

**Amended Virgin Islands Water Quality Management Program
Water Quality Standards
Rules and Regulations
Title 12, Chapter 7, Subchapter 186**



GOVERNMENT OF THE US VIRGIN ISLANDS
DEPARTMENT OF PLANNING AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION

*Amended Rules and Regulations for
Water Quality Management Program, Water Quality Standards
CVIR 12-007-000, Subchapter 186*

DEPARTMENT OF PLANNING AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
VIRGIN ISLANDS WATER QUALITY MANAGEMENT PROGRAM

AMENDED WATER QUALITY STANDARDS

RULES AND REGULATIONS

Submitted this ____ day of _____, 2023

to

GOVERNOR ALBERT BRYAN, JR

by

JEAN-PIERRE L. ORIOL

Commissioner

Department of Planning and Natural Resources

Copy below is hereby certified to be a true and correct copy of the Regulations adopted pursuant to authority granted in Title 3 V.I.C., Chapter 22 Section 401(b)(16), Title 3 V.I.C., Chapter 35, Section 940, and Title 12 V.I.C., Chapter 7, Section 184.

The Commissioner of the Department of Planning and Natural Resources (“DPNR”) “shall set standards of water quality” and “at least once each three-year period commencing September 30, 1998, shall review applicable water quality standards and, as appropriate, amend, repeal or adopt new standards.” [12 V.I.C. § 186(a)]. Furthermore, DPNR “shall have and may exercise the following powers and duties:

“(a) To exercise general supervision of the administration and enforcement of this chapter and all rules and regulations and orders promulgated thereunder, and to perform any and all acts necessary to carry out the purposes and requirements of this chapter and of the Federal Water Pollution Control Act, as amended, relating to the United States Virgin Islands participation in the National Pollutant Discharge Elimination System;

“(b) To develop comprehensive programs including participation in the National Pollutant Discharge Elimination System, for the prevention, control and abatement of all existing or potential pollution of the waters of the United States Virgin Islands and to develop, propose, promulgate and amend such rules and regulations as are necessary to carry out the purposes of this chapter;

* * * *

“(h) To adopt, modify, repeal and promulgate standards of quality of the waters of the United States Virgin Islands for the prevention, control and abatement of pollution;”

“(i) To adopt, modify, repeal and promulgate, after public comment or hearing on due notice, and to enforce such rules and regulations as may be necessary to prevent, control, and abate existing or potential water pollution;

* * * *

“(p) To exercise all incidental powers necessary to carry out the purposes of this chapter;”

“(q) To administer and enforce the provisions of this chapter as it relates to participation in the National Pollution Discharge Elimination System, and all rules, regulations, orders, effluent limitations, water quality standards and permits promulgated, issued or effective hereunder.” [12 V.I.C. § 184].

It is the duty of DPNR, and DPNR is empowered, with the approval of the Governor, to “issue rules and regulations, not inconsistent with the provisions of this chapter, as may be necessary or appropriate for the implementation and effectuation of its powers, duties and functions.” [3 V.I.C. § 401(b)(16)].

VI – CODE OF U.S. VIRGIN ISLAND RULES (“CVIR”)
Title 12. Conservation
Chapter 7. Water Pollution Control
Subchapter 186. Water Quality Standards

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CVIR 12-007-000, Subchapter 186

Pursuant to authority granted in Title 3 V.I.C., Chapter 22, Section 401(b)(16), Title 3 V.I.C., Chapter 35, Section 940, and Title 12 V.I.C., Chapter 7, Sections 184 and 186, DPNR amends the rules and regulations promulgated in CVIR 12-007-000, Subchapter 186 to read as follows:

§ 186 - 1: Definitions and Abbreviations

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

- (a) **Abiotic:** A nonliving physical and chemical attribute of a system such as light, temperature, wind patterns, rocks, soil, pH, and pressure in an environment.
- (b) **Acute:** A stimulus severe enough to rapidly induce an effect; in aquatic toxicity tests, an effect observed in 96-hours or less is typically considered acute. When referring to aquatic toxicology or human health, an acute effect is not always measured in terms of lethality.
- (c) **Aesthetic qualifications:** Criteria that by definition preserves one's ability to experience natural beauty.
- (d) **Aquatic Nuisance Species:** A nonindigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural or recreational activities dependent on such waters.
- (e) **Assimilative capacity:** The natural capacity of a waterbody to dilute and absorb pollutants and prevent harmful effects (e.g., damage to public health or physical, chemical, biological quality of the water).
- (f) **Available treatment:** Treatment that is economically and practicably achievable in the USVI.
- (g) **Best management practices or BMPs:** Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce point and non-point source pollution to "waters of the United States Virgin Islands" or "territorial waters." BMPs 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.

- (h) **Bioaccumulation factor or BAF:** The ratio of a substance's concentration in tissue versus its concentration in ambient water, in situations where the organism and the food chain are exposed.
- (i) **Biological criteria or biocriteria:** Narrative expressions or numeric values of the biological characteristics of aquatic communities based on appropriate reference conditions. As such, biological criteria serve as an index of aquatic community health.
- (j) **Biological Integrity:** The capability of supporting and maintaining a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat of the region
- (k) **Biotic:** Living or of life.
- (l) **Brackish Water:** A mixture of seawater and fresh water whose salinity range is between 0.5 to 35 ppt.
- (m) **CWA or Federal Clean Water Act or Federal Water Pollution Control Act or Federal Act or FWPCA:** The Federal Clean Water Act, 33 U.S.C. § 1251 *et seq.*, as amended, and the rules and regulations promulgated thereunder.
- (n) **Chronic:** A stimulus that lingers or continues for a relatively long period of time, often one-tenth of the life span or more. Chronic should be considered a relative term depending on the life span of an organism. The measurement of a chronic effect can be reduced growth, reduced reproduction, etc., in addition to lethality.
- (o) **Class A Waters (or Outstanding National Resource Waters):** Marine and coastal waters classified pursuant to section 186-3(b) of this title. Class A waters have unique characteristics to be preserved (e.g., waters of exceptional recreational, environmental, or ecological significance). Class A waters are designated for the maintenance and propagation of desirable species of wildlife and aquatic life, for primary contact recreation, and for use as a potable water source for those waters being used currently or that could be used in the future as potable water sources.
- (p) **Class B Waters:** Marine and coastal waters classified pursuant to section 186-3(c) of this title. Class B waters are designated for the maintenance and propagation of desirable species of wildlife and aquatic life, for primary contact recreation and for use as potable water sources for those waters being used currently or that could be used in the future as potable water sources.
- (q) **Class C Waters:** Marine and coastal waters classified pursuant to section 186-3(d) of this title. Class C waters are designated for the maintenance and propagation of desirable species of wildlife and aquatic life, for primary contact recreation and for use as potable water sources for those waters being used currently or that could be used in the future as potable water sources. Class C waters are those waters which are located

in industrial harbors and ports and have less stringent water quality standards for certain parameters than Class B waters.

- (r) **Class I Waters or Inland Waters:** Designated aquatic-influenced environments located within land boundaries. Inland water systems are designated for the maintenance and propagation of desirable species of wildlife and aquatic life, for primary contact recreation and for use as potable water sources for those waters being used currently or that could be used in the future as potable water sources. Waters included in this class can be either inland groundwaters (Subclass IG waters) or inland surface waters. Inland surface waters can be fresh (Subclass IF Waters) as well as saline or brackish (Subclass IBS Waters).
- (s) **Commissioner:** The Commissioner of the Department of Planning and Natural Resources, or his/her designee.
- (t) **Coastal Estuary:** All or part of the mouth of a river or stream or other body of water having a direct natural connection with open sea, which is located along the coast, and within which the sea water is measurably diluted with fresh water derived from land drainage.
- (u) **Community diversity:** The variety and type of species present in a community, the complexity of their interactions, and the age and stability of the community. The community diversity of a region is influenced by the number of communities present, the degree of difference among the communities, and how the communities are distributed across the region.
- (v) **Consistent sampling:** Used to ensure that results can be aggregated and compared over time.
- (w) **Coral habitat:** A place where the physical and biological elements of coral reef ecosystems (including any threatened or endangered species) provide a suitable environment (including food, cover, and space resources) for plant and animal livelihood.
- (x) **Coral reef:** Any reef or shoal composed primarily of corals. A wave-resistant structure resulting from cementation processes and the skeletal construction of hermatypic corals, calcareous algae, and other calcium carbonate-secreting organisms.
- (y) **Coral reef ecosystems:** Corals and other species of reef organisms (including plants) associated with coral reefs, seagrasses and the nonliving environmental factors that directly affect coral reefs, that together function as an ecological unit in nature.
- (z) **Coral reef ecosystems areas:** Areas where a dynamic complex of plants, animals and microorganism communities and their nonliving environment interact as a functional unit. These areas can be measured in square miles/kilometers or as a percent of area

with coral cover. These areas include but are not limited to those areas defined by the National Oceanic and Atmospheric Administration (NOAA).

- (aa) **Criteria:** Elements of Territorial water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use.
- (bb) **Criteria Continuous Concentration or CCC:** The EPA national water quality criteria recommendation for the highest instream concentration of a toxicant or an effluent to which organisms can be exposed indefinitely without causing unacceptable effect.
- (cc) **Criteria Maximum Concentration or CMC:** The EPA national water quality criteria recommendation for the highest in stream concentration of a toxicant or an effluent to which organisms can be exposed for a brief period of time without causing an acute effect.
- (dd) **Designated Use:** A use specified in water quality standards for each waterbody or segment, whether or not it is being attained. Designated uses for different waterbody classifications are provided in section 186-4 of this title.
- (ee) **Desirable Species:** Species indigenous to the area or introduced to the area because of ecological or commercial value.
- (ff) **Dissolved oxygen:** The concentration of free molecular oxygen dissolved in water; expressed in milligrams/liter (mg/L) saturation.
- (gg) **Effluent:** Used waters, sanitary wastes, other wastewaters, or any liquid substances treated or untreated, discharged from sanitary treatment plants, industrial wastewater treatment plants, manufacturing processes, storage tanks, ponds, sewers or any water pollution source.
- (hh) **Embayment:** Consists of alluvial valley-fill deposits that grade into beach sands as the bedrock valleys open onto embayments. The alluvium, which commonly ranges in thickness from 30 to 50 feet, generally is fine grained and consists of clay, silt, and fine sand eroded primarily from volcanic rocks. Where they contain mostly fine-grained sediments, the aquifers yield only small amounts of water and are semi confined. Locally, the alluvium is coarse sand and gravel, and the aquifer is unconfined. The alluvial deposits interfinger and grade into beach deposits that consist primarily of coarse coral sand. These deposits are permeable and yield only a few gallons per minute to wells. However, water in the embayment is generally brackish to saline.
- (ii) **Enterococci Bacteria:** Are commonly found in the feces of humans and other warm-blooded animals. The presence of enterococci in water is an indication of fecal

pollution and the possible presence of enteric pathogens. Enterococci have a greater correlation with swimming-associated gastrointestinal illness in both marine and fresh waters than other bacterial indicator organisms and are less likely to "die off" in saltwater.

- (jj) **ESA:** The federal Endangered Species Act, 16 U.S.C. §§ 1531 – 1544.
- (kk) **Existing uses:** Those uses actually attained in the waterbody on or after November 28, 1975 (the date of EPA's initial water quality standards regulation), whether or not they are included in water quality standards 40 CFR § 131.3(e).
- (ll) **Exotic Species:** A non-native plant or animal deliberately or accidentally introduced into a new habitat.
- (mm) **Federal Clean Water Act or CWA or Federal Water Pollution Control Act or Federal Act or FWPCA:** The Federal Clean Water Act, 33 U.S.C. § 1251 *et seq.*, as amended, and the rules and regulations promulgated thereunder.
- (nn) **Fresh water(s):** All nontidal and tidal waters generally having a salinity, due to natural sources, of less than or equal to 0.5 parts per thousand at mean high tide.
- (oo) **Freshwater ponds:** Ponds that have waters that are entirely non-marine.
- (pp) **Groundwater:** Water that fills all of the unblocked voids of underlying material below the ground surface which is the upper limit of saturation, or water which is held in the unsaturated zone by capillarity.
- (qq) **Gut (also spelled Ghut) or Stream:** A natural or constructed waterway or any permanent or intermittent stream.
- (rr) **Impaired Waterbody:** A waterbody classified under Category 4, 4A, 4B, 4C or 5 of the most current CWA section 303(d) list.
- (ss) **Indicator Species or Indicator Communities:** Unique environmental indicators which provide insight into the biological condition in a watershed.
- (tt) **Inland Estuary:** All or part of the mouth of a river or stream or other body of water having a direct natural connection with the open sea which is located inland and within which the sea water is measurably diluted with fresh water derived from land drainage.
- (uu) **Inlet:** A narrow water passage between peninsulas or through a barrier island leading to a bay or lagoon.
- (vv) **Mangrove Wetlands:** A wetland area where mangroves are the dominant plant species. See definition of *wetlands* (xxxx).

- (ww) **Marine and Coastal Waters:** Consist of the Atlantic Ocean, the Caribbean Sea, and all contiguous saline bays, inlets and harbors within the jurisdiction of the Virgin Islands.
- (xx) **Metric:** An attribute that shows a quantitative change in value along a gradient of human influence.
- (yy) **Mixing Zone:** An area where an effluent discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient waterbody. A mixing zone is an allocated impact zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented.
- (zz) **NPDES or National Pollutant Discharge Elimination System:** A permitting program under CWA section 402, 12 U.S.C. § 1342, and the rules and regulations issued thereunder, that addresses water pollution by regulating point sources that discharge pollutants to waters of the United States.
- (aaa) **Natural Condition / Natural State:** Describes the quality of surface and marine water untouched by human-caused pollution or disturbance. Natural conditions or natural states are rare and exist in limited settings and must be demonstrated to the satisfaction of the DPNR, through extensive sampling and field investigations.
- (bbb) **Natural forces:** Chemical, biological, geological, ecological or any other conditions existing at specific sites, not resulting from, or as a consequence of, human intervention, that may influence a particular parameter at those sites.
- (ccc) **Non-point Source:** A source of pollutant which is caused by rainfall moving over and through the ground. As runoff moves, it picks up and carries away both natural pollutants and pollutants resulting from human activities. These pollutants include sediments, nutrients, pesticides, and toxic substances such as hydrocarbons and heavy metals. Eventually these pollutants are deposited in wetlands, coastal waters and groundwater.
- (ddd) **Nuisances:** Any plant/animal species, material, or substance which is found in water to cause damage or interference with attainment of designated uses.
- (eee) **Nutrients:** Refer to Total Nitrogen and Total Phosphorus concentrations, which are expressed in mg/L.
- (fff) **Other Discharges or Wastes:** Includes but is not limited to garbage, refuse, decayed wood, sawdust, shavings, bark, sand, lime, cinders, ashes, offal, oil, tar, dyestuffs, acids, chemicals, leachate, sludge, salt and all other discarded matter not sewage or industrial waste that may cause or might reasonably be expected to cause pollution of the waters of the US Virgin Islands.

- (ggg) **Outstanding National Resource Waters or ONRW or Class A Waters:** Waters classified pursuant to § 186-3(b) of this title. These waters have unique characteristics to be preserved (e.g., waters of exceptional recreational, environmental, economic, or ecological significance).
- (hhh) **Parameter of Concern:** The parameter that is being assessed, analyzed or assumed to cause impairment.
- (iii) **Passageway:** A continuous stretch where water characteristics are affected only by natural conditions in such a manner that the free movement, flow or continuous drifting of biota is possible.
- (jjj) **Permit:** An authorization, license, or equivalent control document to discharge pollutants into United States Virgin Islands waters issued under 12 V.I.C. § 185 and rules and regulations promulgated pursuant thereto.
- (kkk) **Permittee:** The holder of a TPDES or NPDES permit.
- (lll) **Person:** An individual, corporation, partnership, association, municipality, territory, or territorial agency, the Government of the United States Virgin Islands, the Government of the United States, and any board, commission, authority, or independent instrumentality of the Government of the Virgin Islands or the United States Government and any officer, agent, or employee thereof, including those having regulatory authority over the discharge of pollutants.
- (mmm) **pH:** A measure of the concentration of hydrogen ions in the water expressed in Standard Units (SU).
- (nnn) **Point Source:** Includes but is not limited to 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, or landfill leachate collection system from which pollutants are or may be discharged.
- (ooo) **Pollution:** The man-made or man-induced alteration of the chemical, physical, biological and radiological integrity of any Waters of the United States Virgin Islands.
- (ppp) **Pollutant or Waste:** Includes but is not limited to dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal and agricultural waste discharged into water.
- (qqq) **Potable Water:** Water that, after available treatment, if any, is or could be used legally for drinking, cooking, or domestic purposes.

- (rrr) **Potable Water Source:** Inland or marine and coastal sources of potable water, including but not limited to springs, artisan wells, drilled wells, public or community water systems or any other source that has been tested and identified to be of a quality that will, after available treatment, be able to meet Territorial or Federal drinking water standards at the tap. When waters have a designated use “for use as a potable water source”, it does not necessarily mean the water from those sources is safe for drinking, cooking or domestic purposes without available treatment, nor does it mean that the waterbodies should be used as potable water sources, nor does it mean that they can be used as potable water sources without meeting drinking water standards or other legal requirements, including obtaining any necessary permits or approvals. Determinations as to whether waters can be used as potable water sources will involve assessments, including but not limited to, whether, with available treatment, the water from those sources could meet Federal and Territorial drinking water standards, as well as assessments of the physical and/or chemical characteristics of the water sources, and an understanding that such water sources are declared to be public waters belonging to the people of the United States Virgin Islands, subject to appropriation for beneficial use in the manner set forth in 12 V.I.C. § 151 and not otherwise.
- (sss) **Primary Contact Recreation:** Activities where the human body may come in direct contact with raw water to the point of complete body submergence. Primary contact recreation includes, but is not limited to, swimming, diving, water skiing, skin diving and surfing.
- (ttt) **Reference Conditions:** The characteristics of waterbody segments least impaired by human activities. As such, reference conditions can be used to describe attainable biological or habitat conditions for waterbody segments with common watershed/catchment characteristics within defined waterbody classes.
- (uuu) **Reliable Measure:** A measure that is reliable if it consistently produces the same result.
- (vvv) **Saline Water:** Saline water(s) means waters having salinities generally greater than 3.5 parts per thousand at mean high tide.
- (www) **Salinity:** An estimate of the concentration of dissolved salts in seawater expressed in parts per thousand.
- (xxx) **Salt Flats:** A salt-encrusted flat area resulting from evaporation of a former body of water.
- (yyy) **Salt Pond:** A saltwater embayment or lagoon separated from coastal waters by any barrier.
- (zzz) **Secchi Disc:** Provides a method for assessing the water clarity expressed in meters by a secchi depth recording light transparency.

