

**BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

_____)	
In re:)	
)	
TOWN OF CONCORD, DEPARTMENT OF)	NPDES APPEAL NO. 13-_____
PUBLIC WORKS)	
)	
NPDES Permit No. MA0100668)	
_____)	

PETITION FOR REVIEW BY THE TOWN OF CONCORD

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- Exhibit A -** Concord's August 9, 2012 Comment Letter
- Exhibit B -** Concord's June 20, 2012 Letter to EPA
- Exhibit C -** April 9, 2004 Certificate of the Secretary of Environmental Affairs on the Single Environmental Impact Report EEA No. 13088
- Exhibit D -** EPA's Response to Comments
- Exhibit E -** EPA's National Recommended Water Quality Criteria
- Exhibit F -**
1. Letter of Jon M. Capacasa, Director, US EPA Region III Water Protection Division ("Capacasa") to Lisa McClung, Director Water and Waste Management Division, West Virginia Department of Environmental Protection ("WVDEP") dated January 9, 2006
 2. Capacasa Letter to WVDEP dated September 8, 2009
- Exhibit G -**
1. Letter of William K. Honker, P.E., Acting Director, Water Quality Protection Division, US EPA Region 6 to James P. Bearzi, Chief, Surface Water Quality Bureau, New Mexico Environment Department dated April 30, 2012
 2. Letter of William K. Honker, P.E., Acting Director, Water Quality Protection Division, US EPA Region 6 to James Hogan, Acting Chief, Surface Water Quality Bureau - New Mexico Environment Department dated June 18, 2012
- Exhibit H -** Canada Gazette, Part I, Vol. 143, No. 6 Ottawa, Saturday February 7, 2009
- Exhibit I -** Canadian Environmental Protection Act, 1999; Priority Substances List Assessment Report Follow-up to the State of Science Report, 2000; Aluminum Chloride, Aluminum Nitrate, Aluminum Sulphate, Chemical Abstracts Service Registry Numbers 7446-70-0, 13473-90-0, 10043-01-3; Environment Canada and Health Canada, November 2008
- Exhibit J -** Chart Showing pH in River
- Exhibit K -** Chart Showing Ambient pH and alkalinity in River (from Billerica WWTF WET Testing)

INTRODUCTION

Pursuant to 40 C.F.R. § 124.19(a), the Town of Concord, Department of Public Works (“Petitioner” or “Concord”) petitions for review of the conditions of a National Pollutant Discharge Elimination System (“NPDES”) Permit No. MA0100668 (“the Permit”) which was issued to Concord on August 2, 2013 by the United States Environmental Protection Agency Region 1. Petitioner contends that certain permit conditions are based on clearly erroneous findings of fact and conclusions of law. Specifically, Petitioner challenges the following Permit Conditions:

- (1) Flow Effluent Limit,
- (2) Aluminum Effluent Limit,
- (3) pH Effluent Limit,
- (4) Di(2-ethylhexyl)phthalate (DEHP) Reporting Requirements, and
- (5) Collection System Mapping, Operations and Maintenance Plans, and Annual

Reports.

THRESHOLD PROCEDURAL REQUIREMENTS

Petitioner satisfies the threshold requirements for filing a petition for review under 40 C.F.R. part 124:

1. Petitioner has standing to petition for review of the permit decision because it participated in the public comment period on the permit. *See* 40 C.F.R. § 124.19(a). A copy of Concord’s August 9, 2012 comment letter is attached as Exhibit A. (Hereinafter, “Concord Comment Letter, p. __”).
2. The issues raised by Petitioner in its petition were raised during the public comment period and therefore were preserved for review.

FACTUAL AND STATUTORY BACKGROUND

The Town of Concord operates an advanced secondary waste water treatment facility located in Concord, Massachusetts serving a population of about 6,500. The facility also accepts up to 13,000 gallons per day of septage from the Town of Concord. The Town is approximately 35% sewerred, with the remaining parcels on septic systems pursuant to Commonwealth of Massachusetts and Town of Concord requirements. Concord's sewer system consists of approximately 33.8 miles of sewers, ranging in size from 6 to 27 inches, two large pump stations, six smaller lift stations, and a wastewater treatment plant. Approximately 50% (15.4 miles) of Concord's sewer system is composed of clay pipes with much of it dating back to the original sewer system which was installed over 100 years ago. Generally, the town centers, where development is on smaller lots, is connected to the centralized sewer system and disposes of its wastewater at the Concord Wastewater Treatment Facility (WWTF) with a surface water discharge of treated effluent to the Concord River ("River").

Since the 1990's Concord has been leader in the Commonwealth on stormwater regulation and water conservation. Concord has taken a progressive approach from both a policy and financial standpoint with substantial and continual investments in its stormwater, drinking water and wastewater systems. This includes the development of a robust stormwater management program consisting of the adopted *Town of Concord Stormwater Regulations*¹ with a strong emphasis and requirements for low impact development and sustainable design and construction. Additionally, the Town has consistently supported the upgrade of town owned stormwater infrastructure with annual investments supported by town meeting action totaling over \$250,000.

¹ http://www.concordma.gov/Pages/ConcordMA_Engineering/stormwaterregs.pdf

The Town of Concord has had an aggressive “award winning” water conservation program in place for approximately ten years. This program has evolved with a focus on educating townspeople on how and why they should conserve water. New developments in town are required to perform a Water Use Impact assessment to demonstrate water conservation, above and beyond plumbing code. Since 1998, residential sewer customers have reduced their winter water consumption, which normally approximates indoor water use, by roughly 20%. This has brought indoor water use from an average of 168 gpd per single-family household down to 136 gpd, resulting in an estimated difference in total sewer flow of nearly 40,000 gpd.

The facility has been authorized to discharge to the River under a NPDES Permit issued on January 12, 2006. On September 1, 2010, Concord timely filed its application for reissuance of its NPDES Permit.

