QUALITY OF SURFACE WATERS IN WILTON, CONNECTICUT

By Kenneth P. Kulp

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

Multiply inch-pound unit	By	To obtain SI units
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometers (km^2)
acre-foot (acre-ft)	1,233	cubic meter (m^3)
ton (short)	0.9072	megagram (Mg)
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
micromho per centimeter (umho/cm)	1.000	microsiemen per centimeter (uS/cm)
degree Fahrenheit (°F)	°C = (°F-32)/1.8	degree Celcius (°C)

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ABSTRACT

Water, bed material, and biological samples were collected and analyzed at 10 surface-water gaging sites on six streams in the Town of Wilton, Connecticut over a 2-year period. The data indicate fair to excellent water quality. Fecal coliform bacteria, pH, alkalinity, iron, and manganese are the parameters that most often exceed recommended limits established by either the U.S. Environmental Protection Agency or the Connecticut Department of Environmental Protection.

Data from sites on the Norwalk and East Branch Silvermine Rivers indicate little if any undesirable changes in water quality take place as they flow through the study area.

INTRODUCTION

In April 1976, the U.S. Geological Survey, in cooperation with the Town of Wilton, Conn., began a program of collecting water-quality data. The objectives of the program were to determine baseline water-quality data of the major rivers and streams, and to evaluate downstream changes in the quality of the Norwalk and Silvermine Rivers.

Data collection ended in April 1978. This report summarizes the program and presents all the data collected.

DESCRIPTION OF THE STUDY AREA

The Town of Wilton is in the southwest corner of Connecticut, north of the city of Norwalk, in Fairfield County (fig. 1). The town is predominantly suburban, with some light industry. In recent years, the area has undergone rapid development, which will probably continue.

Based on records of the Norwalk River at South Wilton, streamflows for the 1976 water year (Oct. 1, 1975 - Sept. 30, 1976) were approximately 70 percent above average. Streamflows in the 1977 water year were 93 percent of average and in the 1978 water year were 55 percent of average.

Ten sites were sampled. Their locations are shown on figure 1, and other information is given in table 1.

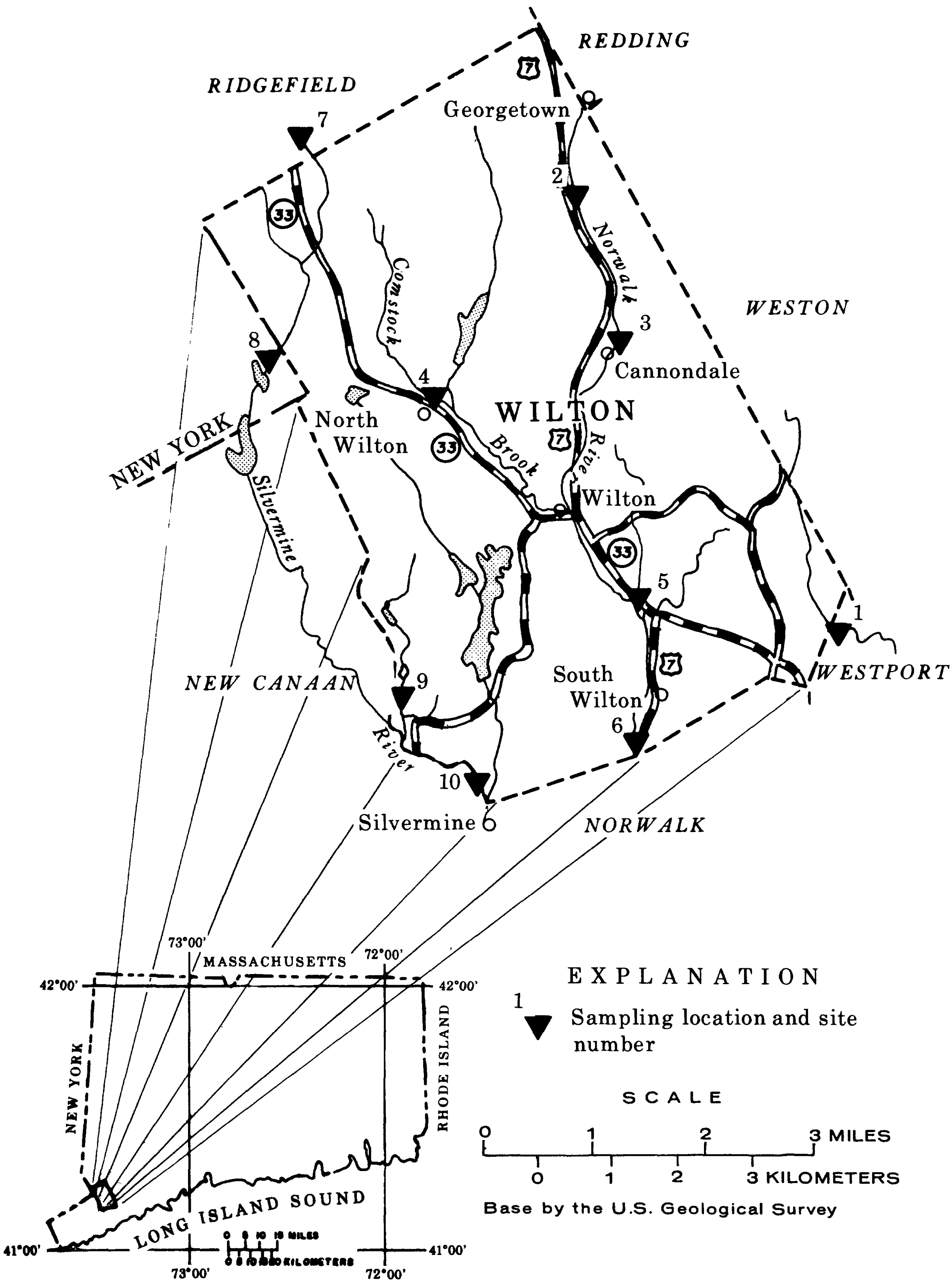

FIGURE 1.-Study area and sampling locations.

Table 1.--Sampling site identification, location, and drainage area

Project site No.	USGS station No.	Name	Coordinate Latitude	Coordinate Longitude	Drainage area (mi^2)	Location
1	01209400	West Branch Saugatuck River near Weston, Conn.	41°10'41"	73°22'50"	10.8	At Newton Turnpike bridge, 1.5 miles south of Weston, Conn.
2	01209570	Norwalk River at Georgetown, Conn.	41°14'45"	73°26'05"	14.5	At bridge on Old Mill Road, 0.8 mile south of Georgetown, Conn.
3	01209572	Norwalk River at Cannondale, Conn.	41°13'52"	73°25'35"	15.2	At bridge on Honey Hill Road, 1 mile north of Cannondale, Conn.
4	01209600	Comstock Brook at North Wilton, Conn.	41°12'45"	73°27'31"	3.53	At bridge on Nod Hill Road, at North Wilton, Conn.
5	01209680	Bryant Brook at Wilton, Conn.	41°11'01"	73°25'09"	0.99	At U.S. Route 7 bridge, 1 mile southeast of Wilton, Conn.
6	01209700	Norwalk River at South Wilton, Conn.	41°09'49"	73°25'11"	30.0	At bridge on Kent Road, at South Wilton, Conn.
7	01209715	East Branch Silvermine River near Ridgefield, Conn.	41°14'59"	73°29'03"	1.36	At Gay Road bridge, 2.5 miles southeast of Ridgefield, Conn.
8	01209716	East Branch Silvermine River near North Wilton, Conn.	41°13'08"	73°29'28"	2.64	At Silver Spring Road bridge by Browns Reservoir, N.Y., 1.5 miles northwest of North Wilton, Conn.
9	01209730	Thayers Brook near Silvermine, Conn.	41°10'10"	73°27'51"	1.59	At Huckleberry Hill Road bridge, below Domenicks Pond, 1.5 miles northwest of Silvermine, Conn.
10	01209734	Silvermine River near Silvermine, Conn.	41°09'25"	73°27'01"	16.0	At bridge on private road, 0.5 mile north of Silvermine, Conn.

Stream Systems

Three rivers flow through Wilton. The principal river is the Norwalk, with a drainage area of 30.0 mi^2 (77.7 km^2) at South Wilton; other rivers are the Silvermine, drainage area of 16.0 mi^2 (41.4 km^2) near Silvermine, and the West Branch Saugatuck, drainage area of 10.8 mi^2 (28 km^2) at Weston. The Silvermine River flows into the Norwalk River at Norwalk, just before it enters Long Island Sound. The West Branch Saugatuck River joins the Saugatuck River north of Weston, and flows into Long Island Sound at Saugatuck. Significant small streams are Comstock Brook and Bryant Brook, tributaries to the Norwalk River, and Thayers Brook, a tributary to the Silvermine River.

Geology

The study area is underlain by gneiss and other metamorphic and igneous rocks (Kroll, 1977). The bedrock is discontinuously mantled by unconsolidated deposits, primarily of glacial origin. The most widespread unconsolidated deposits are till, that occurs in upland areas and stratified drift, that is generally confined to major valleys (Ryder and others, 1970).

METHODS AND TECHNIQUES

During the initial phase of the program, April to June 1976, each of the 10 sites was sampled monthly. Subsequent sampling was restricted to the three Norwalk River sites. These sites were sampled approximately every month through November 1977 and in March and April 1978.

The water at each site was analyzed in the field for temperature, specific conductance, pH, dissolved oxygen, total and fecal coliform, and fecal streptococci bacteria. Samples were also collected and analyzed for selected chemical constituents. Streamflow was measured at each site when samples were collected. The methods and techniques used to collect and analyze the samples are described by Brown and others (1970), Greeson and others (1977), and Buchanan and Somers (1969).

In addition, bed material and biological studies were carried out at sites 2, 3, and 4 in June 1976. Bed material samples were analyzed for metals and pesticides. Samples of suspended or floating plant life (phytoplankton), algae attached to submerged substrates (periphyton), and bottom dwelling animals (benthic invertebrates) were collected and analyzed for numbers, types, and community structure. The water was also analyzed for algal growth potential (AGP), a measure of its ability to support plant life.

A summary of the sampling frequency at each site is given in table 2.

Table 2.--Sampling frequency at sites

Site No.	Time period	Number of water samples	Number of bed material and biological samples
1	Apr. 1976-June 1976	3	--
2	Apr. 1976-Apr. 1978	22	1
3	Apr. 1976-Apr. 1978	22	1
4	Apr. 1976-June 1976	3	1
5	Apr. 1976-June 1976	3	--
6	Apr. 1976-Apr. 1978	22	--
7	Apr. 1976-June 1976	3	--
8	Apr. 1976-June 1976	3	--
9	Apr. 1976-June 1976	3	--
10	Apr. 1976-June 1976	3	--

WATER QUALITY

Results of the water sampling program have been evaluated on a site-by-site basis, using the criteria in table 3, which indicate limiting values of various chemical constituents and physical properties of water based on the protection of water users, aquatic organisms, and aesthetic value.

Additional information concerning the sources and significance of selected chemical, physical, and biological properties of water determined in this study are contained in table 4. The results of the bed material and biological studies are discussed separately, as they were not performed at all sites.

All of the water-quality data collected are given in table 11. For most sites, data collected have been compared with Connecticut Water Quality Standards and Classifications (Connecticut Department of Environmental Protection, 1977).

The official State classification of the waters investigated in this study are shown in figure 2, and a condensed list of the classification standards is shown in table 5. (For more detailed information on the classification of various reaches of streams and the State classification standards, refer to the cited publication.) Because all parameters contained in the State's quality standards were not determined in this study and the number of analyses for any site is limited, it is not possible to assess how the water should be classified according to the State standards.

Table 3.--Selected water-quality criteria

Chemical constituent or physical property	Limiting value	Use	Basis for selection
Alkalinity, total (as $CaCO_3$)	[a]20 mg/L	1	A
Chloride	250 mg/L	4	C
Coliform Bacteria, Fecal	[b]20 col/100 mL	3	D
	[c]200 col/100 mL	6	A,D
	[b]1,000 col/100 mL	5	D
Color	[d]15 color units	4	C
	[d]75 color units	2	A
Copper	1,000 ug/L	2,4	A,C
Iron	300 ug/L	2,4	A,C
	1,000 ug/L	1	A
Lead, dissolved	50 ug/L	2,3	A,B
Manganese	50 ug/L	2,4	A,C
Methylene Blue Active Substance	0.5 mg/L	4	C
Nitrate (as N)	10 mg/L	2,3	A,B
Nitrite (as N)	1 mg/L	2	A
Oxygen, dissolved	[a]5 mg/L	1	A,D
	[a]4 mg/L	6	D
pH	5.0-9.0	2	A
	6.0-8.5	1,6	D
	6.5-8.0	5	D
	6.5-8.5	4	A,C
	6.5-9.0	1	A
Sodium	20 mg/L	3	D
Solids, dissolved	500 mg/L	4	C
Sulfate	250 mg/L	4	C
Turbidity	[e]25 Jackson turbidity units (JTU)	1	D
Zinc	5,000 ug/L	2,4	A,C

Water Use and(or) for the Protection of:

1. Freshwater aquatic life
2. Domestic water supply source
3. Potable drinking water, based on health effects
4. Potable drinking water, based on aesthetic considerations
5. Primary contact
6. Aesthetic value

Basis for Selection

A. Maximum levels recommended by: Quality Criteria for Water, 1977, U.S. Environmental Protection Agency.
B. Maximum contaminant level established by: National Interim Primary Drinking Water Regulations 1975, U.S. Environmental Protection Agency.
C. Maximum contaminant level recommended for the Proposed National Secondary Drinking Water Regulations, 1977, U.S. Environmental Protection Agency.
D. Maximum levels established by: State of Connecticut Water Quality Standards, 1980, Connecticut Department of Environmental Protection (see Table 5).

a/ Minimum recommended value.
b/ Arithmetic mean.
c/ Log mean, based on a minimum of five samples.
d/ As determined by use of the platinum-cobalt method (Standard Methods, 1971).
e/ Unit of measurement based on the Jackson candle turbidimeter.

