DEPARTMENT OF HEALTH

Amendment and Compilation of Chapter 11-54
Hawaii Administrative Rules

OCT 2 2 2021

SUMMARY

1. Title amended.

2. §11-54-1 is amended.

3. §11-54-1.1 is amended.

4. §§11-54-2 to 11-54-4 are amended.

5. §§11-54-5.1 and 11-54-5.2 are amended.

6. §§11-54-6 to 11-54-8 are amended.

7. §11-54-9 is repealed.

8. §11-54-9.1 is repealed.

9. §§11-54-9.1.01 to 11-54-9.1.09 are repealed.

10. §§11-54-9.2 to 11-54-9.6 are added.

11. §11-54-10 is amended.

12. §§11-54-11 and 11-54-12 are repealed.

13. §11-54-15 is amended.

14. Appendix E is added.

15. Chapter 11-54 is compiled.

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HAWAII ADMINISTRATIVE RULES

TITLE 11

DEPARTMENT OF HEALTH

CHAPTER 11-54

WATER QUALITY STANDARDS

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§11-54-9.1.01	Repealed
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§11-54-9.3 Use attainability analysis
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§11-54-1 Definitions. As used in this chapter:

"Act" means the Clean Water Act (formally referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-483, Public Law 97-117, and Public Law 114-115, (33 U.S.C. §1251 et seq).

"Ambient conditions" means the water quality conditions that would occur in the receiving waters if these waters were not influenced by the proposed new human activity.

"Amphidromous" means aquatic life that migrates to and from the sea, but not specifically for reproductive purposes. Amphidromous aquatic life in state streams is confined to fresh waters as adults, but their larval stages are partially or entirely spent in the ocean as part of the zooplankton.

"Anchialine pools" means coastal bodies of standing waters that have no surface connections to the ocean but display both tidal fluctuations and salinity ranges characteristic of fresh and brackish

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waters, indicating the presence of subsurface connections to the watertable and ocean. Anchialine pools are located in porous substrata (recent lava or limestone) and often contain a distinctive assemblage of native aquatic life. Deeper anchialine pools may display salinity stratification, and some shallow pools may contain standing water only on the highest tides.

"Aquatic life", as defined in section 187A-1, HRS, means any type or species of mammal, fish, amphibian, reptile, mollusk, crustacean, arthropod, invertebrate, coral, or other animal that inhabits the freshwater or marine environment and includes any part, product, egg, or offspring thereof; or freshwater or marine plants, including, seeds, roots, products, and other parts thereof.

"Best degree of treatment or control" means that treatment or control which is required by applicable state statutes and state regulations and the Act or which is otherwise specified by the director considering technology or management practices currently available in relation to the public interest.

"Best management practices" or "BMPs" means schedules of activities, prohibitions or designations of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of state waters. Best management practices also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs include methods, measures, or practices selected by the department to meet nonpoint source pollution control needs. BMPs also include but are not limited to structural and nonstructural controls. BMPs can be applied before, during, and after pollution-producing activities.

"Brackish waters" means waters with dissolved inorganic ion concentrations (salinity) greater than

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0.5 parts per thousand, but less than thirty-two parts per thousand.

"Coastal waters", as defined in section 342D-1, HRS, means all waters surrounding the islands of the State from the coast of any island to a point three miles seaward from the coast, and, in the case of streams, rivers, and drainage ditches, to a point three miles seaward from their point of discharge into the sea and includes those brackish waters, fresh waters, and salt waters that are subject to the ebb and flow of the tide.

"Coastal wetlands" means natural or man-made ponds and marshes having variable salinity, basin limits, and permanence. These wetlands usually adjoin the coastline and may be subject to tidal, seasonal, or perennial flooding. Coastal wetlands are generally maintained by surface and subterranean sources of fresh and salt water. Many natural coastal wetlands have been modified significantly by man and are characterized by introduced aquatic life. Coastal wetlands include, but are not limited to, salt marshes, open ponds, mudflats, man-made or natural waterbird refuges, isolated seasonal lakes and mangrove flats.

"Department" means the department of health, State of Hawaii.

"Developed estuaries" means volumes of brackish coastal waters in well-defined basins constructed by man or otherwise highly modified from their natural state. Developed estuaries include, but are not limited to, dredged and revetted stream termini.

"Director" means the director, department of health, State of Hawaii, or the director's duly authorized agent.

"Discharge" means the discharge of a water pollutant.

"Ditches and flumes" means fresh waters flowing continuously in artificial channels. They are used mainly for the purpose of irrigation and usually receive water from stream diversions. Ditches and flumes may be inflowing (carry water to reservoirs or

user areas) or outflowing (drain water from reservoirs or user areas).

"Drainage basin" or "watershed" means the region or area drained by a stream or river system.

"Drainage ditch" means that facility used to carry storm runoff only, not sanitary sewage.

"Elevated wetlands" means natural freshwater wetlands located above one hundred meters (three hundred thirty feet) elevation. They are generally found in undisturbed areas, mainly in remote uplands and forest reserves with high rainfall. Elevated wetlands include upland bogs, marshes, swamps, and associated ponds and pools.

"Estuaries" means characteristically brackish coastal waters in well-defined basins with a continuous or seasonal surface connection to the ocean that allows entry of marine fauna. Estuaries may be either natural or developed.

"Existing uses" means those uses actually attained in the water body on or after November 28, 1975 whether or not they are included in the water quality standards.

"Flowing springs and seeps" means perennial, relatively constant fresh water flows not in distinct channels, in which the water emanates from elevated aquifers as wet films or trickles over rock surfaces. They are found typically as natural occurrences along rock faces or banks of deeply incised streams, and artificially along road cuts.

"Flowing waters" means fresh waters flowing unidirectionally down altitudinal gradients. These waters may or may not be confined in distinct channels. Flowing waters include streams, flowing springs and seeps, and ditches and flumes.

"Fresh waters" means all waters with a dissolved inorganic ion concentration of less than 0.5 parts per thousand.

"Hydric soil" means soil that, in its undrained condition, is saturated, flooded, or ponded and develops conditions that favor the growth and regeneration of hydrophytic vegetation.

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"Hydrophytic vegetation" or "hydrophytes" means plants adapted to growing in seasonally or permanently flooded conditions.

"Intermittent streams" means fresh waters flowing in definite natural channels only during part of the year or season. Intermittent streams include many tributaries of perennial streams.

"Introduced aquatic life" means those species of aquatic organisms that are not native to a given area or water body and whose populations were established (deliberately or accidentally) by human activity. "Introduced" organisms are also referred to as "alien" or "exotic".

"Low wetlands" means freshwater wetlands located below one hundred meters (three hundred thirty feet) elevation that may be natural or artificial in origin and are usually found near coasts or in valley termini. Low wetlands are maintained by either stream, well, or ditch influent water, or by exposure of the natural water table. Low wetlands include, but are not limited to, natural lowland marshes, riparian wetlands, littoral zones of standing waters (including lakes, reservoirs, ponds, and fishponds), and agricultural wetlands such as taro loi.

"Native aquatic life" means those species or higher taxa of aquatic organisms that occur naturally in a given area or water body and whose populations were not established as a result of human activity.

"Natural estuaries" means volumes of brackish coastal waters in well-defined basins of natural origin, found mainly at the mouths of streams or rivers. Natural estuaries can be either stream-fed (drowned stream mouths fed by perennial stream runoff) or spring-fed (nearshore basins with subterranean fresh water sources). Stream-fed estuaries serve as important migratory pathways for larval and juvenile amphidromous stream fauna.

"Natural freshwater lakes" means standing water that is always fresh, in well-defined natural basins, with a surface area usually greater than 0.1 hectares (0.25 acres), and in which rooted emergent

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hydrophytes, if present, occupy no more than thirty per cent of the surface area. Natural freshwater lakes in Hawaii occur at high, intermediate, and low elevations. Lowland freshwater lakes characteristically lack a natural oceanic connection (surface or subsurface) of a magnitude sufficient to cause demonstrable tidal fluctuations.

"Nonpoint source pollution", as defined in section 342E-1, HRS, means water pollution that does not originate from a point source.

"Perennial streams" means fresh waters flowing year-round in all or part of natural channels, portions of which may be modified by humans. Flow in perennial streams may vary seasonally. Perennial streams may be subdivided into longitudinal zones, based on elevation and gradient:

(1) Headwater zone (elevation above eight hundred meters (two thousand six hundred feet) or gradient above thirty per cent or both);

(2) Mid-zone (elevation between fifty and eight hundred meters (one hundred sixty-five and two thousand six hundred feet) or gradient between five and thirty per cent or both); and

(3) Terminal zone (elevation below fifty meters (one hundred sixty-five feet) or gradient below five per cent or both).

Perennial streams may be either continuous or interrupted. Continuous perennial streams discharge continuously to the ocean in their natural state, and contain water in the entire length of the stream channel year-round. Interrupted perennial streams usually flow perennially in their upper reaches but only seasonally in parts of their middle or lower reaches, due to either downward seepage of surface flow (naturally interrupted) or to man-made water diversions (artificially interrupted).

"Person", as defined in section 342D-1, HRS, means any individual, partnership, firm, association, public or private corporation, federal agency, the

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State or any of its political subdivisions, trust, estate, or any other legal entity.

"Point source" or "point source pollution", as defined in section 342E-1, HRS, means pollution from any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.

"Pollutant" or "water pollutant", as defined in section 342D-1, HRS, means dredged spoil, solid refuse, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil, sediment, cellar dirt and industrial, municipal, and agricultural waste.

"Pollution" or "water pollution", as defined in section 342D-1, HRS, means:

(1) Such contamination or other alteration of the physical, chemical, or biological properties of any state waters, including change in temperature, taste, color, turbidity, or odor of the waters, or

(2) Such discharge of any liquid, gaseous, solid, radioactive, or other substances into any state waters, as will or is likely to create a nuisance or render such waters unreasonably harmful, detrimental, or injurious to public health, safety, or welfare, including harm, detriment, or injury to public water supplies, fish and aquatic life and wildlife, recreational purposes and agricultural and industrial research and scientific uses of such waters or as will or is likely to violate any water quality standards, effluent standards, treatment and pretreatment standards, or

standards of performance for new sources adopted by the department.

"Reservoirs" means standing water that is always fresh, in well-defined artificially created impoundments.

"Saline lakes" means standing waters of salinities ranging from brackish to hypersaline, located in well-defined natural basins, and lacking a natural surface connection to the ocean. Saline lakes may be present as high-island shoreline or near-shoreline features (e.g. Lake Nomilu, Kauai; Salt Lake, Oahu; Lake Kauhako, Molokai) or as low-island closed lagoons (Lake Laysan, Laysan). They are usually, but not always, fed by seawater seepage and may be diluted by rainwater, overland runoff, or ground water, or concentrated by evaporation.

"Saline or salt waters" means waters with dissolved inorganic ion concentrations greater than thirty-two parts per thousand.

"Schedule of compliance" means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with an effluent limitation, other limitation, prohibition, or standard.

"Springs and seeps" means small, perennial, relatively constant freshwater flow not in distinct channels, such as wet films or trickles over rock surfaces, in which the water emanates from elevated aquifers. Springs and seeps may be either stream associated, occurring in deeply cut valleys and contributing to stream flow; or coastal, occurring on coastal cliffs and usually flowing into the ocean.

"Standing waters" refers to waters of variable size, depth, and salinity, that have little or no flow and that are usually contained in well-defined basins. Standing water bodies include natural freshwater lakes, reservoirs or impoundments, saline lakes, and anchialine pools.

"State waters", as defined in section 342D-1, HRS, means all waters, fresh, brackish, or salt around and within the State, including, but not limited to,

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coastal waters, streams, rivers, drainage ditches, ponds, reservoirs, canals, ground waters, and lakes; provided that drainage ditches, ponds, and reservoirs required as part of a water pollution control system are excluded. This chapter applies to all state waters, including wetlands, subject to the following exceptions:

(1) This chapter does not apply to groundwater, except the director may in the director's discretion take appropriate actions when the director believes that the discharge of pollutants to the ground or groundwater has adversely affected, is adversely affecting, or will adversely affect the quality of any state water other than groundwater.

(2) This chapter does not apply to drainage ditches, flumes, ponds and reservoirs that are required as part of a water pollution control system.

(3) This chapter does not apply to drainage ditches, flumes, ponds, and reservoirs that are used solely for irrigation and do not overflow into or otherwise adversely affect the quality of any other state waters, unless such ditches, flumes, ponds, and reservoirs are waters of the United States as defined in title 40 Code of Federal Regulations section 122.2. The State has those boundaries stated in the Hawaii Constitution, art. XV, §1.

"Streams" means seasonal or continuous water flowing unidirectionally down altitudinal gradients in all or part of natural or modified channels as a result of either surface water runoff or ground water influx, or both. Streams may be either perennial or intermittent and include all natural or modified watercourses.

"Stream channel" means a natural or modified watercourse with a definite bed and banks which periodically or continuously contains flowing water.

"Stream system" means the aggregate of water features comprising or associated with a stream, including the stream itself and its tributaries, headwaters, ponds, wetlands, and estuary. A stream system is geographically delimited by the boundaries of its drainage basin or watershed.

"Surface water" means both contained surface water (that is, water upon the surface of the earth in well-defined basins created naturally or artificially including, but not limited to, streams, other watercourses, lakes, and reservoirs) and diffused surface water (that is, water occurring upon the surface of the ground other than in contained basins). Water from natural springs and seeps is surface water when it exits from the spring onto the earth's surface.

"U.S. Environmental Protection Agency" or "EPA" means the federal agency whose mission is to protect human and environmental health.

"Water pollution control system" means a system designed and constructed specifically for the purpose of collecting, handling, storing, treating, or disposing of storm water, domestic wastewater, industrial wastewater, or any combination of these waters to prevent water pollution.

"Water quality standards" or "WQS" means provisions of state law which consist of a designated use or designated uses for state waters and water quality criteria for such waters based upon such uses. WQS are to protect the public health or welfare, enhance the quality of state waters, and serve the purposes of the Act.

"Wetlands" means land that is transitional between terrestrial and aquatic ecosystems where the water table is usually at or near the surface or the land is covered by shallow water. A wetland shall have one or more of the following attributes:

(1) At least periodically the land supports predominantly hydrophytic vegetation;

(2) The substratum is predominantly undrained hydric soil; or

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(3) The substratum is nonsoil (gravel or rocks) and is at least periodically saturated with water or covered by shallow water.

