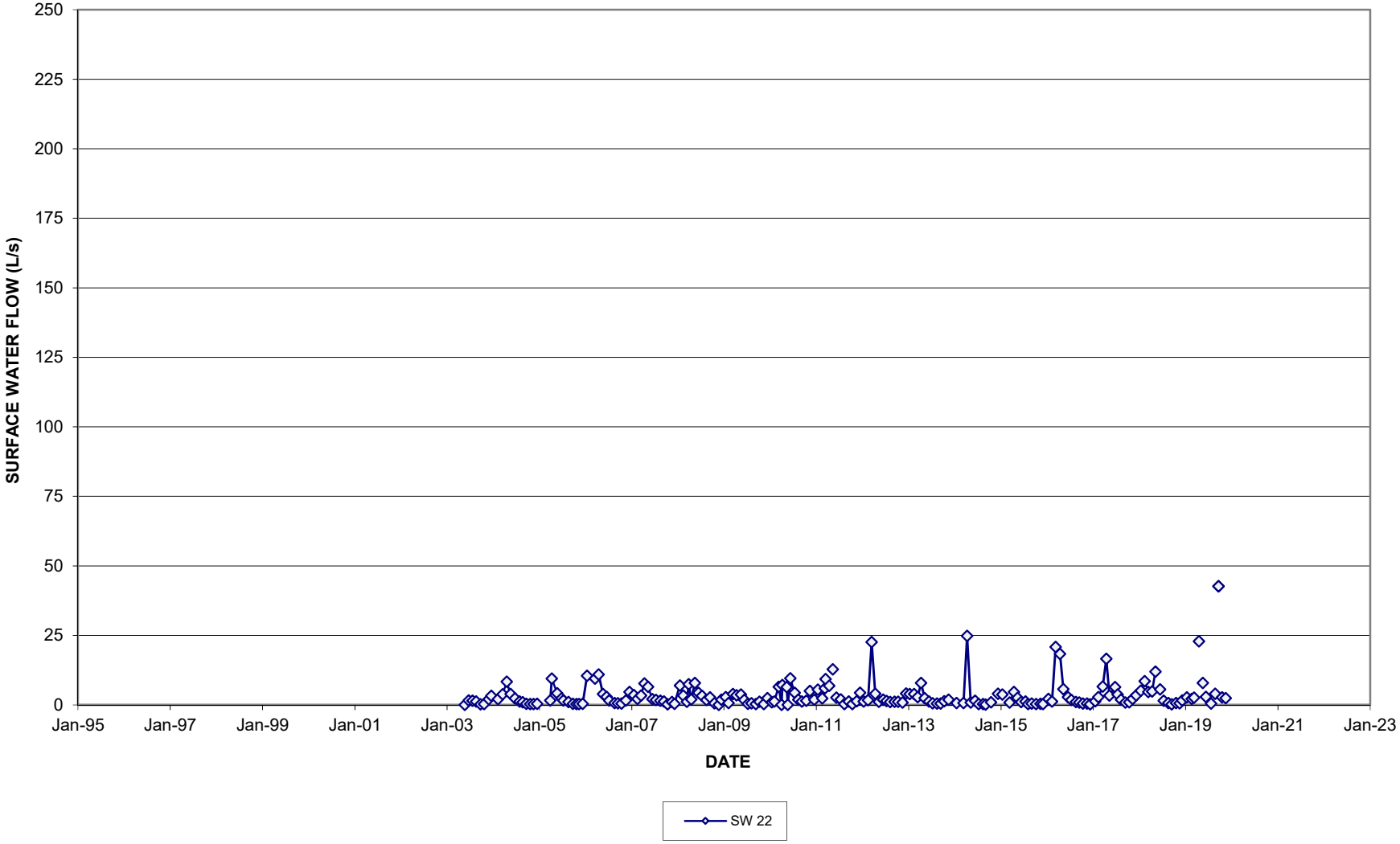


FIGURE B-41

# SURFACE WATER HYDROGRAPH
# SW22A

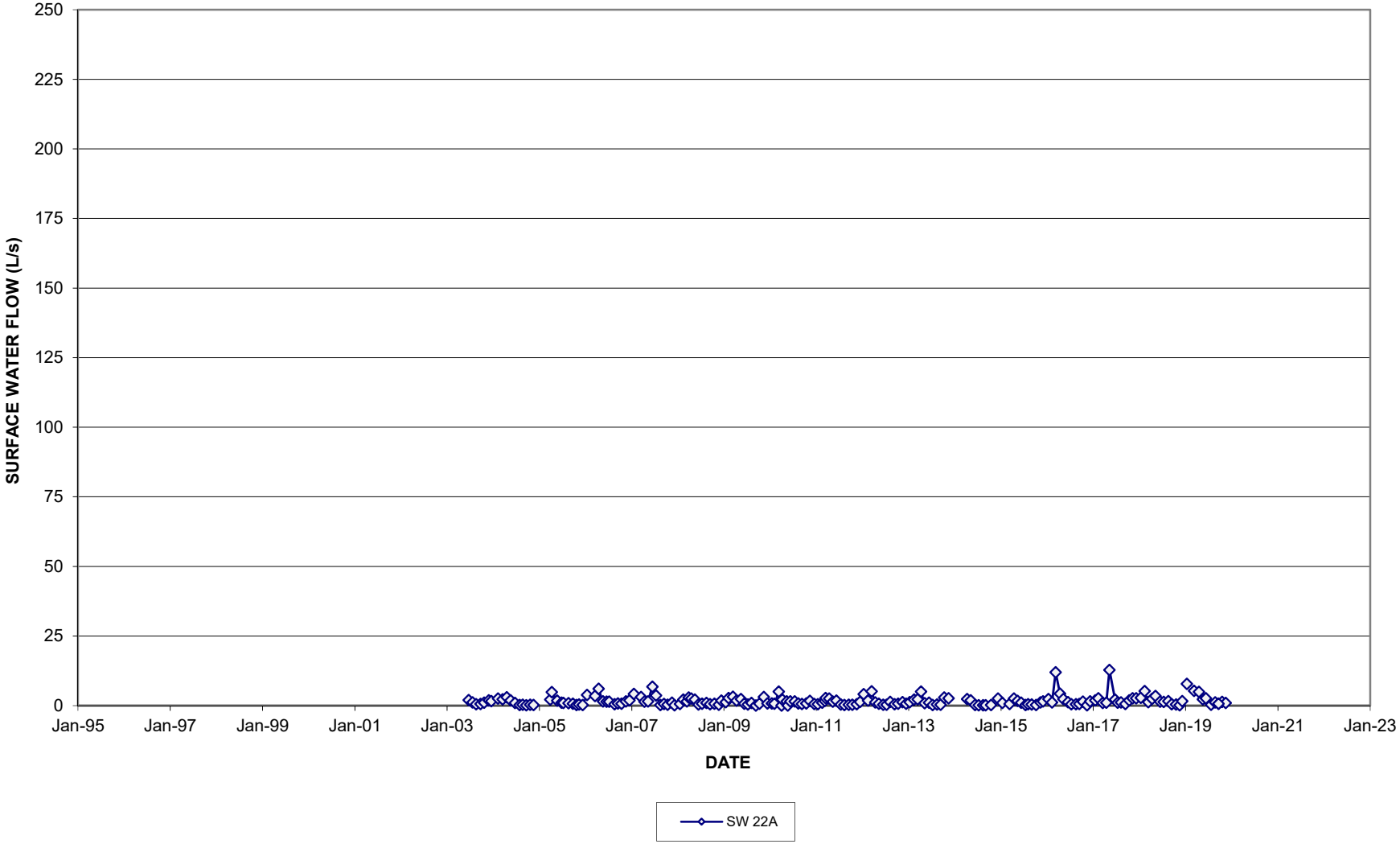


FIGURE B-42

# SURFACE WATER HYDROGRAPH
# SW22B

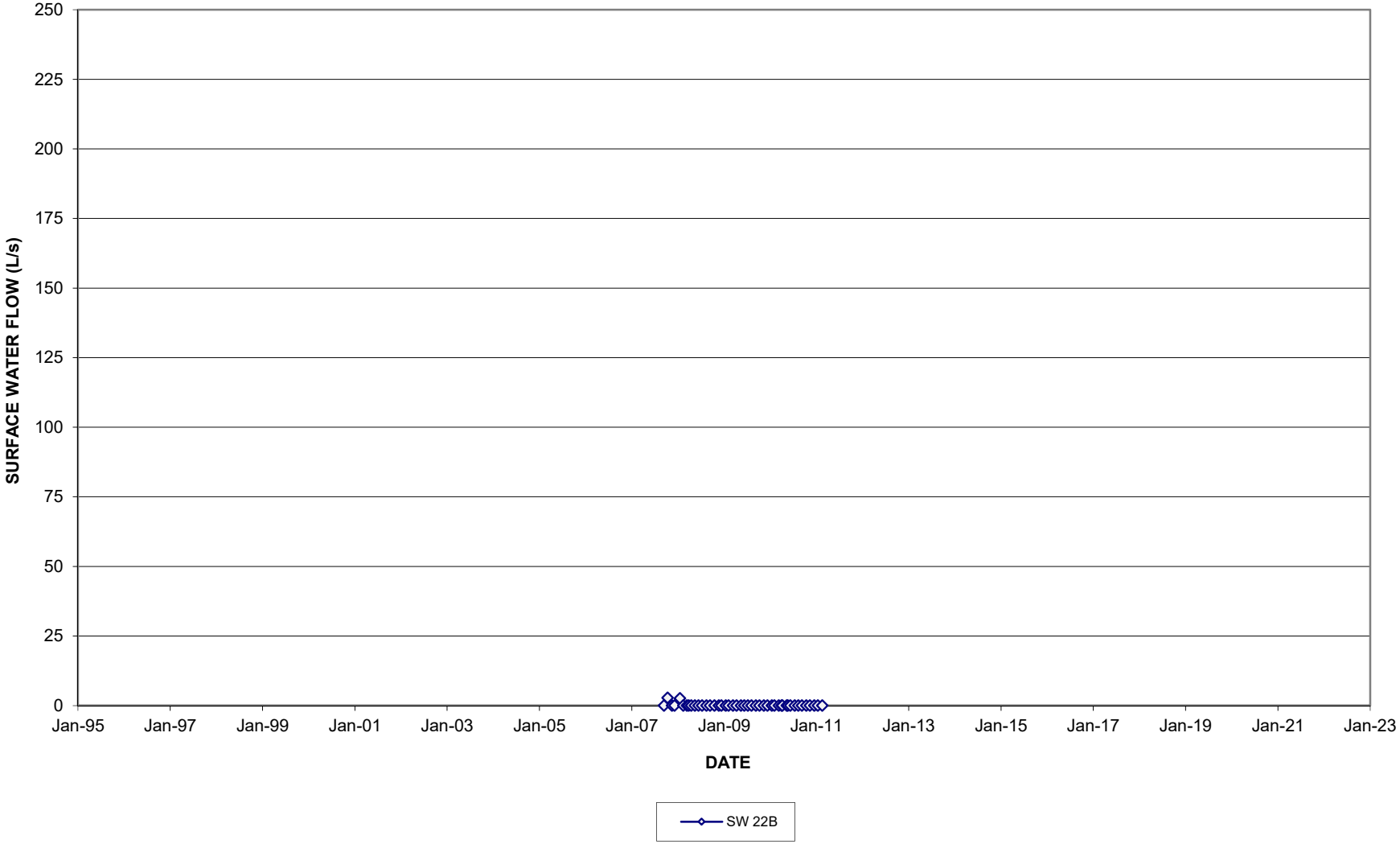


FIGURE B-43

# SURFACE WATER HYDROGRAPH
# SW22C

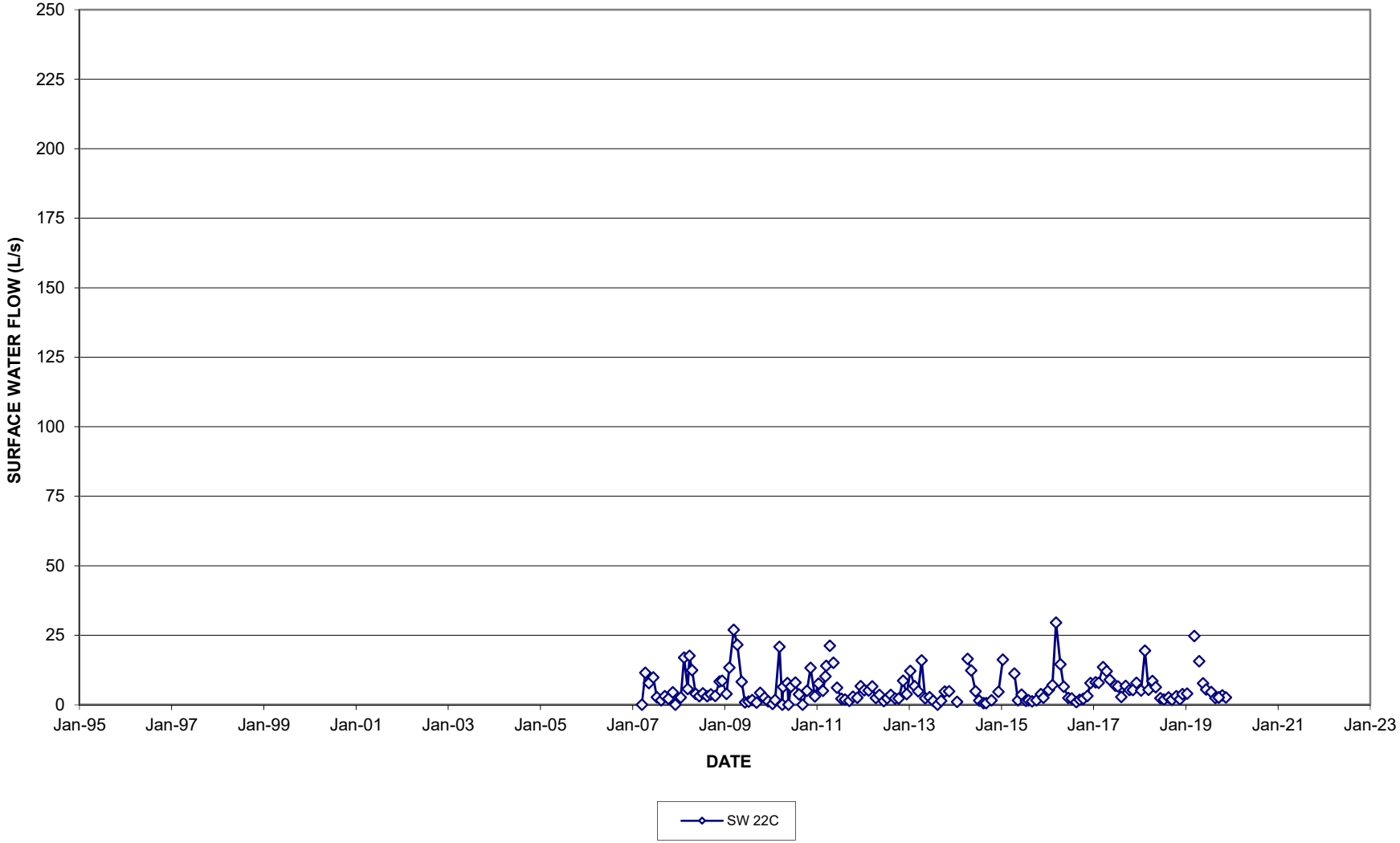


FIGURE B-44

# SURFACE WATER HYDROGRAPH
# SW23

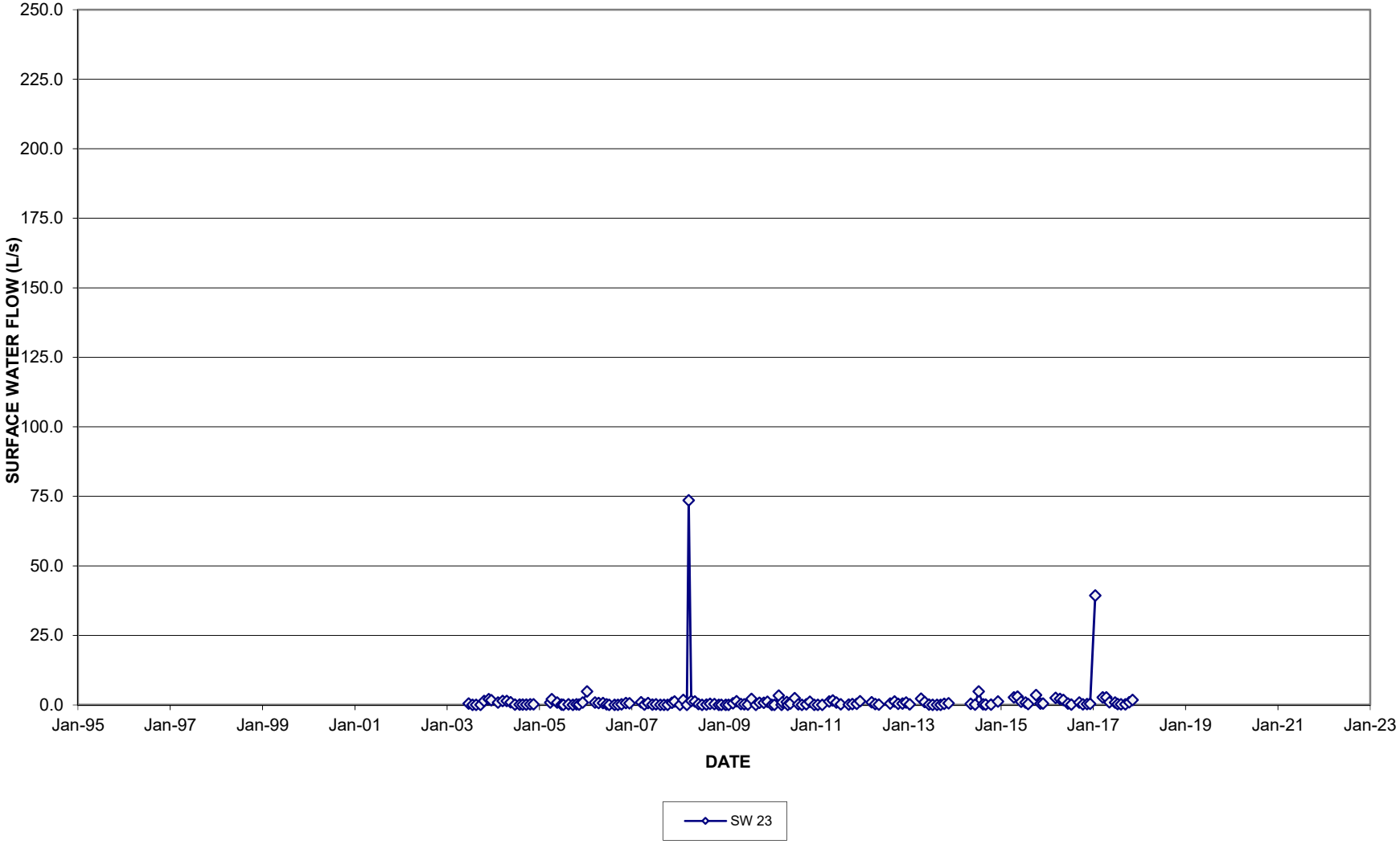


FIGURE B-45

# SURFACE WATER HYDROGRAPH
# SW24

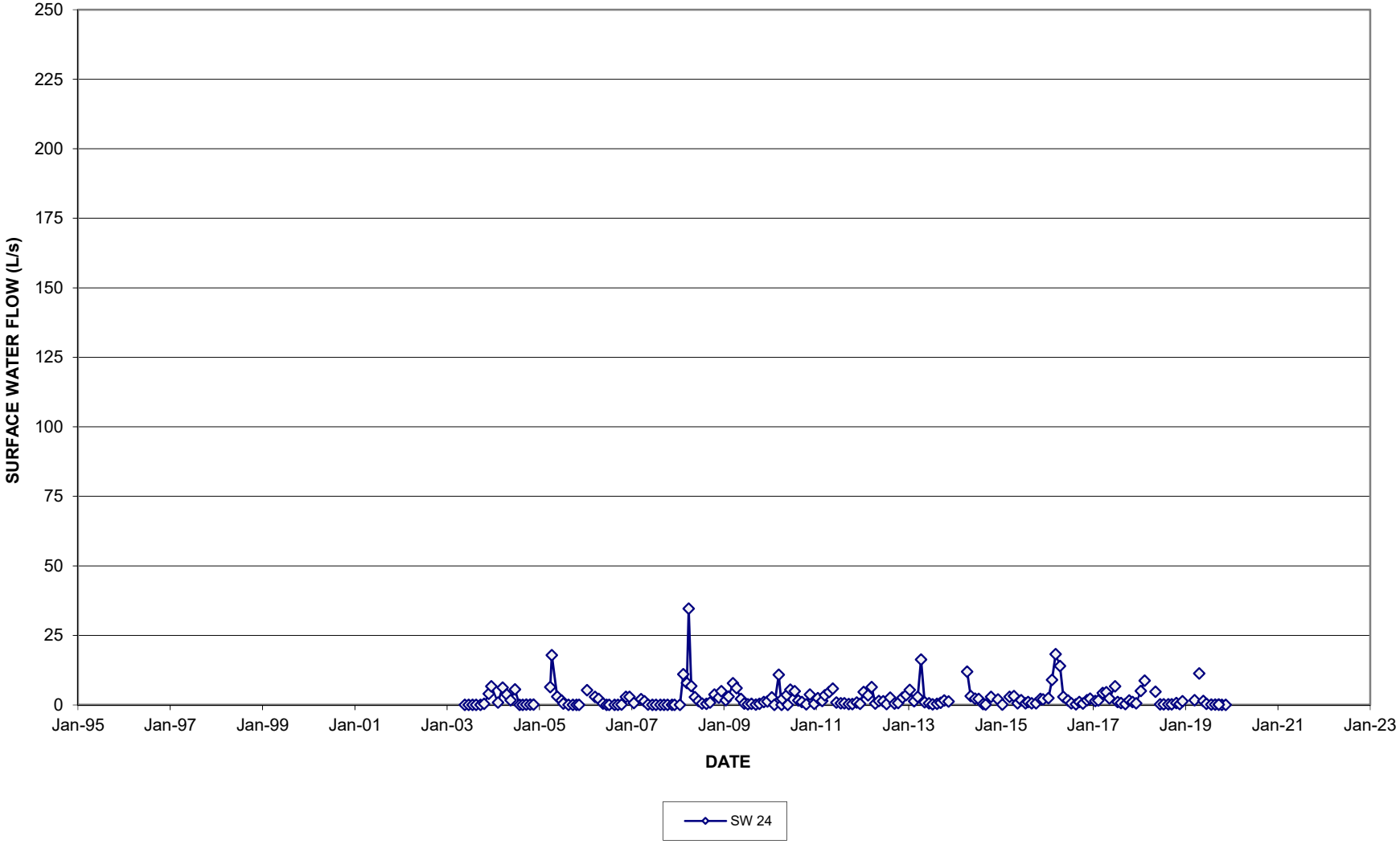


FIGURE B-46

# SURFACE WATER HYDROGRPAH
# SW24A

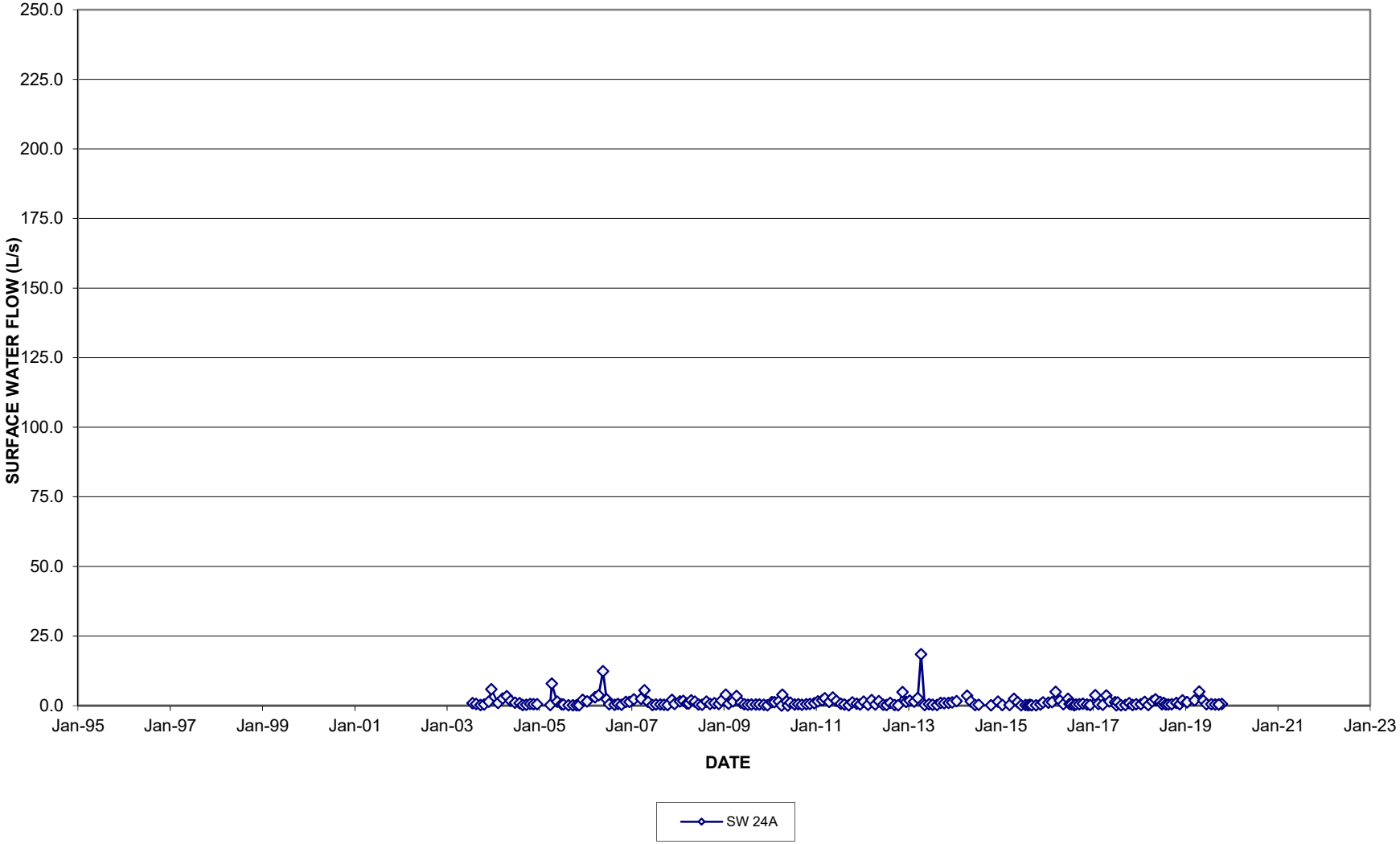


FIGURE B-47

# SURFACE WATER HYDROGRAPH
# SW24B

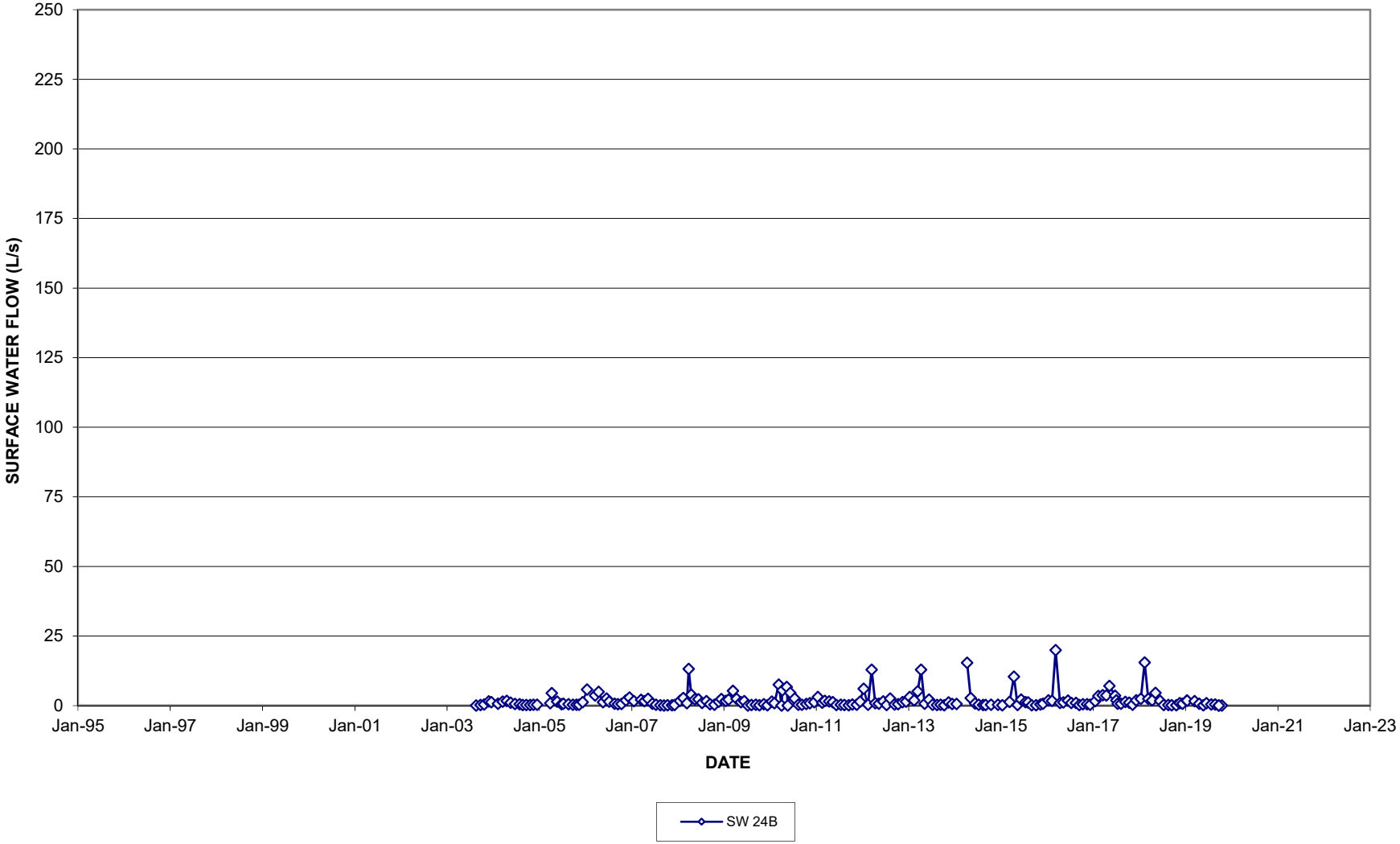


FIGURE B-48

# SURFACE WATER HYDROGRAPH
# SW24C

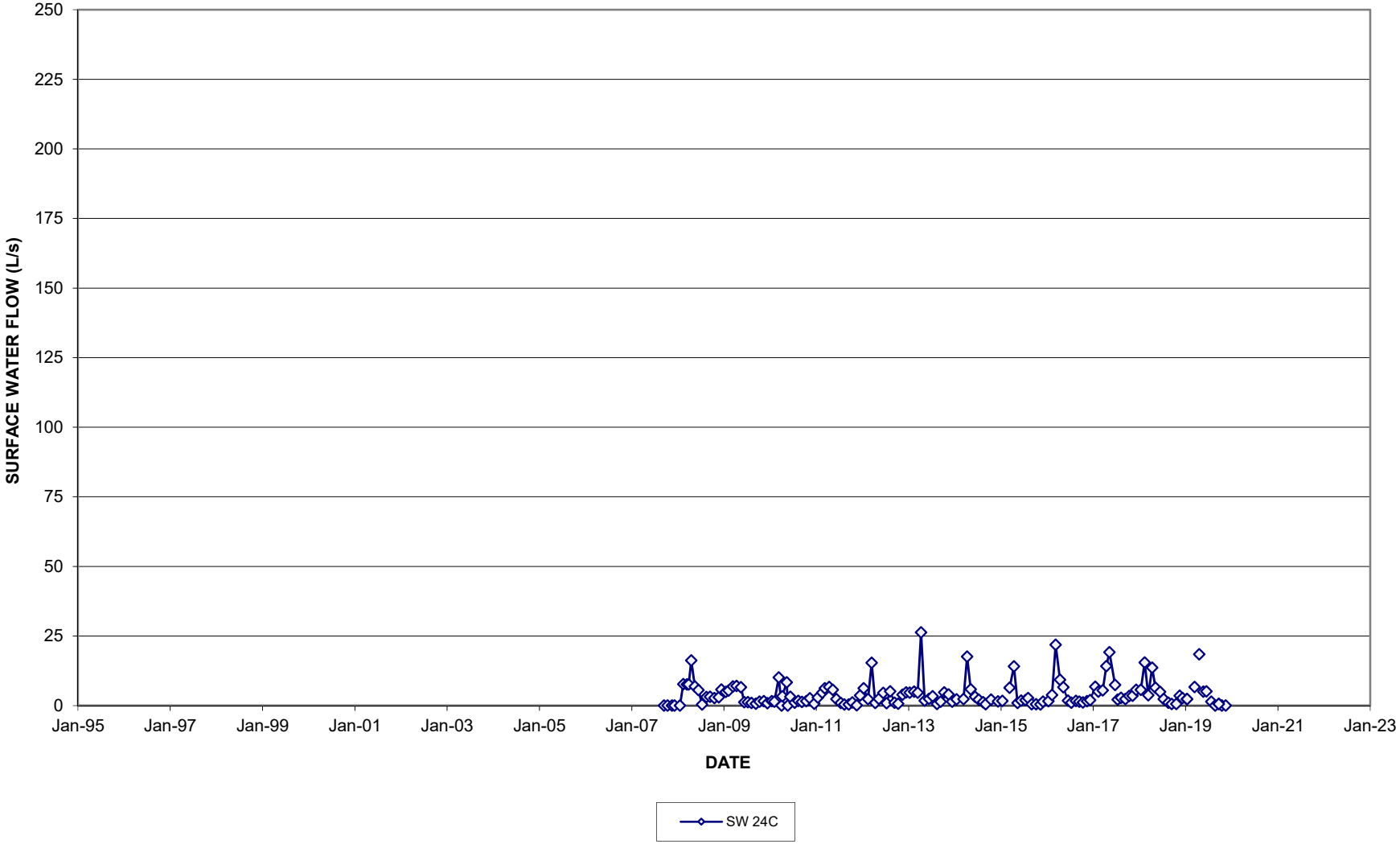


FIGURE B-49

# SURFACE WATER HYDROGRAPH
# SW25

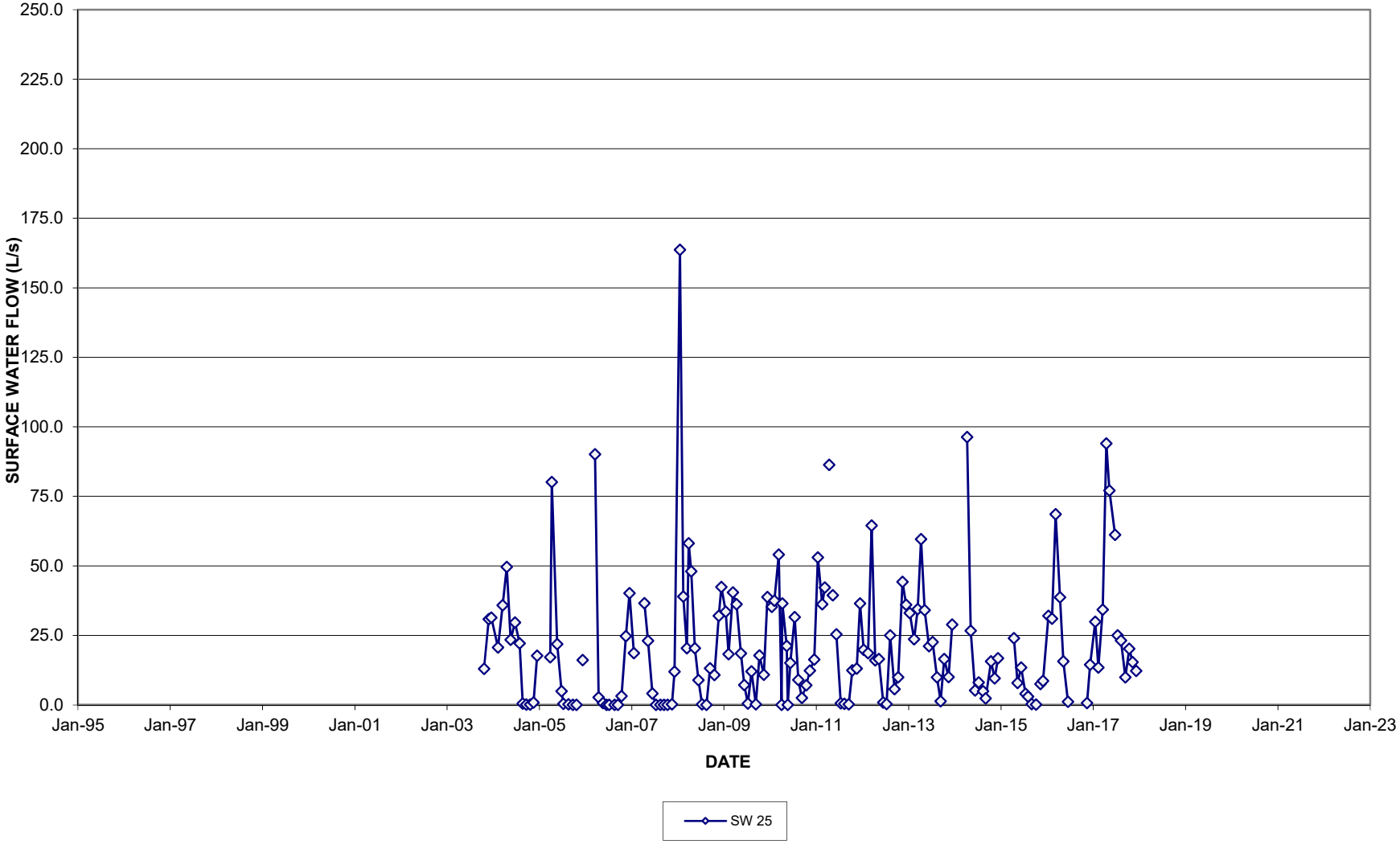


FIGURE B-50

# SURFACE WATER HYDROGRAPH
# SW26

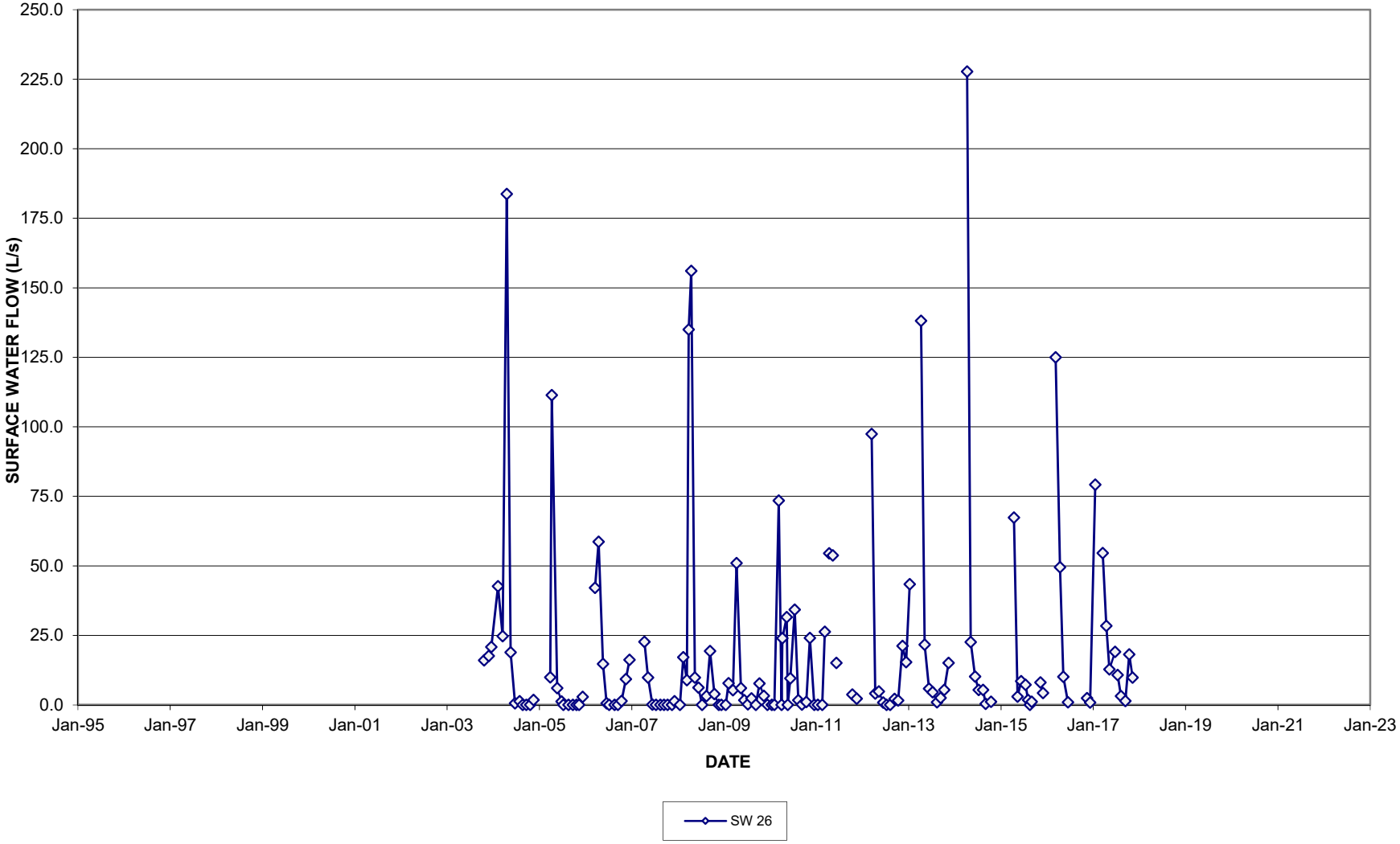


FIGURE B-51

# SURFACE WATER HYDROGRAPH
# SW26A

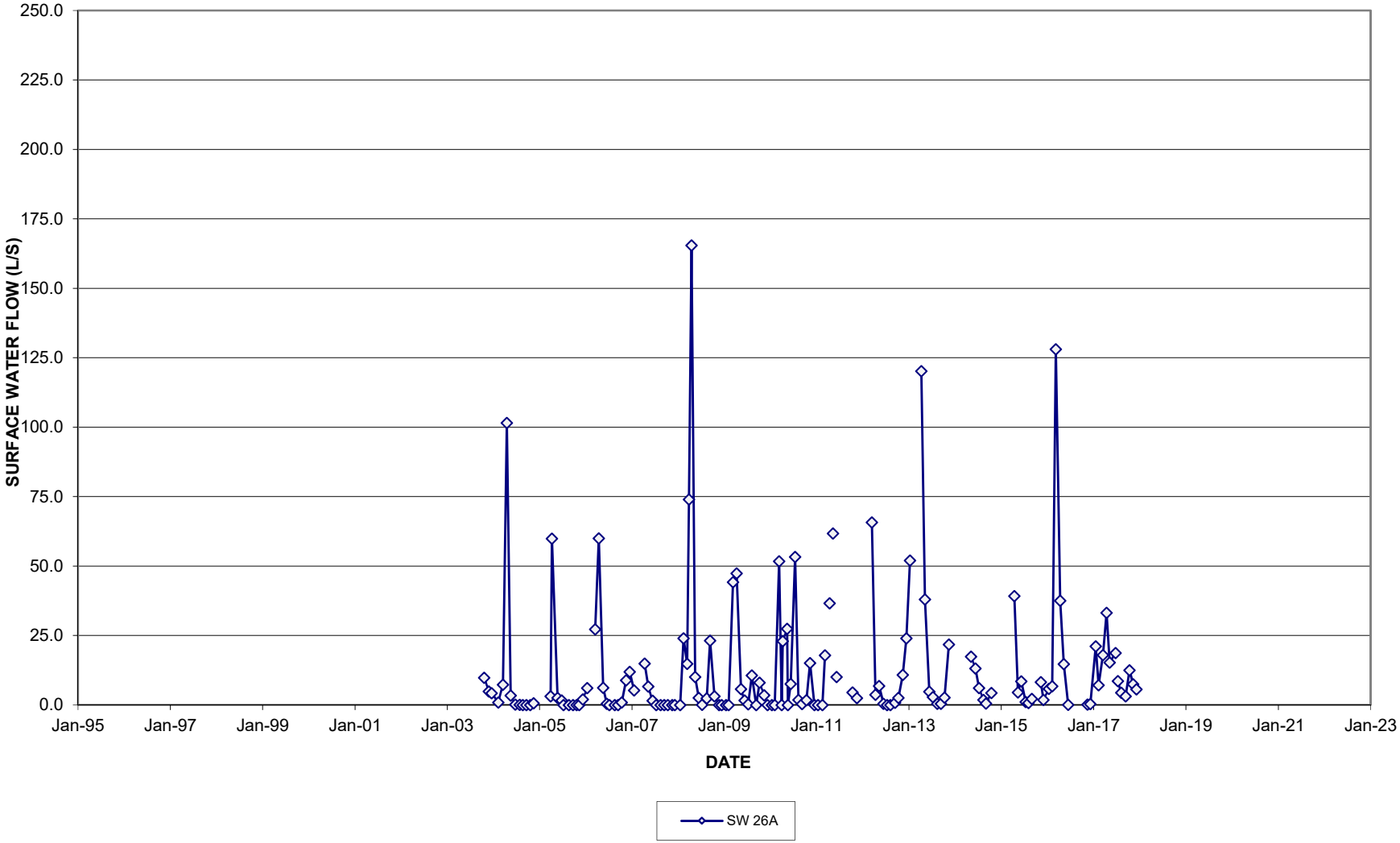


FIGURE B-52

# SURFACE WATER HYDROGRAPH
# SW27

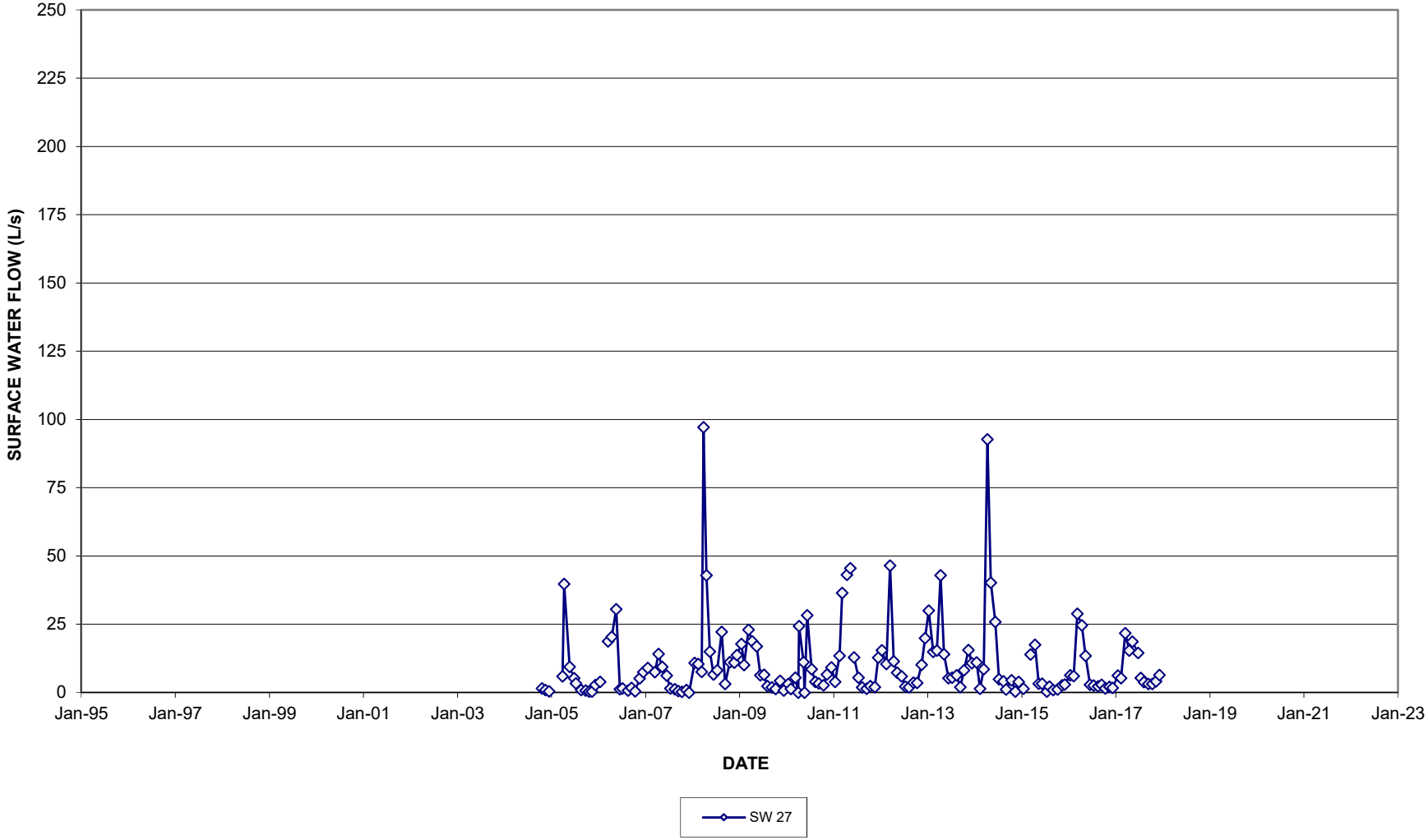


FIGURE B-53

# SURFACE WATER HYDROGRAPH
# SW77

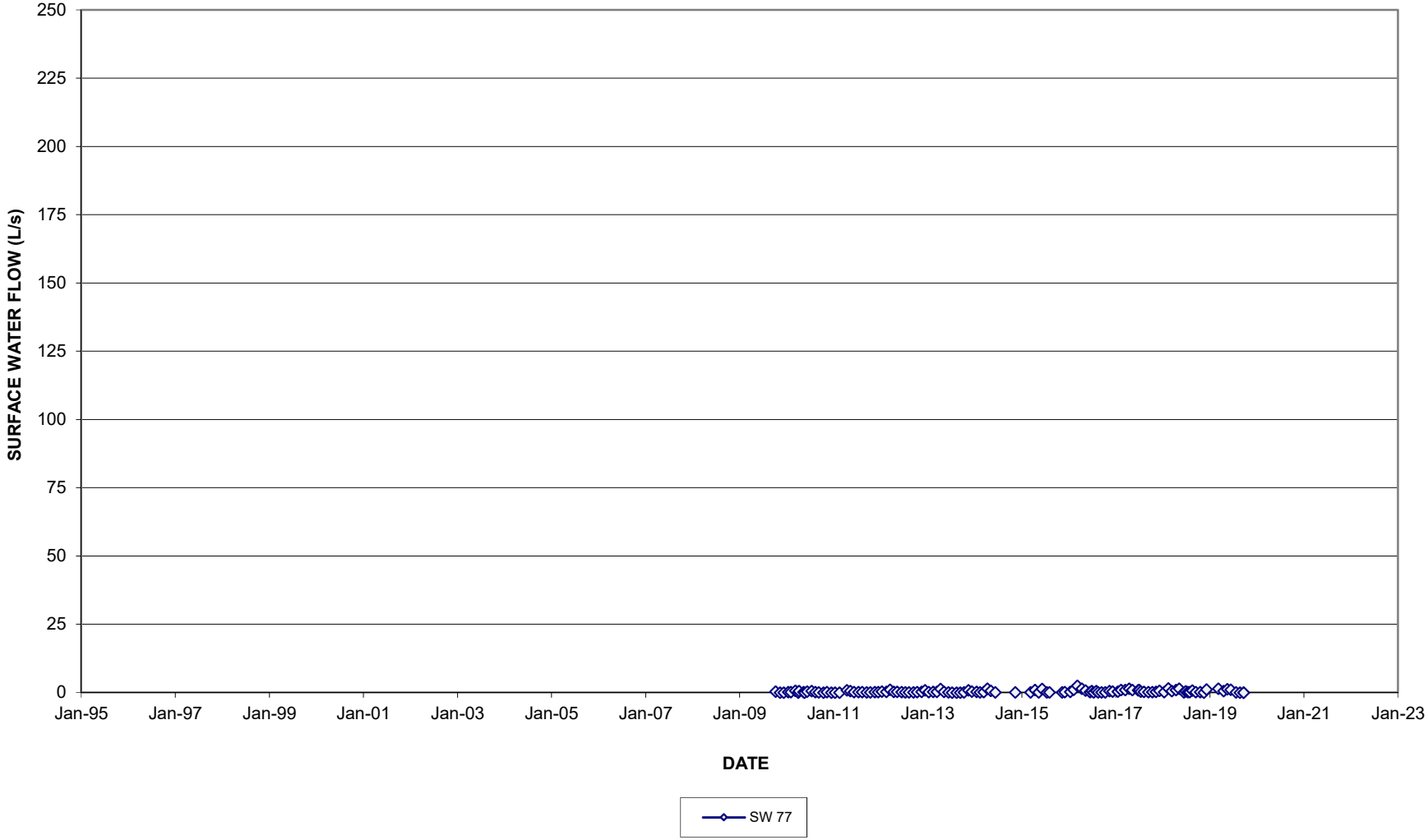


FIGURE B-54

# SURFACE WATER HYDROGRAPH
# SW3C "RR3 OUT"

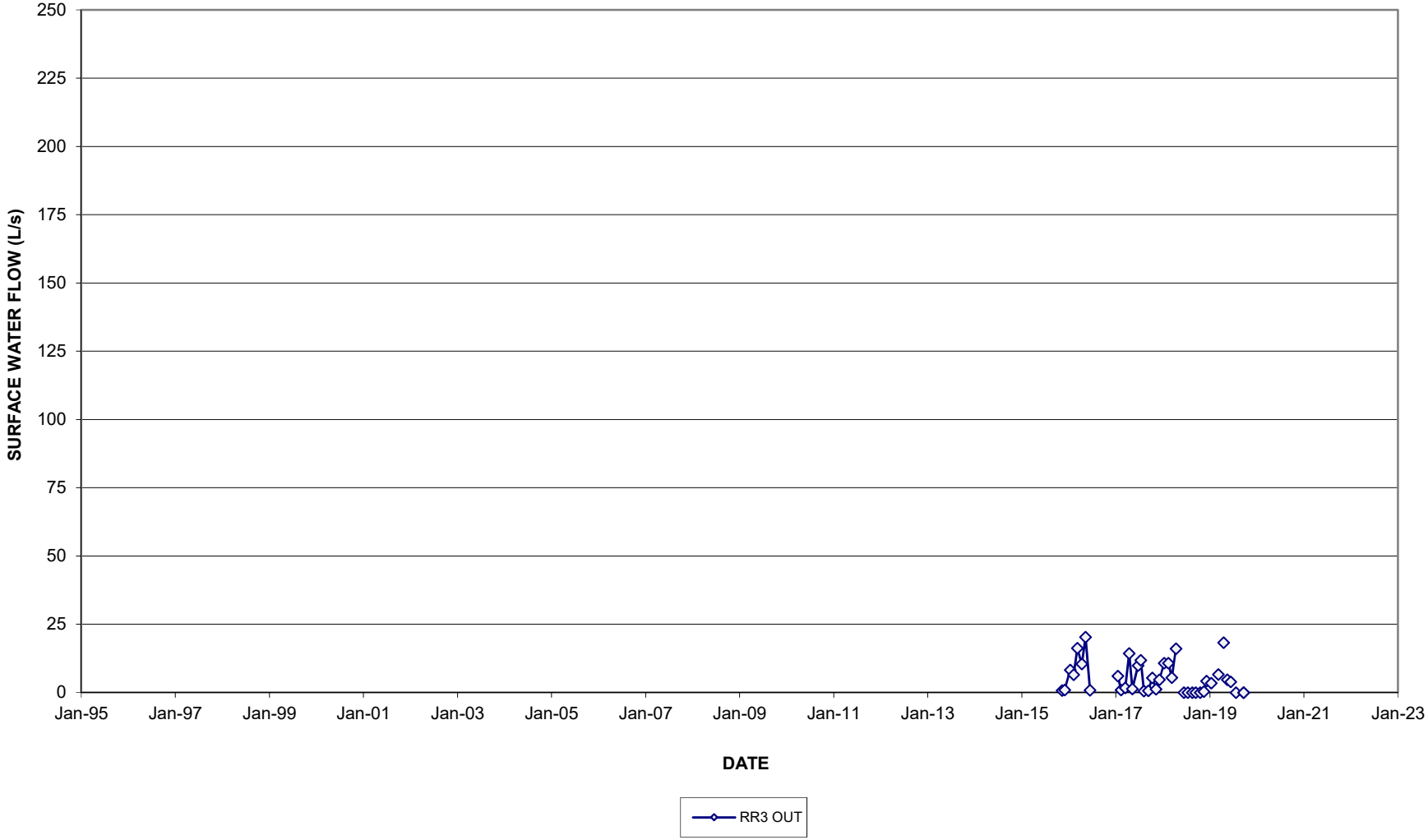


FIGURE B-55

# SURFACE WATER HYDROGRAPH
# SW3B "RR3 KARST"

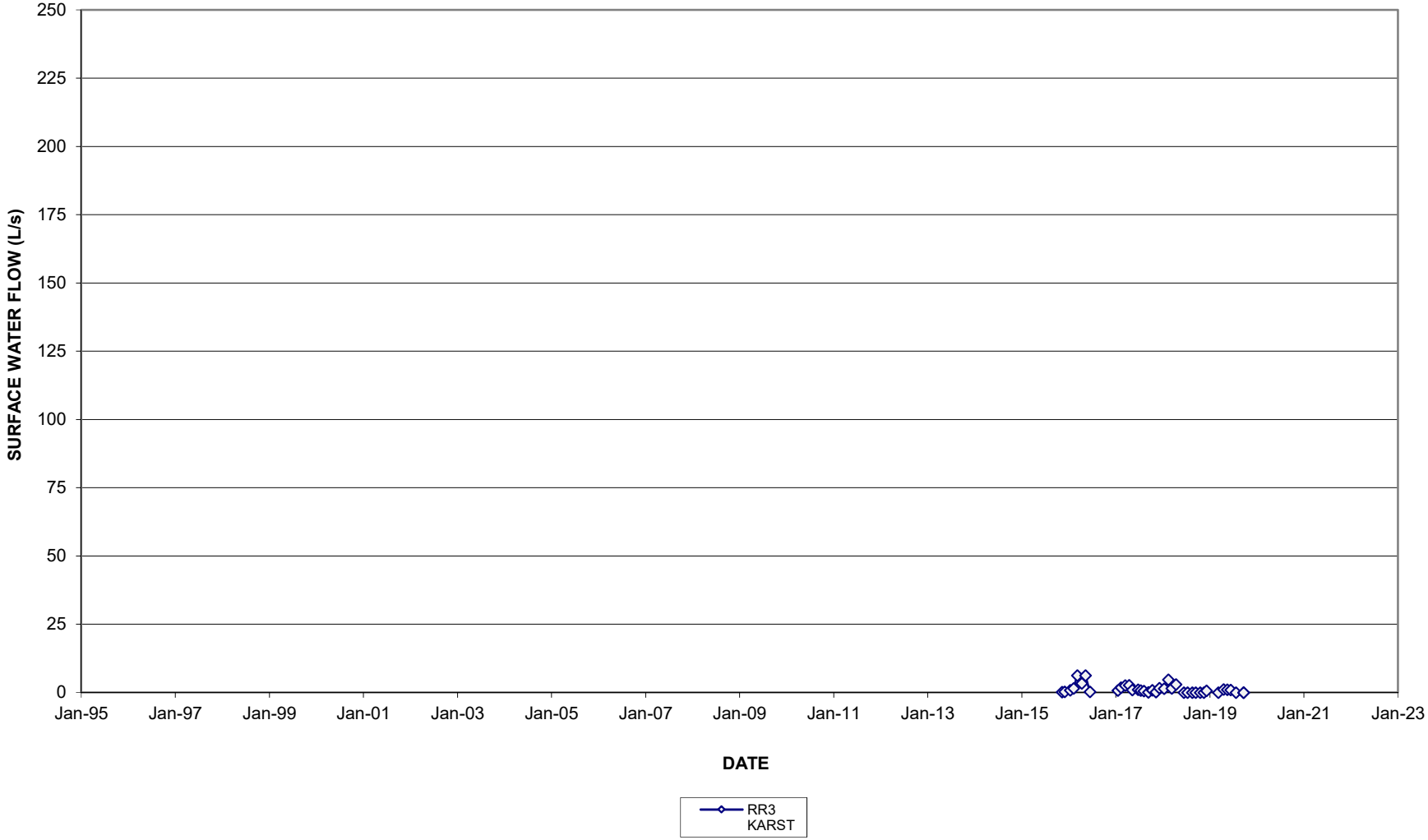


FIGURE B-55 (a)

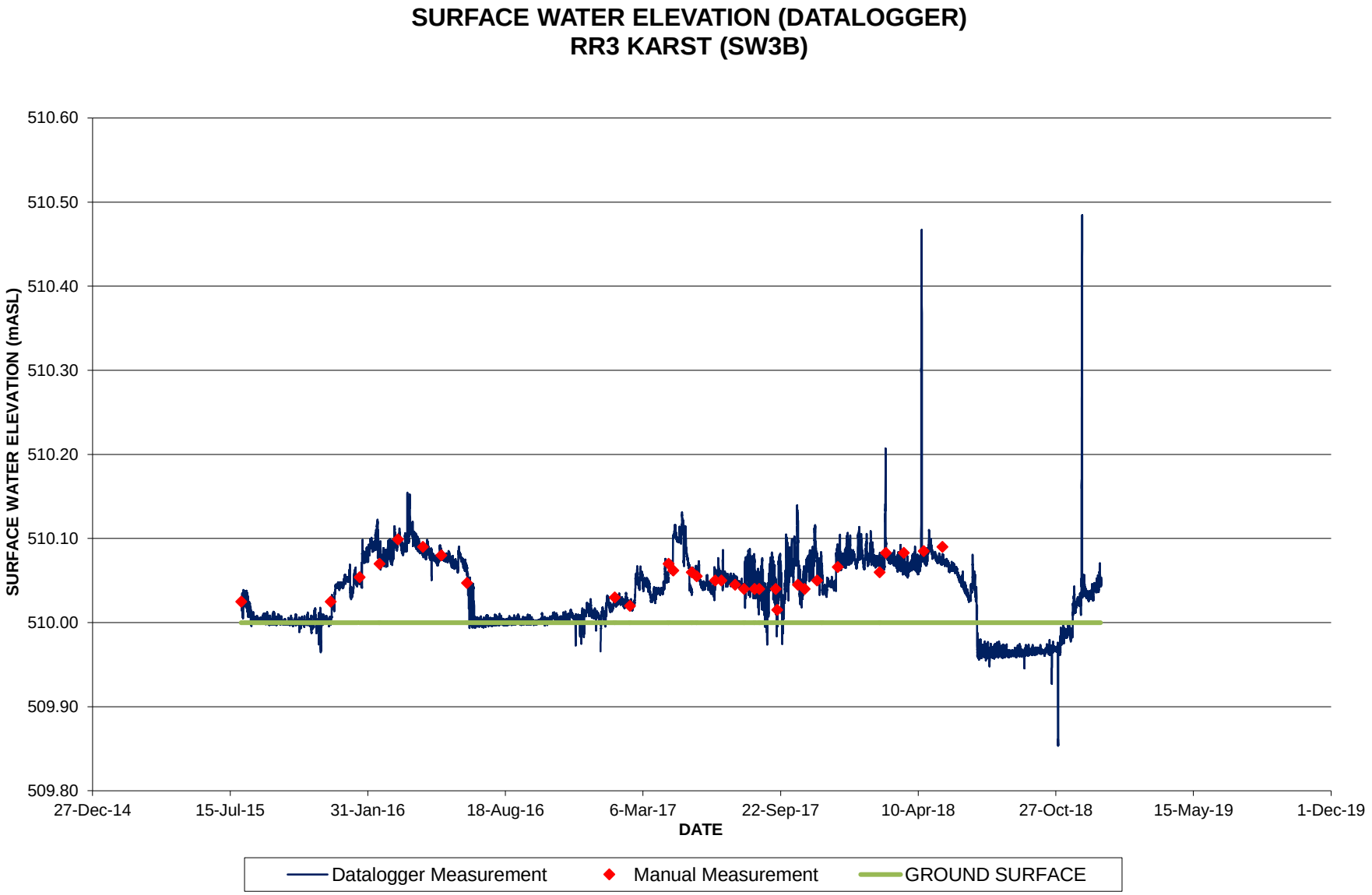

SURFACE WATER ELEVATION (DATALOGGER)
RR3 KARST (SW3B)
SURFACE WATER ELEVATION (mASL)
510.60
510.50
510.40
510.30
510.20
510.10
510.00
509.90
509.80
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
1-Dec-19
DATE
Datalogger Measurement
Manual Measurement
GROUND SURFACE

FIGURE B-55 (b)

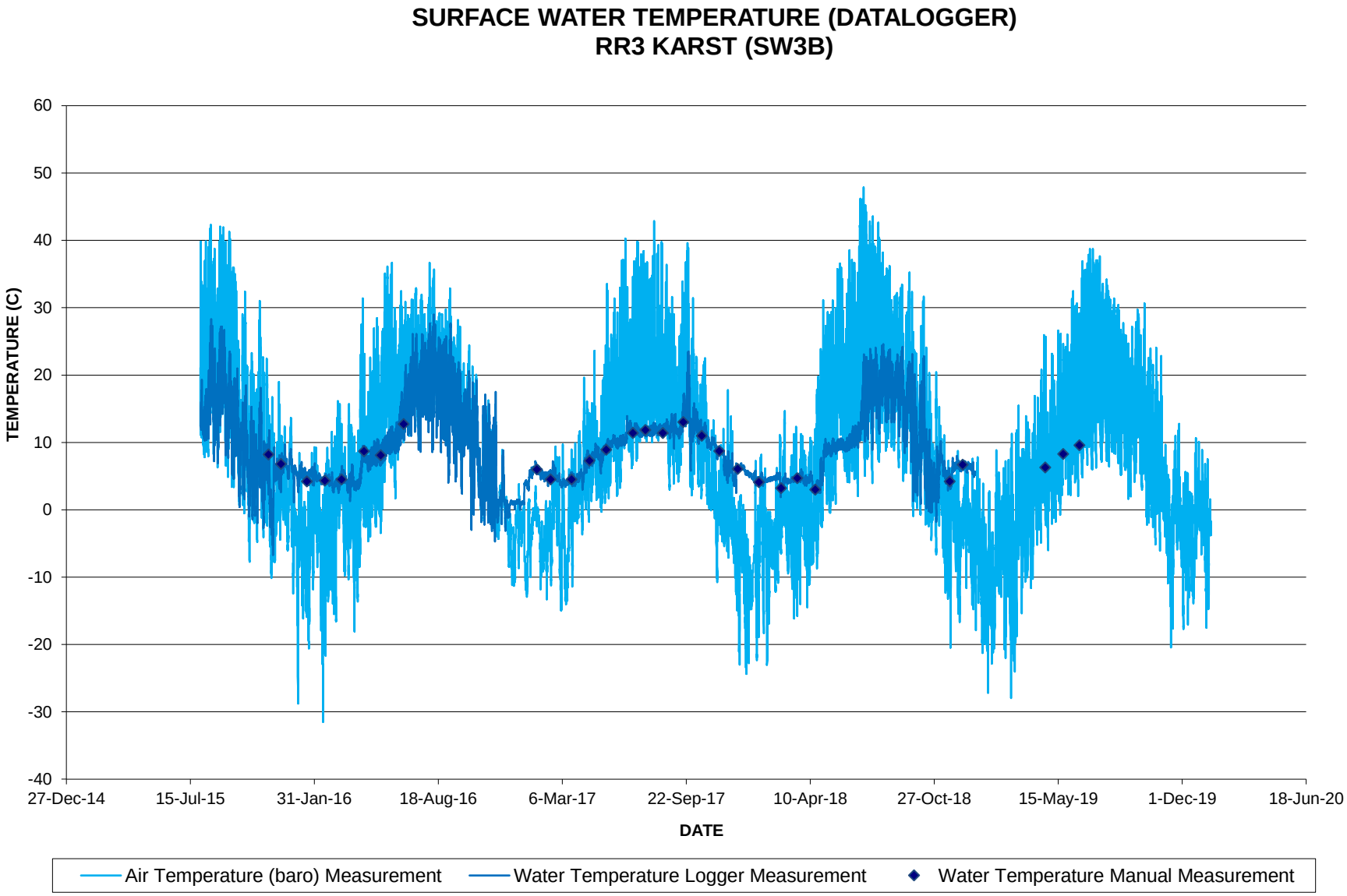

SURFACE WATER TEMPERATURE (DATALOGGER)
RR3 KARST (SW3B)
TEMPERATURE (C)
60
50
40
30
20
10
0
-10
-20
-30
-40
27-Dec-14
15-Jul-15
31-Jan-16
18-Aug-16
6-Mar-17
22-Sep-17
10-Apr-18
27-Oct-18
15-May-19
1-Dec-19
18-Jun-20
DATE
Air Temperature (baro) Measurement
Water Temperature Logger Measurement
Water Temperature Manual Measurement

FIGURE B-56

# SURFACE WATER HYDROGRAPH
## Pretty River Control

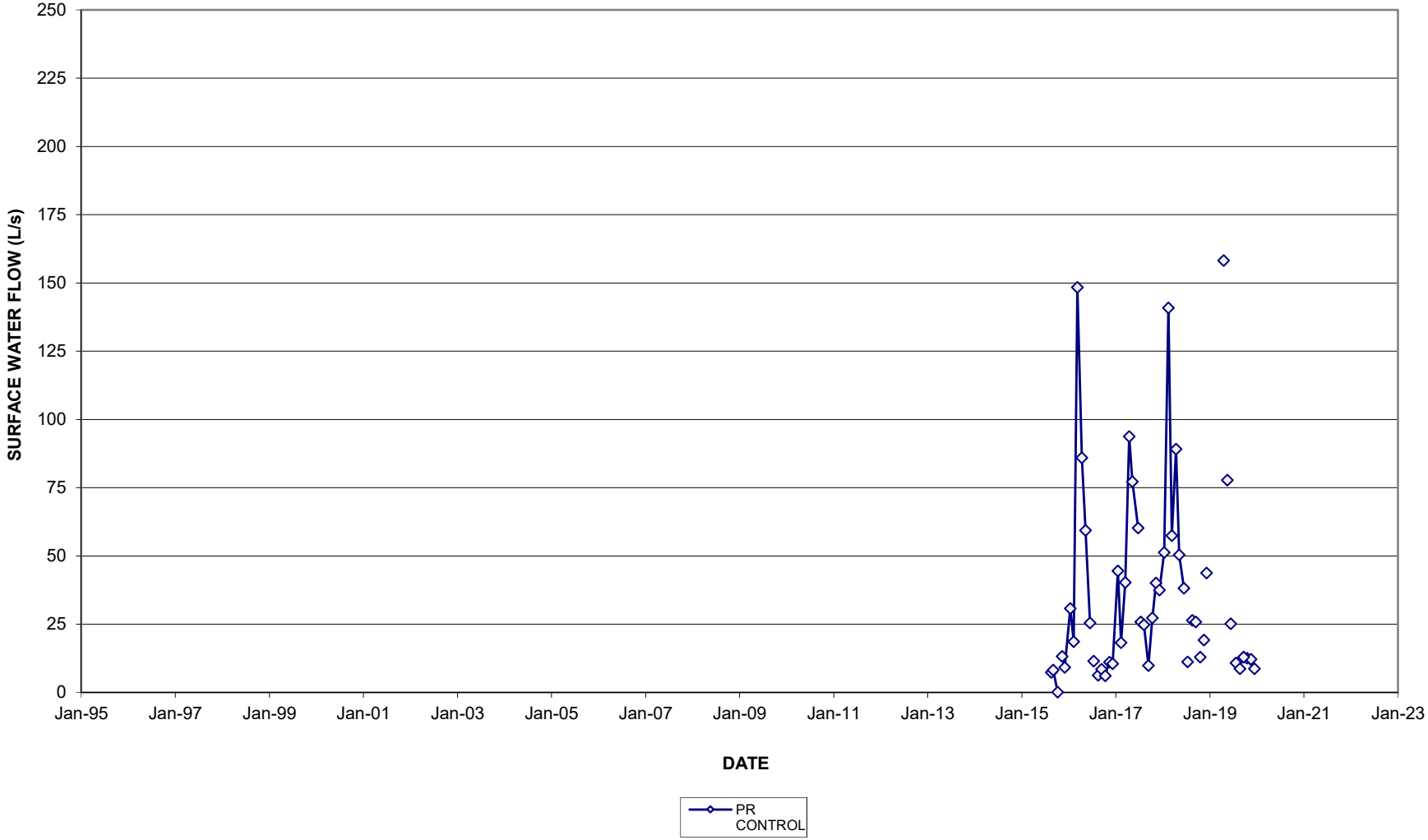
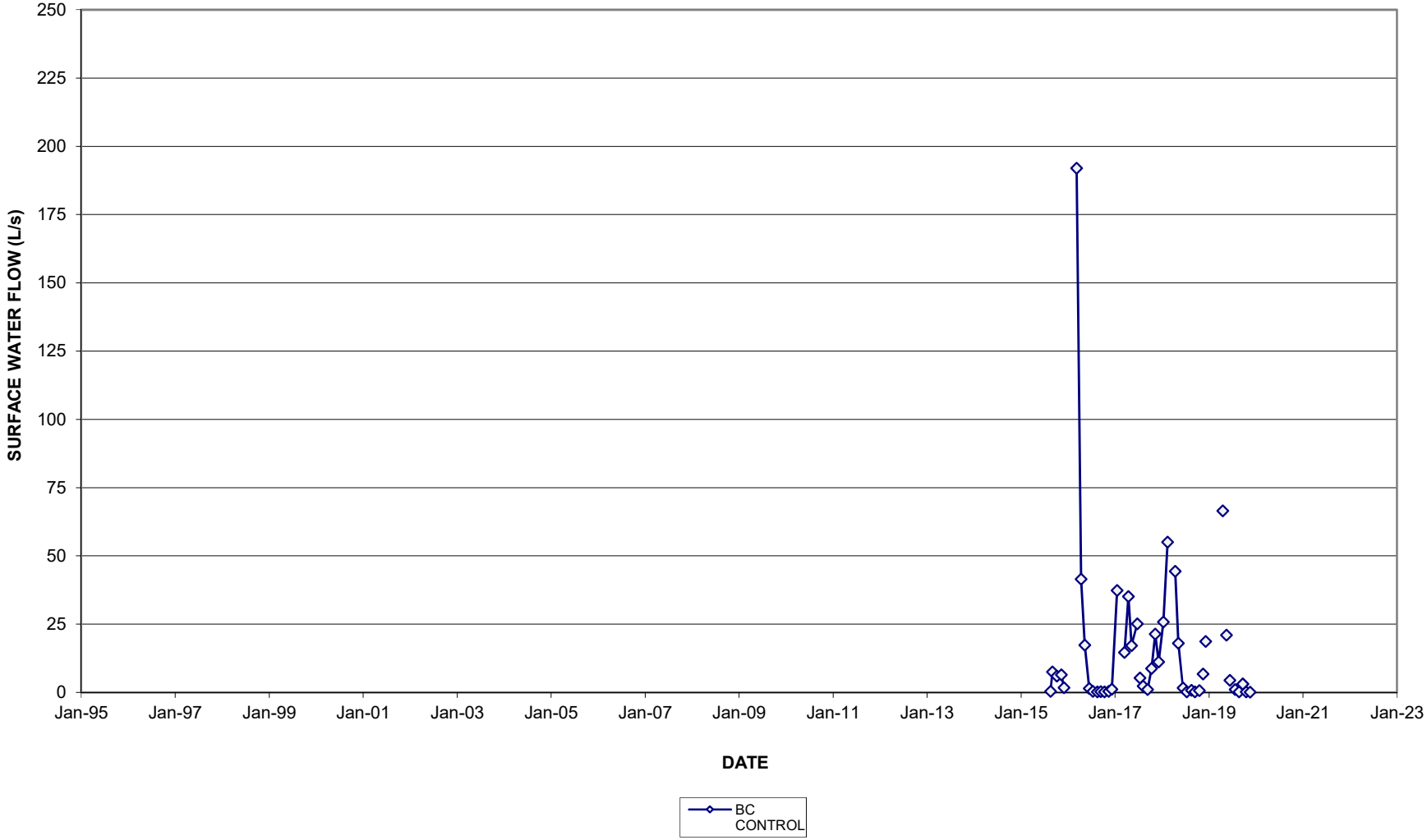


FIGURE B-57

# SURFACE WATER HYDROGRAPH
## Batteaux Creek Control



# TABLE B-4
## SURFACE WATER FLOW HIGH, LOW AND SEASONAL FLOW SUMMARY
DUNTROON QUARRY - 2019 AMP SUMMARY REPORT
111-53312-02 100

| Flow (L/s) | QFSW 2 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 1 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 0-2 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

**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 - 2019 AMP SUMMARY REPORT
111-53312-02 100

| Flow (L/s) | SW 3 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 - 2019 AMP SUMMARY REPORT
111-53312-02 100

| Flow (L/s) | SW 6 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 6A | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 7 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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
DUNTROON QUARRY - 2019 AMP SUMMARY REPORT
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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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 11A | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

**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 - 2019 AMP SUMMARY REPORT
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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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 11C | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 11D | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 11E | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

**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 - 2019 AMP SUMMARY REPORT
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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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 12A | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 14 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

**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 15 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 16 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 17 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 17A | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

**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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 18 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 19 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 20 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

**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 - 2019 AMP SUMMARY REPORT
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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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 21A | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 21B | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

**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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 22A | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 22C | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

**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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 24A | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 24B | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

| Flow (L/s) | SW 24C | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |
| **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 |

