Richmond Draft Permit 3-1173
Response Summary
October 16, 2020

1. How did you arrive at the 134 lbs. annual limit for phosphorous?

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 twelve 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 WWTFs that discharge to the Lake Champlain watershed.

The concentration effluent limitation of 0.8 mg/L is based on the requirements of 10 VSA § 1266a whereas the mass annual effluent limitation of 134 lbs/yr is based on the LC TMDL. 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 segment, which the Richmond WWTF discharges to, as well as the Shelburne Bay, Burlington Bay, St. Albans Bay, and Missisquoi Bay lake segments. 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.

The LC TMDL allocated 0.061 metric tons per year or 134 pounds per year to the Richmond WWTF. The following equation was used to convert units of the WLA from metric tons to pounds:

(0.061 mt/yr) (2204.62 lbs/mt) = 134 lbs/yr

2. Can you cite where the 0.8 mg/L is stated in regulations?

The 0.8 mg/L concentration effluent limitation is based on the requirements of 10 VSA § 1266a which states:

(a) 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. Discharges of less than 200,000 gallons per day, permitted on or before July 1, 1991, shall not be subject to the requirements of this subsection. Discharges from a municipally owned operated aerated lagoon type secondary

sewage treatment plant in the Lake Memphremagog drainage basin, permitted on or before July 1, 1991, shall not be subject to the requirements of this subsection unless the plant is modified to use a technology other than aerated lagoons.

3. How many of the facilities in the Lake Champlain or Memphremagog basin have new permits with the new limits in place?

There are 59 WWTFs that discharge into the Lake Champlain watershed that will be issued on a five-year rotation in accordance with the following schedule:

North Lake Basin	Missisquoi & Lamoille Basins	South Lake A & B Basins	Winooski Basin	Otter Creek Basin
by 6/30/17	by 6/30/18	by 6/30/19	by 6/30/20	by 6/30/21
Alburgh	Enosburg Falls	Benson	Barre	Brandon
Burlington - Main	Fairfax	Fair Haven	Burlington Electric	Middlebury
Ed Weed F.C.S.	Hardwick	Orwell	Burlington – North	Otter Valley
Hinesburg	Jeffersonville	Pawlet	Burlington – River	Pittsford
NWCF	Johnson	Poultney	Cabot	Pittsford F.C.S.
Shelburne Plant #1	Milton	Castleton	Essex Jct.	Proctor
Shelburne Plant #2	Morrisville		IBM*	Rutland
South Burlington - BB	Newport Center		Marshfield	Salisbury F.C.S.
St. Albans	North Troy		Montpelier	Shoreham
	PBM Nutritionals		Northfield	Vergennes
	Richford		Plainfield	Wallingford F.D.
	RockTenn Co.		Richmond	West Rutland
	Sheldon Springs		South Burlington –AP	
	Swanton		Stowe	
	Troy/Jay		Waterbury	
			Williamstown	
			Winooski	

Of the 59 Vermont wastewater treatment facilities in the Lake Champlain Basin, 25 will need to reduce their wastewater phosphorus loads to meet LC TMDL allocations.

Of the 28 LC TMDL direct discharge permits that have been issued to date, 11 have implemented new annual total phosphorus limits (Burlington Main and Newport Center have not been issued to date).

There are four WWTFs listed under the Lake Memphremagog TMDL. All four WWTFs that discharge to the Lake Memphremagog watershed are subject to a 33.2% reduction in annual total phosphorus loading to meet in lake concentration targets in accordance with the following table:

	Permit Flow (MGD)	Permit Concentration (mg/l)	Current Permit Load (lbs./yr)	TMDL WLA (lbs./yr)	Reduction in Permit Load (lbs./yr)	Average Load 2009-2012 (lbs./ yr)
Barton	0.265	1.0	811	542	269	247
Brighton	0.150	5.0*	2293	1532	761	650
Newport	1.300	0.8	3179	2125	1054	862
Orleans	0.190	1.0	582	388	194	84
Total Load	**1.905**	---	6865	4587	2278	1843
Total to Lake			5420	3618	1547	1429

The Barton and Orleans permits were issued with new annual total phosphorus limits in 2019. The Brighton and Newport permits are anticipated to be issued in FY2021.

4. If we increase the customer base of the facility, we may have to decrease the amount of septage we receive. Is it the State's intent to have the Richmond facility reduce the amount of septage that it processes?

It is the expectation of the State that the facility will operate the WWTF as required in the permit and applicable laws. This includes operating the facility within its design criteria for organic loading. Based on input from the Chief Operator, Kendall Chamberlin, the facility design loading may not be fully achieved due to modifications since the plant came online, effectively decreasing the loading capacity of the facility. The draft permit includes the requirement for an engineering evaluation - this could include a review of current organic loading capacity and straightforward refurbishments that would increase the loading capacity of the existing facility, should additional capacity be needed.