Wetlands may be fresh, brackish, or saline and generally include swamps, marshes, bogs, and associated ponds and pools, mud flats, isolated seasonal ponds, littoral zones of standing water bodies, and alluvial floodplains. For the purposes of applying for water quality certifications, as specified in chapter 11-53, and National Pollutant Discharge Elimination System (NPDES) permits, as specified in chapter 11-55, the identification and delineation of wetland boundaries shall be done following the procedures described in the U.S. Army Corps of Engineers' Wetlands Delineation Manual (USACE 1987).

"Zones of mixing" means limited areas around outfalls and other facilities to allow for the initial dilution of waste discharges. Zones of mixing for the assimilation of domestic, agricultural, and industrial discharges which have received the best degree of treatment or control are recognized as being necessary. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/02/04; comp 06/15/09; comp 10/21/12; am and comp 12/6/13; am and comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS §187A-1, §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E; 40 C.F.R. §§122.2, 130.2, 131.3, 131.12; 22 U.S.C. §1362(14))

§11-54-1.1 General policy of water quality antidegradation. (a) Existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

(b) Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected

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unless the director finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the director shall assure water quality adequate to protect existing uses fully. Further, the director shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

(c) Where existing high quality waters constitute an outstanding resource, such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

(d) In those areas where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with section 316 of the Act. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; comp 10/21/12; am and comp 12/6/13; comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E; 40 C.F.R. §131.12) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-2 Classification of state waters. (a) State waters are classified as either inland waters or marine waters.

(b) Inland waters may be fresh, brackish, or saline.

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(1) All inland fresh waters are classified as follows, based on their ecological characteristics and other natural criteria:
- (A) Flowing waters.
  - (i) Streams (perennial and intermittent);
  - (ii) Flowing springs and seeps; and
  - (iii) Ditches and flumes that discharge into any other state waters;
- (B) Standing waters.
  - (i) Natural freshwater lakes; and
  - (ii) Reservoirs (impoundments);
- (C) Wetlands.
  - (i) Elevated wetlands (bogs, marshes, swamps, and associated ponds); and
  - (ii) Low wetlands (marshes, swamps, and associated ponds).

(2) All inland brackish or saline waters are classified as follows, based on their ecological characteristics and other natural criteria:
- (A) Standing waters.
  - (i) Anchialine pools; and
  - (ii) Saline lakes;
- (B) Wetlands.
  - (i) Coastal wetlands (marshes, swamps, and associated ponds);
- (C) Estuaries.
  - (i) Natural estuaries (stream-fed estuaries and spring-fed estuaries); and
  - (ii) Developed estuaries.

(c) Marine waters may be embayments, open coastal, or oceanic waters.

(1) All embayments or open coastal waters are classified as follows, based on their bottom subtypes:
- (A) Sand beaches;
- (B) Lava rock shorelines and solution benches;
- (C) Marine pools and protected coves;

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(D) Artificial basins;
(E) Reef flats; and
(F) Soft bottoms. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; comp 10/21/12; am and comp 12/6/13; am and comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-3 Classification of water uses. (a) The following use categories classify inland and marine waters for purposes of applying the water quality standards set forth in this chapter, and for the selection or definition of appropriate water quality parameters and uses to be protected in these waters. Storm water discharge into state waters shall be allowed provided it meets the requirements specified in this section and the basic water quality criteria specified in section 11-54-4(a).

(b) Inland waters.

(1) Class 1.

It is the objective of class 1 waters that these waters remain in their natural state as nearly as possible with an absolute minimum of pollution from any human-caused source. To the extent possible, the wilderness character of these areas shall be protected. Waste discharge into these waters is prohibited, except as provided in section 11-54-4(f). Any conduct which results in a demonstrable increase in levels of point or nonpoint source contamination in class 1 waters is prohibited.

(A) Class 1.a.

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The uses to be protected in class 1.a waters are scientific and educational purposes, protection of native breeding stock, baseline references from which human-caused changes can be measured, compatible recreation, aesthetic enjoyment, and other nondegrading uses which are compatible with the protection of the ecosystems associated with waters of this class;

(B) Class 1.b.
The uses to be protected in class 1.b waters are domestic water supplies, food processing, protection of native breeding stock, the support and propagation of aquatic life, baseline references from which human-caused changes can be measured, scientific and educational purposes, compatible recreation, and aesthetic enjoyment. Public access to these waters may be restricted to protect drinking water supplies;

(2) Class 2.
The objective of class 2 waters is to protect their use for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies, shipping, and navigation. The uses to be protected in this class of waters are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new treated sewage discharges shall be permitted within estuaries. No new industrial discharges

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shall be permitted within estuaries, with the exception of:

(A) Acceptable non-contact thermal and drydock or marine railway discharges within Pearl Harbor, Oahu;

(B) Storm water discharges associated with industrial activities (defined in title 40 Code of Federal Regulations sections 122.26(b)(14) and (b)(15), except (b)(15)(i)(A) and (b)(15)(i)(B)) which meet, at the minimum, the basic water quality criteria applicable to all waters as specified in section 11-54-4(a), and all applicable requirements specified in chapter 11-55; and

(C) Discharges covered by a National Pollutant Discharge Elimination System (NPDES) general permit, approved by the EPA and issued by the department in accordance with title 40 Code of Federal Regulations section 122.28 and all applicable requirements specified in chapter 11-55.

(c) Marine waters.

(1) Class AA.

It is the objective of class AA waters that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions. To the extent practicable, the wilderness character of these areas shall be protected. No zones of mixing shall be permitted in this class:

(A) Within a defined reef area, in waters of a depth less than ten fathoms (eighteen meters); or

(B) In waters up to a distance of three hundred meters (one thousand feet) offshore if there is no defined reef

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area and if the depth is greater than ten fathoms (eighteen meters).

The uses to be protected in this class of waters are oceanographic research, the support and propagation of shellfish and other marine life, conservation of coral reefs and wilderness areas, compatible recreation, and aesthetic enjoyment. The classification of any water area as Class AA shall not preclude other uses of the waters compatible with these objectives and in conformance with the criteria applicable to them;

(2) Class A.

It is the objective of class A waters that their use for recreational purposes and aesthetic enjoyment be protected. Any other use shall be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new sewage discharges shall be permitted within embayments. No new industrial discharges shall be permitted within embayments, with the exception of:

(A) Acceptable non-contact thermal and drydock or marine railway discharges, in the following water bodies:
  (i) Honolulu Harbor, Oahu;
  (ii) Barbers Point Harbor, Oahu;
  (iii) Keehi Lagoon Marina Area, Oahu;
  (iv) Ala Wai Boat Harbor, Oahu; and
  (v) Kahului Harbor, Maui;

(B) Storm water discharges associated with industrial activities (defined in title 40 Code of Federal Regulations sections

122.26(b)(14) and (b)(15), except (b)(15)(i)(A) and (b)(15)(i)(B)) which meet, at the minimum, the basic water quality criteria applicable to all waters as specified in section 11-54-4(a), and all applicable requirements specified in the chapter 11-55; and

(C) Discharges covered by a NPDES general permit, approved by the EPA and issued by the department in accordance with title 40 Code of Federal Regulations section 122.28 and all applicable requirements specified in chapter 11-55.

(d) Marine bottom ecosystems.

(1) Class I.

It is the objective of class I marine bottom ecosystems that they remain as nearly as possible in their natural pristine state with an absolute minimum of pollution from any human-induced source. Uses of marine bottom ecosystems in this class are passive human uses without intervention or alteration, allowing the perpetuation and preservation of the marine bottom in a most natural state, such as for nonconsumptive scientific research (demonstration, observation or monitoring only), nonconsumptive education, aesthetic enjoyment, passive activities, and preservation;

(2) Class II.

It is the objective of class II marine bottom ecosystems that their use for protection including propagation of fish, shellfish, and wildlife, and for recreational purposes not be limited in any way. The uses to be protected in this class of marine bottom ecosystems are all uses compatible with the protection and propagation of fish, shellfish, and

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wildlife, and with recreation. Any action which may permanently or completely modify, alter, consume, or degrade marine bottoms, such as structural flood control channelization (dams); landfill and reclamation; navigational structures (harbors, ramps); structural shore protection (seawalls, revetments); and wastewater effluent outfall structures may be allowed upon securing approval in writing from the director, considering the environmental impact and the public interest pursuant to sections 342D-4, 342D-5, 342D-6, and 342D-50, HRS, in accordance with the applicable provisions of chapter 91, HRS. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; am and comp 10/21/12; am and comp 12/6/13; am and comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS §174C, §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-4 Basic water quality criteria applicable to all waters. (a) All waters shall be free of substances attributable to domestic, industrial, or other controllable sources of pollutants, including:

(1) Materials that will settle to form objectionable sludge or bottom deposits;

(2) Floating debris, oil, grease, scum, or other floating materials;

(3) Substances in amounts sufficient to produce taste in the water or detectable off-flavor in the flesh of fish, or in amounts sufficient to produce objectionable color, turbidity, or other conditions in the receiving waters;

(4) High or low temperatures, biocides, pathogenic organisms, toxic, radioactive, corrosive, or other deleterious substances at levels or in combinations sufficient to be toxic or harmful to human, animal, plant, or aquatic life, or in amounts sufficient to interfere with any beneficial use of the water;

(5) Substances or conditions or combinations thereof in concentrations which produce undesirable aquatic life; and

(6) Soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways; subdivisions; recreational, commercial, or industrial developments; or the cultivation and management of agricultural lands.

(b) The director is authorized to impose by order the penalties and fines and corrective measures as specified in chapters 342D and 342E, HRS, against any person who discharges or otherwise causes or allows water pollutants to enter state waters and cause violation of this chapter, unless that person acted in compliance with a permit or variance issued by the director pursuant to chapter 342D, HRS, for that person's discharges. Each day that the person has caused each water quality standard not to be met shall constitute a separate offense.

(c) To ensure compliance with section 11-54-4(a)(4), all state waters are subject to monitoring and to the following standards for acute and chronic toxicity and the protection of human health.

(1) As used in this section:

"Acute Toxicity" means the degree to which a pollutant, discharge, or water sample causes a rapid adverse impact to aquatic organisms. The acute toxicity of a discharge or receiving water is measured using the methods in section 11-54-10, unless other methods are specified by the director.

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"Chronic Toxicity" means the degree to which a pollutant, discharge, or water sample causes a long-term adverse impact to aquatic organisms, such as a reduction in growth or reproduction. The chronic toxicity of a discharge or receiving water is measured using the methods in section 11-54-10, unless other methods are specified by the director.

"Dilution" means, for discharges through submerged outfalls, the average and minimum values calculated using the models in the EPA publication, Initial Mixing Characteristics of Municipal Ocean Discharges (EPA/600/3-85/073, November, 1985), or in the EPA publication, Expert System for Hydrodynamic Mixing Zone Analysis of Conventional and Toxic Submerged Single Port Discharges (Cormix 1) (EPA/600/3-90/012), February, 1990.

"In-Stream Waste Concentration" (IWC) means the concentration of a toxicant in the receiving water, or for a discharge, the concentration of the effluent after minimum dilution authorized by the department. A discharge of one hundred divided by the minimum dilution is the IWC when the dilution is authorized by the director. A discharge of one hundred per cent effluent is the IWC when dilution is not authorized by the director.

"No Observed Effect Concentration" (NOEC), means the highest per cent concentration of a discharge or water sample, in dilution water, which causes no observable adverse effect in a chronic toxicity test. For example, a NOEC of one hundred per cent indicates that an undiluted discharge or water sample causes no observable adverse effect to the organisms in a chronic toxicity test.

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"Test of Significant Toxicity" (TST) means the alternative statistical method for analyzing and interpreting valid whole effluent toxicity test data as described in the EPA publications, National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document, EPA 833-R-10-003 (June 2010), and National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document, EPA 833-R-10-004 (June 2010).

(2) Narrative toxicity and human health standards.

(A) Acute Toxicity Standards: All state waters shall be free from pollutants in concentrations which exceed the acute standards listed in Appendix E dated OCT 22 2021, entitled "Numeric Standards for Toxic Pollutants Applicable to All Waters", located at the end of this chapter. All state waters shall also be free from acute toxicity as measured using the toxicity tests listed in section 11-54-10, or other methods specified by the director.

(B) Chronic Toxicity Standards: All state waters shall be free from pollutants in concentrations which on average during any twenty-four-hour period exceed the chronic standards listed in Appendix E dated OCT 22 2021, entitled "Numeric Standards for Toxic Pollutants Applicable to All Waters", located at the end of this chapter. All state waters shall also be free from chronic toxicity as measured using the toxicity tests listed in section 11-54-10, or other methods specified by the director.

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(C) Human Health Standards: All state waters shall be free from pollutants in concentrations which, on average during any thirty-day period, exceed the "fish consumption" standards for non-carcinogens in Appendix E dated OCT 22 2021, entitled "Numeric Standards for Toxic Pollutants Applicable to All Waters", located at the end of this chapter. All state waters shall also be free from pollutants in concentrations, which on average during any twelve-month period, exceed the "fish consumption" standards for pollutants identified as carcinogens in Appendix E dated OCT 22 2021, entitled "Numeric Standards for Toxic Pollutants Applicable to All Waters", located at the end of this chapter.

(3) The following are basic requirements applicable to discharges to state waters. These standards shall be enforced through effluent limitations or other conditions in discharge permits. The director may apply more stringent discharge requirements to any discharge if necessary to ensure compliance with all standards in Appendix E dated OCT 22 2021, entitled "Numeric Standards for Toxic Pollutants Applicable to All Waters", located at the end of this chapter.

(A) Continuous discharges through submerged outfalls.

(i) The No Observed Effect Concentration (NOEC), expressed as per cent effluent, of continuous discharges through submerged outfalls shall not be less than one hundred divided by the minimum dilution; or

(ii) The Test of Significant Toxicity (TST), as described in EPA 833-R-10-003 (June 2010) and EPA 833-R-10-004 (June 2010), shall be used to demonstrate no unacceptable level of chronic toxicity at the In-stream Waste Concentration (IWC). The chronic toxicity criterion is expressed using a regulatory management decision (b value) of 0.75 for chronic toxicity where, a 0.25 effect level (or more) at the IWC demonstrates an unacceptable level of chronic toxicity.

