
APPENDIX K

WATER QUALITY

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1. Excerpts from "Water Quality Standards", State of Connecticut Department of Environmental Protection, 1997.

III. SURFACE WATER CLASSIFICATIONS

INLAND SURFACE WATERS

CLASS AA

Designated Use - Existing or proposed drinking water supply; fish and wildlife habitat; recreational use; agricultural, industrial supply and other purposes, (recreational uses may be restricted).

CRITERIA

<u>Parameter</u>	<u>Standard</u>
1. Aesthetics	Uniformly excellent
2. Dissolved oxygen	Not less than 5 mg/l at any time.
3. Sludge, deposits-solid refuse-floating solids-oils and grease-scum	None other than of natural origin.
4. Color	None other than of natural origin.
5. Suspended and settleable solids	None in concentrations or combinations which would impair the most sensitive designated use; none aesthetically objectionable; none which would significantly alter the physical or chemical composition of the bottom; none which would adversely impact aquatic organisms living in or on the bottom substrate.
6. Silt or sand deposits	None other than of natural origin except as may result from normal agricultural, road maintenance, construction activity or dredging provided all reasonable controls or Best Management Practices are used.
7. Turbidity	Shall not exceed 5 NTU over ambient levels. All reasonable controls or Best Management Practices are to be used.
8. Indicator bacteria	Total coliform organisms (MF) shall not exceed a monthly moving arithmetic mean of 100/100 ml for the most recent 12 months. No individual sample shall exceed 500/100 ml. Refer to Standard number 23 and Appendix B.
9. Taste and odor	None other than of natural origin.
10. pH	As naturally occurs.

11. Allowable temperature increase
None other than of natural origin except when it can be demonstrated that fish spawning and growth will not be impaired, in which case Class B Standards and Criteria apply.
12. Chemical constituents
None in concentrations or combinations which would be harmful to the most sensitive designated water use. Refer to Standards numbers 10, 11, 12, 13, and 17.
- (a) Phosphorus
None other than of natural origin
- (b) Sodium
Not to exceed 20 mg/l
13. Benthic Invertebrates
A wide variety of macroinvertebrate taxa should normally be inhabit lotic waters present and all functional feeding groups should normally be well represented. Presence and productivity of aquatic species is not limited except by natural conditions, permitted flow regulation or irreversible cultural impacts. Water quality shall be sufficient to sustain a diverse macroinvertebrate community of indigenous species. Taxa within the Orders Plecoptera (stoneflies), Ephemeroptera (mayflies), Coleoptera (beetles) and Trichoptera (caddisflies) should be well represented.

CLASSIFICATIONS

- AA
Known or presumed to meet Water Quality Criteria which support the designated uses.
- B/AA or C/AA
May not be meeting Class AA Water Quality Criteria or designated uses. The water quality goal is achievement of Class AA Criteria and attainment of Class AA designated uses.

INLAND SURFACE WATERS

CLASS A

- Designated Uses - Potential drinking water supply; fish and wildlife habitat; recreational use; agricultural, industrial supply and other legitimate uses, including navigation.

CRITERIA

- | <u>Parameter</u> | <u>Standard</u> |
|--|------------------------------------|
| 1. Aesthetics | Uniformly excellent |
| 2. Dissolved oxygen | Not less than 5 mg/l at any time. |
| 3. Sludge deposits-solid refuse - floating | None other than of natural origin. |