On June 7, 2012, at the request of the Town of Concord, a meeting was held at the Environmental Protection Agency (“EPA”) Region 1 headquarters which included key permit writers from both EPA and the Massachusetts Department of Environmental Protection (“MassDEP”). The meeting was requested to review evolving wastewater capacity constraints identified by the Town with specific interest in exploring opportunities by which the Town and regulatory agencies could collaborate on an “integrated” NPDES permit process. It was the Town’s contention that such an approach, while novel, could effectively result in a more holistic, sustainable and environmentally beneficial solution for wastewater management within the Town of Concord. See Letter dated June 20, 2012 memorializing June 7, 2012 meeting attached as Exhibit B.

On July 11, 2012, MassDEP and EPA co-issued a draft NPDES Permit to Concord, with an accompanying Fact Sheet for public comment. Concord submitted timely comments on the draft NPDES Permit to EPA on August 9, 2012.

MassDEP issued a Water Quality Certification to EPA on July 3, 2013, stating that the proposed permit meets Massachusetts water quality standards.

On August 2, 2013, EPA and MassDEP co-issued the Permit, along with the original Fact Sheet and EPA's responses to comments by Concord and others. A copy of the Permit is available at EPA's website and here

<http://www.epa.gov/region1/npdes/permits/2013/finalma0100668permit.pdf>. The Permit will become effective on October 1, 2013, except for those provisions stayed by this appeal.

Waste Water Planning History

In April of 2004 the Town of Concord received MEPA certification for a Comprehensive Wastewater Management Plan (CWMP) from the Commonwealth of Massachusetts. The MEPA Certificate accurately describes the CWMP as an important step in the planning process and recognizes Concord for continuing its planning efforts after completion of the CWMP.

The CWMP study was initiated in 1999, included a detailed parcel-by-parcel assessment of existing wastewater management conditions and proposed allocation of remaining municipal wastewater capacity to several well-defined neighborhoods where existing reliance on on-site septic systems was deemed to be less advantageous due to environmental and economic factors. The CWMP reserved a limited volume of wastewater capacity for redevelopment and infill of existing sewered areas.

In 2005, the Town extended the sewer system into several neighborhoods identified within the CWMP Phase-I construction plan.

In December 2007 *The Status of Municipal Wastewater Report*² was completed effectively identifying a strategic shift between municipal wastewater planning goals and broader planning visions in Concord as evidenced by development and redevelopment within the existing sewerage area greatly outpacing the planning assumptions in the CWMP. The principle finding of this wastewater status review effort was that insufficient capacity existed at the Concord WWTF to meet flow allocations required to proceed with the CWMP Recommended Plan implementation schedule (identified in the CWMP as Phases 2, 3, and 4) and for redevelopment of properties in existing sewerage areas.

In February 2008, at the request of the Concord Board of Selectmen, a Town of Concord *Wastewater Planning Task Force* (WWPTF) was created to provide guidance on an “*Integrated Planning Initiative*,” developed for the purpose of better coordinating community planning goals with wastewater management challenges in Concord. Identifying long-term wastewater needs associated with the following studies prepared under the direction of Department of Planning and Land Use (DPLM) was a priority: *The Planned Production (Housing) Plan (PPHP)*³, the *Comprehensive Long Range Plan (CLRP)*⁴, and *the Village Center Study*⁵

The WWPTF established an estimate of future wastewater flow likely to require municipal management. To arrive at this estimate, the WWPTF considered a variety of present and potential future sewer uses, using sound planning practices and previously determined town-wide goals. Findings identified the need for an additional 320,000 gpd of wastewater flow under existing zoning conditions and 598,000 gpd if re-zoning were approved to accommodate

² http://www.concordma.gov/pages/ConcordMA_PublicWorks/wastewater%20treatment

³ *Planned Production Housing Plan (PPHP)*, dated June 2004
http://www.concordma.gov/pages/concordma_finance/clrp/appj.pdf

⁴ *The Comprehensive Long Range Plan (CLRP)*, dated March 2005
http://www.concordma.gov/pages/ConcordMA_Finance/clrp/clrp2005

⁵ *Village Centers Study*, dated December 2007
http://www.concordma.gov/pages/ConcordMA_Planning/VillageCenterStudy.pdf

affordable housing, smart growth and economic development. To ensure the longevity of flow projections over the 20-year planning period, the WWPTF estimated future infill flow projections within the existing sewer area and within future sewer extension service areas as defined within the CWMP. This very public process, captured within the *Wastewater Planning Task Force Summary Report*, dated February 2009⁶ which culminated in the passing of a 2009 Town Meeting Article calling for the Town Manager to study wastewater management capacity expansion alternatives required to accommodate desired growth. This study, substantially completed in 2012, compared the viability and feasibility of the wastewater management alternatives noted below. In an effort to objectively compare each of these options, an alternatives analysis matrix was developed to evaluate each identified wastewater management option using a set of five defined and weighted criteria. These criteria included: 1) Economic Impact; 2) Environmental Impact; 3) Feasibility and Public Acceptance; 4) Regulatory Considerations; and 5) Responsiveness/Town Control.

- A no build alternative (i.e., no expansion of wastewater capacity), which does not translate to ‘no action’ or ‘no growth,’
- An increase in the flow/capacity of the existing Concord WWTF,
- Supplemental groundwater discharge with treatment at the existing Concord WWTF,
- Construction of new neighborhood treatment system(s),
- Evaluation of use patterns and/or behaviors (i.e. demand management),
- Construction of a new municipal WWTF with groundwater discharge,
- Partnership(s) with private development(s) to serve municipal needs, and
- Seeking regional partnership(s).

⁶ http://www.concordma.gov/pages/ConcordMA_BComm/Wastewater%20February%202009%20Report

The findings of this alternative analysis, as captured in 2012 WWPTF meeting minutes⁷, concluded that after a detailed evaluation of all noted alternatives, the two most viable alternatives were: (1) the permitting, design and construction of a supplemental groundwater discharge site located at the existing Wastewater Treatment site and (2) an increase to the existing flow/capacity of the WWTF. At present, the Town is pursuing both of the preferred alternatives identified by the WWPTF as detailed below.

WWTF Improvements and Ongoing Capacity Analysis

Concord made improvements to the existing WWTF to meet regulatory compliance for effluent quality now and in the future that included a state of the art phosphorus reduction technology (CoMag) which was the first of its kind ever employed. Where feasible in the WWTF rehabilitation and upgrade design, unit processes were designed to treat an average daily flow slightly higher than the existing discharge limitation of 1.20 MGD.

