

**AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
ONE NATIONAL LIFE DRIVE, MAIN BUILDING, 2nd FLOOR
MONTPELIER, VT 05620-3522**

Permit No.: 3-1312
PIN: EJ95-0160
NPDES No.: VT0020931

Name of Applicant: Vermont Department of Fish and Wildlife
1 National Life Drive
Montpelier, VT 05620

Expiration Date: June 30, 2022

DISCHARGE PERMIT

In compliance with the provisions of the Vermont Water Pollution Control Act as amended (10 V.S.A. chapter 47), the Vermont Water Pollution Control Permit Regulations as amended (Environmental Protection Rules, Chapter 13), and the federal Clean Water Act as amended (33 U.S.C. § 1251 *et seq.*) and implementing federal regulations, the Vermont Department of Fish and Wildlife (hereinafter referred to as the "Permittee") is authorized by the Secretary of the Agency Natural Resources ("Secretary") to discharge from the Ed Weed Fish Culture Station to Lake Champlain in accordance with the following conditions.

This permit shall become effective on November 1, 2017

Emily Boedecker, Commissioner
Department of Environmental Conservation

By: 

Date: October 10, 2017

Jessica Bulova, Wastewater Section Supervisor
Watershed Management Division

I. SPECIAL CONDITIONS

A. EFFLUENT LIMITS

1. During the term of this permit, the Permittee is authorized to discharge from outfall serial number S/N 001 of the Ed Weed Fish Culture Station (facility) to Lake Champlain, an effluent for which the characteristics shall not exceed the values listed below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow	11.5 MGD		Daily	Estimate ¹
Turbidity		10 NTU	1 x Monthly	Grab
Total Suspended Solids (TSS)	5.8 mg/L	10 mg/L	1 x Monthly	Composite ⁵
Total Phosphorus (TP) ²⁻⁴	2015 lbs, <i>annual total</i> 0.8 mg/l, <i>monthly average</i>		2 x Monthly	Composite ⁵
pH	Between 6.5 and 8.5 Standard Units		1 x Monthly	Grab
Total Ammonia-Nitrogen	Monitor Only		1 x Quarterly	Grab
Total Nitrogen (TN)	Monitor Only		1 x Monthly	Calculated ⁶
Total Kjeldahl Nitrogen	Monitor Only		1 x Monthly	Composite ⁵
Nitrate/Nitrite Nitrogen (NO _x)	Monitor Only		1 x Monthly	Composite ⁵

¹ The flow rate shall be measured daily at the effluent weir of the polishing pond and calculated by summing daily effluent flow for each day in the given month and dividing the sum by the number of days of discharge in that month.

² The Permittee shall operate the facility to meet the concentration limitations or pounds limitation, whichever is more restrictive.

³ Total Phosphorus shall be reported as Total Monthly Pounds, Running Total Annual Pounds, and Percentage of Running Total Annual Pounds to Annual Permit Limitation. See Condition I.C.5.

⁴See Special Condition B.2.

⁵All composite samples shall be 24-hour composites.

⁶Total nitrogen (TN) shall be reported as pounds, calculated as: *Average TN (mg/L) x Total Daily Flow x 8.34; where, TN (mg/L) = TKN (mg/L) + NO_x (mg/L).*

Samples taken in compliance with the monitoring requirements specified above shall be taken at the polishing pond discharge weir.

The sampling, preservation, handling, and analytical methods used shall conform to the test procedures published in 40 C.F.R. Part 136.

The permittee shall use sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 for the analysis of the pollutants or pollutant parameters specified in Condition I.A. above.

Samples shall be representative of the volume and quality of effluent discharged over the sampling and reporting period. All samples are to be taken during normal operating hours. The Permittee shall identify the effluent sampling location used for each discharge.

2. Technology-Based Effluent Limitations

- a) The Permittee shall employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the state.
- b) To minimize the discharge of accumulated solids from settling ponds and basins and production systems, the Permittee shall identify and implement procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharge of accumulated solids during the inventorying, grading, and harvesting of aquatic animals in the production system.
- c) The Permittee shall remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the state, except in cases where the Secretary authorizes such discharge in order to benefit the aquatic environment.
- d) The Permittee shall ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides, or feed to waters of the state.
- e) The Permittee shall implement procedures for properly containing, cleaning, and disposing of any spilled material.
- f) The Permittee shall inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.
- g) The Permittee shall conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.
- h) In order to calculate representative feed conversion ratios, the Permittee shall maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals.
- i) The Permittee shall keep records documenting the frequency of cleaning, inspections, maintenance, and repairs.
- j) In order to ensure the proper clean-up and disposal of spilled material, the Permittee shall adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill.
- k) The Permittee shall train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

B. SPECIAL CONDITIONS

1. This discharge shall not cause a violation of the water quality standards of the

receiving water.

2. Discharges of TP shall also be limited as specified below:

Phosphorus Discharge Limitation (lbs/day, monthly average)	
January	4.3
February	3.8
March	3.8
April	3.9
May	3.9
June	3.9
July	5.0
August	5.9
September	7.8
October	8.5
November	9.0
December	6.4

C. TOTAL PHOSPHORUS

1. Wasteload Allocation for Phosphorus

This permit includes a formal TP waste load allocation (WLA) of 0.914 metric tons per year (2015 lbs./yr.), as established by the US EPA in the 2016 “Phosphorus TMDLs for Vermont Segments of Lake Champlain” (LC TMDL). The Secretary reserves the right to reopen and amend this permit, pursuant to Condition II.B.4 of this permit, to include an alternate TP limitation and/or additional monitoring requirements based on the monitoring data and/or the results of phosphorus optimization activities, or a reallocation of phosphorus wasteload allocations between the Permittee and another WWTF pursuant to the requirements of the LC TMDL and Vermont’s “Wasteload Allocation Process” Rule (Environmental Protection Rule, Chapter 17).

2. Phosphorus Optimization Plan

- a) **Within 120 days of permit issuance**, the Permittee shall develop or update (as appropriate), and submit to the Secretary a Phosphorus Optimization Plan (POP) to increase the facility’s phosphorus removal efficiency by implementing optimization techniques that achieve phosphorus reductions using primarily existing facilities and equipment. The POP shall:
 - i. Be developed by a qualified professional with experience in the operation and design of WWTFs in consultation with the facility;

- d) If the facility is projected to exceed its WLA during the permit term, the Permittee shall submit a Phosphorus Elimination/Reduction Plan (PERP) within 6 months from the date of submittal of the projection plan submitted under Part I.C.4.b. The PERP shall be submitted to the Secretary to ensure the facility continues to comply with its WLA.
- e) The PERP shall be developed by qualified professionals in consultation with the facility.
- f) The PERP shall include:
 - i. An evaluation of alternatives to ensure the facility's compliance with its WLA.
 - ii. An identification of the chosen alternative or alternatives to ensure the facility's compliance with its WLA;
 - iii. A proposed schedule, including an engineer approved design and construction schedule and, if the chosen alternative or alternatives require a pilot study, a schedule for testing, that shall ensure the facility's compliance with its WLA as soon as possible; and
 - iv. A financing plan that estimates the costs for implementing the PERP and describes a strategy for financing the project.
- g) The PERP shall be treated as an application to amend the permit, and therefore, shall be subject to all public notice, hearing, and comment provisions, in place at the time the plan is submitted, that are applicable to permit amendments. The facility shall revise the PERP, if required by the Secretary.

4. Running Total Annual Pounds Calculation

Compliance with the annual TP limitation (presented in Condition I.A.1., I.B.2., and I.C.1.) will be evaluated each month, using the Running Total Annual Pounds Calculation. In order to calculate running annual TP loading relative to the TMDL WLA:

- a. Calculate the average of results for all TP monitoring events conducted in a month (Monthly Average TP Concentration). Units = mg/L
- b. For flow, use the average daily flow for the month as reported on the DMR. Units = MGD
- c. Calculate Total Monthly Pounds = (Monthly Average TP Concentration) \times (average daily flow from DMR) \times 8.34 \times number of daily discharges in the month.
- d. Sum the results for the immediately preceding 12 months to derive the Running Total Annual Pounds.

5. Total Phosphorus Reporting

Total Phosphorus shall be reported monthly, via electronic Discharge Monitoring Report, in the following ways:

- a. Monthly Average TP Concentration. See Condition I.C.4.a.
- b. Total Monthly Pounds, meaning the total monthly pounds of TP discharged during the month. See Condition I.C.4.c.
- c. Running Total Annual Pounds, meaning the 12-month running annual TP load, as specified by Condition I.C.4.d.
- d. Comparison (%) of Running Total Annual Pounds to Annual Permit Limitation, meaning the percentage of the Running Total Annual Pounds to the Annual Total Phosphorus Limitation. The comparison shall be calculated as:

$$\text{Percentage of Running Total Annual Pounds to Annual Permit Limitation, \%} = \frac{\text{Running Total Annual Pounds}}{\text{Annual TP Permit Limit}} \times 100$$

D. BEST MANAGEMENT PRACTICES (BMP) PLAN

The Permittee shall update, implement, and maintain a BMP plan on site that describes, at a minimum, how the Permittee will comply with each of the technology-based effluent limitations under Condition I.A.2 of this permit. This plan shall be submitted to the Secretary **within 90 days of the permit issuance date**. The BMP plan shall be amended as necessary and appropriate during the life of the permit.