- (aaaa) **Site:** The land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.
- (bbbb) **Stream or Gut (also spelled Ghut):** A natural or constructed waterway or any permanent or intermittent stream.
- (cccc) **Subclass IBS Waters:** All inland brackish or saline waters.
- (dddd) **Subclass IF Waters:** All inland fresh waters.
- (eeee) **Subclass IG Waters:** All inland groundwaters that are used currently or could be used in the future as potable water sources, and their associated recharge areas. They shall be protected as potable water sources. Unless otherwise identified, Subclass IG include all ground water with a naturally occurring salinity of less than 10,000 mg/L.
- (ffff) **Sufficient Quality:** The level of water quality providing acceptable conditions to support aquatic life.
- (gggg) **Surface Water:** Includes all waters other than groundwater within the jurisdiction of the United States Virgin Islands including all streams and/or guts (permanent or intermittent), freshwater ponds, wells, estuaries, and wetlands which include swamps, salt flats, salt ponds, and mangrove wetlands situated wholly or partly within or bordering upon the United States Virgin Islands, including the Territorial seas, contiguous zone, and oceans.
- (hhhh) **Swamp:** Wetland often partially or intermittently covered with water; especially, one dominated by wooded vegetation.
- (iiii) **Temperature:** A measure of the energy of molecular motion expressed in degrees Centigrade.
- (jjjj) **Territorial Waters:** Waters of the United States Virgin Islands.
- (kkkk) **TPDES:** Territorial Pollutant Discharge Elimination System, a permitting program under CWA section 402, 33 U.S.C. § 1342, and the rules and regulations issued thereunder, that addresses water pollution by regulating point sources that discharge pollutants to waters of the USVI and implemented in the USVI through 12 V.I.C. § 185 and 12 V.I. R. & Regs. § 184.
- (llll) **Thermal Discharge:** A discharge that results or would result in a significant or measurable temperature change of the receiving water.
- (mmmm) **Thermal Pollution:** The change in the water temperature of any Territorial Water caused by man-made practices that may adversely affect fish, aquatic life, animals, and human health.

- (nnnn) **Threatened or Endangered Species:** Any threatened or endangered species listed pursuant to section 4 of the Federal Endangered Species Act, 16 U.S.C. §§ 1531 – 1544, and/or any threatened, endangered, or indigenous species listed pursuant to Title 12, Chapter 2 of the Virgin Islands Code.
- (oooo) **Total Maximum Daily Load or TMDL:** The maximum amount of a pollutant that a waterbody can receive while still meeting water quality standards.
- (pppp) **Toxic Pollutant:** Any pollutant listed as toxic under section 307(a)(1) of the CWA.
- (qqqq) **Turbidity:** A measure of the degree to which light is scattered by suspended particulate material and soluble colored compounds in the water. Expressed in Nephelometric Turbidity Units (NTU's).
- (rrrr) **WQS Variance:** A time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the water quality standard variance. Variances are different from changes to the designated use and associated criteria in that they are intended as a mechanism to provide time for states and stakeholders to implement adaptive management approaches that will improve water quality where the designated use and criterion currently in place are not being met, but still retain the designated use as a long-term goal. Variances are issued pursuant to § 186-14 of this title.
- (ssss) **Wastewaters:** Waters containing dissolved, suspended, agglomerated, emulsified or floating substances or solid pollutants resulting from industrial, commercial, residential, agricultural, and recreational or any other type of establishment or man induced activity.
- (tttt) **Water Quality Standards or WQS:** Any water quality standards adopted and effective under United States Virgin Islands or Federal laws applicable to waters of the United States Virgin Islands, including the designated use or uses of a waterbody, the numeric and narrative water quality criteria that are necessary to protect the use or uses of that particular waterbody, and an antidegradation policy.
- (uuuu) **Water Quality Criteria:** Any criteria describing the required quality supporting a particular designated use of United States Virgin Islands waters, as adopted under United States Virgin Islands laws or Federal laws applicable to waters of the United States Virgin Islands.
- (vvvv) **Waters of the United States Virgin Islands (or Territorial Waters):** All inland and marine and coastal waters within the jurisdiction of the United States Virgin Islands including but not limited to harbors, streams, lakes, ponds, impounding reservoirs, marshes, water-courses, water-ways, wells, springs, irrigation systems, drainage systems and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, situated wholly or partly within or bordering

upon the United States Virgin Islands, including the territorial seas, contiguous zones, and oceans.

(www) **Well:** A pit or hole sunk into the earth to reach a resource of potable water to be used for domestic purposes.

(xxxx) **Wetlands:** Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include salt ponds, marshes, swamps, and similar areas, which may be freshwater or brackish or saline.

Abbreviations

The following abbreviations, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise:

°C	Degrees Centigrade
µg/L	Micrograms per Liter
BAF	Bioaccumulation factor
BCF	Bioconcentration factor
BMP	Best management practice(s)
CAS	Chemical Abstracts Service Number
CCC	Criteria Continuous Concentration
CF	Conversion factors
CFR	Code of Federal Regulations
CFU/100 mL	Colony Forming Units per 100 milliliters
CMC	Criteria Maximum Concentration
CN/L	Micrograms free cyanide per Liter
CWA	Federal Clean Water Act or Federal Water Pollution Control Act or Federal Act or FWPCA
DDT	Dichlorodiphenyltrichloroethane
DPNR	The USVI Department of Planning and Natural Resources
EPA	The United States Environmental Protection Agency
ESA	Federal Endangered Species Act, 16 U.S.C. §§ 1531 - 1544
FR	Federal Register
FWPCA	Federal Water Pollution Control Act or Federal Clean Water Act or Federal Act or CWA
g/kg	Grams per kilogram
IBS waters	Inland brackish or saline waters
IF waters	Inland fresh waters
IG waters	Inland groundwaters
IRIS	Integrated Risk Information System
Ln(hardness)	Natural logarithm of total hardness in mg/L as CaCO ₃
MCL	Maximum Contaminant Level
mg TAN/L	Milligrams of total ammonia nitrogen (TAN) per Liter
mg/kg dw	Milligrams per kilogram (Dry Weight)
mg/L	Milligrams per Liter
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
ONRW	Outstanding National Resource Waters
PCBs	Polychlorinated biphenyls
pH	Potential Hydrogen
ppt	Parts per thousand
RfD	Reference dose
SU	Standard Units
TAN	Total ammonia nitrogen
TMDL	Total Maximum Daily Load

TPDES	Territorial Pollutant Discharge Elimination System
U.S.	United States
U.S.C.	United States Code
USVI	United States Virgin Islands
V.I.C	Virgin Islands Code
V.I. R. & Regs.	U.S. Virgin Islands Rules and Regulations
WQS	U.S. Virgin Islands Water Quality Standards

§ 186 - 2: Classification of Territorial Waters

Territorial Waters are classified as either Inland Waters or Marine and Coastal Waters.

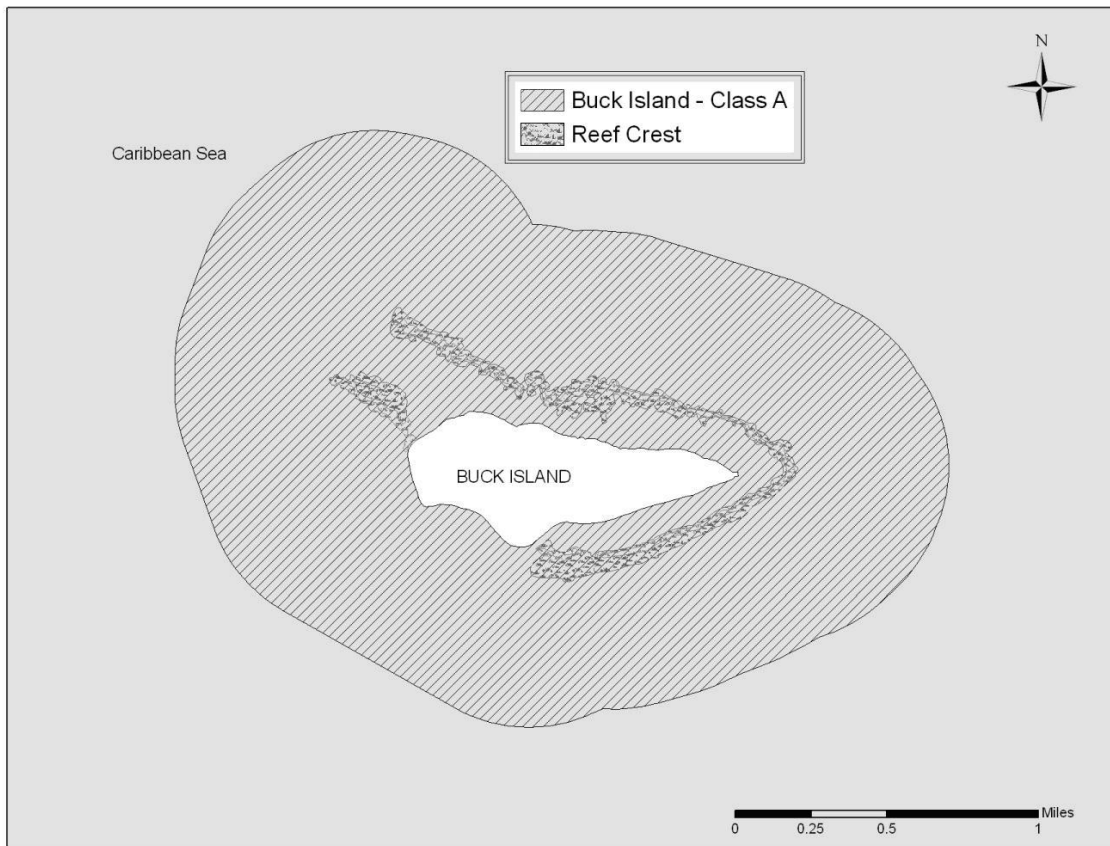
- (a) **Class of Inland Waters** - Class I Waters: include groundwaters (IG waters) and surface waters: fresh (IF) or brackish saline (IBS) waters.
 - (1) Subclass of Inland Fresh Surface Waters - Subclass IF Waters: Based on their ecological characteristics and other natural attributes, all inland fresh waters are classified as follows:
 - (A) Streams and/or guts (Permanent or Intermittent)
 - (B) Freshwater Wetlands:
 - (i) Freshwater Ponds
 - (2) Subclass of Inland Brackish or Saline Surface Waters - Subclass IBS Waters: All inland brackish or saline waters are classified as follows, based on their ecological characteristics and other natural attributes:
 - (A) Inland Estuaries (not designated as Classes A, B or C)
 - (B) Brackish or Saline Wetlands:
 - (i) Swamps
 - (ii) Salt Flats
 - (iii) Salt Ponds
 - (iv) Mangrove Wetlands
 - (v) Marshes
 - (3) Subclass of Groundwaters – Subclass IG Waters:
 - (A) Wells
- (b) **Class of Marine and Coastal Waters** – Class A, B and C Waters: All marine and coastal waters are either embayments, open coastal, or oceanic waters to include all contiguous saline bays, inlets, coastal estuaries and harbors within the jurisdiction of US Virgin Islands.
 - (1) Class A Waters - Outstanding National Resource Waters, as identified in § 186-3(b) of this title.
 - (2) Class B Waters - All coastal or marine waters not classified as Class A or Class C, as identified in § 186-3(c) of this title.
 - (3) Class C Waters - All coastal or marine waters identified in § 186-3(d) of this title. Class C waters have less stringent water quality standards than Class B.

§ 186 - 3: Legal Limits

The following serves as the legal description and boundaries for the Territorial Waters:

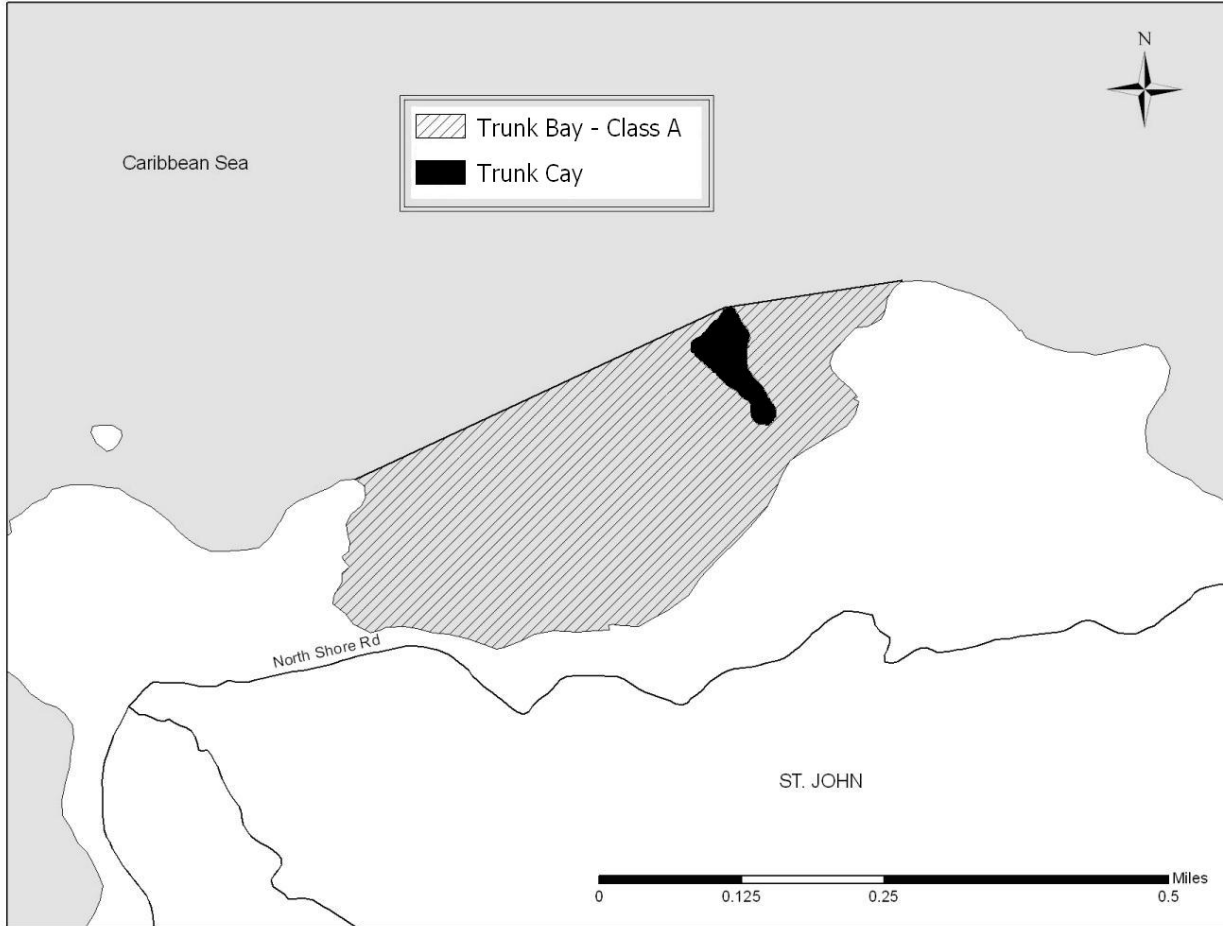
- (a) **Class I (Inland Waters):** Designated aquatic-influenced environments located within land boundaries. Waters included in this class can be either inland groundwaters (Subclass IG Waters) or inland surface waters. Inland surface waters can be fresh (Subclass IF Waters), as well as saline or brackish (Subclass IBS Waters).
- (b) **Class A Marine and Coastal Waters (Outstanding National Resource Waters):**
 - (1) Within 0.5 miles of the boundaries of Buck Island's Natural Barrier Reef, St. Croix.

Figure 1. Class A - Buck Island, St. Croix



(2) Trunk Bay, St. John.

Figure 2. Class A - Trunk Bay, St. John



(c) Class B Marine and Coastal Waters:

- (1) All other coastal or marine waters not classified as Class A or Class C.