- solids -oils and grease-scum.
4. Color
None other than of natural origin
 5. Suspended and settleable solids
None in concentrations or combinations which would impair the most sensitive designated use; none aesthetically objectionable; none which would significantly alter the physical or chemical composition of the bottom; none which would adversely impact aquatic organisms living in or on the bottom substrate.
 6. Silt or sand deposits
None other than of natural origin except as may result from normal agricultural, road maintenance, construction activity or dredging provided all reasonable controls or Best Management Practices are used.
 7. Turbidity
Shall not exceed 5 NTU over ambient levels. All reasonable controls or Best Management Practices to be used.
 8. Indicator Bacteria
Total coliform organisms (MF) shall not exceed a monthly moving arithmetic mean of 100/100 ml for the most recent 12 months. No individual sample shall exceed 500/100 ml. For established bathing waters, enterococcal organisms shall not exceed a geometric mean of 33/100 ml and no sample shall exceed 61/100 ml. Refer to Standard number 23 and Appendix B.
 9. Taste and odor
None other than of natural origin.
 10. pH
As naturally occurs.
 11. Allowable temperature increase
None other than of natural origin except when it can be demonstrated that temperature increase fish spawning and growth will not be impaired, in which case Class B Standards and Criteria apply.
 12. Chemical
None in concentrations or combinations which would be harmful to the most constituents sensitive designated water use. Refer to Standards numbers 10, 11, 12, 13 and 17.
 - (a) Phosphorus
None other than of natural origin.
 13. Benthic Invertebrates
A wide variety of macroinvertebrate taxa should normally be present and all which inhabit lotic functional feeding groups should normally be well represented. Presence and productivity of aquatic species is not limited except by natural conditions, permitted flow regulation or irreversible cultural impacts. Water quality shall be sufficient to sustain a diverse macroinvertebrate community of indigenous species. Taxa within the Orders Plecoptera (stoneflies), Ephemeroptera (mayflies), Coleoptera (beetles) and Trichoptera (caddisflies) should be well represented.

CLASSIFICATIONS

- A Known or presumed to meet Water Quality Criteria which support designated uses.
- B/A or C/A May not be meeting Water Quality Criteria or one or more designated uses. The water quality goal is achievement of class A Criteria and attainment of Class A designated uses.

INLAND SURFACE WATERS

CLASS B

Designated Use - Recreational use; fish and wildlife habitat; agricultural and industrial supply and other legitimate uses including navigation.

CRITERIA

<u>Parameter</u>	<u>Standard</u>
1. Aesthetics	Good to excellent
2. Dissolved oxygen	Not less than 5 mg/l at any time.
3. Sludge deposits - solid refuse - floating solids - grease - scum	None except for small amounts that may result from the discharge from a waste treatment facility providing oil and appropriate treatment.
4. Color	None which causes visible discoloration of the receiving stream outside of any designated zone of influence.
5. Suspended and settleable solids	None in concentrations of combinations which would impair the most sensitive designated use; none aesthetically objectionable; none which would significantly alter the physical or chemical composition of the bottom; and none which would adversely impact aquatic organisms living in or on the bottom sediments; shall not exceed 10 mg/l over ambient concentrations.
6. Silt or sand deposits	None other than of natural origin except as may result from normal agricultural, road maintenance, construction activity or dredging activity provided all reasonable controls or Best Management Practices are used.
7. Turbidity	Shall not exceed 5 NTU over ambient levels. All reasonable controls and Best Management Practices to be used.
8. Indicator bacteria	As an indicator of general sanitary quality Fecal coliform shall not exceed a geometric mean of 200 organisms/100 ml in any group of samples nor shall 10% of the samples exceed 400 organisms/100 ml. For established bathing waters, enterococcal organisms shall not exceed a geometric mean of 33 organisms/100 ml, and no single sample shall exceed 61/100 ml. Refer to Standard number 23 and Appendix B.

9. Taste and odor None that would impair any usages specifically assigned to this Class.
10. pH 6.5 - 8.0
11. Allowable temperature None except where the increase will not exceed the recommended limit on the most increase sensitive receiving water use and in no case exceed 85°F, or in any case raise the normal temperature of the receiving water more than 4°F.
12. Chemical constituents None in concentrations or combinations which would be harmful to the most sensitive designated water use. Refer to Standards numbers 10 11,12, 13, and 17.
13. Benthic Invertebrates Water quality shall be sufficient to sustain a diverse macroinvertebrate community which inhabit lotic of indigenous species. All functional feeding groups and a wide variety of waters macroinvertebrate taxa shall be present, however one or more may be disproportionate in abundance. Waters which currently support a high quality aquatic community shall be maintained at that high quality. Presence and productivity of taxa within the Orders Plecoptera (stoneflies), Ephemeroptera (mayflies); and pollution intolerant Coleoptera (beetles) and Trichoptera (caddisflies) may be limited due to cultural activities. Macroinvertebrate communities in waters impaired by cultural activities shall be restored to the extent practical through implementation of the department's procedures for control of pollutant discharges to surface waters and through Best Management Practices for non-point sources of pollution.