(B) Continuous discharges through submerged outfalls shall not contain:

(i) Pollutants in twenty-four-hour average concentrations greater than the values obtained by multiplying the minimum dilution by the standards for the prevention of chronic toxicity in Appendix E dated OCT 22 2021, entitled "Numeric Standards for Toxic Pollutants Applicable to All Waters", located at the end of this chapter;

(ii) Non-carcinogenic pollutants in thirty-day average concentrations greater than the values obtained by multiplying the minimum dilution by the standards for fish consumption in Appendix E dated OCT 22 2021, entitled "Numeric Standards for Toxic Pollutants Applicable to All Waters", located at the end of this chapter; and

(iii) Carcinogenic pollutants in twelve-month average concentrations greater than the values obtained

by multiplying the average dilution by the standards for fish consumption in Appendix E dated OCT 22 2021, entitled "Numeric Standards for Toxic Pollutants Applicable to All Waters", located at the end of this chapter.

(C) Discharges without submerged outfalls.

(i) The survival of test organisms in an undiluted acute toxicity test of any discharge shall not be less than eighty per cent;

(ii) Compliance with the acute toxicity NPDES effluent limit is demonstrated by using the Test of Significant Toxicity (TST) as described in EPA 833-R-10-003 (June 2010) and EPA 833-R-10-004 (June 2010). The acute toxicity criterion is expressed using a regulatory management decision (b value) of 0.80 for acute toxicity test methods listed in 11-54-10, where, in an undiluted acute toxicity test, a 0.20 effect level (or more) at the IWC demonstrates an unacceptable level of acute toxicity; or

(iii) The Test of Significant Toxicity (TST), as described in EPA 833-R-10-003 (June 2010) and EPA 833-R-10-004 (June 2010), shall be used to demonstrate no unacceptable level of chronic toxicity at the IWC. The chronic toxicity criterion is expressed using a regulatory management decision (b value) of 0.75 for chronic toxicity where, a 0.25 effect level (or more) at the IWC demonstrates an unacceptable level

of chronic toxicity. Toxicity is considered significant if the mean response in the IWC is greater than 0.75 multiplied by the mean response of the control.

No discharge shall contain pollutants in concentrations greater than the standards for the prevention of acute toxicity to aquatic life in Appendix E dated OCT 22 2021, entitled "Numeric Standards for Toxic Pollutants Applicable to All Waters", located at the end of this chapter. The director may make a limited allowance for dilution for a discharge in this category if it meets the following criteria: the discharge velocity is greater than three meters per second; the discharge enters the receiving water horizontally, and; the receiving water depth at the discharge point is greater than zero.

(d) The requirements of section 11-54-4(a)(6) shall be deemed met upon a showing that:

(1) The land on which the erosion occurred or is occurring is being managed in accordance with soil conservation practices acceptable to the applicable soil and water conservation district and the director, and a comprehensive conservation program is being actively pursued; or

(2) The discharge has received the best degree of treatment or control, and the severity of impact of the residual soil reaching the receiving body of water is deemed to be acceptable.

(e) In order to reduce a risk to public health or safety arising out of any violation or probable violation of this chapter, the director may post or order posted any state waters. Posting is the placement, erection, or use of a sign or signs warning people to stay out of, avoid drinking, avoid contact with, or avoid using the water. This posting

authority shall not limit the director's authority to post or order posting in any other appropriate case or to take any enforcement action.

(f) Pesticide Application.

(1) As used in this section:

"Declared pest emergency situation" means an event defined by a public declaration by the President of the United States, state governor or, with the concurrence of the director, county mayor of a pest problem determined to require control through application of a pesticide beginning less than ten days after identification of the need for pest control.

"Pest" means:

(A) Any insect, rodent, nematode, fungus, weed; or

(B) Any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other microorganism (except viruses, bacteria, or other microorganisms on or in living man or other living animals) which the Administrator of the EPA declares to be a pest under title 7 United States Code section 136w(c)(1).

"Pesticide" means:

(A) Any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest;

(B) Any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant; and

(C) Any nitrogen stabilizer.

Except that the term "pesticide" shall not include any article that is a "new animal drug" within the meaning of title 21 United States Code section 321(v), that has been determined by the Secretary of Health and Human Services not to be a new animal drug by a regulation establishing conditions of

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use for the article, or that is an animal feed within the meaning of title 21 United States Code section 321(w) bearing or containing a new animal drug.
The term "pesticide" does not include liquid chemical sterilant products (including any sterilant or subordinate disinfectant claims on such products) for use on a critical device or a semi-critical device, as defined in title 21 United States Code section 321. For purposes of the preceding sentence, the term "critical device" includes any device which is introduced directly into the human body, either into or in contact with the bloodstream or normally sterile areas of the body and the term "semi-critical device" includes any device which contacts intact mucous membranes but which does not ordinarily penetrate the blood barrier or otherwise enter normally sterile areas of the body. The term "pesticide" applies to insecticides, herbicides, fungicides, rodenticides, and various other substances used to control pests. The definition encompasses all uses of pesticides authorized under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) including uses authorized under title 7 United States Code sections 136a (Registration of pesticides), 136c (Experimental use permits), 136p (Exemption of federal and state agencies), 136v(c) (Additional uses), and 136w(b) (Exemption of pesticides).
Note: drugs used to control diseases of humans or animals (such as livestock, fishstock and pets) are not considered pesticides; such drugs are regulated by the Food and Drug Administration. Fertilizers, nutrients, and other substances used to promote plant survival and health are not

considered plant growth regulators and thus are not pesticides. Biological control agents, except for certain microorganisms, are exempted from regulation under FIFRA. (Biological control agents include beneficial predators such as birds or ladybugs that eat insect pests, parasitic wasps, fish, etc.).

(2) Pesticide applications may be made to state waters if the pesticide applications are:

(A) Registered by the EPA and licensed by the state department of agriculture or other state department regulating pesticides;

(B) Used for the purpose of controlling mosquito and other flying insect pests; controlling weed and algae pests; controlling animal pests; controlling forest canopy pests; or protecting public health or the environment in a declared pest emergency situation or as determined by the director;

(C) Applied in a manner consistent with the labeling of the pesticide under FIFRA;(D) Applied under permits required by the director and issued pursuant to chapter 342D, HRS; and

(E) Applied in a manner so applicable narrative and numeric state water quality criteria as required in chapter 11-54 are met. [EFF 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; am and comp 06/15/09; am and comp 10/21/12; am and comp 12/6/13; am and comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-5 Uses and specific criteria applicable to inland waters. Inland water areas to be protected are described in section 11-54-5.1, corresponding specific criteria are set forth in section 11-54-5.2; water body types are defined in section 11-54-1. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; comp 10/21/12; comp 12/6/13; comp 11/15/14; comp OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-5.1 Inland water areas to be protected.

(a) Freshwaters.

(1) Flowing waters include perennial streams and rivers, intermittent streams, springs and seeps, and man-made ditches and flumes that discharge into any other state waters.

(A) Class 1.a.:

(i) All flowing waters within the natural reserves, preserves, sanctuaries, and refuges established by the state department of land and natural resources under chapter 195, HRS, or similar reserves for the protection of aquatic life established under chapter 195, HRS.

(ii) All flowing waters in national and state parks.

(iii) All flowing waters in state or federal fish and wildlife refuges.

(iv) All flowing waters which have been identified as a unique or critical habitat for threatened or endangered species by the U.S. Fish and Wildlife Service.

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(v) All flowing waters in Waimanu National Estuarine Research Reserve (Hawaii).

As listed in Appendix A dated July 1, 2014, entitled "Class 1, Inland Waters", located at the end of this chapter.

(B) Class 1.b.: All flowing waters in protective subzones designated under chapter 13-5 by the state department of land and natural resources as listed in Appendix A dated July 1, 2014, entitled "Class 1, Inland Waters", located at the end of this chapter.

(C) Class 2.: All flowing waters in areas not otherwise classified.

All flowing waters in classes 1 and 2 in which water quality exceeds the standards specified in this chapter shall not be lowered in quality unless it has been affirmatively demonstrated to the director that the change is justifiable as a result of important economic or social development and shall not interfere with or become injurious to any assigned uses made of, or presently in, those waters. This statement of antidegradation policy does not limit the applicability of the policy in section 11-54-1.1 to the whole chapter.

(2) Standing waters include natural freshwater lakes and reservoirs.

(A) Class 1.a.:

(i) All standing waters within the natural reserves, preserves, sanctuaries, and refuges established by the state department of land and natural resources under chapter 195, HRS, or similar reserves for the protection of aquatic life

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established under chapter 195, HRS.

(ii) All standing waters in national and state parks.

(iii) All standing waters in state or federal fish and wildlife refuges.

(iv) All standing waters which have been identified as a unique or critical habitat for threatened or endangered species by the U.S. Fish and Wildlife Service.

(v) All standing waters in Waimanu National Estuarine Research Reserve (Hawaii).

As listed in Appendix A dated July 1, 2014, entitled "Class 1, Inland Waters", located at the end of this chapter.

(B) Class 1.b.: All standing waters in protective subzones designated under chapter 13-5 by the state department of land and natural resources as listed in Appendix A dated July 1, 2014, entitled "Class 1, Inland Waters", located at the end of this chapter.

(C) Class 2.: All standing waters in areas not otherwise classified.

(3) Elevated wetlands and low wetlands.

(A) Class 1.a.:

(i) All elevated and low wetlands within the natural reserves, preserves, sanctuaries, and refuges established by the state department of land and natural resources under chapter 195, HRS, or similar reserves for the protection of aquatic life established under chapter 195, HRS.

(ii) All elevated and low wetlands in national and state parks.

(iii) All elevated and low wetlands in state or federal fish and wildlife refuges.

(iv) All elevated and low wetlands which have been identified as a unique or critical habitat for threatened or endangered species by the U.S. Fish and Wildlife Service.

(v) All elevated and low wetlands in Waimanu National Estuarine Research Reserve (Hawaii).

As listed in Appendix A dated July 1, 2014, entitled "Class 1, Inland Waters", located at the end of this chapter.

(B) Class 1.b.: All elevated and low wetlands in protective subzones designated under chapter 13-5 by the state department of land and natural resources as listed in Appendix A dated July 1, 2014, entitled "Class 1, Inland Waters", located at the end of this chapter.

(C) Class 2.: All elevated and low wetlands not otherwise classified.

(b) Brackish or saline waters include anchialine pools, saline lakes, coastal wetlands, and estuaries.

(1) Class 1.a.:

(A) All inland brackish or saline waters within natural reserves, preserves, sanctuaries, and refuges established by the state department of land and natural resources under chapter 195, HRS, or similar reserves for the protection of aquatic life established under chapter 195, HRS.

(B) All inland brackish or saline waters in national and state parks.

(C) All inland brackish or saline waters in state or federal fish and wildlife refuges.
(D) All inland brackish or saline waters which have been identified as a unique or critical habitat for threatened or endangered species by the U.S. Fish and Wildlife Service.
(E) All inland brackish and saline waters in Waimanu National Estuarine Research Reserve (Hawaii).
(F) The following natural estuaries: Lumahai and Kilauea estuaries (Kauai).

As listed in Appendix A dated July 1, 2014, entitled "Class 1, Inland Waters", located at the end of this chapter.

(2) Class 1.b.: All inland brackish or saline waters in protective subzones designated under chapter 13-5 by the state department of land and natural resources as listed in Appendix A dated July 1, 2014, entitled "Class 1, Inland Waters", located at the end of this chapter.

(3) Class 2.: All inland brackish and saline waters not otherwise classified. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; comp 10/21/12; am and comp 12/6/13; am and comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS §342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-5.2 Inland water criteria. (a) Springs and seeps, ditches and flumes, natural freshwater lakes, reservoirs, low wetlands, coastal wetlands, saline lakes, and anchialine pools.

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(1) Only the basic water quality criteria set forth in section 11-54-4(a) apply to springs and seeps, ditches and flumes, natural freshwater lakes, reservoirs, low wetlands, coastal wetlands, saline lakes, and anchialine pools.

(2) Natural freshwater lakes, saline lakes, and anchialine pools shall be maintained in the natural state through the State's "no discharge" policy for these waters.

(3) Waste discharge into these waters is prohibited, except as provided in section 11-54-4(f) (see section 11-54-3(b)(1)).

(b) Streams.

(1) Specific criteria for streams shall be as provided in the following table:

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than ten per cent of the time	Not to exceed the given value more than two per cent of the time
Total Nitrogen (ug N/L)	250.0* 180.0**	520.0* 380.0**	800.0* 600.0**
Nitrate + Nitrite Nitrogen (ug $[NO_3 + NO_2]$-N/L)	70.0* 30.0**	180.0* 90.0**	300.0* 170.0**
Total Phosphorus (ug P/L)	50.0* 30.0**	100.0* 60.0**	150.0* 80.0**
Total Suspended Solids (mg/L)	20.0* 10.0**	50.0* 30.0**	80.0* 55.0**
Turbidity (N.T.U.)	5.0* 2.0**	15.0* 5.5**	25.0* 10.0**

* Wet season - November 1 through April 30.
** Dry season - May 1 through October 31.
L = liter.
N.T.U. - Nephelometric Turbidity Units are used to measure changes in the intensity of light scattered by

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a water sample. The higher the intensity of scattered light means there is higher turbidity.
ug = microgram or 0.000001 grams.
pH Units - Shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 5.5 nor higher than 8.0.
Dissolved Oxygen - Shall not be less than eighty per cent saturation, determined as a function of ambient water temperature.
Temperature - Shall not vary more than one degree Celsius from ambient conditions.
Specific Conductance - Shall not be more than three hundred micromhos per centimeter.

(2) Bottom criteria for streams shall be applied as:

(A) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding an equivalent thickness of five millimeters (0.20 inches) over hard bottoms twenty-four hours after a heavy rainstorm;

(B) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding an equivalent thickness of ten millimeters (0.40 inches) over soft bottoms twenty-four hours after a heavy rainstorm;

(C) In soft bottom material in pool sections of streams, oxidation-reduction potential (EH) in the top ten centimeters (four inches) shall not be less than +100 millivolts;

(D) In soft bottom material in pool sections of streams, no more than fifty per cent of the grain size distribution of sediment shall be smaller than 0.125 millimeters (0.005 inches) in diameter; and

(E) The director shall prescribe the appropriate parameters, measures, and criteria for monitoring stream bottom

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biological communities including their habitat, which may be affected by proposed actions. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality criteria for this subsection shall be deemed to be met if time series surveys of benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.