Figure 3. Class B - St. Croix

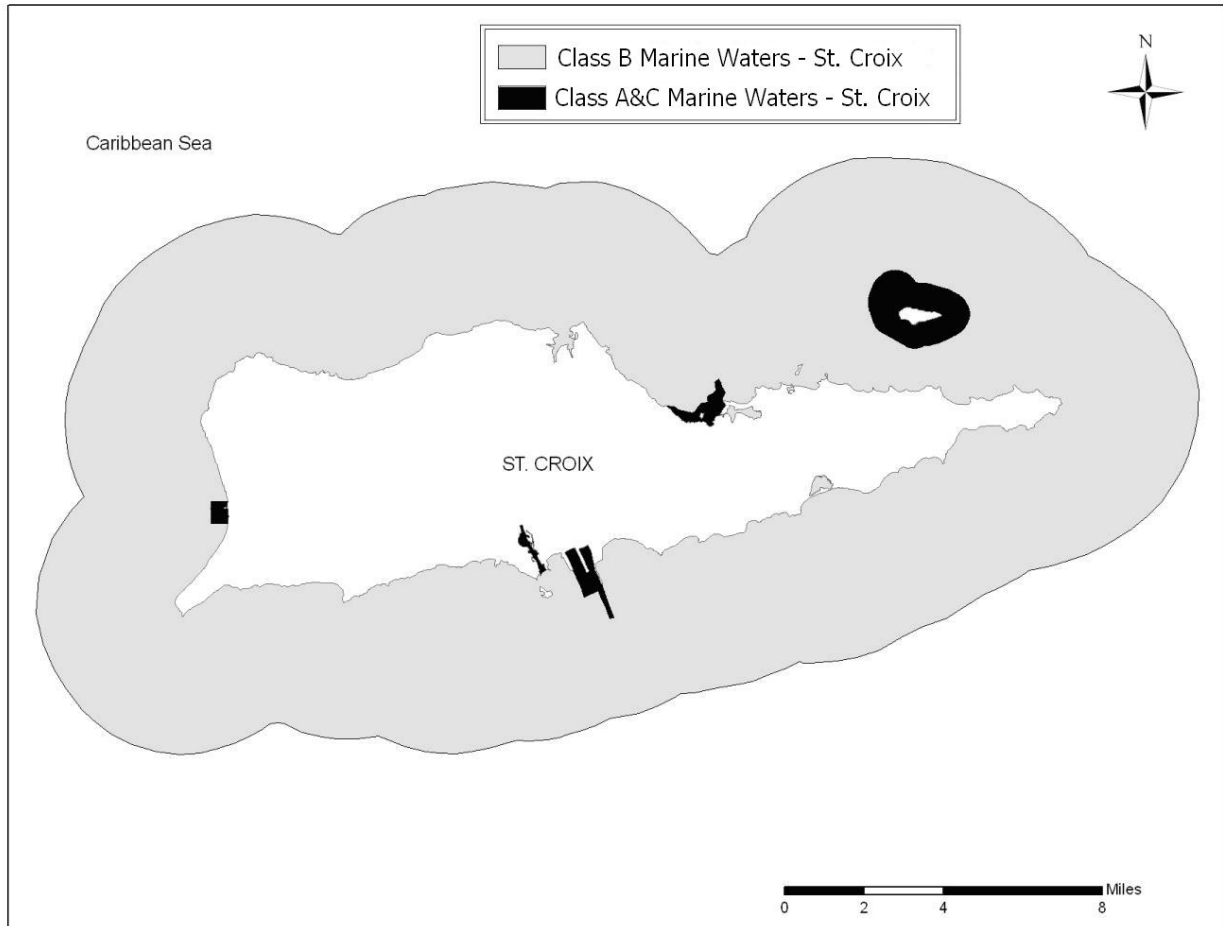
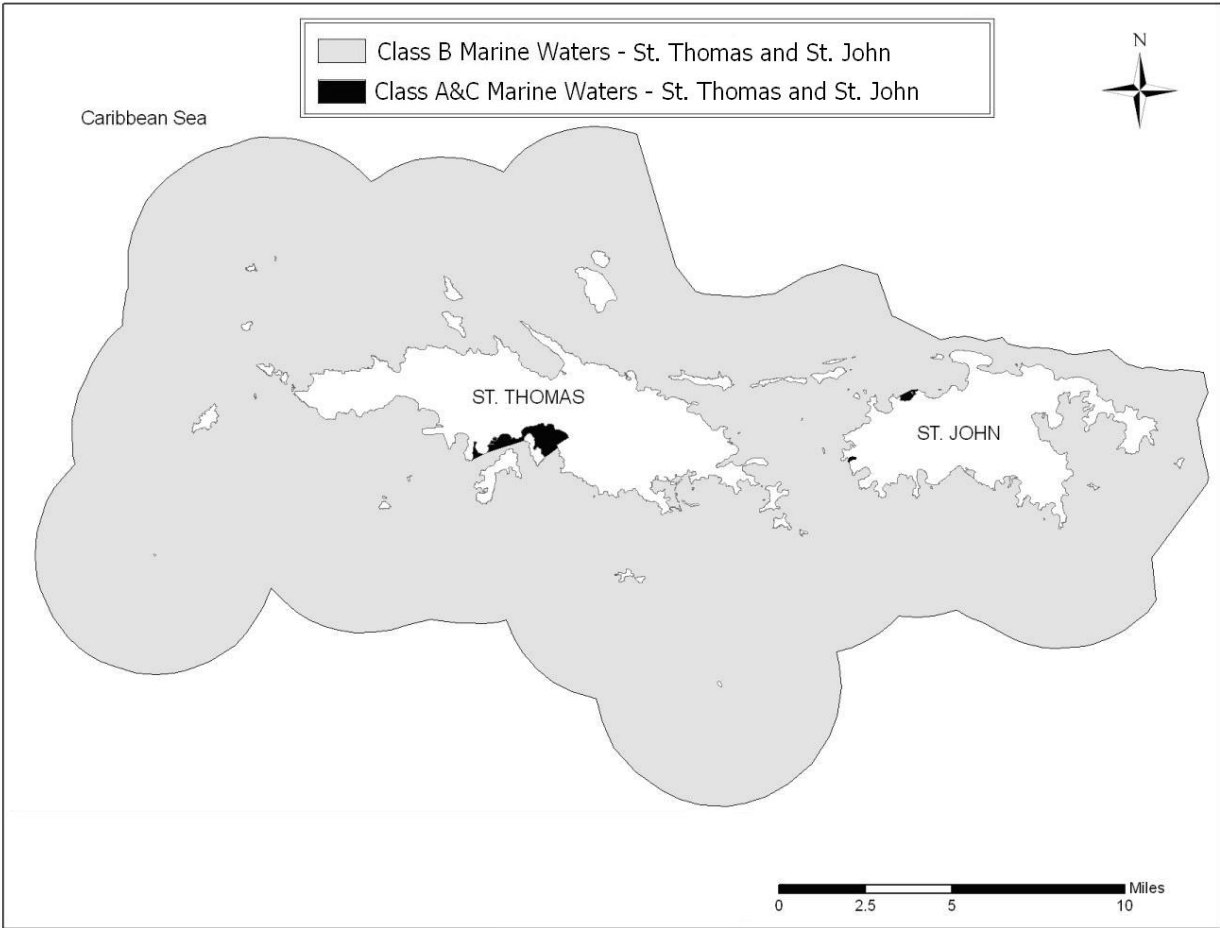


Figure 4. Class B - St. Thomas and St. John

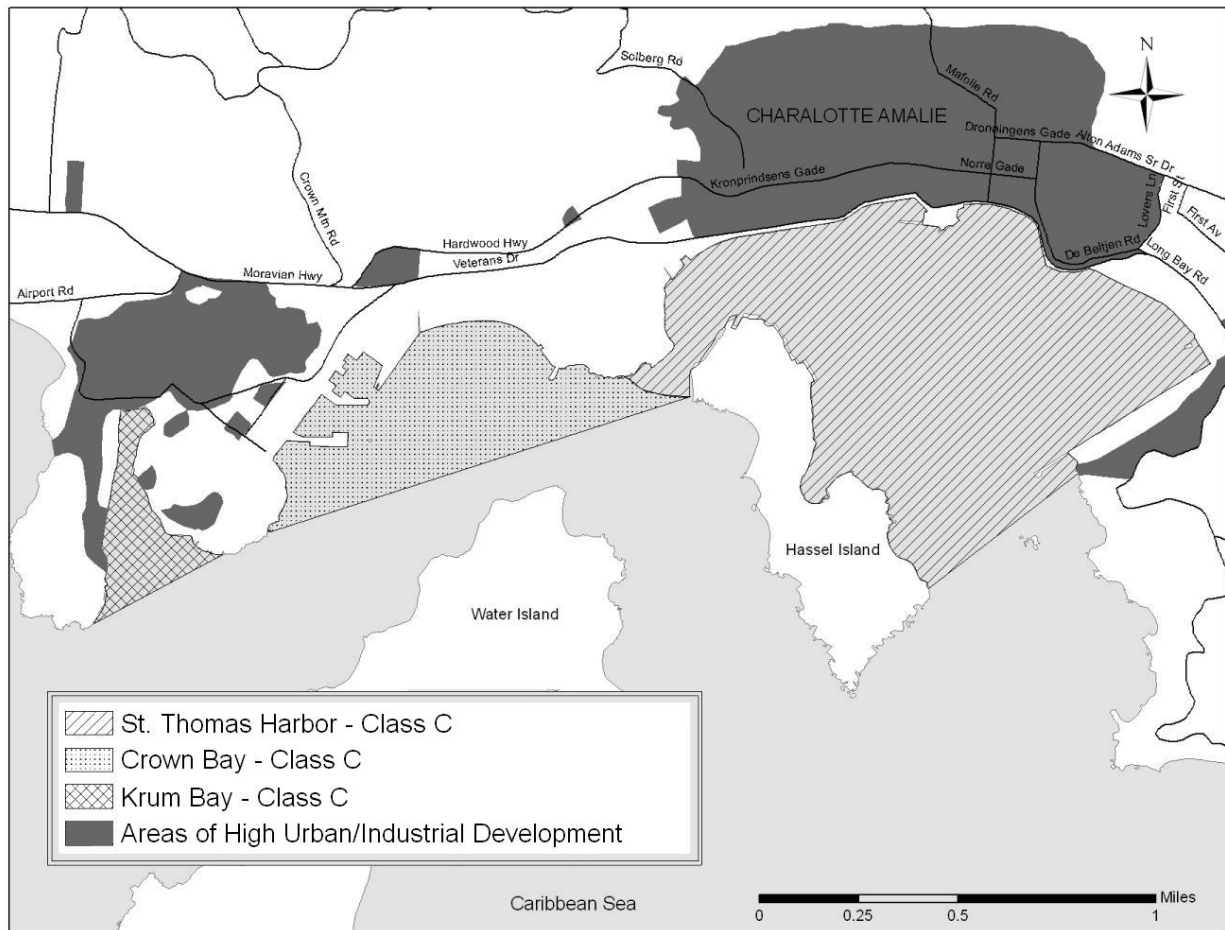


(d) Class C Marine and Coastal Waters:

(1) St. Thomas:

- (A)** St. Thomas Harbor beginning at Rupert Rock and extending to Haulover Cut.
- (B)** Crown Bay enclosed by a line from Hassel Island at Haulover Cut to Regis Point at West Gregerie Channel.
- (C)** Krum Bay.

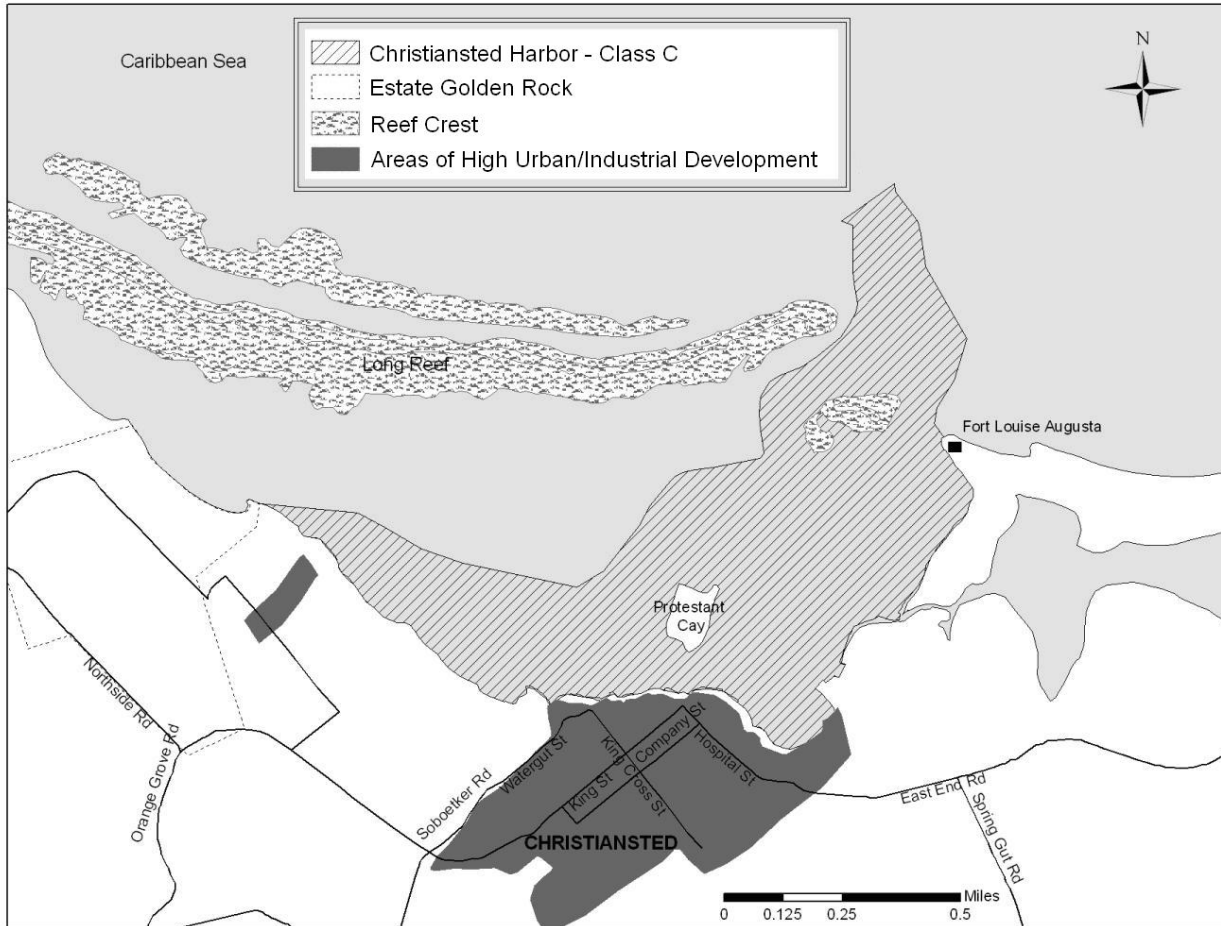
Figure 5. Class C - St. Thomas Harbor, Crown Bay and Krum Bay, St. Thomas



(2) St. Croix:

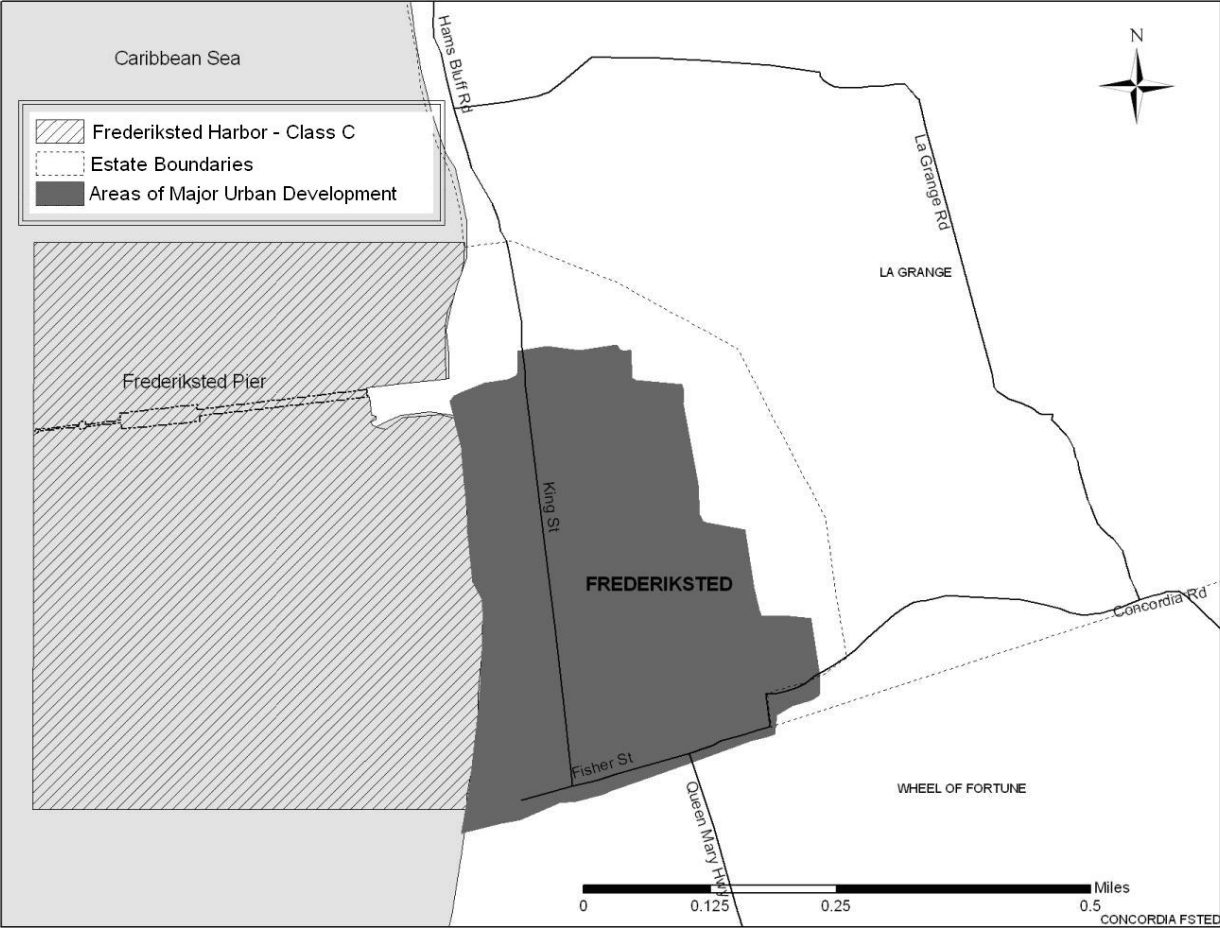
- (A) Christiansted Harbor from Fort Louise Augusta to Golden Rock, along the waterfront and seaward to include the navigational channels and mooring areas

Figure 6. Class C - Christiansted Harbor, St. Croix



(B) Frederiksted Harbor from La Grange to Fisher Street and seaward to the end of the Frederiksted Pier.

Figure 7. Class C - Frederiksted Harbor, St. Croix



- (C) Limetree Bay Channel (formerly named Hess Oil Virgin Islands Harbor and HOVENSA Harbor).
- (D) Krause Lagoon Channel (formerly Martin-Marietta Alumina Harbor and alternatively named Port Alucroix or St. Croix Renaissance Group Harbor).