In 2009, Concord commissioned a detailed engineering evaluation to determine capacity bottlenecks at the WWTF. Most of the existing processes were designed to accommodate a flow rate of 1.36 MGD average daily flow (ADF). The evaluation indicated that with modest retrofits to piping and pumping equipment (at an approximate cost of \$550,000 in 2009 dollars), the capacity of the WWTF could be increased to 1.65 MGD ADF and 5.7 MGD peak hourly flow (PHF). Most importantly, these levels could be achieved without requiring any major system component upgrade including the influent screens, grit removal system, primary clarifiers, trickling filters, secondary clarifiers, CoMag system, or UV system. Further, the existing WWTF outfall to the Concord River can handle the 5.7 MGD peak flow without any modification.

⁷ http://www.concordma.gov/pages/ConcordMA_BComm/WWTF_12_10_minutes

Since completion of the recent upgrades, the facility has routinely handled flows above the 1.2 MGD ADF for extended periods of time. Since January 2007 the facility has handled monthly ADF's over 1.2 MGD on twenty (20) separate occasions, while providing exceptional treatment. Further, as noted in the Discharge Monitoring Reports (DMRs) which have been provided to EPA and MassDEP, the facility handled an ADF as high as 2.40 MGD, recorded in March 2010.

Concord continues to pursue both of the preferred alternatives identified by the WWTF. In furtherance of the groundwater discharge system option, on July 25, 2013, MassDEP issued a formal approval for a "Hydrogeologic Evaluation in Support of the Groundwater Discharge Permit Application" submitted for a site (former sand beds) and scale (155,000 gpd) of wastewater discharge which can be expected to be permitted at the Wastewater Treatment site. This ground water alternative requires additional permitting and is expected to cost significantly more than the minor upgrades to the WWTF. As such, while a viable and valuable alternative, the increase in capacity and cost to build and operate the groundwater discharge system does not compare favorably with the minor WWTF improvements that allow a greater flow/capacity at the Facility and utilize the state of the art nutrient removals systems recently installed in the WWTF.

Increasing the existing facility's capacity as described above would allow it and Concord to address existing wastewater demand for identified economic development, failing septic systems and affordable housing, while also allowing the facility and the Town to invest the monies saved by implementing this option into other critical water management programs through an integrated water resources planning program.

PARALLEL PROCEEDINGS

In addition to this Petition, Concord has appealed the Surface Water Discharge Permit (“SWDP”) issued by MassDEP on August 2, 2013 pursuant to M.G.L. c. 21, §§ 26-53 and 314 CMR 3.00.

TERMS AND PROVISIONS APPEALED

The Environmental Appeals Board may review and remand permits where the Regional office of EPA has made determinations based on clearly erroneous findings of fact or conclusions of law, or where the permit appeal raises important matters of public policy or constitutes an abuse of discretion. 40 C.F.R. 124.19(a)(4). As set forth below, Concord seeks review of certain terms and provisions of the NPDES permit. Concord has identified each of those terms and provisions in Attachment A and hereby incorporates Attachment A as part of this Petition. All provisions of the NPDES Permit which are not appealed by this Petition or included in Attachment A are severable from the appealed provisions that would be effective on October 1, 2013.

A. Region 1’s Flow Effluent Limit is Clearly Erroneous and an Abuse of Discretion.

Despite Concord’s efforts to have Region 1 recognize that the permit’s limitation on flow has placed a constraint on the ability of the Town to develop and re-develop residential and commercial properties, along with economic waste water disposal options for affordable housing, Concord Comment Letter, p. 1, the Region chose to ignore Concord’s interests and proceeded to issue the permit with a 1.2 MGD effluent limitation (Permit Part A.1.), 0.16 MGD below the existing, actual design capacity of the Facility. The Region’s Response to Comments

(hereinafter as “RTC” or “RTC ___”) fails to address or otherwise respond directly to Concord’s concerns and are clearly erroneous and contrary to law and warrant review.

1. As a Matter of Law, Region 1 Has No Authority to Include “Flow” as an “Effluent Limit”.

The NPDES permitting program regulates discharges of pollutants from point sources to waters of the United States under Section 402 of the CWA, 33 U.S.C. § 1342. “Point source” means “any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which *pollutants* are or may be discharged” CWA § 502(14), 33 U.S.C. § 1362(14) (emphasis added).

“Pollutants” are defined in the CWA, as well as EPA’s implementing regulations, to mean “dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.” CWA § 502(6), 33 U.S.C. § 1362(6); *see also* 40 C.F.R. § 122.2. This definition includes many specific substances, but *not* the flow of water. *See* CWA § 502(6), 33 U.S.C. § 1362(6).

"Effluent limitation," is defined in the CWA, and by EPA’s regulations, to mean "any restriction imposed by the Director on quantities, discharge rates, and concentrations of **“pollutants”** which are “discharged” from “point sources” into “waters of the United States” . . ." 40 CFR §122.2.

Regulation of the flow of water or any other non-pollutant or human activity contravenes the plain limit on the Region’s regulatory authority to the control of only the substances

specifically enumerated in the definition of “pollutant.” *See* CWA §§ 303(d)(1)(C), 502(6), 33 U.S.C. §§ 1313(d)(1)(C), 1362(6). The Region has no authority to arbitrarily expand the list of “pollutants” set by statute. The flow or discharge of water itself is not a “pollutant.” *See* CWA § 502(6), 33 U.S.C. § 1362(6).

To the extent that the Region seeks to regulate flow because it believes that the flow or quantity of water, in and of itself, is a concern, the Region is directly regulating a non-pollutant in excess of the Region’s statutory authority. The Region is treating water itself—the very substance the Clean Water Act was created to protect—as a pollutant. Whatever reason the Region has for thinking that a **flow** rate is a way of limiting "pollutants" from navigable waters, the Region cannot be allowed to exceed its limited statutory authority. For these reasons, the Board must remand this matter to the Region with direction to strike the effluent limit of 1.2 MGD from the Permit.

