Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

NPDES PERMIT

Issued to

Permittee:
Town of Stafford
1 Main Street,
Warren Memorial Town Hall

Location Address:
Stafford WPCF
50 River Road
Stafford Springs, Connecticut 06076

Permit ID: CT0101214 **Design Flow Rate:** 2.0 MGD **Effective Date: October 01, 2017**

Receiving Stream: Willimantic River **Permit Expires: September 30, 2022**

SECTION 1: GENERAL PROVISIONS

(A) This permit is reissued in accordance with Section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended, and Section 402(b) of the Clean Water Act, as amended, 33 USC 1251, et. seq., and pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer a N.P.D.E.S. permit program.

(B) The Town of Stafford ("Permittee"), shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to Section 22a-430 of the CGS and are hereby incorporated into this permit. **Your attention is especially drawn to the notification requirements of subsection (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(10)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of Section 22a-430-3.** To the extent this permit imposes conditions more stringent than those found in the regulations, this permit shall apply.

Section 22a-430-3 General Conditions

- **(a)** Definitions
- **(b)** General
- **(c)** Inspection and Entry
- **(d)** Effect of a Permit
- **(e)** Duty to Comply
- **(f)** Proper Operation and Maintenance
- **(g)** Sludge Disposal
- **(h)** Duty to Mitigate
- **(i)** Facility Modifications; Notification
- **(j)** Monitoring, Records and Reporting Requirements
- **(k)** Bypass
- **(l)** Conditions Applicable to POTWs
- **(m)** Effluent Limitation Violations
- **(n)** Enforcement
- **(o)** Resource Conservation
- **(p)** Spill Prevention and Control
- **(q)** Instrumentation, Alarms, Flow Recorders
- **(r)** Equalization

Section 22a-430-4 Procedures and Criteria

- **(a)** Duty to Apply

(b) Duty to Reapply
(c) Application Requirements
(d) Preliminary Review
(e) Tentative Determination
(f) Draft Permits, Fact Sheets
(g) Public Notice, Notice of Hearing
(h) Public Comments
(i) Final Determination
(j) Public Hearings
(k) Submission of Plans and Specifications. Approval.
(l) Establishing Effluent Limitations and Conditions
(m) Case-by-Case Determinations
(n) Permit Issuance or Renewal
(o) Permit or Application Transfer
(p) Permit Revocation, Denial or Modification
(q) Variances
(r) Secondary Treatment Requirements
(s) Treatment Requirements
(t) Discharges to POTWs - Prohibitions

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action including, but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.

(D) Any false statement in any information submitted pursuant to this Section of the permit may be punishable as a criminal offense under Section 22a-438 or 22a-131a of the CGS or in accordance with Section 22a-6, under Section 53a-157b of the CGS.

(E) The Permittee shall comply with Section 22a-416-1 through Section 22a-416-10 of the RCSA concerning operator certification.

(F) No provision of this permit and no action or inaction by the Commissioner shall be construed to constitute an assurance by the Commissioner that the actions taken by the Permittee pursuant to this permit will result in compliance or prevent or abate pollution.

(G) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.

(H) An annual fee shall be paid for each year this permit is in effect as set forth in Section 22a-430-7 of the RCSA. As of October 1, 2009 the annual fee is $2367.50.

SECTION 2: DEFINITIONS

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in Section 22a-423 of the CGS and Section 22a-430-3(a) and 22a-430-6 of the RCSA, except for "Composite" and "No Observable Acute Effect Level (NOAEL)" which are redefined below.

(B) In addition to the above, the following definitions shall apply to this permit:

"------" in the limits column on the monitoring tables in Attachment 1 means a limit is not specified but a value must be reported on the DMR, MOR, and/or the ATMR.

"Annual" in the context of any sampling frequency, shall mean the sample must be collected in the month of July, August or September.

"Average Monthly Limit" means the maximum allowable "Average Monthly Concentration" as defined in Section 22a-430-3(a) of the RCSA when expressed as a concentration (e.g. mg/l); otherwise, it means "Average Monthly Discharge Limitation" as defined in Section 22a-430-3(a) of the RCSA.

"Bi-Weekly" in the context of any sampling frequency, shall mean once every two weeks.

"Composite" or **"(C)"** means a sample consisting of a minimum of eight aliquot samples collected at equal intervals of no less than 30 minutes and no more than 60 minutes and combined proportionally to flow over the sampling period provided that during the sampling period the peak hourly flow is experienced.

"Critical Test Concentration" or **"(CTC)"** means the specified effluent dilution at which the Permittee is to conduct a single-concentration Aquatic Toxicity Test.

"Daily Composite" or **"(DC)"** means a composite sample taken over a full operating day consisting of grab samples collected at equal intervals of no more than sixty (60) minutes and combined proportionally to flow; or, a composite sample continuously collected over a full operating day proportionally to flow.

"Daily Concentration" means the concentration of a substance as measured in a daily composite sample, or, arithmetic average of all grab sample results defining a grab sample average.

"Daily Quantity" means the quantity of waste discharged during an operating day.

"Geometric Mean" is the "n"th root of the product of "n" observations.

"Infiltration" means water other than wastewater that enters a sewer system (including sewer system and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.

"Inflow" means water other than wastewater that enters a sewer system (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters, or drainage. Inflow does not include, and is distinguished from, infiltration.

"Instantaneous Limit" means the highest allowable concentration of a substance as measured by a grab sample, or the highest allowable measurement of a parameter as obtained through instantaneous monitoring.

"In-stream Waste Concentration" or **"(IWC)"** means the concentration of a discharge in the receiving water after mixing has occurred in the allocated zone of influence.

"MGD" means million gallons per day.

"Maximum Daily Limit" means the maximum allowable "Daily Concentration" (defined above) when expressed as a concentration (e.g. mg/l), otherwise, it means the maximum allowable "Daily Quantity" as defined above, unless it is expressed as a flow quantity. If expressed as a flow quantity it means "Maximum Daily Flow" as defined in Section 22a-430-3(a) of the RCSA.

"Monthly Minimum Removal Efficiency" means the minimum reduction in the pollutant parameter specified when the effluent average monthly concentration for that parameter is compared to the influent average monthly concentration.

"NA" as a Monitoring Table abbreviation means "not applicable".

"NR" as a Monitoring Table abbreviation means "not required".

"No Observable Acute Effect Level" or **"(NOAEL)"** means any concentration equal to or less than the critical test concentration in a single concentration (pass/fail) toxicity test, conducted pursuant to Section 22a-430-3(j)(7)(A)(i) of the RCSA, demonstrating 90% or greater survival of test organisms at the CTC.

"Quarterly" in the context of any sampling frequency, shall mean sampling is required in the months of March, June, September, and December.

"Range During Sampling" or **"(RDS)"** as a sample type means the maximum and minimum of all values recorded as a result of analyzing each grab sample of; 1) a Composite Sample, or, 2) a Grab Sample Average. For those Permittee with pH meters that provide continuous monitoring and recording, Range During Sampling means the maximum and minimum readings recorded with the continuous monitoring device during the Composite or Grab Sample Average sample collection.

"Range During Month" or **"(RDM)"** as a sample type means the lowest and the highest values of all of the monitoring data for the reporting month.

"Sanitary Sewage" means wastewaters from residential, commercial and industrial sources introduced by direct connection to the sewerage collection system tributary to the treatment works including non-excessive inflow/infiltration sources.

"Twice per Month" in the context of any sampling frequency, mean two samples per calendar month collected no less than 12 days apart.

"ug/l" means micrograms per liter

"Work Day" in the context of a sampling frequency means, Monday through Friday excluding holidays.

SECTION 3: COMMISSIONER'S DECISION

(A) The Commissioner of Energy and Environmental Protection ("Commissioner") has issued a final decision and found continuance of the existing system to treat the discharge will protect the waters of the state from pollution. The Commissioner's decision is based on application #201106215 for permit reissuance received on August 10, 2011 and the administrative record established in the processing of that application.

(B) The Commissioner hereby authorizes the Permittee to discharge in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or his authorized agent for the discharges and/or activities authorized by, or associated with, this permit.

(C) The Commissioner reserves the right to make appropriate revisions to the permit, if required after Public Notice, in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Clean Water Act or the CGS or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Clean Water Act or CGS or regulations adopted thereunder which are then applicable.

SECTION 4: GENERAL LIMITATIONS AND OTHER CONDITIONS

(A) The Permittee shall not accept any new sources of non-domestic wastewater conveyed to its POTW through its sanitary sewerage system or by any means other than its sanitary sewage system unless the generator of such wastewater; (a) is authorized by a permit issued by the Commissioner under Section 22a-430 CGS (individual permit), or, (b) is authorized under Section 22a-430b (general permit), or, (c) has been issued an emergency or temporary authorization by the Commissioner under Section 22a-6k. All such non-domestic wastewaters shall be processed by the POTW via receiving facilities at a location and in a manner prescribed by the Permittee which are designed to contain and control any unplanned releases.

(B) No new discharge of domestic sewage from a single source to the POTW in excess of 50,000 gallons per day shall be allowed by the Permittee until the Permittee has notified in writing the Connecticut Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal Wastewater Section, 79 Elm Street, Hartford, CT 06106-5127 of said new discharge.

(C) The Permittee shall maintain a system of user charges based on actual use sufficient to operate and maintain the POTW (including the collection system) and replace critical components.