With regard to phosphorus, in the TMDL the EPA's definitions of wasteload and load allocations refer to both future, as well as existing, point and nonpoint sources (40 C.F.R. 130.2(g) and (h)). The Vermont Wasteload Allocation Process requires that future population growth be considered in establishing wasteload allocations. Capacity for future growth in wastewater flows is built into the design and permitting of wastewater treatment facilities, and future growth capacity is therefore included in the individual facility wasteload allocations.

The allowance made within the TMDLs' wasteload allocations for future increases in wastewater flows and phosphorus loads can be assessed by comparing the permitted flows and the phosphorus wasteload allocations with current discharge rates. The 2001-2010 average base load of phosphorus discharged from all Vermont WWTFs was 24.6 metric tons per year (mt/yr). This comprises 76% of the TMDLs' combined WWTF wasteload allocation of 32.3 mt/yr. [Page 35 of Phosphorus TMDLs for Vermont Segments of Lake Champlain" (June 2016)].

5. Please provide the name of the wastewater treatment facilities that have appealed their permit and provide reasons for their appeals.

The Conservation Law Foundation (CLF) filed an appeal with the Vermont Environmental Court to block LC TMDL discharge permits issued in 2017. All of the discharge permits included in CLF's appeal were reviewed and approved by the EPA prior to issuance. The Vermont Environmental Court ruled in VT DEC's favor and the Judgement Order is attached for review.

6. Looking at the TMDL are there goals set for the amount of phosphorus load into Lake Champlain from wastewater, agriculture, and runoff from roads? If so, please share those goals.

Overall, the largest source of phosphorus is the agricultural sector, followed by streambank erosion, developed land, and forests. Cropland is by far the largest phosphorus source, followed by pasture and farmsteads. Within the developed land sector, back roads are the single largest source category in most lake segment watersheds, due primarily to erosion and sedimentation from poorly managed roadside ditches. Impervious surfaces in residential, commercial and industrial land use categories (as a group) represent the next largest developed land source in most watersheds.

The following table outlines obligations that need to be met by municipalities in order to comply with the Vermont Clean Water Act (Act 64):

	ACTIVITY	MUNICIPAL OBLIGATIONS	TIMELINE
WASTEWATER	Wastewater Treatment Facilities (WWTFs)	Reductions from currently permitted phosphorus loads at 25 of 59 facilities in the Lake Champlain Basin.	Vermont DEC will issue wastewater discharge permits incorporating the new phosphorus allocations according to the five-year tactical river basin planning schedule.
STORMWATER	Municipal Roads General Permit www.watershedmanagement.vt.gov/stormwater/hm/sw_municipalroads.htm	Implementation of practices to reduce erosion and stormwater discharged generated from roads and drainage systems.	The general permit must go into effect before January 2018, with all municipalities signed up no later than 2021.
	Municipal Separate Storm Sewer System (MS4) Permit	MS4 municipalities will develop long-range phosphorus control plans following the reissuance of this permit.	The reissuance process for the MS4 permit will commence in 2017.
	Stormwater Permits for Municipally Owned Developed Land	VT DEC's Stormwater Program will be developing a general permit applicable to all sites with 3 or more acres of impervious surface, including municipal properties.	The general permit must go into effect before January 2018, with all projects in the Champlain basin under a permit by 2023, and the rest of the state under a permit by 2028.
CONSTRUCTION	Stormwater Permits for New Municipal Projects	No change. Reported to Legislature in 2016 lowering the threshold for new projects from 1 acre to ½-acre of impervious surface.	
	Stormwater Planning http://dec.vermont.gov/sites/dec/files/wsm/erp/docs/SWMPFinal6-23-16.pdf	No change. Towns are encouraged to seek grant funding for stormwater planning, which can be used in tactical basin plans.	

Additional information regarding phosphorus reductions in the agricultural and developed land sectors are further described in the document "Phosphorus TMDLs for Vermont Segments of Lake Champlain" (June 2016).

While phosphorus concentrations vary among the lake segments, the interconnectedness of the segments (and the way each segment influences other segments) necessitates a lake-wide approach to TMDL development. Based on the 2002 TMDL approach, and the lake modeling that took into account all these interconnections, EPA has established TMDLs for all 12 segments in order to ensure that phosphorus targets are met throughout the lake.

The following table outlines phosphorus reductions needed to meet the TMDL within each lake segment:

Table 8. Percent reductions needed to meet TMDL allocations.