CLASSIFICATIONS

- B Known or presumed to meet Water Quality Criteria which support designated uses.
- C/B or D/B Due to point or nonpoint sources of pollution, certain Water Quality Criteria or one or more designated uses assigned to Class B waters are not currently met. The water quality goal achievement of Class B Criteria and attainment of Class B designated uses.

INLAND SURFACE WATERS

CLASS C

Present water quality conditions preclude the full attainment of one or more designated uses for Class B waters some or all of the time. One or more Water Quality Criteria for Class B waters are not being consistently achieved. Class C waters may be suitable for certain fish and wildlife habitat, certain recreational activities, industrial use and other legitimate uses, including navigation. Class C waters may have good aesthetic value. Class C water quality results from conditions which are usually correctable through implementation of established water quality management programs to control point and nonpoint sources of pollution. Examples of conditions which warrant a Class C designation include; combined sewer overflows, urban runoff, inadequate municipal or industrial wastewater treatment, and community-wide septic system failures. The minimum acceptable class goal is Class B unless a DEP and EPA approved Use Attainability Analysis demonstrates that one of more uses are not attainable. In those situations, site-specific Quality Criteria will be employed in the analysis to insure that all existing uses are maintained. Refer to Standard Number 6.

CLASSIFICATIONS

- C/B, C/A or C/AA

Presently not meeting Water Quality Criteria or not supporting one or more assigned designated uses due to pollution. The goal for such waters may be Class AA, A or Class B.

INLAND SURFACE WATERS

CLASS D

Present water quality conditions persistently preclude the attainment of one or more designated uses for Class B waters. One or more Water Quality Criteria for Class B waters are not being achieved most or all of the time. Class D waters may be suitable for bathing or other recreational purposes, certain fish and wildlife habitat, industrial or other legitimate uses, including navigation. Class D waters may have good aesthetic value. Class D water quality results from sources of pollution which are not readily correctable. Examples of conditions which warrant a Class D designation include contamination of bottom sediments, contamination of fish or shellfish with toxic compounds, and pollution caused by out-of-state sources. The water quality goal is restoration to Class B or Class A conditions. The minimum acceptable class goal is Class B unless a DEP and EPA approved Use Attainability Analysis demonstrates that one or more uses are not attainable. In those situations, site-specific Quality Criteria will be employed in the analysis to insure that all existing uses are maintained. Refer to Standard Number 6.

CLASSIFICATIONS

D/B, D/A

Presently not meeting Water Quality Criteria or not supporting one or more assigned designated uses due to severe pollution. The goal for such waters may be Class A or Class B.

The entire document is available at: <http://www.dep.state.ct.us/wtr/wqs.pdf>

2. Excerpts from "Connecticut Waterbodies Not Meeting Water Quality Standards", State of Connecticut Department of Environmental Protection, 1998

BASIN CODE	WATERBODY	PROBLEM or IMPAIRMENT	SUSPECTED CAUSE	303(d) STATUS	WQMP STATUS
7405	RIPPOWAM RIVER Stamford	Inadequate Fish Passage	Fishway needed at Main Street Dam		FP

The status of TMDL development appears in the column headed "303(d) Status"

The status of Water Quality Management Plan implementation appears in the column headed "WQMP Status"

FP: Fish Passage. These waters are impaired due to the presence of a dam or other barrier to fish migration. TMDLs will not be developed for these waters.