(D) The Permittee shall maintain a sewer use ordinance that is consistent with the Model Sewer Ordinance for Connecticut Municipalities prepared by the Department of Energy and Environmental Protection. The Commissioner of Energy and Environmental Protection alone may authorize certain discharges which may not conform to the Model Sewer Ordinance.

(E) No discharge from the permitted facility beyond any zone of influence shall contain or cause in the receiving stream a visible oil sheen, floating solids, visible discoloration, or foaming beyond that which may result from a discharge from a permitted facility and none exceeding levels necessary to maintain all designated uses.

(F) No discharge from the permitted facility shall cause acute or chronic toxicity in the receiving water body beyond any Zone Of Influence (ZOI) specifically allocated to that discharge in this permit.

(G) The Permittee shall maintain an alternate power source adequate to provide full operation of all pump stations in the sewerage collection system and to provide a minimum of primary treatment and disinfection at the water pollution control facility to insure that no discharge of untreated wastewater will occur during a failure of a primary power source.

(H) The average monthly effluent concentration shall not exceed 15% of the average monthly influent concentration for BOD_5 and Total Suspended Solids for all daily composite samples taken in any calendar month.

(I) Any new or increased amount of sanitary sewage discharge to the sewer system is prohibited where it will cause a dry weather overflow or

exacerbate an existing dry weather overflow.

(J) Sludge Conditions

(1) The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including but not limited to 40 CFR Part 503.

(2) If an applicable management practice or numerical limitation for pollutants in sewage sludge more stringent than existing federal and state regulations is promulgated under Section 405(d) of the Clean Water Act (CWA), this permit shall be modified or revoked and reissued to conform to the promulgated regulations.

(3) The Permittee shall give prior notice to the Commissioner of any change(s) planned in the Permittee' sludge use or disposal practice. A change in the Permittee' sludge use or disposal practice may be a cause for modification of the permit.

(4) Testing for inorganic pollutants shall follow "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846 as updated and/or revised.

(K) This permit becomes effective on the 1st day of the month following the date of signature of the Commissioner or designee.

(L) When the arithmetic mean of the average daily flow from the POTW for the previous 180 days exceeds 90% of the design flow rate, the Permittee shall develop and submit within one year, for the review and approval of the Commissioner, a plan to accommodate future increases in flow to the plant. This plan shall include a schedule for completing any recommended improvements and a plan for financing the improvements.

(M) When the arithmetic mean of the average daily BOD_5 or TSS loading into the POTW for the previous 180 days exceeds 90% of the design load rate, the Permittee shall develop and submit for the review and approval of the Commissioner within one year, a plan to accommodate future increases in load to the plant. This plan shall include a schedule for completing any recommended improvements and a plan for financing the improvements.

(N) On or before July 31st of each calendar year the main flow meter shall be calibrated by an independent contractor in accordance with the manufacturer's specifications. The actual record of the calibration shall be retained onsite and, upon request, the Permittee shall submit to the Commissioner a copy of that record.

(O) The Permittee shall operate and maintain all processes as installed in accordance with the approved plans and specifications and as outlined in the associated operation and maintenance manual. This includes but is not limited to all preliminary treatment processes, primary treatment processes, recycle pumping processes, anaerobic treatment processes, anoxic treatment processes, aerobic treatment processes, flocculation processes, effluent filtration processes or any other processes necessary for the optimal removal of pollutants. The Permittee shall not bypass or fail to operate any of the aforementioned processes without the written approval of the Commissioner.

(P) The Permittee is hereby authorized to accept septage at the treatment facility; or other locations as approved by the Commissioner.

(Q) The temperature of any discharge shall not increase the temperature of the receiving stream above 85°F, or, in any case, raise the normal temperature of the receiving stream more than 4°F beyond the permitted zone of influence.

SECTION 5: SPECIFIC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(A) The discharge(s) shall not exceed and shall otherwise conform to the specific terms and conditions listed in this permit. The discharge is restricted by, and shall be monitored in accordance with Tables A through F incorporated in this permit as Attachment 1.

(B) The Permittee shall monitor the performance of the treatment process in accordance with the Monthly Operating Report (MOR) incorporated in this permit as Attachment 2.

SECTION 6: SAMPLE COLLECTION, HANDLING and ANALYTICAL TECHNIQUES

(A) Chemical Analysis

(1) Chemical analyses to determine compliance with effluent limits and conditions established in this permit shall be performed using the methods approved pursuant to the Code of Federal Regulations, Part 136 of Title 40 (40 CFR 136) unless an alternative method has been approved in writing pursuant to 40 CFR 136.4 or as provided in Section 22a-430-3-(j)(7) of the RCSA. Chemicals which do not

have methods of analysis defined in 40 CFR 136 or the RCSA shall be analyzed in accordance with methods specified in this permit.

(2) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal, as defined in 40 CFR 136 unless otherwise specified.

(3) Grab samples shall be taken during the period of the day when the peak hourly flow is normally experienced.

(4) Samples collected for bacteriological examination shall be collected between the hours of 11 a.m. and 3 p.m. or at that time of day when the peak hourly flow is normally experienced.

(5) The Minimum Levels specified below represent the concentrations at which quantification must be achieved and verified during the chemical analyses for the parameters identified in Attachment 1, Tables A through F. Analyses for these parameters must include check standards within ten percent of the specified Minimum Level or calibration points equal to or less than the specified Minimum Level.

Parameter	Minimum Level
Aluminum	0.050 mg/l
Antimony, Total	0.010 mg/l
Arsenic, Total	0.005 mg/l
Beryllium, Total	0.001 mg/l
Cadmium, Total	0.0005 mg/l
Chlorine, Total Residual	0.050 mg/l
Chromium, Total	0.005 mg/l
Chromium, Total Hexavalent	0.010 mg/l
Copper, Total	0.005 mg/l
Cyanide, Total	0.010 mg/l
Iron, Total	0.040 mg/l
Lead, Total	0.005 mg/l
Mercury, Total	0.0002 mg/l
Nickel, Total	0.005 mg/l
Phosphorus, Total	0.10 mg/l
Selenium, Total	0.005 mg/l
Silver, Total	0.002 mg/l
Thallium, Total	0.005 mg/l
Zinc, Total	0.020 mg/l

(6) The value of each parameter for which monitoring is required under this permit shall be reported to the maximum level of accuracy and precision possible consistent with the requirements of this Section of the permit.

(7) Effluent analyses for which quantification was verified during the analysis at or below the minimum levels specified in this Section and which indicate that a parameter was not detected shall be reported as "less than x" where 'x' is the numerical value equivalent to the analytical method detection limit for that analysis.

(8) Results of effluent analyses which indicate that a parameter was not present at a concentration greater than or equal to the Minimum Level specified for that analysis shall be considered equivalent to zero (0.0) for purposes of determining compliance with effluent limitations or conditions specified in this permit.

(B) Acute Aquatic Toxicity Test

(1) Samples for monitoring of Acute Aquatic Toxicity shall be collected and handled as prescribed in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA-821-R-02-012).

(a) Composite samples shall be chilled as they are collected. Grab samples shall be chilled immediately following collection. Samples shall be held at 0 - 6°C until Acute Aquatic Toxicity testing is initiated.

(b) Effluent samples shall not be dechlorinated, filtered, or, modified in any way, prior to testing for Acute Aquatic Toxicity unless specifically approved in writing by the Commissioner for monitoring at this facility. Facilities with effluent dechlorination and/or filtration designed as part of the treatment process are not required to obtain approval from the Commissioner.

(c) Samples shall be taken at the final effluent for Acute Aquatic Toxicity unless otherwise approved in writing by the Commissioner

for monitoring at this facility.

(d) Chemical analyses of the parameters identified in Attachment 1, Table C shall be conducted on an aliquot of the same sample tested for Acute Aquatic Toxicity.

(i) At a minimum, pH, specific conductance, total alkalinity, total hardness, and total residual chlorine shall be measured in the effluent sample and, during Acute Aquatic Toxicity tests, in the highest concentration of the test and in the dilution (control) water at the beginning of the test and at test termination. If total residual chlorine is not detected at test initiation, it does not need to be measured at test termination. Dissolved oxygen, pH, and temperature shall be measured in the control and all test concentrations at the beginning of the test, daily thereafter, and at test termination.

(e) Tests for Acute Aquatic Toxicity shall be initiated within 36 hours of sample collection.

(2) Monitoring for Acute Aquatic Toxicity to determine compliance with the permit limit on Acute Aquatic Toxicity (invertebrate) shall be conducted for 48 hours utilizing neonatal (less than 24 hours old) *Daphnia pulex.*

(3) Monitoring for Acute Aquatic Toxicity to determine compliance with the permit limit on Acute Aquatic Toxicity (vertebrate) shall be conducted for 48 hours utilizing larval (1 to 14-day old with no more than 24 hours range in age) *Pimephales promelas.*

(4) Tests for Acute Aquatic Toxicity shall be conducted as prescribed for static non-renewal acute tests in "Methods for measuring the Acute Aquatic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012), except as specified below.

(a) For Acute Aquatic Toxicity limits, and for monitoring only conditions, expressed as a NOAEL value, Pass/Fail (single concentration) tests shall be conducted at a specified Critical Test Concentration (CTC) equal to the Aquatic Toxicity limit, (100% in the case of monitoring only conditions), as prescribed in Section 22a-430-3(j)(7)(A)(i) of the RCSA.