Table 4.--Source and significance of some of the chemical constituents in and physical properties of water in the study area

Chemical constituent or physical property	Source	Significance
Alkalinity	The capacity to neutralize acid, which is usually produced by dissolved carbonates, bicarbonates, and(or) hydroxides in the water.	The buffering capacity of water relates to pH, which has direct and indirect effects on aquatic life, and other uses of water.
Calcium (Ca) and magnesium (Mg)	Dissolved from rocks and soils, especially those containing calcium silicates, clay minerals, and carbonate lenses.	Hardness and scale-forming properties of water are caused principally by dissolved bicarbonates and sulfates of calcium and magnesium. (See hardness.) Hard water is objectionable for electroplating, tanning, dyeing and textile processing. It also causes scale formation in steam boilers, water heaters, and pipes.
Carbon (C) organic	Derived from organic material.	Indicative of organic pollution loads
Carbon dioxide (CO_2)	Derived from atmosphere, respiration of aquatic organisms, decomposition of organic matter, and breakdown of bicarbonate due to acids.	Can have detrimental effects on fish, and contributes to the corrosiveness of the water
Carbonate (CO_3) and bicarbonate (HCO_3)	Dissolved from carbonate and calcium silicate minerals by reaction with carbon dioxide in water. Decaying vegetation, sewage, and industrial wastes are also important sources.	Carbonates of calcium and magnesium cause hardness, form scale in boilers and pipes, and release corrosive carbon dioxide gas. (See hardness.) Water of low mineral content and low bicarbonate content in proportion to carbon dioxide is acidic and corrosive.
Chloride (Cl)	Dissolved from rocks and soils in small amounts. Other sources are animal wastes, sewage, road salt, industrial wastes, and seawater.	Large amounts in combination with calcium will result in a corrosive solution and in combination with sodium will give water a salty taste.
Coliform, total	A group of bacteria widely distributed in the environment, some types live in soil, others live in the intestinal tract of warm blooded animals.	As a group are generally considered harmless. Coliforms in water are considered indicators of possible warm-blooded animal waste contamination, including that of humans.
Coliform, fecal	Type of coliform bacteria which live in the intestinal tract of warm blooded animals, including humans. Enter water by way of fecal wastes of these animals.	Presence in water specifically indicates fecal waste contamination by warm blooded animals.
Color	May be imparted by iron and manganese compounds, algae, weeds, and humus. May also be caused by inorganic or organic wastes from industry. True color of water is considered to be only that remaining in solution after the suspended material has been removed.	Water for domestic and some industrial uses should be free of perceptible color. Color in water is objectionable in food and beverage processing and many manufacturing processes.
Copper (Cu)	Presence in more than trace concentrations is usually derived from corrosion of copper pipes, industrial wastes, and copper salts used as algacides and herbicides.	Imparts an objectionable taste to water, toxic to some aquatic organisms. Undesirable in water for some industrial uses.
Hardness	Primarily due to calcium and magnesium, and to a lesser extent to iron, manganese, aluminum, barium, and strontium. There are two classes of hardness: carbonate (temporary) and noncarbonate (permanent). Carbonate hardness refers to the hardness balanced by equivalents of carbonate and bicarbonate ions; noncarbonate refers to the remainder of the hardness. Most waters in the basin are classified as soft to moderately hard.	Hard water uses more soap to lather and deposits soap curds on bathtubs. Water having a hardness of more than 120 mg/L is commonly softened for domestic use. Hardness forms scale in boilers, water heaters, radiators, and pipes, causing a decrease in rate of heat transfer and restricted flow of water. In contrast, water having a very low hardness may be corrosive.
Iron (Fe)	Dissolved from minerals that contain oxides, sulfides, and carbonates of iron. Decaying vegetation, iron objects that are in contact with water, sewage, and industrial waste are also major sources.	On exposure to air, iron in ground water oxidizes to a reddish-brown precipitate. More than about 300 ug/L stains laundry and utensils, causes unpleasant odors, and favors growth of iron bacteria. Iron in water is objectionable for food and textile processing. Most iron-bearing water, when treated by aeration and filtration, are satisfactory for domestic use.
Lead (Pb)	Atmospheric deposition, erosion, and leaching of soil and rocks, and municipal and industrial waste.	A cumulative poison to animals, including man.
Manganese (Mn)	Dissolved from many rocks and soils. Commonly associated with iron in natural waters but less common.	More than 50 ug/L oxidizes to a black precipitate. Manganese has the same undesirable characteristics as iron but is more difficult to remove.
Methylene blue active substance (MBAS)	A measure of the concentrations of apparent detergents in water. The most common sources are synthetic household detergent residues in sewage and waste waters.	High concentration of detergents cause undesirable taste, foaming, and odors. Indicates possible presence of sewage or industrial waste. Low values of MBAS may also be reflective of phenols, proteins, inorganic chlorides, cyanates, nitrates, thiocyanates, and organic compounds having amine groups, which also give positive results to the MBAS determination. Some of these substances may occur naturally.

Table 4.--Continued

Chemical constituent or physical property	Source	Significance
Nitrogen (N)	Derived from the atmosphere, leaching from rocks, and soils, decomposition of organic materials, and various biological processes. Also from fertilizers, municipal and industrial wastes and sewage.	Combines with other elements and at various oxidation states to form chemical species such as ammonia, nitrate, and nitrite.
Ammonia (NH_4)	A degradation product of nitrogenous organic material. Also derived from industrial wastes.	Indicative or organic pollution and toxic to aquatic organisms.
Nitrate (NO_3)	Sewage, industrial wastes, fertilizers, and decaying vegetation are major sources. Lesser amounts are derived from precipitation and solution processes.	Small amounts have no affect on usefulness of water. A concentration greater than 10 mg/L generally indicates pollution. Nitrate encourages growth of algae and other organisms which produce undesirable tastes and odors. Water containing more than 44 mg/L has reportedly caused methemoglobemia, which is often fatal to infants (Comly, 1945). Recommended maximum 10 mg/L of nitrate expressed as N, which is equivalent to 44 mg/L nitrate expressed as NO_3.
Nitrite (NO_2)	An intermediate product of the nitrification process. Formed from the nitrate or ammonium ions by micro-organisms found in water, soil, sewage, and animal digestive tracts.	Very unstable in the presence of oxygen, therefore it is found in minute quantities in most natural waters. It is sometimes indicative of organic pollution.
Oxygen, dissolved (D.O.)	Derived from the atmosphere and from photosynthesis by aquatic vegetation. Amount varies with temperature and pressure and decreases during breakdown of waste material. Concentration can be expressed in mg/L or as a percentage of saturation.	Dissolved oxygen in surface water is necessary for support of fish and other aquatic life. It causes precipitation of iron and manganese in well water and can cause corrosion of metals.
pH	Water having concentrations of acids, acid-generating salts, and free carbon dioxide has a low pH. Where carbonates, bicarbonates, hydroxides, phosphates and silicates are dominant, the pH is high. Most natural waters range between 6 and 8.	A pH of 7.0 indicates neutrality of a solution. Values higher than 7.0 denote alkaline characteristics; values lower than 7.0 indicate acid characteristics. Acid waters and excessively alkaline waters corrode metals.
Phosphorus (P)	Leaching of soils and rocks, fertilizer, decomposition of plants and animals, sewage, and industrial effluents.	In the elemental form, it is toxic. As phosphate, it is an essential plant nutrient, often being the limiting factor in plant growth.
Silica (SiO_2)	Dissolved from practically all rocks and soils.	High concentrations precipitate as hard scale in boilers, water heaters, and pipes. Inhibits deterioration of zeolite-type softeners and corrosion of iron pipes.
Sodium (Na)	Dissolved from practically all rocks and soils. Sewage, industrial wastes, road salt, and sea water are also major sources. Most home water softeners increase the amount of sodium in water by exchanging it for calcium and magnesium.	More than 50 mg/L may cause foaming in steam boilers. The maximum permitted for people restricted to a low salt diet is 20 mg/L.
Solids, dissolved	Includes all dissolved mineral constituents derived from solution of rocks and soils. Locally augmented by mineral matter in sewage and industrial wastes. Measured as residue on evaporation at 180° or calculated as numerical sum of amounts of individual constituents.	Water containing more than 1,000 mg/L dissolved solids is undesirable for public and private supplies and most industrial purposes.
Specific conductance	Specific conductance, or the capacity of water to conduct an electric current. Reflects geochemistry of basin, also affected by pollution.	Relates approximately to dissolved-solids content. In the Norwalk River, 0.062 times the specific conductance is approximately equivalent to the dissolved-solids concentration.
Streptococci, fecal	A group of bacteria which live in the intestinal tract of warm blooded animals. Enter water with animal fecal matter.	Presence of fecal streptococci bacteria specifically indicates fecal waste contamination. These bacteria grow in the intestinal tract in different proportions to fecal coliform bacteria in various animals, thus they are useful in determining the source of fecal contamination.
Sulfate (SO_4)	Dissolved from rocks and soils containing sulfur compounds, especially iron sulfide; also from sulfur compounds dissolved in precipitation and sewage and industrial wastes.	Sulfates of calcium and magnesium cause permanent hardness and form hard scale in boilers and hot water pipes.

Table 4.--Continued

Chemical constituent or physical property	Source	Significance
Temperature	Fluctuates seasonally in streams and shallow aquifers. At depths greater than 30 feet, ground-water temperature remains within 2°C or 3°C of mean annual air temperature [10° to 11°C for the report area (Ryder and others, 1970). Disposal of water used for cooling or industrial processing may cause local temperature anomalies.	Affects the usefulness of water for many purposes. For most uses, especially cooling, water of uniformly low temperatures is desired. A rise of a few degrees in the temperature of a stream may limit its capacity to support aquatic life. Warm water carries less oxygen in solution and is more corrosive than cold water.
Turbidity	An optical property of water attributed to suspended or colloidal matter which inhibits light penetration. May be caused by microorganisms, algae, suspended mineral substances including iron and manganese compounds, clay, silt, sawdust, fibers, or other materials. May result from natural processes of erosion or from the addition of domestic sewage, wastes from industries such as pulp and paper manufacturing, or sediment from construction activities.	Excessive concentrations are harmful or lethal to fish and other aquatic life. Turbidity is also undesirable in water used by most industries, especially in process water. Turbidity can modify water temperature.
Zinc	Dissolved from rocks and ores which are slightly soluble, more so in acid water. Chlorides and sulfates of zinc are highly soluble. Also derived from industrial wastes.	Toxic to various aquatic organisms. High concentrations are detrimental to some crops.

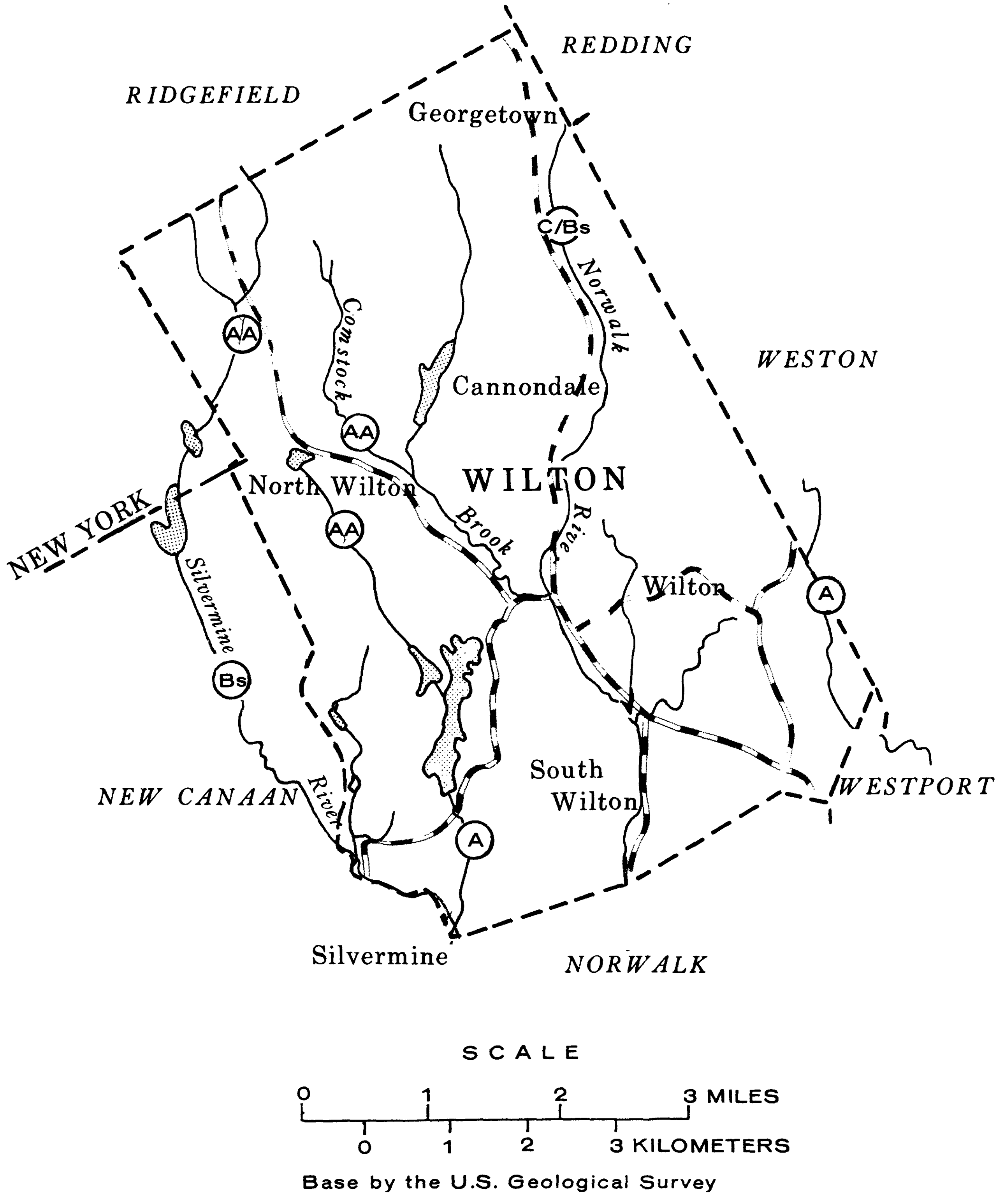

FIGURE 2.-Classification of surface waters in the study area.

