

Table C-5. Guidelines to Identify Potential Causes of Impairment of Aquatic Life Use in Streams

Pesticides and Other Organic Pollutants	Guidelines Based on Water Quality Standards⁽¹⁾
2,4-D	Acute: 100 µg/L ⁽²⁾ , Chronic: 8 µg/L ⁽²⁾
Alachlor	Acute: 1100 µg/L ⁽²⁾
alpha-BHC	Acute: 31 µg/L ⁽²⁾ , Chronic: 2.5 µg/L ⁽²⁾
Atrazine	Acute: 82 µg/L ⁽²⁾ , Chronic: 9 µg/L ⁽²⁾
Benzene	Acute: 4200 µg/L, Chronic: 860 µg/L
Cyanazine	Acute: 370 µg/L ⁽²⁾ , Chronic: 30 µg/L ⁽²⁾
Dicamba	Acute: 1500 µg/L ⁽²⁾ , Chronic: 150 µg/L ⁽²⁾
Endrin	Acute: 0.16 µg/L ⁽²⁾ , Chronic: 0.033 µg/L ⁽²⁾
Ethylbenzene	Acute: 150 µg/L, Chronic: 14 µg/L
Metolachlor	Acute: 380 µg/L ⁽²⁾ , Chronic: 30.4 µg/L ⁽²⁾
Metribuzin	Acute: 8.4 mg/L ⁽²⁾
Terbufos	Acute: 0.024 µg/L ⁽²⁾
Toluene	Acute: 2000 µg/L, Chronic: 600 µg/L
Trifluralin	Acute: 26 µg/L ⁽²⁾ , Chronic: 1.1 µg/L ⁽²⁾
Xylenes (total mixed)	Acute: 920 µg/L, Chronic: 360 µg/L
Metal Pollutants	Guidelines Based on Water Quality Standards⁽¹⁾
Arsenic	Acute: 360 µg/L (dissolved), Chronic: 190 µg/L (dissolved)
Barium	Acute: 5000 µg/L
Boron	Acute: 40100 µg/L, Chronic: 7600 µg/L
Cadmium	Hardness dependent
Copper	Hardness dependent
Chromium, hexavalent	Acute: 16 µg/L, Chronic: 11 µg/L
Chromium, trivalent	Hardness dependent
Iron	Acute: 1000 µg/L (dissolved)
Lead	Hardness dependent
Manganese	Hardness dependent
Mercury	Acute: 2.2 µg/L (dissolved), Chronic: 1.1 µg/L(dissolved)
Nickel	Hardness dependent
Selenium	Acute: 1000 µg/L
Silver	Acute: 5 µg/L
Zinc	Hardness dependent
Other Pollutants	Guidelines Based on Water Quality Standards⁽¹⁾
Ammonia (Total)	Temperature and pH dependent
Chlorides	Acute: 500 mg/L

Other Pollutants	Guidelines Based on Water Quality Standards ⁽¹⁾
Chlorine	Acute: 19 µg/L, Chronic: 11 µg/L
Cyanide	Acute: 22 µg/L, Chronic: 5.2 µg/L
Fluoride	Hardness dependent
Dissolved Oxygen ⁽³⁾	Seasonal and water body dependent
pH	Acute: <6.5 or >9.0
Phenols	Acute 0.1 mg/L
Sulfate	Hardness and chloride dependent
Temperature, Water (<i>used only for thermal point sources</i>)	Dependent on season and 2.8°C maximum rise in water temperature ⁽⁴⁾
Other Toxic Pollutants	Any pollutant with aquatic life criteria derived under 35 Ill. Adm. Code 302.210 ⁽²⁾
Nonpollutants	Guidelines Not Based on Water Quality Standards
Alteration in stream-side or littoral vegetative covers	Observed degradation from alteration in stream-side or littoral vegetative covers ^(5, 6)
Alteration in wetland habitats	Observed degradation from alteration in wetland habitats ⁽⁶⁾
Changes in stream depth and velocity patterns	Observed degradation from alteration/reduction of hydrologic diversity ^(5, 6)
Fish Kills	Documented fish kill from Illinois Department of Natural Resources or Illinois EPA records ⁽⁵⁾
Fish-Passage Barrier	Observed degradation from fish-passage barrier ⁽⁵⁾
Loss of instream cover	Observed degradation from reductions in instream cover ^(5, 6)
Flow alterations	Observed degradation from flow alterations ^(5, 6)
Non-Native Fish, Shellfish, or Zooplankton	Observed degradation from non-native fish, shellfish or zooplankton ^(5, 6)
Physical substrate habitat alterations	Observed degradation from substrate alterations
Cause Unknown	If the pollutant or nonpollutant causing impairment is unknown, Cause Unknown is listed⁽⁷⁾

1. General Use Water Quality Standards at 35 Ill. Adm. Code 302, Subpart B. Unless otherwise indicated, a single exceedance of a water quality standard indicates a potential cause of impairment. For applying these guidelines, Illinois EPA typically uses data from the Ambient Water Quality Monitoring Network (most recent three years), Intensive Basin Surveys (most recent survey), Facility Related Stream Surveys (most recent survey).

2. Criterion derived according to 35 Ill. Adm. Code 302.210. Derived water quality criteria are available at [Derived Criteria \(illinois.gov\)](http://www.illinois.gov).

3. In some Assessment Units, a TMDL study may have determined that violations of the dissolved oxygen standard are not caused by a pollutant. For these cases, the cause, "Dissolved Oxygen," is classified as a nonpollutant.

4. 35 Ill. Adm. Code 302.211.

5. See Table C-4.

6. Site-specific observation, information, or knowledge.

7. Cause Unknown is used when the pollutant or nonpollutant causing an assessment decision of Not Supporting was not identified from existing data.