(b) Organisms shall not be fed during the tests.

(c) Synthetic freshwater prepared with deionized water adjusted to a hardness of 50±5 mg/L as $CaCO_3$ shall be used as dilution water in the tests.

(d) Copper nitrate shall be used as the reference toxicant.

(5) For limits expressed as NOAEL = 100%, compliance shall be demonstrated when the results of a valid pass/fail Acute Aquatic Toxicity Test indicate 90% or greater survival in the effluent sample at the CTC (100%).

(C) Chronic Aquatic Toxicity Test for Freshwater Discharges

(1) Chronic Aquatic Toxicity testing of the discharge shall be conducted annually during July, August, or September of each year.

(2) Chronic Aquatic Toxicity testing shall be performed on the discharge in accordance with the test methodology established in "Short-Term Methods for Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms" (EPA-821-R-02-013) as referenced in 40 CFR 136 for *Ceriodaphnia* survival and reproduction and Fathead minnow larval survival and growth.

(a) Chronic Aquatic Toxicity tests shall utilize a minimum of five effluent dilutions prepared using a dilution factor of 0.5 (100% effluent, 50% effluent, 25% effluent, 12.5% effluent, 6.25% effluent).

(b) Willimantic River water collected immediately upstream of the area influenced by the discharge shall be used as control (0% effluent) and dilution water in the toxicity tests.

(c) A laboratory water control consisting of synthetic freshwater prepared in accordance with EPA-821-R-02-013 at a hardness of 50±5 mg/l shall be used as an additional control (0% effluent) in the toxicity tests.

(d) Daily composite samples of the discharge (final effluent following disinfection) and grab samples of the Willimantic River, for use as site water control and dilution water, shall be collected on day 0 for test solution renewal on day 1 and day 2 of the test; day 2, for test solution renewal on day 3 and day 4 of the test; and day 4, for test solution renewal for the remainder of the test. Samples shall not be pH or hardness adjusted, or chemically altered in any way.

(3) All samples of the discharge and Willimantic River water used in the Chronic Aquatic Toxicity test shall, at a minimum, be analyzed and results reported in accordance with the provisions listed in Section 6(A) of this permit for the parameters listed in Attachment 1, Table C included herein, excluding Acute Aquatic Toxicity organism testing.

SECTION 7: RECORDING AND REPORTING REQUIREMENTS

(A) The Permittee and/or the Signatory Authority shall continue to report the results of chemical analyses and any aquatic toxicity test required above in Section 5 and the referenced Attachment 1 by electronic submission of DMRs under this permit to the Department using NetDMR. The report shall include a detailed explanation of any violations of the limitations specified. DMRs shall be submitted electronically to the Department no later than the 15th day of the month following the month in which samples are collected.

(1) For composite samples, from other than automatic samplers, the instantaneous flow and the time of each aliquot sample collection shall be recorded and maintained at the POTW.

(B) Complete and accurate test data, including percent survival of test organisms in each replicate test chamber, LC_{50} values and 95% confidence intervals for definitive test protocols, and all supporting chemical/physical measurements performed in association with any aquatic toxicity test, shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR) and sent to the Bureau of Water Protection and Land Reuse at the address specified above in Section 7 (A) of this permit by the 15th day of the month following the month in which samples are collected.

(C) The results of the process monitoring required above in Section 5 shall be entered on the Monthly Operating Report (MOR) form, included herein as Attachment 2, and reported to the Bureau of Water Protection and Land Reuse. The MOR report shall also be accompanied by a detailed explanation of any violations of the limitations specified. The MOR, must be received at the address specified above in Section 7 (A) of this permit by the 15th day of the month following the month in which the data and samples are collected.

(D) A complete and thorough report of the results of the chronic toxicity monitoring outlined in Section 6(C) shall be prepared as outlined in Section 10 of EPA-821-R-02-013 and submitted to the Department for review on or before December 31 of each calendar year to the address specified above in Section 7 (A) of this permit.

(E) NetDMR Reporting Requirements

(1) The Permittee and/or the Signatory Authority shall electronically submit DMRs and reports required under this permit to the Department using NetDMR in satisfaction of the DMR submission requirement of this permit. DMRs shall be submitted electronically to the Department no later than the 15th day of the month following the completed reporting period.

SECTION 8: RECORDING AND REPORTING OF VIOLATIONS, ADDITIONAL TESTING REQUIREMENTS, BYPASSES, MECHANICAL FAILURES, AND MONITORING EQUIPMENT FAILURES

(A) If any Acute Aquatic Toxicity sample analysis indicates that an Aquatic toxicity effluent limitation has been exceeded, or that the test was invalid, an additional sample of the effluent shall be collected and tested for Acute Aquatic Toxicity and associated chemical parameters, as described above in Section 5 and Section 6, and the results reported to the Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity) via the ATMR form (see Section 7 (B)) within 30 days of the previous test. These test results shall also be reported on the next month's DMR report pursuant to Section 7 (A). The results of all toxicity tests and associated chemical parameters, valid and invalid, shall be reported.

(B) If any two consecutive Acute Aquatic Toxicity test results or any three Acute Aquatic Toxicity test results in a twelve month period indicates that the Acute Aquatic Toxicity limit has been exceeded, the Permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report, to the Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity), for the review and written approval of the Commissioner in accordance with Section 22a-430-3(j)(10)(c) of the RCSA describing proposed steps to eliminate the toxic impact of the discharge on the receiving water body. Such a report shall include a proposed time schedule to accomplish toxicity reduction and the Permittee shall comply with any schedule approved by the Commissioner.

(C) Sewage Right-to-Know Electronic Bypass Reporting

(1) Section 22a-430-3(k) of the RCSA shall apply in all instances of bypass including a bypass of the treatment plant or a component of the sewage collection system planned during required maintenance. The Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal Wastewater, the Department of Public Health, Water Supply Section and Recreation Section, and the local Director of Health shall be notified within 2 hours of the Permittee learning of the event via online reporting in a format approved by the Commissioner. A final incident report shall be submitted to the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal

Wastewater within five days of the Permittee learning of each occurrence of a discharge or bypass of untreated or partially treated sewage via online reporting in a format approved by the Commissioner.

If the online reporting system is nonfunctional, then the Permittee shall notify DEEP via telephone during normal business hours (8:30 a.m. to 4:30 p.m. Monday through Friday) at (860) 424-3704 or after hours to the DEEP Emergency Response Unit at (860) 424-3338 and the Department of Public Health at (860) 509-8000 with the final incident report being submitted online.

(D) Section 22a-430-3(j) 11 (D) of the RCSA shall apply in the event of any noncompliance with a maximum daily limit and/or any noncompliance that is greater than two times any permit limit. The Permittee shall notify in the same manner as in paragraph C (1) of this Section, the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal Wastewater Section except, if the online reporting system is nonfunctional and the noncompliance occurs outside normal working hours (8:30 a.m. to 4:30 p.m. Monday through Friday) the Permittee may wait to make the verbal report until 10:30 am of the next business day after learning of the noncompliance.

(E) Section 22a-430-3(j) 8 of the RCSA shall apply in all instances of monitoring equipment failures that prevent meeting the requirements in this permit. In the event of any such failure of the monitoring equipment including, but not limited to, loss of refrigeration for an auto-sampler or lab refrigerator or loss of flow proportion sampling ability, the Permittee shall notify in the same manner as in paragraph C (1) of this Section, the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal Wastewater Section except, if the online reporting system is nonfunctional and the failure occurs outside normal working hours (8:30 a.m. to 4:30 p.m. Monday through Friday) the Permittee may wait to make the verbal report until 10:30 am of the next business day after learning of the failure.

(F) In addition to the reporting requirements contained in Section 22a-430-3(i), (j), and (k) of the Regulations of Connecticut State Agencies, the Permittee shall notify in the same manner as in paragraph C (1) of this Section, the Department of Energy and Environmental Protection, Bureau of Water Protection and Land Reuse, Water Planning and Management Division, Municipal Wastewater concerning the failure of any major component of the treatment facilities which the Permittee may have reason to believe would result in an effluent violation.

This permit is hereby issued on September 6, 2017.