Table 5.--Classification standards for Connecticut inland waters

[Modified from Connecticut Water Quality Standards and Classifications, Connecticut Department of Environmental Protection 1977]

	Class AA	Class A	Class B	Class C
Use	Existing or proposed drinking water-supply impoundments and tributary surface waters.	May be suitable for drinking water supply and/or bathing; suitable for all other water uses; character uniformly excellent.	Suitable for bathing, other recreational purposes, agricultural uses, certain industrial processes and cooling; excellent fish and wildlife habitat; good aesthetic value.	Suitable for fish and wildlife habitat, recreational boating, and certain industrial processes and cooling; good aesthetic value.
Dissolved oxygen	Not less than 5 mg/L at any time	Not less than 5 mg/L at any time.	Not less than 5 mg/L at any time.	Not less than 4 mg/L at any time.
Color and turbidity [Jackson turbidity units (JTU)]	Turbidity shall not exceed 10 JTU over ambient levels. A secchi disc shall be visible at a minimum depth of 1 meter. All reasonable controls are to be used.	Turbidity shall not exceed 10 JTU over ambient levels. A secchi disc shall be visible at a minimum depth of 1 meter. All reasonable controls are to be used.	Turbidity shall not exceed 25 JTU; a secchi disc shall be visible at a minimum depth of 1 meter.	Turbidity shall not exceed 25 JTU.
Coliform bacteria (per 100 mL)	Not to exceed an arithmetic mean of 20 organisms/100 mL in any group of samples nor shall 10% of the samples exceed 100 organisms/100 mL.	Not to exceed an arithmetic mean of 20 organisms/100 mL in any group of samples nor shall 10 percent of the samples exceed 100 organisms/100 mL.	Not to exceed a log mean of 200 organisms/100 mL nor shall 10 percent of the samples exceed 400 organisms/100 mL.	Not to exceed a log mean of 1,000 organisms/100 mL nor shall 10 percent of the samples exceed 2,500 organisms/100 mL.
pH	As naturally occurs.	As naturally occurs.	6.5 to 8.0	6.0 to 8.5
Chemical constituents	No chemical constituents in concentrations or combinations which would be harmful to human, animal, or aquatic life for the intended use.	No chemical constituents in concentrations or combinations which would be harmful to human, animal, or aquatic life for the intended use.	No chemical constituents in concentrations or combinations which would be harmful to human, animal, or aquatic life for the intended use.	No chemical constituents in concentrations or combinations which would be harmful to human, animal, or aquatic life for the intended use.
(a) Phosphorus	None other than of natural origin.	None other than of natural origin.		
(b) Sodium	Not to exceed 20 mg/L.			

Site 1

West Branch Saugatuck River Near Weston, Connecticut

The data from this site indicate water of very good quality (table 11). The measured parameters, with the exception of fecal coliform bacteria, were within the established State standards for class A.

Alkalinity values were lower than the minimum recommended values (table 3) in all samples analyzed. The low alkalinity is believed to occur naturally, because of the absence of carbonate minerals in the soils and bedrock of the drainage area. The pH values measured do not indicate that the low alkalinity poses any problem.

In all samples, fecal coliform bacteria exceeded the criteria. The ratio, (FC/FS) of fecal coliform (FC) to fecal streptococci (FS) bacteria colonies ranged from 0.33 to 0.56 at this site. When the ratio FC/FS is less than or equal to 0.7, and the samples were collected not more than 24 hours flow downstream from the source of pollution, it may be taken as strong evidence that the pollution derives predominately or entirely from nonhuman sources such as livestock or poultry wastes (Millipore, 1973). Wild animals such as ducks, geese, and deer would also be included in this category. Additional sampling would be necessary to determine the origin of the bacteria found at this site.

Site 2

Norwalk River at Georgetown, Connecticut

Data indicate the Norwalk River at this site to be of fair quality (tables 6 and 11) and has been rated class C by the State (Connecticut Department of Environmental Protection, 1977). The only parameters exceeding the State standards were pH, which was only slightly elevated on one occasion, and fecal coliform bacteria. The fecal coliform count exceeded 2,500 col/100 mL on several samples, but the log mean value of all samples collected was 522 col/100 mL, which is below the State class C standard (Connecticut Department of Environmental Protection, 1977)

Other physical properties and chemical constituents which were above the criteria of table 3 were color, sodium, iron, lead, manganese, methylene blue active substance (MBAS), and fecal coliform bacteria.

The most consistently high values were found for the total and fecal coliform bacteria. The FC/FS ratios associated with these bacteria counts ranged from 0.36 to 283, indicating that in many instances the bacterial contamination was possibly of human origin. A FC/FS ratio of 4 or greater is considered strong evidence that the bacterial pollution derives from human wastes, if the sample was collected not more than 24 hours flow downstream from the source of the pollution (Millipore, 1973). The source of these bacteria could be sewage

Table 6.--Sumary of water-quality data from site 2, Norwalk River at Georgetown, Conn.

Chemical constituent or physical property	Number of samples	Mean	Minimum value	Maximum value
Streamflow, instantaneous (ft^3/s)	22	39	1.6	228
Specific conductance (umho/cm at 25°C)	22	289	165	490
pH (units)	22	7.9	7.3	8.6
Temperature, air (°C)	22	14.7	0.0	30.0
Temperature, water (°C)	22	12.1	0.0	22.0
Color (platinum-cobalt units)	19	24	3	65
Turbidity (Jackson turbidity units)	20	3	1	7
Oxygen, dissolved (mg/L)	21	11.2	8.6	14.8
Oxygen, dissolved (percent saturation)	21	103	93	111
Coliform, total, (col./ 100 mL)	19	4,100	220	20,000
Coliform, fecal, (col./100 mL)	22	1,000	56	4,500
Streptococci, fecal (col./100 mL)	22	480	3	3,300
Hardness (mg/L as $CaCO_3$)	22	110	62	190
Hardness, noncarbonate (mg/L $CaCO_3$)	22	44	13	110
Calcium, dissolved (mg/L as Ca)	22	31	17	61
Magnesium, dissolved (mg/L as Mg)	22	7.8	4.7	12
Sodium, dissolved (mg/L as Na)	22	13	6.9	22
Sodium adsorption ratio	22	0.6	0.4	0.8
Bicarbonate (mg/L as HCO_3)	22	79	36	120
Carbonate (mg/L as CO_3)	22	0	0	0
Alkalinity (mg/L as $CaCO_3$)	22	65	30	98
Carbon dioxide, dissolved (mg/L as CO_2)	22	2.1	0.3	5.1
Sulfate, dissolved (mg/L as SO_4)	19	27	14	43
Chloride, dissolved (mg/L as Cl)	22	33	13	69
Silica, dissolved (mg/L as SiO_2)	19	6.7	3.3	10
Solids, residue at 180°C, dissolved (mg/L)	22	184	77	335
Solids, sum of constituents, dissolved (mg/L)	19	163	92	259
Solids, dissolved (tons/acre-ft)	22	0.25	0.10	0.46
Solids, dissolved (tons/day)	22	13.4	1.23	62.8
Solids, residue at 105°C, total (mg/L)	22	198	62	382
Nitrogen, NO_2 + NO_3 total (mg/L as N)	22	0.40	0.16	1.0
Nitrogen, ammonia dissolved (mg/L as N)	21	0.10	0.00	0.41
Nitrogen, ammonia dissolved (mg/L as NH_4)	21	0.13	0.00	0.53
Nitrogen, organic total (mg/L as N)	21	0.44	0.17	1.1
Nitrogen, ammonia + organic total (mg/L as N)	22	0.53	0.22	1.3
Nitrogen, total (mg/L as N)	22	0.93	0.40	2.1
Nitrogen, total (mg/L as NO_3)	22	4.2	1.8	9.3
Phosphorus, total (mg/L as P)	22	0.11	0.04	0.23
Copper, dissolved (ug/L as Cu)	22	3	0	11
Iron, dissolved (ug/L as Fe)	22	180	40	390
Lead, dissolved (ug/L as Pb)	21	21	2	77
Manganese, dissolved (ug/L as Mn)	21	41	20	90
Zinc, dissolved (ug/L as Zn)	22	40	20	160
Carbon, organic total (mg/L as C)	22	6.4	3.1	13
Methylene blue active substance (mg/L)	16	0.08	0.0	0.90
Sediment, suspended (mg/L)	22	23	3	336
Sediment discharge, suspended (tons/day)	22	2.2	0.04	32

treatment plant effluents, leachate from septic systems, and/or untreated drains or outfalls. The above normal concentrations of sodium, and the presence of MBAS in some of the samples, along with the concentrations of total phosphorus, total organic carbon, and chloride, also indicate the influence of sewage treatment plants and/or septic systems on the water quality at this site.

The relatively high concentrations of iron, lead, and manganese found at this site probably result from industrial waste discharges.

Site 3

Norwalk River at Cannondale, Connecticut

In general, the water quality at this site was assessed as fair (tables 7 and 11), corresponding to its State rating of class C (Connecticut Department of Environmental Protection, 1977). The pH values exceeded the standard on two occasions and were slightly higher than those found upstream at site 2.

Fecal coliform bacteria counts exceeded the criteria in table 3 on many occasions. The FC/FS ratios frequently exceeded 4, indicative of human waste contamination. The source of the bacteria and the above normal sodium concentrations is probably sewage treatment plants and/or leachate from septic systems or outfalls, as were indicated at site 2. The levels of chloride, total phosphorus, and total organic carbon also suggest this type of source. Fecal coliform counts were similar but usually slightly lower here than at site 2.

Iron concentrations exceeded the criteria in three samples, and lead exceeded the criteria in one sample. In general, the concentrations of all metals at this site were lower than upstream at site 2, indicating that no significant concentrations of metals are entering the river between these two sites.

Site 4

Comstock Brook at North Wilton, Connecticut

The water quality at this site was excellent (table 11) and has been classified by the State as class AA (Connecticut Department of Environmental Protection, 1977). The analytical results showed only one elevated iron concentration, and several relatively high coliform bacteria counts.

The source of the iron is uncertain, but it may be of natural origin. A large number of the total coliform bacteria do not appear to be of animal origin, based on comparison with the considerably lower fecal coliform and fecal streptococci counts. The origin of these fecal bacteria present cannot be determined by FC/FS ratios, but it is unlikely that the source is human.

Table 7.--Summary of water-quality data from site 3, Norwalk River at Cannondale, Conn.

Chemical constituent or physical property	Number of samples	Mean	Minimum value	Maximum value
Streamflow, instantaneous (ft^3/s)	22	41	1.7	239
Specific conductance (umho/cm at 25°C)	22	281	165.	440
pH (units)	22	7.9	7.2	8.9
Temperature, air (°C)	22	15.9	1.0	30.0
Temperature, water (°C)	22	12.4	1.0	21.5
Color (platinum-cobalt units)	19	17	0.0	43
Turbidity (Jackson turbidity units)	20	3	1.	7
Oxygen, dissolved (mg/L)	21	11.8	8.2	15.4
Oxygen, dissolved (percent saturation)	21	107	92	136
Coliform, total, (col./ 100 mL)	19	5,800	88	44,000
Coliform, fecal, (col./100 mL)	22	890	19	3,600
Streptococci, fecal (col./100 mL)	22	3,600	13	66,000
Hardness (mg/L as $CaCO_3$)	22	100	62	170
Hardness, noncarbonate (mg/L $CaCO_3$)	22	43	13	87
Calcium, dissolved (mg/L as Ca)	22	29	17	51
Magnesium, dissolved (mg/L as Mg)	22	7.5	4.8	11
Sodium, dissolved (mg/L as Na)	22	13	4.0	23
Sodium adsorption ratio	22	0.6	0.2	0.8
Bicarbonate (mg/L as HCO_3)	22	72	43	100
Carbonate (mg/L as CO_3)	22	0	0	0
Alkalinity (mg/L as $CaCO_3$)	22	59	35	82
Carbon dioxide, dissolved (mg/L as CO_2)	22	1.8	0.1	5.1
Sulfate, dissolved (mg/L as SO_4)	19	26	14	41
Chloride, dissolved (mg/L as Cl)	22	32	13	61
Silica, dissolved (mg/L as SiO_2)	19	6.5	1.3	10
Solids, residue at 180°C, dissolved (mg/L)	22	176	101	266
Solids, sum of constituents, dissolved (mg/L)	19	154	93	228
Solids, dissolved (tons/acre-ft)	22	0.24	0.14	0.36
Solids, dissolved (tons/day)	22	14.1	1.20	65.2
Solids, residue at 105°C, total (mg/L)	22	192	121	321
Nitrogen, NO_2 + NO_3 total (mg/L as N)	22	0.41	0.15	1.0
Nitrogen, ammonia dissolved (mg/L as N)	21	0.06	0.01	0.27
Nitrogen, ammonia dissolved (mg/L as NH_4)	21	0.07	0.01	0.35
Nitrogen, organic total (mg/L as N)	21	0.47	0.14	1.6
Nitrogen, ammonia + organic total (mg/L as N)	22	0.53	0.18	1.9
Nitrogen, total (mg/L as N)	22	0.94	0.47	2.9
Nitrogen, total (mg/L as NO_3)	22	4.2	2.1	13
Phosphorus, total (mg/L as P)	22	0.11	0.03	0.31
Copper, dissolved (ug/L as Cu)	22	2	0	10
Iron, dissolved (ug/L as Fe)	22	160	10	370
Lead, dissolved (ug/L as Pb)	21	18	4	59
Manganese, dissolved (ug/L as Mn)	21	28	0	50
Zinc, dissolved (ug/L as Zn)	22	40	10	140
Carbon, organic total (mg/L as C)	22	6.1	3.3	9.3
Methylene blue active substance (mg/L)	16	0.01	0.00	0.10
Sediment, suspended (mg/L)	22	21	1	162
Sediment discharge, suspended (tons/day)	22	1.7	0.02	13

Site 5

Bryant Brook at North Wilton, Connecticut

The data collected at this site indicated excellent water quality (table 11). The State has not specifically listed this stream in its publication (Connecticut Department of Environmental Protection, 1977), but assesses a classification of A to all nontidal waters not listed. The data collected met class A standards with the exception of fecal coliform bacteria.