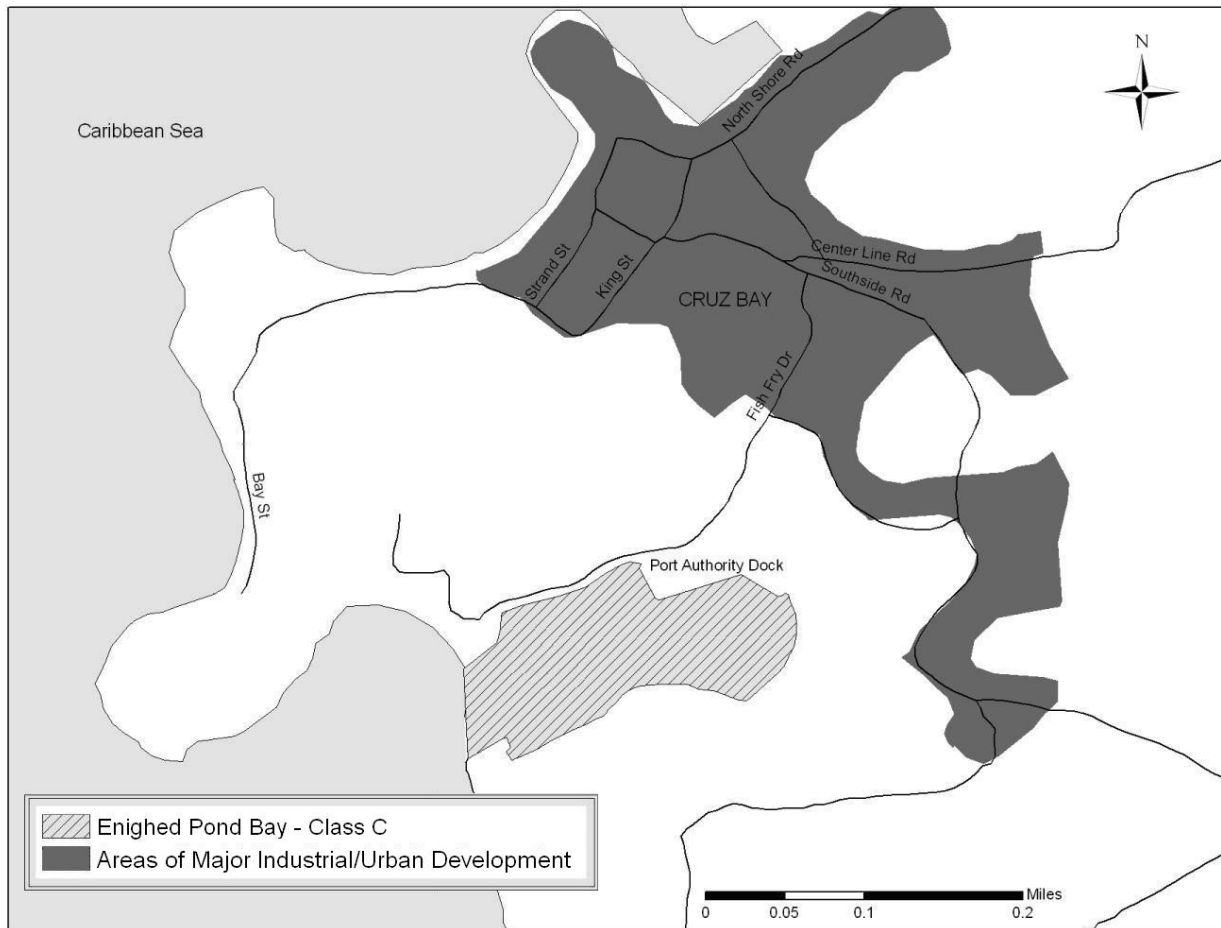
Figure 8. Class C - Limetree Bay Channel and Krause Lagoon Channel, St. Croix



(3) St. John:

(A) Enighed Pond Bay

Figure 9. Class C - Enighed Pond, St. John



§ 186 - 4: Classification of Water Designated Uses

For each of the Territorial Waters classifications, the following specify the designated uses to be protected and the applicable criteria to protect those uses.

A. Class of Inland Waters

Class I Waters: Inland Fresh Waters (Subclass IF Waters), Inland Brackish or Saline Waters (Subclass IBS Waters), and Inland Groundwaters (Subclass IG Waters)

(1) Subclass IF and IBS Waters

(A) **Designated uses:** Maintenance and propagation of desirable species of wildlife and aquatic life (including any threatened or endangered species), primary contact recreation, and for use as a potable water source for those waters being used currently or that could be used in the future as potable water sources.

(B) **Water Quality Criteria:** Waters shall remain in their natural state to the maximum extent possible with an absolute minimum of pollution from any human-caused source. To the extent possible, the ecological character of these areas shall be maintained and protected. The following water quality standards apply:

(i) Narrative Criteria: Criteria listed in § 186-5(a) of this title are applicable.

(ii) Numeric Criteria:

(a) Toxic Pollutants: Numeric criteria listed in § 186-5(b) of this title, including Aquatic Life Criteria in Tables I, Human Health Criteria (for the consumption of Water & Organisms) in Table II and Organoleptic Criteria in Table III, are applicable.

(b) Bacteria:

(1) The 30-day geometric mean for enterococci shall not exceed 30 CFU/100 mL and no more than 10 percent of the samples collected in the same 30 days shall exceed 110 CFU/100 mL.

(2) For waters actually used as sources of potable water (not just having the potential to be used as such), concentration of total coliforms shall be sufficient to

meet applicable USVI Drinking Water Regulations after available treatment.

- (c) Dissolved Oxygen: Not less than 5.5 mg/L except when due to natural forces.

(2) Subclass IG Waters

(A) **Designated uses:** For use as a potable water source.

(B) **Water Quality Criteria:** Waters shall remain in their natural state to the maximum extent possible with an absolute minimum of pollution from any human-caused source. To the extent possible, the ecological character of these areas shall be maintained and protected. The following water quality standards apply:

(i) Narrative Criteria: Criteria listed in § 186-5(a) of this title are applicable.

(ii) Numeric Criteria:

(a) Toxic Pollutants: Numeric criteria listed in § 186-5(b) of this title, including Aquatic Life Criteria in Tables I, Human Health Criteria (for the consumption of Water & Organisms) in Table II and Organoleptic Criteria in Table III, are applicable.

(b) Bacteria: For waters actually used as sources of potable water (not just having the potential to be used as such), concentration of total coliforms shall be sufficient to meet applicable USVI Drinking Water Regulations after available treatment.

B. Class of Marine and Coastal Waters

1. Class A Waters:

(A) **Designated uses:** Maintenance and propagation of desirable species of wildlife and aquatic life (including any threatened or endangered species), primary contact recreation, and for use as potable water sources for those waters being used currently or that could be used in the future as potable water sources. Preservation of the water's unique characteristics that make it a water of exceptional recreational, environmental, or ecological significance (e.g., Natural Barrier Reef at Buck Island, St. Croix and the

Under Water Trail at Trunk Bay, St. John). No new or increased dischargers shall be permitted.

(B) **Water Quality Criteria:** Natural conditions shall not be altered.

(i) Narrative Criteria:

- (a) Criteria listed in § 186-5(a) of this title are applicable.
- (b) Biocriteria: The biological condition shall be similar or equivalent to reference condition established for biological integrity within Class A waters.

(ii) Numeric Criteria: In no case shall Class B water quality standards be exceeded.

- (a) Toxic Pollutants: Numeric criteria listed in § 186-5(b) of this title, including Aquatic Life Criteria in Table I, Human Health Criteria in Table II and Organoleptic Criteria in Table III, are applicable.
- (b) Dissolved oxygen: Not less than 5.5 mg/L except when due to natural forces.
- (c) pH: Natural Conditions of pH must not be extended at any location by more than plus or minus 0.1 pH unit. At no time shall the pH be less than 7.0 or greater than 8.3.
- (d) Temperature:
 - (1) Except by natural conditions, not to exceed 32°C at any time, nor as a result of waste discharge to be greater than 1.0°C above natural conditions. Thermal policies (§ 186-6 of this title) shall also apply.
 - (2) Areas where coral reef ecosystems are located shall not exceed 25-29°C at any time, nor as a result of waste discharge to be greater than 1.0°C above natural. Thermal policies (§ 186-6 of this title) shall also apply.
- (e) Bacteria:
 - (1) The 30-day geometric mean for enterococci shall not exceed 30 CFU/100 mL, and no more than 10 percent of the samples collected in the same 30 days shall exceed 110 CFU/100 mL.

- (2) For waters actually used as sources of potable water sources (not just having the potential to be used as such), concentration of total coliforms shall be sufficient to meet applicable USVI Drinking Water Regulations after available treatment.
- (f) Phosphorus: Phosphorus as total P shall not exceed 50 µg/L in marine and coastal waters.
- (g) Nitrogen: Nitrogen as total N shall not exceed concentration of 207 µg/L in more than 10 percent of samples over a three-year period in estuarine, marine and coastal waters.
- (h) Radioactivity:
 - (1) Gross beta: 1000 picocuries per liter, in the absence of Sr 90 and alpha emitters.
 - (2) Radium-226: 3 picocuries per liter.
 - (3) Strontium-90: 10 picocuries per liter.
- (i) Clarity:
 - (1) A Secchi disc shall be visible at a minimum depth of one (1) meter. For waters where the depth does not exceed one (1) meter, the bottom must be visible.
 - (2) In areas where coral reef ecosystems are located, a secchi disc shall be visible at a minimum depth of fifteen (15) meters. For such waters where the depth does not exceed fifteen (15) meters, the bottom must be visible.
- (j) Turbidity:
 - (1) A maximum nephelometric turbidity unit reading of three (3) shall be permissible.
 - (2) For areas where coral reef ecosystems are located, a maximum nephelometric turbidity unit reading of one (1) shall be permissible.
- (k) In no case shall Class B water quality standards be exceeded.

2. Class B Waters:

- (A) **Designated uses:** Maintenance and propagation of desirable species of wildlife and aquatic life (including any threatened or endangered species), primary contact recreation, and for use as potable water sources for those waters being used currently or that could be used in the future as potable water sources.
- (B) **Water Quality Criteria:**
- (i) Narrative Criteria: Criteria listed in § 186-5(a) of this title are applicable.
- (a) **Biocriteria:** The biological condition shall reflect no more than a minimal departure from reference condition for biological integrity within Class B waters. Class B allows minimal changes in structure of the biotic community and minimal changes in ecosystem function. Virtually all native taxa are maintained with some changes in biomass and/or abundance; ecosystem functions are fully maintained within the range of natural variability.
- (ii) Numerical Criteria: The following criteria apply throughout the waterbody except as modified by a variance issued pursuant to § 186-14 of this title, site-specific criteria issued pursuant to § 186-13 of this title, or a mixing zone specified pursuant to § 186-7 of this title. If a mixing zone has been established, the applicable criteria apply at and beyond the boundary of the applicable mixing zone.
- (a) **Toxic Pollutants:** Numeric criteria listed in § 186-5(b) of this title, including Aquatic Life Criteria in Table I, Human Health Criteria in Table II and Organoleptic Criteria in Table III, are applicable.
- (b) **Dissolved oxygen:** Not less than 5.5 mg/L except when due to natural forces.
- (c) **pH:** Natural Conditions of pH must not be extended at any location by more than plus or minus 0.1 pH unit. At no time shall the pH be less than 7.0 or greater than 8.3.

- (d) Temperature:
 - (1) Except due to natural conditions, not to exceed 32°C at any time, nor as a result of waste discharge to be greater than 1.0°C above natural conditions. Thermal policies (§ 186-6 of this title) shall also apply.
 - (2) Areas where coral reef ecosystems are located shall not exceed 25-29°C at any time, nor as a result of waste discharge to be greater than 1.0°C above natural conditions. Thermal Policies (§ 186-6 of this title) shall also apply.
- (e) Bacteria:
 - (1) The 30-day geometric mean for enterococci shall not exceed 30 CFU/100 mL and no more than 10 percent of the samples collected in the same 30 days shall exceed 110 CFU/100 mL.
 - (2) For waters actually used as sources of potable water (not just having the potential to be used as such), concentration of total coliforms shall be sufficient to meet applicable USVI Drinking Water Regulations after available treatment.
- (f) Phosphorus: Phosphorus as total P shall not exceed 50 µg/L in marine and coastal waters.
- (g) Nitrogen: Nitrogen as total N shall not exceed concentration of 207 µg/L in more than 10 percent of samples over a three-year period in estuarine, marine and coastal waters.
- (h) Radioactivity:
 - (1) Gross beta: 1000 picocuries per liter, in the absence of Sr 90 and alpha emitters.
 - (2) Radium-226: 3 picocuries per liter.
 - (3) Strontium-90: 10 picocuries per liter.
- (i) Clarity:

- (1) A Secchi disc shall be visible at a minimum depth of one (1) meter. For waters where the depth does not exceed one (1) meter, the bottom must be visible
 - (2) In areas where coral reef ecosystems are located, a secchi disc shall be visible at a minimum depth of fifteen (15) meters. For such waters where the depth does not exceed fifteen (15) meters, the bottom must be visible.
- (j) Turbidity: The following turbidity criteria are applicable to all Class B waters, except for those Class B Waters listed below in § 186-4(b)(2)(B)(ii)(j)(3).
- (1) A maximum nephelometric turbidity unit reading of three (3) shall be permissible.
 - (2) For areas where coral reef ecosystems are located, a maximum nephelometric turbidity unit reading of one (1) shall be permissible.
 - (3) The following Class B waters, based on § 186-11 (Natural Conditions) of this title, are not covered by the narrative turbidity criteria found in § 186-5(a)(1)(C) of this title and therefore shall be also excluded from the requirements of the immediately preceding (j)(1) and (2) of this subclause:
 - (i) St. Thomas Waters - Mandahl Bay (Marina), Vessup Bay, Water Bay, Benner Bay, and the Mangrove Lagoon.
 - (ii) St. Croix Waters - Carlton Beach, Good Hope Beach, Salt River Lagoon (Marina), Salt River Lagoon (Sugar Bay), Estate Anguilla Beach, Buccaneer Beach, Tamarind Reef Lagoon, Green Cay Beach and Enfield Green Beach.

3. Class C Waters

- (A) **Designated uses:** Maintenance and propagation of desirable species of wildlife and aquatic life (including any threatened or endangered species), primary contact recreation, industrial water supplies, shipping, navigation

and for use as potable water sources for those waters being used currently or that could be used in the future as potable water sources.

(B) Water Quality Criteria:

- (i) Narrative Criteria: Criteria listed in § 186-5(a) are applicable.
 - (a) **Biocriteria**: Class C allows for evident changes in structure of the biotic community and minimal changes in ecosystem function. Evident changes in structure due to loss of some rare native taxa; shifts in relative abundance of taxa (community structure) are allowed but sensitive-ubiquitous taxa remain common and abundant; ecosystem functions are fully maintained through redundant attributes of the system. Ecosystem function shall be similar or equivalent to reference condition established at the least disturbed reference site(s) within Class C waters.
- (ii) Numerical Criteria: The following criteria apply throughout the waterbody except as modified by a variance issued pursuant to § 186-14 of this title, site specific criteria issued pursuant to § 186-13 of this title, or a mixing zone specified pursuant to § 186-7 of this title. If a mixing zone has been established, the applicable criteria apply at and beyond the boundary of the applicable mixing zone.
 - (a) **Toxic Pollutants**: Numeric criteria listed in § 186-5(b) of this title, including Aquatic Life Criteria in Table I, Human Health Criteria in Table II and Organoleptic Criteria in Table III, are applicable.
 - (b) **Dissolved Oxygen**: Not less than 5.0 mg/L except when due to natural forces.
 - (c) **pH**: Natural Conditions of pH must not be extended at any location by more than plus or minus 0.1 pH unit. At no time shall the pH be less than 6.7 or greater than 8.5.
 - (d) **Temperature**:
 - (1) Except due to natural conditions, not to exceed 32°C at any time, nor as a result of waste discharge to be greater than 1.0°C above natural conditions. Thermal policies (§ 186-6 of this title) shall also apply.

- (2) Areas where coral reef ecosystems are located shall not exceed 25-29°C at any time, nor as a result of waste discharge to be greater than 1.0°C above natural conditions. Thermal Policies (§ 186-6 of this title) shall also apply.
- (e) Bacteria:
- (1) The 30-day geometric mean for enterococci shall not exceed 30 CFU/100 mL, and no more than 10 percent of the samples collected in the same 30 days shall exceed 110 CFU/100 mL.
 - (2) For waters actually used as sources of potable water (not just having the potential to be used as such), concentration of total coliforms shall be sufficient to meet applicable USVI Drinking Water Regulations after available treatment.
- (f) Phosphorus: Phosphorus as total P shall not exceed 50 µg/L in marine and coastal waters.
- (g) Nitrogen: Nitrogen as total N shall not exceed 207 µg/L in more than 10 percent of samples over a three-year period in estuarine, marine and coastal waters.
- (h) Radioactivity:
- (1) Gross beta: 1000 picocuries per liter, in the absence of Sr 90 and alpha emitters.
 - (2) Radium-226: 3 picocuries per liter.
 - (3) Strontium-90: 10 picocuries per liter.
- (i) Clarity:
- (1) A Secchi disc shall be visible at a minimum depth of one (1) meter. For waters where the depth does not exceed one (1) meter, the bottom must be visible.
 - (2) In coral reef ecosystems areas, a secchi disc shall be visible at a minimum depth of fifteen (15) meters. For such waters where the depth does not exceed fifteen (15) meters, the bottom must be visible.

- (i) Turbidity:
 - (1) A maximum nephelometric turbidity unit reading of three (3) shall be permissible.
 - (2) In coral reef ecosystems areas, a maximum nephelometric turbidity unit reading of one (1) shall be permissible.

§ 186 - 5: General Water Quality Criteria

The following are the narrative water quality criteria, numeric water quality criteria for toxic pollutants and downstream protection requirements applicable to all classes of all Territorial Waters – Inland, Marine and Coastal Waters (unless otherwise stated).

A. Narrative Water Quality Criteria:

All Territorial Waters shall meet generally accepted aesthetic qualifications and shall be capable of supporting diversified aquatic life. Refer to § 186-3 above for a complete list of these waters.