The entire document is available at: <http://www.dep.state.ct.us/wtr/wq/303dlist.pdf>

3. Excerpts from "2002 List of Connecticut Waterbodies Not Meeting Water Quality Standards", State of Connecticut Department of Environmental Protection, 2002

Waterbody Segment ID	Waterbody Segment Name	Waterbody Segment Size	Waterbody Location Description	Designated Use	Use Support Category	Cause (Potential Cause)	Tier	Potential Source
CT7405-00_01	Rippowam River_01	5.30	From tidewater (dam US of Rt 1) US to West North Street, Stamford (0.6 miles) and from West North Street US to Rt. 15 (4.7 miles).	Aquatic Life Support	P	Cause unknown	3	Source Unknown

Waterbody segment sizes vary by segment type; rivers and streams are measured in linear miles, lakes and ponds are measured in acres, and estuaries are measured in square miles. Use support categories for each designated use are classified as *P* (Partially supporting), *N* (Not supporting) or *UA* (Unattainable) using procedures outlined in *Connecticut CALM*. Biological and ambient water chemistry data were used to determine the level of support for each impaired designated use. For each impaired designated use, a cause and source was assigned based on a weight of evidence approach and best professional judgment. If the cause of the impairment was unknown, potential causes were placed in parenthesis. Where multiple designated uses are listed as impaired, potential sources may contribute to each of the listed impairments. Assigning causes and sources for designated use impairments in natural biological systems is extremely complex. For example, an aquatic life use impairments may be documented by a less than desirable benthic community, but it is rare that a direct cause and effect relationships can be demonstrated to pinpoint a cause. In most cases, there is the potential for multiple stressors including chemical pollutants, habitat degradation issues (e.g. sedimentation), and water quantity issues. In many cases, Aquatic Life Use Support impairments were listed as Cause Unknown (Tier 3) with potential sources listed in parenthesis. It should be emphasized that these are listed only to direct future monitoring efforts and should not be viewed as a cause and effect relationship. Tier 3 waterbody segments will be highlighted for future monitoring to better delineate the extent of the impairment, further define the cause of the impairment and determine the best watershed management activity to achieve Aquatic Life Use Support goals.

The entire document is available at: <http://www.dep.state.ct.us/wtr/wq/implist.pdf>

4. State of Connecticut Department of Environmental Protection
Water Quality Sampling Data, 1998

Stream Name / Facility Name	Rippowam River				
Site Number	179				
Proximity	Downstream				
Landmark / Facility Name	Bridge Street in Woodside Park				
Municipality	Stamford				
Basin ID	7405				
		Trip Date	10/10/2000	9/24/1998	7/15/1998
		Collection Time	11:00 AM	10:50 AM	11:40 AM
Chemical Parameter	Description / Units				
Alkalinity	ppm	84		54	34
Ammonia Nitrogen	ppm	0.1		0.1	0.1
BOD 5 day	ppm	1		1	1
Chloride	ppm	74		45	51
Dissolved Aluminum	ppm	0.019			
Dissolved Cadmium	ppm	0.001		0.001	
Dissolved Chromium	ppm	0		0	
Dissolved Copper	ppm	0.004		0.003	
Dissolved Iron	ppm	0.075			
Dissolved Lead	ppm	0		0	
Dissolved Nickel	ppm	0		0	
Dissolved Zinc	ppm	0.004		0.008	
Enterococci	mpn per 100 mls	30		120	220
Escherichia coli	mpn per 100 mls	260		640	1100
Hardness	ppm	83		68	93
Nitrate as Nitrogen	ppm	1.4		0.7	0.6
Nitrite as Nitrogen	ppm	0.05		0.05	0.05
Organic Nitrogen	ppm	0.5		0.1	0.3
pH lab	pH	7.7		7.5	7.9
Suspended Solids	ppm	0		1	5
TKN	ppm	0.6		0.1	0.3
Total Aluminum	ppm	0.019			
Total Cadmium	ppm	0		0.001	0.001
Total Chromium	ppm	0		0	0
Total Copper	ppm	0.006		0.004	0.003
Total Iron	ppm	0.098			
Total Lead	ppm	0.002		0	0.003
Total Nickel	ppm	0		0	0
Total Phosphate as P	ppm	0.02		0.05	0.02
Total Solids	ppm	200		200	190
Total Zinc	ppm	0.008		0.008	0.005
Turbidity	NTU	0.4		0.4	0.2
Calcium	ppm Ca2+	20			
Magnesium	ppm Mg2+	5.3			

This data was obtained through personal communication with Michael Beauchene, State of Connecticut Department of Environmental Protection, Bureau of Water Management.