Betsey Wingfield
Bureau Chief
Bureau of Water Protection and Land Reuse

ATTACHMENT 1

Tables A through F

TABLE A

Discharge Serial Number (DSN): **001-1**	Monitoring Location: **1**
Wastewater Description: **Sanitary Sewage**	
Monitoring Location Description: **Final Effluent**	
Allocated Zone of Influence (ZOI): **5.8 cfs**	In-stream Waste Concentration (IWC): **34.8 %**

PARAMETER	Units	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			REPORT FORM	Minimum Level Analysis See Section 6
		Average Monthly Limit	Maximum Daily Limit	Sample Freq.	Sample type	Instantaneous Limit or Required Range[3]	Sample Freq.	Sample Type		
Alkalinity	mg/l	NA	NA	NR	NA	------	Monthly	Grab	MOR	
Biochemical Oxygen Demand (5 day)[1] See remark C	mg/l	30	50	2 per week	Daily Composite	NA	NR	NA	DMR/MOR	
Copper, Total	kg/d	0.355	1.025	Weekly	Daily Composite	NA	NR	NA	DMR/MOR	*
Escherichia coli April 1st through October See remark B below	Colonies per100 ml	NA	NA	NR	NA	410	2 per week	Grab	DMR/MOR	
Flow	MGD	2	------	Continuous[2]	Average Daily Flow	NA	NR	NA	DMR/MOR	
Nitrogen, Ammonia (total as N)										
November through May	mg/l	------	NA	Monthly	Daily Composite	NA	NR	NA	MOR	
June	mg/l	6.5	——	2 per week	Daily Composite	NA	NR	NA	DMR/MOR	
July	mg/l	3.0	------	2 per week	Daily Composite	NA	NR	NA	DMR/MOR	
August	mg/l	3.0	------	2 per week	Daily Composite	NA	NR	NA	DMR/MOR	
September	mg/l	3.0	------	2 per week	Daily Composite	NA	NR	NA	DMR/MOR	
October	mg/l	4.5	------	2 per week	Daily Composite	NA	NR	NA	DMR/MOR	
Nitrogen, Nitrate (total as N)	mg/l	NA	------	Monthly	Daily Composite	NA	NR	NA	MOR	
Nitrogen, Nitrite (total as N)	mg/l	NA	------	Monthly	Daily Composite	NA	NR	NA	MOR	
Nitrogen, Total Kjeldahl	mg/l	NA	------	Monthly	Daily Composite	NA	NR	NA	MOR	
Nitrogen, Total	mg/l	NA	------	Monthly	Daily Composite	NA	NR	NA	MOR	

Nitrogen, Total	lbs/day	NA	——	Monthly	Daily Composite	NA	NR	NA	MOR	
Oxygen, Dissolved	mg/l	NA	NA	NR	NA	——	Work Day	Grab	MOR	
pH	S.U.	NA	NA	NR	NA	6 - 9	Work Day	Grab	DMR/MOR	
Phosphate, Ortho April 1st through October 31st	mg/l	NA	------	Weekly	Daily Composite	NA	NR	NA	MOR	
November 1st through March 31st	mg/l	NA	------	Monthly	Daily Composite	NA	NR	NA	MOR	
Phosphorus, Total April 1st through October 31st	mg/l	NA	------	Weekly	Daily Composite	NA	NR	NA	DMR/MOR	*
November 1st through March 31st	mg/l	NA	------	Monthly	Daily Composite	NA	NR	NA	DMR/MOR	
Phosphorus, Total April 1st through October 31st	lbs/day	-----	——	Weekly	Daily Composite	NA	NA	NA	MOR	
Phosphorus, Total (Average Seasonal Load Cap) [4] October	lbs/day	8.61	NA	Weekly	Calculated	NA	NA	NA	DMR/MOR	
Solids, Settleable	ml/l	NA	NA	NR	NA	——	Work Day	Grab	MOR	
Solids, Total Suspended[1], See remark C	mg/l	30	50		Daily Composite	NA	NA	NA	DMR/MOR	
Temperature	°F	NA	NA	NR	NA	------	Work Day	Grab	MOR	
Turbidity	NTU	NA	NA	NR	NA	------	Work Day	Grab	MOR	
UV Intensity, April 1st through October 31st, See Remark A	mW/cm^2	NA	NA	NR	NA	------	4/Work Day	Grab	MOR	

TABLE A – CONDITIONS

Footnotes:

[1] The discharge shall not exceed an average monthly 30 mg/l or a maximum daily 50 mg/l.

[2] The Permittee shall record and report on the monthly operating report the minimum, maximum and total flow for each day of discharge and the average daily flow for each sampling month. The Permittee shall report, on the discharge monitoring report, the average daily flow and maximum daily flow for each sampling month.

[3] The instantaneous limits in this column are maximum limits.

[4] Compliance with the Average Seasonal Load Cap of 8.61 lbs/day is determined as follows: Calculate the Average Seasonal Load by adding all sample results during each April 1st through October 31st season in pounds per day and dividing by the total number of those samples in that season.

Remarks:

(A) Ultraviolet disinfection shall be utilized from April 1st through October 31st.

(B) The geometric mean of the Escherichia coli bacteria values for the effluent samples collected in a period of a calendar month during the period from April 1st through October 31st shall not exceed 126 per 100 milliliters.

(C) The Average Weekly discharge Limitation for BOD_5 and Total Suspended Solids shall be 1.5 times the Average Monthly Limit listed above.

TABLE B

Discharge Serial Number (DSN): **001-1**		Monitoring Location: **K**			
Wastewater Description: **Sanitary Sewage**					
Monitoring Location Description: **Final Effluent**					
Allocated Zone of Influence (ZOI): **5.8 cfs**		In-stream Waste Concentration (IWC): **34.8 %**			
PARAMETER	**Units**	**FLOW/TIME BASED MONITORING**			**REPORT FORM**
		Average Monthly Minimum	**Sample Freq.**	**Sample type**	
Biochemical Oxygen Demand (5 day) Percent Removal[1]	% of Influent	85	2 per week	Calculated[2]	DMR
Solids, Total Suspended Percent Removal[1]	% of Influent	85	2 per week	Calculated[2]	DMR

TABLE B – CONDITIONS

Footnotes:

[1] The discharge shall be less than or equal to 15% of the average monthly influent BOD_5 and total suspended solids (Table E, Monitoring Location G).

[2] Calculated based on the average monthly results described in Table A. Removal efficiency $= \frac{\text{Inf. BOD or TSS} - \text{Effluent BOD or TSS}}{\text{Inf. BOD or TSS}} \times 100$

TABLE C

Discharge Serial Number (DSN): **001-1**					Monitoring Location: **T**	
Wastewater Description: **Sanitary Sewage**						
Monitoring Location Description: **Final Effluent**						
Allocated Zone of Influence (ZOI): **5.8 cfs**			In-stream Waste Concentration (IWC): **34.8 %**			
PARAMETER	**Units**	**Maximum Daily Limit**	**Sampling Frequency**	**Sample Type**	**Reporting form**	**Minimum Level Analysis See Section 6**
Aluminum, Total	mg/l	-----	Quarterly	Daily Composite	ATMR/DMR	*
Antimony, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
NOAEL Static 48Hr Acute D. Pulex[1]	% survival	≥90%	Quarterly	Daily Composite	ATMR/DMR	
NOAEL Static 48Hr Acute Pimephales[1]	% survival	≥90%	Quarterly	Daily Composite	ATMR/DMR	
Arsenic, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Beryllium, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
BOD_5	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Cadmium, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Chromium, Hexavalent	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Chromium, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Chlorine, Total Residual	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Copper, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Cyanide, Amenable	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Cyanide, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Iron, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Lead, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Mercury, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Nickel, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Nitrogen, Ammonia (total as N)	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Nitrogen, Nitrate, (total as N)	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Nitrogen, Nitrite, (total as N)	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Phosphorus, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Phenols, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Selenium, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Silver, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Suspended Solids, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	
Thallium, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*
Zinc, Total	mg/l	------	Quarterly	Daily Composite	ATMR/DMR	*

TABLE C - CONDITIONS

Remarks:[1]The results of the Toxicity Tests are recorded in % survival. The Permittee shall report <u>% survival</u> on the DMR based on criteria in Section 6(B) of this permit.

ATMR – Aquatic Toxicity Monitoring Report

TABLE D

Discharge Serial Number: **001-1**	Monitoring Location: **N**			
Wastewater Description: **Activated Sludge**				
Monitoring Location Description: **Each Aeration Unit**				
PARAMETER	**REPORTING FORMAT**	**INSTANTANEOUS MONITORING**		**REPORTING FORM**
		Sample Frequency	Sample Type	
Oxygen, Dissolved	High & low for each WorkDay	4/WorkDay	Grab	MOR
Sludge Volume Index	WorkDay	WorkDay	Grab	MOR
Mixed Liquor Suspended Solids	WorkDay	WorkDay	Grab	MOR

TABLE E

Discharge Serial Number: **001-1**			Monitoring Location: **G**				
Wastewater Description: **Sanitary Sewage**							
Monitoring Location Description: **Influent**							
PARAMETER	**Units**	**DMR REPORTING FORMAT**	**FLOW/TIME BASED MONITORING**		**INSTANTANEOUS MONITORING**		**REPORTING FORM**
			Sample Frequency	**Sample Type**	**Sample Frequency**	**Sample Type**	
Alkalinity, Total	mg/l		NA	NA	Monthly	Grab	MOR
Biochemical Oxygen Demand (5 day)	mg/l	Monthly average	2 per week	Daily Composite	NA	NA	DMR/MOR
Nitrogen, Ammonia (total as N)	mg/l		Monthly	Daily Composite	NA	NA	MOR
Nitrogen, Nitrate (total as N)	mg/l		Monthly	Daily Composite	NA	NA	MOR
Nitrogen, Nitrite (total as N)	mg/l		Monthly	Daily Composite	NA	NA	MOR
Nitrogen, Total Kjeldahl	mg/l		Monthly	Daily Composite	NA	NA	MOR
Nitrogen, Total	mg/l		Monthly	Daily Composite	NA	NA	MOR
Phosphate, Ortho	mg/l		Monthly	Daily Composite	NA	NA	MOR
Phosphorus, Total	mg/l		Monthly	Daily Composite	NA	NA	MOR
pH	S.U.		NA	NA	Work Day	Grab	MOR
Solids, Total Suspended	mg/l	Monthly average	2 per week	Daily Composite	NA	NA	DMR/MOR
Temperature	°F		NA	NA	Work Day	Grab	MOR