One sample exceeded the criteria of table 3 for fecal coliform bacteria. The origin of the fecal bacteria cannot be determined by FC/FS ratios. Comparisons of the total coliform counts with fecal coliform counts show that the majority of the coliform bacteria found at this site do not originate from animal waste.

On one occasion, the alkalinity value at this site was found to be lower than the criteria, however, it would require further investigation to determine whether this is a natural occurrence and the frequency of this situation. The pH values, which were above 7.0, indicate that it probably does not have a significant effect on the water quality.

Site 6

Norwalk River at South Wilton, Connecticut

The Norwalk River at this site was found to have fair water quality (tables 8 and 11) and has been rated class C by the State (Connecticut Department of Environmental Protection, 1977). Fecal coliform values were frequently above the criteria of table 3. The FC/FS ratios ranged from 0.26 to 21, indicating that on some occasions, the bacteria were probably derived from human sources, while on other occasions, they were not. The fecal coliform counts were usually considerably lower than the total coliform counts, indicating that a substantial portion of the coliform bacteria are not derived from animal wastes. The fact that the fecal coliform bacteria counts at this site are usually less than those found at site 3 suggests that no substantial quantities of animal wastes are entering the river between these sites.

Lead concentrations on several occasions were found to be higher at this site than those found upriver at site 3. The reasons for this, and the source of the lead is not known; however, it appears that additional lead is entering the river between these sites.

For the most part, however, the quality of water at this site is better than that found at site 3. The data show a continuation of the trend seen between sites 2 and 3, with a decrease in the concentrations of most constituents.

Table 8.--Summary of water-quality data from site 6, Norwalk River at South Wilton, Conn.

Chemical constituent or physical property	Number of samples	Mean	Minimum value	Maximum value
Streamflow, instantaneous (ft^3/s)	22	68	3.8	262
Specific conductance (umho/cm at 25°C)	22	230	134	380
pH (units)	22	7.7	7.1	8.5
Temperature, air (°C)	22	16.6	0.5	28.5
Temperature, water (°C)	22	12.3	1.0	22.0
Color (platinum-cobalt units)	19	15	3	38
Turbidity (Jackson turbidity units)	20	2	1	6
Oxygen, dissolved (mg/L)	22	11.8	9.0	15.6
Oxygen, dissolved (percent saturation)	22	107	97	119
Coliform, total, (col./ 100 mL)	21	10,000	20	66,000
Coliform, fecal, (col./100 mL)	22	410	14	3,100
Streptococci, fecal (col./100 mL)	22	420	6	3,300
Hardness (mg/L as $CaCO_3$)	22	75	23	98
Hardness, noncarbonate (mg/L $CaCO_3$)	22	32	10	55
Calcium, dissolved (mg/L as Ca)	22	21	5.8	28
Magnesium, dissolved (mg/L as Mg)	22	5.6	1.8	7.5
Sodium, dissolved (mg/L as Na)	22	13	7.1	25
Sodium adsorption ratio	22	0.7	0.4	1.1
Bicarbonate (mg/L as HCO_3)	22	52	16	69
Carbonate (mg/L as CO_3)	22	0	0	0
Alkalinity (mg/L as $CaCO_3$)	22	43	13	57
Carbon dioxide, dissolved (mg/L as CO_2)	22	2.2	0.2	5.2
Sulfate, dissolved (mg/L as SO_4)	19	21	7.6	33
Chloride, dissolved (mg/L as Cl)	22	28	8.8	58
Silica, dissolved (mg/L as SiO_2)	19	7.2	4.0	10
Solids, residue at 180°C, dissolved (mg/L)	22	139	59	208
Solids, sum of constituents, dissolved (mg/L)	19	122	47	181
Solids, dissolved (tons/acre-ft)	22	0.19	0.08	0.28
Solids, dissolved (tons/day)	22	20 1	2.12	65.1
Solids, residue at 105°C, total (mg/L)	22	155	55	237
Nitrogen, NO_2 + NO_3 total (mg/L as N)	22	0.43	0.18	0.94
Nitrogen, ammonia dissolved (mg/L as N)	22	0.04	0.00	0.10
Nitrogen, ammonia dissolved (mg/L as NH_4)	22	0.05	0.00	0.13
Nitrogen, organic total (mg/L as N)	22	0.41	0.07	1.3
Nitrogen, ammonia + organic total (mg/L as N)	22	0.42	0.10	1.3
Nitrogen, total (mg/L as N)	22	0.86	0.31	1.8
Nitrogen, total (mg/L as NO_3)	22	3.8	1.4	7.9
Phosphorus, total (mg/L as P)	22	0.05	0.01	0.13
Copper, dissolved (ug/L as Cu)	22	3	0	10
Iron, dissolved (ug/L as Fe)	22	150	30	270
Lead, dissolved (ug/L as Pb)	22	20	2	85
Manganese, dissolved (ug/L as Mn)	22	26	0	50
Zinc, dissolved (ug/L as Zn)	22	20	0	60
Carbon, organic total (mg/L as C)	22	5.5	2.4	11
Methylene blue active substance (mg/L)	16	0.01	0.00	0.10
Sediment, suspended (mg/L)	22	30	1.0	389
Sediment discharge, suspended (tons/day)	22	5.1	0.04	69

Site 7

East Branch Silvermine River near Ridgefield, Connecticut

This reach of river is rated class AA by the State (Connecticut Department of Environmental Protection, 1977), and the data collected indicated relatively good water quality (table 11).

In one sample, the fecal coliform bacteria count exceeded the State Class AA standard. However, the other fecal coliform counts were well below the standard, and fecal streptococci counts were relatively low. The FC/FS ratios associated with these counts tend to indicate a non-human source.

Of note at this site were the relatively high concentrations of manganese found in all three samples collected. Further investigation would be necessary to determine the exact source, but it is possible that it occurs naturally as a result of the mineral content of the rocks and soils of the drainage basin.

Other values found were within the suggested and established criteria and were not indicative of any significant contamination.

Site 8

East Branch Silvermine River near North Wilton, Connecticut

The State has rated this reach of the river as class AA (Connecticut Department of Environmental Protection, 1977), and the data collected indicate very good water quality (table 11). Although one total coliform count was relatively high, the fecal coliform and fecal streptococci counts were generally low, indicating that at the time of sampling, fecal waste contamination was insignificant.

Values for nearly all parameters measured at this site showed an improvement in water quality over that found at site 7. A possible exception was MBAS, which was detected in two out of the three samples collected at this site, and was not found in any samples collected at site 7. Although the concentrations of MBAS were well below the water-quality criteria (table 3), its presence could be significant, representing natural organic acid complexes or some type of foaming agents that could be entering the river between this site and site 7.

Site 9

Thayers Brook near Silvermine, Connecticut

This stream has not been specifically classified by the State (Connecticut Department of Environmental Protection, 1977), but was assumed to be class A, as was the case with Bryant Brook (site 5). The data collected indicated water of good quality (table 11).

Total coliform bacteria counts ranged from 50 to 1400 col/100 mL. The fecal coliform counts were considerably lower by comparison, indicating that the majority of the coliform bacteria did not come from fecal material. In two of three samples, fecal coliform counts exceeded 20, however, the FC/FS ratio associated with the highest bacteria counts measured (May 12, 1976) was 0.51, indicating that the probable sources of these fecal bacteria were some warm-blooded animals other than humans. Because the numbers of these bacteria were relatively low, it is possible that they originated from the natural populations of birds and mammals in the area.

The pH values at this site were consistently lower than those found at any other site in the study area. The samples on all three occasions also had low alkalinity values. These low values may be partly due to the geologic materials in the basin that affect the chemical characteristics of ground-water contributions to streamflow, and/or organic decomposition and other biological activity occurring in the pond just upstream of the sample site (fig. 1).

Some iron and manganese concentrations were also above the criteria. The source of these constituents is also probably related to the geologic material of the basin, and/or biological activity in the pond.

Site 10

Silvermine River near Silvermine, Connecticut

The State has classified this reach of the river as class B (Connecticut Department of Environmental Protection, 1977), and the data collected in this investigation are indicative of good water quality (table 11).

Values for most parameters analyzed at this site showed an improvement in the quality of the water from that which was found in the East Branch of the river at sites 7 and 8.

One relatively high total coliform count was found (2000 col/100 mL), with a corresponding fecal coliform count of 330 col/100 mL. The FC/FS ratio for this sample (May 12, 1976) was 0.69, indicating that the source of the fecal bacteria was probably not human waste.

Slightly below criteria alkalinity values were found at this site on two of the three samples collected, but it does not appear to be a significant factor in the overall quality of the stream, based on pH values.

Bottom Materials

Bottom materials have a significant role in the water quality of a stream for several reasons. Of primary importance is the fact that many chemical constituents of water can be sorbed onto these bottom sediments, and in effect, they act as a sink for them. These chemicals can then be transported with the sediments either by chemical, physical, and biological processes. It is also possible for some of these chemicals to be brought back into solution. Thus, bottom materials can be thought of as an indicator of the chemicals that have been in the water, as a transport mechanism for the chemicals, and as a potential source of these chemicals at a future time.

Bottom material samples were collected at sites 2, 3, and 4 in June of 1976 (table 9). Values from Comstock Brook at site 4 were used to reflect natural conditions in the area based on land use in its basin; therefore, the levels of aluminum, copper, and iron appear to be elevated at Norwalk River sites 2 and 3. Comparison of data between these two sites indicates that metal concentrations are higher at site 3 than at site 2.

Because of the mobility of bottom materials, and the lack of information concerning their rate of transport in the river, it is not possible to determine where the metals originated in the basin. More detailed sampling over an extended period of time would be necessary to determine whether these materials are actually entering the river between sites 2 and 3.

Low concentrations of the pesticides DDE and DDT, and a rather high concentration of chlordane (45 ug/kg) were also found in the sample from Comstock Brook (site 4), indicating that these substances were used in the basin at some time in the past.

Biological Studies

The diversity of the biological community found in a body of water is a good indication of the relative water quality. In general, water of good quality will support a wide variety of organisms, with relatively small numbers of each type of organism present. On the other hand, water of poor quality usually supports a rather sparse variety of organisms, with those that are tolerant of the poor quality being present in large numbers.

Data for biological analysis were collected at sites 2, 3, and 4 from October 1975 to June 1976 (table 10).

Samples of phytoplankton populations in the Norwalk River (sites 2 and 3) showed good diversity, indicative of rather good water quality. There was less diversity of phytoplankton in Comstock Brook (site 4); however, the population was made up entirely of various species of diatoms. Diatoms are usually indicative of good water quality, and the lack of green or blue-green algae would tend to indicate a deficiency of some plant nutrient as the limiting factor for diversity at this site. Data for algal growth potential and total phytoplankton cells found at sites 2 and 3 were considerably higher that at site 4.

Benthic invertebrates possess several characteristics that make them valuable indicators of water quality. Because of their limited mobility and relatively long life span, populations of these bottom dwelling animals reflect water-quality conditions over a long period of time, not just at the instant of sample collection. Information is also available concerning the specific water-quality conditions under which various types of these organisms can exist. Thus, the absence or presence of certain types of benthic invertebrates is indicative of specific water-quality conditions.

Benthic invertebrate populations in the Norwalk River at sites 2 and 3 showed relatively good diversity, which is indicative of good quality. However, the predominant types of organisms present would be characterized as those which are relatively tolerant to pollutants, such as midges and caddis flies. The diversity of benthic invertebrates at site 4 in Comstock Brook was less than that at the Norwalk River sites, possibly due to a limited amount of available food or habitat. The chlordane concentrations found in the bed sample at this site could also be indicative of a condition that existed in the past, which may explain the lesser diversity at this site. Considerably more data would be necessary to determine if this were the case. The types of benthic invertebrates found at this site included several species of mayflies, which are considered to be intolerant of pollution as a group and indicative of good water quality.

SUMMARY

The data collected indicate that streams in the Town of Wilton, Connecticut had fair to excellent water quality. The parameters which most often exceeded recommended and established criteria (table 3) were fecal coliform bacteria, pH, alkalinity, manganese, and iron.

The total coliform bacteria population in most instances appear to be composed primarily of types that are not derived from fecal material. When fecal coliform bacteria counts were found to exceed the criteria, the origins of these bacteria, based on FC/FS ratios, were usually not related to human waste. The exceptions are sites 2, 3, and 6 on the Norwalk River, which had FC/FS ratios indicative of human waste contamination on several occasions.

The Norwalk River showed improvement in water quality as it flowed through Wilton. The concentrations of most chemical constituents and bacteria decreased from the Georgetown site to the Cannondale site. Data from the South Wilton site showed a continuation of this trend of improved quality, with some exceptions, most notably lead, which appears to be entering the river between the Cannondale and South Wilton sites.