**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 - 2019 AMP SUMMARY REPORT
111-53312-02 100

| 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 - 2019 AMP SUMMARY REPORT
111-53312-02 100

| Flow (L/s) | SW 77 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **High** | - | - | - | - | - | - | 0.7 | 0.8 | 1.0 | 1.3 | 1.4 | 1.3 | 2.5 | 1.4 | 1.5 | 1.4 |
| **Low** | - | - | - | - | - | - | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.0 | 0.0 |
| **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 |
| **Summer Average** | - | - | - | - | - | - | 0.3 | 0.2 | 0.1 | <0.1 | <0.1 | 0.5 | 0.2 | 0.4 | 0.3 | 0.0 |
| **Fall Average** | - | - | - | - | - | - | 0.2 | 0.1 | 0.4 | 0.4 | 0.1 | 0.1 | 0.3 | 0.4 | 0.4 | 0.0 |

| Flow (L/s) | RR3 OUT | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
| **High** | - | - | - | - | - | - | - | - | - | - | - | 0.9 | 20.3 | 14.3 | 16.1 | 18.3 |
| **Low** | - | - | - | - | - | - | - | - | - | - | - | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| **Winter Average** | - | - | - | - | - | - | - | - | - | - | - | - | 7.4 | 3.5 | 10.8 | 3.4 |
| **Spring Average** | - | - | - | - | - | - | - | - | - | - | - | - | 12.0 | 6.8 | 7.2 | 8.4 |
| **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 |
| **High** | - | - | - | - | - | - | - | - | - | - | - | 0.3 | 6.2 | 2.7 | 4.7 | 1.1 |
| **Low** | - | - | - | - | - | - | - | - | - | - | - | 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 |
| **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 |
| **High** | - | - | - | - | - | - | - | - | - | - | - | 13.3 | 148.4 | 93.8 | 140.9 | 158.2 |
| **Low** | - | - | - | - | - | - | - | - | - | - | - | 0.2 | 6.1 | 9.9 | 11.2 | 8.7 |
| **Winter Average** | - | - | - | - | - | - | - | - | - | - | - | - | 24.8 | 31.5 | 96.1 | Frozen |
| **Spring Average** | - | - | - | - | - | - | - | - | - | - | - | - | 79.8 | 67.9 | 58.8 | 87.1 |
| **Summer Average** | - | - | - | - | - | - | - | - | - | - | - | 7.9 | 8.8 | 20.2 | 21.2 | 10.9 |
| **Fall Average** | - | - | - | - | - | - | - | - | - | - | - | 7.6 | 9.2 | 35.0 | 25.3 | 11.2 |