E. USE OF FISHERY CHEMICALS FOR THE PREVENTION AND CONTROL OF PATHOGENS AND DISEASE

The use of the following chemicals shall be in accordance with the U.S. Food and Drug Administration for the prevention and control of fish pathogens and disease. Concentrations and treatment durations shall not exceed specific product label, or Investigative New Animal Drug (INAD) authorization, or the terms and conditions of this permit. Results of specified monitoring shall be reported on the monthly DMR.

1. Sodium Chloride, Calcium Chloride, Potassium Chloride - The calculated chloride concentration in the effluent shall not exceed 230 mg/l during the period that these compounds are used. The Permittee shall report the dates and quantities used and the calculated effluent chloride concentration.
2. Hydrogen Peroxide - Treatment of eggs and fish is permitted provided that the daily maximum effluent concentration of hydrogen peroxide does not exceed 2.0 mg/l. Effluent monitoring shall be performed on all days in which treatment of fish in raceways is conducted. Grab samples shall be collected, allowing for the estimated detention time of

treated flows through the polishing pond. The Permittee shall report the dates and quantities used.

3. Chlorine - When a raceway is treated with chlorine, chlorinated raceway effluent shall be directed to the pretreatment pond. Pond effluent shall not exceed 0.1 mg/l. Monitoring shall consist of a single grab sample when this chemical is used. The Permittee shall report the dates and quantities used.
4. Formalin - All flows treated with formalin shall be held in the pretreatment pond for a minimum of 30 hours prior to discharge. A maximum of two raceway pairs may be treated simultaneously, for a 60-minute duration, at treatment levels such that the calculated concentration in the raceway does not exceed 250 ppm. The Permittee shall report the dates and quantities used.
5. Romet-30 - The quantity of Romet in feed should not exceed a calculated concentration of 50 mg/kg of fish in the raceway being treated. The Permittee shall report the dates and quantities used.
6. Florfenicol - Shall be used in compliance 21 CFR 558.6. The Permittee shall report the dates and quantities used.
7. Terramycin/Oxytetracycline - Shall not exceed 3.75 grams per 100 pounds of fish per day. The Permittee shall report the dates and quantities used.
8. Chloramine T -Use is authorized in concentrations of up to 20 ppm for up to 60 minutes on fish in the start tanks and raceways. Treatments may be made for up to three consecutive days for bacteria control or up to 21 days for parasite control.

F. REAPPLICATION

If the Permittee desires to continue to discharge after the expiration date of this permit, the Permittee shall apply on the application forms then in use at least 180 days before the permit expires.

Reapply for a Discharge Permit by: **December 31, 2021**

G. OPERATING FEES

This discharge is subject to operating fees as required by 3 V.S.A. § 2822.

H. MONITORING AND REPORTING

1. Sampling and Analysis

The sampling, preservation, handling, and analytical methods used shall conform to the test procedures published in Title 40 of the Code of Federal Regulations (C.F.R.) Part 136.

The Permittee shall use sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 for the analysis of the pollutants or pollutant parameters specified in Condition I.A. above.

Samples shall be representative of the volume and quality of effluent discharged over the sampling and reporting period. All samples are to be taken during normal operating hours. The Permittee shall identify the effluent sampling location used for each discharge.

2. Reporting

The Permittee is required to submit monthly reports of monitoring results on DMR form WR-43. Reports are due on the 15th day of each month, beginning with the month following the issuance date of this permit.

The Permittee shall electronically submit its DMRs via Vermont's on-line electronic reporting system. The Permittee shall electronically submit additional compliance monitoring data and reports specified by the Secretary. When the Permittee submits DMRs using an electronic system designated by the Secretary, it is not required to submit hard copies of DMRs.

If, in any reporting period, there has been no discharge, the Permittee must submit that information by the report due date.

All monitoring and reports shall be signed:

- a) In the case of corporations, by a principal executive officer of at least the level of vice president, or his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the permit form originates and the authorization is made in writing and submitted to the Secretary;
- b) In the case of a partnership, by a general partner;
- c) In the case of a sole proprietorship, by the proprietor; or
- d) In the case of a municipal, State, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

3. Recording of Results

The Permittee shall maintain records of all information resulting from any monitoring activities required, including:

- a) The exact place, date, and time of sampling or measurement;
- b) The individual(s) who performed the sampling or measurements;
- c) The dates and times the analyses were performed;

- d) The individual(s) who performed the analyses;
- e) The analytical techniques and methods used including sample collection handling and preservation techniques;
- f) The results of such analyses;
- g) The records of monitoring activities and results, including all instrumentation and calibration and maintenance records; and
- h) The original calculation and data bench sheets of the operator who performed analysis of the influent or effluent pursuant to requirements of Conditions I.A and I.E of this permit.
- i) For analyses performed by contract laboratories:
 - 1. The detection level reported by the laboratory for each sample; and
 - 2. The laboratory analytical report including documentation of the QA/QA and analytical procedures.

The results of monitoring requirements shall be reported (in the units specified) on the DMR form WR-43 or other forms approved by the Secretary.

When “non-detects” are recorded, the method detection limit shall be reported and used in calculating any time-period averaging for reporting on DMRs

4. Additional Monitoring

If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the DMR form WR-43. Such increased frequency shall also be indicated.

II. GENERAL CONDITIONS

A. MANAGEMENT REQUIREMENTS

1. Facility Modification / Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such a violation may result in the imposition of civil and/or criminal penalties pursuant to 10 V.S.A. chapters 47, 201, and/or 211. Any anticipated facility alterations or expansions or process modifications which will result in new, different, or increased discharges of any pollutants must be reported by submission of a

new permit application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the Secretary of such changes. Following such notice, the permit may be modified, pursuant to Condition II.B.4 of this permit, to specify and limit any pollutants not previously limited.

2. Noncompliance Notification

- a)** The Permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- b)** In the event the Permittee is unable to comply with any of the conditions of this permit due, among other reasons, to:
 - i.** Breakdown or maintenance of waste treatment equipment (biological and physical-chemical systems including all pipes, transfer pumps, compressors, collection ponds or tanks for the segregation of treated or untreated wastes, ion exchange columns, or carbon absorption units);
 - ii.** Accidents caused by human error or negligence;
 - iii.** Any unanticipated bypass or upset which exceeds any effluent limitation in the permit;
 - iv.** Violation of a maximum day discharge limitation for any of the pollutants listed by the Secretary in this permit; or
 - v.** Other causes such as acts of nature,

the Permittee shall provide notice as specified in subdivisions (c) and (d) of this subsection.

- c)** Pursuant to 10 V.S.A. §1295, notice for “untreated discharges,” as defined.
 - i.** Public notice. For “untreated discharges” an operator of a WWTF or the operator’s delegate shall as soon as possible, but no longer than one hour from discovery of an untreated discharge from the WWTF, post on a publicly accessible electronic network, mobile application, or other electronic media designated by the Secretary an alert informing the public of the untreated discharge and its location, except that if the operator or his or her delegate does not have telephone or Internet service at the location where he or she is working to control or stop the untreated discharge, the operator or his or her delegate may delay posting the alert until the time that the untreated discharge is controlled or stopped, provided that the alert shall be posted no later than four hours from discovery of the untreated discharge.
 - ii.** Secretary notification. For “untreated discharges” an operator of a WWTF shall within 12 hours from discovery of an untreated discharge from the WWTF notify the Secretary and the local health officer of the municipality where the facility is

located of the untreated discharge. The operator shall notify the Secretary through use of the Department of Environmental Conservation's online event reporting system. If, for any reason, the online event reporting system is not operable, the operator shall notify the Secretary via telephone or e-mail. The notification shall include:

- (1) The specific location of each untreated discharge, including the body of water affected. For combined sewer overflows, the specific location of each untreated discharge means each outfall that has discharges during the wet weather storm event.
 - (2) Except for discharges from a WWTF to a separate storm sewer system, the date and approximate time the untreated discharge began.
 - (3) The date and approximate time the untreated discharge ended. If the untreated discharge is still ongoing at the time of reporting, the entity reporting the untreated discharge shall amend the report with the date and approximate time the untreated discharge ended within three business days of the untreated discharge ending.
 - (4) Except for discharges from a WWTF to a separate storm sewer system, the approximate total volume of sewage and, if applicable, stormwater that was released. If the approximate total volume is unknown at the time of reporting, the entity reporting the untreated discharge shall amend the report with the approximate total volume within three business days.
 - (5) The cause of the untreated discharge and a brief description of the noncompliance, including the type of event and the type of sewer structure involved.
 - (6) The person reporting the untreated discharge.
- d)** For any non-compliance not covered under Condition II.A.2.c. of this permit, an operator of a WWTF or the operator's delegate shall notify the Secretary within 24 hours of becoming aware of such condition and shall provide the Secretary with the following information, in writing, within five days:
- i.** Cause of non-compliance;
 - ii.** A description of the non-complying discharge including its impact upon the receiving water;
 - iii.** Anticipated time the condition of non-compliance is expected to continue or, if such condition has been corrected, the duration of the period of non-compliance;
 - iv.** Steps taken by the Permittee to reduce and eliminate the non-complying discharge; and

- v. Steps to be taken by the Permittee to prevent recurrence of the condition of non-compliance.