TABLE F

Discharge Serial Number: **001-1**	Monitoring Location: **SL**		
Wastewater Description: **Thickened sludge**			
Monitoring Location Description: **Thickened sludge**			
PARAMETER	**INSTANTANEOUS MONITORING**		**REPORTING FORM**
	Units	**Grab Sample Freq.**	
Arsenic, Total	mg/kg	Quarterly	DMR
Beryllium, Total	mg/kg	Quarterly	DMR
Cadmium, Total	mg/kg	Quarterly	DMR
Chromium, Total	mg/kg	Quarterly	DMR
Copper, Total	mg/kg	Quarterly	DMR
Lead, Total	mg/kg	Quarterly	DMR
Mercury, Total	mg/kg	Quarterly	DMR
Nickel, Total	mg/kg	Quarterly	DMR
Nitrogen, Ammonia *	mg/kg	Quarterly	DMR*
Nitrogen, Nitrate (total as N) *	mg/kg	Quarterly	DMR*
Nitrogen, Organic *	mg/kg	Quarterly	DMR*
Nitrogen, Nitrite (total as N) *	mg/kg	Quarterly	DMR*
Nitrogen, Total *	mg/kg	Quarterly	DMR*
pH *	S.U.	Quarterly	DMR*
Polychlorinated Biphenyls	mg/kg	Quarterly	DMR
Solids, Fixed	%	Quarterly	DMR
Solids, Total	%	Quarterly	DMR
Solids, Volatile	%	Quarterly	DMR
Zinc, Total	mg/kg	Quarterly	DMR

(*) required for composting or land application only

Testing for inorganic pollutants shall follow "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846 as updated and/or revised.

ATTACHMENT 2

MONTHLY OPERATING REPORT FORM

Stafford WPCF Facility ID: 134-001 Permit expiration date: Chief Plant Operator: Date received: (stamped)

Sample month/year: Page 1 of MOR for permit # Phone:

	Daily Flow			Primary Sludge			Aeration Tank #1				Aeration Tank #2				Return sludge		Waste sludge	Waste accepted		BOD (5-day)		Suspended Solids		Settleable Solids	Turbidity
	Max.	Min.	Total	Vol.	%	wt.	MLSS	SVI	high D.O.	low D.O.	MLSS	SVI	high D.O.	low D.O.	%flow	%solids		septic	indust	Inf.	Final Eff.	Inf.	Final Eff.	Eff.	Eff.
Units	mgd			gal.	solids	lbs.			mg/l				mg/l				lbs	gal	gal	mg/l		mg/l		ml/l	NTU
Freq	daily			work day			Work day		4/work day		Work day		4/work day		work day		work day	work day		2 per week		2 per week		work day	work day
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									
17																									
18																									
19																									
20																									
21																									
22																									
23																									
24																									
25																									
26																									
27																									
28																									
29																									
30																									
31																									
Total																									
Ave																									
Limit																									

Page 2 of MOR for permit #

[All frequency blocks should be filled in to match Table A (F for Primary Effluent) in permit]

UV Intensity		E. Coli	Ammonia		Nitrite		Nitrate		TKN		Total N		Total N	Lowest D.O.	pH		Total P (mg/l)		Total P	Ortho P (mg/l)		Temp.		Copper
			Inf.	Final Eff.	Inf.	Final Eff.	Inf.	Final Eff.	Inf.	Final Eff.	Inf.	Final Eff.					Inf.	Final Eff.		Inf.	Final Eff.			
High	Low																	Weekly			Weekly			
mW/cm2		#/100 ml	mg/l		mg/l		mg/l		mg/l		mg/l		lb/d	mg/l	S.U.			4/1 - 10/31	Eff.		4/1 - 10/31	°F		mg/l
4/work day		2/ week	Monthly		monthlu		monthly		monthly		monthly		monthly	workday	work day		Monthly	Monthly 11/1 - 3/31	lb/d April - October	Monthly	Monthly 11/1 - 3/31	work day		weekly

Alkalinity	
Inf.	Eff.
mg/l	
monthly	

Sludge Disposal Location:

Please return forms to:
DEEP - Water Bureau
ATTN: Municipal Wastewater Monitoring Coordinator
Municipal Facilities
79 Elm Street
Hartford, CT 06106-5127

Statement of Acknowledgement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

Authorized Official:

Title:

Signature: ______________________________

Date: __________

DATA TRACKING AND TECHNICAL FACT SHEET

Permittee: Town of Stafford

PERMIT, ADDRESS, AND FACILITY DATA

PERMIT #:CT0101214_ **APPLICATION #:** 201106215 **FACILITY ID.** 134-001

Mailing Address:	Location Address:
Street: 1 Main Street	Street: 50 River Road
City: Stafford Springs ST: CT Zip: 06076	City: Stafford Springs ST: CT Zip: 06076
Contact Name: Richard F. Hartenstein Jr.	Contact Name: Richard F. Hartenstein Jr.
Phone No.: 860-684-4914	Phone No.: 860-684-4914
	DMR Contact email address: Hartenstein@staffordct.org

PERMIT INFORMATION

DURATION 5 YEAR _X_ 10 YEAR ___ 30 YEAR ___

TYPE New _ Reissuance _X_ Modification ___

CATEGORIZATION POINT (X) NON-POINT ( ) GIS #

NPDES (X) PRETREAT () GROUND WATER(UIC) ( ) GROUND WATER (OTHER) ( )

NPDES MAJOR **(MA)** _X_
NPDES SIGNIFICANT MINOR or PRETREAT SIU **(SI)** ___
NPDES or PRETREATMENT MINOR **(MI)** ___

COMPLIANCE SCHEDULE YES__ NO_X
POLLUTION PREVENTION __ TREATMENT REQUIREMENT__
WATER QUALITY REQUIREMENT __ OTHER ___

OWNERSHIP CODE
Private __ Federal __ State __ Municipal (town only) _X_ Other public___

DEP STAFF ENGINEER Catharine Chu **DATE DRAFTED:** June 20, 2017

PERMIT FEES

Discharge Code	DSN Number	Annual Fee
111000c	001	$2,367.50

FOR NPDES DISCHARGES
Drainage Basin Code: 3100 Water Quality Classification Goal: B Segment: Willimantic River-00

NATURE OF BUSINESS GENERATING DISCHARGE
Municipal Sanitary Sewage Treatment

PROCESS AND TREATMENT DESCRIPTION (by DSN)
Domestic Sanitary Sewage Treatment with secondary settling tanks, tertiary filters and seasonal UV disinfection

RESOURCES USED TO DRAFT PERMIT
_X_ Federal Effluent Limitation Guideline_40CFR 133_____Secondary Treatment Category

__ *Performance Standards*

__ *Federal Development Document*
name of category

_X_ *Department File Information*

_X_ *Connecticut Water Quality Standards*

__ *Anti-degradation Policy*

__ *Coastal Management Consistency Review Form*

__ *Other - Explain*

BASIS FOR LIMITATIONS, STANDARDS OR CONDITIONS

_X_ *Secondary Treatment (Section 22a-430-4(r) of the Regulations of Connecticut State Agencies)*

__ *Case-by-Case Determination (See Other Comments)*

_X_ *In order to meet in-stream water quality (See General Comments)*

_X_ *Anti-degradation policy*

GENERAL COMMENTS

The Town of Stafford ("Permittee") operates a municipal water pollution control facility ("the facility") located at 50 River Road, Stafford Springs, CT. The facility is designed to treat and discharge up to 2.0 million gallons a day of effluent into the Willimantic River. The facility currently uses secondary treatment with UV disinfection to treat effluent before being discharged. Pursuant to Conn. Gen. Stat. § 22a-430, the Department of Energy and Environmental Protection has issued Town of Stafford a permit for the discharge from this facility. The permittee has submitted an application to renew its permit. The Department has made a tentative determination to approve the Town of Stafford's application and has prepared a draft permit consistent with that determination.

The most significant changes from the current permit is the inclusion of a revised copper limit and the removal of the lead limit from the current permit as the facility no longer shows the statistical probability of exceeding water quality goals in Willimantic River associated with lead. The new permit also includes revised bacteria monitoring requirements (e.g. e. coli), aluminum monitoring to be consistent with the most recent CT Water Quality Standards and iron monitoring to be consistent with EPA's National Recommended Water Quality Criteria.

SPECIFIC REQUIREMENTS OR REVISIONS

The Department reviewed the application for consistency with Connecticut's Water Quality Standards and determined that with the limits in the draft permit, including those discussed below, that the draft permit is consistent with maintenance and protection of water quality in accordance with the Tier I Anti-degradation Evaluation and Implementation Review provisions of such Standards.

The need for inclusion of water quality based discharge limitations in this permit was evaluated consistent with Connecticut Water Quality Standards and criteria, pursuant to 40 CFR 122.44(d). Discharge monitoring data was evaluated for consistency with the available aquatic life criteria (acute and chronic) and human health (fish consumption only) criteria, considering the zone of influence allocated to the facility where appropriate. In addition to this review, the statistical procedures outlined in the EPA Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) were employed to calculate the need for such limits. Comparison of the attached monitoring data and its inherent variability with the calculated water quality based limits indicates a ***statistical*** *probability of exceeding such limits. Therefore, revised water quality based limits for copper were included in the permit at this time.*

A limit has been included in this permit to cap the phosphorus load this discharge is permitted for:

Phosphorus Permitting Approach

Phosphorus is a naturally occurring element that is essential to support plant growth. When present in excessive amounts, phosphorus can impair both aquatic life and recreational use of Connecticut's water resources. Excess nutrient enrichment is a serious threat to water quality in Connecticut. Excessive loading of phosphorus to surface waters as a result of discharges from wastewater treatment plants or non point sources such as runoff from urban and agricultural lands, can lead to algal blooms, including blooms of noxious blue green algae, reduction in water clarity, and in extreme cases depletion of oxygen, fish kills, and other impairments to aquatic life. Currently, 21 water body segments have been identified on Connecticut's List of Waters Not Meeting Water Quality Standards where nutrient enrichment is a contributing cause of the impairment.