2. The State’s CWMP Process Does Not Provide Authority to Regulate Flow.

Without conceding that Region has the legal authority to impose a flow/capacity limit on the facility, Concord contends that Region erroneously cites completion of the Commonwealth of Massachusetts Comprehensive Waste Water Management Plan (“CWMP”) process as a prerequisite to the Region’s issuance of the Permit with an increase flow/capacity. This is an error of both fact and law and the Town respectfully requests the Board to remand the Permit to the Region with instructions to either remove the flow limit or to include a step permit authorizing a flow of 1.65 MGD.

In RTC A1, the Region states that “it will not process an NPDES permit authorizing an increased discharge from a POTW until the Commonwealth has approved a comprehensive wastewater management plan that justifies the flow increase.” However, the Region provides no

legal or factual basis in support of this statement. First, there is no legal basis for the Region's position. The CWMP is not part of the MassDEP surface water discharge regulations nor is it a part of the EPA NPDES permitting regulations. Review of the MassDEP Surface Water Discharge regulations at 314 CMR 3.00 shows that there is no reference to CWMP. Similarly, EPA's NPDES regulations provide no reference to the CWMP process. Consequently, the Region's statement has no basis in law and cannot serve as a valid basis to avoid addressing the facility flow/capacity issues raised by Concord or as a basis to impose a limit on facility flow/capacity in the Permit.

Second, the Region misapplies the facts surrounding the Concord CWMP. Concord has completed a CWMP approved by the Commonwealth's Secretary of Environmental Affairs ("Secretary"). See Certificate of the Secretary of Environmental Affairs on the Single Environmental Impact Report EEA No. 13088 attached as Exhibit C ("Certificate"). As acknowledged by the Secretary in the Certificate, completion of the CWMP is a wastewater planning function and completing the CWMP does not mark the end of the planning process. Consistent with the Certificate and as detailed in the Factual and Statutory Background, Concord has continued the planning process, adopted a number of local provisions that including revised Sewer Use Rules and Regulations and completed an additional needs analysis. Concord's additional analysis indicates that Concord's successful growth planning efforts in the CWMP have resulted in demand for access to the existing central sewer system such that the increased demand is not the result of the additional phases of sewer expansion; it instead is the result of growth planning management that focuses development along the existing sewer system. Consequently, the Region's analysis is flawed and does not support the use of the Commonwealth's CWMP process as a basis for imposing a flow limit on the facility.

3. Region 1's 1.2 MGD Flow Limit Artificially Caps the Capacity of Concord's Facility.

Region 1's impermissible characterization of "flow" as a water quality limit on the existing WWTF artificially limits the capacity of the WWTF thereby impeding Concord's ability to address existing identified demand for access to its existing central sewer system. Region 1 arbitrarily contends that increased capacity is not needed to reach its favored public policy position that alternative wastewater systems provide a better solution to Concord's long-standing wastewater demand needs. This conclusion not only fails to respond to Concord's comment – and direct request to an increased of flow capacity – it is contrary to the facts.

4. Region 1's Proposed Alternatives to Address Existing Wastewater Demand are Untimely, Uncertain, More Costly and Potentially Less Environmentally Appropriate for Concord and Clearly Erroneous.

A. EPA Reliance on Limited Large-Scale Massachusetts Water Reclamation Projects.

In its RTC concerning the WWTF flow limit, EPA states that it "does not necessarily agree with the claim that economic development cannot move forward without additional wastewater capacity," stating that "Wrentham Outlet Mall and Gillette Stadium are two examples of successful commercial developments where no expansion of point source discharges are necessary." RTC A1. While Concord supports the ongoing evolution of reclaimed wastewater use in Massachusetts, EPA's suggestion that it is a viable option to address immediate and long-standing wastewater demand needs in Concord is misguided and misapplied to the facts. As such, EPA's suggestion is at best a diversion from properly addressing the wastewater demand issues facing Concord.

EPA's reliance on the Wrentham Village Premium Outlets and Gillette Stadium as proper examples of successful water reclamation projects in Massachusetts is flawed for the following reasons. First, both of these commercial projects are of a size and scale wholly out of keeping

with zoning in Concord which is well-recognized for its historic preservation and rural character. Second, both of these projects were permitted, constructed and operational before the Commonwealth of Massachusetts even adopted reclaimed water use regulations which were not promulgated until 2009.⁸ In fact, both projects are often recognized as the impetus for the development and issuance of the Commonwealth's *Interim Guidelines On Reclaimed Water (Revised)* issued on January 3, 2000 so there would be a legal construct allowing each project to proceed with reclaimed water use⁹ and it took approximately an addition nine years to promulgate permitting regulations for reclaimed water.

The Wrentham Premium Outlets is an open-air outlet center that opened in 1997, and was expanded in 1998, 1999, and 2000 which purportedly consists of approximately 616,000 sq ft and 170 retailers. Plans for construction of Gillette Stadium were approved by the Town of Foxborough on December 6, 1999, work on the stadium began on March 24, 2000 and the first official event was on May 11, 2002.

According to MassDEP, only twelve reclaimed water projects have been approved to date and that number includes Gillette Stadium and the Wrentham Premium Outlets which predate adoption of the Commonwealth's regulations in 2009.¹⁰ According to MassDEP, other approved reclaimed water projects include reuse for watering at golf courses, and reuse at manufacturing and office facilities. The process for reclaimed water projects is more arduous, time consuming and expensive than the work needed to increase the flow in the existing WWTF to approximately 1.65 MGD.

B. EPA Reliance on Proposed Smart Sewering Programs is an Equally Misleading Solution.

⁸ <http://www.mass.gov/eea/docs/dep/service/regulations/314cmr20.pdf>

<http://www.mass.gov/eea/agencies/massdep/water/wastewater/wastewater-reclaimed-water.html>

⁹ <http://www.mass.gov/dep/water/reuse.pdf>

¹⁰ <http://www.mass.gov/eea/agencies/massdep/water/wastewater/wastewater-reclaimed-water-faqs.html>

In its RTC concerning the WWTF Flow limit, the Region encourages consideration of "cluster sewer treatment" suggesting this "might be less expensive when costs to expand the central sewer system are considered." RTC A1. Unfortunately, EPA stops short of an actual analysis of the facts choosing instead to reach its desired outcome of trying to impose a lower flow rate at the facility.