**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 - 2019 AMP SUMMARY REPORT
111-53312-02 100

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

**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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |
| **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 | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| **SW B-1** | | | | | |
| | 22-May-03 | 9.0 | | | |
| | 12-Feb-04 | 4.4 | | 364 | 12.6 |
| | 19-Mar-04 | 4.0 | | 545 | 12.6 |
| | 14-May-04 | 12.8 | 7.9 | 536 | |
| | 20-May-04 | 10.9 | 7.9 | 558 | |
| | 28-May-04 | 10.9 | 8.0 | 501 | |
| | 4-Jun-04 | 13.2 | 7.9 | 560 | |
| | 16-Jul-04 | 15.3 | 7.7 | 621 | 9.0 |
| | 22-Jul-04 | 19.8 | 8.0 | | 9.2 |
| | 19-Nov-04 | 7.9 | 7.8 | 628 | |
| | 25-Nov-04 | 4.0 | 7.7 | 598 | 11.8 |
| | 2-Dec-04 | 4.7 | 7.6 | 536 | 12.5 |
| | 9-Dec-04 | 5.1 | 7.6 | 512 | |
| | 17-Dec-04 | 2.8 | 7.7 | 718 | #REF! |
| | 5-Jan-05 | 3.9 | 7.7 | 403 | |
| | 13-Jan-05 | 5.0 | 7.6 | 418 | 12.6 |
| | 28-Jan-05 | 3.3 | 7.7 | 370 | |
| | 3-Feb-05 | 2.8 | 7.7 | 407 | |
| | 10-Feb-05 | 2.8 | 7.4 | 453 | 12.8 |
| | 7-Apr-05 | 4.3 | 7.6 | 360 | |
| | 15-Apr-05 | 4.7 | 7.1 | 409 | 11.7 |
| | 21-Apr-05 | 5.9 | 7.3 | 413 | 12.0 |
| | 29-Apr-05 | 5.8 | 7.3 | 407 | 12.1 |
| | 6-May-05 | 10.1 | 7.1 | 617 | |
| | 27-May-05 | 12.2 | 6.1 | 555 | |
| | 3-Jun-05 | 12.1 | 7.1 | 572 | |
| | 30-Jun-05 | 17.0 | 7.4 | 678 | |
| | 7-Jul-05 | 16.6 | 5.5 | 635 | |
| | 15-Jul-05 | 18.6 | 7.0 | 967 | 9.0 |
| | 21-Jul-05 | 18.4 | 7.9 | 1313 | 8.4 |
| | 28-Jul-05 | 16.7 | 7.3 | 800 | 8.9 |
| | 2-Aug-05 | 18.5 | 8.8 | 720 | |
| | 12-Aug-05 | 17.6 | 7.4 | 1144 | |
| | 1-Sep-05 | 17.1 | | 690 | 9.3 |
| | 9-Sep-05 | 17.3 | 6.5 | 696 | |
| | 16-Sep-05 | 17.0 | 7.4 | 732 | |
| | 18-Nov-05 | 6.1 | 8.2 | 906 | |
| | 25-Nov-05 | 5.9 | 8.1 | 573 | 11.0 |
| | 2-Dec-05 | 5.2 | 9.2 | 563 | 10.7 |
| | 9-Dec-05 | 4.5 | 9.1 | 552 | 12.2 |
| | 16-Dec-05 | 3.9 | 8.1 | 597 | 13.2 |
| | 22-Dec-05 | 3.8 | 8.0 | 596 | 12.6 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 6-Jan-06 | 4.4 | 8.0 | 560 | |
| | 13-Jan-06 | 5.4 | 8.0 | 524 | |
| | 20-Jan-06 | 5.0 | 6.4 | 497 | 12.5 |
| | 27-Jan-06 | 3.7 | 7.3 | 535 | 13.2 |
| | 3-Feb-06 | 4.2 | 7.5 | 505 | |
| | 10-Mar-06 | 3.3 | 8.1 | 395 | |
| | 17-Mar-06 | 3.6 | 8.2 | 483 | 12.9 |
| | 24-Mar-06 | 5.1 | 8.1 | 453 | |
| | 31-Mar-06 | 7.3 | 8.0 | 607 | |
| | 7-Apr-06 | 5.1 | 8.1 | 601 | |
| **QFSW 1** | | | | | |
| | 23-Apr-04 | 4.7 | 7.6 | 334 | |
| | 30-Apr-04 | 6.9 | 7.8 | 622 | |
| | 14-May-04 | 15.9 | 7.9 | 608 | 8.9 |
| | 20-May-04 | 7.5 | 7.5 | 483 | 8.3 |
| | 28-May-04 | 12.1 | 7.9 | 546 | 9.0 |
| | 4-Jun-04 | 15.4 | 8.0 | 626 | 9.4 |
| | 11-Jun-04 | 18.3 | 8.1 | 702 | |
| **QFSW 2** | | | | | |
| | 23-Apr-04 | 5.9 | 7.8 | 374 | |
| | 30-Apr-04 | 11.9 | 8.1 | 640 | |
| | 14-May-04 | 11.8 | 7.8 | 538 | 10.6 |
| | 20-May-04 | 11.2 | 7.9 | 559 | 11.0 |
| | 28-May-04 | 9.7 | 7.9 | 477 | 11.0 |
| | 4-Jun-04 | 15.7 | 7.8 | 590 | 9.9 |
| | 11-Jun-04 | 16.0 | 7.8 | 652 | 9.2 |
| | 17-Jun-04 | 14.0 | 7.7 | 649 | |
| | 23-Jun-04 | 15.2 | 7.9 | 701 | |
| | 1-Jul-04 | 13.1 | 7.7 | 662 | 7.8 |
| | 22-Jul-04 | 19.6 | 7.8 | | 8.4 |
| | 29-Jul-04 | 16.3 | 7.6 | 659 | 9.6 |
| | 6-Aug-04 | 16.6 | 7.8 | 708 | 9.0 |
| | 12-Aug-04 | 15.5 | 7.8 | 712 | |
| | 19-Aug-04 | 17.3 | 7.7 | 757 | 9.6 |
| | 26-Aug-04 | 17.0 | 7.7 | 712 | |
| | 3-Sep-04 | 17.2 | 7.8 | 679 | 8.1 |
| | 9-Sep-04 | 14.3 | 8.0 | 713 | 7.9 |
| | 17-Sep-04 | 13.7 | 7.7 | 732 | 8.2 |
| | 23-Sep-04 | 16.3 | 7.6 | 803 | 8.1 |
| | 1-Oct-04 | 14.6 | 7.6 | 783 | 8.4 |
| | 7-Oct-04 | 14.3 | 7.8 | 774 | 9.2 |
| | 14-Oct-04 | 11.4 | 7.6 | 712 | 9.0 |
| | 20-Oct-04 | 9.8 | 7.7 | 692 | 10.0 |
| | 28-Oct-04 | 10.7 | 7.7 | 809 | 9.5 |
| | 4-Nov-04 | 8.0 | 7.6 | 595 | 9.6 |
| | 11-Nov-04 | 7.3 | 7.7 | 611 | 10.7 |
| | 19-Nov-04 | 7.9 | 7.6 | 641 | 10.7 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 25-Nov-04 | 5.4 | 7.6 | 624 | 10.5 |
| | 2-Dec-04 | 5.9 | 7.6 | 564 | 10.8 |
| | 9-Dec-04 | 4.6 | 7.5 | 477 | 10.6 |
| | 17-Dec-04 | 3.3 | 7.6 | 814 | |
| | 5-Jan-05 | 4.6 | 7.5 | 492 | 11.0 |
| | 13-Jan-05 | 3.4 | 7.3 | 373 | 11.3 |
| | 20-Jan-05 | 2.7 | 7.1 | 430 | 11.0 |
| | 28-Jan-05 | 3.0 | 7.3 | 447 | 10.3 |
| | 3-Feb-05 | 3.2 | 7.3 | 452 | 10.6 |
| | 10-Feb-05 | 4.4 | 7.1 | 477 | 10.3 |
| | 16-Feb-05 | 3.9 | 7.6 | 467 | 10.8 |
| | 24-Feb-04 | 4.1 | 7.8 | 482 | 10.8 |
| | 3-Mar-05 | 2.9 | 7.2 | 469 | 10.8 |
| | 10-Mar-05 | 4.5 | 7.4 | 500 | 10.7 |
| | 17-Mar-05 | 4.1 | 7.2 | 457 | 10.3 |
| | 24-Mar-05 | 4.9 | 7.2 | 477 | 10.3 |
| | 30-Mar-05 | 6.1 | 7.5 | 477 | 10.4 |
| | 7-Apr-05 | 4.2 | 7.4 | 376 | 10.5 |
| | 15-Apr-05 | 4.9 | 6.9 | 410 | 10.5 |
| | 21-Apr-05 | 5.6 | 7.1 | 417 | 9.2 |
| | 29-Apr-05 | 6.1 | 7.2 | 414 | 10.4 |
| | 6-May-05 | 9.9 | 7.0 | 634 | |
| | 13-May-05 | 8.8 | 7.9 | 509 | 10.0 |
| | 20-May-05 | 10.9 | 7.6 | 530 | 9.6 |
| | 27-May-05 | 12.2 | 7.3 | 570 | 9.1 |
| | 3-Jun-05 | 12.3 | 6.7 | 585 | 8.5 |
| | 10-Jun-05 | 14.9 | 7.3 | 626 | 8.4 |
| | 17-Jun-05 | 13.0 | 7.2 | 610 | 7.7 |
| | 24-Jun-05 | 18.0 | 7.6 | 701 | 9.4 |
| | 30-Jun-05 | 17.1 | 7.2 | 690 | |
| | 7-Jul-05 | 16.9 | 6.6 | 852 | 8.0 |
| | 15-Jul-05 | 18.1 | 6.5 | 977 | 7.6 |
| | 21-Jul-05 | 19.1 | 8.1 | 1361 | 7.1 |
| | 28-Jul-05 | 17.1 | 6.9 | 1270 | 7.3 |
| | 2-Aug-05 | 17.8 | 8.1 | 802 | 5.7 |
| | 12-Aug-05 | 17.6 | 7.0 | 1176 | 9.5 |
| | 19-Aug-05 | 18.0 | 7.5 | 729 | |
| | 24-Aug-05 | 18.1 | 7.7 | 734 | 8.8 |
| | 1-Sep-05 | 17.9 | | 712 | 8.7 |
| | 9-Sep-05 | 18.5 | 6.9 | 722 | 9.0 |
| | 16-Sep-05 | 17.4 | 7.3 | 739 | |
| | 23-Sep-05 | 17.9 | 7.8 | 718 | 9.0 |
| | 30-Sep-05 | 16.1 | 8.0 | 701 | 9.1 |
| | 7-Oct-05 | 14.9 | 8.6 | 815 | |
| | 14-Oct-05 | 15.0 | 8.2 | 695 | 9.0 |
| | 21-Oct-05 | 13.7 | 8.4 | 689 | |
| | 28-Oct-06 | 11.6 | 7.9 | 705 | 10.7 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 4-Nov-05 | 11.0 | 8.2 | 708 | |
| | 11-Nov-05 | 9.4 | 8.4 | 681 | 10.6 |
| | 18-Nov-05 | 6.4 | 8.6 | 943 | |
| | 25-Nov-05 | 6.3 | 8.4 | 592 | 10.0 |
| | 2-Dec-05 | 5.8 | 9.2 | 583 | 10.3 |
| | 9-Dec-05 | 5.5 | 9.1 | 583 | 9.8 |
| | 16-Dec-05 | 4.7 | 8.2 | 620 | 9.4 |
| | 22-Dec-05 | 4.6 | 8.2 | 635 | 10.7 |
| | 6-Jan-06 | 5.7 | 8.1 | 592 | 10.7 |
| | 13-Jan-06 | 5.9 | 7.0 | 553 | 10.4 |
| | 20-Jan-06 | 4.9 | 7.2 | 524 | 10.3 |
| | 27-Jan-06 | 5.0 | 7.5 | 582 | 10.8 |
| | 3-Feb-06 | 4.8 | 7.7 | 526 | 10.9 |
| | 10-Feb-06 | 4.4 | 8.1 | 530 | 11.1 |
| | 20-Feb-06 | 4.6 | 8.6 | 539 | |
| | 24-Feb-06 | 3.7 | 8.0 | 519 | |
| | 3-Mar-06 | 2.0 | 7.9 | 523 | |
| | 10-Mar-06 | 3.4 | 8.1 | 447 | 12.6 |
| | 20-Mar-06 | 3.2 | 8.3 | 703 | |
| | 24-Mar-06 | 5.0 | 8.1 | 463 | |
| | 31-Mar-06 | 7.7 | 8.0 | 617 | |
| | 13-Apr-06 | 8.2 | 8.0 | 623 | |
| | 21-Apr-06 | 9.0 | 8.1 | 634 | |
| | 26-Apr-06 | 8.6 | 8.2 | 693 | |
| | 5-May-06 | 9.9 | 8.0 | 662 | |
| | 12-May-06 | 10.2 | 8.6 | 724 | |
| | 19-May-06 | 9.5 | 7.4 | 854 | |
| | 25-May-06 | 11.6 | 7.9 | 756 | |
| | 2-Jun-06 | 12.6 | 7.8 | 741 | |
| | 9-Jun-06 | 12.8 | 7.9 | 609 | |
| | 19-Jun-06 | 12.1 | 7.8 | 654 | |
| | 23-Jun-06 | 12.5 | 7.9 | 672 | |
| | 30-Jun-06 | 17.6 | 8.5 | 787 | |
| | 7-Jul-06 | 17.5 | 8.3 | 765 | |
| | 14-Jul-06 | 18.5 | 7.8 | 779 | |
| | 21-Jul-06 | 17.9 | 8.0 | 781 | |
| | 28-Jul-06 | 19.9 | 7.8 | 815 | |
| | 4-Aug-06 | 21.1 | 7.9 | 599 | |
| | 11-Aug-06 | 19.8 | 7.7 | 783 | |
| | 18-Aug-06 | 19.2 | 7.9 | 870 | |
| | 25-Aug-06 | 16.7 | 7.4 | 917 | |
| | 1-Sep-06 | 18.4 | 7.5 | 902 | |
| | 8-Sep-06 | 18.1 | 7.5 | 888 | |
| | 15-Sep-06 | 16.5 | 7.5 | 895 | |
| | 21-Sep-06 | 15.4 | 7.7 | 885 | |
| | 28-Sep-06 | 13.1 | 7.5 | 933 | |
| | 6-Oct-06 | 14.2 | 7.7 | 889 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 13-Oct-06 | 10.2 | 7.6 | 907 | |
| | 20-Oct-06 | 9.9 | 7.7 | 911 | |
| | 26-Oct-06 | 9.9 | 7.8 | 931 | |
| | 3-Nov-06 | 8.6 | 8.6 | 903 | 10.7 |
| | 10-Nov-06 | 9.3 | 7.9 | 872 | |
| | 17-Nov-06 | 7.5 | 7.8 | 829 | 10.4 |
| | 24-Nov-06 | 8.0 | 8.4 | 865 | 11.0 |
| | 4-Dec-06 | 6.0 | 7.6 | 853 | 10.4 |
| | 8-Dec-06 | 5.7 | 7.2 | 840 | 11.2 |
| | 14-Dec-06 | 5.9 | 7.7 | 889 | 12.3 |
| | 21-Dec-06 | 5.6 | 7.9 | 859 | 11.4 |
| | 28-Dec-06 | 5.0 | 7.7 | 876 | 11.3 |
| | 5-Jan-07 | 5.4 | 7.5 | 873 | 10.7 |
| | 12-Jan-07 | 4.8 | 7.3 | 795 | 11.5 |
| | 19-Jan-07 | 4.4 | 7.6 | 790 | 11.2 |
| | 26-Jan-07 | 4.6 | 8.1 | 796 | 10.3 |
| | 2-Feb-07 | 4.6 | 7.8 | 779 | 10.4 |
| | 9-Feb-07 | 4.6 | 7.7 | 723 | 9.9 |
| | 16-Feb-07 | 4.2 | 7.6 | 816 | 10.0 |
| | 22-Feb-07 | 4.6 | 8.1 | 816 | 9.4 |
| | 2-Mar-07 | 4.6 | 8.1 | 824 | 10.2 |
| | 9-Mar-07 | 5.3 | 7.3 | 673 | 9.6 |
| | 23-Mar-07 | 5.1 | 7.5 | 749 | 9.9 |
| | 30-Mar-07 | 6.1 | 7.7 | 671 | 10.7 |
| | 13-Apr-07 | 4.2 | 7.7 | 657 | 12.0 |
| | 20-Apr-07 | 6.6 | 7.7 | 630 | 11.1 |
| | 28-Apr-07 | 6.7 | 8.1 | 690 | 9.1 |
| | 4-May-07 | 8.1 | 7.9 | 635 | 8.9 |
| | 11-May-07 | 8.4 | 7.9 | 767 | 8.1 |
| | 18-May-07 | 9.1 | 8.2 | 674 | 8.2 |
| | 25-May-07 | 9.5 | 7.8 | 663 | 8.4 |
| | 1-Jun-07 | 10.5 | 7.7 | 703 | 7.7 |
| | 8-Jun-07 | 12.3 | 7.8 | 738 | 7.2 |
| | 14-Jun-07 | 12.3 | 8.0 | 753 | 7.4 |
| | 22-Jun-07 | 11.7 | 7.9 | 693 | 8.9 |
| | 29-Jun-07 | 14.1 | 8.1 | 697 | 8.5 |
| | 6-Jul-07 | 14.7 | 8.1 | 729 | 8.5 |
| | 13-Jul-07 | 14.5 | 8.2 | 746 | 8.2 |
| | 20-Jul-07 | 14.5 | 7.8 | 749 | 8.0 |
| | 27-Jul-07 | 14.2 | 7.6 | 683 | 8.1 |
| | 3-Aug-07 | 17.2 | 7.7 | 794 | 8.2 |
| | 10-Aug-07 | 16.5 | 7.6 | 728 | 8.0 |
| | 17-Aug-07 | 15.6 | 7.6 | 784 | 7.9 |
| | 24-Aug-07 | 15.9 | 7.9 | 803 | 7.5 |
| | 30-Aug-07 | 16.8 | 7.9 | 793 | 7.9 |
| | 7-Sep-07 | 16.9 | 7.7 | 803 | 8.2 |
| | 14-Sep-07 | 16.0 | 7.6 | 760 | 7.9 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 21-Sep-07 | 16.1 | 7.8 | 770 | 8.6 |
| | 28-Sep-07 | 14.1 | 8.3 | 821 | 8.2 |
| | 5-Oct-07 | 15.1 | 7.5 | 865 | 8.6 |
| | 12-Oct-07 | 13.1 | 7.4 | 784 | 7.7 |
| | 19-Oct-07 | 13.5 | 8.1 | 598 | 7.6 |
| | 26-Oct-07 | 11.7 | 7.2 | 789 | 8.4 |
| | 2-Nov-07 | 11.1 | 7.4 | 813 | 9.4 |
| | 9-Nov-07 | 9.2 | 7.2 | 797 | 8.2 |
| | 16-Nov-07 | 8.3 | 7.4 | 838 | 7.8 |
| | 23-Nov-07 | 7.9 | 8.0 | 840 | 8.9 |
| | 7-Dec-07 | 7.0 | 7.8 | 758 | 8.3 |
| | 14-Dec-07 | 6.6 | 7.3 | 763 | 7.9 |
| | 20-Dec-07 | 4.5 | 7.3 | 786 | |
| | 4-Jan-08 | 6.2 | 7.2 | 807 | 9.1 |
| | 11-Jan-08 | 5.1 | 7.5 | 676 | 11.3 |
| | 18-Jan-08 | 3.4 | 7.2 | 651 | 12.2 |
| | 25-Jan-08 | 3.5 | 7.7 | 667 | 12.4 |
| | 1-Feb-08 | 3.5 | 7.4 | 703 | 12.0 |
| | 8-Feb-08 | 3.9 | 7.2 | 713 | 11.6 |
| | 15-Feb-08 | 2.9 | 7.2 | 650 | 12.0 |
| | 22-Feb-08 | 3.5 | 7.4 | 752 | |
| | 29-Feb-08 | 3.6 | 7.4 | 723 | |
| | 7-Mar-08 | 3.3 | 7.4 | 737 | |
| | 14-Mar-08 | 3.7 | 7.1 | 725 | |
| | 20-Mar-08 | 3.2 | 7.7 | 732 | 12.8 |
| | 28-Mar-08 | 4.1 | 7.4 | 608 | |
| | 25-Apr-08 | 9.3 | 7.9 | 559 | 8.9 |
| | 2-May-08 | 7.5 | 6.9 | 530 | 8.2 |
| | 8-May-08 | 9.0 | 7.3 | 638 | |
| | 15-May-08 | 17.9 | 7.6 | 648 | 8.6 |
| | 23-May-08 | 10.4 | 7.7 | 576 | 8.4 |
| | 30-May-08 | 10.5 | 7.3 | 698 | 8.1 |
| | 6-Jun-08 | 15.5 | 7.3 | 798 | 6.6 |
| | 13-Jun-08 | 13.8 | 7.7 | 686 | 6.5 |
| | 20-Jun-08 | 13.2 | 7.7 | 726 | 6.4 |
| | 27-Jun-08 | 14.9 | 7.1 | 781 | 6.8 |
| | 4-Jul-08 | 14.2 | 7.1 | 783 | |
| | 11-Jul-08 | 15.4 | 7.0 | 763 | 7.1 |
| | 18-Jul-08 | 16.2 | 7.7 | 826 | 5.2 |
| | 25-Jul-08 | 16.8 | 7.0 | 843 | 5.8 |
| | 1-Aug-08 | 17.2 | 6.9 | 827 | 5.6 |
| | 8-Aug-08 | 16.3 | 7.4 | 814 | 4.8 |
| | 15-Aug-08 | 16.4 | 7.3 | 936 | 5.5 |
| | 22-Aug-08 | 17.4 | 7.5 | 937 | 4.7 |
| | 28-Aug-08 | 16.1 | 7.4 | | 6.5 |
| | 5-Sep-08 | 16.4 | 7.8 | 852 | 6.3 |
| | 12-Sep-08 | 15.5 | 7.9 | 864 | 5.6 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 19-Sep-08 | 15.0 | 8.0 | 882 | |
| | 26-Sep-08 | 15.0 | 7.5 | 859 | 5.7 |
| | 3-Oct-08 | 12.1 | 7.7 | 835 | 6.7 |
| | 10-Oct-08 | 12.2 | 7.2 | 850 | 7.6 |
| | 17-Oct-08 | 11.8 | | 785 | 5.3 |
| | 24-Oct-08 | 10.0 | 7.9 | 820 | 5.4 |
| | 31-Oct-08 | 9.5 | 7.7 | 814 | 5.8 |
| | 7-Nov-08 | 9.7 | 7.5 | 467 | 8.3 |
| | 14-Nov-08 | 8.6 | | 584 | 8.8 |
| | 28-Nov-08 | 5.5 | | 412 | 7.1 |
| | 12-Dec-08 | 4.6 | 6.4 | 759 | 8.8 |
| | 23-Dec-08 | 4.0 | 8.0 | 654 | 8.1 |
| | 16-Jan-09 | 3.7 | | 656 | 9.7 |
| | 23-Jan-09 | 3.9 | 8.0 | 666 | 8.3 |
| | 6-Feb-09 | 4.2 | | 611 | 8.8 |
| | 20-Feb-09 | 3.3 | 8.1 | 610 | 13.3 |
| | 27-Feb-09 | 2.7 | 8.1 | 599 | 13.5 |
| | 6-Mar-09 | 3.7 | | 519 | 12.6 |
| | 13-Mar-09 | 3.4 | 8.4 | 552 | |
| | 20-Mar-09 | 4.3 | 8.3 | 554 | |
| | 27-Mar-09 | 5.0 | 7.4 | 640 | |
| | 3-Apr-09 | 5.5 | 7.5 | 583 | |
| | 9-Apr-09 | 4.4 | 7.8 | 530 | |
| | 17-Apr-09 | 6.4 | 8.3 | 596 | |
| | 24-Apr-09 | 7.5 | 8.1 | 589 | |
| | 1-May-09 | 10.5 | 8.2 | 431 | 10.5 |
| | 8-May-09 | 11.1 | 7.5 | 575 | 10.0 |
| | 15-May-09 | 11.9 | 8.1 | 480 | 10.5 |
| | 22-May-09 | 11.4 | 8.1 | 497 | 9.5 |
| | 29-May-09 | 11.4 | 8.0 | 627 | |
| | 5-Jun-09 | 11.8 | 7.1 | 569 | 10.3 |
| | 12-Jun-09 | 12.1 | 8.3 | 575 | 9.6 |
| | 19-Jun-09 | 13.3 | 7.6 | 1229 | 9.7 |
| | 26-Jul-09 | 14.9 | 7.9 | 692 | 9.2 |
| | 2-Jul-09 | 13.4 | 7.6 | 609 | 9.3 |
| | 10-Jul-09 | 14.3 | | | 9.6 |
| | 17-Jul-09 | 14.1 | 9.1 | 693 | 9.1 |
| | 24-Jul-09 | 13.7 | 7.9 | 714 | 8.8 |
| | 31-Jul-09 | 14.8 | 8.0 | 739 | 8.9 |
| | 7-Aug-09 | 14.5 | 7.9 | 760 | 7.6 |
| | 14-Aug-09 | 17.5 | 8.3 | 675 | 6.1 |
| | 21-Aug-09 | 16.0 | 9.0 | 801 | 8.6 |
| | 28-Aug-09 | 15.4 | 8.4 | 738 | 8.8 |
| | 4-Sep-09 | 15.5 | 8.9 | 763 | 8.6 |
| | 11-Sep-09 | 14.8 | 8.3 | 737 | 8.8 |
| | 18-Sep-09 | 13.9 | 7.7 | 829 | 6.9 |
| | 25-Sep-09 | 13.7 | 7.7 | 731 | 9.9 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 2-Oct-09 | 12.0 | 8.4 | 851 | 9.7 |
| | 9-Oct-09 | 10.8 | 7.7 | 894 | 11.2 |
| | 16-Oct-09 | 9.4 | 8.2 | 846 | |
| | 23-Oct-09 | 8.6 | 7.6 | 767 | 10.9 |
| | 30-Oct-09 | 9.0 | 7.7 | 804 | |
| | 6-Nov-09 | 7.1 | 6.5 | 808 | |
| | 13-Nov-09 | 8.2 | 7.4 | 858 | |
| | 20-Nov-09 | 7.2 | 7.4 | 737 | 12.1 |
| | 27-Nov-09 | 7.5 | 7.5 | 739 | 11.0 |
| | 4-Dec-09 | 4.8 | 7.6 | 707 | 12.9 |
| | 11-Dec-09 | 4.8 | 7.6 | 662 | 11.0 |
| | 18-Dec-09 | 4.8 | 7.6 | 758 | 11.2 |
| | 22-Dec-09 | 4.9 | 7.6 | 757 | 11.5 |
| | 15-Jan-10 | 5.0 | 7.6 | 741 | 10.6 |
| | 22-Jan-10 | 4.5 | 7.5 | 756 | 10.6 |
| | 5-Feb-10 | 5.0 | 7.0 | 742 | 8.4 |
| | 12-Feb-10 | 4.8 | 7.0 | 736 | 9.4 |
| | 19-Feb-10 | 4.9 | 7.9 | 738 | 10.3 |
| | 1-Mar-10 | 5.1 | 7.3 | 649 | 10.5 |
| | 5-Mar-10 | 5.9 | 7.4 | 542 | 9.2 |
| | 12-Mar-10 | 5.4 | 7.2 | 721 | 9.6 |
| | 19-Mar-10 | 7.3 | 7.6 | 622 | 10.8 |
| | 26-Mar-10 | 5.4 | 7.2 | 566 | 10.6 |
| | 9-Apr-10 | 7.2 | 7.5 | 666 | 11.9 |
| | 16-Apr-10 | 9.3 | 8.0 | 484 | 10.1 |
| | 23-Apr-10 | 8.7 | 7.0 | 471 | 11.2 |
| | 30-Apr-10 | 9.9 | 7.9 | 463 | 10.5 |
| | 7-May-10 | 9.7 | 7.9 | 448 | 10.1 |
| | 14-May-10 | 10.3 | 7.9 | 454 | 10.0 |
| | 21-May-10 | 11.1 | 7.8 | 498 | 9.4 |
| | 28-May-10 | 13.7 | 7.8 | 484 | 9.2 |
| | 4-Jun-10 | 13.2 | 7.8 | 541 | 6.2 |
| | 11-Jun-10 | 12.8 | 7.8 | 465 | 6.1 |
| | 18-Jun-10 | 13.5 | 7.7 | 565 | 11.3 |
| | 25-Jun-10 | 14.0 | 7.8 | 543 | 9.2 |
| | 9-Jul-10 | 15.7 | 7.7 | 541 | 8.8 |
| | 15-Jul-10 | 16.4 | 7.7 | 627 | 8.0 |
| | 23-Jul-10 | 15.6 | 7.6 | 614 | 9.1 |
| | 30-Jul-10 | 16.3 | 7.7 | 529 | 7.5 |
| | 6-Aug-10 | 15.7 | 7.6 | 606 | 10.8 |
| | 13-Aug-10 | 16.4 | 7.6 | 640 | 8.5 |
| | 20-Aug-10 | 15.7 | 7.6 | 654 | 6.7 |
| | 27-Aug-10 | 15.4 | 7.3 | 606 | 6.4 |
| | 3-Sep-10 | 16.3 | 7.7 | 674 | 7.7 |
| | 10-Sep-10 | 15.1 | 7.7 | 555 | 8.9 |
| | 17-Sep-10 | 14.3 | 7.7 | 563 | 8.0 |
| | 24-Sep-10 | 14 69 | 7.7 | | 7.5 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 1-Oct-10 | 13.2 | 7.7 | 631 | 7.5 |
| | 8-Oct-10 | 12.8 | 7.8 | 636 | 8.7 |
| | 15-Oct-10 | 11.0 | 7.6 | 596 | 8.3 |
| | 22-Oct-10 | 10.4 | 7.7 | 625 | 8.4 |
| | 29-Oct-10 | 10.2 | 7.8 | 523 | 7.5 |
| | 5-Nov-10 | 7.6 | 7.6 | 599 | 8.2 |
| | 12-Nov-10 | 8.6 | 7.6 | 630 | 8.4 |
| | 19-Nov-10 | 7.7 | 8.0 | 516 | 9.4 |
| | 26-Nov-10 | 6.2 | 7.6 | 469 | 10.1 |
| | 3-Dec-10 | 0.1 | 7.7 | 485 | 8.8 |
| | 9-Dec-10 | 4.7 | 7.6 | 413 | 13.0 |
| | 17-Dec-10 | 5.2 | 8.1 | 485 | 10.8 |
| | 23-Dec-10 | 4.8 | 8.1 | 414 | 8.3 |
| | 7-Jan-11 | 3.6 | 7.8 | 404 | 12.5 |
| | 14-Jan-11 | 4.6 | 7.7 | 380 | 10.2 |
| | 21-Jan-11 | 3.7 | 8.1 | 378 | 9.3 |
| | 28-Jan-11 | 4.5 | 7.7 | 372 | 8.7 |
| | 4-Feb-11 | 3.9 | 7.7 | 372 | 8.8 |
| | 11-Feb-11 | 4.8 | 8.0 | 443 | 9.1 |
| | 18-Feb-11 | 4.6 | 8.3 | 429 | 10.1 |
| | 25-Feb-11 | 4.4 | 7.4 | 404 | 12.7 |
| | 4-Mar-11 | 4.9 | 7.5 | 400 | 10.9 |
| | 11-Mar-11 | 2.4 | 7.6 | 362 | 11.6 |
| | 18-Mar-11 | 2.4 | 8.2 | 209 | - |
| | 25-Mar-11 | 5.4 | 8.4 | 402 | 12.0 |
| | 1-Apr-11 | 4.6 | 7.2 | 362 | 10.7 |
| | 8-Apr-11 | 4.6 | 7.9 | 376 | 9.7 |
| | 15-Apr-11 | 5.4 | 8.1 | 321 | 12.0 |
| | 21-Apr-11 | 4.9 | 8.1 | 373 | 12.1 |
| | 6-May-11 | 7.4 | 8.4 | 314 | 10.9 |
| | 13-May-11 | 9.7 | 8.2 | 474 | 12.6 |
| | 20-May-11 | 10.2 | 7.9 | 395 | 11.0 |
| | 3-Jun-11 | 12.9 | 7.9 | 432 | 9.1 |
| | 10-Jun-11 | 13.1 | 7.7 | 501 | 7.8 |
| | 17-Jun-11 | 13.3 | 6.6 | 481 | 7.9 |
| | 24-Jun-11 | 13.1 | 7.8 | 527 | 7.3 |
| | 30-Jun-11 | 13.8 | 7.5 | 486 | 9.2 |
| | 8-Jul-11 | 15.2 | 7.7 | 589 | 7.4 |
| | 14-Jul-11 | 15.1 | 8.0 | 593 | 7.3 |
| | 22-Jul-11 | 17.4 | 7.7 | 629 | 9.5 |
| | 29-Jul-11 | 15.4 | 7.9 | 542 | 6.3 |
| | 5-Aug-11 | 16.6 | 7.7 | 613 | 8.5 |
| | 12-Aug-11 | 15.5 | 7.9 | 644 | 6.8 |
| | 19-Aug-11 | 15.5 | 8.0 | 458 | 6.8 |
| | 26-Aug-11 | 15.2 | 7.8 | 661 | 7.2 |
| | 2-Sep-11 | 15.56 | 7.43 | 552 | 7.41 |
| | 9-Sep-11 | 15.57 | 8.31 | 632 | 7.17 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 16-Sep-11 | 13.29 | 8.53 | 557 | 6.73 |
| | 30-Sep-11 | 12.88 | 8.17 | 618 | 8.03 |
| | 6-Oct-11 | 11.27 | 7.9 | 694 | 7.97 |
| | 14-Oct-11 | 13.3 | 7.7 | 580 | 8.6 |
| | 21-Oct-11 | 10.0 | 8.1 | 643 | 9.4 |
| | 28-Oct-11 | 9.6 | 7.7 | 594 | 8.2 |
| | 4-Nov-11 | 8.2 | 8.1 | 520 | 9.8 |
| | 11-Nov-11 | 7.7 | 8.0 | 591 | 4.0 |
| | 25-Nov-11 | 7.4 | 8.7 | 554 | 7.8 |
| | 9-Dec-11 | 6.6 | 8.1 | 438 | 7.4 |
| | 16-Dec-11 | 6.2 | 7.3 | 422 | 10.9 |
| | 6-Jan-12 | 5.5 | 7.3 | 448 | 10.7 |
| | 20-Jan-12 | 4.7 | 8.4 | 368 | 8.0 |
| | 27-Jan-12 | 4.6 | 9.0 | 315 | 11.7 |
| | 3-Feb-12 | 4.8 | 8.2 | 284 | 9.2 |
| | 10-Feb-12 | 4.2 | 8.5 | 360 | 10.6 |
| | 17-Feb-12 | 4.7 | 8.6 | 372 | 11.4 |
| | 1-Mar-12 | 4.7 | 8.9 | 216 | - |
| | 23-Mar-12 | 7.4 | 7.6 | - | 8.6 |
| | 30-Mar-12 | 6.1 | 9.0 | 379 | 9.8 |
| | 13-Apr-12 | 6.7 | 8.5 | 409 | 10.1 |
| | 20-Apr-12 | 7.8 | 8.8 | 445 | 6.8 |
| | 27-Apr-12 | 6.0 | 8.7 | 345 | 9.0 |
| | 4-May-12 | 8.4 | 8.1 | 515 | 6.8 |
| | 11-May-12 | 9.1 | 7.7 | 315 | 9.4 |
| | 18-May-12 | 9.1 | 7.6 | 449 | 6.1 |
| | 25-May-12 | 11.4 | 6.4 | 512 | 5.5 |
| | 1-Jun-12 | 13.2 | 7.8 | 581 | 7.3 |
| | 8-Jun-12 | 13.2 | 8.3 | 545 | 7.8 |
| | 15-Jun-12 | 13.1 | 7.7 | 587 | 5.4 |
| | 22-Jun-12 | 13.2 | 7.7 | 580 | 7.4 |
| | 28-Jun-12 | 14.7 | 8.0 | 640 | 6.1 |
| | 6-Jul-12 | 15.1 | 7.8 | 688 | 5.5 |
| | 13-Jul-12 | 14.7 | 8.3 | 627 | 4.4 |
| | 20-Jul-12 | 17.4 | 8.1 | 739 | 6.8 |
| | 27-Jul-12 | 14.9 | 7.9 | 686 | 5.3 |
| | 3-Aug-12 | 17.3 | 7.8 | 741 | 7.9 |
| | 10-Aug-12 | 15.2 | 8.3 | 375 | 7.3 |
| | 17-Aug-12 | 14.2 | 8.8 | 450 | 5.3 |
| | 24-Aug-12 | 15.9 | 7.7 | 660 | 8.2 |
| | 31-Aug-12 | 16.3 | 7.3 | 723 | 6.9 |
| | 7-Sep-12 | 15.8 | 7.7 | 722 | 6.0 |
| | 14-Sep-12 | 14.6 | 7.0 | 715 | 7.4 |