5. United States Geological Survey
Water Quality Sampling Data, 1994

http://waterdata.usgs.gov/nwis/qwdata/?site_no=01209901
US Geological Survey

This file contains water quality sample data
for stations in the water quality database.

This information includes the following fields:

agency_cd - Agency Code

site_no - USGS site number

sample_dt - Date of sample

sample_tm - Time of sample

parameter_cd - Parameter Code

result_va - Value

remark_cd - Remark Code

qa_cd - Quality Assurance Code

qw_method_cd - Quality Assurance Method Code

result_sg - Results significant figures

medium_cd - Sample medium code

Data for the following sites are included:

USGS 01209901 RIPPOWAM RIVER AT STAMFORD, CT.

The following parameters are included:

00010 - TEMPERATURE, WATER (DEG. C)

00020 - TEMPERATURE, AIR, DEGREES CELSIUS

00025 - BAROMETRIC PRESSURE (MM OF HG)

00027 - AGENCY COLLECTING SAMPLE (CODE NUMBER)

00028 - AGENCY ANALYZING SAMPLE (CODE NUMBER)

00061 - DISCHARGE, INSTANTANEOUS, CUBIC FEET PER SECOND

00095 - SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C)

00300 - OXYGEN DISSOLVED (MG/L)

00301 - OXYGEN DISSOLVED (% OF SATURATION)

00400 - PH, WATER, WHOLE, FIELD, STANDARD UNITS

00403 - PH, WATER, WHOLE, LABORATORY, STANDARD UNITS
 # 00453 - BICARBONATE, WATER, DISSOLVED, INCREMENTAL TITRATION, FIELD, MG/L AS HCO3
 # 00608 - NITROGEN AMMONIA DISSOLVED (MG/L AS N)
 # 00613 - NITROGEN, NITRITE, DISSOLVED, MG/L AS N
 # 00623 - NITROGEN AMMONIA PLUS ORGANIC DISSOLVED (MG/L AS N)
 # 00625 - NITROGEN AMMONIA PLUS ORGANIC TOTAL (MG/L AS N)
 # 00631 - NITROGEN NITRITE PLUS NITRATE DISSOLVED (MG/L AS N)
 # 00665 - PHOSPHORUS TOTAL (MG/L AS P)
 # 00666 - PHOSPHORUS DISSOLVED (MG/L AS P)
 # 00671 - PHOSPHORUS ORTHOPHOSPHATE DISSOLVED (MG/L AS P)
 # 00915 - CALCIUM DISSOLVED (MG/L AS CA)
 # 00925 - MAGNESIUM DISSOLVED (MG/L AS MG)
 # 00930 - SODIUM DISSOLVED (MG/L AS NA)
 # 00935 - POTASSIUM DISSOLVED (MG/L AS K)
 # 00940 - CHLORIDE DISSOLVED (MG/L AS CL)
 # 00945 - SULFATE DISSOLVED (MG/L AS SO4)
 # 00950 - FLUORIDE DISSOLVED (MG/L AS F)
 # 00955 - SILICA DISSOLVED (MG/L AS SIO2)
 # 01046 - IRON DISSOLVED (UG/L AS FE)
 # 01056 - MANGANESE DISSOLVED (UG/L AS MN)
 # 39086 - ALKALINITY, WATER, DISSOLVED, TOTAL, INCREMENTAL TITRATION, FIELD, MG/L AS CaCO3
 # 50280 - PURPOSE, SITE VISIT, CODE
 # 70300 - SOLIDS, RESIDUE ON EVAPORATION AT 180 DEG C, DISSOLVED (MG/L)
 # 90095 - SPECIFIC CONDUCTANCE MICROSIEMENS/CM AT 25 DEG C
 # 90410 - ACID NEUTRALIZING CAPACITY (ANC), WATER, UNFILTERED, TITRATION TO PH 4.5, LABORATORY, MILLIGRAMS PER LITER AS CaCO3
 # Description of remark_cd column
 # < - Actual value is known to be less than the value shown.
 # > - Actual value is known to be greater than the value shown.
 # A - Average value
 # E - Estimated value
 # M - Presence of material verified but not quantified
 # N - Presumptive evidence of presence of material
 # S - Most probable value
 # U - Analyzed for, not detected
 # V - Value affected by contamination