3. Operation and Maintenance

All waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

- a) The Permittee shall, at all times, maintain in good working order and operate as efficiently as possible all treatment and control facilities and systems (and related appurtenances) installed or used by the Permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the Permittee only when the operation is necessary to achieve compliance with the conditions of this permit.
- b) The Permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance, and testing functions required to ensure compliance with the conditions of this permit; and
- c) The operation and maintenance of this facility shall be performed only by qualified personnel who are licensed as required by the Secretary and the Director of the Vermont Office of Professional Regulation

4. Quality Control

The Permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at regular intervals to ensure accuracy of measurements, or shall ensure that both activities will be conducted.

The Permittee shall keep records of these activities and shall provide such records upon request of the Secretary.

For purposes of demonstrating compliance with the requirements of Condition II.A.3.a) of this permit regarding adequate laboratory controls and appropriate quality assurance procedures, the Permittee shall conduct an annual laboratory proficiency test (via an accredited laboratory) for the analysis of all pollutant parameters performed within their facility laboratory and reported as required by this permit. This requirement can be met as part of an EPA DMR-QA study. Results shall be submitted to the Secretary by **December 31, annually**.

5. Bypass

The bypass of facilities (including pump stations) is prohibited, except where authorized under the terms and conditions of an Emergency Pollution Permit issued pursuant to 10 V.S.A. § 1268. It shall not be a defense for the Permittee in an enforcement action that it

would have been necessary to halt or reduce the activity in order to maintain compliance with the conditions of this permit.

6. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any adverse impact to waters of the State, the environment, or human health resulting from non-compliance with any condition specified in this permit, including accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, all calibration and maintenance of instrumentation records and all original chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained for a minimum of three years, and shall be submitted to the Secretary upon request. This period shall be extended during the course of unresolved litigation regarding the discharge of pollutants or when requested by the Secretary.

8. Solids Management

Collected screenings, sludges, and other solids removed in the course of treatment and control of wastewaters shall be stored, treated, and disposed of in accordance with 10 V.S.A. chapter 159 and with the terms and conditions of any certification, interim or final, transitional operation authorization, or order issued pursuant to 10 V.S.A. chapter 159 that is in effect on the issuance date of this permit or is issued during the term of this permit.

9. Emergency Pollution Permits

Maintenance activities, or emergencies resulting from equipment failure or malfunction, including power outages, which result in an effluent which exceeds the effluent limitations specified herein, shall be considered a violation of the conditions of this permit, unless the Permittee's discharge is covered under an emergency pollution permit, under the provisions of 10 V.S.A. § 1268. The Permittee shall notify the Secretary of the emergency situation by the next working day, unless notice is required sooner under Section II.A.2.

10 V.S.A. § Section 1268 reads as follows:

When a discharge permit holder finds that pollution abatement facilities require repairs, replacement or other corrective action in order for them to continue to meet standards specified in the permit, he may apply in the manner specified by the secretary for an emergency pollution permit for a term sufficient to effect repairs, replacements or other corrective action. The permit may be issued without prior public notice if the nature of the emergency will not provide sufficient time to give notice; provided that the secretary shall give public notice as soon as possible but in any event no later than five days after the issuance date of the emergency pollution permit. No emergency

pollution permit shall be issued unless the applicant certifies and the secretary finds that:

- (1) there is no present, reasonable alternative means of disposing of the waste other than by discharging it into the waters of the State during the limited period of time of the emergency;
- (2) the denial of an emergency pollution permit would work an extreme hardship upon the applicant;
- (3) the granting of an emergency pollution permit will result in some public benefit;
- (4) the discharge will not be unreasonably harmful to the quality of the receiving waters;
- (5) the cause or reason for the emergency is not due to willful or intended acts or omissions of the applicant.

Application shall be made to the Secretary at the following address: Agency of Natural Resources, Department of Environmental Conservation, One National Life Drive, Main Building, 2nd Floor, Montpelier VT 05620-3522.

10. Power Failure

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the Permittee shall either:

- a) Provide an alternative power source sufficient to operate the wastewater control facilities, or if such alternative power source is not in existence,
- b) Halt, reduce, or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

B. RESPONSIBILITIES

1. Right of Entry

The Permittee shall allow the Secretary or authorized representative, upon the presentation of proper credentials:

- a) To enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b) To have access to and copy, at reasonable times, any records required to be kept under the terms and conditions of this permit;

- c) To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d) To sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

2. Transfer of Ownership or Control

This permit is not transferable without prior written approval of the Secretary. All application and operating fees must be paid in full prior to transfer of this permit. In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the Permittee shall provide a copy of this permit to the succeeding owner or controller and shall send written notification of the change in ownership or control to the Secretary **at least 30 days in advance of the proposed transfer date**. The notice to the Secretary shall include a written agreement between the existing and new Permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them. The Permittee shall also inform the prospective owner or operator of their responsibility to make an application for transfer of this permit.

This request for transfer application must include as a minimum:

- a) A properly completed application form provided by the Secretary and the applicable processing fee.
- b) A written statement from the prospective owner or operator certifying:
 - i. The conditions of the operation that contribute to, or affect, the discharge will not be materially different under the new ownership;
 - ii. The prospective owner or operator has read and is familiar with the terms of the permit and agrees to comply with all terms and conditions of the permit; and
 - iii. The prospective owner or operator has adequate funding to operate and maintain the treatment system and remain in compliance with the terms and conditions of the permit.
- c) The date of the sale or transfer.

The Secretary may require additional information dependent upon the current status of the facility operation, maintenance, and permit compliance.

3. Confidentiality

Pursuant to 10 V.S.A. § 1259(b):

Any records or information obtained under this permit program that constitutes trade secrets under 1 V.S.A. § 317(c)(9) shall be kept confidential, except that such records or information may be disclosed to authorized representatives of the State and the United States when relevant to any proceedings under this chapter.

Claims for confidentiality for the following information will be denied:

- a) The name and address of any permit applicant or Permittee.
- b) Permit applications, permits, and effluent data.
- c) Information required by application forms, including information submitted on the forms themselves and any attachments used to supply information required by the forms.

4. Permit Modification, Suspension, and Revocation

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including the following:

- a) Violation of any terms or conditions of this permit;
- b) Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c) Reallocation of WLA under the LC TMDL; or
- d) A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance shall not stay any permit condition.

The Permittee shall provide to the Secretary, within a reasonable time, any information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to the Secretary upon request, copies of records required to be kept by this permit.

5. Toxic Effluent Standards

If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under section 307(a) of the Clean Water Act for a toxic pollutant which is present in the Permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, then this permit shall be modified or revoked and reissued, pursuant to Condition II.B.4 of this permit, in accordance with the toxic effluent standard or prohibition and the Permittee so notified.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under 10 V.S.A. § 1281.

7. Other Materials

Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:

- a) They are not:
 - i. Designated as toxic or hazardous under provisions of Sections 307 and 311, respectively, of the Clean Water Act, or
 - ii. Known to be hazardous or toxic by the Permittee

except that such materials indicated in (i) and (ii) above may be discharged in certain limited amounts with the written approval of, and under special conditions established by, the Secretary or his/her designated representative, if the substances will not pose any imminent hazard to the public health or safety;

- b) The discharge of such materials will not violate the Vermont Water Quality Standards; and
- c) The Permittee is not notified by the Secretary to eliminate or reduce the quantity of such materials entering the water.

8. Navigable Waters

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

9. Civil and Criminal Liability

The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Except as provided in, "Bypass" (Condition II.A.5) and "Emergency Pollution Permits" (Condition II.A.9), nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance. Civil and criminal penalties for non-compliance are provided for in 10 V.S.A. Chapters 47, 201, and 211.

10. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act.

11. Property Rights

Issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

12. Other Information

If the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Secretary, it shall promptly submit such facts or information.

13. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

14. Authority

This permit is issued under authority of 10 V.S.A. §§1258 and 1259 of the Vermont Water Pollution Control Act, the Vermont Water Pollution Control Permit Regulation, and Section 402 of the Clean Water Act, as amended.

15. Definitions

For purposes of this permit, the following definitions shall apply.

Agency – means the Vermont Agency of Natural Resources.

Annual Average - means the highest allowable average of daily discharges calculated as the sum of all daily discharges (mg/L, lbs or gallons) measured during a calendar year divided by the number of daily discharges measured during that year.

Average - means the arithmetic means of values taken at the frequency required for each parameter over the specified period.

Bypass – means the intentional diversion of waste streams from any portion of the treatment facility.

The Clean Water Act - means the federal Clean Water Act, as amended (33 U.S.C. § 1251, *et seq.*).

Composite Sample - means a sample consisting of a minimum of one grab sample per hour collected during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportionally to flow over that same time period.

Daily Discharge - means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.

For pollutants with limitations expressed in pounds the daily discharge is calculated as the total pounds of pollutants discharged over the day.

For pollutants with limitations expressed in mg/L the daily discharge is calculated as the average measurement of the pollutant over the day.

Discharge – means the placing, depositing, or emission of any wastes, directly or indirectly, into an injection well or into the waters of the State.

Grab Sample – means an individual sample collected in a period of less than 15 minutes.

Incompatible Substance – means any waste being discharged into the treatment works which interferes with, passes through without treatment, or is otherwise incompatible with said works or would have a substantial adverse effect on the works or on water quality. This includes all pollutants required to be regulated under the Clean Water Act.

Instantaneous Maximum - means a value not to be exceeded in any grab sample.

Maximum Day (maximum daily discharge limitation) - The highest allowable “daily discharge” (mg/L, lbs or gallons).

Mean - is the arithmetic mean.

Monthly Average (average monthly discharge limitation) – means the highest allowable average of daily discharges (mg/L, lbs or gallons) over a calendar month, calculated as the sum of all daily discharges (mg/L, lbs or gallons) measured during a calendar month divided by the number of daily discharges measured during that month.

NPDES - The National Pollutant Discharge Elimination System.

Secretary – means the Secretary of the Agency of Natural Resources or the Secretary’s duly authorized representative.

Septage – means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Untreated Discharge – means (1) combined sewer overflows from a WWTF; (2) overflows from sanitary sewers and combined sewer systems that are part of a WWTF during dry weather flows, which result in a discharge to waters of the State; (3) upsets or bypasses around or within a WWTF during dry or wet weather conditions that are due to factors unrelated to a wet weather storm event and that result in a discharge of sewage that has not been fully treated to waters of the State; and (4) discharges from a WWTF to separate storm sewer systems.

Waste – means effluent, sewage or any substance or material, liquid, gaseous, solid, or radioactive, including heated liquids, whether or not harmful or deleterious to waters, provided however, the term “sewage” as used in this permit shall not include the rinse or process water from a cheese manufacturing process.

Waters includes all rivers, streams, creeks, brooks, reservoirs, ponds, lakes, springs, and all bodies of surface waters, artificial or natural, which are contained within, flow through, or border upon the State or any portion of it.

Weekly average - (average weekly discharge limitation) – means the highest allowable average of daily discharges (mg/L, lbs or gallons) over a calendar week, calculated as the sum of all daily discharges (mg/L, lbs or gallons) measured during a calendar week divided by the number of daily discharges measured during that week.

**AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
ONE NATIONAL LIFE DRIVE, MAIN BUILDING, 2ND FLOOR
MONTPELIER, VT 05620-3522**

**FACT SHEET FOR DRAFT PERMIT
(October 2017)**

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE STATE

PERMIT NO: 3-1312
PIN: EJ95-0106
NPDES NO: VT0020931

NAME AND ADDRESS OF APPLICANT:

Vermont Department of Fish and Wildlife
1 National Life Drive
Montpelier, VT 05620

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Ed Weed Fish Culture Station
14 Bell Hill Road
Grand Isle, Vermont

RECEIVING WATER: Lake Champlain

CLASSIFICATION OF USES OF RECEIVING WATER: Class B(2). Class B(2) waters are suitable for swimming and other primary contact recreation; irrigation and agricultural uses; aquatic biota and aquatic habitat; good aesthetic value; boating, fishing, and other recreational uses and suitable for public water source with filtration and disinfection or other required treatment.

I. Proposed Action, Type of Facility, and Discharge Location

The Vermont Agency of Natural Resources (Agency) received a renewal application for the permit to discharge into the designated receiving water from the above-named applicant on March 25, 2010. The facility's previous permit was issued on October 1, 2005. The previous permit (hereafter referred to as the "current permit") has been administratively continued, pursuant to 3 V.S.A. § 814, as the applicant filed a complete application for permit reissuance within the prescribed time period as per the Vermont Water Pollution Control Permit Regulations (VWPCPR) § 13.5(b). At this time, the Secretary has made a tentative decision to reissue the discharge permit.

The facility is engaged in the hatching and rearing of fish.

A map showing the location of facility, outfalls, and the receiving water is provided in the Reasonable Potential Determination (RPD) (see Attachment A).

II. Description of Discharge

The facility is engaged in the hatching and rearing of fish. Depending on treatment needs, wastewater is either sent to a clarifier and treated with alum then to a polishing pond, sent to a chemical effluent stabilization pond then to the polishing pond, or directly to the polishing pond. The design flow of the facility is 11.5 million gallons per day (MGD).

The discharge is from the outfall of an effluent polishing pond, by way of a stabilized channel, to Lake Champlain.

III. Limitations and Monitoring Requirements

The draft permit contains limitations for effluent flow, turbidity, total suspended solids, total phosphorus, and pH. It also contains monitoring requirements for total nitrogen, total Kjeldahl nitrogen, nitrate/nitrite, and ammonia. Best Practicable Control Technology-based limitations are also included. The effluent limitations and monitoring requirements may be found on the following pages of the draft permit:

Effluent Limitations:	Page 2-4 of 22
Monitoring Requirements:	Pages 2 of 22

IV. Statutory and Regulatory Authority

A. Clean Water Act and NPDES Background

Congress enacted the Clean Water Act (CWA or Act), “to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.” CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specified permitting sections of the Act, one of which is Section 402. CWA §§ 301(a), 402(a). Section 402 establishes one of the CWA’s principal permitting programs, the National Pollutant Discharge Elimination System (NPDES). Under this section of the Act, the U.S. Environmental Protection Agency (EPA) may “issue a permit for the discharge of any pollutant, or combination of pollutants” in accordance with certain conditions. CWA § 402(a). The State of Vermont has been delegated by EPA to administer the NPDES Program in Vermont. NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. CWA § 402(a)(1) - (2).

Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits: “technology-based” limitations and “water quality-based” limitations. CWA §§ 301, 303, 304(b); 40 C.F.R. Parts 122, 125, 131. Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant-reducing technology available and economically achievable for the type of facility being permitted. CWA § 301(b).

Water quality-based effluent limits, on the other hand, are designed to ensure that state water quality standards are achieved, irrespective of the technological or economic considerations that inform technology-based limits. Under the CWA, states must develop water quality standards for all water bodies within the state. CWA § 303. These standards have three parts: (1) one or more “designated uses” for each water body or water body segment in the State; (2) water quality “criteria,” consisting of numerical concentration levels and/or narrative statements specifying the amounts of various pollutants that may be present in each water body without impairing the designated uses of that water body; and (3) an antidegradation provision, focused on protecting high quality waters and protecting and maintaining water quality necessary to protect existing uses. CWA § 303(c)(2)(A); 40 C.F.R. § 131.12. The applicable water quality standards for this permit are the 2017 Vermont Water Quality Standards (Environmental Protection Rule, Chapter 29a).

A permit must include limits for any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) that is or may be discharged at a level that causes or has “reasonable potential” to cause or contribute to an excursion above any water quality standard, including narrative water quality criteria. See 40 C.F.R. §122.44(d)(1). An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion. A NPDES permit must contain effluent limitations and conditions in order to ensure that the discharge does not cause or contribute to water quality standard violations.

Receiving stream requirements are established according to numerical and narrative standards adopted under state law for each stream classification. When using chemical-specific numeric criteria from the State’s water quality standards to develop permit limits, both the acute and chronic aquatic life criteria are used and expressed in terms of maximum allowable in stream pollutant concentrations. Acute aquatic life criteria are generally implemented through maximum daily limits and chronic aquatic life criteria are generally implemented through average monthly limits.