In general, the East Branch Silvermine River had better water quality than that of the Norwalk River. The data showed that the quality of the Silvermine River also improved as it flowed through Wilton. Nearly all parameters showed decreases in concentration between the Ridgefield and the North Wilton sites, with the exception of the methylene blue active substance. This substance was present in low concentration at the North Wilton site, and absent upstream at Ridgefield. Data from further downriver at Silvermine, on the main stem of the Silvermine River, showed more improvement in water quality.

Bottom material analysis from the Norwalk River (sites 2 and 3) and Comstock Brook (site 4) showed concentrations of some metals in the Norwalk River above those expected under normal conditions. The Comstock Brook sample had no abnormal concentrations of metals, but did contain a high concentration of chlordane, and trace concentrations of DDE and DDT.

Biological samples collected at sites 2, 3, and 4 indicated relatively good water quality. In general, the types of organisms found in the Norwalk River were indicative of higher concentrations of nutrients, and were of types that are more tolerant to degraded water quality than those found in Comstock Brook.

Table 9.--Bottom material analyses

Site 2, Norwalk River at Georgetown, Conn.

DATE	ALUMINUM, RECOV. FM BOTTOM MATERIAL (UG/G)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	BORON, RECOV. FM BOTTOM MATERIAL (UG/G AS B)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G)
JUN 21...	2900	55	0	10	6	4	60	6000	110	360

DATE	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI)	SILVER, RECOV. FM BOTTOM MATERIAL (UG/G AS AG)	STRONTIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	TITANIUM, TOTAL IN BOTTOM MATERIAL (UG/G)	VANADIUM, TOTAL IN BOTTOM MATERIAL (UG/G)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)
JUN 21...	3	12	0	13	90	9.0	0	.0	0	.0

DATE	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)
JUN 21...	.0	.0	.0	.0	.0	.0	.0	.0	.0

DATE	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM
JUN 21...	.0	.0	.0	.0	0	.0	1	3	100

Table 9.--Bottom material analyses.--Continued

Site 3, Norwalk River at Cannondale, Conn.

DATE	ALUMINUM, RECOV. FM BOTTOM MATERIAL (UG/G)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	BORON, RECOV. FM BOTTOM MATERIAL (UG/G AS B)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G)
JUN 21...	4200	95	1	10	9	7	190	8900	150	460

DATE	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G)	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI)	SILVER, RECOV. FM BOTTOM MATERIAL (UG/G AS AG)	STRONTIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	TITANIUM, TOTAL IN BOTTOM MATERIAL (UG/G)	VANADIUM, TOTAL IN BOTTOM MATERIAL (UG/G)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)
JUN 21...	4	18	0	20	170	13	0	.0	0	.0

DATE	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)
JUN 21...	.0	.0	.0	.0	.0	.0	.0	.0	.0

DATE	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM
JUN 21...	.0	.0	.0	.0	0	.0	1	2	100

Table 9.--Bottom material analyses.--Continued

Site 4, Comstock Brook at North Wilton, Conn.

DATE	ALUMINUM, RECOV. FM BOTTOM MATERIAL (UG/G)	BARIUM, RECOV. FM BOTTOM MATERIAL (UG/G AS BA)	BERYLLIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	CHROMIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	COBALT, RECOV. FM BOTTOM MATERIAL (UG/G AS CO)	COPPER, RECOV. FM BOTTOM MATERIAL (UG/G AS CU)	IRON, RECOV. FM BOTTOM MATERIAL (UG/G AS FE)	LEAD, RECOV. FM BOTTOM MATERIAL (UG/G AS PB)	MANGANESE, RECOV. FM BOTTOM MATERIAL (UG/G)	MOLYBDENUM, RECOV. FM BOTTOM MATERIAL (UG/G)
JUN 22...	2100	40	0	7	3	6	2900	130	300	4

DATE	NICKEL, RECOV. FM BOTTOM MATERIAL (UG/G AS NI)	SILVER, RECOV. FM BOTTOM MATERIAL (UG/G AS AG)	STRONTIUM, RECOV. FM BOTTOM MATERIAL (UG/G)	TITANIUM, TOTAL IN BOTTOM MATERIAL (UG/G)	VANADIUM, TOTAL IN BOTTOM MATERIAL (UG/G)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)
JUN 22...	7	0	10	130	6.0	0	.0	45	.0

DATE	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)
JUN 22...	.6	7.7	.0	.0	.0	.0	.0	.0	.0

DATE	MALATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	METHYL PARATHION, TOT. IN BOTTOM MATL. (UG/KG)	METHYL TRITHION, TOT. IN BOTTOM MATL. (UG/KG)	PARATHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TRITHION, TOTAL IN BOTTOM MATERIAL (UG/KG)	BED MAT. FALL DIAM. % FINER THAN .004 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN 2.00 MM
JUN 22...	.0	.0	.0	.0	0	.0	2	5	100

Table 10.--Biological analyses

Site 2, Norwalk River at Georgetown, Conn.

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1975 TO JUNE 1976

DATE	JUN 21,76
TIME	1005
TOTAL COUNT	2097
DIVERSITY: PHYLUM	0.0
.CLASS	0.1
..ORDER	1.1
...FAMILY	1.4
....GENUS	3.2
....GENUS-INSECTA	3.2

ORGANISM	COUNT
ARTHROPODA (ARTHROPODS)	
.ARACHNIDA	
..HYDRACARINA	
...UNKNOWN FAMILY	
....UNKNOWN GENUS	20
.INSECTA	
..COLEOPTERA	
...PSEPHENIDAE	
....ECTOPRIA	1
..DIPTERA	
...CHIRONOMIDAE	
....BRILLIA	20
....CARDIOCLADIUS	70
....CORYNONEURA	30
....CRICOTOPUS	210
....EUKIEFFERIELLA	460
....PENTANEURA	50
....POLYPEDILUM	40
....RHEOTANYTARSUS	140
....THIENEMANNIELLA	270
...EMPIDIDAE	
....HEMERODROMIA	1
...SIMULIIDAE	
....SIMULIUM	128
...TIPULIDAE	
....ANTOCHA	4
..EPHEMEROPTERA	
...BAETIDAE	
....BAETIS	36
..ODONATA	
...AESHNIDAE	
....BOYERIA	1
..PLECOPTERA	
...PERLIDAE	
....PARAGNETINA	1
..TRICHOPTERA	
...HYDROPSYCHIDAE	
....CHEUMATOPSYCHE	434
....HYDROPSYCHE	181

PHYTOPLANKTON ANALYSES, OCTOBER 1975 TO JUNE 1976

DATE	JUN 21,76
TIME	1005
TOTAL CELLS/ML	1300
DIVERSITY: DIVISION	0.4
.CLASS	0.4
..ORDER	1.3
...FAMILY	2.5
....GENUS	2.7

ORGANISM	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...CHARACIACEAE		
....SCHROEDERIA	17	1
...SCENEDESMACEAE		
....SCENEDESMUS	17	1
..VOLVOCALES		
...CHLAMYDOMONADACEAE		
....CHLAMYDOMONAS	67	5
CHRYSOPHYTA		
.BACILLARIOPHYCEAE		
..CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	350#	26
....MELOSIRA	33	2
..PENNALES		
...ACHNANTHACEAE		
....ACHNANTHES	120	9
....COCCONEIS	17	1
....RHOICOSPHENIA	*	0
...CYMBELLACEAE		
....CYMBELLA	17	1
...FRAGILARIACEAE		
....FRAGILARIA	350#	26
....SYNEDRA	17	1
...MERIDIONACEAE		
....MERIDION	*	0
...NAVICULACEAE		
....NAVICULA	300#	22
...NITZSCHIACEAE		
....NITZSCHIA	33	2
...SURIRELLACEAE		
....SURIRELLA	17	1

NOTE: # - DOMINANT ORGANISM: EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

Table 10.--Biological analyses.--continued

Site 3, Norwalk River at Cannondale, Conn.

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1975 TO JUNE 1976

DATE	JUN 21,76
TIME	1330
TOTAL COUNT	3828
DIVERSITY: PHYLUM	0.0
.CLASS	0.0
..ORDER	0.9
...FAMILY	0.9
....GENUS	2.8
....GENUS-INSECTA	2.8

ORGANISM	COUNT
ARTHROPODA (ARTHROPODS)	
.ARACHNIDA	
..HYDRACARINA	
...UNKNOWN FAMILY	
....UNKNOWN GENUS	5
.INSECTA	
..COLEOPTERA	
...ELMIDAE	
....OPTIOSERVUS	1
..DIPTERA	
...CHIRONOMIDAE	
....BRILLIA	33
....CORYNONEURA	98
....CRICOTOPUS	427
....EUKIEFFERIELLA	999
....PENTANEURA	66
....POLYPEDILUM	66
....RHEOTANYTARSUS	999
....TANYTARSUS	131
....THIENEMANNIELLA	33
...SIMULIIDAE	
....SIMULIUM	36
...TIPULIDAE	
....ANTOCHA	2
....TIPULA	1
..EPHEMEROPTERA	
...BAETIDAE	
....BAETIS	5
....PSEUDOCLOEON	1
...HEPTAGENIIDAE	
....STENONEMA	2
..ODONATA	
...AESHNIDAE	
....BOYERIA	1
...AGRIIDAE	
....AGRION	1
..PLECOPTERA	
...PERLIDAE	
....PARAGNETINA	4
..TRICHOPTERA	
...HYDROPSYCHIDAE	
....CHEUMATOPSYCHE	672
....HYDROPSYCHE	241
...HYDROPTILIDAE	
....LEUCOTRICHIA	2
...LEPTOCERIDAE	
....DECETIS	1
MOLLUSCA (MOLLUSCS)	
.GASTROPODA	
..BASOMMATOPHORA	
...PHYSIDAE	
....PHYSA	1

PHYTOPLANKTON ANALYSES, OCTOBER 1975 TO JUNE 1976

DATE	JUN 21,76
TIME	1330
TOTAL CELLS/ML	960
DIVERSITY: DIVISION	0.9
.CLASS	0.9
..ORDER	1.9
...FAMILY	2.1
....GENUS	2.4

ORGANISM	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)		
.CHLOROPHYCEAE		
..CHLOROCOCCALES		
...CHARACIACEAE		
....SCHROEDERIA	17	2
...OOCYSTACEAE		
....ANKISTRODESMUS	17	2
....OOCYSTIS	130	14
...SCENEDESMACEAE		
....SCENEDESMUS	*	0
..VOLVOCALES		
...VOLVOCACEAE		
....PANDORINA	130	14
CHRYSOPHYTA		
.BACILLARIOPHYCEAE		
..CENTRALES		
...COSCINODISCACEAE		
....CYCLOTELLA	390#	40
....MELOSIRA	34	4
..PENNALES		
...ACHNANTHACEAE		
....RHOICOSPHENIA	50	5
...NAVICULACEAE		
....NAVICULA	190#	19

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

Table 10.--Biological analyses.--continued

Site 4, Comstock Brook at North Wilton, Conn.

BENTHIC INVERTEBRATE ANALYSES, OCTOBER 1975 TO JUNE 1976

DATE	JUN 22,76
TIME	1240
TOTAL COUNT	669
DIVERSITY: PHYLUM	0.1
.CLASS	0.1
..ORDER	0.5
...FAMILY	0.5
....GENUS	2.6
....GENUS-INSECTA	2.6

ORGANISM	COUNT
ANNELIDA	
.OLIGOCHAETA	
..PLESIOPORA	
...TUBIFICIDAE	
....UNKNOWN GENUS	1
ARTHROPODA (ARTHROPODS)	
.INSECTA	
..COLEOPTERA	
...ELMIDAE	
....OPTIOSERVUS	1
..DIPTERA	
...CHIRONOMIDAE	
....CORYNONEURA	230
....CRYPTOCHIRONOMUS	10
....EUKIEFFERIELLA	30
....MICROTENDIPES	67
....RHEOTANYTARSUS	170
....TANYTARSUS	10
....THIENEMANNIELLA	107
...TIPULIDAE	
....ANTOCHA	1
..EPHEMEROPTERA	
...BAETIDAE	
....BAETIS	3
...CAENIDAE	
....CAENIS	1
...EPHEMERELLIDAE	
....EPHEMERELLA	2
...HEPTAGENIIDAE	
....STENONEMA	20
..PLECOPTERA	
...PERLIDAE	
....PERLESTA	10
..TRICHOPTERA	
...POLYCENTROPODIDAE	
....NYCTIOPHYLAX	1
...UNKNOWN FAMILY	
....UNKNOWN GENUS	2
CNIDARIA (CNIDARIANS)	
.HYDROZOA	
..HYDROIDA	
...HYDRIDAE	
....HYDRA	1
MOLLUSCA (MOLLUSCS)	
.GASTROPODA	
..BASOMMATOPHORA	
...PHYSIDAE	
....PHYSA	2

PHYTOPLANKTON ANALYSES, OCTOBER 1975 TO JUNE 1976

DATE	JUN 22,76
TIME	1240
TOTAL CELLS/ML	120
DIVERSITY: DIVISION	0.3
.CLASS	0.3
..ORDER	0.3
...FAMILY	1.2
....GENUS	1.5

ORGANISM	CELLS /ML	PER-CENT
CHRYSOPHYTA		
.BACILLARIOPHYCEAE		
..PENNALES		
...ACHNANTHACEAE		
....ACHNANTHES	75#	61
....COCCONEIS	20#	17
...CYMBELLACEAE		
....CYMBELLA	7	6
...EUNOTIACEAE		
....EUNOTIA	*	0
...GOMPHONEMATACEAE		
....GOMPHONEMA	7	6
...NAVICULACEAE		
....NAVICULA	7	6
EUGLENOPHYTA (EUGLENOIDS)		
.EUGLENOPHYCEAE		
..EUGLENALES		
...EUGLENACEAE		
....EUGLENA	7	6

NOTE: # - DOMINANT ORGANISM: EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED: LESS THAN 1/2%