Lake Segment	Total Overall	Wastewater[1]	CSO	Developed Land[2]	Agricultural Production Areas	Forest	Streams	Agricultural Nonpoint
01. South Lake B	41.4%	0.0%		21.1%	80.0%	40.0%	46.7%	62.9%
02. South Lake A	55.5%	0.0%		18.1%	80.0%	5.0%		62.9%
03. Port Henry	55.4%			7.6%	80.0%	5.0%		62.9%
04. Otter Creek	23.6%	0.0%		15.0%	80.0%	5.0%	40.1%	46.9%
05. Main Lake	20.5%	61.1%		20.2%	80.0%	5.0%	28.9%	46.9%
06. Shelburne Bay	11.6%	64.1%		20.2%	80.0%	5.0%	55.0%	20.0%
07. Burlington Bay	31.2%	66.7%	11.8%	24.2%	0.0%	0.0%		0.0%
09. Malletts Bay	17.6%	0.2%		20.5%	80.0%	5.0%	44.9%	28.6%
10. Northeast Arm	12.5%			7.2%	80.0%	5.0%		20.0%
11. St. Albans Bay	24.5%	59.4%		21.7%	80.0%	5.0%	55.0%	34.5%
12. Missisquoi Bay	64.3%	51.9%		34.2%	80.0%	50.0%	68.5%	82.8%
13. Isle La Motte	11.7%	0.0%		8.9%	80.0%	5.0%		20.0%
TOTAL	33.7%	42.1%	11.8%	20.9%	80.0%	18.7%	45.4%	53.6%

[1]Percent change from current permitted loads

[2] Includes reductions needed to offset future growth

7. Knowing your goal is to have this permit in place by January 1, 2020 is there a legal reason for this date? Could this date be delayed based on the questions that the Richmond Water and Sewer Commission has about the permit?

In the EPA-approved Phase 1 TMDL Implementation Plan, the required issuance date for the FY2020 permits, which includes the Richmond WWTF, was June 30, 2020. Due to the COVID-19 pandemic as well as a reduction in technical staff, the issuance date for 2020 LC TMDL permits has been delayed, but the Wastewater Program continues to make a good-faith effort to issue these permits as soon as possible while remaining responsive to questions and comments from stakeholders.

STATE OF VERMONT

SUPERIOR COURT ENVIRONMENTAL DIVISION

Montpelier (Dog River Road) Wastewater Treatment Facility (Permit #3-1207)	Docket No. 138-10-17 Vtec
Alburgh (US Route 2) Wastewater Treatment Facility (Permit #3-1180)	Docket No. 139-10-17 Vtec
St. Albans (NW Correctional Facility) Wastewater Treatment Facility (Permit #3-1260)	Docket No. 140-10-17 Vtec
S. Burlington (Bartlett Bay) Wastewater Treatment Facility (Permit #3-1284)	Docket No. 141-10-17 Vtec
St. Albans (Rewes Drive) Wastewater Treatment Facility (Permit #3-1279)	Docket No. 145-10-17 Vtec
Shelburne #1 (Crown Road) Wastewater Treatment Facility (Permit #3-1289)	Docket No. 146-10-17 Vtec
Shelburne #2 (Harbor Road) Wastewater Treatment Facility (Permit #3-1304)	Docket No. 4-1-18 Vtec
Williamstown Wastewater Treatment Facility (Permit #3-1176)	Docket No. 5-1-18 Vtec
Hinesburg (Lagoon Road) Wastewater Treatment Facility (Permit #3-1172)	Docket No. 17-2-18 Vtec

Judgment Order

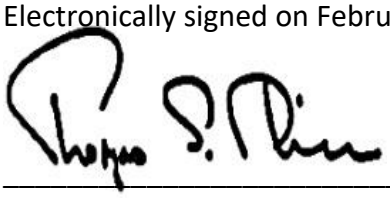
For the reasons set forth in the Decision on Summary Judgment Motions that accompanies this Judgment Order, the Court answers all three Questions presented by the Conservation Law Foundation in its Statement of Questions in the affirmative. As detailed in our Decision, we conclude that the WQBELs can, as a general matter, be identical to the WLAs within a TMDL and, in all of the above-referenced appeals, the WQBELs may be identical to the WLAs set forth in the 2016 TMDL. Further, we conclude that the WQBELs are not impermissible conditions subsequent. Finally, we conclude that ANR performed an adequate site-specific analysis of the assumptions underlying the effluent limits when issuing the permits presently on

appeal, and that those assumptions remain valid. Therefore, the summary judgment motions filed by the Agency of Natural Resources, the City of Montpelier, and the Towns of Hinesburg, Alburgh, and Shelburne are **GRANTED**. The summary judgment motion filed by CLF is **DENIED**.

For these reasons, we **AFFIRM** ANR's issuance of the above-referenced permits.

This concludes the matter before the Court.

Electronically signed on February 1, 2019 at Brattleboro, Vermont, pursuant to V.R.E.F. 7(d).



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Thomas S. Durkin, Superior Judge
Environmental Division

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