# Summary of Sediment Quality Guidelines from North America

| Jurisdiction | Type | Metals | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Arsenic | Cadmium | Chromium (total) | Copper | Lead | Manganese | Mercury* | Molybdenum | Nickel | Selenium | Silver | Thallium | Uranium | Vanadium | Zinc |
| Quebec (DSEE) | REL | 4.1 | 0.33 | 25 | 22 | 25 | - | 0.094 | - | ND | - | - | - | - | - | 80 |
| Canada (CCME) | ISQC/TEL | 5.9 | 0.6 | 37.3 | 35.7 | 35 | - | 0.17 | - | - | - | - | - | - | - | 123 |
| Quebec (DSEE) | TEL | 5.9 | 0.6 | 37 | 36 | 35 | - | 0.17 | - | ND | - | - | - | - | - | 120 |
| Ontario (OMOEE) | LEL | 6 | 0.6 | 26 | 16 | 31 | 460 | 0.2 | - | 16 | - | - | - | - | - | 120 |
| US EPA (Region IV - FDEP) | TEL | 7.24 | - | 52.3 | 18.7 | 30.2 | - | 0.13 | - | - | - | 0.73 | - | - | - | 124 |
| Quebec (DSEE) | OEL | 7.6 | 1.7 | 57 | 63 | 52 | - | 0.25 | - | 47 | - | - | - | - | - | 170 |
| US EPA (OSWER) | ER-L | 8.2 | 1.2 | 81 | 34 | 47 | - | 0.15 | - | 21 | - | 1 | - | - | - | 150 |
| US EPA (Region III) | BTAG SSB | 9.8 | 0.99 | 43.4 | 31.6 | 35.8 | 460 | 0.18 | - | 22.7 | 2 | 1 | - | - | - | 121 |
| Minnesota (MPCA) | $SQT_{Level\ 1}$ | 9.8 | 0.99 | 43 | 32 | 36 | - | 0.18 | - | 23 | | - | - | - | - | 120 |
| NewYork (NYSDEC) | Class A | 10 | 1 | 43 | 32 | 36 | - | 0.2 | - | 23 | - | 1 | - | - | - | 120 |
| British Columbia (MWLAP) | $SedQC_{SCS}$ | 11 | 2.2 | 56 | 120 | 57 | - | 0.3 | - | - | - | - | - | - | - | 200 |
| US EPA (ARCS) | TEC | 12.1 | 0.592 | 56 | 28 | 34.2 | 1673 | - | - | 39.6 | - | - | - | - | - | 159 |
| Washington (WSDOE) | SCO | 14 | 2.1 | 72 | 400 | 360 | - | 0.66 | | 26 | 11 | 0.57 | - | - | - | 3200 |
| Canada (CCME) | PEL | 17 | 3.5 | 90 | 197 | 91.3 | - | 0.486 | - | - | - | - | - | - | - | 315 |
| Quebec (DSEE) | PEL | 17 | 3.5 | 90 | 200 | 91 | - | 0.49 | - | ND | - | - | - | - | - | 310 |
| NovaScotia (NSE) | EQS | 17 | 3.5 | 90 | 197 | 91.3 | 1100 | 0.486 | - | 75 | 2 | - | - | - | - | 315 |
| British Columbia (MWLAP) | $SedQC_{TCS}$ | 20 | 4.2 | 110 | 240 | 110 | - | 0.58 | - | - | - | - | - | - | - | 380 |
| Quebec (DSEE) | FEL | 23 | 12 | 120 | 700 | 150 | - | 0.87 | - | ND | - | - | - | - | - | 770 |
| Ontario (OMOEE) | SEL | 33 | 10 | 110 | 110 | 250 | 1100 | 2 | - | 75 | - | - | - | - | - | 820 |
| Minnesota (MPCA) | $SQT_{Level\ 2}$ | 33 | 5 | 110 | 150 | 130 | - | 1.1 | - | 49 | | - | - | - | - | 460 |
| NewYork (NYSDEC) | Class C | 33 | 5 | 110 | 150 | 130 | - | 1 | - | 49 | - | 2.2 | - | - | - | 460 |
| US EPA (ARCS) | PEC | 57 | 11.7 | 159 | 77.7 | 396 | 1081 | - | - | 38.5 | - | - | - | - | - | 1532 |
| US EPA (OSWER) | ER-M | 70 | 9.6 | 370 | 270 | - | - | 0.71 | - | 51.6 | - | 3.7 | - | - | - | 410 |
| US EPA (ARCS) | NEC | 92.9 | 41.1 | 312 | 54.8 | 68.7 | 819 | - | - | 37.9 | - | - | - | - | - | 541 |
| Washington (WSDOE) | CSL | 120 | 5.4 | 88 | 1200 | 1300 | - | 0.8 | - | 110 | 20 | 1.7 | - | - | - | 4200 |
| Ontario (OMOEE) | NEL | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| NewYork (NYSDEC) | $BSGV_{human}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| NewYork (NYSDEC) | $BSGV_{wildlife}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| US DOE | $EqP_{NAWQC}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| US DOE | $EqP_{secondary}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| US DOE | $EqP_{Fish}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| US DOE | $EqP_{Daphnids}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| US DOE | $EqP_{Nondaphnid\ invert.}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| US EPA (OSWER) | SQB | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| US EPA (OSWER) | SQC | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