| | 21-Sep-12 | 12.6 | 7.5 | 671 | 6.7 |
| | 28-Sep-12 | 11.9 | 7.6 | 722 | 7.6 |
| | 5-Oct-12 | 13.1 | 8.1 | 769 | 8.5 |
| | 12-Oct-12 | 9.8 | 8.5 | 666 | 6.8 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 19-Oct-12 | 9.3 | 8.6 | 672 | 6.8 |
| | 26-Oct-12 | 10.7 | 7.6 | 710 | 10.6 |
| | 2-Nov-12 | 7.4 | 8.3 | 632 | 6.4 |
| | 9-Nov-12 | 8.3 | 8.7 | 408 | 9.5 |
| | 16-Nov-12 | 8.5 | 8.1 | 569 | 9.2 |
| | 23-Nov-12 | 8.1 | 8.0 | 515 | 6.0 |
| | 30-Nov-12 | 6.0 | 8.7 | 408 | 4.3 |
| | 7-Dec-12 | 6.5 | 8.1 | 542 | 6.8 |
| | 14-Dec-12 | 6.4 | 8.1 | 463 | 9.8 |
| | 21-Dec-12 | 5.6 | 7.7 | 516 | 10.9 |
| | 4-Jan-13 | 4.8 | 7.7 | 509 | 8.6 |
| | 11-Jan-13 | 4.3 | 7.7 | 450 | 8.7 |
| | 17-Jan-13 | 4.2 | 7.8 | 489 | 10.2 |
| | 25-Jan-13 | 4.3 | 7.9 | 492 | 6.9 |
| | 15-Feb-13 | 3.5 | 7.7 | 648 | 9.8 |
| | 22-Feb-13 | 3.6 | 7.5 | 372 | 7.3 |
| | 1-Mar-13 | 3.3 | 7.6 | 486 | 8.5 |
| | 8-Mar-13 | 5.2 | 7.5 | 387 | 10.1 |
| | 15-Mar-13 | 3.6 | - | 374 | 8.6 |
| | 22-Mar-13 | 3.6 | 7.7 | 431 | 10.4 |
| | 28-Mar-13 | 4.4 | 7.5 | 370 | 9.4 |
| | 5-Apr-13 | 3.8 | 7.7 | 375 | 11.3 |
| | 12-Apr-13 | 3.3 | 7.7 | 382 | 12.4 |
| | 26-Apr-13 | 5.2 | 7.6 | 343 | 10.1 |
| | 3-May-13 | 8.9 | 7.6 | 350 | 9.0 |
| | 9-May-13 | 10.6 | 7.8 | 449 | 10.1 |
| | 16-May-13 | 9.1 | 8.0 | 410 | 10.3 |
| | 24-May-13 | 8.2 | 7.7 | 439 | 8.2 |
| | 31-May-13 | 12.7 | 7.8 | 466 | 8.0 |
| | 14-Jun-13 | 14.5 | 7.9 | 509 | 6.5 |
| | 21-Jun-13 | 12.4 | 8.0 | 528 | 11.3 |
| | 27-Jun-13 | 12.6 | 8.1 | 532 | 10.9 |
| | 5-Jul-13 | 14.4 | 7.7 | 588 | 7.9 |
| | 12-Jul-13 | 17.5 | 7.7 | 538 | 5.0 |
| | 19-Jul-13 | 16.9 | 7.8 | 525 | 7.7 |
| | 25-Jul-13 | 14.1 | 7.5 | 565 | 9.0 |
| | 2-Aug-13 | 15.6 | 8.1 | 596 | 9.2 |
| | 8-Aug-13 | 16.0 | 8.1 | 548 | 8.2 |
| | 16-Aug-13 | 14.8 | 8.2 | 646 | 8.9 |
| | 23-Aug-13 | 15.9 | 8.0 | 573 | 6.7 |
| | 30-Aug-13 | 16.0 | 7.9 | 570 | 6.0 |
| | 6-Sep-13 | 15.7 | 7.8 | 560 | 6.6 |
| | 13-Sep-13 | 13.3 | 7.7 | 541 | 8.5 |
| | 20-Sep-13 | 12.9 | 7.9 | 529 | 8.1 |
| | 27-Sep-13 | 12.8 | 7.8 | 520 | 8.1 |
| | 4-Oct-13 | - | - | - | - |
| | 11-Oct-13 | 11.3 | 7.6 | 502 | 7.6 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 18-Oct-13 | 10.7 | 7.5 | 500 | 5.7 |
| | 25-Oct-13 | 8.6 | 7.5 | 423 | 3.9 |
| | 31-Oct-13 | 8.3 | 7.3 | 406 | 3.8 |
| | 8-Nov-13 | 3.5 | 7.2 | 400 | 5.0 |
| | 14-Nov-13 | 2.1 | 7.2 | 420 | 4.9 |
| | 22-Nov-13 | 7.5 | 7.9 | 449 | 4.0 |
| | 29-Nov-13 | 6.6 | 8.4 | 427 | 10.7 |
| | 6-Dec-13 | 5.2 | 8.0 | 404 | 8.1 |
| | 19-Dec-13 | 6.0 | 8.2 | 414 | 5.1 |
| | 3-Jan-14 | 2.3 | 7.8 | 530 | 3.3 |
| | 10-Jan-14 | 5.0 | 8.4 | 404 | 4.6 |
| | 17-Jan-14 | 4.7 | 8.5 | 394 | 10.5 |
| | 31-Jan-14 | 4.5 | 7.3 | 436 | 8.5 |
| | 7-Feb-14 | 3.5 | 7.8 | 426 | 3.9 |
| | 14-Feb-14 | 5.0 | 7.2 | 447 | 6.0 |
| | 21-Feb-14 | 4.4 | 7.3 | 435 | 8.3 |
| | 28-Feb-14 | 4.2 | 7.3 | 437 | 8.5 |
| | 7-Mar-14 | 4.4 | 7.3 | 439 | 8.5 |
| | 14-Mar-14 | 4.1 | 6.4 | 443 | 7.0 |
| | 21-Mar-14 | 4.2 | 7.2 | 449 | 4.9 |
| | 28-Mar-14 | 4.0 | 7.6 | 389 | 9.9 |
| | 4-Apr-14 | 3.7 | 6.9 | 416 | 9.0 |
| | 11-Apr-14 | 3.6 | 7.6 | 363 | 10.4 |
| | 17-Apr-14 | 4.6 | 8.0 | 631 | 11.0 |
| | 25-Apr-14 | 4.3 | 7.9 | 603 | 10.3 |
| | 1-May-14 | 4.7 | 7.8 | 580 | 9.2 |
| | 9-May-14 | 12.2 | 7.6 | 418 | 5.6 |
| | 16-May-14 | 10.0 | 7.1 | 450 | 8.2 |
| | 23-May-14 | 11.9 | 7.5 | 382 | 6.2 |
| | 30-May-14 | 12.0 | 7.2 | 375 | 6.1 |
| | 6-Jun-14 | 12.5 | 7.3 | 391 | 7.6 |
| | 13-Jun-14 | 12.7 | 7.2 | 398 | 7.5 |
| | 20-Jun-14 | 13.2 | 7.9 | 416 | 8.1 |
| | 27-Jun-14 | 14.4 | 7.2 | 420 | 8.2 |
| | 4-Jul-14 | 13.3 | 8.0 | 492 | 8.7 |
| | 11-Jul-14 | 14.3 | 7.9 | 482 | 7.2 |
| | 18-Jul-14 | 12.6 | 8.4 | 575 | - |
| | 25-Jul-14 | 13.1 | 8.8 | 615 | - |
| | 1-Aug-14 | 13.2 | 8.6 | 575 | 6.8 |
| | 8-Aug-14 | 13.8 | 8.5 | 523 | 6.6 |
| | 15-Aug-14 | 12.5 | 8.3 | 520 | 7.3 |
| | 22-Aug-14 | 13.1 | 8.9 | 662 | - |
| | 29-Aug-14 | 13.5 | 9.0 | 663 | - |
| | 5-Sep-14 | 14.1 | 9.0 | 672 | - |
| | 12-Sep-14 | 10.2 | 8.0 | 639 | 5.8 |
| | 19-Sep-14 | 10.2 | 8.0 | 423 | 6.2 |
| | 26-Sep-14 | 10.1 | 8.0 | 418 | 6.2 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 3-Oct-14 | 12.8 | 7.5 | 431 | 6.8 |
| | 10-Oct-14 | 12.6 | 7.6 | 419 | 7.0 |
| | 16-Oct-14 | 11.7 | 8.2 | 656 | 7.4 |
| | 24-Oct-14 | 9.4 | 8.5 | 427 | 6.3 |
| | 31-Oct-14 | 6.4 | 8.4 | 420 | 6.3 |
| | 7-Nov-14 | 0.4 | 7.3 | 447 | 8.0 |
| | 14-Nov-14 | -1.3 | 7.4 | 423 | 6.7 |
| | 20-Nov-14 | -1.2 | 7.3 | 416 | 6.7 |
| | 28-Nov-14 | -1.5 | 7.3 | 413 | 5.2 |
| | 5-Dec-14 | -0.3 | 7.2 | 418 | 6.9 |
| | 12-Dec-14 | -0.3 | 7.2 | 412 | 6.6 |
| | 19-Dec-14 | -1.3 | 7.2 | 427 | 6.1 |
| | 8-Jan-15 | 0.4 | 7.2 | 420 | 6.3 |
| | 14-Jan-15 | 0.9 | 7.4 | 446 | 7.3 |
| | 23-Jan-15 | -0.4 | 7.2 | 420 | 7.9 |
| | 6-Feb-15 | 4.3 | 7.8 | 570 | 8.6 |
| | 27-Feb-15 | 4.6 | 7.8 | 577 | 8.2 |
| | 6-Mar-15 | 4.5 | 7.6 | 576 | 8.7 |
| | 13-Mar-15 | 5.1 | 7.6 | 569 | 8.2 |
| | 20-Mar-15 | 5.5 | 7.6 | 349 | 8.4 |
| | 26-Mar-15 | 4.6 | 7.7 | 337 | 8.9 |
| | 2-Apr-15 | 4.9 | 7.7 | 341 | 9.0 |
| | 10-Apr-15 | 6.4 | 7.9 | 288 | 9.9 |
| | 17-Apr-15 | 5.7 | 9.2 | 372 | 12.6 |
| | 23-Apr-15 | 5.2 | 7.9 | 419 | 10.2 |
| | 1-May-15 | 7.1 | 7.6 | 466 | 10.2 |
| | 8-May-15 | 10.2 | 9.2 | 472 | - |
| | 15-May-15 | 8.7 | 7.8 | 414 | 9.3 |
| | 21-May-15 | 8.9 | 7.8 | 420 | 10.6 |
| | 28-May-15 | 11.8 | 7.8 | 485 | 8.8 |
| | 4-Jun-15 | 11.2 | 7.7 | 478 | 8.7 |
| | 12-Jun-15 | 10.8 | 7.6 | 535 | 7.0 |
| | 18-Jun-15 | 12.8 | 7.8 | 548 | 7.1 |
| | 26-Jun-15 | 13.6 | 7.7 | 495 | - |
| | 10-Jul-15 | 13.0 | 7.9 | 557 | - |
| | 17-Jul-15 | 13.0 | 7.9 | 557 | - |
| | 22-Jul-15 | 12.7 | 8.1 | 558 | - |
| | 30-Jul-15 | 16.4 | 8.0 | 665 | - |
| | 5-Aug-15 | 12.8 | 7.6 | 586 | 6.8 |
| | 13-Aug-15 | 14.9 | 7.7 | 703 | 6.9 |
| | 21-Aug-15 | 15.0 | 8.2 | 635 | - |
| | 28-Aug-15 | - | 8.2 | 605 | - |
| | 3-Sep-15 | 16.9 | 7.6 | 700 | 7.7 |
| | 10-Sep-15 | 17.0 | 7.8 | 682 | 7.9 |
| | 18-Sep-15 | 13.8 | 7.6 | 626 | 7.6 |
| | 25-Sep-15 | 14.3 | 7.7 | 632 | 9.1 |
| | 2-Oct-15 | 9.7 | 7.3 | 544 | 7.2 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 9-Oct-15 | 11.0 | 7.4 | 561 | 7.8 |
| | 16-Oct-15 | 10.3 | 7.8 | 549 | 8.5 |
| | 23-Oct-15 | 9.3 | 7.5 | 558 | 8.2 |
| | 30-Oct-15 | 8.8 | 7.5 | 576 | 8.7 |
| | 5-Nov-15 | 11.0 | 7.9 | 596 | 7.5 |
| | 13-Nov-15 | 8.7 | 7.5 | 549 | 5.2 |
| | 19-Nov-15 | 9.6 | 7.8 | 648 | 11.9 |
| | 26-Nov-15 | 7.0 | 7.6 | 558 | 10.3 |
| | 4-Dec-15 | 6.6 | 7.4 | 564 | 10.4 |
| | 10-Dec-15 | 7.5 | 7.4 | 574 | 8.3 |
| | 17-Dec-15 | 6.9 | 7.7 | 492 | 7.4 |
| | 23-Dec-15 | 7.3 | 7.6 | 499 | 7.3 |
| | 30-Dec-15 | 5.3 | 7.4 | 466 | 8.4 |
| | 8-Jan-15 | 5.5 | 7.3 | 470 | 8.5 |
| | 14-Jan-16 | 4.3 | 7.1 | 441 | 8.4 |
| | 22-Jan-16 | 5.0 | 7.9 | 504 | 7.9 |
| | 29-Jan-16 | 3.6 | 7.5 | 472 | 9.0 |
| | 5-Feb-16 | 4.5 | 7.5 | 466 | 9.0 |
| | 11-Feb-16 | 3.7 | 7.6 | 466 | 9.2 |
| | 18-Feb-16 | 5.4 | 7.5 | 484 | 8.8 |
| | 25-Feb-16 | 3.3 | 7.1 | 442 | 9.2 |
| | 4-Mar-16 | 4.5 | 7.6 | 448 | 9.0 |
| | 10-Mar-16 | 1.6 | 7.0 | 276 | 11.8 |
| | 18-Mar-16 | 4.7 | 7.7 | 388 | 10.8 |
| | 28-Mar-16 | 1.3 | 7.5 | 99 | 12.7 |
| | 1-Apr-16 | 3.7 | 7.3 | 237 | 10.4 |
| | 7-Apr-16 | 3.7 | 7.1 | 271 | 10.7 |
| | 15-Apr-16 | 6.9 | 7.5 | 340 | 10.3 |
| | 22-Apr-16 | 8.8 | 8.0 | 449 | 10.2 |
| | 29-Apr-16 | 6.9 | 8.3 | 439 | 11.1 |
| | 6-May-16 | 10.5 | 8.1 | 528 | 9.3 |
| | 13-May-16 | 12.5 | 7.8 | 632 | - |
| | 20-May-16 | 13.0 | 8.2 | 650 | 8.8 |
| | 27-May-16 | 14.7 | 8.1 | 581 | 7.7 |
| | 2-Jun-16 | 13.5 | 8.0 | 531 | 6.5 |
| | 10-Jun-16 | 12.1 | 8.1 | 733 | 8.6 |
| | 17-Jun-16 | 17.0 | 8.0 | 695 | 8.6 |
| | 24-Jun-16 | 13.4 | 7.9 | 561 | 7.9 |
| | 28-Jun-16 | 14.1 | 8.1 | 626 | 11.1 |
| | 8-Jul-16 | 16.7 | 8.1 | 587 | 9.8 |
| | 15-Jul-16 | 16.0 | 8.2 | 582 | 7.7 |
| | 22-Jul-16 | 18.0 | 7.8 | 769 | 8.0 |
| | 29-Jul-16 | 15.5 | 8.1 | 691 | 8.4 |
| | 5-Aug-16 | 16.8 | 8.3 | 674 | 8.0 |
| | 12-Aug-16 | 18.0 | 8.1 | 832 | 8.0 |
| | 19-Aug-16 | 16.4 | 7.9 | 661 | 7.0 |
| | 26-Aug-16 | 14.8 | 7.9 | 676 | 7.6 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 2-Sep-16 | 13.1 | 7.5 | 586 | 7.3 |
| | 9-Sep-16 | 14.7 | 7.9 | 587 | 7.5 |
| | 16-Sep-16 | 12.4 | 8.1 | 612 | 8.3 |
| | 21-Sep-16 | 15.5 | 8.0 | 623 | 10.1 |
| | 30-Sep-16 | 12.0 | 8.3 | 604 | 9.7 |
| | 7-Oct-16 | 12.5 | 7.4 | 621 | 7.0 |
| | 13-Oct-16 | 11.2 | 8.0 | 532 | 9.5 |
| | 19-Oct-16 | 12.4 | 7.5 | 645 | 9.8 |
| | 27-Oct-16 | 6.6 | 8.0 | 492 | 7.2 |
| | 3-Nov-16 | 9.5 | 7.8 | 592 | 7.3 |
| | 11-Nov-16 | 8.1 | 6.1 | 496 | 9.0 |
| | 18-Nov-16 | 9.2 | 7.7 | 751 | 7.2 |
| | 24-Nov-16 | 7.5 | 7.3 | 516 | 8.4 |
| | 2-Dec-16 | 6.8 | 7.8 | 468 | 4.9 |
| | 7-Dec-16 | 5.8 | 7.9 | 453 | 5.9 |
| | 16-Dec-16 | 4.9 | 7.5 | 768 | 9.2 |
| | 22-Dec-16 | 5.6 | 7.7 | 750 | 8.8 |
| | 6-Jan-17 | 4.5 | 7.7 | 412 | 9.4 |
| | 13-Jan-17 | 4.0 | 7.8 | 439 | 9.7 |
| | 20-Jan-17 | 4.8 | 7.8 | 470 | 8.7 |
| | 26-Jan-17 | 4.8 | 7.8 | 494 | 8.8 |
| | 3-Feb-17 | 3.5 | 7.8 | 440 | 8.6 |
| | 10-Feb-17 | 4.0 | 7.8 | 413 | 7.8 |
| | 17-Feb-17 | 4.0 | 7.7 | 492 | 8.9 |
| | 19-Apr-17 | 9.3 | 6.9 | 449 | 11.2 |
| | 3-May-17 | 7.8 | 7.1 | 374 | 9.6 |
| | 16-May-17 | 14.5 | 8.2 | 548 | 8.4 |
| | 28-Jun-17 | 14.8 | 7.9 | 625 | 6.8 |
| | 18-Jul-17 | 17.4 | 8.0 | 705 | 7.9 |
| | 15-Aug-17 | 15.1 | 8.3 | 557 | 6.4 |
| | 18-Sep-17 | 14.1 | 6.4 | 679 | 5.7 |
| | 18-Oct-17 | 11.1 | 7.9 | 626 | 7.3 |
| | 15-Nov-17 | 6.9 | 7.8 | 550 | 9.1 |
| | 14-Dec-17 | 4.3 | 7.9 | 495 | 3.3 |
| | 17-Jan-18 | 3.1 | 7.4 | 445 | 8.6 |
| | 23-Feb-18 | 2.3 | 7.9 | 334 | 8.0 |
| | 20-Mar-18 | 3.6 | 7.5 | 406 | 12.1 |
| | 18-Apr-18 | 3.2 | 7.8 | 624 | 15.7 |
| | 14-May-18 | 10.3 | 7.7 | 597 | 7.9 |
| | 18-Jun-18 | 16.4 | 7.8 | 654 | 6.4 |
| | 19-Jul-18 | 15.5 | 7.6 | 683 | 5.1 |
| | 23-Aug-18 | 15.9 | 7.7 | 674 | 5.2 |
| | 19-Sep-18 | 14.9 | 7.5 | 737 | 3.8 |
| | 24-Oct-18 | 8.6 | 7.8 | 714 | 5.4 |
| | 21-Nov-18 | 4.6 | 7.6 | 699 | 7.3 |
| | 12-Dec-18 | 6.1 | 7.8 | 697 | 7.5 |
| | 18-Jan-19 | 5.1 | 7.6 | 422.4 | 7.2 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 26-Feb-19 | 2.5 | 7.8 | 608 | 9.9 |
| | 24-Apr-19 | 7.7 | 7.9 | 484.4 | 8.5 |
| | 23-May-19 | 12.0 | 8.1 | 525 | 8.4 |
| | 18-Jun-19 | 13.6 | 7.8 | 607 | 7.3 |
| | 29-Jul-19 | 18.2 | 7.8 | 671 | 6.3 |
| | 29-Aug-19 | 18.1 | 8.0 | 578 | 6.6 |
| | 23-Oct-19 | | 7.5 | 698 | 6.3 |
| | 23-Oct-19 | 8.5 | 7.5 | 698 | 6.3 |
| | 22-Nov-19 | 2.1 | 7.6 | 583 | 7.0 |
| | 20-Dec-19 | 0.1 | 7.6 | 423 | 7.2 |
| | 26-Sep-19 | 15.0 | 7.4 | 700 | 6.3 |
| **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 |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 | - |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | - |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 23-Oct-19 | | 7.4 | 743 | 7.3 |
| | 23-Oct-19 | 7.3 | 7.4 | 743 | 7.3 |
| | 26-Sep-19 | 13.4 | 7.2 | 685 | 5.1 |
| **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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 | - |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| **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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| **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 |
| | 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 |
| **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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 23-Oct-19 | | 7.7 | 439.1 | 4.0 |
| | 23-Oct-19 | 9.1 | 7.7 | 439.1 | 4.0 |
| | 26-Sep-19 | 15.6 | 7.3 | 472.8 | 3.1 |
| **SW 6** | | | | | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 23-Oct-19 | | 7.5 | 476.9 | 3.3 |
| | 23-Oct-19 | 8.9 | 7.5 | 476.9 | 3.3 |
| | 26-Sep-19 | 12.2 | 7.4 | 485.6 | 2.2 |
| **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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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-Sep-19 | 15.3 | 7.8 | 410.7 | 7.5 |
| **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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | - |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 30-Aug-19 | 15.4 | 8.3 | 388.1 | 9.0 |
| | 22-Oct-19 | | 8.1 | 379.2 | 9.0 |
| | 22-Oct-19 | 10.2 | 8.1 | 379.2 | 9.0 |
| | 27-Sep-19 | 12.7 | 8.2 | 396.5 | 9.5 |
| **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 |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 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 |
| | 27-Sep-19 | 12.4 | 8.5 | 358.4 | 9.1 |
| **SW 11A** | | | | | |
| | 22-May-03 | 8.0 | | | |
| | 13-Feb-04 | 4.8 | | 325 | 11.9 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 22-Oct-19 | | 8.0 | 390.5 | 10.2 |
| | 22-Oct-19 | 9.4 | 8.0 | 390.5 | 10.2 |
| | 27-Sep-19 | 11.9 | 7.7 | 388.2 | 11.2 |
| **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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| **SW 11C** | | | | | |
| | 22-May-03 | 8.0 | | | |
| | 18-Mar-04 | 4.4 | | 431 | 9.0 |
| | 21-Apr-04 | 4.3 | 7.8 | 221 | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| **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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 20-Feb-08 | 3.7 | 8.0 | 383 | |
| | 17-Mar-08 | 4.2 | 7.7 | 402 | |
| | 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 | - | - | - |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 8-Sep-15 | 12.0 | 7.8 | 306 | 9.3 |
| | 15-Oct-15 | 8.5 | 8.1 | 283 | 10.7 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 25-Apr-19 | 3.6 | 8.1 | 278 | 12.1 |
| | 27-May-19 | 5.6 | 7.9 | 360.1 | 11.9 |
| | 21-Jun-19 | 6.7 | 8.0 | 391.1 | 11.4 |
| | 30-Jul-19 | 11.5 | 8.2 | 386.8 | 6.4 |
| **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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | - |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 27-Sep-19 | 13.5 | 8.1 | 359.4 | 9.5 |
| **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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 30-Aug-19 | 13.5 | 8.1 | | 9.0 |
| | 22-Oct-19 | | 8.0 | 445.3 | 9.3 |
| | 22-Oct-19 | 8.8 | 8.0 | 445.3 | 9.3 |
| | 27-Sep-19 | 13.2 | 7.9 | 412 | 8.6 |
| **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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 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 |
| | 26-Sep-19 | 15.3 | 8.3 | 479.2 | 7.4 |
| **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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 27-Sep-19 | 15.1 | 7.8 | 392.4 | 8.2 |
| **SW 15** | | | | | |
| | 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! |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| **SW 16** | | | | | |
| | 22-May-03 | 15.0 | | | |
| | 23-Jun-03 | 19.4 | | | |
| | 19-Apr-04 | 12.6 | 8.0 | 251 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 30-Aug-19 | 19.1 | 7.7 | 441.5 | 5.6 |
| | 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 |
| | 27-Sep-19 | 18.3 | 7.5 | 389.4 | 6.8 |
| **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 | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 27-Sep-19 | 16.8 | 8.0 | 404.9 | 5.6 |
| **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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 27-Sep-19 | 14.2 | 8.2 | 442.3 | 8.9 |
| **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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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-Sep-19 | 17.6 | 7.9 | 425.9 | 7.4 |
| **SW 18** | | | | | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 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 |
| | 27-Sep-19 | 13.8 | 8.2 | 367.1 | 10.4 |
| **SW 19** | | | | | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 22-May-03 | 15.0 | | | |
| | 23-Jun-03 | 18.5 | | | |
| | 20-Aug-03 | 21.5 | | | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 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 |
| | 27-Sep-19 | 17.9 | 7.9 | 529.1 | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | | |
| **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 |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 27-Sep-19 | 15.2 | 8.2 | 387.8 | 7.2 |
| **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 | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 27-Sep-19 | 13.0 | 8.6 | 415 | 8.0 |
| **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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| **SW 21D** | | | | | |
| | 21-Apr-04 | 9.7 | 7.5 | 162 | |
| | 19-Apr-06 | 15.7 | 7.8 | 241 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| **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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 26-Sep-19 | 11.4 | 8.2 | 534.2 | 10.2 |
| **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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 26-Sep-19 | 12.2 | 8.0 | 478.6 | 10.1 |
| **SW 22B** | | | | | |
| | 18-Oct-07 | 11.4 | 8.2 | 629 | 9.3 |
| | 22-Jan-08 | 2.0 | 7.7 | 574 | |
| **SW 22C** | | | | | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 | - |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 30-Aug-19 | 18.6 | 8.3 | 498.6 | 10.0 |
| | 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 |
| | 27-Sep-19 | 16.5 | 8.3 | 498.2 | 10.1 |
| **SW 23** | | | | | |
| | 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 |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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** | | | | | |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 27-Sep-19 | 15.8 | 8.2 | 366.1 | 8.1 |
| **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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 30-Jul-19 | 12.7 | 8.2 | 467.7 | 9.5 |
| | 30-Aug-19 | 14.4 | 8.2 | 424.8 | 9.7 |
| | 22-Oct-19 | | 8.1 | 394.8 | 8.2 |
| | 22-Oct-19 | 8.8 | 8.1 | 394.8 | 8.2 |
| | 27-Sep-19 | 15.6 | 8.0 | 451 | 8.9 |
| **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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 22-Oct-19 | | 7.9 | 411.5 | 8.6 |
| | 22-Oct-19 | 9.3 | 7.9 | 411.5 | 8.6 |
| | 27-Sep-19 | 12.3 | 8.1 | 408.4 | 9.1 |
| **SW 24C** | | | | | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 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 |
| | 26-Sep-19 | 15.2 | 7.9 | 422.8 | 8.8 |
| **SW 25** | | | | | |
| | 11-Feb-04 | 1.2 | 8.5 | 220 | 10.1 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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** | | | | | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 | |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| **RR3 OUT** | | | | | |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 18-Nov-15 | 8.2 | 6.9 | 494 | 4.9 |
| | 8-Dec-15 | 7.0 | 7.1 | 439 | 6.2 |
| | 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 |
| **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 - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 |
| **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 |
| | 17-Jan-18 | 0.2 | 8.1 | 269 | 12.6 |
| | 22-Feb-18 | 1.9 | 8.4 | 243 | 12.8 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 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 |
| | 26-Sep-19 | 14.0 | 8.2 | 420.6 | 9.6 |
| **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 |
| | 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 |