(c) Elevated wetlands. Specific criteria to be applied for elevated wetlands: pH units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 4.5 nor higher than 7.0.

(d) Estuaries.

(1) Specific criteria for all estuaries except Pearl Harbor shall be as provided in the following table:

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than ten per cent of the time	Not to exceed the given value more than two per cent of the time
Total Nitrogen (ug N/L)	200.00	350.00	500.00
Nitrate + Nitrite Nitrogen (ug $[NO_3 + NO_2]$-N/L)	8.00	25.00	35.00
Ammonia Nitrogen (ug NH_4-N/L)	6.00	10.00	20.00
Total Phosphorus (ug P/L)	25.00	50.00	75.00
Chlorophyll a (ug/L)	2.00	5.00	10.00
Turbidity (N.T.U.)	1.5	3.00	5.00

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L = liter.
N.T.U. - Nephelometric Turbidity Units are used to measure changes in the intensity of light scattered by a water sample. The higher the intensity of scattered light means there is higher turbidity.
ug = microgram or 0.000001 grams.
pH Units - Shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 7.0 nor higher than 8.6.
Dissolved Oxygen - Shall not be less than seventy-five per cent saturation, determined as a function of ambient water temperature and salinity.
Temperature - Shall not vary more than one degree Celsius from ambient conditions.
Salinity - Shall not vary more than ten per cent from ambient conditions.
Oxidation-reduction potential (EH) - Shall not be less than -100 millivolts in the uppermost ten centimeters (four inches) of sediment.

(2) Specific criteria for Pearl Harbor Estuary shall be as provided in the following table:

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than ten per cent of the time	Not to exceed the given value more than two per cent of the time
Total Nitrogen (ug N/L)	300.00	550.00	750.00
Nitrate + Nitrite Nitrogen (ug $[NO_3 + NO_2]$-N/L)	15.00	40.00	70.00
Ammonia Nitrogen (ug NH_4-N/L)	10.00	20.00	30.00
Total Phosphorus (ug P/L)	60.00	130.00	200.00
Chlorophyll a (ug/L)	3.50	10.00	20.00
Turbidity (N.T.U.)	4.00	8.00	15.00

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L = liter.
N.T.U. - Nephelometric Turbidity Units are used to measure changes in the intensity of light scattered by a water sample. The higher the intensity of scattered light means there is higher turbidity.
ug = microgram or 0.000001 grams.
pH Units - Shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 6.8 nor higher than 8.8.
Dissolved Oxygen - Shall not be less than sixty per cent saturation, determined as a function of ambient water temperature and salinity.
Temperature - Shall not vary more than one degree Celsius from ambient conditions.
Salinity - Shall not vary more than ten per cent from ambient conditions.
Oxidation-Reduction potential (EH) - Shall not be less than -100 millivolts in the uppermost ten centimeters (four inches) of sediment. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; am and comp 10/21/12; am and comp 12/6/13; comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-6 Uses and specific criteria applicable to marine waters. (a) Embayments.

(1) As used in this subsection:

"Embayments" means land-confined and physically-protected marine waters with restricted openings to open coastal waters, defined by the ratio of total bay volume to the cross-sectional entrance area of seven hundred to one or greater.

"Total bay volume" is measured in cubic meters and "cross-sectional entrance area" is measured in square meters, and both are determined at mean lower low water.

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(2) Water areas to be protected:

(A) Class AA.

(i) Waters are listed in Appendix B dated July 1, 2014, entitled "Class AA, Marine Waters and Embayments", located at the end of this chapter.

(ii) All embayments in preserves, reserves, sanctuaries, and refuges established by the state department of land and natural resources under chapter 195 or chapter 190, HRS, as listed in Appendix B dated July 1, 2014, entitled "Class AA, Marine Waters and Embayments", located at the end of this chapter, or similar reserves for the protection of marine life established under chapter 190, HRS, as listed in Appendix B dated July 1, 2014, entitled "Class AA, Marine Waters and Embayments", located at the end of this chapter.

(iii) All waters in state or federal fish and wildlife refuges and marine sanctuaries as listed in Appendix B dated July 1, 2014, entitled "Class AA, Marine Waters and Embayments", located at the end of this chapter.

(iv) All waters which have been officially identified as a unique or critical habitat for threatened or endangered species by the U.S. Fish and Wildlife Service as listed in Appendix B dated July 1, 2014, entitled "Class AA, Marine Waters and Embayments", located at the end of this chapter.

(B) Class A.

Waters are listed in Appendix C dated July 1, 2014, entitled "Class A, Marine Waters and Embayments", located at the end of this chapter.

(3) The following criteria are specific for all embayments excluding those described in section 11-54-6(d). (Note that criteria for embayments differ based on fresh water inflow.)

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than ten per cent of the time	Not to exceed the given value more than two per cent of the time
Total Nitrogen (ug N/L)	200.00* 150.00**	350.00* 250.00**	500.00* 350.00**
Nitrate + Nitrite Nitrogen (ug $[NO_3 + NO_2]$-N/L)	8.00* 5.00**	20.00* 14.00**	35.00* 25.00**
Ammonia Nitrogen (ug NH_4-N/L)	6.00* 3.50**	13.00* 8.50**	20.00* 15.00**
Total Phosphorus (ug P/L)	25.00* 20.00**	50.00* 40.00**	75.00* 60.00**
Chlorophyll a (ug/L)	1.50* 0.50**	4.50* 1.50**	8.50* 3.00**
Turbidity (N.T.U.)	1.5* 0.40**	3.00* 1.00**	5.00* 1.50**

* "Wet" criteria apply when the average fresh water inflow from the land equals or exceeds one per cent of the embayment volume per day.
** "Dry" criteria apply when the average fresh water inflow from the land is less than one per cent of the embayment volume per day.
Applicable to both "wet" and "dry" conditions:
L = liter.
N.T.U. - Nephelometric Turbidity Units are used to measure changes in the intensity of light scattered by

a water sample. The higher the intensity of scattered light means there is higher turbidity.
ug = microgram or 0.000001 grams.
pH Units - Shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, stormdrain or groundwater discharge may depress the pH to a minimum level of 7.0.
Dissolved Oxygen - Shall not be less than seventy-five per cent saturation, determined as a function of ambient water temperature and salinity.
Temperature - Shall not vary more than one degree Celsius from ambient conditions.
Salinity - Shall not vary more than ten per cent from natural or seasonal changes considering hydrologic input and oceanographic factors.

(b) Open coastal waters.

(1) As used in this subsection, "open coastal waters" means marine waters bounded by the one hundred fathom (one hundred eighty-three meters or six hundred feet) depth contour and the shoreline, excluding bays named in section 11-54-6(a).

(2) Water areas to be protected:

(A) Class AA as listed in Appendix D dated July 1, 2014, entitled "Class AA, Open Coastal Waters", located at the end of this chapter.
All open waters in preserves, reserves, sanctuaries, and refuges established by the state department of land and natural resources under chapter 195, HRS, or chapter 190, HRS, as listed in Appendix D dated July 1, 2014, entitled "Class AA, Open Coastal Waters", located at the end of this chapter; or similar reserves for the protection of marine life established under chapter 190, HRS, as amended, as listed in Appendix D dated July 1, 2014, entitled "Class AA, Open Coastal Waters",

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located at the end of this chapter; or in the refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service as listed in Appendix D dated July 1, 2014, entitled "Class AA, Open Coastal Waters", located at the end of this chapter.

(B) Class A - All other open coastal waters not otherwise specified.

(3) The following criteria are specific for all open coastal waters, excluding those described in section 11-54-6(d). (Note that criteria for open coastal waters differ, based on fresh water discharge.)

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than ten per cent of the time	Not to exceed the given value more than two per cent of the time
Total Nitrogen (ug N/L)	150.00* 110.00**	250.00* 180.00**	350.00* 250.00**
Nitrate + Nitrite Nitrogen (ug $[NO_3 + NO_2]$-N/L)	5.00* 3.50**	14.00* 10.00**	25.00* 20.00**
Ammonia Nitrogen (ug NH_4-N/L)	3.50* 2.00**	8.50* 5.00**	15.00* 9.00**
Total Phosphorus (ug P/L)	20.00* 16.00**	40.00* 30.00**	60.00* 45.00**
Chlorophyll a (ug/L)	0.30* 0.15**	0.90* 0.50**	1.75* 1.00**
Turbidity (N.T.U.)	0.50* 0.20**	1.25* 0.50**	2.00* 1.00**
Light Extinction Coefficient (k units)	0.20* 0.10**	0.50* 0.30**	0.85* 0.55**

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* "Wet" criteria apply when the open coastal waters receive more than three million gallons per day of fresh water discharge per shoreline mile.
** "Dry" criteria apply when the open coastal waters receive less than three million gallons per day of fresh water discharge per shoreline mile.
Applicable to both "wet" and "dry" conditions:
L = liter.
N.T.U. - Nephelometric Turbidity Units are used to measure changes in the intensity of light scattered by a water sample. The higher the intensity of scattered light means there is higher turbidity.
ug = microgram or 0.000001 grams.
pH Units - Shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, stormdrain or groundwater discharge may depress the pH to a minimum level of 7.0.
Dissolved Oxygen - Shall not be less than seventy-five per cent saturation, determined as a function of ambient water temperature and salinity.
Temperature - Shall not vary more than one degree Celsius from ambient conditions.
Salinity - Shall not vary more than ten per cent from natural or seasonal changes considering hydrologic input and oceanographic factors.
k units = the ratio of light measured at the water's surface to light measured at a particular depth.
Light Extinction Coefficient is only required for dischargers who have obtained a waiver pursuant to section 301(h) of the Act and are required by EPA to monitor it.

(c) Oceanic waters.

(1) As used in this subsection, "oceanic waters" means all other marine waters outside of the one hundred fathom (one hundred eighty-three meters or six hundred feet) depth contour.

(2) Water areas to be protected: Class A - All oceanic waters.

(3) The following criteria are specific for oceanic waters:

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Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than ten per cent of the time	Not to exceed the given value more than two per cent of the time
Total Nitrogen (ug N/L)	50.00	80.00	100.00
Nitrate + Nitrite Nitrogen (ug $[NO_3 + NO_2]$-N/L)	1.50	2.50	3.50
Ammonia Nitrogen (ug NH_4-N/L)	1.00	1.75	2.50
Total Phosphorus (ug P/L)	10.00	18.00	25.00
Chlorophyll a (ug/L)	0.06	0.12	0.20
Turbidity (N.T.U.)	0.03	0.10	0.20

L = liter.
N.T.U. - Nephelometric Turbidity Units are used to measure changes in the intensity of light scattered by a water sample. The higher the intensity of scattered light means there is higher turbidity.
ug = microgram or 0.000001 grams.
pH Units - Shall not deviate more than 0.5 units from a value of 8.1.
Dissolved Oxygen - Shall not be less than seventy-five per cent saturation, determined as a function of ambient water temperature and salinity.
Temperature - Shall not vary more than one degree Celsius from ambient conditions.
Salinity - Shall not vary more than ten per cent from natural or seasonal changes considering hydrologic input and oceanographic factors.

(d) Area-specific criteria for the Kona (west) coast of the island of Hawaii.

(1) As used in this subsection, "Kona coast of the island of Hawaii" means the area from

Loa Point, South Kona District, clockwise to Malae Point, North Kona District.

(2) Water areas to be protected: All marine waters and all areas from the shoreline at mean lower low water to a distance one thousand meters seeward, excluding Honokohau Harbor and Kawaihae Harbor.

(3) The following criteria are specific to the Kona coast of the island of Hawaii, except for Honokohau Harbor and Kawaihae Harbor (see section 11-54-6(a)(3) for Class A embayments):

(A) In areas where nearshore marine water salinity is greater than thirty-two parts per thousand the following specific criteria apply:

Parameter	Geometric mean not to exceed the given value
Total Dissolved Nitrogen (ug N/L)	100.00
Nitrate + Nitrite Nitrogen (ug $[NO_3 + NO_2]$-N/L)	4.50
Ammonia Nitrogen (ug NH_4-N/L)	2.50
Total Dissolved Phosphorus (ug P/L)	12.50
Phosphate (ug PO_4-P/L)	5.00
Chlorophyll a (ug/L)	0.30
Turbidity (N.T.U.)	0.10

(B) If nearshore marine water salinity is less than or equal to thirty-two parts

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per thousand the following parameters shall be related to salinity on the basis of a linear least squares regression equation:

$$Y = MX + B$$

where:
Y = parameter concentration (in ug/L)
X = salinity (in ppt)
M = regression coefficient (or "slope")
B = constant (or "Y intercept").

The absolute value of the upper ninety-five per cent confidence limit for the calculated sample regression coefficient (M) shall not exceed the absolute value of the following values:

Parameter	M
Total Dissolved Nitrogen (ug N/L)	-40.35
Nitrate + Nitrite Nitrogen (ug $[NO_3 + NO_2]$-N/L)	-31.92
Total Dissolved Phosphorus (ug P/L)	-2.86
Phosphate (ug PO_4-P/L)	-3.22

The specific criteria for ammonia nitrogen, chlorophyll a, and turbidity given in section 11-54-6(d)(3)(A) also apply.

(C) Parameter concentrations shall be determined along a horizontal transect extending seaward from a shoreline sample location using the following method: water samples shall be

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obtained at distances of one, ten, fifty, one hundred, and five hundred meters from the shoreline sampling location. Samples shall be collected within one meter of the water surface and below the air-water interface. Dissolved nutrient samples shall be filtered through media with particle size retention of 0.7 um. This sampling protocol shall be replicated not less than three times on different days over a period not to exceed fourteen days during dry weather conditions. The geometric means of sample measurements for corresponding offshore distances shall be used for regression calculations.

L = liter.
N.T.U. - Nephelometric Turbidity Units are used to measure changes in the intensity of light scattered by a water sample. The higher the intensity of scattered light means there is higher turbidity.
ug = microgram or 0.000001 grams.
pH Units - Shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, stormdrain or groundwater discharge may depress the pH to a minimum level of 7.0.
Dissolved Oxygen - Shall not be less than seventy-five per cent saturation, determined as a function of ambient water temperature and salinity.
Temperature - Shall not vary more than one degree Celsius from ambient conditions.
Salinity - Shall not vary more than ten per cent from natural or seasonal changes considering hydrologic input and oceanographic factors. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; comp 10/21/12; am and comp 12/6/13; am and comp 11/15/14; am and comp

OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-7 Uses and specific criteria applicable to marine bottom types. (a) Sand beaches.