As set forth in Concord's Comments, as well as in a letter dated June 20, 2012 (attached as Exhibit B) Concord has, since approval of its CWMP, continued its wastewater planning analysis. Concord recognizes that multiple approaches including on-site disposal systems are likely components of a longer term solution, but EPA's suggestion that such systems should be used in lieu of an increase in the flow from the existing WWTF defies logic and the facts in Concord. Concord's Comment Letter, pp. 2-3.

Region 1 conveniently avoids referring to the fact that the majority of the identified and anticipated demand for wastewater discharge is from areas of Concord that are already served by the existing sewer system. In doing so, Region 1 artificially reaches the conclusion that an increase in the WWTF flow includes the cost of central sewer system expansion thereby falsely reaching the conclusion that cluster sewer treatment is less costly than increasing flow in the WWTF. Concord zoning intentionally steers development toward in-fill projects, Transit Oriented Developments and Planned Housing Development to minimize central sewer system expansion.

Groundwater discharge systems, whether municipally owned and operated or privately owned and operated, are not the only solution to Concord's immediate wastewater capacity needs. Nonetheless, Concord continues to evaluate the possible development of a new groundwater discharge system adjacent to the WWTF with a capacity of 150,000 GPD, at

significant cost likely in the millions of dollars. This is considered a valuable option and one Concord is pursuing, but it is uncontraverted that this system provides a lower disposal capacity, at far higher cost and will take a longer time to permit and make operational than the minor modifications to the WWTF referenced above. Equally important is the fact that minor modifications to increase the WWTF flow would allow Concord to dedicate the monies saved to addressing other important water needs facing the community such as stormwater management and an enhanced inflow and infiltration program through the integrated planning envisioned by the EPA's *Integrated Municipal Stormwater and Wastewater Planning Approach Framework*. (EPA Office of Water and Office of Enforcement and Compliance Assurance, June 5, 2012).¹¹

C. I/I Removal As Source Of Capacity Instead Of Increased Plant Flow.

The Inflow Infiltration (I&I) "assumptions" in the Region's RTC A1 represent a gross oversimplification of estimating I&I and is a factually inaccurate characterization of Concord's I&I program. The industry generally accepts that I&I rates are greatly influenced by age, material, size and length of sewer pipe as well as relative groundwater level and rainfall conditions. The Region fails to account for any of these variables. As a result, the Region erroneously concludes that overall daily flow to the Concord facility includes 0.387 MGD of I&I to support its inaccurate assertion that Concord has a significant amount of I&I and is lacking an I&I program. Proper analysis of the facts in Concord and a comparison of Concord to I&I rates of other municipal systems in the Commonwealth confirm that the Region's assumptions, assertions and conclusion are wholly inaccurate and constitute errors of fact.

As detailed in the Factual and Statutory Background, Concord's sewer system consists of approximately 33.8 miles of sewers, ranging in size from 6 to 27 inches, two large pump stations,

¹¹ http://www.epa.gov/npdes/pubs/integrated_planning_framework.pdf

six smaller lift stations, and a wastewater treatment plant. Approximately 50% (15.4 miles) of Concord's sewer system is composed of clay pipes with much of it dating back to the original sewer system which was installed over 100 years ago

Contrary to the Region's assertion in RTC A1, Concord recognizes that a systematic and sustained I&I program is important to the upkeep of a properly functioning sewer system and Concord does not perform system maintenance solely on the basis of cost effectiveness. Over the past decade, Concord has invested over \$1 million dollars in I&I related activities. This is consistent with Concord's annual budget which earmarks up to \$100,000 for such activities, including flow monitoring, television inspections, smoke testing, dye testing, root control treatment, joint testing and sealing, pipe lining, and replacement of sewer pipe as well as manhole inspections and rehabilitation.

In addition to its systematic and sustained investment in I&I removal activities, Concord is one of the few, if not the only municipality in the Commonwealth that has adopted local regulations that require private property owners to replace older sewer laterals as part of any major site redevelopment project. This municipal sewer regulation is one example of the many efforts that Concord has analyzed and acted upon to improve its management of water resources.

For comparative purposes, and to illustrate the success of Concord's I&I program Concord references the Massachusetts Water Resource Authority's Annual I&I Reduction Report for FY11 which provides a rudimentary comparison of annual I&I rates for its 43 member communities. While it is recognized that system size significantly impacts the daily contribution of I&I on a gallon per day basis, Concord has elected to use a more meaningful metric - I&I as a percentage of total system flow. Using this metric, and for comparative purposes, using the Region's erroneously derived assumption of 0.387 MGD I&I in Concord, it

would represent 35% of the average daily flow to the Concord WWTF in 2010. In comparison, data compiled from 43 MRWA communities during a similar time period show a median percentage of I&I contribution of 49% ADF for all systems with a minimum of 34% and a maximum of 69%. If Concord data was added to this survey, Concord would rate in the top 3 of the 43 communities surveyed - which is hardly appropriate to characterize a community with a significant I&I rate. Analysis of the facts in Concord and a comparison of Concord to the I&I in other municipal systems in the Commonwealth confirm that the Region's assumptions, assertions and conclusion are wholly inaccurate and constitute errors of fact.

5. Region 1 could have addressed Concord flow needs under EPA's *Integrated Planning Memorandum* and with a stepped effluent flow limit, contingent meeting certain special conditions.

As noted above, while the Region encouraged the Town to proceed with its *Integrated Planning* approach, RTC A1, the Region nonetheless issued the permit without delay for the reason that the *Integrated Planning* memorandum provides "permit issuance and the implementation of existing permit and enforcement requirements and activities shall not be delayed while an integrated plan is being developed." Fact Sheet, p. 4.

As an alternative to imposing a flow rate effluent limit of 1.2 MGD, the Region could have set as a special condition a flow rate in the Permit that would have addressed Concord's concerns. The Permit could provide that, if the State supports an increase to the authorized discharge flow during the permit term, the facility would be eligible for an increased flow limit of 1.65 MGD. A special condition such as this with a stepped flow rate is consistent with other Region 1 permits and would support efficiencies in implementing municipal wastewater permitting as contemplated by EPA's *Integrated Planning Memorandum*.