| Jurisdicition | Type | Polycyclic Aromatic Hydrocarbons (PAHs) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Acenaphthene | Acenaphthylene | Anthracene | Benzo[a]anthracene | Benzo[a]pyrene | Chrysene | Dibenzo[a,h]anthracene | Fluoranthene | Fluorene | 2-Methylnaphthalene | Naphthalene | Phenanthrene | Pyrene | Low MW PAHs | High MW PAHs | Total PAHs |
| Quebec (DSEE) | REL | 0.0037 | 0.0033 | 0.016 | 0.014 | 0.011 | 0.026 | 0.0033 | 0.047 | 0.01 | 0.016 | 0.017 | 0.025 | 0.029 | - | - | - |
| Canada (CCME) | ISQC/TEL | 0.0067 | 0.0059 | 0.0469 | 0.0317 | 0.0319 | 0.0571 | 0.0062 | 0.111 | 0.0212 | 0.0202 | 0.0346 | 0.0419 | 0.053 | - | - | - |
| Quebec (DSEE) | TEL | 0.0067 | 0.0059 | 0.047 | 0.032 | 0.032 | 0.057 | 0.0062 | 0.11 | 0.021 | 0.02 | 0.035 | 0.042 | 0.053 | - | - | - |
| Ontario (OMOEE) | LEL | - | - | 0.22 | 0.32 | 0.37 | 0.34 | 0.06 | 0.75 | 0.19 | - | - | - | 0.49 | - | - | 4 |
| US EPA (Region IV - FDEP) | TEL | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.655 | 1.684 |
| Quebec (DSEE) | OEL | 0.021 | 0.03 | 0.11 | 0.12 | 0.15 | 0.24 | 0.043 | 0.45 | 0.061 | 0.063 | 0.12 | 0.13 | 0.23 | - | - | - |
| US EPA (OSWER) | ER-L | 0.016 | 0.044 | 0.0853 | 0.261 | 0.43 | 0.384 | 0.0634 | 0.6 | 0.019 | 0.07 | 0.16 | 0.24 | 0.66 | 0.552 | 1.7 | 4.022 |
| US EPA (Region III) | BTAG SSB | 0.0067 | 0.0059 | 0.0572 | 0.108 | 0.15 | 0.166 | 0.033 | 0.423 | 0.0774 | 0.0202 | 0.176 | 0.204 | 0.195 | - | - | - |
| Minnesota (MPCA) | $SQT_{Level\ 1}$ | 0.0067 | 0.0059 | 0.057 | 0.11 | 0.15 | 0.17 | 0.033 | 0.42 | 0.077 | 0.02 | 0.18 | 0.2 | 0.2 | - | - | 1.6 |
| NewYork (NYSDEC) | Class A | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 |
| British Columbia (MWLAP) | $SedQC_{SCS}$ | 0.055 | 0.08 | 0.15 | 0.24 | 0.48 | 0.53 | 0.084 | 1.5 | 0.089 | 0.12 | 0.24 | 0.32 | 0.54 | - | - | 10 |
| US EPA (ARCS) | TEC | - | - | 0.0316 | 0.26 | 0.35 | 0.5 | - | 0.0642 | 0.0346 | - | 0.0328 | - | 0.57 | 0.786 | 2.9 | 3.553 |
| Washington (WSDOE) | SCO | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 17 |
| Canada (CCME) | PEL | 0.0889 | 0.128 | 0.245 | 0.385 | 0.782 | 0.862 | 0.135 | 2.355 | 0.144 | 0.201 | 0.391 | 0.515 | 0.875 | - | - | - |
| Quebec (DSEE) | PEL | 0.089 | 0.13 | 0.24 | 0.39 | 0.78 | 0.86 | 0.14 | 2.4 | 0.14 | 0.2 | 0.39 | 0.52 | 0.88 | - | - | - |
| NovaScotia (NSE) | EQS | 0.0889 | 0.128 | 0.245 | 0.385 | 0.782 | 0.862 | 0.135 | 2.355 | 0.144 | 0.201 | 0.391 | 0.515 | 0.875 | - | - | - |
| British Columbia (MWLAP) | $SedQC_{TCS}$ | 0.11 | 0.15 | 0.29 | 0.46 | 0.94 | 1 | 0.16 | 2.8 | 0.17 | 0.24 | 0.47 | 0.62 | 1.1 | - | - | 20 |
| Quebec (DSEE) | FEL | 0.94 | 0.34 | 1.1 | 0.76 | 3.2 | 1.6 | 0.2 | 4.9 | 1.2 | 0.38 | 1.2 | 1.1 | 1.5 | - | - | - |
| Ontario (OMOEE) | SEL | - | - | 3.7 | 15 | 14.4 | 4.6 | 1.3 | 10.2 | 1.6 | - | - | - | 8.5 | | | 100 |
| Minnesota (MPCA) | $SQT_{Level\ 2}$ | 0.089 | 0.13 | 0.85 | 1.1 | 1.5 | 1.3 | 0.14 | 2.2 | 0.54 | 0.2 | 0.56 | 1.2 | 1.5 | - | - | 23 |
| NewYork (NYSDEC) | Class C | 4.91 | 4.52 | 5.94 | 8.41 | 9.64 | 8.43 | 11.22 | 7.08 | 5.39 | - | 3.85 | 5.97 | 6.98 | - | - | 45 |
| US EPA (ARCS) | PEC | - | - | 0.5477 | 4.2 | 0.3937 | 5.2 | 0.0282 | 0.8343 | 0.6519 | - | 0.6874 | - | 3.225 | 3.369 | 4.3538 | 13.66 |
| US EPA (OSWER) | ER-M | 0.5 | 0.64 | 1.1 | 1.6 | 1.6 | 2.8 | 0.26 | 5.1 | 0.54 | 0.67 | 2.1 | 1.5 | 2.6 | 3.16 | 9.6 | 44.792 |
| US EPA (ARCS) | NEC | - | - | 1.7 | 3.5 | 0.44 | 4 | 0.87 | 7.5 | 1.8 | - | 0.29 | - | 6.1 | 3.04 | 51 | 84.6 |
| Washington (WSDOE) | CSL | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 30 |
| Ontario (OMOEE) | NEL | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| NewYork (NYSDEC) | $BSGV_{human}$ | - | - | - | - | 0.0044 | - | 0.0098 | - | - | - | - | - | - | - | - | - |
| NewYork (NYSDEC) | $BSGV_{wildlife}$ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| US DOE | $EqP_{NAWQC}$ | 1.3 | - | - | - | - | - | - | - | - | - | - | 1.8 | - | - | - | - |
| US DOE | $EqP_{secondary}$ | - | - | 0.0087 | 0.11 | 0.14 | - | - | - | - | - | 0.24 | - | | - | - | - |
| US DOE | $EqP_{Fish}$ | 5.3 | - | 3 | 0.027 | - | - | - | - | - | - | 12 | - | - | - | - | - |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| US DOE | $EqP_{Daphnids}$ | 470 | - | 0.0091 | 0.62 | 3 | - | - | - | - | - | 23 | 59 | - | - | - | - |
| US DOE | $EqP_{Nondaphnid\ invert.}$ | 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| US EPA (OSWER) | SQB | - | - | - | - | - | - | - | - | - | - | 0.48 | - | - | - | - | - |
| US EPA (OSWER) | SQC | 0.62 | - | - | - | - | - | - | 2.9 | - | - | | 0.85 | - | - | - | |