(1) As used in this subsection, "sand beaches" means shoreline composed of the weathered calcareous remains of marine algae and animals (white sand), the weathered remains of volcanic tuff (olivine), or the weathered remains of lava (black sand). Associated animals are largely burrowers and are related to particle grain size, slope, and color of the beach.

(2) Water areas to be protected:

(A) Class I - All beaches on the Northwestern Hawaiian Islands. These islands comprise that portion of the Hawaiian Archipelago which lies northwest of the island of Kauai and is part of the State; including Nihoa Island, Necker Island, French Frigate Shoals, Brooks Banks, Gardiner Pinnacles, Dowsett and Maro Reef, Laysan Island, Lisianski Island, Pearl and Hermes Atoll, Gambia Shoal, and Kure Atoll.

(B) Class II - All beaches not in Class I.

(3) The following criteria are specific to sand beaches:

(A) Oxidation-reduction potential (EH) in the uppermost ten centimeters (four inches) of sediment shall not be less than +100 millivolts.

(B) No more than fifty per cent of the grain size distribution of sediment shall be smaller than 0.125 millimeters in diameter.

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(C) Episodic deposits of flood borne sediment shall not occur in quantities exceeding an equivalent thickness of ten millimeters (0.40 inches) twenty-four hours after a heavy rainstorm.

(b) Lava rock shoreline and solution benches.

(1) As used in this subsection:

"Lava rock shorelines" means sea cliffs and other vertical rock faces, horizontal basalts, volcanic tuff beaches, and boulder beaches formed by rocks falling from above or deposited by storm waves. Associated plants and animals are adapted to the harsh physical environment and are distinctly zoned to the degree of wave exposure.

"Solution benches" means sea level platforms developed on upraised reef or solidified beach rock by the erosive action of waves and rains. Solution benches are distinguished by a thick algal turf and conspicuous zonation of plants and animals.

(2) Water areas to be protected:

(A) Class I - All lava rock shorelines and solution benches in preserves, reserves, sanctuaries, and refuges established by the state department of land and natural resources under chapter 195 or chapter 190, HRS, or similar reserves for the protection of marine life established under chapter 190, HRS, as amended; or in refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

(B) Class II

(i) All other lava rock shorelines not in Class I.

(ii) The following solution benches:

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Maui
Kihei
Papaula Point

Kauai
Near Hanapepe Salt Ponds
Mililii
Nualolo
Makaha
Mahaulepu
Kuhio Beach Park (Kukuiula)

Oahu
Diamond Head
Manana Island
Makapuu
Laie
Kahuku
Mokuleia
Makua
Makaha
Maile
Lualualei
Barbers Point

(3) The following criteria are specific to lava rock shorelines and solution benches:
(A) Episodic deposits of flood-borne sediment shall not occur in quantities exceeding an equivalent thickness of five millimeters (0.20 inches) for longer than twenty-four hours after a heavy rainstorm.
(B) The director shall determine parameters, measures, and criteria for bottom biological communities which may be affected by proposed actions. The location and boundaries of each bottom-type class shall be clarified when situations require their identification such as when a discharge permit is

applied for or a waiver pursuant to section 301(h) of the Act is required. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality standards for this subsection shall be deemed to be met if time series surveys of benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.

(c) Marine pools and protected coves.

(1) As used in this subsection:

"Marine pools" means waters which collect in depressions on sea level lava rock outcrops and solution benches and also behind large boulders fronting the sea. Pools farthest from the ocean have harsher environments and less frequent renewal of water and support fewer animals. Those closest to the ocean are frequently renewed with water, are essentially marine, and support more diverse fauna.

"Protected coves" means small inlets which are removed from heavy wave action or surge.

(2) Water areas to be protected.

(A) Class I.

(i) All marine pools and protected coves in preserves, reserves, sanctuaries, and refuges established by the state department of land and natural resources under chapter 195 or chapter 190, HRS, or similar reserves for the protection of marine life established under chapter 190, HRS, as amended; or in refuges or sanctuaries

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established by the U.S. Fish and Wildlife Service or the National Fisheries Service; and

(ii) Hawaii
Honaunau
Kiholo

(B) Class II.

Hawaii
Kalapana
Pohakuloa
Kapalaoa
Kapoho
King's Landing (Papai)
Hilo
Leileiwi Point
Wailua Bay

Maui
Hana
Keanae
Napili
Puu Olai to Cape Hanamanioa
Kipahulu

Molokai
Cape Halawa
Kalaupapa
South Coast

Oahu
Diamond Head
Halona Blowhole to Makapuu
Mokuleia
Kaena Point
Makua
Punaluu

B435

Kauai
Kealia
Mahaulepu
Hanamaulu
Poipu
Puolo Point

(3) The following criteria are specific to marine pools and protected coves:
  (A) In marine pools and coves with sand bottoms, oxidation-reduction potential (EH) in the uppermost ten centimeters (four inches) of sediment shall not be less than +100 millivolts.
  (B) In marine pools and coves with sand bottoms, no more than fifty per cent of the grain size distribution of the sediment shall be smaller than 0.125 millimeters in diameter.
  (C) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding equivalent thicknesses for longer than twenty-four hours following a heavy rainstorm according to the following:
    (i) No thicker than an equivalent of five millimeters (0.20 inches) on hard bottoms (other than living corals).
    (ii) No thicker than an equivalent of ten millimeters (0.40 inches) on soft bottoms.
  (D) The director shall determine parameters, measures, and criteria for bottom biological communities which may be affected by proposed actions. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality standards for this subsection shall be deemed to be met if time series surveys of

benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.

(d) Artificial basins.

(1) As used in this subsection, "artificial basins" means dredged or quarried channels or harbors, and harbor-associated submerged structures. Many organisms can attach to the vertical structures, but the soft, shifting sediment bottoms of harbors may only be colonized by a few hardy or transient species.

(2) Class II water areas to be protected are as follows:

(A) Shallow draft harbors:

Hawaii
Wailoa River Boat Harbor
Mahukona Harbor
Keauhou Harbor
Kailua-Kona Harbor
Honokohau Boat Harbor
Kawaihae Boat Harbor

Maui
Maalaea Boat Harbor
Lahaina Boat Harbor
Hana Harbor

Lanai
Manele Boat Harbor
Kaumalapau Harbor

Molokai
Kalaupapa Anchorage
Kaunakakai Small Boat Harbor
Hale o Lono Harbor

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Oahu
Heeia Kea Boat Harbor
Kaneohe Marine Corps Air Station
Kaneohe Yacht Club
Hawaii Kai Marina (Kuapa Pond)
Pokai Bay
Waianae Boat Harbor
Keehi Marine Center
La Mariana Sailing Club
Haleiwa Harbor
Makani Kai Marina
Keehi Boat Harbor
Ala Wai Boat Harbor:
    Ala Wai Fuel Dock
    Hawaii Yacht Club
    Waikiki Yacht Club
Ko Olina

Kauai
Nawiliwili Small Boat Harbor
Kukuiula Boat Harbor
Kikiaola Boat Harbor
Port Allen Boat Harbor

(B) Deep draft commercial harbors:

Hawaii
Kuhio Bay (Hilo Harbor)
Kawaihae Deep Draft Harbor

Maui
Kahului Harbor

Molokai
Kaunakakai Barge Harbor

Oahu
Honolulu Harbor
Barbers Point Harbor
Kewalo Basin

Kauai
Nawiliwili Harbor
Port Allen Harbor

(3) Specific criterion to be applied - Oxidation-reduction potential (EH) in the uppermost ten centimeters (four inches) of sediment shall not be less than -100 millivolts.

(e) Reef flats and reef communities.

(1) As used in this subsection:

"Nearshore reef flats" means shallow platforms of reef rock, rubble, and sand extending from the shoreline. Smaller, younger flats projected out as semi-circular aprons while older, larger flats form wide continuous platforms. Associated animals are mollusks, echinoderms, worms, crustaceans (many living beneath the surface), and reef-building corals.

"Offshore reef flats" means shallow, submerged platforms of reef rock and sand between depths of zero to three meters (zero to ten feet) which are separated from the shoreline of high volcanic islands by lagoons or ocean expanses. Dominant organisms are bottom-dwelling algae. Biological composition is extremely variable. There are three types: patch, barrier, and atoll reef flats; quite different from one another structurally. The presence of heavier wave action, water more oceanic in character, and the relative absence of terrigenous influences distinguish offshore reef flats.

"Protected reef communities" means hard bottom aggregations, including scattered sand channels and patches, dominated by living coral thickets, mounds, or platforms. They are found at depths of ten to thirty meters (thirty-two to ninety-six feet) along

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protected leeward coasts or in shallow water (up to sea level) in sheltered lagoons behind atoll or barrier reefs and in the calm reaches of bays or coves.

"Wave-exposed reef communities" means aggregations, including scattered sand channels and patches, dominated by corals. They may be found at depths up to forty meters (approximately one hundred thirty feet) along coasts subject to continuous or heavy wave action and surge. Wave-exposed reef communities are dominated biologically by benthic algae, reef-building corals, and echinoderms.

(2) Water areas to be protected:

(A) Class I.

(i) All reef flats and reef communities in preserves, reserves, sanctuaries, and refuges established by the state department of land and natural resources under chapter 195 or chapter 190, HRS, or similar reserves for the protection of marine life under chapter 190, HRS, as amended; or in refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service;

(ii) Nearshore reef flats:

Hawaii
Puako

Lanai
Northwest Lanai Reef

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Molokai
Western Kalaupapa
Southeast Molokai Reef
Honomuni Harbor
Kulaalamihi Fishpond

Maui
Honolua

Oahu
Hanauma Bay

Kauai
Nualolokai
Hanalei (Anini to Haena)

(iii) Offshore reef flats:

Moku o Loe (Coconut Island, Kaneohe Bay, Oahu)
Kure Atoll
Pearl and Hermes Atoll
Lisianski Island
Laysan Island
Maro Reef
French Frigate Shoals

(iv) Wave exposed reef communities:

Hawaii
1823 Lava Flow (Punaluu)
1840 Lava Flow (North Puna)
1868 Lava Flow (South Point)
1887 Lava Flow (South Point)
1955 Lava Flow (South Puna)
1960 Lava Flow (Kapoho)
1969 Lava Flow (Apuna Point)
1970 Lava Flow (Apuna Point)
1971 Lava Flow (Apuna Point)
1972 Lava Flow (Apuna Point)
1973 Lava Flow (Apuna Point)

Maui
Hana Bay
Makuleia Bay (Honolua)

Molokini Island
All wave exposed reef communities

Molokai
Moanui Kahinapohaku Waikolu - Kalawao
Halawa Bay

Oahu
Sharks Cove (Pupukea)
Moku Manu (Islands)
Outer Hanauma Bay
Waimea Bay
Kawela Bay
Kahana Bay

Kauai
Kee Beach
Poipu Beach
Kipu Beach

Niihau
All wave exposed communities

Lehua (off Niihau)
All wave exposed communities

(v) Protected reef communities:

Hawaii
Puako
Honaunau
Kealakekua
Kiholo
Anaehoomalu
Hapuna

Hawaii (continued)
Kahaluu Bay
Keaweula (North Kohala)
Milolii Bay to Keawaiki
Kailua-Kaiwi (Kona)
Onomea Bay
1801 Lava Flow (Keahole or Kiholo)
1850 Lava Flow (South Kona)
1859 Lava Flow (Kiholo)
1919 Lava Flow (Milolii)
1926 Lava Flow (Milolii)

Maui
Honolua
Ahihi-La Perouse (including 1790 Lava Flow at Cape Kinau)

Molokini Island
All protected reef communities

Lanai
Manele
Hulopoe

Molokai
Southeast Molokai
Kalaupapa
Honomuni Harbor

Oahu
Hanauma Bay
Moku o Loe (Coconut Island, Kaneohe Bay)

Kauai
Hoai Bay (Poipu)

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Northwestern Hawaiian Islands
Kure Atoll Lagoon
Pearl and Hermes Lagoon
Lisianski Lagoon
Maro Reef Lagoon
French Frigate Shoals Lagoon

(B) Class II.

(i) Existing or planned harbors may be located within nearshore reef flats showing degraded habitats and only where feasible alternatives are lacking and upon written approval by the director, considering environmental impact and the public interest pursuant to section 342D-6, HRS.

Hawaii
Blonde Reef (Hilo Harbor)
Kawaihae Small Boat Harbor

Maui
Lahaina Harbor
Kahului Harbor

Lanai
Manele

Molokai
Kaunakakai Harbor
Hale o Lono Harbor
Palaau (1.5 miles or 2.4 kilometers, east of Pakanaka Fishpond)

Oahu
Keehi Boat Harbor
Ala Moana Reef
Honolulu Harbor
Heeia Harbor

Oahu (continued)
Kaneohe Yacht Club
Ala Wai Harbor
Haleiwa Boat Harbor
Maunalua Bay
Pearl Harbor
Kaneohe Bay
Kahe

All other nearshore reef flats not in Class I;

(ii) Offshore reef flats:

Oahu
Kapapa Barrier Reef
Kaneohe Patch Reefs (Kaneohe Bay)

(iii) All other wave exposed or protected reef communities not in Class I.

(3) Specific criteria to be applied to all reef flats and reef communities: No action shall be undertaken which would substantially risk damage, impairment, or alteration of the biological characteristics of the areas named herein. When a determination of substantial risk is made by the director, the action shall be declared to be contrary to the public interest and no other permits shall be issued pursuant to chapter 342D, HRS.

(A) Oxidation-reduction potential (EH) in the uppermost ten centimeters (four inches) of sand patches shall not be less than +100 millivolts.

(B) No more than fifty per cent of the grain size distribution of sand patches shall be smaller than 0.125 millimeters in diameter.

(C) Episodic deposits of flood-borne soil sediment shall not occur in quantities

exceeding equivalent thicknesses for longer than twenty-four hours after a heavy rainstorm as follows:

(i) No thicker than an equivalent of two millimeters (0.08 inches) on living coral surfaces.

(ii) No thicker than an equivalent of five millimeters (0.2 inches) on other hard bottoms.

(iii) No thicker than an equivalent of ten millimeters (0.4 inches) on soft bottoms.