B. Region 1's Aluminum Effluent Limits are without legal or factual basis and an Abuse of Discretion.

The final permit imposes a monthly average effluent limit of 255 ug/l for Total Recoverable Aluminum. The draft permit had proposed a monthly average effluent limit of 306 ug/l. Consequently, the final permit provides for a more stringent limit than that proposed in the draft permit. The Region states that the aluminum limit was changed from the draft permit to the final permit due to a correction in the 7Q10 calculation. RTC A3 – A8.

The Region ignored Concord comments on the aluminum effluent in the draft permit (Concord Comment Letter, pp. 4-5) and made changes from the draft permit to the final permit that Concord did not have any opportunity to address. The Region applied the National Recommended Water Quality Criteria for aluminum, i.e., 750 ug/l for protection against acute aquatic life effects, and 87 ug/l for protection against chronic aquatic life effects. RTC A5. There are no National Recommended Water Quality Criteria for aluminum for protection against human health effects. The Region concluded that an effluent limit is not necessary to satisfy the acute aquatic life criterion, but is necessary to satisfy the chronic aquatic life criterion. RTC A5.

1. The Region applied in this instance inappropriate water quality criteria.

The Region improperly imposed an aluminum limit of 255 ug/L using EPA's National Recommended Water Quality criterion. Proper analysis of the data demonstrates that levels of aluminum upstream of Concord's discharge exceed the Region's proposed limit, indicating elevated aluminum in the River that may be naturally occurring. The EPA's National Recommended Water Quality criterion for aluminum should not apply as, pursuant to 314 CMR 4.05(5)(e), MA DEP adopts the EPA criterion as the state water quality criterion, except where there is site specific criterion or naturally occurring background concentrations are higher. The Massachusetts Surface Water Quality Standards state:

For pollutants not otherwise listed in 314 CMR 4.00, the *National Recommended Water Quality Criteria: 2002, EPA 822R-02-047, November 2002* published by EPA pursuant to Section 304(a) of the Federal Water Pollution Control Act, are the allowable receiving water concentrations for the affected waters, unless the Department either establishes a site specific criterion or determines that naturally occurring background concentrations are higher. Where the Department determines that naturally occurring background concentrations are higher, those concentrations shall be the allowable receiving water concentrations.

A significant number of background concentrations for aluminum exceed the EPA Recommended Water Quality criterion for acute aquatic life. RTC A5. As a result, the National criterion should not apply, and the background concentration of aluminum should become the relevant water quality criterion.

The Region is well aware that the National Water Quality criteria for aluminum may be significantly over-protective, and not applicable to Massachusetts rivers. While Massachusetts Surface Water Quality Standards, which, as noted above, default to the National criteria have been in effect since 1989, the Region has for the past 24 years not used it as a mechanism to set aluminum limits in the Town's Permit. The Region now does so, but at time when it knows that site specific criteria is needed to set proper limits.

This waterway is not listed as impaired for aquatic life. Thus, aluminum concentrations in the River are not causing or contributing to aquatic life impairment in the River. Aluminum concentrations in eastern Massachusetts streams are regularly observed to be above the National chronic criterion of 87 ug/l. If ever there was an instance for which a site specific criterion is needed in lieu of application of a National criterion, this is it. In Massachusetts, aluminum criteria for Massachusetts waters is currently being evaluated which will likely result in new criteria. The rush to impose an effluent limit based on National criteria that are clearly not

applicable nor representative of conditions in this and other waterways in eastern Massachusetts is inappropriate and constitutes “bad science”.

Moreover, EPA's own guidance indicates that the water quality criteria for aluminum may be significantly over-protective. See EPA's National Recommended Water Quality Criteria at footnote S, attached as Exhibit E. The Region is also aware that other EPA Regional offices have approved revisions of the EPA's National Recommended Water Quality criterion for aluminum in West Virginia and New Mexico.¹² Further, the Region is aware that both water and wastewater utilities are concerned about such low limits because of the value of various aluminum salts in both water and wastewater treatment. Importantly, published studies of aluminum salts in water stand for the proposition that the EPA's National Recommended Water Quality Criteria for aluminum are too conservative. Environment Canada conducted an extensive evaluation of the matter and determined that direct inputs of aluminum from the use of aluminum salts in treatment facilities is unlikely to cause organisms to be exposed to harmful levels of aluminum, and that aluminum from such use is “not entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity.” Hence these discharges are not contributing to chronic aquatic life effects.¹³

¹² See Letter of Jon M. Capacasa, Director, US EPA Region III Water Protection Division (“Capacasa”) to Lisa McClung, Director Water and Waste Management Division, West Virginia Department of Environmental Protection (“WVDEP”) dated January 9, 2006, and Capacasa Letter to WVDEP dated September 8, 2009 attached as Exhibit F. See Letter of William K. Honker, (“Honker”) P.E., Acting Director, Water Quality Protection Division, US EPA Region 6 to James P. Bearzi, Chief, Surface Water Quality Bureau, New Mexico Environment Department (“NMED”) dated April 30, 2012 and Honker Letter to NMED dated June 18, 2012 attached as Exhibit G.

¹³ See Canada Gazette, Part I, Vol. 143, No. 6 Ottawa, Saturday February 7, 2009, attached as Exhibit H and Canadian Environmental Protection Act, 1999; Priority Substances List Assessment Report Follow-up to the State of Science Report, 2000; Aluminum Chloride, Aluminum Nitrate, Aluminum Sulphate, Chemical Abstracts Service Registry Numbers 7446-70-0, 13473-90-0, 10043-01-3; Environment Canada and Health Canada, November 2008, attached as Exhibit I.

It is also widely recognized that the toxicity of specific metals like aluminum will vary from one waterway to another. For this reason, EPA provides an opportunity for effective modification of a specific criterion via the application of a Water-Effect Ratio. In developing the National criteria, EPA goes out of its way with a special footnote to point out that there are “three major reasons why the use of Water-Effect Ratios might be appropriate.” Footnote S, Exhibit E. EPA does not provide an analogous footnote for any other parameter in its Aquatic Life Criteria Table. Clearly EPA has contemplated that there is need to develop site specific criteria for aluminum. In its footnote to the National aluminum criteria, EPA notes the following: “EPA is aware of field data indicating that many high quality waters in the U.S. contain more than 87 ug/l aluminum...” The footnote also promotes the position that a total recoverable aluminum criterion is not appropriate in surface waters with the following statement: “In surface waters, however, the total recoverable procedure might measure aluminum associated with clay particles, which might be less toxic than aluminum associated with aluminum hydroxide.” Consequently, EPA questions its own use of a total recoverable aluminum criterion.