The Connecticut Water Quality Standards (WQS) do not include numeric criteria for nutrients but rather incorporate narrative standards and criteria for nutrients. These narrative policy statements direct the Connecticut Department of Environmental Protection to impose discharge limitations or other reasonable controls on point and non point sources to support maintenance or attainment of designated uses. In the absence of numeric criteria for phosphorus, the Department has developed an interim nutrient management strategy for freshwater non-tidal streams based on the narrative policy statements in the WQS to meet the pressing need to issue NPDES permits and be protective of the environment. The strategy includes methods that focus on phosphorus because it is the primary limiting nutrient in freshwater systems. These methods were approved by the United States Environmental Protection (EPA) in their letter dated October 26, 2010 as an interim strategy to establish water quality based phosphorus limits in non-tidal freshwater for industrial and municipal water pollution control facilities (WPCFs) national pollutant discharge elimination system (NPDES) permits.

The method in the interim strategy uses best available science to identify phosphorus enrichment levels in waste receiving rivers and streams that adequately support aquatic life uses. The methodology focuses on algal communities as the key aquatic life nutrient response variable and phosphorus enrichment factors that represent significant changes in communities based on data collected statewide. Ongoing work is currently being conducted to refine the approach through additional data collection and by expanding the methodology to include non-waste receiving streams. It is expected that the ongoing work will lead to numeric nutrient criteria for all freshwater rivers and streams in the next WQS review cycle. The current approach provides for a major statewide advancement in the level of phosphorus control that is expected to meet all freshwater designated uses. The adaptive nature of Connecticut's strategy allows for revisions to permit limits in future permit cycles without delaying action that we know needs to be taken today.

The current approach follows a watershed based framework incorporating many of the elements from the U.S. EPA Watershed–Based National Pollutant Discharge Elimination System (NPDES) Permitting Technical Guidance (2007). Consistent with the 2007 Guidance, the approach "explicitly considers the impact of multiple pollutant sources and stressors, including nonpoint source contributions, when developing point source permits". Expected current conditions are based on the probability of excess phosphorus export from land cover and municipal and industrial facilities in the upstream drainage basin. Connecticut's policy for phosphorus management is translated into a numeric expression through geo-spatial and statistical analyses that determines the maximum acceptable seasonal phosphorus mass load per unit area of watershed contributing flow to the point of assessment.

The goal of the interim strategy is to achieve or maintain an enrichment factor (EF) of 8.4 or below throughout a watershed. An EF is representative of the amount of anthropogenic phosphorus loading to river and streams. It is calculated by dividing the current total seasonal phosphorus load by a modeled total phosphorus load under complete forested conditions at a particular point along the river. An enrichment factor is representative of the amount of anthropogenic phosphorus loading to rivers and streams. The goal of an 8.4 enrichment factor represents a threshold at which a significant change is seen in the algal communities indicating highly enriched conditions and impacts to aquatic life uses.

The analysis was conducted using benthic algae collected in rivers and streams throughout CT under varying enrichment conditions. The approach targets the critical 'growing' season (April through October) when phosphorus is more likely to be taken up by sediment and biomass because of low flow and warmer conditions. During winter months aquatic plants are dormant and flows are higher providing constant flushing of phosphorus through aquatic systems with a less likely chance that it will settle out into the sediment. Limiting the phosphorus

export from industrial and municipal facilities offers a targeted management strategy for achieving aquatic life designated uses within a waterbody. The export of some phosphorus from facilities and other land sources is considered normal use of the land recognizing that humans are part of the environment.

A seasonal load was established by the Department for each facility discharging to non-tidal waters based on the current degree of enrichment of the receiving water body at the point of discharge and the facilities contribution to the total watershed enrichment at the point of discharge.

The Town of Strafford's Permit Requirements
A nutrient watershed analysis was conducted for the Willimantic River watershed below facilities discharging phosphorus into the river. The facilities discharging to the river include Stafford WPCF, University of CT WPCF, and Willimantic WPCF. The seasonal (April 1st through October 31st) nutrient loading from each facility discharging to the watershed was reduced to achieve an enrichment factor of 8.4 or lower throughout the river.

The current enrichment factor at the Town of Stafford WPCF discharge is 5. The final proposed seasonal load allocation for Town of Stafford WPCF is 8.61 lbs/day. When this strategy is fully implemented by combining reductions at all facilities located in the same watershed, the NPDES load in the Willimantic River will be reduced by 0%.

Federal regulations at 40 CFR 122.44(d) indicate that permit issuers are required to determine whether a given point source discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard after consideration of existing controls on point and non-point sources of pollution. If a discharge is found to cause an excursion of a numeric or narrative state water quality criterion, NPDES regulations implementing section 301(b)(1)(C) of the Clean Water Act provide that a permit must contain effluent limits as necessary to achieve state water quality standards. The limit in the permit and the strategy are consistent with the narrative policy statements in the CT WQS and are expected to result in the attainment and maintenance of all designated uses for the water body when the strategy is fully implemented. If the Department develops numeric criteria in the future, or it is found that the current limit under the strategy is not sufficient to achieve designated uses, the goal will be modified and the WPCF will be expected to meet the more stringent water quality goal.

WATER QUALITY LIMIT CALCULATIONS
See attached

WQB LIMITS:

Discharger:	Stafford Springs			by: ChuCa, 6/19/2017, 10:37
Receiving Water:	Willimantic River	CURRENT CONDITIONS		
Design Flow:	2.000 MGD	Avg. Flow:	0.710 MGD	
Allocated ZOI:	5.80 CFS	Max. Flow:	0.960 MGD	
Samples/Month:	4	IWC:	34.80 %	

WQB Limits - **Site Specific**

Compound	C.V.	AML ug/l	MDL ug/l	AML kg/d	MDL kg/d	LIMIT? ML?
Aluminum	0.0	2.50E+02	2.50E+02	1.89E+00	1.89E+00	
Ammonia	1.6	2.55E+03	7.47E+03	1.93E+01	5.66E+01	LIMIT/ML
Antimony	0.0	5.46E+02	5.46E+02	4.14E+00	4.14E+00	
Arsenic	0.0	2.10E-02	2.10E-02	1.59E-04	1.59E-04	ML
Beryllium	2.2	5.64E+00	1.76E+01	4.27E-02	1.34E-01	ML
Cadmium	0.0	3.59E-01	3.59E-01	2.72E-03	2.72E-03	ML
Chlorine	0.6	2.59E+01	5.19E+01	1.96E-01	3.93E-01	
Chromium (hex)	0.0	3.16E+01	3.16E+01	2.40E-01	2.40E-01	ML
Chromium (tri)	0.1	1.17E+02	1.35E+02	8.84E-01	1.02E+00	
Copper	1.5	4.69E+01	1.35E+02	3.55E-01	1.02E+00	LIMIT/ML
Cyanide (amen)	0.0	1.49E+01	1.49E+01	1.13E-01	1.13E-01	
Lead	0.6	2.82E+00	5.67E+00	2.14E-02	4.29E-02	ML
Mercury	0.0	1.47E-01	1.47E-01	1.11E-03	1.11E-03	ML
Nickel	1.2	5.69E+01	1.54E+02	4.31E-01	1.16E+00	
Phenol	0.0	4.60E+02	4.60E+02	3.48E+00	3.48E+00	
Selenium	0.0	1.44E+01	1.44E+01	1.09E-01	1.09E-01	
Silver	2.4	9.26E-01	2.93E+00	7.02E-03	2.22E-02	ML
Thallium	0.0	1.38E+00	1.38E+00	1.05E-02	1.05E-02	ML
Zinc	0.4	1.12E+02	1.87E+02	8.45E-01	1.42E+00	

Current Conditions

Compound	# DETECTS	AMC ug/l	MMC ug/l	AMM kg/d	MMM kg/d
Aluminum	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ammonia	18	2.50E+03	1.33E+04	6.72E+00	4.83E+01
Antimony	0	1.00E+01	1.00E+01	2.69E-02	3.64E-02
Arsenic	0	5.00E+00	5.00E+00	1.34E-02	1.82E-02
Beryllium	1	1.90E+00	2.00E+01	5.11E-03	7.27E-02
Cadmium	0	5.00E-01	5.00E-01	1.34E-03	1.82E-03
Chlorine				0.00E+00	0.00E+00
Chromium (hex)	0	1.00E+01	1.01E+02	2.69E-02	3.67E-01
Chromium (tri)	2	5.20E+00	7.00E+00	1.40E-02	2.55E-02
Copper	14	1.31E+01	9.00E+01	3.52E-02	3.27E-01
Cyanide (amen)	0	5.00E+00	5.00E+00	1.34E-02	1.82E-02
Lead	2	5.80E+00	2.00E+01	1.56E-02	7.27E-02
Mercury	0	2.00E-01	2.00E-01	5.38E-04	7.27E-04
Nickel	14	1.29E+01	5.20E+01	3.47E-02	1.89E-01
Phenol	0	5.00E+01	5.00E+01	1.34E-01	1.82E-01
Selenium	0	5.00E+00	5.00E+00	1.34E-02	1.82E-02
Silver	2	2.00E+00	2.40E+01	5.38E-03	8.73E-02
Thallium	0	1.00E+01	1.00E+01	2.69E-02	3.64E-02
Zinc	21	4.50E+01	1.00E+02	1.21E-01	3.64E-01