- (1) **All Territorial Waters shall be free of substances attributable to municipal, industrial, or other discharges or wastes as follows:**
 - (A) Deposits - materials that will settle to form objectionable deposits,
 - (B) Matter - floating debris, oils, scum, and other nuisance matter,
 - (C) Turbidity - substances producing objectionable turbidity, such as sediment, floating debris, scum and other floating materials attributable to discharges in amounts sufficient to be unsightly, deleterious, create a nuisance, or be detrimental to the existing or designated uses of the waterbody,
 - (D) Materials - including radionuclides, in concentrations or combinations which are toxic, or which produce undesirable physiological responses in human, fish and other animal life, and plants,
 - (E) Color - virtually free from substances producing objectionable color for aesthetic purposes,
 - (F) Suspended, colloidal, or settleable solids - from wastewater sources which

will cause disposition or be detrimental to existing or designated uses,

- (G) Oil and floating substances - residue attributable to wastewater or visible oil film or globules of grease,
 - (H) Taste and odor producing substances - in amounts that will interfere with the use for primary contact recreation, potable water supply or will render any undesirable taste or odor to edible aquatic life, except where these substances are primarily the result of natural conditions, states or forces (e.g., decomposition) rather than anthropogenic factors or processes,
 - (I) Substances and/or conditions - in concentrations which produce undesirable aquatic life,
 - (J) Nuisance species - Exotic or aquatic, and
- (2) **Downstream Protection** – All Territorial waters shall attain and maintain a level of water quality and quantity (except natural changes to water flow in intermittent ghuts) that provides for the protection, attainment and maintenance of the water quality standards of downstream waters, as well as the velocity and volume properties of natural flow to support aquatic life.
- (3) **Biocriteria:** These narrative biological criteria shall apply to Class A, B, and C waters, wetlands, estuarine, mangrove, seagrass, coral reef and other marine ecosystems based upon their respective reference conditions and metrics. The Territory shall preserve, protect, and restore these water resources to their most natural condition. The condition of these waterbodies shall be determined from measures of physical, chemical, and biological characteristics of each waterbody class, according to its designated use. As a component of these measures, the Territory may consider the biological integrity of the benthic communities living within waters. These communities shall be assessed by comparison to reference conditions with similar abiotic and biotic environmental settings that represent the optimal or least disturbed condition for that system. Such reference conditions shall be those observed to support the greatest community diversity, and abundance of aquatic life as is expected to be or has been historically found in natural settings essentially undisturbed or minimally disturbed by human impacts, development, or discharges. This condition shall be determined by consistent sampling and reliable measures of selected indicator communities of flora and/or fauna and may be used in conjunction with other measures of water quality.

In utilizing the following criteria, the Virgin Islands shall preserve, protect, and restore Territorial Waters to their most natural condition.

- (A) Determining Conditions
 - (i) The condition of these waterbodies shall be determined from

measures of physical, chemical, and biological characteristics of each waterbody class, according to its designated use.

- (ii) As a component of these measures, the Virgin Islands may consider the biological integrity of the benthic communities living within waters. These communities shall be assessed by comparison to reference conditions(s) with similar abiotic and biotic environmental settings that represent the optimal or least disturbed condition for that system. Such reference conditions shall be those observed to support the greatest community diversity, and abundance of aquatic life as is expected to be or has been historically found in natural settings essentially undisturbed or minimally disturbed by human impacts, development, or discharges. This condition shall be determined by consistent sampling and reliable measures of selected indicator communities of flora and/or fauna and may be used in conjunction with other measures of water quality.

- (B) Sufficient Quality: Waters shall be of a sufficient quality to support a resident biological community defined by metrics based upon reference conditions.

B. Numeric Criteria:

Numeric Water Quality Criteria for Toxic Pollutants - The applicable numeric water quality criteria for the toxic pollutants to protect the designated uses of the Territorial Waters shall be the United States Environmental Protection Agency's (EPA) national recommended Clean Water Act section 304(a) water quality criteria (<http://www.epa.gov/wqc/national-recommended-water-quality-criteria>, accessed on August 18, 2022, EPA's Office of Water, Office of Science and Technology (4304T), adopted for the protection of freshwater and saltwater aquatic life from acute (criterion maximum concentration) and chronic (criterion continuous concentration) effects; and, the protection of human health.

1. Aquatic Life-Based Criteria

The applicable criteria to protect aquatic life are listed in Table I below (and accompanying footnotes).

Table I. Aquatic Life Criteria

		Freshwater		Saltwater	
		<i>(Apply to IF & IG waters)</i>		<i>(Apply to IBS, A, B, and C waters)</i>	
Pollutant	CAS Number	CMC	CCC	CMC	CCC
		(acute)	(chronic)	(acute)	(chronic)
		(A1)	(A2)	(A1)	(A2)
		(µg/L)	(µg/L)	(µg/L)	(µg/L)
Acrolein	107028	3	3		
Aldrin (H)	309002	3		1.3	
Alkalinity (I)	—		20000		
alpha-Endosulfan (H)	959988	0.22	0.056	0.034	0.0087
Aluminum (L)	7429905	Criteria are pH, hardness, and DOC Dependent (L1-L14).			
Ammonia (A.3)	7664417	Criteria are pH, Temperature and Life-stage Dependent (B1)		Criteria are pH and Temperature Dependent (B2)	
Arsenic (C)	7440382	340	150	69	36
beta-Endosulfan (H)	33213659	0.22	0.056	0.034	0.0087
Carbaryl	63252	2.1	2.1	1.6	
Cadmium (C) (D) (J)	7440439	1.8	0.72	33	7.9
Chlordane (H)	57749	2.4	0.0043	0.09	0.004
Chloride	16887006	860000	230000		
Chlorine	7782505	19	11	13	7.5
Chloropyrifos	2921882	0.083	0.041	0.011	0.0056
Chromium (III) (C) (D) (J)	16065831	570	74		
Chromium (VI) (C)	18540299	16	11	1,100	50
Copper (C)	7440508	Freshwater criteria calculated using the Biotic Ligand Model (M)		4.8	3.1
Cyanide (F)	57125	22	5.2	1	1
Demeton	8065483		0.1		0.1
Diazinon	333415	0.17	0.17	0.82	0.82
Dieldrin	60571	0.24	0.056	0.71	0.0019
Endrin	72208	0.086	0.036	0.037	0.0023
gamma-BHC (Lindane)	58899	0.95		0.16	

		Freshwater		Saltwater	
		<i>(Apply to IF & IG waters)</i>		<i>(Apply to IBS, A, B, and C waters)</i>	
Pollutant	CAS Number	CMC	CCC	CMC	CCC
		(acute)	(chronic)	(acute)	(chronic)
		(A1)	(A2)	(A1)	(A2)
		(µg/L)	(µg/L)	(µg/L)	(µg/L)
Gases, Total Dissolved	—	To protect freshwater and marine aquatic life, the total dissolved gas concentrations in water should not exceed 100 percent of the saturation value for gases at the existing atmospheric and hydrostatic pressures.			
Guthion (I)	86500		0.01		0.01
Heptachlor (H)	76448	0.52	0.0038	0.053	0.0036
Heptachlor Epoxide (H)	1024573	0.52	0.0038	0.053	0.0036
Iron (I)	7439896		1000		
Lead (C) (D) (J)	7439921	65	2.5	210	8.1
Malathion (I)	121755		0.1		0.1
Mercury	7439976	1.4	0.77	1.8	0.94
Methylmercury (C)	22967926				
Methoxychlor (I)	72435		0.03		0.03
Mirex (I)	2385855		0.001		0.001
Nickel (C) (D) (J)	7440020	470	52	74	8.2
Nonylphenol	84852153	28	6.6	7	1.7
Parathion	56382	0.065	0.013		
Pentachlorophenol	87865	19	15	13	7.9
Polychlorinated Biphenyls (PCBs) (E)			0.014		0.03
Selenium (C)	7782492	Freshwater criteria applied as a four-part criterion (K)		290	71
Silver (C) (D)	7440224	3.2		1.9	
Sulfide-Hydrogen Sulfide	7783064		2		2
Toxaphene	8001352	0.73	0.0002	0.21	0.0002
Tributyltin (TBT)	—	0.46	0.072	0.42	0.0074
Zinc (C) (D)	7440666	120	120	90	81
4,4'-DDT (G)	50293	1.1	0.001	0.13	0.001

Table I Footnotes:

A - Frequency and Duration of Criteria Exceedance:

A1. Acute aquatic life protection criteria are expressed as one-hour average not to be exceeded more than once over a three-year period.

A2. Chronic aquatic life protection criteria are expressed as four-day average not to be exceeded more than once over a three-year period.

A3. For ammonia, the highest four-day average within the 30-day period should not exceed 2.5 times the CCC.

B – Ammonia criteria calculations:

B1. Freshwater Ammonia Criteria (for Class IF waters):

i. Acute Criterion

The one-hour average concentration of total ammonia nitrogen (in mg TAN/L) is not to exceed, more than once every three years on the average, the CMC (acute criterion magnitude) calculated using the following equation:

$$CMC = MIN \left(\left(\frac{0.275}{1 + 10^{7.204-pH}} + \frac{39.0}{1 + 10^{pH-7.204}} \right), \left(0.7249 \times \left(\frac{0.0114}{1 + 10^{7.204-pH}} + \frac{1.6181}{1 + 10^{pH-7.204}} \right) \times (23.12 \times 10^{0.036 \times (20-T)}) \right) \right)$$

ii. Chronic Criterion Calculations

The thirty-day rolling average concentration of total ammonia nitrogen (in mg TAN/L) is not to exceed, more than once every three years on the average, the chronic criterion magnitude (CCC) calculated using the following equation:

$$CCC = 0.8876 \times \left(\frac{0.0278}{1 + 10^{7.688-pH}} + \frac{1.1994}{1 + 10^{pH-7.688}} \right) \times (2.126 \times 10^{0.028 \times (20-MAX(T,7))})$$

In addition, the highest four-day average within the 30-day averaging period should not be more than 2.5 times the CCC (e.g., 2.5 x 1.9 mg TAN/L at pH 7 and 20°C or 4.8 mg TAN/L) more than once in three years on average.

B2. Saltwater Ammonia Criteria (for Class A, B, C, and IBS Waters):

Concentrations based on total ammonia for the pH range of 7.0 to 9.0, temperature range of 0 °C to 35 °C, and salinities of 10, 20 and 30 g/kg are provided in Tables B-1 and B-2 below:

Table B-1. Water quality criteria for saltwater aquatic life based on total ammonia (mg/L) – Criteria Maximum Concentrations.

Temperature (degrees centigrade)						
	10	15	20	25	30	35
pH	Salinity = 10 g/kg					
7.0	131	92	62	44	29	21
7.2	83	58	40	27	19	13
7.4	52	35	25	17	12	8.3
7.6	33	23	16	11	7.7	5.6
7.8	21	15	10	7.1	5.0	3.5
8.0	13	9.4	6.4	4.6	3.1	2.3
8.2	8.5	5.8	4.2	2.9	2.1	1.5
8.4	5.4	3.7	2.7	1.9	1.4	1.0
8.6	3.5	2.5	1.8	1.3	0.98	0.75
8.8	2.3	1.7	1.2	0.92	0.71	0.56
9.0	1.5	1.1	0.85	0.67	0.52	0.44
pH	Salinity = 20 g/kg					
7.0	137	96	64	44	31	21
7.2	87	60	42	29	20	14
7.4	54	37	27	18	12	8.7
7.6	35	23	17	11	7.9	5.6
7.8	23	15	11	7.5	5.2	3.5
8.0	14	9.8	6.7	4.8	3.3	2.3
8.2	8.9	6.2	4.4	3.1	2.1	1.6
8.4	5.6	4.0	2.9	2.0	1.5	1.1
8.6	3.7	2.7	1.9	1.4	1.0	0.77
8.8	2.5	1.7	1.3	0.94	0.73	0.56
9.0	1.6	1.2	0.87	0.69	0.54	0.44
pH	Salinity = 30 g/kg					
7.0	148	102	71	48	33	23
7.2	94	64	44	31	21	15
7.4	58	40	27	19	13	9.4
7.6	37	25	21	12	8.5	6.0
7.8	23	16	11	7.9	5.4	3.7
8.0	15	10	7.3	5.0	3.5	2.5
8.2	9.6	6.7	4.6	3.3	2.3	1.7
8.4	6.0	4.2	2.9	2.1	1.6	1.1
8.6	4.0	2.7	2.0	1.4	1.1	0.81
8.8	2.5	1.8	1.3	1.0	0.75	0.58

9.0	1.7	1.2	0.94	0.71	0.56	0.46
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Table B-2. Water quality criteria for saltwater aquatic life based on total ammonia (mg/L) – Criteria Continuous Concentrations.

Temperature (degrees centigrade)						
	10	15	20	25	30	35
pH	Salinity = 10 g/kg					
7.0	20	14	9.4	6.6	4.4	3.1
7.2	12	8.7	5.9	4.1	2.8	2.0
7.4	7.8	5.3	3.7	2.6	1.8	1.2
7.6	5.0	3.4	2.4	1.7	1.2	0.84
7.8	3.1	2.2	1.5	1.1	0.75	0.53
8.0	2.0	1.4	0.97	0.69	0.47	0.34
8.2	1.3	0.87	0.62	0.44	0.31	0.23
8.4	0.81	0.56	0.41	0.29	0.21	0.16
8.6	0.53	0.37	0.27	0.2	0.15	0.11
8.8	0.34	0.25	0.18	0.14	0.11	0.08
9.0	0.23	0.17	0.13	0.1	0.08	0.07
pH	Salinity = 20 g/kg					
7.0	21	14	9.7	6.6	4.7	3.1
7.2	13	9.0	6.2	4.4	3.0	2.1
7.4	8.1	5.6	4.1	2.7	1.9	1.3
7.6	5.3	3.4	2.5	1.7	1.2	0.84
7.8	3.4	2.3	1.6	1.1	0.78	0.53

8.0	2.1	1.5	1.0	0.72	0.5	0.34
8.2	1.3	0.94	0.66	0.47	0.31	0.24
8.4	0.84	0.59	0.44	0.3	0.22	0.16
8.6	0.56	0.41	0.28	0.2	0.15	0.12
8.8	0.37	0.26	0.19	0.14	0.11	0.08
9.0	0.24	0.18	0.13	0.1	0.08	0.07
pH	Salinity = 30 g/kg					
7.0	22	15	11	7.2	5.0	3.4
7.2	14	9.7	6.6	4.7	3.1	2.2
7.4	8.7	5.9	4.1	2.9	2.0	1.4
7.6	5.6	3.7	3.1	1.8	1.3	0.9
7.8	3.4	2.4	1.7	1.2	0.81	0.56
8.0	2.2	1.6	1.1	0.75	0.53	0.37
8.2	1.4	1.0	0.69	0.5	0.34	0.25
8.4	0.9	0.62	0.44	0.31	0.23	0.17
8.6	0.59	0.41	0.3	0.22	0.16	0.12
8.8	0.37	0.27	0.2	0.15	0.11	0.09
9.0	0.26	0.19	0.14	0.11	0.08	0.07

C - Freshwater and saltwater criteria for metals are expressed in terms of the dissolved metal in the water column.

Table C. Conversion Factors for Dissolved Metals

Metal	Conversion Factor			
	freshwater CMC	freshwater CCC	saltwater CMC	saltwater CCC
Arsenic	1.000	1.000	1.000	1.000
Cadmium	$1.136672 - [(\ln(\text{hardness}))(0.041838)]$	$1.101672 - [(\ln(\text{hardness}))(0.041838)]$	0.994	0.994
Chromium III	0.316	0.860	—	—
Chromium VI	0.982	0.962	0.993	0.993
Copper	0.960	0.960	0.83	0.83
Lead	$1.46203 - [(\ln(\text{hardness}))(0.145712)]$	$1.46203 - [(\ln(\text{hardness}))(0.145712)]$	0.951	0.951
Mercury	0.85	0.85	0.85	0.85
Nickel	0.998	0.997	0.990	0.990
Selenium	—	—	0.998	0.998
Silver	0.85	—	0.85	—
Zinc	0.978	0.986	0.946	0.946

D - Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent are listed in Table D below:

Chemical	m _A	b _A	m _C	b _C	Freshwater Conversion Factors (CF)	
					CMC	CCC
Cadmium	0.9789	-3.866	0.7977	-3.909	$1.136672 - [(\ln(\text{hardness}))(0.041838)]$	$1.101672 - [(\ln(\text{hardness}))(0.041838)]$
Chromium III	0.8190	3.7256	0.8190	0.6848	0.316	0.8600
Lead	1.273	-1.460	1.273	-4.705	$1.46203 - [(\ln(\text{hardness}))(0.145712)]$	$1.46203 - [(\ln(\text{hardness}))(0.145712)]$
Nickel	0.8460	2.255	0.8460	0.0584	0.998	0.997
Silver	1.72	-6.59	—	—	0.85	—
Zinc	0.8473	0.884	0.8473	0.884	0.978	0.986

Hardness-dependent metals' criteria may be calculated from the following:

$$\text{CMC (dissolved)} = \exp\{m_A [\ln(\text{hardness})] + b_A\} \text{ (CF)}$$

$$\text{CCC (dissolved)} = \exp\{m_C [\ln(\text{hardness})] + b_C\} \text{ (CF)}$$

E - This criterion applies to total PCBs, (e.g., the sum of all congeners or all isomer or homolog or Aroclor analyses.)

F - This recommended water quality criterion is expressed as µg free cyanide (as CN)/L.

G - This criterion applies to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).

H - These criteria are based on the 1980 criteria which used different Minimum Data Requirements and derivation procedures from the 1985 Guidelines. If evaluation is to be done using an averaging period, the acute criteria values given should be divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.

I - The CCC of 20mg/L is a minimum value except where alkalinity is naturally lower, in which case the criterion cannot be lower than 25% of the natural level.

J - The freshwater criterion for this metal is expressed as a function of hardness (mg/L). The value given here corresponds to a hardness of 100 mg/L.