Table 11.--Water-quality analyses

Site 1, West Branch Saugatuck River near Weston, Conn.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (JTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)
APR										
14...	1425	22	116	7.2	23.0	12.0	1	11.6	107	27
MAY										
12...	1415	73	92	7.1	18.5	16.0	2	10.1	102	1300
JUN										
23...	1405	6.5	111	6.9	30.5	22.5	2	8.4	96	430

DATE	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)
APR										
14...	4	12	26	13	7.0	2.1	7.7	.7	16	0
MAY										
12...	420	1100	23	10	5.9	1.9	6.4	.6	15	0
JUN										
23...	130	230	30	12	8.1	2.3	7.6	.6	21	0

DATE	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
APR									
14...	13	1.6	13	73	.10	4.34	60	.31	.20
MAY									
12...	12	1.9	10	64	.09	12.6	63	.19	.40
JUN									
23...	17	4.2	14	79	.11	1.39	63	.39	.33

DATE	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
APR									
14...	.51	2.3	.020	0	90	20	0	2.4	.00
MAY									
12...	.59	2.6	.050	0	150	30	0	4.7	.00
JUN									
23...	.72	3.2	.050	0	280	30	0	6.0	.00

Table 11.--Water-quality analyses.--continued

Site 2, Norwalk River at Georgetown, Conn.--Continued

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
APR , 1976										
12...	700	110	--	--	40	83	27	22	6.7	10
MAY										
10...	1700	390	--	--	70	74	18	19	6.4	9.4
JUN										
21...	6500	1800	--	--	110	99	29	27	7.7	11
JUL										
13...	3800	590	--	--	880	190	110	61	9.8	20
AUG										
11...	--	1200	--	--	3300	62	13	17	4.7	6.9
SEP										
21...	10000	2900	--	--	620	150	69	44	9.1	13
OCT										
27...	1400	--	170	120	--	79	18	20	7.1	8.9
NOV										
22...	900	--	100	45	--	110	34	29	9.1	12
DEC										
29...	650	--	230	9	--	130	66	39	8.0	13
JAN , 1977										
26...	220	--	56	8	--	130	53	38	8.2	18
FEB										
23...	1000	--	240	3	--	160	72	47	9.2	22
MAR										
29...	320	--	160	38	--	71	41	19	5.6	12
APR										
19...	--	--	1700	6	--	100	39	27	7.9	12
MAY										
11...	3900	--	550	81	--	90	28	24	7.2	12
JUN										
22...	3400	--	1000	130	--	150	83	46	8.7	16
JUL										
25...	660	--	660	230	--	160	70	46	11	18
AUG										
23...	20000	--	1300	850	--	150	56	42	12	20
SEP										
21...	6000	--	4500	1600	--	91	31	25	7.0	12
OCT										
19...	7200	--	700	190	--	93	40	25	7.4	12
NOV										
10...	7600	--	3100	2200	--	68	16	18	5.6	9.5
MAR , 1978										
22...	--	--	160	30	--	65	26	17	5.4	11
APR ,										
19...	1600	--	360	58	--	88	26	23	7.3	14

Table 11.--Water-quality analyses.--continued

Site 2, Norwalk River at Georgetown, Conn.

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, AIR (DEG C)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (JTU)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
APR , 1976											
12...	0935	27	251	8.2	2.5	7.5	--	1	--	12.6	104
MAY											
10...	0955	30	210	7.9	22.0	13.5	--	1	--	11.1	106
JUN											
21...	1005	15	251	7.8	25.0	21.0	--	1	--	8.6	96
JUL											
13...	1125	3.2	490	8.3	19.0	20.0	18	5	--	8.6	93
AUG											
11...	1340	228	165	7.5	30.0	20.5	38	7	--	8.9	98
SEP											
21...	1340	6.4	371	7.8	18.5	19.0	10	3	--	9.0	97
OCT											
27...	1130	36	219	7.7	3.5	7.0	40	2	--	12.5	102
NOV											
22...	1040	13	295	7.9	4.0	3.0	5	2	--	13.7	102
DEC											
29...	1450	15	370	8.0	.0	1.5	12	2	--	--	--
JAN , 1977											
26...	1025	10	420	7.6	6.5	.0	15	4	--	14.8	101
FEB											
23...	1030	11	450	8.5	9.0	1.0	15	3	--	14.4	101
MAR											
29...	1030	101	224	7.7	21.0	9.0	3	2	--	12.4	107
APR											
19...	1035	30	280	8.6	22.5	15.0	7	2	--	10.8	106
MAY											
11...	1030	35	232	8.0	16.5	11.0	10	1	--	11.6	104
JUN											
22...	1115	2.9	380	7.7	22.5	20.0	20	3	--	10.2	110
JUL											
25...	1200	1.6	381	7.8	22.0	22.0	30	4	--	9.8	111
AUG											
23...	1030	2.7	375	7.8	23.0	19.5	50	6	--	8.9	98
SEP											
21...	1030	7.6	225	7.5	12.5	17.0	10	6	--	9.8	101
OCT											
19...	1035	28	229	7.5	14.0	11.0	55	3	--	11.3	102
NOV											
10...	1100	100	180	7.3	14.0	13.0	65	5	--	11.8	111
MAR , 1978											
22...	1100	130	172	7.9	9.0	4.0	20	--	2.0	13.8	104
APR ,											
19...	1100	23	195	8.0	5.5	10.0	30	--	1.0	11.4	101

Table 11.--Water-quality analyses.--continued

Site 2, Norwalk River at Georgetown, Conn.--Continued

DATE	SODIUM AD- SORP- TION RATIO	BICAR- BONATE (MG/L AS HCO3)	CAR- BONATE (MG/L AS CO3)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)
APR , 1976										
12...	.5	68	0	56	.7	--	22	--	143	--
MAY										
10...	.5	68	0	56	1.4	--	16	--	132	--
JUN										
21...	.5	86	0	71	2.2	--	23	--	167	--
JUL										
13...	.6	106	0	87	.9	43	69	3.3	335	259
AUG										
11...	.4	60	0	49	3.0	14	13	6.9	102	92
SEP										
21...	.5	96	0	79	2.4	35	47	4.2	240	200
OCT										
27...	.4	74	0	61	2.4	17	19	10	135	119
NOV										
22...	.5	93	0	76	1.9	22	25	7.7	161	151
DEC										
29...	.5	79	0	65	1.3	26	48	8.8	212	182
JAN , 1977										
26...	.7	92	0	75	3.7	29	56	10	232	205
FEB										
23...	.8	101	0	83	.5	39	62	9.3	283	238
MAR										
29...	.6	36	0	30	1.1	18	26	6.5	133	105
APR										
19...	.5	74	0	61	.3	21	32	3.3	171	140
MAY										
11...	.6	75	0	62	1.2	16	22	6.1	77	125
JUN										
22...	.6	82	0	67	2.6	38	55	5.2	280	210
JUL										
25...	.6	110	0	90	2.8	42	44	5.4	285	221
AUG										
23...	.7	120	0	98	3.0	42	44	7.5	272	227
SEP										
21...	.5	73	0	60	3.7	29	22	5.2	159	136
OCT										
19...	.5	64	0	53	3.2	29	22	10	159	137
NOV										
10...	.5	64	0	53	5.1	17	18	8.0	107	108
MAR , 1978										
22...	.6	47	0	39	.9	17	24	7.1	108	105
APR ,										
19...	.7	75	0	62	1.2	20	25	3.5	166	130

Table 11.--Water-quality analyses.--continued

Site 2, Norwalk River at Georgetown, Conn.--Continued

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)
APR , 1976										
12...	.19	10.4	146	.22	.03	.04	.35	.38	.60	2.7
MAY										
10...	.18	10.7	148	.25	--	--	--	.28	.53	2.3
JUN										
21...	.23	6.85	174	.53	.01	.01	.49	.50	1.0	4.6
JUL										
13...	.46	2.89	382	.43	.09	.12	.51	.60	1.0	4.6
AUG										
11...	.14	62.8	117	.23	.07	.09	.53	.60	.83	3.7
SEP										
21...	.33	4.15	256	.31	.25	.32	.45	.70	1.0	4.5
OCT										
27...	.18	13.1	138	.16	.05	.06	.28	.33	.49	2.2
NOV										
22...	.22	5.65	167	.40	.05	.06	.20	.25	.65	2.9
DEC										
29...	.29	8.59	234	.56	.13	.17	.35	.48	1.0	4.6
JAN , 1977										
26...	.32	6.58	248	1.0	.27	.35	.83	1.1	2.1	9.3
FEB										
23...	.38	8.41	294	.99	.41	.53	.69	1.1	2.1	9.3
MAR										
29...	.18	36.3	146	.48	.06	.08	.24	.30	.78	3.5
APR										
19...	.23	13.9	173	.21	.09	.12	.31	.40	.61	2.7
MAY										
11...	.10	7.28	62	.18	.05	.06	.17	.22	.40	1.8
JUN										
22...	.38	2.19	272	.40	.10	.13	.34	.44	.84	3.7
JUL										
25...	.39	1.23	315	.34	.03	.04	.55	.58	.92	4.1
AUG										
23...	.37	1.98	280	.53	.20	.26	1.1	1.3	1.8	8.1
SEP										
21...	.22	3.26	187	.27	.11	.14	.34	.45	.72	3.2
OCT										
19...	.22	12.0	188	.32	.04	.05	.40	.44	.76	3.4
NOV										
10...	.15	28.9	127	.23	.01	.01	.54	.55	.78	3.5
MAR , 1978										
22...	.15	37.9	130	.63	.05	.06	.23	.28	.91	4.0
APR ,										
19...	.23	10.3	179	.19	.00	.00	.41	.41	.60	2.7

Table 11.--Water-quality analyses.--continued

Site 2, Norwalk River at Georgetown, Conn.--Continued

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1976										
12...	.050	0	150	14	50	20	3.1	.00	4	.29
MAY										
10...	.090	0	200	--	--	40	13	.00	3	.24
JUN										
21...	.230	0	320	9	50	40	9.3	.00	5	.21
JUL										
13...	.120	10	40	23	40	40	6.0	.10	7	.06
AUG										
11...	.180	0	180	21	30	20	9.9	.00	6	3.7
SEP										
21...	.100	0	200	55	30	60	6.2	.00	4	.07
OCT										
27...	.110	0	300	60	30	30	9.3	.00	4	.39
NOV										
22...	.060	0	160	21	40	40	4.5	.00	3	.11
DEC										
29...	.050	0	160	13	60	80	4.7	.00	4	.16
JAN , 1977										
26...	.110	0	80	7	60	160	3.6	.10	5	.14
FEB										
23...	.110	0	40	2	50	30	3.3	.10	4	.12
MAR										
29...	.040	0	120	5	30	30	3.7	.00	17	4.6
APR										
19...	.040	0	360	22	40	30	3.4	.00	23	1.9
MAY										
11...	.100	8	390	21	40	30	6.5	--	336	32
JUN										
22...	.100	6	170	10	30	50	4.2	--	5	.04
JUL										
25...	.190	11	120	2	20	30	5.3	--	18	.08
AUG										
23...	.220	6	100	15	90	40	7.6	--	28	.20
SEP										
21...	.190	4	180	27	40	40	6.9	--	11	.23
OCT										
19...	.110	3	60	15	40	40	9.2	.90	8	.60
NOV										
10...	.120	3	230	77	20	30	10	--	3	.81
MAR , 1978										
22...	.040	4	220	8	40	40	4.0	.00	5	1.8
APR ,										
19...	.070	4	180	5	40	40	8.1	.00	3	.19

Table 11.--Water-quality analyses.--continued

Site 3, Norwalk River at Cannondale, Conn.

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, AIR (DEG C)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (JTU)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
APR , 1976											
12...	1055	28	259	8.1	4.0	8.0	--	1	--	13.6	114
MAY											
10...	1055	31	211	7.8	22.5	14.0	--	1	--	11.3	109
JUN											
21...	1330	16	246	7.8	27.5	21.5	--	1	--	8.2	92
JUL											
13...	1345	3.4	430	8.9	22.5	19.0	9	3	--	12.7	136
AUG											
11...	1240	239	169	7.5	30.0	20.0	37	7	--	8.7	95
SEP											
21...	1245	6.7	319	7.7	18.5	18.0	10	2	--	9.4	99
OCT											
27...	1225	37	217	7.6	4.0	7.0	35	1	--	12.6	103
NOV											
22...	1145	13	288	8.2	4.0	4.0	6	1	--	15.2	114
DEC											
29...	1340	16	328	7.8	1.0	1.0	8	2	--	15.4	109
JAN , 1977											
26...	1145	11	400	7.6	3.0	1.0	15	3	--	14.6	103
FEB											
23...	1145	12	440	8.3	12.0	3.0	10	4	--	14.0	103
MAR											
29...	1200	106	230	7.6	23.5	12.0	2	3	--	12.8	118
APR											
19...	1210	32	272	8.9	27.5	17.0	3	1	--	10.0	103
MAY											
11...	1200	37	238	8.2	18.0	12.0	0	1	--	11.4	105
JUN											
22...	1230	3.0	382	7.8	23.5	20.0	18	2	--	9.8	106
JUL											
25...	1300	1.7	350	7.9	22.5	21.0	30	3	--	9.8	108
AUG											
23...	1150	2.8	372	8.1	23.5	20.0	35	5	--	10.4	113
SEP											
21...	1215	7.9	250	7.6	15.0	17.0	8	4	--	10.6	109
OCT											
19...	1230	29	231	7.6	15.0	11.5	23	2	--	11.4	104
NOV											
10...	1200	105	185	7.2	16.5	13.0	43	4	--	11.2	106
MAR , 1978											
22...	1220	137	165	7.7	10.0	3.5	20	--	2.0	13.4	102
APR ,											
19...	1200	24	201	8.2	6.0	9.0	20	--	1.0	12.4	106