Where a state has not established a numeric water quality criterion for a specific chemical pollutant that is present in the effluent in a concentration that causes or has a reasonable potential to cause a violation of narrative water quality standards, the permitting authority must establish effluent limits in one of three ways: based on a “calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use”; on a “case-by-case basis” using CWA Section 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, in certain circumstances, based on an “indicator parameter.” 40 C.F.R. § 122.44(d)(1)(vi)(A-C).

The state rules governing Vermont’s NPDES permit program are found in the Vermont Water Pollution Control Permit Regulations (Environmental Protection Rule, Chapter 13).

In 2004 EPA promulgated new regulations for the concentrated aquatic animal production (CAAP) point source category (40 C.F.R. Part 451). Subpart A applies to flow through facilities that produce at least 100,000 pounds annually of aquatic animals. The intent is to reduce discharges of solids and other materials by the implementation of operational measures. The EPA CAAP regulations establish best management practices (BMPs) for the reduction of solids and other wastes instead of setting numeric effluent limitations. As the Ed Weed Fish Culture Station

produces 130,000 of fish per year, these limits are included in Section I.A of the draft permit.

1. Reasonable Potential Determination

In determining whether this permit has the reasonable potential to cause or contribute to an impairment, Vermont has considered:

- 1) Existing controls on point and non-point sources of pollution as evidenced by the Vermont surface water assessment database;
- 2) Pollutant concentration and variability in the effluent as determined from the permit application materials, monthly discharge monitoring reports (DMRs), or other facility reports;
- 3) Receiving water quality based on targeted water quality and biological assessments of receiving waters, as applicable, or other State or Federal water quality reports;
- 4) Toxicity testing results based on the Vermont Toxics Control Discharge Strategy, and compelled as a condition of prior permits;
- 5) Available dilution of the effluent in the receiving water, expressed as the instream waste concentration. In accordance with the applicable Vermont Water Quality Standards, available dilution for rivers and streams is based on a known or estimated value of the lowest average flow which occurs for seven (7) consecutive days with a recurrence interval of once in ten (10) years (7Q10) for aquatic life and human health criteria for non-carcinogens, or at all flows for human health (carcinogens only) in the receiving water. For nutrients, available dilution for stream and river discharges is assessed using the low median monthly flow computed as the median flow of the month containing the lowest annual flow. Available dilution for lakes is based on mixing zones of no more than 200 feet in diameter, in any direction, from the effluent discharge point, including as applicable the length of a diffuser apparatus.
- 6) All effluent limitations, monitoring requirements, and other conditions of the proposed draft permit.

The Reasonable Potential Determination for this facility is attached to this Fact Sheet as Attachment A.

B. Anti-Backsliding

Section 402(o) of the CWA provides that certain effluent limitations of a renewed, reissued, or modified permit must be at least as stringent as the comparable effluent limitations in the previous permit. EPA has also promulgated anti-backsliding regulations which are found at 40 C.F.R. § 122.44(l). Unless applicable anti-backsliding exemptions are met, the limits and conditions in the reissued permit must be at least as stringent as those in the previous permit.

V. Description of Receiving Water

The receiving water is Lake Champlain, which is impaired for phosphorus and is subject to a Total Maximum Daily Load (TMDL) for phosphorus. This is discussed further in Section VII.C.1. of this Fact Sheet.

VI. Facility History and Background

The Vermont Department of Fish and Wildlife owns and operates the Ed Weed Fish Culture Station (Station). The Station began construction of this flow-through facility in 1990 with the first-year class raised through the '92/93 season. At present six species of salmonids are reared at the Station: landlocked Atlantic Salmon, Brook Trout, Brown Trout, Rainbow Trout to include migratory Steelhead, and Lake Trout, as well as Walleye. The facility contains 20 raceways and is producing about 130,000 pounds of fish annually. Depending on specific program needs, fish are reared and distributed at various life stages. The water used at the Station is pumped from Lake Champlain via one of two 250 HP pumps. The facility can pump from shallow water (20'), deep water (180'), or a blend of both waters depending on the temperature needs in the raceways. In 1997, a filter building was constructed to address zebra mussel control. All water entering the facility is disinfected by ultraviolet technology.

Wastewater flowing through the raceways is sent directly to the 1.3-acre polishing pond (estimated volume of 2.1 MG) for treatment. Wastewater from the cleaning of the raceways is directed first to a 55,000-gallon clarifier and then to the polishing pond for treatment. Alum is added at the clarifier to aid in settling. Liquid sludge is removed from the 40,000-gallon solids holding tank twice a year in the summer and is used by a nearby farmer for fertilizer. When formalin is used, raceway cleaning effluent is diverted to a 33,750-gallon chemical effluent pond where it is held for 30 hours to allow for photodegradation of formalin before flowing to the polishing pond. Effluent discharged from the polishing pond flows about 200 yards down a stabilized channel and enters Lake Champlain. The polishing pond is periodically measured for sludge depth.

As the Ed Weed Fish Culture Station produces 130,000 of fish per year, Effluent Limit Guidelines required for concentrated aquatic animal production facilities under 40 C.F.R. Part 451 are included in Section I.A of the draft permit. The current permit also incorporates the newest language and requirements to support the State of Vermont's compliance with the Lake Champlain TMDL and updated special conditions regarding the use of antibiotics.

VII. Permit Basis and Explanation of Effluent Limitation Derivation

The current permit allows the facility to report net limits for turbidity, total suspended solids (TSS), and total phosphorus (TP). The net limits, formally referred to as intake credits, allowed the Permittee to subtract the turbidity, TSS, and TP of the influent water from the effluent values of these parameters and report the 'net' value to meet effluent limits.

In the draft permit net limits are no longer permitted. Intake credit regulations (found in 40 C.F.R. 122.45(g)) are allowed only for Technology-Based Effluent Limitations. Because the limits for turbidity, TSS, and TP in this permit are Water Quality-Based Effluent Limits the net intake credit is not applicable.

A. Flow

The draft permit maintains the annual average flow limitation of 11.5 MGD. This facility maintains a constant discharge. The flow rate is measured daily via the effluent weir after the polishing pond.

B. Conventional Pollutants

1. **Total Suspended Solids (TSS)** – The TSS limit remains unchanged at 5.8 mg/l, monthly average, and 10.0 mg/l, daily maximum. As intake credits are no longer allowed under the draft permit, gross results must be reported. Monitoring remains at monthly.
2. **pH** – The pH limitation remains at 6.5 - 8.5 Standard Units as specified in Section 29A-303(6) in the Vermont Water Quality Standards. Monitoring remains at monthly.

C. Non-Conventional and Toxics**1. Total Phosphorus (TP)***Background:*

Excess phosphorus entering Lake Champlain from a variety of sources has impaired the water quality of the Lake. The Lake Champlain Total Maximum Daily Load (LC TMDL), places a cap on the maximum amount of phosphorus from point and non- point sources that is allowed to flow into the Lake while still meeting Vermont's water quality standards. The EPA developed phosphorus TMDLs for the 12 Vermont segments of Lake Champlain in collaboration with the Vermont Agency of Natural Resources, Department of Environmental Conservation, and the Vermont Agency of Agriculture, Food and Markets, and released the document titled "Phosphorus TMDLs for Vermont Segments of Lake Champlain" (June 2016). The 2016 LC TMDL specifies allowable phosphorus loads, or waste load allocations (WLA), expressed as metric tons per year (mt/yr), for each of the 59 wastewater treatment facilities (WWTFs) that discharge to the Lake's watershed. Discharge NPDES permits will be issued by the Secretary in accordance with the permit issuance schedule in the Lake Champlain TMDL Phase 1 Implementation Plan (Chapter 3, page 46). The Secretary will follow this schedule unless special circumstances are raised by the facility that warrant the issuance of the permit sooner (e.g., planned facility upgrades), and the Program has sufficient staff capacity to handle the request.

Reductions in WLAs are targeted only to WWTFs in those lake segment watersheds where the currently permitted wastewater load represents a significant (defined as being 10% or greater) portion of the total phosphorus load to that segment from all sources (Main Lake, Shelburne Bay, Burlington Bay, St. Albans Bay) or where wastewater upgrades would meaningfully reduce the phosphorus reduction burden placed on non-wastewater (non-point) sources (Missisquoi Bay). Therefore, WWTFs discharging to the Port Henry, Otter Creek, Mallets Bay, Northeast Arm, Isle LaMotte, and the South Lake A/B lake segments were not assigned a new waste load allocation. The EPA also determined that wastewater facilities with a design flow of < 0.1 MGD would be given the same allocations as in the 2002 TMDLs due their minor contribution of phosphorus loading.

The LC TMDL establishes new annual WLAs for WWTFs with a design flow capacity of above 0.1 million gallons per day (MGD) that discharge to the Main Lake, Shelburne Bay, Burlington Bay, St. Albans Bay, and Missisquoi Bay lake segments. Specifically, WWTFs with a design flow capacity of 0.1 to 0.2 MGD were assigned WLAs based on a 0.8 mg/L effluent phosphorus concentration at permitted flow while WWTFs with design capacity of > 0.2 MGD were assigned a WLA based on a 0.2 mg/L effluent phosphorus concentration at permitted flow.