K - The freshwater criterion for Selenium is summarized in the table K below:

Media Type	Fish Tissue ¹		Water Column ⁴	
	Egg/Ovary ²	Fish Whole Body or Muscle ³	Monthly Average Exposure	Intermittent Exposure ⁵
Magnitude	15.1 mg/kg dw	8.5 mg/kg dw whole body or 11.3 mg/kg dw muscle (skinless, boneless filet)	1.5 µg/L in lentic aquatic systems 3.1 µg/L in lotic aquatic systems	$WQC_{int} = \frac{WQC_{30-day} - C_{bkgnd} (1 - f_{int})}{f_{int}}$
Duration	Instantaneous measurement ⁶	Instantaneous measurement ⁶	30 days	Number of days/month with an elevated concentration
Frequency	Not to be exceeded	Not to be exceeded	Not more than once in three years on average	Not more than once in three years on average

Footnotes:

1- Fish tissue elements are expressed as steady-state.

2- Egg/Ovary supersedes any whole-body, muscle, or water column element when fish egg/ovary concentrations are measured.

3- Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured.

4- Water column values are based on dissolved total selenium in water and are derived from fish tissue values via bioaccumulation modeling. Water column values are the applicable criterion element in the absence of steady-state condition fish tissue data.

5- Where $WQC_{30\text{-day}}$ is the water column monthly element, for either a lentic or lotic waters; C_{bkgmd} is the average background selenium concentration, and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value $^30.033$ (with 0.033 corresponding to 1 day).

6- Fish tissue data provide instantaneous point measurements that reflect integrative accumulation of selenium over time and space in fish population(s) at a given site.

L . Freshwater acute and chronic criteria for aluminum are listed in Tables L-1 to L-14 below.

Table L-1. Freshwater CMC at DOC of 0.1 mg/L (with various Total Hardness and pH levels)

Total Hardness	Acute Criterion (CMC) (ug/L total aluminum) (DOC=0.1 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	51	120	210	290	310
25	84	180	290	370	380
50	120	240	380	440	430
75	150	290	440	480	470
100	170	320	490	520	500
150	200	380	560	580	540
200	230	420	610	620	570
250	250	460	660	650	600
300	270	490	700	680	620
350	290	510	730	710	640
400	310	540	760	730	660
430	320	550	780	750	670

Table L-2. Freshwater CCC at DOC of 0.1 mg/L (with various Total Hardness and pH levels)

Total Hardness	Chronic Criterion (CCC) (ug/L total aluminum) (DOC=0.1 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	33	77	130	180	200
25	48	120	180	230	240
50	63	140	240	270	270
75	71	160	290	300	290
100	77	180	320	330	310
150	87	190	370	360	340
200	94	200	400	390	360
250	100	210	420	410	380
300	100	220	430	430	390

350	110	220	440	440	400
400	110	230	450	460	410
430	120	230	450	470	420

Table L-3. Freshwater CMC at DOC of 0.5 mg/L (with various Total Hardness and pH levels)

Total Hardness	Acute Criterion (CMC) (ug/L total aluminum) (DOC=0.5 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	130	300	550	770	820
25	210	430	750	960	980
50	300	560	920	1,100	1,100
75	360	650	1,000	1,300	1,200
100	410	720	1,100	1,400	1,300
150	480	820	1,200	1,500	1,400
200	550	890	1,300	1,600	1,500
250	600	950	1,400	1,600	1,600
300	650	1,000	1,500	1,700	1,600
350	700	1,100	1,500	1,800	1,700
400	740	1,100	1,500	1,800	1,700
430	770	1,100	1,600	1,800	1,700

Table L-4. Freshwater CCC at DOC of 0.5 mg/L (with various Total Hardness and pH levels)

Total Hardness	Chronic Criterion (CCC) (ug/L total aluminum) (DOC=0.5 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	78	180	370	480	510
25	110	230	470	600	620
50	140	270	520	740	710
75	160	290	560	840	770
100	170	300	580	910	820
150	190	320	600	970	910
200	200	340	610	990	990
250	220	350	610	1,000	1,000
300	230	360	620	1,000	1,100
350	240	370	620	1,000	1,100
400	250	370	630	1,000	1,100
430	250	380	630	1,000	1,100

Table L-5. Freshwater CMC at DOC of 1.0 mg/L (with various Total Hardness and pH levels)

Total Hardness	Acute Criterion (CMC) (ug/L total aluminum) (DOC=1.0 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	190	430	810	1,200	1,200
25	310	620	1,100	1,400	1,500
50	430	790	1,300	1,700	1,700
75	520	900	1,400	1,800	1,800
100	590	980	1,500	1,900	1,900

150	700	1,100	1,600	2,100	2,100
200	790	1,200	1,700	2,200	2,200
250	870	1,300	1,800	2,200	2,200
300	950	1,400	1,900	2,300	2,300
350	1,000	1,500	1,900	2,300	2,300
400	1,100	1,600	2,000	2,400	2,400
430	1,100	1,600	2,000	2,400	2,400

Table L-6. Freshwater CCC at DOC of 1.0 mg/L (with various Total Hardness and pH levels)

Total Hardness	Chronic Criterion (CCC) (ug/L total aluminum) (DOC=1.0 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	110	240	500	730	770
25	160	300	580	970	930
50	200	340	620	1,100	1,100
75	220	360	640	1,100	1,200
100	240	380	650	1,100	1,300
150	260	400	660	1,100	1,300
200	290	420	670	1,100	1,300
250	300	430	670	1,100	1,300
300	320	440	680	1,100	1,300
350	330	450	680	1,100	1,300
400	340	470	680	1,100	1,300
430	350	470	680	1,100	1,300

Table L-7. Freshwater CMC at DOC of 2.5 mg/L (with various Total Hardness and pH levels)

Total Hardness	Acute Criterion (CMC) (ug/L total aluminum) (DOC=2.5 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	330	7008.3	1,300	1,900	2,100
25	520	960	1,600	2,300	2,500
50	720	1,200	1,800	2,500	2,700
75	850	1,300	2,000	2,700	2,800
100	970	1,500	2,100	2,700	2,900
150	1,100	1,700	2,300	2,900	3,000
200	1,300	1,900	2,500	2,900	3,100
250	1,500	2,100	2,600	3,000	3,100
300	1,600	2,200	2,700	3,000	3,100
350	1,700	2,300	2,800	3,100	3,200
400	1,800	2,400	2,900	3,100	3,200
430	1,900	2,400	2,900	3,100	3,200

Table L-8. Freshwater CCC at DOC of 2.5 mg/L (with various Total Hardness and pH levels)

Total Hardness	Chronic Criterion (CCC) (ug/L total aluminum) (DOC=2.5 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	180	340	650	1,200	1,400

25	250	400	690	1,200	1,500
50	310	450	710	1,200	1,500
75	340	480	720	1,200	1,500
100	370	500	730	1,200	1,400
150	410	530	740	1,100	1,400
200	440	560	750	1,100	1,300
250	470	580	760	1,100	1,300
300	490	600	770	1,100	1,300
350	520	610	780	1,100	1,200
400	540	630	780	1,000	1,200
430	550	640	790	1,000	1,200

Table L-9. Freshwater CMC at DOC of 5.0 mg/L (with various Total Hardness and pH levels)

Total Hardness	Acute Criterion (CMC) (ug/L total aluminum) (DOC=5.0 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	490	970	1,700	2,600	3,000
25	760	1,300	2,000	3,000	3,300
50	1,000	1,600	2,400	3,100	3,400
75	1,200	1,900	2,600	3,200	3,500
100	1,400	2,100	2,800	3,300	3,500
150	1,700	2,400	3,000	3,500	3,600
200	1,900	2,600	3,200	3,600	3,700
250	2,100	2,800	3,400	3,700	3,700
300	2,300	3,000	3,500	3,800	3,800
350	2,500	3,100	3,600	3,800	3,800
400	2,600	3,200	3,700	3,900	3,800
430	2,700	3,300	3,700	3,900	3,900

Table L-10. Freshwater CCC at DOC of 5.0 mg/L (with various Total Hardness and pH levels)

Total Hardness	Chronic Criterion (CCC) (ug/L total aluminum) (DOC=5.0 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	260	430	740	1,300	1,700
25	350	500	760	1,300	1,600
50	430	550	780	1,200	1,500
75	480	590	790	1,200	1,400
100	520	620	810	1,100	1,300
150	570	660	830	1,100	1,300
200	620	700	840	1,100	1,200
250	660	720	850	1,100	1,200
300	690	750	860	1,100	1,200
350	730	770	860	1,000	1,100
400	760	780	870	1,000	1,100
430	770	790	870	1,000	1,100

Table L-11. Freshwater CMC at DOC of 10.0 mg/L (with various Total Hardness and pH levels)

Total Hardness	Acute Criterion (CMC) (ug/L total aluminum) (DOC=10.0 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	720	1,300	2,200	3,300	3,800
25	1,100	1,800	2,700	3,600	4,000
50	1,500	2,300	3,100	3,900	4,100
75	1,800	2,600	3,400	4,100	4,200
100	2,000	2,900	3,600	4,200	4,300
150	2,500	3,300	3,900	4,300	4,400
200	2,800	3,600	4,100	4,400	4,500
250	3,100	3,800	4,200	4,500	4,500
300	3,400	4,000	4,300	4,500	4,500
350	3,600	4,200	4,400	4,500	4,500
400	3,900	4,300	4,500	4,600	4,500
430	4,000	4,400	4,500	4,600	4,500

Table L-12. Freshwater CCC at DOC of 10.0 mg/L (with various Total Hardness and pH levels)

Total Hardness	Chronic Criterion (CCC) (ug/L total aluminum) (DOC=10.0 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	370	540	810	1,300	1,700
25	490	610	830	1,200	1,500
50	600	690	870	1,200	1,300
75	670	740	890	1,100	1,300
100	720	780	900	1,100	1,200
150	800	830	910	1,100	1,200
200	860	870	920	1,100	1,200
250	930	900	930	1,100	1,100
300	980	920	930	1,000	1,100
350	1,000	950	950	1,000	1,100
400	1,100	960	970	1,000	1,100
430	1,100	970	970	1,000	1,100

Table L-13. Freshwater CMC at DOC of 12.0 mg/L (with various Total Hardness and pH levels)

Total Hardness	Acute Criterion (CMC) (ug/L total aluminum) (DOC=12.0 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	800	1,500	2,300	3,500	4,000
25	1,200	2,000	2,900	3,800	4,100
50	1,700	2,500	3,400	4,100	4,400
75	2,000	2,900	3,600	4,300	4,500
100	2,200	3,100	3,800	4,400	4,500
150	2,700	3,500	4,100	4,500	4,600
200	3,100	3,900	4,300	4,600	4,600
250	3,500	4,100	4,400	4,600	4,700
300	3,700	4,300	4,500	4,700	4,700

350	4,000	4,500	4,600	4,700	4,700
400	4,300	4,700	4,700	4,700	4,700
430	4,400	4,800	4,800	4,700	4,700

Table L-14. Freshwater CCC at DOC of 12.0 mg/L (with various Total Hardness and pH levels)

Total Hardness	Chronic Criterion (CCC) (ug/L total aluminum) (DOC=12.0 mg/L)				
	pH 6.5	pH 7.0	pH 7.5	pH 8.0	pH 8.2
10	410	570	820	1,300	1,600
25	540	650	860	1,200	1,400
50	650	730	890	1,200	1,300
75	730	780	910	1,100	1,300
100	780	820	920	1,100	1,200
150	870	880	940	1,100	1,200
200	950	920	940	1,100	1,100
250	1,000	950	950	1,000	1,100
300	1,100	980	980	1,000	1,100
350	1,100	1,000	990	1,000	1,100
400	1,200	1,000	1,000	1,000	1,000
430	1,200	1,000	1,000	1,000	1,000

M – as described in EPA’s Aquatic Life Ambient Freshwater Quality Criteria – Copper 2007

Revision (EPA-822-R-07-001).

2. Human Health-Based Criteria

The applicable criteria to protect Human Health are listed in Table II below (and accompanying footnotes).

Table II. Human Health Criteria

		Human Health for the consumption of	
		Water+Organism (A)	Organism Only (A)
		(µg/L)	(µg/L)
Pollutant	CAS Number	<i>(Only applicable to waters designated and currently being used as a potable water source”)</i>	<i>(Apply to all waters except ones designated and currently being used as potable water source”)</i>
Acenaphthene (E)	83329	70	90
Acrolein	107028	3	400
Acrylonitrile (C)	107131	0.061	7
Aldrin (C)	309002	0.00000077	0.00000077
alpha-BHC	319846	0.0036	0.00039
alpha-Endosulfan	959988	20	30
Anthracene	120127	300	400
Antimony (B) (D)	7440360	5.6	640
Arsenic (C) (D)	7440382	0.018	0.14
Asbestos (D)	1332214	7 million fibers/L	-
Barium (D)	7440393	1,000	-
Benzene (C) (D)	71432	0.58-2.1	16-58
Benzidine (C)	92875	0.00014	0.011
Benzo(a) Anthracene (C)	56553	0.0012	0.0013
Benzo(a) Pyrene (C) (D)	50328	0.00012	0.00013
Benzo(b) Fluoranthene (C)	205992	0.0012	0.0013
Benzo(k) Fluoranthene (C)	207089	0.012	0.013
beta-BHC	319857	0.008	0.014
beta-Endosulfan	33213659	20	40
Bis(2-Chloroethyl) Ether (C)	111444	0.03	2.2
Bis(2-Chloroisopropyl) Ether	108601	200	4,000
Bis(2-Ethylhexyl) Phthalate (C) (D)	117817	0.32	0.37
Bis(Chloromethyl) Ether (C)	542881	0.00015	0.017
Bromoform (C) (D)	75252	7	120
Butylbenzyl Phthalate	85687	0.1	0.1

		Human Health for the consumption of	
		Water+Organism (A)	Organism Only (A)
		(µg/L)	(µg/L)
Pollutant	CAS Number	<i>(Only applicable to waters designated and currently being used as a potable water source”)</i>	<i>(Apply to all waters except ones designated and currently being used as potable water source”)</i>
Carbon Tetrachloride (C) (D)	56235	0.4	5
Chlordane (D)	57749	0.00031	0.00032
Chlorobenzene (D) (E)	108907	100	800
Chlorodibromomethane (C) (D)	124481	0.8	21
Chloroform (C) (D)	67663	60	2,000
Chlorophenoxy Herbicide (2,4-D) (D)	94757	1,300	12,000
Chlorophenoxy Herbicide (2,4,5-TP) [Silvex] (D)	93721	100	400
Chrysene (C) (D)	218019	0.12	0.13
Copper (C) (D)	7440508	1,300	-
Cyanide (D) (F)	57125	4	400
Dibenzo(a,h)Anthracene (C)	53703	0.00012	0.00013
Dichlorobromomethane (C) (D)	75274	0.95	27
Dieldrin (C)	60571	0.0000012	0.0000012
Diethyl Phthalate	84662	600	600
Dimethyl Phthalate	131113	2,000	2,000
Di-n-Butyl Phthalate	84742	20	30
Dinitrophenols	25550587	10	1,000
Endosulfan Sulfate	1031078	20	40
Endrin (D)	72208	0.03	0.03
Endrin Aldehyde	7421934	1	1
Ethylbenzene (D)	100414	68	130
Fluoranthene	206440	20	20
Fluorene	86737	50	70
gamma-HCH (Lindane) (D)	58899	4.2	4.4
Heptachlor (C) (D)	76448	0.0000059	0.0000059
Heptachlor Epoxide (C) (D)	1024573	0.000032	0.00032
Hexachlorobenzene (C) (D)	118741	0.000079	0.000079

		Human Health for the consumption of	
		Water+Organism (A)	Organism Only (A)
		(µg/L)	(µg/L)
Pollutant	CAS Number	<i>(Only applicable to waters designated and currently being used as a potable water source”)</i>	<i>(Apply to all waters except ones designated and currently being used as potable water source”)</i>
Hexachlorobutadiene (C) (D)	87683	0.01	0.01
Hexachlorocyclo-hexane-Technical	608731	0.0066	0.01
Hexachlorocyclopentadiene (D) (E)	77474	4	4
Hexachloroethane (C)	67721	0.1	0.1
Indeno(1,2,3-cd) Pyrene (C)	193395	0.0012	0.0013
Isophorone (C)	78591	34	1,800
Manganese (E)	7439965	50	100
Mercury Methylmercury	22967926	-	0.3 mg/kg
Methoxychlor (D)	72435	0.02	0.02
Methyl Bromide	74839	100	10,000
Methylene Chloride (C) (D)	75092	20	1,000
Nickel (B)	7440020	610	4,600
Nitrates (D)	14797558	10,000	-
Nitrobenzene (E)	98953	10	600
Nitrosamines	—	0.0008	1.24
Nitrosodibutylamine, T (C)	924163	0.0063	0.22
Nitrosodiethylamine, T (C)	55185	0.0008	1.24
Nitrosopyrrolidine, T (C)	930552	0.016	34
N-Nitrosodimethylamine (C)	62759	0.00069	3
N-Nitrosodi-n-Propylamine (C)	621647	0.005	0.51
N-Nitrosodiphenylamine (C)	86306	3.3	6
Pentachlorobenzene	608935	0.1	0.1
Pentachlorophenol (C) (D) (E)	87865	0.03	0.04
Phenol (E) (G)	108952	4,000	300,000
Polychlorinated Biphenyls (PCBs) (C) (D)		0.000064	0.000064
Pyrene	129000	20	30

		Human Health for the consumption of	
		Water+Organism (A)	Organism Only (A)
		(µg/L)	(µg/L)
Pollutant	CAS Number	<i>(Only applicable to waters designated and currently being used as a potable water source”)</i>	<i>(Apply to all waters except ones designated and currently being used as potable water source”)</i>
Selenium (D)	7782492	170	4,200
Solids Dissolved and Salinity	—	250,000	
Tetrachlorobenzene,1,2,4,5-	95943	0.97	1.1
Tetrachloroethylene (C) (D)	127184	10	29
Thallium	7440280	0.24	0.47
Toluene (D)	108883	57	520
Toxaphene (C) (D)	8001352	0.0007	0.00071
Trichloroethylene (C) (D)	79016	0.6	7
Trichlorophenol,2,4,5-	95954	1,800	3,600
Vinyl Chloride (C) (D)	75014	0.022	1.6
Zinc (E)	7440666	7,400	26,000
1,1,1-Trichloroethane (D)	71556	10,000	200,000
1,1,2,2-Tetrachloroethane (C)	79345	0.2	3
1,1,2-Trichloroethane (C) (D)	79005	0.55	8.9
1,1-Dichloroethylene (C) (D)	75354	300	20,000
1,2,4,5-Tetrachlorobenzene	95943	0.03	0.03
1,2,4-Trichlorobenzene (D)	120821	0.071	0.076
1,2-Dichlorobenzene (D)	95501	1,000	3,000
1,2-Dichloroethane (C) (D)	107062	9.9	650
1,2-Dichloropropane (C) (D)	78875	0.9	31
1,2-Diphenylhydrazine (C)	122667	0.03	0.2
1,2-Trans-Dichloroethylene (D)	156605	100	4,000
1,3-Dichlorobenzene	541731	7	10
1,3-Dichloropropene (C)	542756	0.27	12
1,4-Dichlorobenzene (D)	106467	300	900
2,3,7,8-TCDD (Dioxin) (C) (D)	1746016	5.00E-09	5.10E-09
2,4,5-Trichlorophenol (E)	95954	300	600
2,4,6-Trichlorophenol (E)	88062	1.5	2.8
2,4-Dichlorophenol (E)	120832	10	60

		Human Health for the consumption of	
		Water+Organism (A)	Organism Only (A)
		(µg/L)	(µg/L)
Pollutant	CAS Number	<i>(Only applicable to waters designated and currently being used as a potable water source”)</i>	<i>(Apply to all waters except ones designated and currently being used as potable water source”)</i>
2,4-Dimethylphenol (E)	105679	100	3,000
2,4-Dinitrophenol	51285	10	300
2,4-Dinitrotoluene (C)	121142	0.049	1.7
2-Chloronaphthalene	91587	800	1,000
2-Chlorophenol (E)	95578	30	800
2-Methyl-4,6-Dinitrophenol	534521	2	30
3,3'-Dichlorobenzidine (C)	91941	0.049	0.15
3-Methyl-4-Chlorophenol (E)	59507	500	2000
4,4'-DDD (C)	72548	0.00012	0.00012
4,4'-DDE (C)	72559	0.000018	0.000018
4,4'-DDT (C)	50293	0.00003	0.00003

Table II. Footnotes:

A - Frequency and Duration of Criteria Exceedance:

A1. Human health noncarcinogenic effect-based criteria are expressed as a 30-day average with no frequency of exceedance.