(D) The director shall determine parameters, measures, and criteria for bottom biological communities which may be affected by proposed actions. The location and boundaries of each bottom-type class shall be clarified when situations require their identification. For example, the location and boundaries shall be clarified when a discharge permit is applied for or a waiver pursuant to section 301(h) of the Act is required. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality standards for this subsection shall be deemed to be met if time series surveys of benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.

(f) Soft bottom communities.

(1) As used in this subsection, "soft bottom communities" means poorly described and "patchy" communities, mostly of burrowing organisms, living in deposits at depths between two to forty meters (approximately

six to one hundred thirty feet). The particle size of sediment, depth below sea level, and degree of water movement and associated sediment turnover dictate the composition of animals which rework the bottom with burrows, trails, tracks, ripples, hummocks, and depressions.

(2) Water areas to be protected:
Class II - All soft bottom communities.

(3) Specific criteria to be applied - Oxidation-reduction potential (EH) in the uppermost ten centimeters (four inches) of sediment should not be less than -100 millivolts. The location and boundaries of each bottom-type class shall be clarified when situations require their identification. For example, the location and boundaries shall be clarified when a discharge permit is applied for or a waiver pursuant to section 301(h) of the Act is required. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; comp 10/21/12; am and comp 12/6/13; comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-8 Recreational criteria for all state waters. (a) These criteria are designed to protect the public from exposure to harmful levels of pathogens while participating in water-contact activities. The specific criteria for enterococci shall be expressed in colony forming units (CFU) per one hundred milliliters or as a most probable number (MPN) per one hundred milliliters, as specified by the analytical method used.

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(b) Enterococci content shall not exceed a geometric mean of thirty-five CFU per one hundred milliliters over any thirty-day interval.

(c) A Statistical Threshold Value (STV) of one hundred thirty CFU per one hundred milliliters shall be used for enterococci. The STV shall not be exceeded by more than ten per cent of samples taken within the same thirty-day interval in which the geometric mean is calculated.

(d) State waters in which enterococci content does not exceed the standard shall not be lowered in quality.

(e) Raw or inadequately treated sewage, sewage for which the degree of treatment is unknown, or other pollutants of public health significance, as determined by the director, shall not be present in natural public swimming, bathing, or wading areas. Warning signs shall be posted at locations where human sewage has been identified as temporarily contributing to the enterococci count. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; am and comp 06/15/09; comp 10/21/12; am and comp 12/6/13; am and comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §342D-4, 342D-5, Ch. 342E)

§11-54-9 Repealed. [R OCT 2 2 2021]

§11-54-9.1 Repealed. [R OCT 2 2 2021]

§11-54-9.1.01 Repealed. [R OCT 2 2 2021]

§11-54-9.1.02 Repealed. [R OCT 2 2 2021]

§11-54-9.1.03 Repealed. [R OCT 2 2 2021]

§11-54-9.1.04 Repealed. [R OCT 2 2 2021]

§11-54-9.1.05 Repealed. [R OCT 2 2 2021]

§11-54-9.1.06 Repealed. [R OCT 2 2 2021]

§11-54-9.1.07 Repealed. [R OCT 2 2 2021]

§11-54-9.1.08 Repealed. [R OCT 2 2 2021]

§11-54-9.1.09 Repealed. [R OCT 2 2 2021]

§11-54-9.2 Site-specific flexibilities. As used in sections 11-54-9.3, 11-54-9.4, 11-54-9.5, and 11-54-9.6:

"40 C.F.R. §25" means title 40, Code of Federal Regulations, part 25, entitled "Public Participation in Programs under the Resource Conservation And Recovery Act, the Safe Drinking Water Act, and the Clean Water Act", revised as of 16 February 1979 unless otherwise noted.

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"40 C.F.R. §131" means title 40, Code of Federal Regulations, part 131, entitled "Water Quality Standards", revised as of 21 August 2015 unless otherwise noted. [Eff and comp OCT 2 2 2021] (Auth: HRS §§342D-4, 342D-5, 342D-7) (Imp: §§342D-4, 342D-5, 342D-6, 342D-7; 40 C.F.R. §§25.5, 131.10, 131.11)

§11-54-9.3 Use attainability analysis. (a) As used in this section:

"Highest attainable use" or "HAU" means the modified use that is both closest to the uses specified in section 303(c)(2)(A) of the Act and attainable based on a UAA or other scientifically defensible analyses that were used to evaluate attainability.

"Use attainability analysis" or "UAA" means a structured scientific assessment of the factors affecting the attainment of the use, which may include factors as described in title 40, Code of Federal Regulations, section 131.10(g).

(b) A UAA or other scientifically defensible analyses may be conducted to demonstrate the non-attainment of a use, as described in this chapter.

(c) A UAA shall not be inconsistent with federal regulations on protecting and designating uses as described in title 40, Code of Federal Regulations, section 131.10.

(d) A HAU shall be adopted whenever a use, as described in this chapter, is demonstrated to be non-attainable based on a UAA or other scientifically defensible analyses.

(e) The decision to adopt the results of a UAA or other scientifically defensible analyses, demonstrating the non-attainment of a use, shall be subject to public participation requirements. The department shall hold one or more public hearings when adopting the results of a UAA or other scientifically defensible analyses in accordance with applicable

provisions of chapter 91, HRS, and 40 C.F.R. §25. The results of a UAA or other scientifically defensible analyses, and supporting information shall be made available to the public prior to the hearing.

(f) The results of a UAA or other scientifically defensible analyses, demonstrating the non-attainment of a use, shall not be effective until they are adopted by the department and approved by the EPA. [Eff and comp OCT 2 2 2021] (Auth: HRS §§342D-4, 342D-5) (Imp: §§342D-4, 342D-5; 40 C.F.R. §§25.5, 131.10; 33 U.S.C. §1313(303))

§11-54-9.4 Water quality standards variance.

(a) As used in this section:

"Permit" means an authorization, license, or equivalent control document issued by the department to implement the requirements specified in chapter 11-55. Permit does not include any permit which has not yet been the subject of final department action, such as a draft permit.

"Pollutant Minimization Program" or "PMP" means a structured set of activities to improve processes and pollutant controls that will prevent and reduce pollutant loadings.

"WQS variance" or "variance" means a time-limited criterion, for a specific pollutant or a water quality parameter, which reflects the highest attainable condition (HAC) during the term of the variance.

(b) A time-limited change to a criterion, as described in this chapter, shall be consistent with the provisions of section 342D-7, HRS. The following requirements shall apply when considering the application for a variance:

(1) A variance may be considered if a criterion can be demonstrated as not feasibly attainable throughout the term of the variance. Complete assessments, detailed descriptions, supporting analyses, water quality data, and any additional information

requested by the department shall be submitted to demonstrate that the attainment of a criterion is not feasible throughout the term based on any of the factors listed in title 40, Code of Federal Regulations, section 131.10(g);

(2) A variance may be considered if a criterion cannot be attained while restoration or other significant reconfiguration activities are being implemented; and

(3) A variance shall not be considered if a criterion addressed by the variance can be achieved by implementing technology-based effluent limits required under chapter 11-55.

(c) A variance shall identify a discharger or dischargers subject to the variance. A variance shall also identify the criterion and the water body to which the variance applies. All other criteria not specifically addressed by a variance shall remain applicable.

(d) A highest attainable condition (HAC) shall be quantifiably specified as either the highest attainable interim condition or the interim effluent condition that reflects the greatest pollutant reduction achievable throughout the term of a variance. The following requirements shall apply when specifying a HAC:

(1) A HAC shall not result in any lowering of the currently attained ambient water quality unless restoration activities are necessary, as described in section 11-54-9.4(b)(2);

(2) A HAC shall take into consideration the installation of pollutant control technologies and, if applicable, the adoption and implementation of a PMP; and

(3) If the length of time required to achieve a HAC exceeds five years, the HAC of each succeeding permit, in a series of permits, shall be at least as stringent as the HAC of the preceding permit.

(e) The term of a variance shall be only as long as necessary to achieve the HAC; provided no permit shall have a term exceeding five years. The following requirements shall apply when specifying the term of a variance:

(1) A term may start from the date EPA approves the variance or from a date specified by the department; and

(2) If the length of time required to achieve a HAC exceeds five years, the department may consider issuing a series of permits; provided no permit, in a series of permits, shall have a term exceeding five years.

(f) The decision to approve the application for a variance shall be subject to public participation requirements. The department shall hold one or more public hearings when approving the application for a variance in accordance with applicable provisions of chapter 91, HRS, and 40 C.F.R. §25. The application for a variance and supporting information shall be made available to the public prior to the hearing.

(g) A variance shall not be effective until it is adopted by the department and approved by the EPA.

(h) Re-evaluation of a variance or a permit in a series of permits shall be conducted no less frequently than every five years, and at least one hundred eighty days prior to the end of such a variance or such a permit to review the HAC using all existing and readily available information. The following requirements shall apply when conducting a re-evaluation:

(1) A re-evaluation shall determine the water quality progress achieved. Available documents, supporting analyses, water quality data, and any additional information requested by the department shall be submitted to determine the water quality progress achieved;

(2) The results of a re-evaluation may modify the HAC of a variance or the HAC(s) of succeeding permits in a series of permits;

(3) The department shall obtain, in accordance with chapter 91, HRS, public comment on a re-evaluation;

(4) The department shall submit, in accordance with title 40, Code of Federal Regulations, section §131.14(b)(1)(v), the results of a re-evaluation to the EPA; and

(5) If the department does not conduct a re-evaluation as specified or does not submit the results of a re-evaluation as required, then a variance shall no longer be applicable.

(i) All specified conditions of an expiring variance must have been met in order for a discharger to request a renewal. The following requirements shall apply when requesting a renewal of a variance:

(1) A renewal shall provide for a HAC at least as stringent as the expiring HAC; and

(2) A renewal shall take into consideration the installation of pollutant control technologies and, if applicable, the adoption and implementation of a PMP. [Eff and comp OCT 2 2 2021] (Auth: HRS §§342D-4, 342D-5, 342D-7, Ch. 342E) (Imp: §§342D-4, 342D-5, 342D-6, 342D-7, Ch. 342E; 40 §§131.10, 131.14)

§11-54-9.5 Site-specific aquatic life criterion. (a) As used in this section:

"Criterion" means an element of WQS, as described in this chapter, that is expressed as a constituent concentration, a numeric level, or a narrative statement, and that represents a quality of water supporting a particular use. When criteria are met, water quality shall generally protect the designated use.

"EPA PB85-227049" means "*Guidelines for Deriving Numerical National Water Quality Criteria for the*

Protection of Aquatic Organisms and their Uses," December 2010 unless otherwise noted.

"EPA 823-B-17-001" means "*Water Quality Standards Handbook*," Chapter 3, Water Quality Criteria, Section 3.5.2, Site-Specific Aquatic Life Water Quality Criteria, November 2017 unless otherwise noted.

(b) A site-specific aquatic life criterion shall be consistent with federal regulations on adopting criteria that protect designated uses as described in title 40, Code of Federal Regulations, section 131.11.

(c) A site-specific aquatic life criterion may be derived to address species sensitivity, toxicity variation, natural background, or any combination of these situations.

(d) A site-specific aquatic life criterion may be based on scientific guidelines described in EPA PB85-227049.

(e) A site-specific aquatic life criterion may be derived with scientific processes described in EPA 823-B-17-001 or other scientifically defensible methods.

(f) The decision to adopt a site-specific aquatic life criterion shall be based on a scientific demonstration that the derived criterion protects the designated use, as described in this chapter.

(g) The decision to adopt a site-specific aquatic life criterion shall be subject to public participation requirements. The department shall hold one or more public hearings when adopting a site-specific aquatic life criterion in accordance with applicable provisions of chapter 91, HRS, and 40 C.F.R. §25. The site-specific aquatic life criterion and supporting information shall be made available to the public prior to the hearing.

(h) A site-specific aquatic life criterion shall not be effective until it is adopted by the department and approved by the EPA. [Eff and comp OCT 2 2 2021] (Auth: HRS §187A-1, §§342D-4, 342D-5) (Imp: §§342D-4, 342D-5; 40 C.F.R. §§25.5, 131.11)

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§11-54-9.6 Schedule of compliance. (a) A schedule of compliance is an NPDES implementation tool that applies to the implementation of water quality standards through NPDES permits only.

(b) The director may issue a schedule of compliance in an individual NPDES permit for the implementation of effluent limits derived from the water quality criteria in this chapter if the director makes a finding that the discharger cannot immediately comply with the water quality based effluent limitations upon the effective grant of the permit.

(c) A schedule of compliance may be included in an individual NPDES permit issued by the director pursuant to chapter 342D, HRS.

(d) A schedule of compliance in an NPDES permit is allowed only for water quality-based effluent limits based upon a new, revised, or newly interpreted water quality standard and must:

(1) Comply with the provisions in title 40, Code of Federal Regulations, section 122.47, revised as of July 1, 2014;

(2) Include an enforceable final effluent limitation that is within the timeframe allowed as specified in sections 11-55-08(a)(2)(B), 11-55-15(d), 11-55-21, 11-55-22, 11-55-23(10), and 11-55-34.07(3)(B); and

(3) Require compliance as soon as possible.

(e) A schedule of compliance that exceeds one year in duration must set forth interim requirements, specific dates to meet interim requirements, and a date by which the required water quality-based effluent limitation must be achieved. [Eff and comp OCT 2 2 2021] (Auth: HRS §§342D-4, 342D-5, 342D-53, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, 342D-6, Ch. 342E)

Historical note: §11-54-9.6 is based substantially upon §11-54-11. [Eff and comp 11/15/14; R OCT 2 2 2021]

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§11-54-10 Water quality analyses. (a) Laboratory analysis shall be performed by a laboratory approved by the department.

(b) Where applicable, analysis to determine compliance with these rules shall be by:

Parameter	Reference
Sample Collection (Phytoplankton and other Bioassays)	Standard Methods for the Examination of Water and Waste Water, twenty first edition, APHA
Sample Preservation and Holding Time, Bacteriological and Chemical Methodology	Title 40, Code of Federal Regulations, part 136, entitled "Guidelines Establishing Test Procedures for the Analysis of Pollutants", (40 C.F.R. §136) "A Manual of Chemical and Biological Methods for Seawater Analysis" T.R. Parsons, Y. Maita, and C.M. Lalli, 1984, Pergamon Press, New York. "Methods of Seawater Analysis", 2nd, Revised and Extended Edition, ed. by K. Grashof, M. Erhardt, K. Kremling, 1983. Verlag Chemie, Weinheim, Germany.
Toxicity Test	EPA 821-R-02-013, Short-Term Methods For Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 4th edition, October 2002.