In the LC TMDL, EPA acknowledged and supported the Secretary's commitment to employ flexible approaches to implementing the WWTF WLAs including "providing a period of time for optimization to be pursued and the corresponding load reduction results to be realized, and then commencement of the process to upgrade phosphorus treatment facilities will be required when actual phosphorus loads reach 80% of the LC TMDL limits." The Wastewater Management Program maintains a tracking system for phosphorus loading from Vermont WWTFs so facilities approaching or over the 80% threshold can be identified. The 80% phosphorus load threshold is calculated by comparing the individual WWTF phosphorus WLA established in the LC TMDL to the actual phosphorus discharge load from the WWTF over last 12 months:

WWTF Annual TP Load / LC TMDL WLA x 100

There are currently WWTFs in the Lake Champlain watershed with existing discharged loads of phosphorus already at, or above, 80% of allowable loads. To ensure facilities are operating as efficiently as possible, all reissued wastewater discharge NPDES permits under the LC TMDL will specify a period of 12-months for optimization to be pursued and the corresponding load reduction results to be realized, prior to evaluating where a facility ranks relative to the 80% trigger. Discharge permits will specify that after the optimization period, when an existing facility reaches 80% of its WLA for phosphorus (evaluated as a rolling, 12-month load), the permittee will have to develop and submit a projection of whether the facility will exceed its WLA during the permit term and if it is projected to do so, then the facility will be required to develop a Phosphorus Elimination/Reduction Plan (PERP) that will ensure the facility continues to comply with its WLA.

Effluent phosphorus limits in permits are expressed as total annual mass loads for facilities that currently have an existing monthly effluent concentration limit for phosphorus in their NPDES permit, as monthly effluent concentration limits. Therefore, the draft permit retains the monthly TP limits specified in the current permit.

Phosphorus Limit in Draft Permit:

Under the 2016 "Phosphorus TMDLs for Vermont Segments of Lake Champlain," the EPA established new, mass-based, annual WLAs for wastewater facilities discharging to Lake Champlain and its tributaries based on a TP limit of 0.20 mg/L at design flow. However, the 2002 Lake Champlain Phosphorus TMDL WLA for Ed Weed Fish Culture Station was lower than a limit of 0.20 mg/L at design flow. Therefore, the 2002 WLA of 0.914 metric tons per year (2015 lbs/yr) is retained for this facility. The draft permit also includes a concentration limit of 0.80 mg/l, monthly average and monthly mass limits (provided in permit condition I.A.1) that remain unchanged from the current permit.

The LC TMDL includes WLAs for WWTFs expressed as total annual mass loads; the LC TMDL does not include monthly average concentration effluent limits for WWTFs. State law (10 V.S.A. § 1266a) requires that, “No person directly discharging into the drainage basins of Lake Champlain or Lake Memphremagog shall discharge any waste that contains a phosphorus concentration in excess of 0.80 milligrams per liter on a monthly average basis.” Therefore, in addition to the annual mass load effluent limitation required by the TMDL, the permit must also include a monthly average concentration limit for phosphorus. While the WLA in the TMDL was calculated based on a TP effluent concentration of less than 0.80 mg/L, the permit does not include that as the concentration effluent limitation because a permittee may not need to achieve that lower concentration to ensure compliance with the WLA established in the TMDL. Rather the permit includes a monthly average concentration limit for phosphorus of 0.80 mg/L to ensure compliance with state law and to recognize seasonal variations in the facility’s discharge. It is important to note that because the annual mass load and average monthly concentration limits are not mathematically consistent in the permit, meeting a 0.80 mg/L concentration limit at design flows will not result in meeting the annual mass limit.

In The permittee must comply with both limitations and, as required by the permit, must operate the facility to meet the more restrictive limitation, which may vary depending upon discharge flows at the facility. If the facility is operating at design flows, the annual mass load limitation will be the more restrictive limitation. However, if the facility is operating at low flows, the monthly average concentration limit may be the more restrictive limitation.

The permittee is also subject to monthly TP limits that have been included in the facility’s permit since its inception. This set of TP limits is imposed to limit periphyton algae increases in the vicinity of the hatchery and were originally derived from the fish feeding bioprogram developed by the Vermont Fish and Wildlife Department to accommodate the feeding needs for the fish while minimizing the generation of phosphorus within the hatchery effluent. The monthly limits have changed over the years based on observations in the lake and VWQS numeric nutrient criteria. While the exact factors used to modify the monthly limits are unclear based on DEC records, monitoring data and the Reasonable Potential Determination indicate these limits are protective of water quality and suitable for hatchery operations. Monthly limits in the draft permit are unchanged from the current permit.

The requirement for twice monthly sampling for total phosphorus is unchanged from the current permit. As intake credits are no longer allowed under the draft permit, gross results must be reported.

Condition I.H.2 of this draft permit requires the submission of monitoring reports to the Secretary specific to tracking TP in the discharge. Monthly reporting of total monthly pounds, running total annual pounds, and a comparison (%) of running total annual pounds to the annual permit limitation shall be submitted monthly via electronic discharge monitoring report. A report that documents the annual TP discharged from the facility, summarizes phosphorus removal optimization and efficiencies, and tracks trends relative to the previous year shall be attached to the December WR-43 form. The annual and monthly TP loads discharged from the facility shall also be along with other required parameters.

Phosphorus Optimization and Elimination/Reduction Plans:

To ensure the facility is operating as efficiently as possible for purposes of phosphorus removal, Condition I.C.2 of the permit requires that within 120 days of permit issuance, the permittee shall develop or update (as appropriate), and submit to the Secretary, a Phosphorus Optimization Plan (POP) to increase the WWTF's phosphorus removal efficiency by implementing optimization techniques that achieve phosphorus reductions using primarily existing facilities and equipment. The techniques to be evaluated may include operational process changes to enhance biological and/or chemical phosphorous removal, incorporation of anaerobic/anoxic zones, septage receiving policies and procedures, and side stream management.

The facility shall have 12 months from the permit issuance date to optimize removal of total phosphorus. If, after the 12-month optimization period, the WWTF's actual TP loads reach or exceed 80% of the LC TMDL WLA for the WWTF, based on the WWTF's 12-month running annual load calculated using the Phosphorus Load Calculation (Condition I.C.3 of the permit) the permittee shall, within 90 days of reaching or exceeding 80% of the LC TMDL WLA for the WWTF, develop and submit to the Secretary a projection based on the WWTF's current operations and expected future loadings of whether it will exceed its WLA during the permit term.

If the facility is not projected to exceed its WLA within the permit term, the WWTF shall reassess when it is projected to reach its WLA prior to permit renewal and submit that information with its next permit application. If the facility is projected to exceed its WLA during the permit term, the permittee shall submit a Phosphorus Elimination/Reduction Plan (PERP) within 6 months to the Secretary to ensure the WWTF continues to comply with its WLA. The PERP shall be treated as an application to amend the permit, and therefore, shall be subject to all public notice, hearing, and comment provisions, in place at the time the plan is submitted, that are applicable to permit amendments. The WWTF shall revise the PERP, if required by the Secretary.

2. Total Nitrogen (TN)

To gather data on the amount of Nitrate/Nitrite (NO_x) and Total Nitrogen (TN) in this discharge and its potential impact on the receiving water, a monthly "monitor only" requirement for NO_x and TN has been included in this permit. TN is a calculated value based on the sum of Total Kjeldahl Nitrogen (TKN) and Nitrate/Nitrite (NO_x) Nitrogen, and, shall be reported as pounds, calculated as:

$$\text{Average TN (mg/L)} \times \text{Total Daily Flow} \times 8.34$$

$$\text{where, TN (mg/L)} = \text{TKN (mg/L)} + \text{NO}_x \text{ (mg/L)}$$

Per EPA excess nitrogen (N) and phosphorus (P) are the leading cause of water quality degradation in the United States. Historically nutrient management focused on limiting a single nutrient—phosphorus or nitrogen—based on assumptions that production is usually phosphorus limited in freshwater and nitrogen limited in marine waters. Scientific research demonstrates this is an overly simplistic model. The evidence clearly indicates management of both phosphorus and nitrogen is necessary to protect water quality. The literature shows that aquatic flora and fauna have differing nutrient needs, some are P dependent, others N dependent and others are co-dependent on these two nutrients.

Like P, N promotes noxious aquatic plant and algal growth. High concentrations of P and N together cause greater growth of algae than P alone. The relative abundance of these nutrients also influences the type of species within the community. Furthermore, a high N-to-P ratio may exacerbate the growth of cyanobacteria, while elevated levels of nitrogen increase toxicity in some cyanobacteria species. Given the dynamic nature of all aquatic ecosystems, for the State to fully understand the degradation to water quality it is necessary to limit P and monitor bioavailable N (including nitrate, ammonium, and certain dissolved organic nitrogen compounds).