# TABLE B-5
# SURFACE WATER FIELD CHEMISTRY DATA

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| LOCATION | DATE | TEMPERATURE ($^oC$) | pH (pH units) | CONDUCTIVITY (µS/cm) | DISSOLVED OXYGEN (mg/L) |
|---|---|---|---|---|---|
| | 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 |
| | 23-Oct-19 | 8.2 | 7.5 | 438 | 10.3 |
| | 22-Nov-19 | 0.5 | 7.7 | 384 | 9.3 |
| | 26-Sep-19 | 15.2 | 8.3 | 522 | 7.8 |

**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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 |
| 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 | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 | 0.02 | <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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 | | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW1 | | | |
|---|---|---|---|---|---|---|
| | | | SW1 | | | |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | |
| Total Coliform | cfu/100mL | | - | | | |
| E.Coli | cfu/100mL | | - | | | |
| Heterotrophic Plate Count | cfu/mL | | - | | | |
| Temperature (field) | °C | | 6.3 | | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 7.7 | | | |
| Conductivity @25°C (lab) | µS/cm | | | | | |
| Conductivity (field) | µS/cm | | 446.9 | | | |
| Dissolved Oxygen (field) | mg/L | | 8.9 | | | |
| Alkalinity (CaCO3) | mg/L | | 190 | | | |
| Hardness (CaCO3) | mg/L | | 230 | | | |
| Chloride | mg/L | | 41 | | | |
| Fluoride | mg/L | | 0.18 | | | |
| Nitrate (N) | mg/L | | <0.010 | | | |
| Nitrite (N) | mg/L | | 0.37 | | | |
| Sulphate | mg/L | | <1.0 | | | |
| Colour | TCU | | 16 | | | |
| Total Suspended Solids | mg/L | | <10 | | | |
| Ammonia (N) - Total | mg/L | | <0.05 | | | |
| Unionized Ammonia as $NH_3$ | mg/L | 0.02 | <0.0003 | | | |
| Total Kjeldahl Nitrogen | mg/L | | 0.22 | | | |
| Phosphorus - Total | mg/L | 0.03 | <0.02 | | | |
| Turbidity (lab) | NTU | | | | | |
| Calcium | mg/L | | 49 | | | |
| Magnesium | mg/L | | 27 | | | |
| Potassium | mg/L | | 1.6 | | | |
| Sodium | mg/L | | 19 | | | |
| Aluminum | µg/L | | 23 | | | |
| Antimony | µg/L | | <0.50 | | | |
| Arsenic | µg/L | | <1.0 | | | |
| Barium | µg/L | | 8.0 | | | |
| Beryllium | µg/L | | <0.50 | | | |
| Boron | µg/L | 200.00 | 17 | | | |
| 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 | | 180 | | | |
| Thallium | µg/L | | <0.050 | | | |
| Titanium | µg/L | | <5.0 | | | |
| Tungsten | µg/L | | <1.0 | | | |
| Uranium | µg/L | | <0.10 | | | |

# TABLE B-6
# SURFACE WATER LABORATORY ANALYSIS (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW1 | | | |
|---|---|---|---|---|---|---|
| | | | SW1 | | | |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | |
| 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 | | 396 | | | |
| Benzene | µg/L | | <0.20 | | | |
| Toluene | µg/L | | <0.20 | | | |
| Ethylbenzene | µg/L | | <0.20 | | | |
| Xylene, m, p- | µg/L | | <0.20 | | | |
| Xylene, o- | µg/L | | <0.40 | | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 | 0.01 | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW2 | | | SW0-2 | | |
|---|---|---|---|---|---|---|---|---|
| | | | SW2 | SW2 | SW2 | SW0-2 | SW0-2 | SW0-2 |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | 14-May-19 | | |
| Total Coliform | cfu/100mL | | - | - | - | - | - | - |
| E.Coli | cfu/100mL | | - | - | - | - | - | - |
| Heterotrophic Plate Count | cfu/mL | | - | - | - | - | - | - |
| Temperature (field) | °C | | 6.7 | | | 6.1 | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 7.79 | | | 7.7 | | |
| Conductivity @25°C (lab) | µS/cm | | | | | | | |
| Conductivity (field) | µS/cm | | 554 | | | 380.6 | | |
| Dissolved Oxygen (field) | mg/L | | 11.2 | | | 8.9 | | |
| Alkalinity (CaCO3) | mg/L | | 250 | | | 180 | | |
| Hardness (CaCO3) | mg/L | | 280 | | | 220 | | |
| Chloride | mg/L | | 44 | | | 36 | | |
| Fluoride | mg/L | | <0.10 | | | 0.11 | | |
| Nitrate (N) | mg/L | | 0.35 | | | <0.10 | | |
| Nitrite (N) | mg/L | | <0.10 | | | <0.010 | | |
| Sulphate | mg/L | | 5.2 | | | <1.0 | | |
| Colour | TCU | | 2 | | | 47 | | |
| Total Suspended Solids | mg/L | | <10 | | | <10 | | |
| Ammonia (N) - Total | mg/L | | <0.05 | | | <0.05 | | |
| Unionized Ammonia as $NH_3$ | mg/L | 0.02 | <0.00044 | | | <0.0003 | | |
| Total Kjeldahl Nitrogen | mg/L | | <0.10 | | | 0.44 | | |
| Phosphorus - Total | mg/L | 0.03 | 0.007 | | | 0.054 | | |
| Turbidity (lab) | NTU | | | | | | | |
| Calcium | mg/L | | 69 | | | 49 | | |
| Magnesium | mg/L | | 25 | | | 23 | | |
| Potassium | mg/L | | 0.86 | | | 4.5 | | |
| Sodium | mg/L | | 29 | | | 16 | | |
| Aluminum | µg/L | | 21 | | | 8.5 | | |
| Antimony | µg/L | | <0.50 | | | <0.50 | | |
| Arsenic | µg/L | | <1.0 | | | <1.0 | | |
| Barium | µg/L | | 8.2 | | | 8.5 | | |
| Beryllium | µg/L | | <0.50 | | | <0.50 | | |
| Boron | µg/L | 200.00 | <10 | | | 14 | | |
| 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 | | 8.1 | | | 7.9 | | |
| 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 | | 61 | | | 120 | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW2 | | | SW0-2 | | |
|---|---|---|---|---|---|---|---|---|
| | | | SW2 | SW2 | SW2 | SW0-2 | SW0-2 | SW0-2 |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | 14-May-19 | | |
| 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 | | | | | | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW3 | | | SW3B | | |
|---|---|---|---|---|---|---|---|---|
| | | | SW3 | SW3 - DUP | SW3 | SW3B | SW3B | SW3B |
| PARAMETERS | UNITS | PWQO | 14-May-19 | 14-May-19 | | 14-May-19 | | |
| Total Coliform | cfu/100mL | | - | - | - | - | - | - |
| E.Coli | cfu/100mL | | - | - | - | - | - | - |
| Heterotrophic Plate Count | cfu/mL | | - | - | - | - | - | - |
| Temperature (field) | °C | | 7.1 | 7.1 | | 7.1 | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 7.71 | 7.71 | | 7.49 | | |
| Conductivity @25°C (lab) | µS/cm | | | | | | | |
| Conductivity (field) | µS/cm | | 324.5 | 324.5 | | 385.7 | | |
| Dissolved Oxygen (field) | mg/L | | 7.54 | 7.54 | | 6.19 | | |
| Alkalinity (CaCO3) | mg/L | | 190 | 190 | | 210 | | |
| Hardness (CaCO3) | mg/L | | 210 | 210 | | 220 | | |
| Chloride | mg/L | | 2.2 | 2.3 | | 15 | | |
| Fluoride | mg/L | | <0.10 | <0.10 | | <0.10 | | |
| Nitrate (N) | mg/L | | <0.10 | <0.10 | | 0.15 | | |
| Nitrite (N) | mg/L | | <0.01 | <0.01 | | <0.010 | | |
| Sulphate | mg/L | | <1.0 | <1.0 | | <1.0 | | |
| Colour | TCU | | 36 | 35 | | 11 | | |
| Total Suspended Solids | mg/L | | <10 | <10 | | <10 | | |
| Ammonia (N) - Total | mg/L | | <0.05 | <0.05 | | <0.05 | | |
| Unionized Ammonia as $NH_3$ | mg/L | 0.02 | <0.0004 | <0.0004 | | <0.0002 | | |
| Total Kjeldahl Nitrogen | mg/L | | 0.26 | 0.29 | | 0.17 | | |
| Phosphorus - Total | mg/L | 0.03 | 0.019 | 0.013 | | 0.007 | | |
| Turbidity (lab) | NTU | | | | | | | |
| Calcium | mg/L | | 55 | 55 | | 61 | | |
| Magnesium | mg/L | | 16 | 16 | | 19 | | |
| Potassium | mg/L | | 0.44 | 0.39 | | 0.42 | | |
| Sodium | mg/L | | 1.2 | 1.3 | | 9.6 | | |
| Aluminum | µg/L | | 26 | 26 | | 18 | | |
| Antimony | µg/L | | <0.50 | <0.50 | | <0.50 | | |
| Arsenic | µg/L | | <1.0 | <1.0 | | <1.0 | | |
| Barium | µg/L | | 10 | 9.9 | | 12 | | |
| Beryllium | µg/L | | <0.50 | <0.50 | | <0.50 | | |
| Boron | µg/L | 200.00 | <10 | <10 | | <10 | | |
| Cadmium | µg/L | 0.2 | <0.10 | <0.10 | | <0.10 | | |
| Chromium | µg/L | | <5.0 | <5.0 | | <5.0 | | |
| Cobalt | µg/L | 0.9 | <0.50 | <0.50 | | <0.50 | | |
| Copper | µg/L | 5 | <1.0 | <1.0 | | <1.0 | | |
| Iron | µg/L | 300 | <100 | <100 | | <100 | | |
| Lead | µg/L | 25 | <0.50 | <0.50 | | <0.50 | | |
| Manganese | µg/L | | 11 | 11 | | 5.2 | | |
| Molybdenum | µg/L | | <0.50 | 1.1 | | <0.50 | | |
| Nickel | µg/L | | <1.0 | <1.0 | | <1.0 | | |
| Selenium | µg/L | | <2.0 | <2.0 | | <2.0 | | |
| Silver | µg/L | | <0.10 | <0.10 | | <0.10 | | |
| Strontium | µg/L | | 51 | 53 | | 55 | | |
| Thallium | µg/L | | <0.050 | <0.050 | | <0.050 | | |
| Titanium | µg/L | | <5.0 | <5.0 | | <5.0 | | |
| Tungsten | µg/L | | <1.0 | <1.0 | | <1.0 | | |
| Uranium | µg/L | | 0.13 | 0.14 | | 0.16 | | |

# TABLE B-6
# SURFACE WATER LABORATORY ANALYSIS (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW3 | | | SW3B | | |
|---|---|---|---|---|---|---|---|---|
| | | | SW3 | SW3 - DUP | SW3 | SW3B | SW3B | SW3B |
| PARAMETERS | UNITS | PWQO | 14-May-19 | 14-May-19 | | 14-May-19 | | |
| Vanadium | µg/L | | <0.50 | <0.50 | | <0.50 | | |
| Zinc | µg/L | 20.00 | <5.0 | <5.0 | | <5.0 | | |
| Zirconium | µg/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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW6A | | | | SW9 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | SW6A | SW6A | SW6A | SW6A | SW9 | SW9 | SW9 |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | | 14-May-19 | | |
| Total Coliform | cfu/100mL | | - | - | - | - | - | - | - |
| E.Coli | cfu/100mL | | - | - | - | - | - | - | - |
| Heterotrophic Plate Count | cfu/mL | | - | - | - | - | - | - | - |
| Temperature (field) | °C | | 7.0 | | | | 6.6 | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 7.9 | | | | 7.82 | | |
| Conductivity @25°C (lab) | µS/cm | | | | | | | | |
| Conductivity (field) | µS/cm | | 381 | | | | 296.9 | | |
| Dissolved Oxygen (field) | mg/L | | 8.9 | | | | 8.73 | | |
| Alkalinity (CaCO3) | mg/L | | 210 | | | | 180 | | |
| Hardness (CaCO3) | mg/L | | 240 | | | | 200 | | |
| Chloride | mg/L | | 13 | | | | <1.0 | | |
| Fluoride | mg/L | | <0.10 | | | | <0.10 | | |
| Nitrate (N) | mg/L | | 0.11 | | | | <0.10 | | |
| Nitrite (N) | mg/L | | <0.010 | | | | <0.010 | | |
| Sulphate | mg/L | | <1.0 | | | | <1.0 | | |
| Colour | TCU | | 26 | | | | 25 | | |
| Total Suspended Solids | mg/L | | <10 | | | | <10 | | |
| Ammonia (N) - Total | mg/L | | 0.05 | | | | 0.05 | | |
| Unionized Ammonia as $NH_3$ | mg/L | 0.02 | <0.0006 | | | | <0.0005 | | |
| Total Kjeldahl Nitrogen | mg/L | | 0.28 | | | | 0.25 | | |
| Phosphorus - Total | mg/L | 0.03 | 0.008 | | | | 0.009 | | |
| Turbidity | NTU | | | | | | | | |
| Calcium | mg/L | | 56 | | | | 51 | | |
| Magnesium | mg/L | | 21 | | | | 16 | | |
| Potassium | mg/L | | 1.2 | | | | 0.87 | | |
| Sodium | mg/L | | 5.5 | | | | 0.76 | | |
| Aluminum | µg/L | | 10 | | | | 29 | | |
| Antimony | µg/L | | <0.50 | | | | <0.50 | | |
| Arsenic | µg/L | | <1.0 | | | | <1.0 | | |
| Barium | µg/L | | 11 | | | | 11 | | |
| Beryllium | µg/L | | <0.50 | | | | <0.50 | | |
| Boron | µg/L | 200.00 | <10 | | | | <10 | | |
| 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 | | 12 | | | | <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 | | 68 | | | | 52 | | |
| 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 | | | | 0.18 | | |