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or:

EPA 821-R-02-012, Methods For Measuring the Acute Toxicity of Effluents and Receiving waters to Freshwater and Marine Organisms, 5th edition, October 2002.

or:

EPA 821-R-02-014, Short-Term Methods For Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, 3rd edition, October 2002.

or:

EPA 833-R-10-003, National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document, June 2010.

or:

EPA 833-R-10-004, National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document, June 2010.

or:

	EPA/600/R-12/022, Tropical Collector Urchin, *Tripneustes gratilla*, Fertilization Test Method, April 2012.
Quality Control (Bacteriological and Biology) and Chemistry	EPA/600/4-79-019, Handbook for Analytical Quality Control in Water and Wastewater Laboratories, March 1979.
Kona Coast Area Specific Standards	Rationale for the Development of Area-Specific Water Quality Criteria for the West Coast of The Island of Hawaii and Procedures for Their Use. Department of Health, State of Hawaii. March 1997.

or as otherwise previously specified or approved by the director. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; comp 10/21/12; am and comp 12/6/13; comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-11 Repealed. [R OCT 2 2 2021]

§11-54-12 Repealed. [R OCT 2 2 2021]

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§11-54-13 Revision. These water quality criteria are based upon the best currently available data. Studies made in connection with the implementation program may suggest improvements to this chapter. For this reason, the chapter will be subject to periodic review and, where necessary, to change. Any change will be made only after public hearing, held in compliance with chapter 91, HRS and the rules of practice and procedures of the department. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; comp 10/21/12; comp 12/6/13; ren §11-54-11 and comp 11/15/14; comp OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-14 Severability. If any provisions of this chapter, or the application thereof to any person or circumstances, is held invalid, the invalidity does not affect other provisions or application of this chapter which can be given effect without the invalid provision or application, and to this end the provisions of this chapter are severable. [Eff 11/12/82; am and comp 10/6/84; am and comp 04/14/88; am and comp 01/18/90; am and comp 10/29/92; am and comp 04/17/00; am and comp 10/2/04; comp 06/15/09; comp 10/21/12; comp 12/6/13; ren §11-54-12 and comp 11/15/14; comp OCT 2 2 2021] (Auth: HRS §§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

§11-54-15 Field citations; non-compliance. (a) This section authorizes field citations to effectively and quickly settle easily verifiable violations of chapter 342D, HRS, and this chapter. Settlements under this section are an additional remedy and do not

supplant the director's authority to issue orders under section 342D-9, HRS.

(b) Offer to settle.

(1) A field citation is an offer to settle an administrative case against a specific violation on a specific day. Instead of issuing a formal notice and finding of violation and order, the director may, in the director's sole discretion, through any authorized employee, issue a field citation by personal service or certified mail to:

(A) Any person who discharges or otherwise causes or allows water pollutants to enter state waters and cause violation of this chapter, unless that person acted in compliance with a permit or variance issued by the director pursuant to chapter 342D, HRS, for that person's discharges;

(B) Any person who fails to correctly install, implement, maintain, or repair site best management practices as called for in this chapter;

(C) Any person who violates monitoring requirements as required by the director; and

(D) Any person who violates record keeping requirements as required by the director.

(2) A field citation shall indicate the following amounts for violations:

(A) $500 for any person who violates sections 11-54-15(b)(1)(A), 11-54-15(b)(1)(B), or 11-54-15(b)(1)(C) for first violation, and $2,000 for a subsequent violation; and

(B) $100 for any person who violates section 11-54-15(b)(1)(D) for first violation, and $200 for a subsequent violation.

(c) Resolution of field citation.

(1) A person issued a field citation may accept the citation by:
  (A) Signing the field citation;
  (B) Paying the full amount indicated on the field citation. Payment shall be made to the "State of Hawaii" in the form of a pre-printed check, cashier's check, money order, or as otherwise specified by the director;
  (C) Mailing or delivering the signed citation and full payment to the clean water branch in Pearl City or to the district health office for the county where the violation occurred. The department must receive the signed field citation and full payment within twenty days after the person receives the field citation; and
  (D) Correction within seven days, or unless otherwise specified on the field citation, of the violation of this chapter.

(2) By signing the field citation, the person to whom it was issued agrees to:
  (A) Give up the right to a contested case hearing under chapter 91 or 342D, HRS, or otherwise challenge the field citation;
  (B) Pay the full amount indicated; and
  (C) Correct the violation.

(3) If the field citation is not accepted in compliance with section 11-54-15(c)(1), the director may seek for that cited violation any remedies available under this chapter; chapter 342D, HRS; or any other law. For all other violations the director retains authority to seek any available remedies.

(d) Form of citation. The department shall prescribe a field citation form. [Eff and comp 11/15/14; am and comp OCT 2 2 2021] (Auth: HRS

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§§342D-1, 342D-4, 342D-5, Ch. 342E) (Imp: HRS §§342D-4, 342D-5, Ch. 342E)

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Amendments and compilation of chapter 11-54, Hawaii Administrative Rules, on the Summary Page dated OCT 22 2021, were adopted on OCT 22 2021, following a public hearing held on February 1, 2021, after public notice was given in the Honolulu Star-Advertiser, Hawaii Tribune-Herald, West Hawaii Today, The Maui News, and The Garden Island on December 16, 2020.

These rules shall take effect ten days after filing with the Office of the Lieutenant Governor.

APPROVED:

ELIZABETH A. CHAR, M.D.
Director
Department of Health

Date: _____

DAVID Y. IGE
Governor
State of Hawaii

10/11/21

Date: _____

LIEUTENANT GOVERNOR'S OFFICE
'21 OCT 12 A11:07

APPROVED AS TO FORM:

Dale K. Sakata

Deputy Attorney General

Filed

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Appendix A

July 1, 2014

Class 1, Inland Waters

Hawaii
Akaka Falls State Park
Hakalau Forest National Wildlife Refuge
Hakalau Forest National Wildlife Refuge (South Kona Section)
Hamakua Forest Reserve (Hoea Kaao Section)
Hamakua Forest Reserve (Kainehe Section)
Hamakua Forest Reserve (Kalopa Section)
Hamakua Forest Reserve (Paauilo Section)
Hapuna Beach State Recreation Area
Hawaii Volcanoes National Park
Hilo Forest Reserve (Humuula Section)
Hilo Forest Reserve (Laupahoehoe Section)
Kahaualea Natural Area Reserve
Kalopa State Rec. Area
Keaoi Islet Sea Bird Sanctuary
Kekaha Kai State Park
Kipahoehoe Natural Area Reserve
Kohala Forest Reserve (Pololu Section)
Kohala Historical Sites State Monument
Kona Hema Preserve (Nature Conservancy)
Lapakahi State Historical Park
Laupahoehoe Natural Area Reserve
Lava Tree State Monument
Mackenzie State Recreation Area
Manowaialee Forest Reserve
Manuka Natural Area Reserve
Manuka State Wayside
Mauna Kea Ice Age Natural Area Reserve
Mauna Kea State Recreation Area/Mauna Kea Fr
Mokupuku Islet Sea Bird Sanctuary
Ookala Cooperative Game Management Area
Paokalani Islet Sea Bird Sanctuary
Puu Honau O Honaunau National Historical Park

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Puu Waawaa Forest Bird Sanctuary
Puu Waawaa Forest Reserve
Puukohola Heiau National Historic Site
Wailoa River State Recreation Area
Wailuku River State Park

Kauai
Ahukini State Recreation Pier
Haena State Park
Hanalei National Wildlife Refuge
Kilauea Point National Wildlife Refuge
Kuia Natural Area Reserve
Mokuaeae Rock Islet Sea Bird Sanctuary
Na Pali Coast State Wilderness Park
Polihale State Park
Russian Fort Elizabeth State Historical Park
Wailua River State Park
Waimea Canyon State Park
Waimea State Recreation Pier

Lanai
Moku Naio Sea Bird Sanctuary
Nanahoa Islets Sea Bird Sanctuary
Poopoo Islet Sea Bird Sanctuary
Puupehe Islet Sea Bird Sanctuary

Maui
Ahihi-Kinau Natural Area Reserve
Alau Island Sea Bird Sanctuary
Haleakala National Park
Halekii-Pihana Heiaus State Monument
Hanawi Natural Area Reserve
Iao Valley State Monument
Kanaha Pond Wildlife Sanctuary
Kanaio Natural Area Reserve
Kaumahina State Wayside
Kealia Pond National Wildlife Refuge
Keopuka Islet Sea Bird Sanctuary
Makena State Park
Mokeehia Islet Sea Bird Sanctuary

Moku Hala Sea Bird Sanctuary
Moku Mana Islet Sea Bird Sanctuary
Molokini Sea Bird Sanctuary
Papanui O Kane Islet Sea Bird Sanctuary
Pauwalu Point Wildlife Sanctuary
Polipoli Spring State Recreation Area
Puaa Kaa State Wayside
Puuku Island Sea Bird Sanctuary
Waianapanapa State Park
Wailua Valley State Wayside
West Maui Natural Area Reserve (Honokowai Section)
West Maui Natural Area Reserve (Lihau Section)
West Maui Natural Area Reserve (Panaewa Section)

Molokai
Huelo Islet Sea Bird Sanctuary
Kakahaia National Wildlife Refuge
Kalaupapa National Historical Park
Kamiloloa Plant Sanctuary
Kanaha Rock Sea Bird Sanctuary
Mokapu Islet Sea Bird Sanctuary
Mokumanu Islet Sea Bird Sanctuary
Molokai Forest Reserve
Okala Islet Sea Bird Sanctuary

Niihau
Kaula Island Sea Bird Sanctuary
Lehua Island Sea Bird Sanctuary

Oahu
Aiea Bay State Recreation Area
Diamond Head State Monument
Hamakua Marsh Wildlife Sanctuary
James Campbell National Wildlife Refuge (Kii)
Kaohikaipu Island Sea Bird Sanctuary
Kawainui Marsh Wildlife Sanctuary (Proposed)
Keaiwa Heiau State Recreation Area
Kekepa Island Sea Bird Sanctuary
Kukaniloko Birthstones State Monument
Kukuihoolua Island Sea Bird Sanctuary

Makiki Valley State Recreation Area
Malaekahana State Recreation Area
Mokualai Island Sea Bird Sanctuary
Mokuauia Island Sea Bird Sanctuary
Mokulua Island Sea Bird Sanctuary
Mokumanu Islet Sea Bird Sanctuary
Oahu Forest National Wildlife Refuge
Pahole Natural Area Reserve
Paiko Lagoon Wildlife Sanctuary
Pearl Harbor National Wildlife Refuge (Mid Loch)
Pearl Harbor National Wildlife Refuge (W Loch)
Pearl Harbor Nat'l Wildlife Refuge (Kalaeloa)
Popoia Island Sea Bird Sanctuary
Pouhala Marsh Wildlife Sanctuary
Pulemoku Rock Sea Bird Sanctuary
Puu Ualakaa State Park
Royal Mausoleum State Monument
Sacred Falls State Park
Sand Island State Recreation Area
Ulu Po Heiau State Monument
Waiahole Forest Reserve (Waiahole Section)
Waianae Kai Forest Reserve

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Appendix B

July 1, 2014

Class AA, Marine Waters and Embayments

Hawaii
Puako Bay
Waiulua Bay
Anaehoomalu Bay
Kiholo Bay
Kailua Harbor
Kealakekua Bay
Honaunau Bay

Oahu
Waialua Bay
Kahana Bay
Kaneohe Bay
Hanauma Bay

Kauai
Hanalei Bay

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Appendix C

July 1, 2014

Class A, Marine Waters and Embayments

Hawaii
Hilo Bay (inside breakwater)
Kawaihae Boat Harbor
Honokohau Boat Harbor
Keauhou Bay

Maui
Kahului Bay
Lahaina Boat Harbor
Maalaea Boat Harbor

Lanai
Manele Boat Harbor
Kaumalapau Harbor

Molokai
Hale o Lono Harbor
Kaunakakai Harbor
Kaunakakai Boat Harbor

Oahu
Kaiaka Bay
Paiko Peninsula to Koko Head
Ala Wai Boat Harbor
Kewalo Basin
Honolulu Harbor
Keehi Lagoon
Barbers Point Harbor
Pokai Bay
Heeia Kea Boat Harbor
Waianae Boat Harbor
Haleiwa Boat Harbor
Ko Olina

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Kauai
Hanamaulu Bay
Nawiliwili Bay
Kukuiula Bay
Wahiawa Bay
Hanapepe Bay (inside breakwater)
Kikiaola Boat Harbor
Port Allen Boat Harbor

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Appendix D

July 1, 2014

Class AA, Open Coastal Waters

Measured in a clockwise direction from the first-named to the second-named location, where applicable):

Hawaii
The open coastal waters from Leleiwi Point to Waiulaula Point.

Maui
The open coastal waters between Nakalele Point and Waihee Point and between Huelo Point and Puu Olai.

Kahoolawe
All open coastal water surrounding the island.

Lanai
All open coastal waters surrounding the island.

Molokai
The open coastal waters between the westerly boundary of Hale o Lono Harbor to Lamaloa Head. Also, the open coastal waters from Cape Halawa to the easterly boundary of Kaunakakai Harbor.

Oahu
Waimanalo Bay from the southerly boundary of Kaiona Beach Park, and including the waters surrounding Manana and Kaohikaipu Islands, to Makapuu Point. Also, Waialua Bay from Kaiaka Point to Puaena Point, and the open coastal waters along Kaena Point between a distance of 5.6 kilometers (3.5 miles) from Kaena Point towards Makua and 5.6 kilometers (3.5 miles) from Kaena Point toward Mokuleia.

Kauai
The open coastal waters between Hikimoe Valley and Makahoa Point. Also, the open coastal waters between Makahuena Point and the westerly boundary of Hoai Bay.

Niihau
All open coastal waters surrounding the island.

All other islands of the state
All open coastal waters surrounding the islands not classified in Appendix D or 11-54-6(b)(2)(A).

OCT 22 2021

Appendix E

Numeric Standards for Toxic Pollutants Applicable to All Waters

The freshwater standards apply where the dissolved inorganic ion concentration is less than 0.5 parts per thousand; saltwater standards apply above 0.5 parts per thousand.
Values for metals refer to the dissolved fraction.
Except for Methylmercury, all values are expressed in micrograms per liter (µg/L).