Concord requests that the Board review the revised aluminum conditions. The Region’s decision to impose these limits involves an exercise of discretion and/or an important policy consideration that the Board should, in its discretion, address. The record in this matter indicates that while the Region claims to have completed additional analysis since issuance of the draft permit, the Region has not developed the proper basis to impose the revised aluminum permit limits, and given the Region’s own uncertainty about the proper criterion to apply, the aluminum limit does not merit deference from the EAB.

2. The Town is unfairly being asked to shoulder the burden for compliance with aluminum criteria.

The Town is located in a watershed where there are at least eight wastewater treatment plant discharges upstream of the location of the discharge from the Town's wastewater treatment plant. All of these facilities discharge aluminum. If the National chronic aquatic life criterion of 87 ug/l is determined applicable in this instance, then the upstream discharges will have effectively consumed all of the assimilative capacity for aluminum in the River at the Town's point of discharge. Therefore, simply due to its position in the watershed, the Town suffers disproportionately and is being required to bear a disproportionate burden for the control of aluminum in this watershed. If an aluminum effluent limit is considered necessary in this watershed, then it must be determined on a watershed basis, not on an individual point source basis. The discharges cannot be disconnected in this instance. The appropriate mechanism would be the development of a TMDL for aluminum that would consider the application of site specific criteria and water effect ratios. The Region has neither developed a watershed analysis and/or a TMDL for aluminum, nor has it provided MassDEP or the Town the opportunity to do so.

3. The Region used a faulty method to determine the 7Q10 flow.

In deriving the revised 7Q10 flow used in the final permit, the Region relied upon stream flow data for the period April 1993 through March 2012 at the Maynard and Lowell gauges. In the draft permit, the Region relied upon a stream flow record for the period 1971 through 2000 at these same gage stations. No explanation for the change is provided. The revised period of record results in lower 7Q10 values, and hence more stringent effluent limits.

The Town's discharge is located between the two stations mentioned above. Therefore, the Region estimated a 7Q10 flow at the location of the Town's discharge. Yet in preparing that

estimate, the Region relied upon wastewater treatment plant flow data only for the months of June through September and only for the years 2010 through 2012. Using treatment plant flows for only recent years may overestimate the contribution from these discharges (assuming their discharge flows were less in earlier years) and decrease the calculated amount of natural flow in the River.

The Region has not demonstrated that its approach as described above is valid, and may have resulted in a faulty value for the 7Q10 at the location of the Town's discharge. The 7Q10 is an important variable in the calculation of the aluminum effluent limit and the Region's errors need correction.

4. The method the Region uses to calculate effluent limits results in excessively stringent values for those limits.

RTC Appendix A pages 4 through 8 of 19 provides the Region's revised calculation of the aluminum effluent limit. The method appears to use the principles presented in EPA's Technical Support Document for Water Quality-based Toxics Control, March 1991 (often referred to as the TSD). Page 8 of 19 of RTC Appendix A shows the Region's calculation of the chronic wasteload allocation (WLA) for aluminum, which it then set equal to the monthly average effluent limit. The TSD notes that setting the average monthly limit equal to the chronic WLA is a practice that has been used, but "EPA discourages the use of this approach" since it does not address effluent variability. (See TSD page 104). Applying the TSD methods for derivation of permit limits (see TSD pages 98 – 103) results in a less stringent effluent limit in this instance.

5. The Region has not fairly represented the Town's effluent aluminum concentrations.

The effluent database relied upon by the Region is from the period January 2009 through January 2011. Clearly, there are more recent data, and those data show improving effluent

concentrations (i.e., decreasing aluminum levels). This is a natural consequence of the Town's continuing efforts to optimize its treatment system. Lower effluent concentrations accompanied by the application of site specific criteria and/or a water effect ratio may well lead to a conclusion that an effluent limitation is not needed.

6. River assimilative capacity and effluent aluminum concentrations vary with season.

In preparing the revised effluent limit, the Region has not given any consideration to a seasonally varying effluent limit for aluminum. (For example, the permit includes a seasonally varying effluent limit for phosphorus.) Due to higher stream flows during the winter season as compared to the summer season, greater dilution will occur and therefore a less stringent effluent limit can be specified during the winter season.

For all of these reasons, the Board should remand the Permit to the Region with the direction to revise the aluminum limit.

C. The Region's pH Effluent Limit is Clearly Erroneous and an Abuse of Discretion.

The final permit requires that effluent pH not deviate outside the range 6.5 to 8.3 SU. The draft permit had proposed a range of 6.0 – 8.3 SU, the same limit as in the prior permit. Consequently, the final permit provides for a more stringent limit than that set in the prior permit and the draft permit.

The Region explained in the Fact Sheet that the 6.0 – 8.3 SU pH range requirements would be maintained “[b]ecause the receiving waters has not shown any adverse effects due to occasional low pH in the discharge.” Fact Sheet, p. 9. In explaining the change from 6.0 – 8.3 SU to 6.5 -8.5 SU, the Region claims that on reexamination of upstream data collected during WET testing upstream, the River does not always meet the 6.5 minimum specified in the State's Water Quality Standards, and that alkalinity of the receiving water is, at times, low. On this

ground alone, the Region concludes "...it is not clear that the Concord River has sufficient buffering capacity to assimilate low-pH discharges..." RTC C6. No further basis was provided.

Not only is the need for the above change speculative, but the actual value chosen for the lower limit of the pH range is arbitrary. Why not 6.3? Why not 6.1? The Region provides no evidence showing that the River is unable to assimilate a discharge with pH as low as 6.0. No doubt, the Region would not accept the kind of speculative basis that it is relying on from a permittee seeking a change to a pH limit. The change and its basis are completely insufficient and without factual or legal support.