| Jurisdiction | Type | Other | | |
|---|---|---|---|---|
| | | Chloride | Naphthenic acids | Phenols |
| Quebec (DSEE) | REL | - | - | ND |
| Canada (CCME) | ISQC/TEL | - | - | 1.4 |
| Quebec (DSEE) | TEL | - | - | 1.4 |
| Ontario (OMOEE) | LEL | - | - | - |
| US EPA (Region IV - FDEP) | TEL | - | - | - |
| Quebec (DSEE) | OEL | - | - | ND |
| US EPA (OSWER) | ER-L | - | - | - |
| US EPA (Region III) | BTAG SSB | - | - | 0.42 |
| Minnesota (MPCA) | $SQT_{Level\ 1}$ | - | - | - |
| NewYork (NYSDEC) | Class A | - | - | - |
| British Columbia (MWLAP) | $SedQC_{SCS}$ | - | - | - |
| US EPA (ARCS) | TEC | - | - | - |
| Washington (WSDOE) | SCO | | | |
| Canada (CCME) | PEL | - | - | ND |
| Quebec (DSEE) | PEL | - | - | ND |
| NovaScotia (NSE) | EQS | - | - | - |
| British Columbia (MWLAP) | $SedQC_{TCS}$ | - | - | - |
| Quebec (DSEE) | FEL | - | - | ND |
| Ontario (OMOEE) | SEL | - | - | - |
| Minnesota (MPCA) | $SQT_{Level\ 2}$ | - | - | - |
| NewYork (NYSDEC) | Class C | - | - | - |
| US EPA (ARCS) | PEC | - | - | - |
| US EPA (OSWER) | ER-M | - | - | - |
| US EPA (ARCS) | NEC | - | - | - |
| Washington (WSDOE) | CSL | - | - | - |
| Ontario (OMOEE) | NEL | - | - | - |
| NewYork (NYSDEC) | $BSGV_{human}$ | - | - | - |
| NewYork (NYSDEC) | $BSGV_{wildlife}$ | - | - | - |
| US DOE | $EqP_{NAWQC}$ | - | - | - |
| US DOE | $EqP_{secondary}$ | - | - | - |
| US DOE | $EqP_{Fish}$ | - | - | - |