Pollutant Name	Carcin-ogen	CAS #	Freshwater (µg/L)		Saltwater (µg/L)		Fish Consumption (µg/L except Methylmercury *)
			Acute	Chronic	Acute	Chronic	
Acenaphthene	-	83-32-9	570	ns	320	ns	90
Acrolein	-	107-02-8	23	ns	18	ns	400
Acrylonitrile	X	107-13-1	2,500	ns	ns	ns	7.0
Aldrin	X	309-00-2	3.0	ns	1.3	ns	0.00000077
Aluminum	-	7429-90-5	750	260	ns	ns	ns
Anthracene	-	120-12-7	ns	ns	ns	ns	400
Benzo(a)anthracene	X	56-55-3	ns	ns	ns	ns	0.0013
Dibenzo(a,h)anthracene	X	53-70-3	ns	ns	ns	ns	0.00013
Antimony	-	7440-36-0	3,000	ns	ns	ns	640
Arsenic	X	7440-38-2	360	190	69	36	0.14
Benzene	X	71-43-2	1,800	ns	1,700	ns	16
Benzidine	X	92-87-5	800	ns	ns	ns	0.011
Beryllium	-	7440-41-7	43	ns	ns	ns	0.038

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Pollutant Name	Carcin-ogen	CAS #	Freshwater (µg/L)		Saltwater (µg/L)		Fish Consumption (µg/L except Methylmercury *)
			Acute	Chronic	Acute	Chronic	
Bromoform	X	75-25-2	ns	ns	ns	ns	120
Butylbenzyl Phthalate	X	85-68-7	ns	ns	ns	ns	0.10
Cadmium	-	7440-43-9	3+	3+	43	9.3	ns
Carbon Tetrachloride	X	56-23-5	12,000	ns	16,000	ns	5
Chlordane	X	57-74-9	2.4	0.0043	0.09	0.004	0.00032
Chlorine	-	7782-50-5	19	11	13	7.5	ns
Chlorobenzene	-	108-90-7	ns	ns	ns	ns	800
Chlorodibromomethane	X	124-48-1	ns	ns	ns	ns	21
Bis(2-Chloroethyl) Ether	X	111-44-4	ns	ns	ns	ns	2.2
Chloroform	-	67-66-3	9,600	ns	ns	ns	2,000
Bis(Chloromethyl) Ether	X	542-88-1	ns	ns	ns	ns	0.017
2-Chloronaphthalene	-	91-58-7	ns	ns	ns	ns	1,000
2-Chlorophenol	-	95-57-8	1,400	ns	ns	ns	800
3-Methyl-4-Chlorophenol	-	59-50-7	ns	ns	ns	ns	2,000
Chlorpyrifos	-	2921-88-2	0.083	0.041	0.011	0.0056	ns
Chromium (VI)	-	18540-29-9	16	11	1,100	50	ns
Chrysene	X	218-01-9	ns	ns	ns	ns	0.13
Copper	X	7440-50-8	6+	6+	2.9	2.9	ns

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Pollutant Name	Carcin-ogen	CAS #	Freshwater (µg/L)		Saltwater (µg/L)		Fish Consumption (µg/L except Methylmercury *)
			Acute	Chronic	Acute	Chronic	
Cyanide	-	57-12-5	22	5.2	1	1	400
Demeton	-	8065-48-3	ns	0.1	ns	0.1	ns
Di-n-Butyl Phthalate	-	84-74-2	ns	ns	ns	ns	30
Dichlorobenzenes	-	-	370	ns	660	ns	ns
1,2-Dichlorobenzene	-	95-50-1	ns	ns	ns	ns	3,000
1,3-Dichlorobenzene	-	541-73-1	ns	ns	ns	ns	10
1,4-Dichlorobenzene	-	106-46-7	ns	ns	ns	ns	900
3,3'-Dichlorobenzidine	X	91-94-1	ns	ns	ns	ns	0.15
Dichlorobromomethane	X	75-27-4	ns	ns	ns	ns	27
p,p'-Dichlorodiphenyl-dichloroethane (DDD)	X	72-54-8	0.03	ns	1.2	ns	0.00012
p,p'-Dichlorodiphenyl-dichloroethylene (DDE)	X	72-55-9	ns	ns	ns	ns	0.000018
p,p'-Dichlorodiphenyl-trichloroethane (DDT)	X	50-29-3	1.1	0.001	0.013	0.001	0.000030
1,2-Dichloroethane	X	107-06-2	39,000	ns	38,000	ns	650
1,1-Dichloroethylene	-	75-35-4	ns	ns	ns	ns	20,000
Trans-1,2-Dichloroethylene	-	156-60-5	ns	ns	ns	ns	4,000
2,4-Dichlorophenol	-	120-83-2	670	ns	ns	ns	60
Chlorophenoxy Herbicide (2,4-D)	-	94-75-7	ns	ns	ns	ns	12,000

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Pollutant Name	Carcin-ogen	CAS #	Freshwater (µg/L)		Saltwater (µg/L)		Fish Consumption (µg/L except Methylmercury *)
			Acute	Chronic	Acute	Chronic	
Dichloropropanes	-	-	7,700	ns	3,400	ns	ns
1,2-Dichloropropane	X	78-87-5	ns	ns	ns	ns	31
1,3-Dichloropropene	X	542-75-6	2,000	ns	260	ns	12
Dieldrin	X	60-57-1	2.5	0.0019	0.71	0.0019	0.0000012
Diethyl Phthalate	-	84-66-2	ns	ns	ns	ns	600
Dimethyl Phthalate	-	131-11-3	ns	ns	ns	ns	2,000
2,4-Dimethylphenol	-	105-67-9	700	ns	ns	ns	3,000
Dinitrophenols	-	25550-58-7	ns	ns	ns	ns	1,000
2,4-Dinitrophenol	-	51-28-5	ns	ns	ns	ns	300
2-Methyl-4,6-Dinitrophenol	-	534-52-1	ns	ns	ns	ns	30
Dinitrotoluenes	X	-	110	ns	200	ns	ns
2,4-Dinitrotoluene	X	121-14-2	ns	ns	ns	ns	1.7
1,2-Diphenylhydrazine	X	122-66-7	ns	ns	ns	ns	0.2
Endosulfan	-	-	0.22	0.056	0.034	0.0087	ns
alpha-Endosulfan	-	959-98-8	ns	ns	ns	ns	30
beta-Endosulfan	-	33213-65-9	ns	ns	ns	ns	40
Endosulfan Sulfate	-	1031-07-8	ns	ns	ns	ns	40
Endrin	-	72-20-8	0.18	0.0023	0.037	0.0023	0.03

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Pollutant Name	Carcin-ogen	CAS #	Freshwater (µg/L)		Saltwater (µg/L)		Fish Consumption (µg/L except Methylmercury *)
			Acute	Chronic	Acute	Chronic	
Endrin Aldehyde	-	7421-93-4	ns	ns	ns	ns	1
Ethylbenzene	-	100-41-4	11,000	ns	140	ns	130
Bis(2-Ethylhexyl) Phthalate	X	117-81-7	ns	ns	ns	ns	0.37
Fluoranthene	-	206-44-0	1,300	ns	13	ns	20
Benzo(b)fluoranthene	X	205-99-2	ns	ns	ns	ns	0.0013
Benzo(k)fluoranthene	X	207-08-9	ns	ns	ns	ns	0.013
Fluorene	-	86-73-7	ns	ns	ns	ns	70
Guthion	-	86-50-0	ns	0.01	ns	0.01	ns
Heptachlor	X	76-44-8	0.52	0.0038	0.053	0.0036	0.0000059
Heptachlor Epoxide	X	1024-57-3	ns	ns	ns	ns	0.000032
Hexachlorobenzene	X	118-74-1	ns	ns	ns	ns	0.000079
Hexachlorobutadiene	X	87-68-3	30	ns	11	ns	0.01
Hexachloro-cyclohexane (HCH)-Technical	X	608-73-1	ns	ns	ns	ns	0.010
alpha-Hexachloro-cyclohexane (HCH)	X	319-84-6	ns	ns	ns	ns	0.00039
beta-Hexachloro-cyclohexane (HCH)	X	319-85-7	ns	ns	ns	ns	0.014
gamma-Hexachloro-cyclohexane (HCH) [Lindane]	-	58-89-9	2.0	0.08	0.16	ns	4.4

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Pollutant Name	Carcin-ogen	CAS #	Freshwater (µg/L)		Saltwater (µg/L)		Fish Consumption (µg/L except Methylmercury *)
			Acute	Chronic	Acute	Chronic	
Hexachloro-cyclopentadiene	-	77-47-4	2	ns	2	ns	4
Hexachloroethane	X	67-72-1	330	ns	310	ns	0.1
Isophorone	X	78-59-1	39,000	ns	4,300	ns	1,800
Lead	-	7439-92-1	29+	29+	140	5.6	ns
Malathion	-	121-75-5	ns	0.1	ns	0.1	ns
Mercury	-	7439-97-6	2.4	0.55	2.1	0.025	0.047
Methoxychlor	-	72-43-5	ns	0.03	ns	0.03	0.02
Methyl Bromide	-	74-83-9	ns	ns	ns	ns	10,000
Methylene Chloride	X	75-09-2	ns	ns	ns	ns	1,000
Bis(2-Chloro-1-Methylethyl) Ether	-	108-60-1	ns	ns	ns	ns	4,000
Methylmercury	-	22967-92-6	ns	ns	ns	ns	0.3 mg/kg *
Mirex	-	2385-85-5	ns	0.001	ns	0.001	ns
Naphthalene	-	91-20-3	770	ns	780	ns	ns
Nickel	-	7440-02-0	5+	5+	75	8.3	4,600
Nitrobenzene	-	98-95-3	9,000	ns	2,200	ns	600
Nitrophenols	-	-	77	ns	1,600	ns	ns
Nitrosamines	X	-	1,950	ns	ns	ns	1.24
Nitrosodibutylamine	X	924-16-3	ns	ns	ns	ns	0.22

Pollutant Name	Carcin-ogen	CAS #	Freshwater (µg/L)		Saltwater (µg/L)		Fish Consumption (µg/L except Methylmercury *)
			Acute	Chronic	Acute	Chronic	
Nitrosodiethylamine	X	55-18-5	ns	ns	ns	ns	1.24
N-Nitrosodimethylamine	X	62-75-9	ns	ns	ns	ns	3.0
N-Nitrosodiphenylamine	X	86-30-6	ns	ns	ns	ns	6.0
N-Nitrosodi-n-Propylamine	X	621-64-7	ns	ns	ns	ns	0.51
Nitrosopyrrolidine	X	930-55-2	ns	ns	ns	ns	34
Parathion	-	56-38-2	0.065	0.013	ns	ns	ns
Pentachlorobenzene	-	608-93-5	ns	ns	ns	ns	0.1
Pentachloroethane	-	-	2,400	ns	130	ns	ns
Pentachlorophenol	X	87-86-5	20	13	13	ns	0.04
Phenol	-	108-95-2	3,400	ns	170	ns	300,000
Polychlorinated Biphenyls (PCBs)	X	-	2.0	0.014	10	0.03	0.000064
Pyrene	-	129-00-0	ns	ns	ns	ns	30
Benzo(a)pyrene	X	50-32-8	ns	ns	ns	ns	0.00013
Indeno(1,2,3-cd)pyrene	X	193-39-5	ns	ns	ns	ns	0.0013
Selenium	-	7782-49-2	20	5	300	71	4,200
Silver	-	7440-22-4	1+	1+	2.3	ns	ns
1,2,4,5-Tetrachlorobenzene	-	95-94-3	ns	ns	ns	ns	0.03
2,3,7,8-TCDD (Dioxin)	X	1746-01-6	0.003	ns	ns	ns	5.1×10^{-9}

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Pollutant Name	Carcin-ogen	CAS #	Freshwater (µg/L)		Saltwater (µg/L)		Fish Consumption (µg/L except Methylmercury *)
			Acute	Chronic	Acute	Chronic	
Tetrachloroethanes	-	-	3,100	ns	ns	ns	ns
1,1,2,2-Tetrachloroethane	X	79-34-5	ns	ns	3,000	ns	3
Tetrachloroethylene	X	127-18-4	1,800	ns	3,400	145	29
2,3,5,6-Tetrachlorophenol	-	-	ns	ns	ns	440	ns
Thallium	-	7440-28-0	470	ns	710	ns	0.47
Toluene	-	108-88-3	5,800	ns	2,100	ns	520
Toxaphene	X	8001-35-2	0.73	0.0002	0.21	0.0002	0.00071
Tributyltin (TBT)	-	-	ns	0.026	ns	0.01	ns
1,2,4-Trichlorobenzene	X	120-82-1	ns	ns	ns	ns	0.076
1,1,1-Trichloroethane	-	71-55-6	6,000	ns	10,400	ns	200,000
1,1,2-Trichloroethane	X	79-00-5	6,000	ns	ns	ns	8.9
Trichloroethylene	X	79-01-6	15,000	ns	700	ns	7
2,4,5-Trichlorophenol	-	95-95-4	ns	ns	ns	ns	600
2,4,6-Trichlorophenol	X	88-06-2	ns	ns	ns	ns	2.8
Chlorophenoxy Herbicide (2,4,5-TP) [Silvex]	-	93-72-1	ns	ns	ns	ns	400
Vinyl Chloride	X	75-01-4	ns	ns	ns	ns	1.6
Zinc	-	7440-66-6	22+	22+	95	86	26,000

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CAS # - Chemical Abstracts Service Number

* - As recommended by the EPA, the standard for Methylmercury is expressed as a fish (or shellfish) tissue residue water quality criterion rather than a water column-based water quality criterion. (https://www.epa.gov/sites/production/files/2019-02/documents/wqc-final-methylmercury-factsheet-2001.pdf)

ns - No standard has been developed.

+ - The value listed is the minimum standard. Depending upon the receiving water calcium carbonate hardness, higher standards may be calculated using the respective formula in EPA 440/5-86-001, Quality Criteria for Water, 1986 (published May 1, 1986).

Note - Compounds listed in the plural in the "Pollutant Name" column (except for Nitrosamines and PCBs) represent mixtures of isomers. Values listed refer to the total allowable concentration of any combination of isomers of these compounds.

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