agency_cd	site_no	sample_dt	sample_tm	parameter_cd	result_va	remark_cd	qa_cd	qw_method_cd	result_sg	medium_cd
USGS	1209901	9/7/1994	13:55	10	16.8		I		3	9
USGS	1209901	9/7/1994	13:55	20	20.2		I		3	9
USGS	1209901	9/7/1994	13:55	25	763		I		3	9
USGS	1209901	9/7/1994	13:55	27	1028		I		4	9
USGS	1209901	9/7/1994	13:55	28	80020		H		5	9
USGS	1209901	9/7/1994	13:55	61	4.4		I		2	9
USGS	1209901	9/7/1994	13:55	95	308		I		3	9
USGS	1209901	9/7/1994	13:55	300	10		I		3	9
USGS	1209901	9/7/1994	13:55	301	104		I		3	9
USGS	1209901	9/7/1994	13:55	400	6.4		I		2	9
USGS	1209901	9/7/1994	13:55	403	7.5		H	A	2	9
USGS	1209901	9/7/1994	13:55	453	48		I		2	9
USGS	1209901	9/7/1994	13:55	608	0.01	<	H	B	3	9
USGS	1209901	9/7/1994	13:55	613	0.01	<	H	B	3	9
USGS	1209901	9/7/1994	13:55	623	0.2	<	H	C	2	9
USGS	1209901	9/7/1994	13:55	625	0.2	<	H	C	2	9
USGS	1209901	9/7/1994	13:55	631	0.53		H	B	3	9
USGS	1209901	9/7/1994	13:55	665	0.01	<	H	C	3	9
USGS	1209901	9/7/1994	13:55	666	0.01	<	H	C	3	9
USGS	1209901	9/7/1994	13:55	671	0.01		H	B	3	9
USGS	1209901	9/7/1994	13:55	915	18		H	D	3	9
USGS	1209901	9/7/1994	13:55	925	4.8		H	C	3	9
USGS	1209901	9/7/1994	13:55	930	29		H	C	3	9
USGS	1209901	9/7/1994	13:55	935	2.6		H	B	3	9
USGS	1209901	9/7/1994	13:55	940	55		H	J	3	9
USGS	1209901	9/7/1994	13:55	945	13		H	G	3	9
USGS	1209901	9/7/1994	13:55	950	0.1	<	H	B	1	9
USGS	1209901	9/7/1994	13:55	955	6.2		H	D	2	9
USGS	1209901	9/7/1994	13:55	1046	90		H	D	1	9
USGS	1209901	9/7/1994	13:55	1056	15		H	C	3	9
USGS	1209901	9/7/1994	13:55	39086	39		I		2	9
USGS	1209901	9/7/1994	13:55	50280	1099		A		4	9
USGS	1209901	9/7/1994	13:55	70300	159		H	A	3	9
USGS	1209901	9/7/1994	13:55	90095	308		H	A	3	9
USGS	1209901	9/7/1994	13:55	90410	42		H	A	2	9

6. Data collected by Project SEARCH on the Rippowam River in Stamford Connecticut

The first two tables include data from the Rippowam River off of Route 104 in Stamford, CT.

The following table is chemical data collected by Westhill H.S. students over the past 7 years. All data is measured in ppm except for bacteria loads.