A2. Human health carcinogenic effect-based criteria are expressed as a 70-year average with no frequency of exceedance.

B - This criterion has been revised to reflect The United States Environmental Protection Agency's q1* or reference dose RfD, as contained in the Integrated Risk Information System (IRIS) as of May 17, 2002. The fish tissue bioconcentration factor (BCF) from the 1980 Ambient Water Quality Criteria document used to derive the original criterion was retained in each case.

C - This criterion is based on carcinogenicity of 10⁻⁶ risk.

D - EPA has issued a Maximum Contaminant Level (MCL) for this chemical which may be more stringent. See EPA's National Primary Drinking Water Regulations.

E - The criterion for organoleptic (taste and odor) effects may be more stringent. The organoleptic criteria can be found in Table III below for both fresh and marine waters.

F - This recommended water quality criterion is expressed as total cyanide, even though the IRIS RFD we used to derive the criterion is based on free cyanide. The multiple forms of cyanide that are present in ambient water have significant differences in toxicity due to their differing abilities to liberate the CN-moiety. Some complex cyanides require even more extreme conditions than refluxing with sulfuric acid to liberate the CN-moiety. Thus, these complex cyanides are expected to have little or no 'bioavailability' to humans. If a substantial fraction of the cyanide present in a waterbody is present in a complexed form (e.g., $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$), this criterion may be over conservative.

G - This criterion has been revised to reflect the United States Environmental Protection Agency's cancer slope factor (CSF) or reference dose (RfD), as contained in the Integrated Risk Information System (IRIS) as of (date of publication of Final FR Notice). The fish tissue bioconcentration factor (BCF) from the 1980 Ambient Water Quality Criteria document was retained in each case.

3. Organoleptic Criteria

Table III - Organoleptic Effects (e.g., taste and odor)

Pollutant	CAS Number	Organoleptic Effect Criteria ($\mu\text{g/L}$)
Acenaphthene	83329	20
Monochlorobenzene	108907	20
3-Chlorophenol	—	0.1
4-Chlorophenol	106489	0.1
2,3-Dichlorophenol	—	0.04
2,5-Dichlorophenol	—	0.5
2,6-Dichlorophenol	—	0.2
3,4-Dichlorophenol	—	0.3
2,4,5-Trichlorophenol	95954	1
2,4,6-Trichlorophenol	88062	2
2,3,4,6-Tetrachlorophenol	—	1
2-Methyl-4-Chlorophenol	—	1800
3-Methyl-4-Chlorophenol	59507	3000
3-Methyl-6-Chlorophenol	—	20
2-Chlorophenol	95578	0.1
Copper	7440508	1000
2,4-Dichlorophenol	120832	0.3
2,4-Dimethylphenol	105679	400
Hexachlorocyclopentadiene	77474	1
Nitrobenzene	98953	30
Pentachlorophenol	87865	30

Pollutant	CAS Number	Organoleptic Effect Criteria (µg/L)
Phenol	108952	300
Zinc	7440666	5000

§ 186 - 6: Thermal Policy

In order to protect the Territorial Waters from thermal pollution, the following criteria shall apply:

- (a) Fish and other aquatic life shall be protected from thermal blocks to movement and pass-through, and a minimum of seventy-five percent (75%) stream or estuarine cross-section and/or volumetric passageway, including a minimum of one half of the surface as measured from water edge to water edge at any stage of tide, shall be provided for.
- (b) In non-passageway the surface water temperature shall not exceed 32°C.
- (c) Except in designated mixing zones established pursuant to § 186-7 of this title, no heat may be added which would cause temperatures to exceed 32°C, or which would cause the monthly mean of the maximum daily temperature at any site, prior to the addition of any heat, to be exceeded by more than 1.0°C.
- (d) No discharge or combination of discharges shall be injurious to aquatic life (including any threatened or endangered species) or the culture or propagation of a balanced indigenous population thereof.
- (f) Rate of temperature change outside the mixing zone established pursuant to § 186-7 of this title shall not be more than 0.5°C per hour nor exceed 3°C in any 24-hour period except when natural phenomena cause these limits to be exceeded.
- (g) Unless specific conditions, such as spawning ground, migratory routes, or other sections of conditions from these regulations are applicable, the thermal mixing zone should be defined by a sphere with a specified point as the center (not necessarily the outfall but limited to one point for each installation) and a radius equal to the square root of the volume of discharge (A) expressed as millions of gallons per day, times 200 feet; and in no case exceed 3/8 mile. The formula is: Radius (mixing zone) = $(\sqrt{A}) * 200 \text{ feet} \leq 3/8 \text{ mile}$.

§ 186 - 7: Mixing Zones

- (a) As part of the Water Quality Certification Program established by 12 V.I.C. § 185(b), the TPDES permitting program, or through a separate public review process, the Commissioner may establish parameter-specific mixing zones that apply to the discharge of treated wastewater to surface waters of the Territorial Waters. In a mixing zone (up to its boundary), water quality criteria can be exceeded as long as acutely toxic conditions are prevented.
- (b) The Commissioner, in determining whether to establish or grant a request for a mixing zone, shall apply the following criteria:
 - (1) Mixing zones shall be limited to an area or volume as small as feasible;
 - (2) There shall be prompt mixing of the discharge with receiving waters;
 - (3) Mixing zones shall not be used for, or considered as a substitute for, minimum treatment technology;
 - (4) Mixing zones shall not create nuisance conditions, accumulate pollutants in sediments or biota in toxic amounts, or diminish existing or best usages of surface waters disproportionately;
 - (5) There shall be no mixing zones for pathogens or indicators of pathogens;
 - (6) Mixing zones shall not encroach upon intakes for potable water;
 - (7) Mixing zones shall not encroach upon areas used for harvesting of stationary species such as shellfish;
 - (8) There shall be no lethality to organisms passing through the mixing zone;
 - (9) There shall be safe and adequate passage for swimming and drifting organisms;
 - (10) Mixing zones shall minimize impacts on aquatic life, and shall not interfere with biological communities, including coral reefs and all their habitats, spawning areas, nursery areas, and fish migration routes to a degree that is damaging to the ecosystem;
 - (11) There shall be no mixing zones for discharges that would likely jeopardize the continued existence of any threatened or endangered species, or that would likely result in the destruction or adverse modification of any such species' critical habitat.

§ 186 - 8: Antidegradation Policy and Implementation Procedures

The Commissioner shall maintain and protect existing water uses, including those that protect any threatened or endangered species, as well as the level of water quality necessary to protect existing uses.

A. Antidegradation Policy

- (1) In those water bodies where the quality exceeds levels necessary to support the protection and propagation of fish, wildlife, desirable species, including threatened or endangered species, and recreation in and on the water, that quality shall be maintained and protected.
- (2) Notwithstanding the preceding sentence, a water quality lower than the existing quality may be allowed on a parameter-by-parameter basis when the Commissioner determines that, taking into account practicable alternatives, allowing such lower water quality is necessary to accommodate important economic or social development and will not interfere with or become injurious to any assigned uses made of, or presently possible in, such waters. In allowing such lower water quality, the Commissioner shall require a water quality level adequate to fully protect existing and designated uses. The Commissioner may condition the lowering of water quality on the implementation of one or more practicable alternatives. The public review process requirements established in § 186-15 of this title for amendments to water quality standard regulations shall also apply to the determinations and lower water quality levels authorized by this section. Further, the Commissioner will require that:
 - (A) The highest statutory and regulatory requirements for all new and/or existing point sources be achieved, and
 - (B) The cost-effective and reasonable best management practices for non-point sources control be implemented.
- (3) Notwithstanding paragraph (2) of this subsection, where high quality waters are Outstanding National Resource or Class A waters, the water quality shall be maintained and protected, and a lower water quality shall not be allowed.
- (4) Where potential water quality impairment is associated with a thermal discharge, this thermal discharge must comply with section 316 of the Clean Water Act, as amended, 33 U.S.C. § 1326.

B. Antidegradation Implementation Procedures

- (1) General: In conducting an antidegradation review, which would occur as part of the Water Quality Certification Program (established by 12 V.I.C. § 185(b)), the TPDES permitting program, or through a separate public review process, the Commissioner will sequentially apply the following steps:
 - (A) Determine which level of antidegradation protection applies. Antidegradation Tier 1 through Tier 3 protection differ from the Water Quality Standards classification system of the Class A, B, and C for Marine and Coastal Waters described in §186-4 of the title. For Antidegradation Tiered waters addressed in this section, a higher Tier correlates to a higher level of water quality protection. Water quality parameters in Class B and C waters may be assigned Tier 1 and/or Tier 2 protection, while Class A waters are assigned Tier 3 protection for the purposes of this section:
 - (i) Tier 1 – Protection of Existing and Designated Uses
 - (ii) Tier 2 – Protection of High-Quality Waters
 - (iii) Tier 3 – Protection of Outstanding National Resource Waters (ONRWs)
 - (B) Review existing water quality data and other information submitted by the applicant. The applicant shall provide to the DPNR the information regarding the discharge including, but not limited to the following:
 - (i) Description of the nature of the pollutants to be discharged,
 - (ii) Treatment technologies applied to the pollutants to be discharged,
 - (iii) Nature of the petitioner's business,
 - (iv) Daily maximum and average flow to be discharged,
 - (v) Effluent characterization,
 - (vi) Effluent limitations requested to be applied to the discharge according to the TPDES regulations,
 - (vii) Location of the point of discharge,

- (viii) Receiving waterbody name,
 - (ix) Water quality data of the receiving waterbody,
 - (x) Receiving waterbody minimum flow for stream waters,
 - (xi) Location of water intakes within the waterbody, and
 - (xii) Data and information demonstrating that the discharge is necessary to accommodate important economic or social development in the area where the receiving waters are located, and
 - (xiii) An alternatives analysis that can form the basis of, or serve as, the alternatives analysis required by paragraph (1)(C) of this subsection.
- (C) Prepare an analysis of alternatives (including alternative control options, alternative processes and predicted reduction in water quality for each alternative) that assesses their practicability and the extent to which they affect DPNR's determination that lowering water quality is necessary to accommodate important economic or social development in the area in which the waters are located. The analysis of alternatives shall evaluate a range of practicable solutions and best management practices that would prevent or lessen the degradation associated with the proposed activity.
- (D) Determine if additional information or assessment is necessary to make the decision.
- (E) Prepare an intent to issue or deny the request to lower the water quality of a waterbody and follow the public review process requirements established in § 186-15 of this title for amendments to water quality standards regulations.
- (F) Address the comments received from the interested parties and consider such comments as part of the decision-making process.
- (G) Make the final determination to approve or deny the request for an increased loading.
- (2) **Tier 1 - Existing uses protection:** For Tier 1 waters, all existing uses and the water quality necessary to protect the existing uses shall be maintained and protected.
- (A) Tier 1 waters are:

- (i) Those Waters of the US Virgin Islands identified as impaired and that have been included in the list required by section 303(d) of the CWA; and
 - (ii) Those Waters of the US Virgin Islands for which attainment of applicable water quality standards has been or is expected to be, achieved through implementation of effluent limitations more stringent than technology-based controls.
 - (B) To decide whether a lower water quality should be allowed under (a)(2) of this section for a Tier 1 waterbody, the Commissioner must determine if a discharge would lower the water quality to the extent that it would no longer be sufficient to protect and maintain the existing and designated uses of that waterbody.
 - (C) When a waterbody has been impaired for a parameter of concern, causing it to be included on the 303(d) List, then the Commissioner will not allow an increase of the concentration of the parameter of concern, or pollutants affecting the parameter of concern, in the waterbody. This “no increase” will be achieved by requiring the applicable water quality standards to be met at the end of the pipe. Until such time that a Total Maximum Daily Load (TMDL) is developed for the parameter of concern for the waterbody, no discharge will be allowed to cause or contribute to further degradation of the waterbody.
 - (D) When the assimilative capacity of a waterbody is not sufficient to ensure maintenance of the water quality standard for a parameter of concern with an additional load to the waterbody, then the DPNR will not allow an increase of the concentration of the parameter of concern, or pollutants affecting the parameter of concern, in the waterbody. This “no increase” will be achieved by requiring the applicable water quality standards to be met at the end of the pipe. Until such time that a TMDL is developed for the parameter of concern for the waterbody, no discharge will be allowed to cause or contribute to further degradation of the waterbody.
- (3) **Tier 2 – High-quality water protection:**
- (A) Identification of high-quality water shall be performed on a parameter-by-parameter basis. Waters shall not be excluded from Tier 2 protection based solely on the impairment of a single parameter or group of parameters if any of the uses specified in CWA section 101(a)(2) is attained.
 - B) To verify that a waterbody is a high-quality water for a parameter of concern, which initiates a Tier 2 antidegradation review, the DPNR must evaluate and determine:

- (i) The existing water quality of the waterbody,
 - (ii) The projected water quality of the waterbody, and
 - (iii) If the existing and designated uses of the waterbody will be fully maintained and protected in the event of a lowering of water quality.
- (C) In multiple discharge situations, the effects of all discharges shall be evaluated.
- (D) Alternative analysis and social/economic analysis shall be conducted consistent with the requirements of § 186 - 8(b)(1)(C) above.
- (E) An antidegradation demonstration submittal is required for any person seeking to lower the water quality in a High-Quality Water. The antidegradation demonstration submittal to the Commissioner must include the following:
- (i) Pollution Prevention Alternatives Analysis: Identify any cost-effective pollution prevention alternatives and techniques that are available to persons that would eliminate or significantly reduce the extent to which the increased loading results in a lowering of the water quality.
 - (ii) Alternative or Enhanced Treatment Analysis: Identify alternative or enhanced treatment techniques that are available to the person that would eliminate the lowering of the water quality and their costs relative to the cost of treatment necessary to achieve applicable effluent limitations.
 - (iii) Important Social or Economic Development Analysis: Identify the social or economic development and the benefits to the area in which the waters are located that will be foregone if the lowering of water quality is not allowed.
- (F) In order to allow the lowering of water quality in high quality waters, the applicant must show and justify the necessity for such lowering of the water quality. DPNR will not allow the entire assimilative capacity of a waterbody for a parameter of concern to be allocated to a discharger if the necessity of the requested effluent limitation for the parameter of concern is not demonstrated to the full satisfaction of DPNR.
- (G) The public review process requirements established in § 186-15 of this title for amendments to water quality standards regulations shall also apply

to any finding that will allow a lower water quality.

- (H) Requirements for point and nonpoint sources when allowing a lowering of water quality shall be 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.
- (I) DPNR's Antidegradation decision process is as follows:
 - (i) Once DPNR determines that the information provided by the person proposing to increase loadings is administratively complete, DPNR shall use that information to determine whether or not the lowering of the water quality is necessary taking practicable alternatives into account.
 - (ii) If DPNR determines that the lowering of the water quality is necessary, DPNR must then determine, taking practicable alternatives into account, whether or not the lowering of the water quality will support important social and economic development in the area.
 - (iii) If the proposed lowering of water quality is either not necessary, or will not support important social and economic development, taking practicable alternatives into account, DPNR shall deny the request to lower the water quality.
 - (iv) If the lowering of the water quality is necessary, and will support important social and economic development, taking practicable alternatives into account, DPNR may allow all or part of the proposed lowering to occur as necessary.
- (4) **Tier 3 - ONRW Protection:** Waters identified as ONRWs shall be maintained and protected.
 - (A) When the DPNR designates a specific water as Class A, that water is also an ONRW.
 - (B) Any interested party may nominate a specific water to be classified as an ONRW (or Class A water), and the DPNR will make the final determination.
 - (C) The natural conditions of an ONRW (or Class A water), shall not be changed. No new or increased point source dischargers will be permitted in ONRWs.
- (5) Thermal Discharges: Consistency with section 316 of the CWA shall be ensured

in cases that involve potential water quality impairment associated with thermal discharges.

§ 186 - 9: Analytical Procedure

The analytical procedures used as methods of analysis to determine the chemical, bacteriological, biological, and radiological quality of waters sampled shall be in accordance with those specified in or approved under Title 40 of the Code of Federal Regulations (CFR) Part 136 or other methods approved by the DPNR and the EPA.