# TABLE B-6
# SURFACE WATER LABORATORY ANALYSIS (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW6A | | | | SW9 | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | SW6A | SW6A | SW6A | SW6A | SW9 | SW9 | SW9 |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | | 14-May-19 | | |
| 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 | | | | | | | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW10 | | | SW11 | | |
|---|---|---|---|---|---|---|---|---|
| | | | SW10 | SW10 | SW10 | SW11 | SW11 | SW11 |
| PARAMETERS | UNITS | PWQO | 16-May-19 | | | 16-May-19 | | |
| Total Coliform | cfu/100mL | | - | | | - | | |
| E.Coli | cfu/100mL | | - | | | - | | |
| Heterotrophic Plate Count | cfu/mL | | - | | | - | | |
| Temperature (field) | °C | | 7.5 | | | 5.7 | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 8.2 | | | 8.2 | | |
| Conductivity @25°C (lab) | µS/cm | | | | | | | |
| Conductivity (field) | µS/cm | | 378.8 | | | 321.1 | | |
| Dissolved Oxygen (field) | mg/L | | 11.1 | | | 12.5 | | |
| Alkalinity (CaCO3) | mg/L | | 210 | | | 200 | | |
| Hardness (CaCO3) | mg/L | | 240 | | | 200 | | |
| Chloride | mg/L | | 3.3 | | | 1.5 | | |
| Fluoride | mg/L | | <0.10 | | | <0.10 | | |
| Nitrate (N) | mg/L | | 2.29 | | | 0.24 | | |
| Nitrite (N) | mg/L | | <0.010 | | | <0.010 | | |
| Sulphate | mg/L | | 4.3 | | | 1 | | |
| Colour | TCU | | 4 | | | 7 | | |
| Total Suspended Solids | mg/L | | <10 | | | <10 | | |
| Ammonia (N) - Total | mg/L | | <0.05 | | | <0.05 | | |
| Unionized Ammonia as $NH_3$ | mg/L | 0.02 | <0.001 | | | <0.001 | | |
| Total Kjeldahl Nitrogen | mg/L | | 0.11 | | | 0.11 | | |
| Phosphorus - Total | mg/L | 0.03 | 0.019 | | | 0.11 | | |
| Turbidity | NTU | | | | | | | |
| Calcium | mg/L | | 69 | | | 57 | | |
| Magnesium | mg/L | | 15 | | | 15 | | |
| Potassium | mg/L | | 0.46 | | | 0.87 | | |
| Sodium | mg/L | | 1.8 | | | 0.94 | | |
| Aluminum | µg/L | | 52 | | | 82 | | |
| Antimony | µg/L | | <0.50 | | | <0.50 | | |
| Arsenic | µg/L | | <1.0 | | | <1.0 | | |
| Barium | µg/L | | 8.6 | | | 9.0 | | |
| Beryllium | µg/L | | <0.50 | | | <0.50 | | |
| Boron | µg/L | 200.00 | <10 | | | <10 | | |
| 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 | | 2.8 | | | 2.8 | | |
| 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 | | 79 | | | 58 | | |
| 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 | | | 0.11 | | |

# TABLE B-6
# SURFACE WATER LABORATORY ANALYSIS (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW10 | | | SW11 | | |
|---|---|---|---|---|---|---|---|---|
| | | | SW10 | SW10 | SW10 | SW11 | SW11 | SW11 |
| PARAMETERS | UNITS | PWQO | 16-May-19 | | | 16-May-19 | | |
| 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 | | | | | | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW11B | | | SW11C | | |
|---|---|---|---|---|---|---|---|---|
| | | | SW11B | SW11B | SW11B | SW11C | SW11C | SW11C |
| PARAMETERS | UNITS | PWQO | 16-May-19 | | | 16-May-19 | | |
| Total Coliform | cfu/100mL | | 93 | | | 7 | | |
| E.Coli | cfu/100mL | | 0 | | | 0 | | |
| Heterotrophic Plate Count | cfu/mL | | 36 | | | 4 | | |
| Temperature (field) | °C | | 5.7 | | | 5.2 | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 7.9 | | | 7.3 | | |
| Conductivity @25°C (lab) | µS/cm | | | | | | | |
| Conductivity (field) | µS/cm | | 322.3 | | | 325.1 | | |
| Dissolved Oxygen (field) | mg/L | | 12.3 | | | 12.2 | | |
| Alkalinity (CaCO3) | mg/L | | 200 | | | 190 | | |
| Hardness (CaCO3) | mg/L | | 200 | | | 200 | | |
| Chloride | mg/L | | 1.1 | | | 1.3 | | |
| Fluoride | mg/L | | <0.10 | | | <0.10 | | |
| Nitrate (N) | mg/L | | 0.2 | | | 0.21 | | |
| Nitrite (N) | mg/L | | <0.010 | | | <0.010 | | |
| Sulphate | mg/L | | <1.0 | | | <1.0 | | |
| Colour | TCU | | 6 | | | 5 | | |
| 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 | #VALUE! | | | #VALUE! | | |
| Total Kjeldahl Nitrogen | mg/L | | 0.15 | | | 0.16 | | |
| Phosphorus - Total | mg/L | 0.03 | 0.006 | | | 0.005 | | |
| Turbidity (lab) | NTU | | | | | | | |
| Calcium | mg/L | | 57 | | | 56 | | |
| Magnesium | mg/L | | 15 | | | 15 | | |
| Potassium | mg/L | | 0.91 | | | 0.87 | | |
| Sodium | mg/L | | 0.95 | | | 0.92 | | |
| Aluminum | mg/L | | 0.021 | | | 0.011 | | |
| Antimony | mg/L | | <0.0005 | | | <0.0005 | | |
| Arsenic | mg/L | | <0.001 | | | <0.001 | | |
| Barium | mg/L | | 0.0094 | | | 0.0092 | | |
| Beryllium | mg/L | | <0.0005 | | | <0.0005 | | |
| Boron | mg/L | 0.20 | <0.01 | | | <0.01 | | |
| Cadmium | mg/L | 0.0002 | <0.0001 | | | <0.0001 | | |
| Chromium | mg/L | 0.0089 | <0.005 | | | <0.005 | | |
| Cobalt | mg/L | | <0.0005 | | | <0.0005 | | |
| Copper | mg/L | 0.005 | <0.001 | | | <0.001 | | |
| Iron | mg/L | 0.3 | <0.1 | | | <0.1 | | |
| Lead | mg/L | 0.025 | <0.0005 | | | <0.0005 | | |
| Manganese | mg/L | | <0.002 | | | <0.002 | | |
| Molybdenum | mg/L | | <0.0005 | | | <0.0005 | | |
| Nickel | mg/L | | <0.001 | | | <0.001 | | |
| Selenium | mg/L | | <0.002 | | | <0.002 | | |
| Silver | mg/L | | <0.0001 | | | <0.0001 | | |
| Strontium | mg/L | | 0.058 | | | 0.057 | | |
| Thallium | mg/L | | <0.00005 | | | <0.00005 | | |
| Titanium | mg/L | | <0.005 | | | <0.005 | | |
| Tungsten | mg/L | | <0.001 | | | <0.001 | | |
| Uranium | mg/L | | <0.0001 | | | <0.0001 | | |

# TABLE B-6
# SURFACE WATER LABORATORY ANALYSIS (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW11B | | | SW11C | | |
|---|---|---|---|---|---|---|---|---|
| | | | SW11B | SW11B | SW11B | SW11C | SW11C | SW11C |
| PARAMETERS | UNITS | PWQO | 16-May-19 | | | 16-May-19 | | |
| Vanadium | mg/L | | <0.0005 | | | <0.0005 | | |
| Zinc | mg/L | 0.02 | <0.005 | | | <0.005 | | |
| Zirconium | mg/L | | <0.001 | | | <0.001 | | |
| Anion Sum | meq/L | | - | | | - | | |
| Cation Sum | meq/L | | - | | | - | | |
| Ion Ratio | AS/CS | | - | | | - | | |
| TDS (Calc) | mg/L | | - | | | - | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW11D | | | |
|---|---|---|---|---|---|---|
| | | | SW11D | SW11D | SW11D | SW11D |
| PARAMETERS | UNITS | PWQO | 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 | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW11D | | | |
|---|---|---|---|---|---|---|
| | | | SW11D | SW11D | SW11D | SW11D |
| PARAMETERS | UNITS | PWQO | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW11E | | | SW14 | | |
|---|---|---|---|---|---|---|---|---|
| | | | SW11E | SW11E | SW11E | SW14 | SW14 | SW14 |
| PARAMETERS | UNITS | PWQO | 16-May-19 | | | 14-May-19 | | |
| Total Coliform | cfu/100mL | | - | - | - | - | - | - |
| E.Coli | cfu/100mL | | - | - | - | - | - | - |
| Heterotrophic Plate Count | cfu/mL | | - | - | - | - | - | - |
| Temperature (field) | °C | | 6.6 | | | 6.9 | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 8.5 | | | 8.5 | | |
| Conductivity @25°C (lab) | µS/cm | | | | | | | |
| Conductivity (field) | µS/cm | | 315 | | | 338.5 | | |
| Dissolved Oxygen (field) | mg/L | | 12.0 | | | 11.7 | | |
| Alkalinity (CaCO3) | mg/L | | 190 | | | 190 | | |
| Hardness (CaCO3) | mg/L | | 200 | | | 210 | | |
| Chloride | mg/L | | 1.2 | | | 9 | | |
| Fluoride | mg/L | | <0.10 | | | <0.10 | | |
| Nitrate (N) | mg/L | | 0.23 | | | 0.41 | | |
| Nitrite (N) | mg/L | | <0.010 | | | <0.010 | | |
| Sulphate | mg/L | | <1.0 | | | 4 | | |
| Colour | TCU | | 8 | | | 8 | | |
| Total Suspended Solids | mg/L | | <10 | | | <10 | | |
| Ammonia (N) - Total | mg/L | | <0.050 | | | 0.05 | | |
| Unionized Ammonia as $NH_3$ | mg/L | 0.02 | | | | <0.002 | | |
| Total Kjeldahl Nitrogen | mg/L | | 0.24 | | | 0.13 | | |
| Phosphorus - Total | mg/L | 0.03 | 0.012 | | | 0.016 | | |
| Turbidity (lab) | NTU | | - | | | | | |
| Calcium | mg/L | | 57 | | | 61 | | |
| Magnesium | mg/L | | 15 | | | 16 | | |
| Potassium | mg/L | | 0.91 | | | 1.1 | | |
| Sodium | mg/L | | 0.95 | | | 5.9 | | |
| Aluminum | µg/L | | 66 | | | 210 | | |
| Antimony | µg/L | | <0.5 | | | <0.50 | | |
| Arsenic | µg/L | | <1.0 | | | <1.0 | | |
| Barium | µg/L | | 9.4 | | | 11 | | |
| Beryllium | µg/L | | <0.5 | | | <0.50 | | |
| Boron | µg/L | 200.00 | <10 | | | 17 | | |
| Cadmium | µg/L | 0.2 | <0.10 | | | <0.10 | | |
| Chromium | µg/L | | <5.0 | | | <5.0 | | |
| Cobalt | µg/L | 0.9 | <0.5 | | | <0.50 | | |
| Copper | µg/L | 5 | <1.0 | | | <1.0 | | |
| Iron | µg/L | 300 | <100 | | | 210 | | |
| Lead | µg/L | 25 | <0.5 | | | <0.50 | | |
| Manganese | µg/L | | 3.4 | | | 20 | | |
| Molybdenum | µg/L | | <0.5 | | | <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 | | 60 | | | 81 | | |
| Thallium | µg/L | | <0.050 | | | <0.050 | | |
| Titanium | µg/L | | <5.0 | | | 10 | | |
| Tungsten | µg/L | | <1.0 | | | <1.0 | | |
| Uranium | µg/L | | 0.11 | | | 0.22 | | |

# TABLE B-6
# SURFACE WATER LABORATORY ANALYSIS (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW11E | | | SW14 | | |
|---|---|---|---|---|---|---|---|---|
| | | | SW11E | SW11E | SW11E | SW14 | SW14 | SW14 |
| PARAMETERS | UNITS | PWQO | 16-May-19 | | | 14-May-19 | | |
| Vanadium | µg/L | | <0.5 | | | 0.76 | | |
| 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 | | - | | | - | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW15 | | | |
|---|---|---|---|---|---|---|
| | | | SW15 | SW15 | SW15 | SW15 |
| PARAMETERS | UNITS | PWQO | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW17 | | | |
|---|---|---|---|---|---|---|
| | | | SW17 | SW17 | SW17 | SW DUP2 |
| PARAMETERS | UNITS | PWQO | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW17 | | | |
|---|---|---|---|---|---|---|
| | | | SW17 | SW17 | SW17 | SW DUP2 |
| PARAMETERS | UNITS | PWQO | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW17 | | | |
|---|---|---|---|---|---|---|
| | | | SW17 | SW17 | SW17 | SW17 |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | |
| Total Coliform | cfu/100mL | | - | | | |
| E.Coli | cfu/100mL | | - | | | |
| Heterotrophic Plate Count | cfu/mL | | - | | | |
| Temperature (field) | °C | | 8.8 | | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 8.4 | | | |
| Conductivity @25°C (lab) | µS/cm | | | | | |
| Conductivity (field) | µS/cm | | 361.6 | | | |
| Dissolved Oxygen (field) | mg/L | | 10.8 | | | |
| Alkalinity (CaCO3) | mg/L | | 200 | | | |
| Hardness (CaCO3) | mg/L | | 220 | | | |
| Chloride | mg/L | | 7.1 | | | |
| Fluoride | mg/L | | <0.1 | | | |
| Nitrate (N) | mg/L | | 0.26 | | | |
| Nitrite (N) | mg/L | | <.01 | | | |
| Sulphate | mg/L | | 7.5 | | | |
| Colour | TCU | | 3 | | | |
| Total Suspended Solids | mg/L | | <10 | | | |
| Ammonia (N) - Total | mg/L | | 0.05 | | | |
| Unionized Ammonia as $NH_3$ | mg/L | 0.02 | 0.002 | | | |
| Total Kjeldahl Nitrogen | mg/L | | 0.13 | | | |
| Phosphorus - Total | mg/L | 0.03 | 0.008 | | | |
| Turbidity (lab) | NTU | | | | | |
| Calcium | mg/L | | 59 | | | |
| Magnesium | mg/L | | 16 | | | |
| Potassium | mg/L | | 0.67 | | | |
| Sodium | mg/L | | 4.3 | | | |
| Aluminum | ug/L | | 41 | | | |
| Antimony | ug/L | | <0.50 | | | |
| Arsenic | ug/L | | <1.0 | | | |
| Barium | ug/L | | 9.0 | | | |
| Beryllium | ug/L | | <0.50 | | | |
| Boron | ug/L | 200.00 | 24 | | | |
| 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 | | 15 | | | |
| Molybdenum | ug/L | | <0.50 | | | |
| Nickel | ug/L | | <1.0 | | | |
| Selenium | ug/L | | <2.0 | | | |
| Silver | ug/L | | <0.10 | | | |
| Strontium | ug/L | | 380 | | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW17 | | | |
|---|---|---|---|---|---|---|
| | | | SW17 | SW17 | SW17 | SW17 |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | |
| 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 | | | | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW18 | | | |
|---|---|---|---|---|---|---|
| | | | SW18 | SW18 | SW18 | SW18 |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | |
| Total Coliform | cfu/100mL | | - | | | |
| E.Coli | cfu/100mL | | - | | | |
| Heterotrophic Plate Count | cfu/mL | | - | | | |
| Temperature (field) | °C | | 7.9 | | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 8.5 | | | |
| Conductivity @25°C (lab) | µS/cm | | | | | |
| Conductivity (field) | µS/cm | | 360.9 | | | |
| Dissolved Oxygen (field) | mg/L | | 11.4 | | | |
| Alkalinity (CaCO3) | mg/L | | 220 | | | |
| Hardness (CaCO3) | mg/L | | 230 | | | |
| Chloride | mg/L | | 3.1 | | | |
| Fluoride | mg/L | | <0.10 | | | |
| Nitrate (N) | mg/L | | 0.35 | | | |
| Nitrite (N) | mg/L | | <0.010 | | | |
| Sulphate | mg/L | | 4.9 | | | |
| Colour | TCU | | 3 | | | |
| Total Suspended Solids | mg/L | | <10 | | | |
| Ammonia (N) - Total | mg/L | | <0.05 | | | |
| Unionized Ammonia as $NH_3$ | mg/L | 0.02 | <0.002 | | | |
| Total Kjeldahl Nitrogen | mg/L | | 0.13 | | | |
| Phosphorus - Total | mg/L | 0.03 | <0.020 | | | |
| Turbidity (lab) | NTU | | | | | |
| Calcium | mg/L | | 63 | | | |
| Magnesium | mg/L | | 16 | | | |
| Potassium | mg/L | | 0.69 | | | |
| Sodium | mg/L | | 1.5 | | | |
| Aluminum | ug/L | | 63 | | | |
| Antimony | ug/L | | <0.50 | | | |
| Arsenic | ug/L | | <1.0 | | | |
| Barium | ug/L | | 10 | | | |
| Beryllium | ug/L | | <0.50 | | | |
| Boron | ug/L | 200.00 | 14 | | | |
| 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 | | 16 | | | |
| Molybdenum | ug/L | | <0.50 | | | |
| Nickel | ug/L | | <1.0 | | | |
| Selenium | ug/L | | <2.0 | | | |
| Silver | ug/L | | <0.10 | | | |
| Strontium | ug/L | | 140 | | | |
| Thallium | ug/L | | <0.050 | | | |
| Titanium | ug/L | | <5.0 | | | |
| Tungsten | ug/L | | <1.0 | | | |
| Uranium | ug/L | | 0.22 | | | |

# TABLE B-6
# SURFACE WATER LABORATORY ANALYSIS (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW18 | | | |
|---|---|---|---|---|---|---|
| | | | SW18 | SW18 | SW18 | SW18 |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | |
| 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 | | - | | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW21C | | | |
|---|---|---|---|---|---|---|
| | | | SW21C | SW21C | SW21C | SW21C |
| PARAMETERS | UNITS | PWQO | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW21C | | | |
|---|---|---|---|---|---|---|
| | | | SW21C | SW21C | SW21C | SW21C |
| PARAMETERS | UNITS | PWQO | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW21C | | | |
|---|---|---|---|---|---|---|
| | | | SW21C | SW21C | SW21C | SW21C |
| PARAMETERS | UNITS | PWQO | 16-May-19 | | | |
| Total Coliform | cfu/100mL | | 19 | | | |
| E.Coli | cfu/100mL | | 0 | | | |
| Heterotrophic Plate Count | cfu/mL | | 6 | | | |
| Temperature (field) | °C | | 7.8 | | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 8.4 | | | |
| Conductivity @25°C (lab) | µS/cm | | | | | |
| Conductivity (field) | µS/cm | | 357.5 | | | |
| Dissolved Oxygen (field) | mg/L | | 11.5 | | | |
| Alkalinity (CaCO3) | mg/L | | 210 | | | |
| Hardness (CaCO3) | mg/L | | 230 | | | |
| Chloride | mg/L | | 2 | | | |
| Fluoride | mg/L | | <0.10 | | | |
| Nitrate (N) | mg/L | | 1.26 | | | |
| Nitrite (N) | mg/L | | <0.010 | | | |
| Sulphate | mg/L | | 4.1 | | | |
| 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 | | | | |
| Total Kjeldahl Nitrogen | mg/L | | 0.13 | | | |
| Phosphorus - Total | mg/L | 0.03 | 0.007 | | | |
| Turbidity (lab) | NTU | | - | | | |
| Calcium | mg/L | | 61 | | | |
| Magnesium | mg/L | | 17 | | | |
| Potassium | mg/L | | 0.36 | | | |
| Sodium | mg/L | | 0.91 | | | |
| Aluminum | mg/L | | 0.032 | | | |
| Antimony | mg/L | | <0.0005 | | | |
| Arsenic | mg/L | | <0.001 | | | |
| Barium | mg/L | | 0.0052 | | | |
| Beryllium | mg/L | | <0.0005 | | | |
| Boron | mg/L | 0.20 | <0.01 | | | |
| 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 | <0.1 | | | |
| Lead | mg/L | 0.025 | <0.0005 | | | |
| Manganese | mg/L | | <0.002 | | | |
| Molybdenum | mg/L | | <0.0005 | | | |
| Nickel | mg/L | | 0.0013 | | | |
| Selenium | mg/L | | <0.002 | | | |
| Silver | mg/L | | <0.0001 | | | |
| Strontium | mg/L | | 0.06 | | | |
| Thallium | mg/L | | <0.00005 | | | |
| Titanium | mg/L | | <0.005 | | | |
| Tungsten | mg/L | | <0.001 | | | |
| Uranium | mg/L | | <0.0001 | | | |

# TABLE B-6
# SURFACE WATER LABORATORY ANALYSIS (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | SW21C | | | |
|---|---|---|---|---|---|---|
| | | | SW21C | SW21C | SW21C | SW21C |
| PARAMETERS | UNITS | PWQO | 16-May-19 | | | |
| Vanadium | mg/L | | <0.0005 | | | |
| Zinc | mg/L | 20.00 | <0.005 | | | |
| Zirconium | mg/L | | <0.001 | | | |
| Anion Sum | meq/L | | - | | | |
| Cation Sum | meq/L | | - | | | |
| Ion Ratio | AS/CS | | - | | | |
| TDS (Calc) | mg/L | | - | | | |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| PARAMETERS | UNITS | PWQO | SW77 | | | |
|---|---|---|---|---|---|---|
| | | | SW77 | SW77 | SW77 | SW77 |
| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | BC CONTROL | | | |
|---|---|---|---|---|---|---|
| | | | BC CONT | BC CONT | BC CONT | BC CONT |
| 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 | | 6.1 | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | BC CONTROL | | | |
|---|---|---|---|---|---|---|
| | | | BC CONT | BC CONT | BC CONT | BC CONT |
| PARAMETERS | UNITS | PWQO | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | 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 |
| 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 (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | PR CONTROL | | | |
|---|---|---|---|---|---|---|
| | | | PR CONT | PR CONT | PR CONT | PR CONT |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | |
| Total Coliform | cfu/100mL | | | | | |
| E.Coli | cfu/100mL | | | | | |
| Heterotrophic Plate Count | cfu/mL | | | | | |
| Temperature (field) | °C | | 5.9 | | | |
| pH @25°C (lab) | pH units | 6.5 - 8.5 | | | | |
| pH (field) | pH units | 6.5 - 8.5 | 8.5 | | | |
| Conductivity @25°C (lab) | µS/cm | | | | | |
| Conductivity (field) | µS/cm | | 364.1 | | | |
| Dissolved Oxygen (field) | mg/L | | 12.0 | | | |
| Alkalinity (CaCO3) | mg/L | | 210 | | | |
| Hardness (CaCO3) | mg/L | | 250 | | | |
| Chloride | mg/L | | 2.9 | | | |
| Fluoride | mg/L | | <0.10 | | | |
| Nitrate (N) | mg/L | | <0.010 | | | |
| Nitrite (N) | mg/L | | 0.36 | | | |
| Sulphate | mg/L | | 7.6 | | | |
| Colour | TCU | | 8 | | | |
| Total Suspended Solids | mg/L | | <10 | | | |
| Ammonia (N) - Total | mg/L | | <0.05 | | | |
| Unionized Ammonia as $NH_3$ | mg/L | 0.02 | <0.002 | | | |
| Total Kjeldahl Nitrogen | mg/L | | 0.11 | | | |
| Phosphorus - Total | mg/L | 0.03 | 0.009 | | | |
| Turbidity (lab) | NTU | | | | | |
| Calcium | mg/L | | 60 | | | |
| Magnesium | mg/L | | 17 | | | |
| Potassium | mg/L | | 0.77 | | | |
| Sodium | mg/L | | 1.5 | | | |
| Aluminum | ug/L | | 110 | | | |
| Antimony | ug/L | | <0.50 | | | |
| Arsenic | ug/L | | <1.0 | | | |
| Barium | ug/L | | 17 | | | |
| Beryllium | ug/L | | <0.50 | | | |
| Boron | ug/L | 200.00 | 17 | | | |
| 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 | | 5.6 | | | |
| Molybdenum | ug/L | | <0.50 | | | |
| Nickel | ug/L | | <1.0 | | | |
| Selenium | ug/L | | <2.0 | | | |
| Silver | ug/L | | <0.10 | | | |
| Strontium | ug/L | | 120 | | | |
| Thallium | ug/L | | <0.050 | | | |
| Titanium | ug/L | | <5.0 | | | |
| Tungsten | ug/L | | <1.0 | | | |
| Uranium | ug/L | | 0.22 | | | |

# TABLE B-6
# SURFACE WATER LABORATORY ANALYSIS (2019)

DUNTROON QUARRY - AMP SUMMARY REPORT (2019)
111-53312-02 100

| | | | PR CONTROL | | | |
|---|---|---|---|---|---|---|
| | | | PR CONT | PR CONT | PR CONT | PR CONT |
| PARAMETERS | UNITS | PWQO | 14-May-19 | | | |
| Vanadium | ug/L | | 0.54 | | | |
| 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 | | | | | |
| 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 | | | |