	NO ₃	PO ₄	NH ₃	ALK	HARD	pH	TDS	DO	Bacteria
10/03/98	1.08	0.01	0.33	88.7	114.7	7.6	No data	11.2	No data
10/16/98	0.54	0.0	0.065	No data	73.3	8.1	No data	11.1	No data
04/17/97	0.26	0.13	0.31	52.7	84.0	7.6	No data	9.1	73col/100ml Fecal Coliform
04/08/97	1.90	0.03	0.19	69.3	52	7.3	No data	6.7	91col/100ml Fecal Coliform
11/07/96	0.74	0.16	0.54	55.5	76.6	8.3	No data	7.8	106col/100ml Fecal Coliform
10/17/96	0.84	0.09	0.20	94	100	7.4	No data	9.2	136col/100ml Fecal Coliform
05/06/96	0.09	0.00	0.44	60	60	8.2	No data	9.3	147col/100ml Fecal Coliform
04/24/96	0.39	0.01	0.28	66.6	194	7.2	No data	10.0	109col/100ml Fecal Coliform
10/26/95	0.66	0.02	0.00	84.7	86.7	8.2	No data	9.3	87col/100ml Fecal Coliform
10/16/95	0.53	0.13	0.16	93.3	84.0	8.2	No data	9.1	296col/100ml Fecal Coliform

This table is chemical data reported from state-collected and analyzed data from the past 7 years.
 All data is measured in ppm except for bacteria loads.

	NO ₃	PO ₄	NH ₃	ALK	HARD	pH	TDS	DO	Bacteria
4/30/02	1.3	0.01	0.1	48	59	7.0	220	9.0	430 col/100ml E.coli
11/03/99	0.2	0.02	0.05	40	38	7.0	160	9.0	2100 col/100ml E.coli
04/06/98	0.6	0.005	0.05	32	76	7.5	130	11.6	300 col/100ml Fecal Coliform
10/06/97	0.8	0.015	0.05	41	73	7.5	210	9.5	<100 col/100ml Fecal Coliform
04/03/97	0.6	0.01	0.05	50	52	7.4	150	11.3	<100 col/100ml Fecal Coliform
11/07/96	No data	No data	No data	No data	No data	No data	No data	10.6	<100 col/100ml Fecal Coliform
05/06/96	1.1	0.005	0.05	27	67	7.1	No data	10.1	<100 col/100ml Fecal Coliform
10/27/95	0.6	0.005	0.05	47	94	7.2	No data	10.2	<100 col/100ml Fecal Coliform

The next table represents macroinvertebrate data collected and analyzed by Project SEARCH at Westhill H.S. in Stamford Connecticut. The following is a code for the columns : EPT Index = the total # of families of Ephemeroptera Plecoptera and Trichoptera, Scr: CF = Scrapers : Collector Filterers, EPT : Chirono = # of individual EPT : chironomids, HBI = Hisenhoff Biotic Index.

Date	Taxa Richness	EPT Index	Scr: CF ratio	EPT : Chirono	Dominant family %	HBI	Dominant family
10/26/95	12	4	1.90	Undefined	18	4.9	No data
10/17/95	8	2	0.09	Undefined	38	4.2	No data
04/24/96	10	4	1.10	0.70	56	4.8	Chironomidae
05/06/96	8	4	0.25	1.10	37	4.70	Chironomidae
11/07/96	8	5	15.5	Undefined	36	3.54	Hydropsychidae
04/08/97	13	7	0.38	2.40	22	5.87	Limnephilidae
04/17/97	12	6	0.33	1.73	24	5.87	Chironomidae
09/23/97	13	4	0.82	1.95	26	5.51	No data
10/6/97	9	3	1.00	2.81	52	4.68	No data
04/06/98	17	8	1.30	0.96	30	4.40	No data
04/27/98	10	6	1.08	4.86	64	5.46	No data
10/08/98	18	7	2.25	16	17.5	5.4	No data
10/16/98	11	7	.667	Undefined	47.8	5.75	No data
05/14/99	17	8	2.00	Undefined	38.2	3.75	No data

The remaining information contained in this document has been collected by students from Wright Technical School in Stamford, CT. SEARCH staff also collected replicate samples for State Health Lab Analysis. The sampling site is close to where the river flows past the school.