Table 11.--Water-quality analyses.--continued

Site 3, Norwalk River at Cannondale, Conn.--Continued

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
APR , 1976										
12...	180	90	--	--	21	85	31	23	6.8	11
MAY										
10...	1100	610	--	--	69	66	13	17	5.8	10
JUN										
21...	3400	1100	--	--	67	97	32	27	7.3	4.0
JUL										
13...	4000	1200	--	--	220	170	87	51	9.4	20
AUG										
11...	9000	1900	--	--	2900	62	14	17	4.8	7.3
SEP										
21...	44000	1400	--	--	800	130	48	36	8.9	13
OCT										
27...	780	--	220	130	--	78	19	20	6.8	9.4
NOV										
22...	330	--	130	31	--	110	36	29	8.8	12
DEC										
29...	310	--	63	13	--	120	51	33	8.0	12
JAN , 1977										
26...	400	--	260	50	--	120	50	34	8.0	19
FEB										
23...	320	--	19	81500	--	140	67	43	8.9	23
MAR										
29...	200	--	88	160	--	70	29	19	5.4	12
APR										
19...	--	--	270	40	--	94	42	25	7.6	14
MAY										
11...	24000	--	330	34	--	90	33	24	7.2	12
JUN										
22...	3000	--	1300	500	--	140	81	43	8.5	17
JUL										
25...	10000	--	2500	1200	--	140	65	41	10	17
AUG										
23...	2000	--	800	160	--	140	61	39	11	20
SEP										
21...	4000	--	2400	1200	--	100	55	30	6.8	12
OCT										
19...	4800	--	900	K5000	--	94	43	25	7.6	12
NOV										
10...	8800	--	3600	66000	--	68	26	18	5.6	9.8
MAR , 1978										
22...	88	--	88	32	--	64	29	17	5.3	12
APR ,										
19...	480	--	220	52	--	71	34	19	5.6	13

Table 11.--Water-quality analyses.--continued

Site 3, Norwalk River at Cannondale, Conn.--Continued

DATE	SODIUM AD-SORP-TION RATIO	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
APR , 1976										
12...	.5	66	0	54	.8	--	23	--	145	--
MAY										
10...	.5	65	0	53	1.6	--	19	--	125	--
JUN										
21...	.2	80	0	66	2.0	--	23	--	165	--
JUL										
13...	.7	96	0	79	.2	41	55	1.3	266	225
AUG										
11...	.4	59	0	48	3.0	14	13	7.1	101	93
SEP										
21...	.5	96	0	79	3.1	30	37	4.5	205	177
OCT										
27...	.5	72	0	59	2.9	17	19	10	132	118
NOV										
22...	.5	88	0	72	.9	22	27	7.4	160	150
DEC										
29...	.5	78	0	64	2.0	25	39	8.8	182	165
JAN , 1977										
26...	.8	83	0	68	3.3	27	54	10	212	193
FEB										
23...	.8	94	0	77	.8	37	61	8.9	264	228
MAR										
29...	.6	49	0	40	2.0	19	27	6.6	130	113
APR										
19...	.6	63	0	52	.1	21	32	3.4	159	134
MAY										
11...	.6	69	0	57	.7	16	23	6.2	154	123
JUN										
22...	.6	75	0	62	1.9	37	52	5.9	255	201
JUL										
25...	.6	96	0	79	1.9	39	42	1.8	261	198
AUG										
23...	.7	100	0	82	1.3	40	44	6.8	253	210
SEP										
21...	.5	59	0	48	2.4	32	32	5.3	186	147
OCT										
19...	.5	62	0	51	2.5	29	23	10	166	137
NOV										
10...	.5	51	0	42	5.1	18	19	8.0	104	104
MAR , 1978										
22...	.7	43	0	35	1.4	16	24	7.2	110	103
APR ,										
19...	.7	45	0	37	.5	20	25	4.5	145	110

Table 11.--Water-quality analyses.--continued

Site 3, Norwalk River at Cannondale, Conn.--Continued

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)
APR , 1976										
12...	.20	11.0	150	.24	.04	.05	.19	.23	.47	2.1
MAY										
10...	.17	10.5	128	.21	.03	.04	.30	.33	.54	2.4
JUN										
21...	.22	7.13	172	.54	.02	.03	.46	.48	1.0	4.5
JUL										
13...	.36	2.44	321	.21	.01	.01	.44	.45	.66	2.9
AUG										
11...	.14	65.2	121	.25	.07	.09	.48	.55	.80	3.5
SEP										
21...	.28	3.71	218	.31	.03	.04	.42	.45	.76	3.4
OCT										
27...	.18	13.2	141	.19	.04	.05	.29	.33	.52	2.3
NOV										
22...	.22	5.75	168	.40	.04	.05	.14	.18	.58	2.6
DEC										
29...	.25	7.86	200	.57	.07	.09	.21	.28	.85	3.8
JAN , 1977										
26...	.29	6.30	234	.99	.22	.28	.75	.97	2.0	8.7
FEB										
23...	.36	8.55	294	1.0	.27	.35	1.6	1.9	2.9	13
MAR										
29...	.18	37.2	135	.48	.05	.06	.15	.20	.68	3.0
APR										
19...	.22	13.7	163	.25	.05	.06	.45	.50	.75	3.3
MAY										
11...	.21	15.4	152	.20	.03	.04	.28	.31	.51	2.3
JUN										
22...	.35	2.09	254	.48	.03	.04	.37	.40	.88	3.9
JUL										
25...	.36	1.20	274	.15	.03	.04	.49	.52	.67	3.0
AUG										
23...	.34	1.91	285	.61	.03	.04	.81	.84	1.5	6.4
SEP										
21...	.25	4.01	216	.34	.12	.15	.79	.91	1.3	5.5
OCT										
19...	.23	13.2	186	.33	.03	.04	.36	.39	.72	3.2
NOV										
10...	.14	29.5	126	.23	.01	.01	.71	.72	.95	4.2
MAR , 1978										
22...	.15	40.5	125	.60	.04	.05	.27	.31	.91	4.0
APR ,										
19...	.20	9.45	152	.38	.01	.01	.35	.36	.74	3.3

Table 11.--Water-quality analyses.--continued

Site 3, Norwalk River at Cannondale, Conn.--Continued

DATE	PHOS- PHORUS, TOTAL (MG/L AS P)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT DIS- CHARGE, SUS- PENDED (T/DAY)
APR , 1976										
12...	.050	0	120	4	40	20	3.7	.00	3	.23
MAY										
10...	.080	0	150	7	20	10	4.5	.00	3	.25
JUN										
21...	.200	0	290	16	40	50	9.2	.00	4	.17
JUL										
13...	.080	10	40	9	10	10	6.3	.10	8	.07
AUG										
11...	.180	0	190	9	20	20	9.1	.00	11	7.1
SEP										
21...	.080	0	210	16	10	50	6.9	.00	1	.02
OCT										
27...	.080	0	300	25	30	30	7.0	.00	2	.20
NOV										
22...	.060	0	140	37	30	40	5.0	.00	3	.11
DEC										
29...	.050	0	130	27	40	50	3.7	.00	3	.13
JAN , 1977										
26...	.100	0	50	8	50	140	4.0	.00	4	.12
FEB										
23...	.220	0	40	5	40	40	4.0	.10	5	.16
MAR										
29...	.080	0	120	5	20	40	5.7	.00	46	13
APR										
19...	.040	0	320	18	30	30	4.0	.00	21	1.8
MAY										
11...	.100	3	370	35	40	30	7.1	--	52	5.2
JUN										
22...	.080	5	100	22	0	30	4.6	--	12	.10
JUL										
25...	.090	10	110	10	20	10	6.0	--	162	.74
AUG										
23...	.310	6	100	15	20	20	7.8	--	7	.05
SEP										
21...	.160	5	140	23	30	40	7.6	--	18	.39
OCT										
19...	.100	3	10	26	30	40	7.9	.00	7	.56
NOV										
10...	.120	4	220	59	30	30	9.3	--	2	.57
MAR , 1978										
22...	.040	2	100	5	30	30	3.3	.00	2	.74
APR ,										
19...	.030	3	360	7	30	50	7.8	.00	81	5.3

Table 11.--Water-quality analyses.--continued

Site 4, Comstock Brook at North Wilton, Conn.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (JTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./100 ML)
APR 13...	1325	8.0	124	7.5	17.0	10.5	1	11.4	102	20	2
MAY 11...	1400	6.3	108	7.5	19.5	15.0	1	10.5	103	230	31
JUN 22...	1240	1.9	124	7.4	29.5	21.0	1	8.4	93	330	63
23...	1025	--	--	--	--	--	--	--	--	--	--

DATE	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)
APR 13...	3	35	12	8.7	3.2	6.2	.5	28	0	23	1.4
MAY 11...	53	31	6	7.5	2.9	5.6	.4	30	0	25	1.5
JUN 22...	--	44	7	11	3.9	5.5	.4	44	0	36	2.8
23...	74	--	--	--	--	--	--	--	--	--	--

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
APR 13...	12	62	.08	1.34	81	.12	.01	.01	.19	.20	.32
MAY 11...	8.9	69	.09	1.17	69	.09	.02	.03	.33	.35	.44
JUN 22...	9.7	88	.12	.45	88	.29	.02	.03	.38	.40	.69
23...	--	--	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)
APR 13...	1.4	.020	0	70	7	20	0	3.9	.00	5	.11
MAY 11...	1.9	.030	0	100	9	10	0	1.9	.00	2	.03
JUN 22...	3.1	.050	0	430	10	20	0	11	.00	43	.22
23...	--	--	--	--	--	--	--	--	--	--	--

Table 11.--Water-quality analyses.--continued

Site 5, Bryant Brook at Wilton, Conn.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (JTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)
APR										
12...	1430	1.6	132	7.1	7.0	8.5	1	12.2	104	5
MAY										
10...	1350	1.6	123	7.5	24.5	16.0	1	10.5	106	4300
JUN										
22...	1410	.39	131	7.6	29.0	25.0	2	9.0	107	2100
23...	1445	--	--	--	--	--	--	--	--	--

DATE	COLI-FORM, FECAL, 0.45 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)
APR										
12...	1	1	32	19	9.0	2.3	8.4	.6	16	0
MAY										
10...	10	24	33	10	8.9	2.6	8.3	.6	28	0
JUN										
22...	360	--	40	9	11	3.0	7.7	.5	38	0
23...	--	8220	--	--	--	--	--	--	--	--

DATE	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
APR									
12...	13	2.0	14	81	.11	.35	87	.34	.28
MAY									
10...	23	1.4	12	86	.12	.37	88	.25	.23
JUN									
22...	31	1.5	12	90	.12	.09	97	.37	.33
23...	--	--	--	--	--	--	--	--	--

DATE	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
APR									
12...	.62	2.7	.020	0	60	20	0	1.6	.00
MAY									
10...	.48	2.1	.030	0	80	10	0	2.6	.00
JUN									
22...	.70	3.1	.070	0	160	10	10	5.4	.00
23...	--	--	--	--	--	--	--	--	--

Table 11.--Water-quality analyses.--continued

Site 6, Norwalk River at South Wilton, Conn.

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, AIR (DEG C)	TEMPERATURE, WATER (DEG C)	COLOR (PLATINUM COBALT UNITS)	TURBIDITY (JTU)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
APR, 1976											
12...	1210	74	220	8.5	7.0	7.0	--	1	--	14.3	117
MAY											
10...	1235	68	189	8.2	23.5	14.0	--	1	--	12.4	119
JUN											
23...	1310	21	236	7.6	28.0	22.0	--	2	--	9.2	104
JUL											
13...	1455	7.8	265	7.8	22.5	19.0	3	2	--	10.4	112
AUG											
11...	1100	262	146	7.5	26.5	19.0	35	6	--	9.0	97
SEP											
21...	1120	14	235	7.4	22.5	18.0	7	2	--	9.5	100
OCT											
27...	1345	76	198	7.5	6.0	6.5	38	2	--	12.4	101
NOV											
22...	1350	23	240	8.4	5.0	4.0	10	1	--	15.5	117
DEC											
29...	1130	25	271	7.5	.5	1.0	8	1	--	15.6	109
JAN, 1977											
26...	1300	15	380	7.5	1.5	2.0	7	2	--	14.4	104
FEB											
23...	1300	20	330	7.8	15.0	3.0	7	3	--	14.2	105
MAR											
29...	1330	165	210	7.5	28.5	11.0	7	3	--	11.2	101
APR											
19...	1330	57	217	8.5	24.5	16.0	5	2	--	10.4	105
MAY											
11...	1400	80	225	8.2	17.5	13.0	10	1	--	10.6	100
JUN											
22...	1330	9.4	250	8.0	26.0	21.0	8	2	--	10.4	115
JUL											
25...	1400	3.8	275	7.2	22.5	20.5	10	1	--	10.4	114
AUG											
23...	1300	5.5	268	7.8	25.0	20.0	20	5	--	9.8	106
SEP											
21...	1310	23	215	7.1	15.5	16.0	15	4	--	11.2	113
OCT											
19...	1400	45	220	7.3	14.0	11.0	17	2	--	11.6	104
NOV											
10...	1400	210	170	7.2	16.5	13.0	37	4	--	10.8	102
MAR, 1978											
22...	1400	225	134	7.5	11.0	5.0	20	--	2.0	13.2	103
APR,											
19...	1300	66	165	7.4	6.0	9.0	20	--	4.0	12.0	103