Final WQB Limits

	AML (kg/d)	MDL (kg/d)
Ammonia	19.288	56.597
Copper	0.355	1.025

Interim WQB Limits

	AML (kg/d)	MDL (kg/d)

Minimum Levels

Ammonia	
Arsenic	0.005 mg/L
Beryllium	0.001 mg/L
Cadmium	0.0005 mg/L
Chromium (hex)	0.010 mg/L
Copper	0.005 mg/L
Lead	0.005 mg/L
Mercury	0.0002 mg/L
Silver	0.002 mg/L
Thallium	0.005 mg/L

Effluent Chemistry: STAFFORD SPRINGS WPCF

as of Monday, June 19, 2017 Design Flow 2 MGD Avg. Monthly Flow : MGD Max. Monthly Flow : MGD

Receiving Waterbody: Willimantic River
Allocated ZOI: 5.8 cfs
Database IWC: 34.8% Site Specific

Date	BOD	TSS	NH3	NO2	NO3	CNt	CNa	Be	As	Cd	Cr6	Cr3	Cu	Pb	Th	Ni	Ag	Zn	Sb	Se	Phen	Hg	Al	P	Fe
6/13/2012	9.80	4.00	13.28	< 0.030	0.99	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	< 2.0	< 5.0	< 10.0	< 5.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2			
9/19/2012	9.90	3.50	8.70	< 0.030	1.90	9.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	9.0	< 5.0	< 10.0	< 5.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2			
12/12/2012	7.30	< 1.00	2.90	< 0.030	8.40	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	8.0	< 5.0	< 10.0	< 5.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2			
12/19/2012	2.70	5.00	0.66	< 0.030	9.10	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	20.0	20.0	< 10.0	10.0	1.0	40.0	< 10.0	< 5.0	< 50.0	< 0.2			
1/23/2013	4.20	6.00	0.15	< 0.030	9.70	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	20.0	7.0	< 10.0	6.0	< 1.0	80.0	< 10.0	< 5.0	< 50.0	< 0.2			
3/6/2013	13.60	2.50	9.14	< 0.030	3.20	< 5.0	< 5.0	20.0	< 5.0	< 0.5	< 10.0	< 5.0	30.0	< 5.0	< 10.0	7.0	< 1.0	20.0	< 10.0	< 5.0	< 50.0	< 0.2			
6/19/2013	< 1.00	1.50	0.45	< 0.030	4.80	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	< 2.0	< 5.0	< 10.0	7.0	< 1.0	< 10.0	< 10.0	< 5.0	< 50.0	< 0.2			
9/11/2013	10.60	< 1.00	1.05	< 0.030	7.80	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	90.0	< 5.0	< 10.0	50.0	< 1.0	30.0	< 10.0	< 5.0	< 50.0	< 0.2			
12/18/2013	1.70	< 1.00	1.90	< 0.030	9.10	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	< 2.0	< 5.0	< 10.0	5.0	24.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2			
3/12/2014	2.60	< 1.00	4.21	0.540	5.30	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	< 2.0	< 5.0	< 10.0	18.0	< 1.0	40.0	< 10.0	< 5.0	< 50.0	< 0.2			
6/11/2014	5.00	< 1.00	< 0.10	< 0.010	6.64	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	2.0	< 5.0	< 10.0	6.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2			
9/10/2014	5.10	1.50	0.11	< 0.030	6.80	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	20.0	< 5.0	< 10.0	9.0	< 1.0	100.0	< 10.0	< 5.0	< 50.0	< 0.2			
12/9/2014	2.80	< 1.00	9.84	0.130	1.60	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	< 2.0	< 5.0	< 10.0	6.0	< 1.0	30.0	< 10.0	< 5.0	< 50.0	< 0.2			
3/10/2015	5.50	1.50	0.52	< 0.030	< 11.00	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	20.0	< 5.0	< 10.0	10.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2			
6/9/2015	3.40	2.00	0.10	< 0.030	6.00	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	< 2.0	< 5.0	< 10.0	6.0	< 1.0	50.0	< 10.0	< 5.0	< 50.0	< 0.2			

Date	BOD	TSS	NH3	NO2	NO3	CNt	CNa	Be	As	Cd	Cr6	Cr3	Cu	Pb	Th	Ni	Ag	Zn	Sb	Se	Phen	Hg	Al	P	Fe
9/23/2015	4.00	< 1.00	< 0.10	8.140	< 0.03	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	14.0	< 5.0	< 10.0	< 5.0	< 1.0	70.0	< 10.0	< 5.0	< 50.0	< 0.2			
12/29/2015	5.60	< 1.00	0.21	< 0.030	6.26	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	8.0	< 5.0	< 10.0	< 5.0	< 1.0	40.0	< 10.0	< 5.0	< 50.0	< 0.2			
3/16/2016	4.50	< 1.00	< 0.10	< 0.030	5.50	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	7.0	20.0	< 5.0	< 10.0	52.0	< 1.0	40.0	< 10.0	< 5.0	< 50.0	< 0.2			
6/7/2016	2.90	< 1.00	0.51	< 0.030	5.77	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	9.0	< 5.0	< 10.0	< 5.0	< 1.0	40.0	< 10.0	< 5.0	< 50.0	< 0.2			
9/7/2016	< 1.00	< 1.00	0.19	< 0.030	9.06	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	< 2.0	< 5.0	< 10.0	< 5.0	< 1.0	30.0	< 10.0	< 5.0	< 50.0	< 0.2			
12/7/2016	2.00	< 1.00	0.73	< 0.030	7.69	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	< 5.0	< 2.0	< 5.0	< 10.0	< 5.0	< 1.0	30.0	< 10.0	< 5.0	< 50.0	< 0.2			
3/16/2017	4.50	< 1.00	< 0.10	< 0.030	5.50	< 5.0	< 5.0	< 1.0	< 5.0	< 0.5	< 10.0	7.0	2.0	< 5.0	< 10.0	52.0	< 1.0	40.0	< 10.0	< 5.0	< 50.0	< 0.2			

	BOD	TSS	NH3	NO2	NO3	CNt	CNa	Be	As	Cd	Cr6	Cr3	Cu	Pb	Th	Ni	Ag	Zn	Sb	Se	Phen	Hg	Al	P	Fe
Count	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0	0	0
# Detected	20	9	18	3	20	1	0	1	0	0	0	2	14	2	0	14	2	21	0	0	0	0	0	0	0
Average	4.99	1.84	2.50	0.425	6.01	5.2	5.0	1.9	5.0	0.5	10.0	5.2	13.1	5.8	10.0	12.9	2.0	45.0	10.0	5.0	50.0	0.2			
Maximum	13.60	6.00	13.28	8.140	11.00	9.0	5.0	20.0	5.0	0.5	10.0	7.0	90.0	20.0	10.0	52.0	24.0	100.0	10.0	5.0	50.0	0.2			
CV	0.7	0.8	1.5	4.1	0.5	0.2	0.0	2.2	0.0	0.0	0.0	0.1	1.5	0.6	0.0	1.2	2.4	0.4	0.0	0.0	0.0	0.0			

Bold => mg/L Normal => ug/L

DATA TRACKING AND TECHNICAL FACT SHEET

Permittee: Town of Stafford

PERMIT, ADDRESS, AND FACILITY DATA

PERMIT #:CT0101214_ **APPLICATION #:** 201106215 **FACILITY ID.** 134-001

Mailing Address:	Location Address:
Street: 1 Main Street	Street: 50 River Road
City: Stafford Springs ST: CT Zip: 06076	City: Stafford Springs ST: CT Zip: 06076
Contact Name: Richard F. Hartenstein Jr.	Contact Name: Richard F. Hartenstein Jr.
Phone No.: 860-684-4914	Phone No.: 860-684-4914
	DMR Contact email address: Hartenstein@staffordct.org

PERMIT INFORMATION

DURATION 5 YEAR _X_ 10 YEAR ___ 30 YEAR ___

TYPE New _ Reissuance _X_ Modification ___

CATEGORIZATION POINT (X) NON-POINT ( ) GIS #

NPDES (X) PRETREAT () GROUND WATER(UIC) ( ) GROUND WATER (OTHER) ( )

NPDES MAJOR **(MA)** _X_
NPDES SIGNIFICANT MINOR or PRETREAT SIU **(SI)** ___
NPDES or PRETREATMENT MINOR **(MI)** ____

COMPLIANCE SCHEDULE YES__ NO_X
POLLUTION PREVENTION __ TREATMENT REQUIREMENT__
WATER QUALITY REQUIREMENT __ OTHER ___

OWNERSHIP CODE
Private __ Federal __ State __ Municipal (town only) _X_ Other public___