This table contains data from State Health Lab Analysis. All values are in ppm except bacteria.

DATE	NO ₃	PO ₄	NH ₃	ALK	HARD	pH	TDS	DO	Bacteria
05/04/95	0.5	0.005	0.05	45	72	8.3	No data	12.7	400col/100ml Fecal Coliform
11/17/94	0.4	0.02	0.1	53	73	7.2	No data	9.8	400col/100ml Fecal Coliform

This table includes data collected and analyzed by the students of Wright Tech. All values are in ppm.

DATE	NO ₃	PO ₄	NH ₃	ALK	HARD	pH	TDS	DO	Bacteria
05/04/95	No data	No data	No data	60	68	8.2	No data	11.4	No data
05/11/93	0.32	No data	No data	46	60	6	No data	6.8	No data
10/27/92	0.29	No data	No data	68	76	7.5	No data	13.6	No data
10/23/92	0.4	No data	No data	70	70	7	No data	11.8	No data
09/11/92	0.4	No data	No data	52	68	7	No data	6.3	No data

This data was obtained through personal communication with Chris Sullivan, Project SEARCH.

State of Connecticut Department of Environmental Protection
 Benthic Invertebrate Sampling Data, 1997 & 2000

7.

Trip Id	Trip Date	Run Name	Station ID	Stream Name / Facility Name	Site Number	Sample By Site	Collection Method	Subsample Size	TYPE
612	10/31/1997	ABM fall macros	307	Rippowam River	179	1423	Kick Net 2M2	200	RA200

Final ID	Stage	Number of Individuals	Tolerance Value	FFG
Antocha	L	5	3	C-G
Ceratopsyche bifida group	L	95	4	C-F
Ceratopsyche sparna	L	1	1	C-F
Cheumatopsyche	L	8	5	C-F
Corydalis cornutus	L	2	6	PRD
Cricotopus bicornutus	L	2	7	SHR
Cura foremani	A	2	4	PRD
Fossaria	A	1	6	C-G
Gammarus	A	3	6	C-G
Hemerodromia	L	1	6	PRD
Hydropsyche betteni	L	36	6	C-F
Leucotrichia pictipes	L	1	4	SCR
Lumbriculidae	A	1	8	C-G
Micromenetus dilatatus	A	1	5	SCR
Mystacides	L	2	4	C-G
Physa	A	1	8	C-G
Prostoma graecense	A	7	8	PRD
Rheotanytarsus	L	1	6	C-F
Stenelmis	L	1	5	SCR
Stenonema modestum group	L	8	4	SCR
Taeniopteryx burksi group	L	10	2	SHR
Tanytarsus guerlus group	L	1	6	C-F

Trip ID	Trip Date	Run Name	Station ID	Stream Name / Facility Name	Site Number	Sample By Site	Collection Method	Subsample Size	TYPE
715	10/10/2000	ABM fall macros & quarterly monitoring	307	Rippowam River	179	2425	Kick Net 2M2	200	RA200

Final ID	Stage	Number of Individuals	Tolerance Value	FFG
Ceratopsyche bifida group	L	46	4	C-F
Ceratopsyche sparna	L	3	1	C-F
Cheumatopsyche	L	130	5	C-F
Chimarra aterrima	L	1	4	C-F
Corydalis cornutus	L	1	6	PRD
Hydropsyche betteni	L	30	6	C-F
Isonychia	L	1	2	C-G
Prostoma graecense	A	1	8	PRD
Simuliidae	P	1	6	C-F
Simulium	L	3	5	C-F
Sphaeriidae	A	4	8	C-F
Stenonema modestum group	L	11	4	SCR

This data was obtained through personal communication with Michael Beauchene, State of Connecticut Department of Environmental Protection, Bureau of Water Management