Facilities with design flow greater than 1 MGD will complete monthly monitoring unless more frequent sampling is already required by the permit. Facilities with design flows less than 1 MGD will complete quarterly, unless more frequent sampling is already required by the permit.

For more information, see

<https://www.epa.gov/sites/production/files/documents/nandpfactsheet.pdf>.

Monthly monitoring via composite sample is required for this facility.

3. Total Ammonia Nitrogen

Prior to 2005, the Station's permits included ammonia limits of 0.56 mg/1, monthly average, and 0.84 mg/1, daily maximum which were based on Federal Ambient Water Quality Criteria for ammonia. Utilizing EPA's '1999 Update of Ambient Water Quality Criteria for Ammonia' and using a conservative pH of 8.3 and a temperature of 22° C, the in-lake standard (not considering dilution) is 0.94 mg/1, monthly average (chronic) and 3.15 mg/1, daily maximum, (acute). Self-monitoring data indicate the effluent is consistently well below these in-lake standards, and therefore, consistent with CWA § 402(o)(2)(B)(i), a "monitor only" requirement remains in place for the permit. Monitoring remains at quarterly.

4. Turbidity

Until 2005, the facility was permitted to discharge an effluent with a turbidity limit of 10 NTU year-round. The draft permit maintains the 10 NTU year-round limit from the earlier permits. The 10 NTU (10/1-5/31) and 25 NTU (6/1-9/30) effluent limit contained in the current permit was included in error. While the Vermont Water Quality Standards were amended to allow a summertime turbidity limit of 25 NTU from June 1 through September 30 for this portion of Lake Champlain, anti-backsliding requirements prohibit the Secretary from relaxing water quality based effluent limitations merely to reflect relaxed water quality standards. CWA § 402(o). Intake credits are not allowed under the draft permit therefore gross effluent results must be reported. Monitoring remains the same at monthly.

D. Special Conditions

1. Use of Fishery Chemicals for the Prevention and Control of Pathogens and Disease

The Fish and Wildlife Department has requested approval for the chemicals authorized for use in the current permit. The permit continues to allow the use of a calculated effluent concentration based on the quantity of chemical used rather than effluent monitoring. The following changes have been made from the current permit:

1. The current limit for chlorine in the pond effluent is 1.0 mg/L. To comply with VWQS, this limit has changed to not exceed 0.1 mg/l. Monitoring via single grab sample when this chemical is used remains unchanged from the current permit.
2. To be consistent with other conditions in this section, the permittee is required to report the dates and quantities of hydrogen peroxide and chlorine used.
3. The permittee may use Florfenicol in accordance with FDA guidelines.
4. The condition included in the current permit that limits the of use of Romet to two raceway pairs at a time has been removed from the draft permit. This limitation was not consistent with the needs of Romet application by the facility and is supported by EPA findings at similar facilities. In reviewing permits for similar aquaculture facilities, the EPA determined substances (e.g., antibiotics) delivered to fish via ingestion do not pose a risk of harm or degradation to aquatic life or other beneficial uses. In most cases, the EPA believes that when used in accordance with FDA requirements and best management practices that these drugs pose no reasonable potential to violate applicable water quality standards (Appendix A of Leavenworth NFH Fact Sheet [Permit WA-0001902]).

2. Best Management Practices (BMP) Plan

Within 90 days of the permit issuance date the facility is required to submit an updated BMP plan that addresses solids control, materials storage, structural maintenance, training, and recordkeeping. These BMPs support the attainment of the Best Practicable Control Technology-Based Limitations listed in Condition I.A.2 of the draft permit.

3. Laboratory Proficiency Testing

To ensure there are adequate laboratory controls and appropriate quality assurance procedures, the permittee shall conduct an annual laboratory proficiency test for the analysis of all pollutant parameters performed within their facility laboratory and reported as required by their NPDES permit. Proficiency test samples must be obtained from an accredited laboratory or as part of an EPA DMR-QA study. Results shall be submitted to the Secretary by December 31, annually.

4. Electronic Reporting

The EPA recently promulgated a final rule to modernize the Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. The final rule requires the inclusion of electronic reporting requirements in NPDES permits that become effective after December 21, 2015. The rule requires that NPDES regulated entities that are required to submit discharge monitoring reports (DMRs), including majors and nonmajors, individually permitted or covered by a general permit, must do so electronically after December 2016. The Secretary has created an electronic reporting system for DMRs and has recently trained facilities in its use. The Secretary completed a phased roll out of mandatory electronic reporting. As of December 2020, these NPDES facilities will also be expected to submit additional information electronically as specified in Appendix A in 40 C.F.R. Part 127.

5. Noncompliance Notification

As required by the passage of 10 V.S.A. § 1295, promulgated in the 2016 legislative session, Section II.A.2 has been included in the proposed permit. Section 1295 requires the permittee to provide public notification of untreated discharges from wastewater facilities, including bypass events. The permittee is required to post a public alert within one hour of discovery, and submit to the Secretary specified information regarding the discharge within 12 hours of discovery.

6. Reopener

This draft permit includes a reopener whereby the Secretary reserves the right to reopen and amend the permit to implement an integrated plan to address multiple Clean Water Act obligations.

E. Reasonable Potential Analysis

The Secretary has conducted a reasonable potential analysis, which is attached to this Fact Sheet as Attachment A. Based on this analysis, this facility and its discharge quality pursuant to the draft permit maintains effluent quality that does not have the potential to cause measurable change in the receiving water during normal operations.

VIII. Procedures for Formulation of Final Determinations

The public comment period for receiving comments on this draft permit is from **August 28 through October 4, 2017** during which time interested persons may submit their written views on the draft permit. All written comments received by 4:30 PM on **October 4, 2017** will be retained by the Secretary and considered in the formulation of the final determination to issue, deny, or modify the draft permit. The period of comment may be extended at the discretion of the Secretary.

Written comments should be sent to:

Agency of Natural Resources
Department of Environmental Conservation
Watershed Management Division
One National Life Drive, Main Building, 2nd Floor
Montpelier, VT 05620-3522

Comments may also be faxed to 802-828-1544 or submitted by e-mail to ANR.WSMDWastewaterComments@vermont.gov

For additional information, contact Jessica Bulova at 802-828-1535

The Secretary will hold a public meeting on **September 27, 2017, 4:00 PM**, Gordon-Center House, 54 West Shore Rd (Rt. 314) Grand Isle, VT 05458. Any person may submit oral or written statements and data concerning the draft permit at the public meeting. The Secretary may establish reasonable limits on the time allowed for oral statements and may require the submission

of statements in writing. All statements, comments, and data presented at the public meeting will be retained by the Secretary and considered in the formulation of the final determination to issue, deny, or modify the draft permit.

The complete application, draft permit, and other information are on file and may be inspected by appointment on the 2nd floor of the Main Building at One National Life Drive, Montpelier, Vermont. Copies may be obtained by calling 802-828-1535 from 7:45 AM to 4:30 PM Monday through Friday, and will be made at a cost based upon the current Secretary of State Official Fee Schedule for Copying Public Records. The draft permit and fact sheet may also be viewed on the Watershed Management Division's website at <http://www.watershedmanagement.vt.gov/>

No comments were received on the draft permit or fact sheet during the public comment period

Fact Sheet Attachment A

Agency of Natural Resources
Department of Environmental Conservation

Watershed Management Division
1 National Life Drive 2 Main
802-828-1535

MEMORANDUM

To: Amy Polaczyk, Wastewater Program (WWP)

From: Rick Levey, Monitoring, Assessment and Planning Program (MAPP) *Rick Levey 05/23/17*

Cc: Pete LaFlamme, Director, (WSMD)
Jessica Bulova, Manager, (WWP)
Neil Kamman, Manager, (MAPP)

Date: May 23, 2017

Subject: VT F&W Ed Weed Fish Culture Wastewater Treatment Facility

Facility:

Ed Weed Fish Culture Station WWTF
Permit No. 3-1312
NPDES No. VT0020931

Hydrology for Ed Weed Fish Culture Station WWTF:

Design Flow: 11.5 MGD = 17.7 CFS

Receiving Water:

Lake Champlain, Grand Isle, Vermont

MAPP has evaluated the draft permit for the Ed Weed Fish Culture Station WWTF, in relation to available water quality monitoring data, to determine the protectiveness of the permit with respect to receiving water quality criteria. The Ed Weed Fish Culture facility discharges to the Main Lake Segment of Lake Champlain from the 1.3-acre polishing pond that flows about 200 yards down a stabilized channel that enters Lake Champlain. Figure 1 provides a graphical representation of the location of outfall outlet for this facility, relative to the most proximal location from which water quality monitoring data are available.