§ 186 - 10: Applicability of Standards

If a requirement established by any provision of this Regulation is either more restrictive or less restrictive than a requirement established by any other provision of this Regulation, or by any other law, regulation, standard, or limit established by any duly constituted governmental authority having jurisdiction, the requirement which is more restrictive shall apply.

§186 - 11: Natural Conditions

Natural waters may have characteristics outside of the limits prescribed by these regulations. The criteria contained herein do not relate to violations of standards resulting from natural forces.

§ 186 - 12: Schedules of Compliance for Limits in TPDES Permits

- (a) Persons, who are authorized to discharge pollutants into the Waters of the United States Virgin Islands at the time these WQS are amended to add or make more stringent any water quality standards, shall meet such newly adopted or more stringent water quality standards within three (3) years of the effective date of the amendment.
- (b) The Commissioner shall upon the expiration of the three (3) years revoke or modify any discharge permit previously issued which result in reducing the quality of such waters below the newly established standards.
- (c) Nothing in this section shall limit any authority of the Commissioner to set or revise schedules of compliance pursuant to the statutes and regulations referred to herein.
- (d) Any schedule of compliance issued by the Commissioner shall be in accordance with

sections 502(17) and 301(b)(1)(C) of the Clean Water Act.

§ 186 - 13: Site-specific Criteria

As part of the Water Quality Certification Program (established by 12 V.I.C. § 185(b)), the TPDES permitting program, or through a separate public review process, the Commissioner may allow site-specific modifications to criteria on a site-specific basis in order to reflect local environmental conditions.

A. Requirements for Site-specific Modifications to Criteria: Any modification must comply with the following:

- (1) Modifications must be protective of designated uses and aquatic life, wildlife or human health.
- (2) Modifications that result in less stringent criteria must be based on a sound scientific rationale and shall not be likely to jeopardize the continued existence of endangered or threatened species listed or proposed under section 4 of the Federal Endangered Species Act or Title 12, Chapter 2 of the Virgin Islands Code, or likely to result in the destruction or adverse modification of such species' critical habitat.
- (3) More stringent modifications shall be developed to protect endangered or threatened species listed or proposed under section 4 of the federal ESA or Title 12, Chapter 2 of the Virgin Islands Code, where such modifications are necessary to ensure that water quality is not likely to jeopardize the continued existence of such species or result in the destruction or adverse modification of such species' critical habitat.
- (4) The public review process requirements established in § 186-15 of this title for amendments to water quality standards regulations shall also apply to any modification that would result in less stringent criteria.
- (5) Modifications must be submitted by DPNR to EPA for approval.

B. Aquatic Life Criteria:

- (1) Aquatic life criteria may be modified on a site-specific basis to provide an additional level of protection.
- (2) Less stringent site-specific modifications to chronic or acute aquatic life criteria may be developed when:

- (A) The local water quality characteristics such as pH, hardness, temperature, color, etc., alter the biological availability or toxicity of a pollutant; or
 - (B) The sensitivity of the aquatic organism species that “occur at the site” differs from the species actually tested in developing the criteria. The phrase “occur at the site” includes the species, genera, families, orders, classes, and phyla that: are usually present at the site; are present at the site only seasonally due to migration; are present intermittently because they periodically return to or extend their ranges into the site; were present at the site in the past, are not currently present at the site due to degraded conditions, and are expected to return to the site when conditions improve; are present in nearby bodies of water, are not currently present at the site due to degraded conditions, and are expected to be present at the site when conditions improve. The taxa that “occur at the site” cannot be determined merely by sampling downstream and/or upstream of the site at one point in time. “Occur at the site” does not include taxa that were once present at the site but cannot exist at the site now due to permanent physical alteration of the habitat at the site resulting, for example, from dams, etc.
- (3) Less stringent modifications also may be developed to acute and chronic aquatic life criteria to reflect local physical and hydrological conditions.

C. Human Health Criteria:

- (1) Human health criteria may be modified on a site-specific basis to provide an additional level of protection. Human health criteria shall be modified on a site-specific basis to provide additional protection appropriate for highly exposed subpopulations.
- (2) Less stringent site-specific modifications to human health criteria may be developed when:
 - (A) local fish consumption rates are lower than the rate used in deriving the human health criteria in § 186-5(c) of this title, and/or
 - (B) a site-specific bioaccumulation factor is derived which is lower than that used in deriving human health criteria in § 186-5(c) of this title.

§ 186 - 14: Water Quality Standards Variances

It is the Commissioner’s policy that a WQS variance is only appropriate when a designated use is

not attainable in the short-term but might be attainable in the long-term. The Commissioner may consider a temporary modification to a designated use and associated water quality criteria that would otherwise apply. The Commissioner could issue a variance as part of the Water Quality Certification Program (established by 12 V.I.C. § 185(b)), the TPDES permitting program, or through a separate public review process.

- (a) **Applicability:** A variance from any WQS that is the basis of a water quality-based effluent limitation included in a TPDES Permit is based on the following:
- (1) A variance from WQS applies only to the permittee requesting the WQS variance, the waterbody/waterbody segment(s) specified in the WQS variance, or the pollutant or pollutants specified in the WQS variance.
 - (2) A WQS variance does not affect, or require the Commissioner to modify, in its standards, the underlying designated use and criterion addressed by the WQS variance, unless the Territory adopts, and EPA approves a revision to the underlying designated use and criterion consistent with 40 CFR § 131.10 and 131.11. All applicable standards not specifically addressed by the WQS variance remain in effect.
 - (3) A variance does not affect, or require the Commissioner to modify, the corresponding water quality standard for the waterbody as a whole.
 - (4) A WQS variance, once adopted by the Territory and approved by EPA, shall be the applicable standard for purposes of the CWA under 40 CFR § 131.21(d)-(e), for the following limited purposes. An approved WQS variance applies for the purposes of developing TPDES permit limits and requirements under section 301(b)(1)(C) of the CWA, where appropriate, consistent with paragraph (a)(1) of this section. DPNR and other certifying entities may also use an approved WQS variance when issuing certifications under section 401 of the CWA.
 - (5) A variance from a water quality standard shall not be adopted if the variance would likely jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of such species' critical habitat.
 - (6) A variance from WQS shall not be adopted if standards will be attained by implementing effluent limits required under sections 301(b) and 306 of the Clean Water Act (CWA) and by the permittee implementing cost-effective and reasonable best management practices for nonpoint source control.
- (b) **The maximum timeframe:** A variance from the WQS shall not exceed five (5) years or the term of the TPDES permit, whichever is less. The Commissioner will review, and modify as necessary, variances from WQS as part of each water quality standards review pursuant to section 303(c) of the CWA.

- (c) Conditions to adopt: A variance from the WQS may be adopted if, and only if:
- (1) The permittee demonstrates to DPNR that attaining the WQS is not feasible because:
 - (A) Naturally occurring pollutant concentrations prevent the attainment of the WQS;
 - (B) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the WQS, unless these conditions may be compensated for by the discharge of sufficient volume of effluent to enable WQS to be met without violating Territorial water conservation requirements;
 - (C) Human-caused conditions or sources of pollution prevent the attainment of the WQS and cannot be remedied, or would cause more environmental damage to correct than to leave in place;
 - (D) Dams, diversions or other types of hydrologic modifications preclude the attainment of the WQS, and it is not feasible to restore the waterbody to its original condition or to operate such modification in a way that would result in the attainment of the WQS;
 - (E) Physical conditions related to the natural features of the waterbody, such as the lack of a proper substrate cover, flow, depth, pools, riffles, and the like, unrelated to chemical water quality, preclude attainment of WQS; or
 - (F) Controls more stringent than those required by sections 301(b) and 306 of the CWA would result in substantial and widespread economic and social impact.
 - (2) The permittee shall also:
 - (A) Show that the WQS variance requested conforms to the requirements of the antidegradation procedures in § 186-8 of this title; and
 - (B) Characterize the extent of any increased risk to human health and the environment associated with adoption of the requested WQS variance compared with compliance with WQS absent the variance and explain how any such increased risk will remain unlikely to pose a significant risk to public health, safety and welfare.
- (d) Requirements for Submission of Application to DPNR
- (1) An application for a WQS variance must include:

- (A) Identification of the pollutant(s) or water quality parameter(s), and the waterbody/waterbody segment(s) for which the WQS variance is sought. Discharger(s)-specific WQS variance requests must also identify the permittee(s) seeking the WQS variance and the requested extent of variance from the WQS.
 - (B) The requested requirements that would apply throughout the term of the WQS variance. The applicant must explain how the requested requirements would meet the criteria set forth in (g)(2) of this section.
- (2) The supporting documentation to be submitted by the Applicant must include:
- (A) Documentation demonstrating the need for a WQS variance.
 - (i) For a WQS variance to a use specified in section 101(a)(2) of the CWA or a sub-category of such a use, the applicant must demonstrate that attaining the designated use and criterion is not feasible throughout the term of the WQS variance because:
 - (a) Attaining the WQS is not feasible based on one or more of the conditions in § 186-14 (c)(1) of this title; or
 - (b) Actions necessary to facilitate lake, wetland, or stream restoration through dam removal or other significant reconfiguration activities preclude attainment of the designated use and criterion while the actions are being implemented.
 - (ii) For a WQS variance to a non-101(a)(2) use, the applicant must submit documentation justifying how consideration of the use and value of the water for those uses listed in 40 CFR 131.10(a) appropriately supports the WQS variance and term. A demonstration consistent with (d)(2)(A)(i) of this section may be used to satisfy this requirement.
 - (B) Documentation demonstrating that the requested term of the WQS variance is only as long as necessary to achieve the highest attainable condition. Such documentation must justify the term of the WQS variance by describing the pollutant control activities to achieve the highest attainable condition, including those activities identified through a Pollutant Minimization Program, which serve as milestones for the WQS variance.
 - (C) In addition to (A) and (B) of this paragraph, for a WQS variance that would apply to a waterbody or waterbody segment:
 - (i) Identification and documentation of any cost-effective and reasonable best management practices for nonpoint source controls related to the

pollutant(s) or water quality parameter(s) and waterbody or waterbody segment(s) specified in the requested WQS variance that could be implemented to make progress towards attaining the underlying designated use and criterion. The Commissioner must provide public notice and comment for any such documentation.

(ii) Any subsequent WQS variance for a waterbody or waterbody segment must include documentation of whether and to what extent best management practices for nonpoint source controls were implemented to address the pollutant(s) or water quality parameter(s) subject to the WQS variance and the water quality progress achieved.

(D) All relevant information demonstrating compliance with the conditions in § 186-14 (c)(2) of this title.

(e) Implementing WQS variances in TPDES permits: A WQS variance serves as the applicable water quality standard for implementing TPDES permitting requirements pursuant to 12 V.I. R. & Regs. § 184-54(c) and 40 CFR § 122.44(d) for the term of the WQS variance. Any limitations and requirements necessary to implement the WQS variance shall be included as enforceable conditions of the TPDES permit for the permittee(s) subject to the WQS variance.

(f) Public notice of preliminary decision: Upon receipt of a complete application for a variance from the WQS, and upon making a preliminary decision regarding the WQS variance, the Commissioner shall provide public notice of the request and preliminary decision for public comment. This public notice will be satisfied by including the supporting information for the variance from the WQS and the preliminary decision in the public notice of a draft TPDES permit.

(g) Final decision: The Commissioner will issue a final decision on a WQS variance request within 90 days of the expiration of the public comment period required in accordance with the TPDES permit.

(1) If the Commissioner approves all or part of the variance from the WQS, the decision shall include all permit conditions needed to implement those parts of the WQS variance as approved. Such permit conditions shall, at a minimum, require:

(A) Compliance with an initial effluent limitation which, at the time the variance from the WQS is granted, represents the level currently achievable by the permittee, and which is no less stringent than that achieved under the previous permit;

(B) Achieving reasonable progress toward attaining the water quality standards for the waterbody as a whole through appropriate conditions;

(C) When the duration of a variance from the WQS is shorter than the duration

of a permit, compliance with an effluent limitation sufficient to meet the underlying water quality standard, upon the expiration of said WQS variance; and

- (D) A provision that allows the Commissioner to reopen and modify or revoke any condition granted in a WQS variance due to the permittee not providing relevant information that reasonable would affect the decision process.
- (2) If the Commissioner decides to issue a WQS variance, it shall include requirements that represent the highest attainable condition of the waterbody or waterbody segment applicable throughout the term of the WQS variance. The requirements shall not result in any lowering of the currently attained ambient water quality, unless a WQS variance is necessary for restoration activities, consistent with subsection (d)(2)(A)(i)(b) of this section. DPNR must specify the highest attainable condition of the waterbody or waterbody segment as a quantifiable expression that is one of the following:
- (A) For discharger(s)-specific WQS variances:
 - (i) The highest attainable interim criterion, or
 - (ii) The interim effluent condition that reflects the greatest pollutant reduction achievable, or
 - (iii) If no additional feasible pollutant control technology can be identified, the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the Territory adopts the WQS variance, and the adoption and implementation of a Pollutant Minimization Program.
 - (B) For WQS variances applicable to a waterbody or waterbody segment:
 - (i) The highest attainable interim use and interim criterion, or
 - (ii) If no additional feasible pollutant control technology can be identified, the interim use and interim criterion that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the Territory adopts the WQS variance, and the adoption and implementation of a Pollutant Minimization Program.
- (3) If DPNR decides to issue WQS variance, its term must only be as long as necessary to achieve the highest attainable condition identified at the time of the adoption of the WQS variance. The Territory may adopt a subsequent WQS

variance consistent with this section.

- (h) Incorporating the WQS variance: DPNR will establish and incorporate into the permittee's TPDES permit all conditions needed to implement the variance from the WQS as determined in § 186-14 (g) of this title.
- (i) Renewal of WQS variance: A WQS variance may be renewed, subject to the requirements of § 186-14(a) through (h) of this title. As part of any renewal application, the permittee shall again demonstrate that attaining the WQS is not feasible based on the requirements of § 186-14(c) of this title. The permittee's application shall also contain information concerning its compliance with the conditions incorporated into its permit as part of the original variance from the WQS pursuant to § 186-14(g) and (h) of this title. Renewal of a WQS variance may be denied if the permittee did not comply with the conditions of the original WQS variance.
- (j) EPA Approval: DPNR shall submit all variances from the WQS and supporting information to EPA Region 2 for approval. The submittal shall include
 - (1) Relevant permittee applications pursuant to § 186-14(d) of this title,
 - (2) Public comments and records of any public hearings pursuant to § 186-14(f) of this title,
 - (3) The final decision pursuant to § 186-14(g) of this title, and
 - (4) TPDES permits issued pursuant to § 186-14(h) of this title.

§ 186 - 15: Public Review Process

- (a) Public Notice: Public notice shall be published on each island in one (1) newspaper of wide circulation within that island informing of the Commissioner's intention to amend the VI Water Quality Standards Regulations. Such notice shall also:
 - (1) Inform the public and interested parties that comments related to the proposed WQS amendments can be submitted to DPNR within sixty (60) days after publication of the notice;
 - (2) Include the location and times in which the amended draft of the VI's Water Quality Standards Regulations, "Background and Basis" document and other relevant documents are available for public review; and
 - (3) Include other relevant information determined by the Commissioner.

- (b) Public Hearing: DPNR shall hold public hearings, within a reasonable time, before the expiration of the sixty (60) day public comment period described above in subsection (a). DPNR shall publish public notice of the public hearing at least thirty (30) days prior to the set public hearing date, in one (1) newspaper of wide circulation within each island, specifying the following:
 - (1) The day(s), the time(s) and the place(s) of the public hearing,
 - (2) The waters for which standards are sought to be amended, and
 - (3) Include any other pertinent information specified by the DPNR.
- (c) Response to Comments: The DPNR shall review all public comments submitted during the public review process, including comments received during the public hearings. The DPNR shall complete and make available to the public the “Responsiveness Summary” document prior to the adoption of proposed amendments into the WQS Regulations.

§ 186 - 16: Enforcement

The Commissioner shall enforce these Water Quality Standards Rules and Regulations in accordance with 12 V.I.C. § 186(d), as amended.

CERTIFICATION OF PUBLICATION AND CONFORMITY IN FORMATTING

In my capacity as Lieutenant Governor of the United States Virgin Islands, I have reviewed the foregoing Rules and Regulations from the Virgin Islands Department of Planning and Natural Resources and find them to be in compliance with Title 3, Chapter 25, and the Amended Rules and Regulations for Filing and Publication of Regulations in the Territory of the United States Virgin Islands and hereby approve the same in accordance with 3 V.I.C. § 936.

TREGENZA A. ROACH, ESQ.
Lieutenant Governor
United States Virgin Islands

Date

GOVERNOR'S APPROVAL & LIEUTENANT GOVERNOR'S ATTEST

Pursuant to the powers vested in me by Section 11 of the Revised Organic Act of 1954, the above Amended Rules and Regulations for Water Quality Standards, issued by the United States Virgin Islands Department of Planning and Natural Resources, which were duly published for public commentary in the Virgin Islands Daily News on July 31, 2018, are hereby approved.

ALBERT BRYAN, JR.
Governor
United States Virgin Islands

Date

Attest:

TREGENZA A. ROACH, ESQ.
Lieutenant Governor
United States Virgin Islands

Date

GOVERNOR’S CERTIFICATE OF COMPELLING CIRCUMSTANCES

Pursuant to the authority granted under Section 938 of Title 3, Virgin Islands Code, in my capacity as Governor of the United States Virgin Islands, I certify that because of compelling circumstances, including lengthy delays before publication, the public interest requires that the attached *Amended Rules and Regulations for the Water Quality Standards for the Territory of the United States Virgin Islands* become effective immediately on the date noted below.

ALBERT BRYAN, JR.
Governor
United States Virgin Islands

Date

CERTIFICATION OF TRANSMITTAL TO LEGISLATURE

I hereby certify that the above approved Amended Rules and Regulations for the Water Quality Standards for the Territory of the United States Virgin Islands, issued by the Virgin Islands Department of Planning and Natural Resources, were transmitted to the Legislature of the United States Virgin Islands pursuant to 3 V.I.C. § 913(a) on the date noted below.

Governor/Governor’s Designee

Date