DEP STAFF ENGINEER Catharine Chu **DATE DRAFTED:** June 20, 2017

PERMIT FEES

Discharge Code	DSN Number	Annual Fee
111000c	001	$2,367.50

FOR NPDES DISCHARGES
Drainage Basin Code: 3100 Water Quality Classification Goal: B Segment: Willimantic River-00

NATURE OF BUSINESS GENERATING DISCHARGE
Municipal Sanitary Sewage Treatment

PROCESS AND TREATMENT DESCRIPTION (by DSN)
Domestic Sanitary Sewage Treatment with secondary settling tanks, tertiary filters and seasonal UV disinfection

RESOURCES USED TO DRAFT PERMIT
_X_ Federal Effluent Limitation Guideline_40CFR 133_____Secondary Treatment Category

__ Performance Standards

__ *Federal Development Document*
name of category

_X_ *Department File Information*

_X_ *Connecticut Water Quality Standards*

__ *Anti-degradation Policy*

__ *Coastal Management Consistency Review Form*

__ *Other - Explain*

BASIS FOR LIMITATIONS, STANDARDS OR CONDITIONS

_X_ *Secondary Treatment (Section 22a-430-4(r) of the Regulations of Connecticut State Agencies)*

__ *Case-by-Case Determination (See Other Comments)*

_X_ *In order to meet in-stream water quality (See General Comments)*

_X_ *Anti-degradation policy*

GENERAL COMMENTS

The Town of Stafford ("Permittee") operates a municipal water pollution control facility ("the facility") located at 50 River Road, Stafford Springs, CT. The facility is designed to treat and discharge up to 2.0 million gallons a day of effluent into the Willimantic River. The facility currently uses secondary treatment with UV disinfection to treat effluent before being discharged. Pursuant to Conn. Gen. Stat. § 22a-430, the Department of Energy and Environmental Protection has issued Town of Stafford a permit for the discharge from this facility. The permittee has submitted an application to renew its permit. The Department has made a tentative determination to approve the Town of Stafford's application and has prepared a draft permit consistent with that determination.

The most significant changes from the current permit is the inclusion of a revised copper limit and the removal of the lead limit from the current permit as the facility no longer shows the statistical probability of exceeding water quality goals in Willimantic River associated with lead. The new permit also includes revised bacteria monitoring requirements (e.g. e. coli), aluminum monitoring to be consistent with the most recent CT Water Quality Standards and iron monitoring to be consistent with EPA's National Recommended Water Quality Criteria.

SPECIFIC REQUIREMENTS OR REVISIONS

The Department reviewed the application for consistency with Connecticut's Water Quality Standards and determined that with the limits in the draft permit, including those discussed below, that the draft permit is consistent with maintenance and protection of water quality in accordance with the Tier I Anti-degradation Evaluation and Implementation Review provisions of such Standards.

The need for inclusion of water quality based discharge limitations in this permit was evaluated consistent with Connecticut Water Quality Standards and criteria, pursuant to 40 CFR 122.44(d). Discharge monitoring data was evaluated for consistency with the available aquatic life criteria (acute and chronic) and human health (fish consumption only) criteria, considering the zone of influence allocated to the facility where appropriate. In addition to this review, the statistical procedures outlined in the EPA Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) were employed to calculate the need for such limits. Comparison of the attached monitoring data and its inherent variability with the calculated water quality based limits indicates a ***statistical*** *probability of exceeding such limits. Therefore, revised water quality based limits for copper were included in the permit at this time.*

A limit has been included in this permit to cap the phosphorus load this discharge is permitted for:

Phosphorus Permitting Approach

Phosphorus is a naturally occurring element that is essential to support plant growth. When present in excessive amounts, phosphorus can impair both aquatic life and recreational use of Connecticut's water resources. Excess nutrient enrichment is a serious threat to water quality in Connecticut. Excessive loading of phosphorus to surface

waters as a result of discharges from wastewater treatment plants or non point sources such as runoff from urban and agricultural lands, can lead to algal blooms, including blooms of noxious blue green algae, reduction in water clarity, and in extreme cases depletion of oxygen, fish kills, and other impairments to aquatic life. Currently, 21 water body segments have been identified on Connecticut's List of Waters Not Meeting Water Quality Standards where nutrient enrichment is a contributing cause of the impairment.

The Connecticut Water Quality Standards (WQS) do not include numeric criteria for nutrients but rather incorporate narrative standards and criteria for nutrients. These narrative policy statements direct the Connecticut Department of Environmental Protection to impose discharge limitations or other reasonable controls on point and non point sources to support maintenance or attainment of designated uses. In the absence of numeric criteria for phosphorus, the Department has developed an interim nutrient management strategy for freshwater non-tidal streams based on the narrative policy statements in the WQS to meet the pressing need to issue NPDES permits and be protective of the environment. The strategy includes methods that focus on phosphorus because it is the primary limiting nutrient in freshwater systems. These methods were approved by the United States Environmental Protection (EPA) in their letter dated October 26, 2010 as an interim strategy to establish water quality based phosphorus limits in non-tidal freshwater for industrial and municipal water pollution control facilities (WPCFs) national pollutant discharge elimination system (NPDES) permits.

The method in the interim strategy uses best available science to identify phosphorus enrichment levels in waste receiving rivers and streams that adequately support aquatic life uses. The methodology focuses on algal communities as the key aquatic life nutrient response variable and phosphorus enrichment factors that represent significant changes in communities based on data collected statewide. Ongoing work is currently being conducted to refine the approach through additional data collection and by expanding the methodology to include non-waste receiving streams. It is expected that the ongoing work will lead to numeric nutrient criteria for all freshwater rivers and streams in the next WQS review cycle. The current approach provides for a major statewide advancement in the level of phosphorus control that is expected to meet all freshwater designated uses. The adaptive nature of Connecticut's strategy allows for revisions to permit limits in future permit cycles without delaying action that we know needs to be taken today.

The current approach follows a watershed based framework incorporating many of the elements from the U.S. EPA Watershed –Based National Pollutant Discharge Elimination System (NPDES) Permitting Technical Guidance (2007). Consistent with the 2007 Guidance, the approach "explicitly considers the impact of multiple pollutant sources and stressors, including nonpoint source contributions, when developing point source permits". Expected current conditions are based on the probability of excess phosphorus export from land cover and municipal and industrial facilities in the upstream drainage basin. Connecticut's policy for phosphorus management is translated into a numeric expression through geo-spatial and statistical analyses that determines the maximum acceptable seasonal phosphorus mass load per unit area of watershed contributing flow to the point of assessment.

The goal of the interim strategy is to achieve or maintain an enrichment factor (EF) of 8.4 or below throughout a watershed. An EF is representative of the amount of anthropogenic phosphorus loading to river and streams. It is calculated by dividing the current total seasonal phosphorus load by a modeled total phosphorus load under complete forested conditions at a particular point along the river. An enrichment factor is representative of the amount of anthropogenic phosphorus loading to rivers and streams. The goal of an 8.4 enrichment factor represents a threshold at which a significant change is seen in the algal communities indicating highly enriched conditions and impacts to aquatic life uses.

The analysis was conducted using benthic algae collected in rivers and streams throughout CT under varying enrichment conditions. The approach targets the critical 'growing' season (April through October) when phosphorus is more likely to be taken up by sediment and biomass because of low flow and warmer conditions. During winter months aquatic plants are dormant and flows are higher providing constant flushing of phosphorus through aquatic systems with a less likely chance that it will settle out into the sediment. Limiting the phosphorus export from industrial and municipal facilities offers a targeted management strategy for achieving aquatic life designated uses within a waterbody. The export of some phosphorus from facilities and other land sources is considered normal use of the land recognizing that humans are part of the environment.

A seasonal load was established by the Department for each facility discharging to non-tidal waters based on the current degree of enrichment of the receiving water body at the point of discharge and the facilities contribution to the total watershed enrichment at the point of discharge.

The Town of Strafford's Permit Requirements
A nutrient watershed analysis was conducted for the Willimantic River watershed below facilities discharging phosphorus into the river. The facilities discharging to the river include Stafford WPCF, University of CT WPCF, and Willimantic WPCF. The seasonal (April 1st through October 31st) nutrient loading from each facility discharging to the watershed was reduced to achieve an enrichment factor of 8.4 or lower throughout the river.

The current enrichment factor at the Town of Stafford WPCF discharge is 5. The final proposed seasonal load allocation for Town of Stafford WPCF is 8.61 lbs/day. When this strategy is fully implemented by combining reductions at all facilities located in the same watershed, the NPDES load in the Willimantic River will be reduced by 0%.

Federal regulations at 40 CFR 122.44(d) indicate that permit issuers are required to determine whether a given point source discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard after consideration of existing controls on point and non-point sources of pollution. If a discharge is found to cause an excursion of a numeric or narrative state water quality criterion, NPDES regulations implementing section 301(b)(1)(C) of the Clean Water Act provide that a permit must contain effluent limits as necessary to achieve state water quality standards. The limit in the permit and the strategy are consistent with the narrative policy statements in the CT WQS and are expected to result in the attainment and maintenance of all designated uses for the water body when the strategy is fully implemented. If the Department develops numeric criteria in the future, or it is found that the current limit under the strategy is not sufficient to achieve designated uses, the goal will be modified and the WPCF will be expected to meet the more stringent water quality goal.

WATER QUALITY LIMIT CALCULATIONS
See attached