Table 11.--Water-quality analyses.--continued

Site 6, Norwalk River at South Wilton, Conn.--Continued

DATE	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./100 ML)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
APR , 1976										
12...	470	22	--	--	29	61	23	16	5.1	11
MAY										
10...	2200	70	--	--	28	57	18	15	4.8	10
JUN										
23...	2300	160	--	--	88	85	35	24	6.2	12
JUL										
13...	66000	220	--	--	97	93	38	26	6.9	20
AUG										
11...	10000	880	--	--	3300	53	14	14	4.3	7.1
SEP										
21...	1900	450	--	--	120	86	30	23	7.0	12
OCT										
27...	850	--	190	88	--	66	20	17	5.6	9.0
NOV										
22...	1100	--	27	41	--	86	34	23	7.0	11
DEC										
29...	34000	--	160	29	--	91	38	26	6.3	12
JAN , 1977										
26...	240	--	50	30	--	93	41	28	5.7	25
FEB										
23...	28000	--	40	25	--	95	44	26	7.2	21
MAR										
29...	260	--	20	6	--	50	17	17	1.8	13
APR										
19...	130	--	48	12	--	65	26	17	5.5	12
MAY										
11...	18000	--	58	16	--	83	37	23	6.3	12
JUN										
22...	36000	--	730	34	--	90	44	25	6.7	15
JUL										
25...	3000	--	530	700	--	98	55	28	6.8	16
AUG										
23...	9600	--	240	450	--	98	47	27	7.5	16
SEP										
21...	4400	--	3100	1900	--	78	48	22	5.7	12
OCT										
19...	4400	--	230	200	--	87	47	24	6.5	12
NOV										
10...	6000	--	1700	2000	--	57	21	15	4.8	9.6
MAR , 1978										
22...	20	--	14	21	--	49	17	13	4.1	11
APR ,										
19...	1200	--	100	88	--	23	10	5.8	2.1	7.4

Table 11.--Water-quality analyses.--continued

Site 6, Norwalk River at South Wilton, Conn.--Continued

DATE	SODIUM AD-SORP-TION RATIO	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
APR , 1976										
12...	.6	46	0	38	.2	--	22	--	119	--
MAY										
10...	.6	48	0	39	.5	--	19	--	119	--
JUN										
23...	.6	61	0	50	2.5	--	29	--	120	--
JUL										
13...	.9	68	0	56	1.7	22	31	4.0	166	144
AUG										
11...	.4	47	0	39	2.4	15	12	7.1	92	83
SEP										
21...	.6	69	0	57	4.4	21	28	6.3	138	132
OCT										
27...	.5	56	0	46	2.8	17	20	10	121	107
NOV										
22...	.5	64	0	53	.4	19	25	6.6	131	123
DEC										
29...	.5	64	0	53	3.2	23	33	9.0	159	141
JAN , 1977										
26...	1.1	64	0	53	3.2	24	58	9.0	208	181
FEB										
23...	.9	62	0	51	1.6	22	46	7.9	184	161
MAR										
29...	.8	40	0	33	2.0	17	26	7.1	117	102
APR										
19...	.6	48	0	39	.2	17	27	4.4	124	107
MAY										
11...	.6	56	0	46	.6	17	25	6.3	133	117
JUN										
22...	.7	56	0	46	.9	24	33	6.9	178	138
JUL										
25...	.7	52	0	43	5.2	27	42	4.8	207	150
AUG										
23...	.7	63	0	52	1.6	27	35	7.1	188	151
SEP										
21...	.6	37	0	30	4.7	33	25	7.6	157	124
OCT										
19...	.6	49	0	40	3.9	28	26	9.9	156	131
NOV										
10...	.6	44	0	36	4.4	18	18	8.4	96	96
MAR , 1978										
22...	.7	40	0	33	2.0	15	20	7.1	85	90
APR ,										
19...	.7	16	0	13	1.0	7.6	8.8	7.0	59	47

Table 11.--Water-quality analyses.--continued

Site 6, Norwalk River at South Wilton, Conn.--Continued

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)
APR , 1976										
12...	.16	23.8	128	.31	--	--	--	.20	.51	2.3
MAY										
10...	.16	21.8	124	.28	--	--	--	.25	.53	2.3
JUN										
23...	.16	6.80	168	.67	--	--	--	.35	1.0	4.5
JUL										
13...	.23	3.50	180	.25	.05	.06	.28	.33	.58	2.6
AUG										
11...	.13	65.1	122	.25	.05	.06	.50	.55	.80	3.5
SEP										
21...	.19	5.22	154	.41	.04	.05	.26	.30	.71	3.1
OCT										
27...	.16	24.8	127	.20	.03	.04	.27	.30	.50	2.2
NOV										
22...	.18	8.14	183	.32	.02	.03	.13	.15	.47	2.1
DEC										
29...	.22	10.7	173	.64	.02	.03	.18	.20	.84	3.7
JAN , 1977										
26...	.28	8.42	225	.94	.09	.12	.76	.85	1.8	7.9
FEB										
23...	.25	9.94	199	.84	.05	.06	.49	.54	1.4	6.1
MAR										
29...	.16	52.1	125	.55	.03	.04	.07	.10	.65	2.9
APR										
19...	.17	19.1	127	.27	.02	.03	.58	.60	.87	3.9
MAY										
11...	.18	28.7	144	.28	.01	.01	.36	.37	.65	2.9
JUN										
22...	.24	4.52	174	.57	.04	.05	.38	.42	.99	4.4
JUL										
25...	.28	2.12	237	.47	.10	.13	.30	.40	.87	3.9
AUG										
23...	.26	2.79	197	.41	.02	.03	.53	.55	.96	4.3
SEP										
21...	.21	9.75	167	.45	.10	.13	.68	.78	1.2	5.4
OCT										
19...	.21	19.0	177	.41	.02	.03	.33	.35	.76	3.4
NOV										
10...	.13	54.4	125	.26	.00	.00	1.3	1.3	1.6	6.9
MAR , 1978										
22...	.12	51.6	101	.54	.01	.01	.27	.28	.82	3.6
APR ,										
19...	.08	10.5	55	.18	.00	.00	.13	.13	.31	1.4

Table 11.--Water-quality analyses.--continued

Site 6, Norwalk River at South Wilton, Conn.--Continued

DATE	PHOS-PHORUS, TOTAL (MG/L AS P)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT DIS-CHARGE, SUS-PENDED (T/DAY)
APR , 1976										
12...	.030	10	110	--	30	10	2.4	.00	2	.40
MAY										
10...	.040	0	140	--	20	20	3.1	.00	3	.55
JUN										
23...	.100	10	220	--	30	20	6.1	.00	8	.45
JUL										
13...	.040	10	100	12	10	10	4.6	.00	4	.08
AUG										
11...	.130	0	180	8	20	10	9.0	.00	15	11
SEP										
21...	.060	0	140	8	20	10	3.1	.00	1	.04
OCT										
27...	.070	0	260	40	20	20	7.4	.00	2	.41
NOV										
22...	.030	0	150	12	20	0	4.7	.00	3	.19
DEC										
29...	.040	0	100	34	40	40	4.7	.00	2	.13
JAN , 1977										
26...	.050	0	30	9	40	60	3.6	.10	2	.08
FEB										
23...	.080	0	40	7	50	30	3.3	.10	3	.16
MAR										
29...	.010	0	120	22	20	20	6.1	.00	11	4.9
APR										
19...	.020	0	240	19	20	10	3.0	.00	55	8.5
MAY										
11...	.060	3	50	38	20	20	6.2	--	33	7.1
JUN										
22...	.050	6	140	19	0	10	5.1	--	13	.33
JUL										
25...	.040	6	140	15	30	10	5.6	--	62	.64
AUG										
23...	.060	8	130	14	30	20	6.7	--	9	.13
SEP										
21...	.080	3	160	13	40	20	8.1	--	14	.87
OCT										
19...	.050	2	230	9	20	30	6.1	.00	8	.97
NOV										
10...	.100	3	200	85	20	20	11	--	7	4.0
MAR , 1978										
22...	.030	1	80	6	30	10	5.0	.00	4	2.4
APR ,										
19...	.010	5	270	2	50	20	5.2	.00	389	69

Table 11.--Water-quality analyses.--continued

Site 7, East Branch Silvermine River near Ridgefield, Conn.

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, AIR (DEG C)	TEMPERATURE, WATER (DEG C)	TURBIDITY (JTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)
APR										
13...	1005	2.0	239	7.7	13.0	6.0	1	13.3	106	180
MAY										
11...	1010	2.3	209	7.5	21.0	13.5	1	10.2	97	6500
JUN										
22...	1005	1.0	238	7.4	24.5	18.0	2	7.9	83	2100
23...	1005	--	--	--	--	--	--	--	--	--

DATE	COLIFORM, FECAL, 0.45 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)
APR										
13...	1	4	74	20	18	7.1	10	.5	66	0
MAY										
11...	12	95	73	13	18	6.7	10	.5	72	0
JUN										
22...	200	--	95	16	23	9.0	11	.5	96	0
23...	--	B140	--	--	--	--	--	--	--	--

DATE	ALKALINITY (MG/L AS CACO3)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	CHLORIDE, DISSOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR									
13...	54	2.1	19	128	.17	.69	141	.60	.23
MAY									
11...	59	3.6	17	124	.17	.77	122	.40	.38
JUN									
22...	79	6.1	19	108	.15	.29	162	.48	.35
23...	--	--	--	--	--	--	--	--	--

DATE	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
APR									
13...	.83	3.7	.020	10	170	100	0	2.1	.00
MAY									
11...	.78	3.5	.030	0	200	120	0	3.6	.00
JUN									
22...	.83	3.7	.050	0	250	140	10	8.3	.00
23...	--	--	--	--	--	--	--	--	--

Table 11.--Water-quality analyses.--continued

Site 8, East Branch Silvermine River near North Wilton, Conn.

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, AIR (DEG C)	TEMPERATURE, WATER (DEG C)	TURBIDITY (JTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)
APR										
13...	1130	6.2	185	7.9	12.0	8.0	1	12.6	105	190
MAY										
11...	1150	4.9	165	7.9	20.0	15.5	1	10.6	105	3400
JUN										
22...	1105	4.2	175	7.8	26.0	21.5	1	8.8	99	200
23...	1015	--	--	--	--	--	--	--	--	--

DATE	COLIFORM, FECAL, 0.45 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)
APR										
13...	4	1	56	17	14	5.2	8.6	.5	48	0
MAY										
11...	9	23	53	9	13	5.1	8.2	.5	54	0
JUN										
22...	65	--	70	14	18	6.1	8.0	.4	68	0
23...	--	100	--	--	--	--	--	--	--	--

DATE	ALKALINITY (MG/L AS CACO3)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	CHLORIDE, DISSOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR									
13...	39	1.0	15	102	.14	1.71	116	.31	.18
MAY									
11...	44	1.1	13	101	.14	1.34	102	.18	.33
JUN									
22...	56	1.7	14	116	.16	1.32	119	.37	.35
23...	--	--	--	--	--	--	--	--	--

DATE	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
APR									
13...	.49	2.2	.020	0	90	30	0	3.2	.00
MAY									
11...	.51	2.3	.030	0	150	20	10	3.9	.10
JUN									
22...	.72	3.2	.060	0	220	20	20	7.1	.10
23...	--	--	--	--	--	--	--	--	--

Table 11.--Water-quality analyses.--continued

Site 9, Thayers Brook near Silvermine, Conn.

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE, AIR (DEG C)	TEMPER-ATURE, WATER (DEG C)	TUR-BID-ITY (JTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML)
APR 14...	1000	1.8	90	6.4	18.0	10.0	1	11.0	97	130
MAY 12...	1010	7.1	77	6.3	16.5	16.5	1	9.6	98	1400
JUN 23...	1040	.41	85	6.1	25.0	23.0	1	5.8	67	850

DATE	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)
APR 14...	3	5	18	8	5.0	1.3	6.1	.6	12	0
MAY 12...	96	190	18	10	4.9	1.5	5.5	.6	10	0
JUN 23...	27	16	21	7	5.6	1.6	5.8	.6	17	0

DATE	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)
APR 14...	10	7.6	11	50	.07	.24	64	.05	.25
MAY 12...	8	8.0	9.2	54	.07	1.04	62	.02	.45
JUN 23...	14	22	12	61	.08	.07	66	.08	.48

DATE	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	ZINC, DIS-SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
APR 14...	.30	1.3	.020	0	60	40	10	3.8	.00
MAY 12...	.47	2.1	.040	0	140	90	20	3.3	.00
JUN 23...	.56	2.5	.050	0	490	120	10	8.0	.00

Table 11.--Water-quality analyses.--continued

Site 10, Silvermine River near Silvermine, Conn.

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE, AIR (DEG C)	TEMPERATURE, WATER (DEG C)	TURBIDITY (JTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, TOTAL, IMMED. (COLS. PER 100 ML)
APR 14...	1120	19	128	7.3	21.0	10.0	1	11.4	101	48
MAY 12...	1150	74	103	7.3	17.0	15.5	2	9.9	99	2000
JUN 23...	1135	4.6	116	7.2	25.5	22.5	2	8.4	95	B150

DATE	COLIFORM, FECAL, 0.45 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)
APR 14...	15	13	32	17	8.4	2.7	7.9	.6	19	0
MAY 12...	330	480	28	11	7.1	2.5	6.6	.5	21	0
JUN 23...	33	120	35	16	9.5	2.8	7.6	.6	24	0

DATE	ALKALINITY (MG/L AS CACO3)	CARBON DIOXIDE DISSOLVED (MG/L AS CO2)	CHLORIDE, DISSOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	SOLIDS, DISSOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
APR 14...	16	1.5	13	67	.09	3.51	80	.33	.18
MAY 12...	17	1.7	9.9	67	.09	13.4	71	.23	.40
JUN 23...	20	2.4	14	79	.11	.98	83	.32	.20

DATE	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS, TOTAL (MG/L AS P)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	ZINC, DISSOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
APR 14...	.51	2.3	.020	0	80	30	10	2.6	.00
MAY 12...	.63	2.8	.030	0	120	40	20	4.2	.00
JUN 23...	.52	2.3	.040	0	140	10	10	4.3	.00

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