| | | | | |
|---|---|---|---|---|
| US DOE | $EqP_{Daphnids}$ | - | - | - |
| US DOE | $EqP_{Nondaphnid\ invert.}$ | - | - | - |
| US EPA (OSWER) | SQB | - | - | - |
| US EPA (OSWER) | SQC | - | - | - |

**Notes:**

BC Ministry of Water, Land and Air Protection (BC Environment 2003)
- Sed $CS_{SCS}$ - Sediment Quality Criteria for Sensitive Contaminated Sites
- Sed $CS_{TCS}$ - Sediment Quality Criteria for Typical Contaminated Sites

Canadian Council of Ministers of the Enivronment (CCME 1999 and updates)
- ISQC - Interim Sediment Quality Guideline
- TEL - Threshold Effect Level Sediment Quality Criteria for Sensitive
- PEL - Probable Effect Level

Minnesota Pollution Control Agency (MPCA 2007)
- SQT - Sediment Quality Target
- Level 1 - intended to identify contaminant concentrations below which harmful effects on sediment-dwelling organisms are unlikely to be observed
- Level 2 - intended to identify contaminant concentrations above which

harmful effects on sediment-dwelling organisms are likely to be observed

New York State Department of Environmental Conservation of Fish, Wildlife and Marine Resources Bureau of Habitat (NYSDEC 2014)
- SQT - Sediment Quality Target
- BSGV - Bioaccumulation Based Sediment Guideline Value
- Class A - little or no potential for risk to aquatic life
- Class C - a high potential for the sediments to be toxic to aquatic life

NovaScotia Environment (NSE 2014)
- EQS - Environmental Quality Standard

Ontario Ministry of Environment and Energy (OMOEE 2008)
- NEL - No Effect Level
- LEL - Lowest Effect Level
- SEL - Severe Effect Level

Quebec (Direction du suivi de l'état de l'environnement (DSEE 2007))
- NEL - No Effect Level
- REL - Rare Effect Level
- OEL - Occasional Effect Level
- FEL - Frequent Effect Level

United States Deperatment of Energy (US DOE) Office of Environmental Management (US DOE 1997)
- EqP - equilibrium partitioning
- NAWQC - national ambient water quality criteria
- Secondary - chronic conservative predictor of risk
- Fish - lowest chronic value protective of fish tissue