# APPENDIX B – PERFORMANCE INDICATOR MONITORING PROGRAM RESULTS MONTHLY MONITORNG DATA AND TRIGGER VALUES

## TABLE B7: ESCARPMENT SPRING STATIONS JANUARY 2019

| 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** | 0.5 | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11** | 3.6 | 6.4 | NO TRIGGER | NO TRIGGER | 11 | 1.2 |
| **SW 11A** | 5.5 | 0.6 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11B** | 5.2 | 0.9 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11C** | 5.1 | 1.9 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11D** | 4.7 | 2.4 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11E** | 2.3 | 5.9 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | 3 | 6 | NO TRIGGER | NO TRIGGER | 2.8 | 0.5 |
| **SW 24A** | 1.3 | 1.2 | 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 2019

| 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** | 4.2 | 1.5 | 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** | 1.2 | Frozen | NO TRIGGER | NO TRIGGER | 1.7 (unfrozen) | NO TRIGGER |
| **SW 6A** | 0.1 | 211.4 | NO TRIGGER | NO TRIGGER | 174.6 | 113 |
| **SW 9** | 0 | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 14** | -0.1 | 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** | 2.6 | 4.1 | NO TRIGGER | NO TRIGGER | 2.4 | 1.4 |
| **SW 17A** | 1.2 | 16.3 | NO TRIGGER | NO TRIGGER | 15.5 | 0.6 |
| **SW 18** | 0.5 | 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** | 0.05 | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **BC CONTROL** | 0.1 | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |

## TABLE B9: ESCARPMENT SPRING STATIONS FEBRUARY 2019

| 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** | 3.9 | 11.8 | NO TRIGGER | NO TRIGGER | 4.6 | 1.4 |
| **SW 11A** | 0 | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11B** | 5.2 | 1.8 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11C** | 4.7 | 1.7 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11D** | 4.7 | 2.1 | 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 2019

| 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 2019

| 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** | 2.6 | 1.7 | NO TRIGGER | NO TRIGGER | 0.4 | 0.2 |
| **SW 11** | 4.6 | 21.1 | NO TRIGGER | NO TRIGGER | 11.5 | 2.1 |
| **SW 11A** | 5 | 2.4 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11B** | 4.9 | 1.7 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11C** | 4.3 | 1.5 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11D** | 4 | 9.9 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11E** | 4.4 | 13 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | 4.4 | 12.6 | NO TRIGGER | NO TRIGGER | 1.7 | 0.7 |
| **SW 24A** | 3.6 | 1.9 | NO TRIGGER | NO TRIGGER | 1.50 | 0.2 |
| **SW 77** | 4.9 | 1.4 | NO TRIGGER | NO TRIGGER | 0.35 | 0.3 |

## TABLE B12: SURFACE WATER STATIONS MARCH 2019

| 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** | 0 | Frozen | NO TRIGGER | NO TRIGGER | 6.8 | 0.6 |
| **SW 2** | 0 | Frozen | NO TRIGGER | NO TRIGGER | 2.8 | 2.2 |
| **SW 0-2** | 0 | Frozen | NO TRIGGER | NO TRIGGER | 104.3 | 69.3 |
| **SW 3** | 0 | Frozen | NO TRIGGER | NO TRIGGER | 5.5 | 0.8 |
| **SW 6A** | 0 | frozen | NO TRIGGER | NO TRIGGER | 363.3 | 178.8 |
| **SW 9** | 0 | Frozen | NO TRIGGER | NO TRIGGER | 5.2 | 0.4 |
| **SW 14** | 1.8 | 42.5 | NO TRIGGER | NO TRIGGER | 25.1 | 5.5 |
| **SW 15** | 0 | Buried | NO TRIGGER | NO TRIGGER | 1.7 | 1.5 |
| **SW 16** | 0 | Frozen | NO TRIGGER | NO TRIGGER | 12.1 | 2 |
| **SW 17** | 2.5 | 14.8 | NO TRIGGER | NO TRIGGER | 4.3 | 1.8 |
| **SW 17A** | 3.3 | 24.6 | NO TRIGGER | NO TRIGGER | 14.7 | 11.7 |
| **SW 18** | 1.1 | 61.9 | NO TRIGGER | NO TRIGGER | 66 | 48.7 |
| **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 B13: ESCARPMENT SPRING STATIONS APRIL 2019

| 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** | 6.3 | 4 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11** | 4.2 | 43.1 | NO TRIGGER | NO TRIGGER | 11 | 1.2 |
| **SW 11A** | 4.8 | 2 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11B** | 4.8 | 3.8 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11C** | 4.5 | 2.8 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11D** | 3.6 | 3.6 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11E** | 4.6 | 78.3 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | 6.6 | 17.1 | NO TRIGGER | NO TRIGGER | 2.8 | 0.5 |
| **SW 24A** | 5.8 | 5 | NO TRIGGER | NO TRIGGER | 1.70 | 1.5 |
| **SW 77** | 5.4 | 0.5 | NO TRIGGER | NO TRIGGER | 0.23 | 0.2 |

## TABLE B14: SURFACE WATER STATIONS APRIL 2019

| 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** | 5 | 110.3 | NO TRIGGER | NO TRIGGER | 13.8 | 0.9 |
| **SW 2** | 5.2 | 32.7 | NO TRIGGER | NO TRIGGER | 3.7 (unfrozen) | 1.5 (unfrozen) |
| **SW 0-2** | 4.8 | 162.7 | NO TRIGGER | NO TRIGGER | 78.8 (unfrozen) | 48.2 (unfrozen) |
| **SW 3** | 4.6 | 19.8 | NO TRIGGER | NO TRIGGER | 1.7 (unfrozen) | NO TRIGGER |
| **SW 6A** | 7.4 | 985 | NO TRIGGER | NO TRIGGER | 174.6 | 113 |
| **SW 9** | 4.4 | 5.9 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 14** | 6.4 | 189.8 | NO TRIGGER | NO TRIGGER | 35.7 | 12.6 |
| **SW 15** | 7.2 | 31.8 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 16** | 6.6 | 84.1 | NO TRIGGER | NO TRIGGER | 7.0 (unfrozen) | 6.1 (unfrozen) |
| **SW 17** | 8.2 | 32.1 | NO TRIGGER | NO TRIGGER | 2.4 | 1.4 |
| **SW 17A** | 6.1 | 145.4 | NO TRIGGER | NO TRIGGER | 15.5 | 0.6 |
| **SW 18** | 6.7 | Not measured | NO TRIGGER | NO TRIGGER | 36.3 (unfrozen) | 31.6 (unfrozen) |
| **RR3 KARST** | 6.3 | 1.1 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **PR CONTROL** | 6.4 | 158.2 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **BC CONTROL** | 7.8 | 66.5 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |

## TABLE B15: ESCARPMENT SPRING STATIONS MAY 2019

| 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** | 9.1 | 0.7 | NO TRIGGER | NO TRIGGER | 0.2 | 0.1 |
| **SW 11** | 7.9 | 12 | NO TRIGGER | NO TRIGGER | 10.4 | 2.5 |
| **SW 11A** | 5.7 | 0.9 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11B** | 6.1 | 1 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11C** | 5.9 | 0.7 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11D** | 5.6 | 2.6 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11E** | 9.5 | 12 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | 9.4 | 7 | NO TRIGGER | NO TRIGGER | 3.7 | 2.6 |
| **SW 24A** | 10 | 1.8 | NO TRIGGER | NO TRIGGER | 1.40 | 0.8 |
| **SW 77** | 6.1 | 1.2 | NO TRIGGER | NO TRIGGER | 0.3 | 0.2 |

## TABLE B16: SURFACE WATER STATIONS MAY 2019

| 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** | 11.2 | 51.7 | NO TRIGGER | NO TRIGGER | 5 | 2.5 |
| **SW 2** | 7.7 | 5.6 | NO TRIGGER | NO TRIGGER | 3.9 | 3.3 |
| **SW 0-2** | 10.8 | 64.7 | NO TRIGGER | NO TRIGGER | 33.5 | 16.1 |
| **SW 3** | 10.8 | 5.8 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 6A** | 11.6 | 337.1 | NO TRIGGER | NO TRIGGER | 189.1 | 164.4 |
| **SW 9** | 11.2 | 2.4 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 14** | 10.8 | 18.1 | NO TRIGGER | NO TRIGGER | 8.8 | 4.1 |
| **SW 15** | 11 | 1 | NO TRIGGER | NO TRIGGER | 0.6 | 0.1 |
| **SW 16** | 11 | 7.4 | NO TRIGGER | NO TRIGGER | 2.4 | 1 |
| **SW 17** | 12.1 | 4.8 | NO TRIGGER | NO TRIGGER | 2 | 1.3 |
| **SW 17A** | 8.4 | 25.2 | NO TRIGGER | NO TRIGGER | 12 | 9.6 |
| **SW 18** | 10 | 54.9 | NO TRIGGER | NO TRIGGER | 29.1 | 25.3 |
| **RR3 KARST** | 8.3 | 1 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **PR CONTROL** | 10.8 | 77.8 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **BC CONTROL** | 12.4 | 21 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |

## TABLE B17: ESCARPMENT SPRING STATIONS JUNE 2019

| 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** | 11.6 | 0.8 | 16.4 | 18.3 | 0.09 | 0.09 |
| **SW 11** | 8.1 | 5.3 | 10.9 | 12.1 | 2.8 | 1.9 |
| **SW 11A** | 6.7 | 0.2 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11B** | 6.7 | 0.8 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11C** | 7 | 0.7 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11D** | 6.7 | 1.1 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11E** | 9.7 | 6.5 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | 9.8 | 3.8 | 10.8 | 12 | 2.1 | 0.6 |
| **SW 24A** | 10.8 | 0.5 | 12.1 | 13.5 | 0.40 | 0.2 |
| **SW 77** | 7.1 | 1 | 7.5 | 8.3 | 0.12 | 0.1 |

## TABLE B18: SURFACE WATER STATIONS JUNE 2019

| 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** | 16.5 | 24.4 | 21 | 23.4 | 3 | 1.1 |
| **SW 2** | 9.3 | 2.5 | 12.2 | 13.5 | 1.9 | 1.6 |
| **SW 0-2** | 17.7 | 31.3 | 22.9 | 25.4 | 4.9 | 3.6 |
| **SW 3** | 15.9 | 0.1 | 16.7 | 18.5 | NO TRIGGER | NO TRIGGER |
| **SW 6A** | 17.7 | 149.3 | 22.7 | 25.2 | 83.4 | 58.3 |
| **SW 9** | 0 | 0 | 14.8 | 16.4 | NO TRIGGER | NO TRIGGER |
| **SW 14** | 13.6 | 9.3 | 19.6 | 21.8 | 1.8 | 1.6 |
| **SW 15** | 13.8 | 0.4 | 20.7 | 23 | 0.2 | NO TRIGGER |
| **SW 16** | 12.3 | 6.3 | 17.5 | 19.4 | 0.6 | 0.1 |
| **SW 17** | 15 | 2.4 | 19.2 | 21.4 | 0.5 | 0.3 |
| **SW 17A** | 9.7 | 13.6 | 12.6 | 14 | 6.9 | 3.9 |
| **SW 18** | 11.8 | 27.5 | 16.1 | 17.9 | 13.3 | 11.5 |
| **RR3 KARST** | 9.6 | 0.9 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **PR CONTROL** | 12.1 | 25.2 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **BC CONTROL** | 14 | 4.4 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |

## TABLE B19: ESCARPMENT SPRING STATIONS JULY 2019

| 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** | 16.9 | 0.1 | 19.2 | 21.3 | 0.09 | 0.09 |
| **SW 11** | 12.8 | 0.7 | 14.4 | 16 | 0.09 | 0.08 |
| **SW 11A** | 0 | 0 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11B** | 9.7 | 0.3 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11C** | 8.5 | 0.3 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11D** | 11.5 | 0.3 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11E** | 14.6 | 1.3 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | 11.6 | 3.5 | 11.7 | 13 | 1.2 | 0.7 |
| **SW 24A** | 12.7 | 0.45 | 13.5 | 15 | 0.40 | 0.3 |
| **SW 77** | 9.2 | 0.02 | 9.7 | 10.8 | 0.12 | 0.1 |

## TABLE B20: SURFACE WATER STATIONS JULY 2019

| 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** | 0 | 0 | 21.7 | 24.1 | 0.3 | 0.2 |
| **SW 2** | 10 | 0.3 | 15.7 | 17.4 | 1.3 | 0.5 |
| **SW 0-2** | 18.9 | 0.8 | 26.3 | 29.2 | 3.6 | 1.7 |
| **SW 3** | 0 | 0 | 17.8 | 19.8 | NO TRIGGER | NO TRIGGER |
| **SW 6A** | 22.6 | 45.2 | 21.1 | 23.4 | 55.6 | 47.5 |
| **SW 9** | 0 | 0 | 17.3 | 19.2 | NO TRIGGER | NO TRIGGER |
| **SW 14** | 19.9 | 4.7 | 21.6 | 24 | 1.1 | 0.5 |
| **SW 15** | 0 | 0 | 21.4 | 23.8 | 0.1 | NO TRIGGER |
| **SW 16** | 17.7 | 2.1 | 18.6 | 20.7 | 0.3 | NO TRIGGER |
| **SW 17** | 21.5 | 0.7 | 20.7 | 23 | 0.3 | 0.2 |
| **SW 17A** | 13.3 | 4.9 | 14.4 | 16 | 2.9 | 1.7 |
| **SW 18** | 17.3 | 9.9 | 18.6 | 20.7 | 7.1 | 3.8 |
| **RR3 KARST** | 0 | 0 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **PR CONTROL** | 18.6 | 10.9 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **BC CONTROL** | 18.6 | 1.1 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |

## TABLE B21: ESCARPMENT SPRING STATIONS AUGUST 2019

| 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** | 15.4 | 0 | 15.8 | 17.5 | 0.09 | NO TRIGGER |
| **SW 11** | 13.1 | 1.4 | 13.5 | 15 | 0.8 | 0.1 |
| **SW 11A** | 10.4 | 0 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11B** | Dry | DRY | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11C** | Dry | DRY | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11D** | Dry | DRY | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11E** | 14 | 7.5 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | Dry | DRY | 10.8 | 12 | 0.8 | 0.7 |
| **SW 24A** | 14.4 | 0.4 | 11.7 | 13 | 0.30 | 0.1 |
| **SW 77** | 15.7 | 0 | 9.5 | 10.6 | 0.1 | 0.09 |

## TABLE B22: SURFACE WATER STATIONS AUGUST 2019

| 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** | 0 | 0 | 17.7 | 19.7 | 0.5 | 0.1 |
| **SW 2** | 10.7 | 1 | 15,6 | 17.3 | 0.3 | 0.1 |
| **SW 0-2** | 15.2 | 0.8 | 22.4 | 24.9 | 3.8 | 2.1 |
| **SW 3** | Dry | Dry | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 6A** | 17.8 | 38.2 | 19.1 | 21.2 | 32.1 | 24.9 |
| **SW 9** | Dry | Dry | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 14** | 15.2 | 2.3 | 20 | 22.2 | 1.1 | 0.4 |
| **SW 15** | Dry | Dry | 19.4 | 21.5 | 0.1 | NO TRIGGER |
| **SW 16** | 19.1 | 1.6 | 15.3 | 17 | 0.1 | NO TRIGGER |
| **SW 17** | 18.4 | 0.5 | 19.1 | 21.2 | 0.3 | 0.1 |
| **SW 17A** | 12.6 | 2.1 | 13.4 | 14.9 | 2.5 | 0.5 |
| **SW 18** | 14.5 | 4.3 | 17.4 | 19.3 | 3.5 | 3 |
| **RR3 KARST** | Dry | Dry | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **PR CONTROL** | 15.4 | 8.7 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **BC CONTROL** | 17 | 0.2 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |

## TABLE B23: ESCARPMENT SPRING STATIONS SEPTEMBER 2019

| 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** | 12.7 | 0.2 | 12.8 | 14.2 | 0.09 | 0.09 |
| **SW 11** | 12.4 | 1.3 | 11.4 | 12.7 | 0.2 | 0.1 |
| **SW 11A** | 11.9 | 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** | 13.5 | 1 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | Dry | Dry | 9.6 | 10.7 | 0.8 | 0.7 |
| **SW 24A** | 15.6 | 0.4 | 10.2 | 11.4 | 0.30 | 0.1 |
| **SW 77** | Dry | Dry | 9.9 | 11 | 0.1 | 0.09 |

## TABLE B24: SURFACE WATER STATIONS SEPTEMBER 2019

| 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** | 11.4 | 0.1 | 12.8 | 14.2 | 0.1 | NO TRIGGER |
| **SW 0-2** | 13.4 | 2.3 | 20.8 | 23.1 | 1.9 | 0.4 |
| **SW 3** | Dry | Dry | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 6A** | 15.3 | 46.2 | 14.4 | 16 | 14.7 | 9 |
| **SW 9** | Dry | Dry | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 14** | 15.1 | 3 | 14.5 | 16.1 | 0.8 | 0.1 |
| **SW 15** | Dry | Dry | 15 | 16.7 | 0.1 | NO TRIGGER |
| **SW 16** | 18.3 | 1.5 | 12.5 | 13.9 | 0.1 | NO TRIGGER |
| **SW 17** | 16.8 | 1.4 | 15.6 | 17.3 | 0.3 | 0.1 |
| **SW 17A** | 14.2 | 3.4 | 10.9 | 12.1 | 1.2 | 1.1 |
| **SW 18** | 13.8 | 8.1 | 13.2 | 14.7 | 3.1 | 1.6 |
| **RR3 KARST** | Dry | Dry | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **PR CONTROL** | 14 | 13 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **BC CONTROL** | 15.2 | 3.1 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |

## TABLE B25: ESCARPMENT SPRING STATIONS OCTOBER 2019

| 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** | 10.2 | 0.2 | NO TRIGGER | NO TRIGGER | 0.09 | 0.09 |
| **SW 11** | 10.1 | 2.9 | NO TRIGGER | NO TRIGGER | 0.2 | 0.1 |
| **SW 11A** | 9.4 | 0 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11B** | Dry | Dry | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11C** | Dry | Dry | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11D** | Dry | Dry | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11E** | 8.9 | 3.3 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | Dry | Dry | NO TRIGGER | NO TRIGGER | 0.8 | 0.7 |
| **SW 24A** | 8.8 | 0.6 | NO TRIGGER | NO TRIGGER | 0.30 | 0.1 |
| **SW 77** | Dry | Dry | NO TRIGGER | NO TRIGGER | 0.1 | 0.09 |

## TABLE B26: SURFACE WATER STATIONS OCTOBER 2019

| 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** | 0 | 0 | NO TRIGGER | NO TRIGGER | 1.3 | 0.9 |
| **SW 2** | 10.4 | 0.8 | NO TRIGGER | NO TRIGGER | 0.12 | 0.1 |
| **SW 0-2** | 7.3 | 13.8 | NO TRIGGER | NO TRIGGER | 6.6 | 1.2 |
| **SW 3** | 0 | 0 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 6A** | 8.5 | 62.7 | NO TRIGGER | NO TRIGGER | 14.7 | 9 |
| **SW 9** | 0 | 0 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 14** | 7.9 | 2.7 | NO TRIGGER | NO TRIGGER | 0.8 | 0.1 |
| **SW 15** | 0 | 0 | NO TRIGGER | NO TRIGGER | 0.1 | NO TRIGGER |
| **SW 16** | 10.2 | 0.3 | NO TRIGGER | NO TRIGGER | 0.1 | NO TRIGGER |
| **SW 17** | 10.7 | 2.4 | NO TRIGGER | NO TRIGGER | 0.3 | 0.1 |
| **SW 17A** | 8.9 | 3.9 | NO TRIGGER | NO TRIGGER | 1.2 | 1.1 |
| **SW 18** | 9.1 | 2.4 | NO TRIGGER | NO TRIGGER | 3.1 | 1.6 |
| **RR3 KARST** | 0 | 0 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **PR CONTROL** | 9.4 | 12.6 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **BC CONTROL** | 8.2 | 0.2 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |

## TABLE B27: ESCARPMENT SPRING STATIONS NOVEMBER 2019

| 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** | 0 | Frozen | 12.8 | 14.2 | 0.09 | 0.09 |
| **SW 11** | 0.1 | 6.2 | 11.4 | 12.7 | 0.2 | 0.1 |
| **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** | 1.1 | 6.6 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | 0 | Frozen | 9.6 | 10.7 | 0.8 | 0.7 |
| **SW 24A** | 0 | Frozen | 10.2 | 11.4 | 0.30 | 0.1 |
| **SW 77** | 0 | Frozen | 9.9 | 11 | 0.1 | 0.09 |

## TABLE B28: SURFACE WATER STATIONS NOVEMBER 2019

| 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** | 0.01 | 57.9 | 17.1 | 19 | 0.6 | 0.2 |
| **SW 2** | 0 | Frozen | 12.8 | 14.2 | 0.1 | NO TRIGGER |
| **SW 0-2** | 0 | Frozen | 20.8 | 23.1 | 1.9 | 0.4 |
| **SW 3** | 0 | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 6A** | 1.2 | 75.5 | 14.4 | 16 | 14.7 | 9 |
| **SW 9** | 0 | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 14** | 1.1 | 3.1 | 14.5 | 16.1 | 0.8 | 0.1 |
| **SW 15** | 0 | Frozen | 15 | 16.7 | 0.1 | NO TRIGGER |
| **SW 16** | 0.9 | 0.3 | 12.5 | 13.9 | 0.1 | NO TRIGGER |
| **SW 17** | 2.2 | 2.2 | 15.6 | 17.3 | 0.3 | 0.1 |
| **SW 17A** | 1.9 | 2.4 | 10.9 | 12.1 | 1.2 | 1.1 |
| **SW 18** | 1.7 | 0.9 | 13.2 | 14.7 | 3.1 | 1.6 |
| **RR3 KARST** | 0 | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **PR CONTROL** | 1.1 | 12.2 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **BC CONTROL** | 0.5 | 0.1 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |

## TABLE B29: ESCARPMENT SPRING STATIONS DECEMBER 2019

| Escarpment Spring Stations | December 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** | | Frozen | 12.8 | 14.2 | 0.09 | 0.09 |
| **SW 11** | | Frozen | 11.4 | 12.7 | 0.2 | 0.1 |
| **SW 11A** | | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11B** | | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11C** | | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11D** | | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 11E** | | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 21C** | | Frozen | 9.6 | 10.7 | 0.8 | 0.7 |
| **SW 24A** | | Frozen | 10.2 | 11.4 | 0.30 | 0.1 |
| **SW 77** | | Frozen | 9.9 | 11 | 0.1 | 0.09 |

## TABLE B30: SURFACE WATER STATIONS DECEMBER 2019

| 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 | 17.1 | 19 | 0.6 | 0.2 |
| **SW 2** | | Frozen | 12.8 | 14.2 | 0.1 | NO TRIGGER |
| **SW 0-2** | | Frozen | 20.8 | 23.1 | 1.9 | 0.4 |
| **SW 3** | | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 6A** | | Frozen | 14.4 | 16 | 14.7 | 9 |
| **SW 9** | | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **SW 14** | | Frozen | 14.5 | 16.1 | 0.8 | 0.1 |
| **SW 15** | | Frozen | 15 | 16.7 | 0.1 | NO TRIGGER |
| **SW 16** | 0.3 | 0.1 | 12.5 | 13.9 | 0.1 | NO TRIGGER |
| **SW 17** | | Frozen | 15.6 | 17.3 | 0.3 | 0.1 |
| **SW 17A** | | Frozen | 10.9 | 12.1 | 1.2 | 1.1 |
| **SW 18** | | Frozen | 13.2 | 14.7 | 3.1 | 1.6 |
| **RR3 KARST** | | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **PR CONTROL** | 0.01 | 8.7 | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |
| **BC CONTROL** | | Frozen | NO TRIGGER | NO TRIGGER | NO TRIGGER | NO TRIGGER |

## TABLE B-31: Bi-Weekly Drivepoint Monitoring 2019

| Location | 2019 Measurement Water Level (m ASL) | | | | | |
|---|---|---|---|---|---|---|
| | May 6 | May 22 | June 6 | June 19 | July 5 | July 19 |
| **RW PSW #2** | | | | | | |
| **DP5 (in)** | 510.0 | 510.0 | 510.0 | 510.0 | 509.9 | 509.7 |
| **DP5 (out)** | 510.0 | 510.0 | 510.0 | 510.0 | 509.9 | 509.7 |
| **DP7 (in)** | 509.4 | 509.3 | 509.3 | 509.3 | 509.2 | 509.0 |
| **DP7 (out)** | 509.4 | 509.3 | 509.3 | 509.3 | 509.2 | |
| **RR PSW#6** | | | | | | |
| **DP2 (in)** | 512.3 | 512.3 | 512.3 | 512.3 | 512.3 | 512.3 |
| **DP2 (out)** | 512.3 | 512.3 | 512.3 | 512.3 | 512.3 | 512.3 |
| **DP4 (in)** | 511.2 | 511.2 | 511.2 | 511.2 | 511.1 | 511.1 |
| **DP4 (out)** | 511.2 | 511.2 | 511.2 | 511.2 | 511.0 | 511.1 |
| **DP8 (in)** | 511.4 | 511.4 | 511.4 | 511.3 | 511.4 | 511.4 |
| **DP8 (out)** | 511.4 | 511.4 | 511.4 | 511.3 | 511.4 | 511.4 |
| **RR PSW #3** | | | | | | |
| **DP10 (in)** | 507.4 | 507.4 | 507.3 | 507.3 | 507.3 | 507.3 |
| **DP10 (out)** | 507.4 | 507.4 | 507.3 | 507.3 | 507.5 | |
| **ANSI A** | | | | | | |
| **DP6 (in)** | 511.8 | 511.8 | 511.8 | 511.8 | 511.5 | 510.8 |
| **DP6 (out)** | 511.8 | 511.8 | 511.8 | 511.8 | 511.5 | |
| **ANSI B** | | | | | | |
| **Bridson DP (in)** | 510.5 | 510.4 | 510.4 | 510.4 | | 509.7 |
| **Bridson DP (out)** | 510.5 | 510.4 | | | | |
| **DP9 (in)** | 507.8 | 507.8 | 507.8 | 507.7 | 507.6 | 507.5 |
| **DP9 (out)** | 507.8 | 507.7 | 507.8 | | | |