Phosphorus: Lake Champlain TMDL – Main Lake Segment

The ultimate receiving water for this facility is the Main Lake Segment of Lake Champlain, a phosphorus-impaired segment of Lake Champlain subject to the 2016 Lake Champlain TMDLs promulgated by USEPA. That TMDL establishes a wasteload allocation for this facility not to exceed 0.914 MT/year, which reflects no change from the prior limitation in the 2002 TMDL to which this facility was permitted previously. The TMDL provides a reasonable assurance analysis and accountability framework demonstrating that the Main Lake Segment of Lake Champlain will achieve standards following implementation of the TMDL.



Figure 1. Approximate location of outfall outlet, relative to the Lake Champlain Long-term Biological and Chemical Monitoring Program station.

Phosphorus

Review of Ed Weed Fish Culture Station monitoring records indicate that the average gross effluent TP concentration in 2016 was 0.035 mg/L-TP (35 µg/L), and ranged from 0.05 – 0.059. These values are significantly lower than the monthly average permit limit of 0.8 mg/L. In fact, the average effluent TP recorded is less than 5 percent than the monthly average permit limit of 0.8 mg/L-TP.

Monitoring records for 2016 indicate that the facility has been operating at about 1/3rd (3.8 MGD) of design flow (11.5 MGD), this is consistent with flow records observed for the last 5 years. At these conditions the daily mass loadings of TP have been 1/5th of permit limit, only 1.1 lbs./day, compared to the average limit of 5.5 lbs. /day based on annual total of 2015 lbs.

There is significant dilution available, this is a very deep segment of Lake Champlain with depths of 80 feet near shore. A 200-foot radius around the outfall area with average depth of 40 feet would provide (10:1 Dilution), resulting in TP concentration of 3.5 µg/l, which would be diluted out further outside of this zone.

Lake Champlain Water quality monitoring data are available from the [Lake Champlain Long-term Biological and Chemical Monitoring Program](#), from a monitoring station (LCM Sta 33) located approximately 3 miles due west of the outfall outlet. Results from this station indicate that arithmetic total phosphorus concentrations in this Cumberland Bay segment for the period 2015-2016 (April-Nov measurements) averaged 13.8 ug/L, and that long-term trends suggest that the average concentration in this segment has been declining slightly since 2012 (Figure 2).

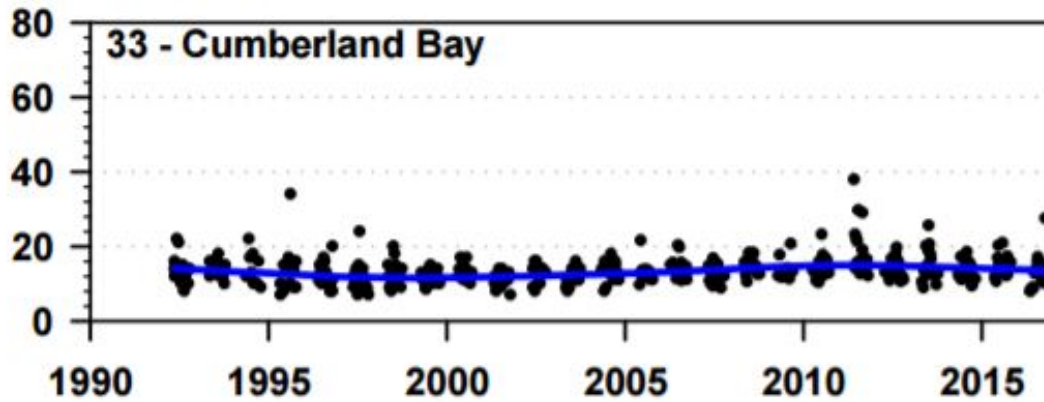


Figure 2. Long-term total phosphorus concentration monitored by the Lake Champlain Long-term Biological and Chemical Monitoring Program. Y-axis shows total phosphorus in ug/L.

Nitrogen

While total nitrogen is not a causal pollutant of designated uses in Lake Champlain, previous permits have not required nitrogen monitoring, although the draft permit requires quarterly monitoring for Total Nitrogen, TKN and NOx. Water quality monitoring data available from the [Lake Champlain Long-term Biological and Chemical Monitoring Program](#) indicates that total nitrogen concentrations in the Cumberland Bay segment for the period 2015-2016 average 0.33 mg/L, and long-term trends suggest that the average concentration in this segment is flat to slightly declining over the period of record (Figure 3).

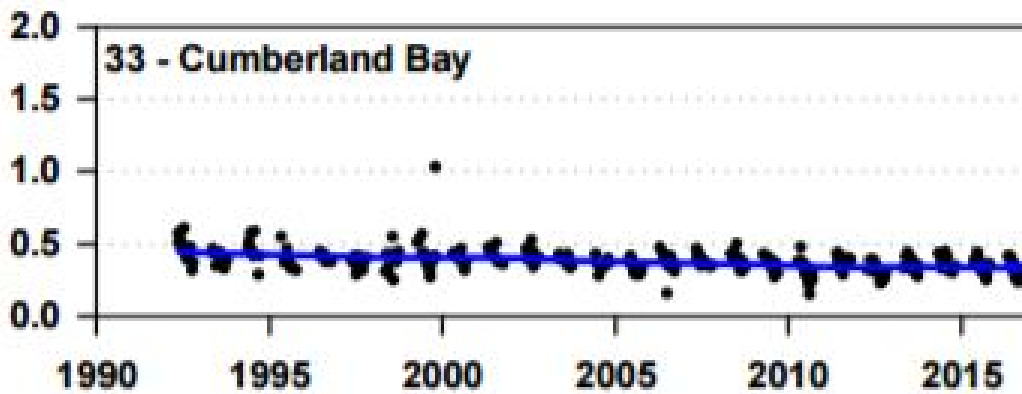


Figure 3. Long-term total nitrogen concentration monitored by the Lake Champlain Long-term Biological and Chemical Monitoring Program. Y-axis shows total nitrogen in mg/L.

Ammonia Monitoring:

Review of Ed Weed Fish Culture Station monitoring records from 2012 - 2017 indicate that the average effluent ammonia concentration was 0.13 mg TAN/L, and ranged from non-detect to 0.5 mg TAN/L. Using the maximum effluent ammonia concentration of 0.5 mg/L TAN, the 10:1 available dilution would result in a RWC of 0.05 mg TAN/L, which is significantly lower than the most stringent ammonia WQS. As such there is not a reasonable potential for VWQS excursion.

Use of Fishery Chemicals for the Prevention and Control of Pathogens and Disease

The use of fishery chemicals has been reviewed as part of this analysis, and when used as the draft permit conditions describe should not pose any potential risk to receiving waters. The fishery chemicals will be used in accordance with the U.S. Food and Drug Administration for the prevention and control of fish pathogens and disease. Concentrations and treatment durations shall not exceed specific product label, or Investigative New Animal Drug (INAD) authorization, or the terms and conditions of this permit.

Results of specified monitoring will be reported on the monthly Discharge Monitoring Report (DMR).

Formalin

A maximum of two raceway pairs may be treated simultaneously, for a 60-minute duration, such that the concentration in raceway does not exceed 250 mg/L. Monitoring records for 2016 indicate on average 100 gallons/month of formalin is used, range is 0.2 – 286 gallons/month. Daily use ranged from 0 – 18 gallons -formalin. All flows treated with formalin are held in pretreatment pond (33,750 gallons) for a minimum of 30 hours prior to discharge to the 1.3-acre polishing pond. The polishing pond has an average depth 5ft for an estimated volume of 2.1 MG. Using the maximum of 18 gallons' formalin used in 1 day, computations indicate that the worse-case effluent concentration would be 8.5 mg/L-formalin, before the 10:1 immediate dilution available at the outfall, reducing the concentration further to 0.85 mg/L.

Chronic and acute formalin criteria used by DEC are 4.34 mg/L and 12.36 mg/L, which are higher than the worse-case value of 0.85 mg/L-formalin. Formalin does not persist in the environment, the half-life for formalin is 36 hours. Treated water is held in "chemical effluent detention pond," for 30 hours before it is released to the 1.3-acre polishing pond, which has an additional 13-hour retention time before being discharged. Based on the fate and transport properties of formalin, this 43-hour minimum detention period will further reduce the formalin concentration likely by at least 50 percent. As such there is not a reasonable potential for WQ excursion.

Summary

These analyses help to illustrate the de minimus impact phosphorus, or other pollutants within this discharge would pose to receiving waters during standard operations.

Considering these factors, MAPP has determined that this facility and its discharge quality pursuant to the draft permit maintains effluent quality that does not have the potential to cause measurable change in the receiving waters during normal operations.