Under 40 C.F.R. § 124.17(a)(1), the Region must specify the reasons for any changes to the draft permit. By so doing, "the Region ensures that interested parties have an opportunity to adequately prepare a petition for review and that any changes in the draft permit are subject to effective review." *In re Amoco Oil Co.*, 4 E.A.D. 954, 980 (1993). "Because it is not clear" is clearly insufficient. RTC C6. Remand on this issue is required. *See id.* (remanding permit where the Region failed to provide adequate explanation for a change in draft permit and, thus, failed to provide the parties "with an opportunity to prepare an adequately informed challenge to the permit addition").

As the Board has stated repeatedly, permit writers are expected to express finding with clear, unambiguous, declarative words supported by appropriate analysis and references to record evidence. *See In re City of Marlborough*, 12 E.A.D. 235, 252 (2005) (permit remanded where the permit issuer failed to "sufficiently explain[] where or how [finding] is reflected in the record"). Absent such an explanation, there is no showing of any "considered judgment" necessary to support the applicable permit determination. *See In re Austin Powder Co.*, 6 E.A.D. 713, 720 (1997) (remand due to lack of clarity in permitting authority's explanation); *In re Ash*

Grove Cement Co., 7 E.A.D. 387, 417-18 (1997) (remanding RCRA permit because permitting authority's rationale for certain permit limits was not clear and therefore did not reflect considered judgment required by regulations). If the permitting authority does not articulate its analysis in the record, the Board "cannot conclude that [the analysis] meets the requirement of rationality." *In re Shell Offshore*, 13 E.A.D. 357, 386 (2007), quoting, *In re Gov't of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323, 342 (2002)).

Furthermore, a final permit that differs from a proposed permit and is not subject to public notice and comment must be a "logical outgrowth" of the proposed permit. *NRDC v. EPA*, 279 F.3d 1180, 1186 (9th Cir. 2002). See 40 C.F.R. § 124.14(b) (standard for reopening public comment period). See, e.g., *Indeck - Elwood LLC*, 13 E.A.D. 126 145-47 (2006) (remanding when the permit issuer did not provide an opportunity for public comment on a significant addition to the permit); *In re Amoco Oil Co.*, 4 E.A.D. 954, 981 (1993) (remanding permit and directing Region to reopen public comment period when Region failed to provide public with opportunity to prepare an adequately informed challenge to a permit change); *In re GSX Servs. of S.C., Inc.*, 4 E.A.D. 451, 467 (1992) (remanding and directing Region to reopen public comment period when public was not given opportunity to comment on significant permit changes); see also *In re Old Dominion Power*, 3 E.A.D. 779, 797 (1992) (explaining that despite the discretionary wording of the regulations, "there may be times when a revised permit differs so greatly from the draft version that additional public comment is required"). The Region's Fact Sheet states that the receiving waters had not shown any adverse effects due to occasional low pH in the discharge and notes only two pH values exceeding 8.3. SU. Based on this information, Concord could not have reasonably anticipated that the Region would change the pH limit from the prior permit range or from the position stated in the Fact Sheet. In its comments, Concord's

said that the “Town agrees with pH range as provided in the draft permit,” and commented that the 6.0 SU “acknowledges natural dilution from the Concord River which is more advantageous than requiring the unnecessary introduction of additional chemical treatment.” Concord Comment Letter, p. 6.

What more could it say? The new pH limit in the Permit is not a logical outgrowth of the previous draft and, accordingly, Concord was denied the opportunity to provide meaningful comment on the issue. The Region’s previous statements indicated it believed that the 6.0 – 8.3 SU was adequate, but those statements never indicated a belief that it might change. The Region has completed an about-face between the draft and final permits and has done so without articulating a basis or providing an explanation. Procedurally the Region’s action has denied Concord the opportunity to provide comment and instead forced Concord to seek relief by this appeal to the EAB. Such an about-face is not a logical outgrowth of the original proposal, and the Board can not allow the Region “to pull a surprise swicheroo on regulated entities.” *In re: District of Columbia Water and Sewer Authority*, 13 E.A.D. 714, 762 (2008), quoting, *Envtl. Integrity Project v. EPA*, 425 F.3d 992, 996 (D.C. Cir. 2005).

The permit does provide a condition that would allow a change to the revised pH range, to a range not less restrictive the 6.0 – 9.0 SU, provided the permittee obtains an approval letter from the State demonstrating to the State’s satisfaction “that as long as discharges to the receiving water from a specific outfall are within a specific numeric pH range the naturally occurring receiving water pH will be unaltered.” But, until “written notice is received by certified mail from the [Region] indicating the pH limit range has been changed, the permittee is required to meet the permitted pH limit range in the [Permit].” (Permit Part I.F). The Region has this backward. The Region must have the data and grounds for setting the limit. The Region has

turned the permitting process on its head and impermissibly attempts to shift its burden as regulator under the Clean Water Act to Concord as the regulated entity/permittee. The Board should remand the Permit to the Region with the direction to revise the pH limit to the prior limits - 6.0 to 8.3 SU – and clarify that it is the Region’s responsibility to develop information on buffering capacity that would justify a change.

Finally, the data upon which the Region relied to change the pH limit demonstrate that Concord WWTF discharge is not having a deleterious effect on downstream River pH. The Region cites 11 measurements for pH upstream of the Concord WWTF discharge, all of which have 6.5 SU or higher but for one measurement at 6.3 SU. RTC C6. This one value hardly substantiates the Region’s claim that the Concord River is not in compliance with the Massachusetts Water Quality Standards for pH. The Region further asserts that upstream alkalinity in the River is low and therefore the River is vulnerable to acidic inputs. RTC C6. While the Concord WWTF effluent may generally have pH levels below 7.0 SU, it is unfair to characterize it as an acidic input.

In considering the Region’s claim that the Concord WWTF discharge might reduce pH in the River below 6.5 SU, Concord has assembled available data for pH in the River below the Concord discharge. It shows the following:

1. 1990 Concord River Survey

Data for pH were collected downstream of the Concord WWTF discharge, but upstream of the Billerica WWTF discharge at River Mile 4.0. See Exhibit J attached. Measurements for pH were completed on July 11, 1990 and on August 22, 1990. The results were 7.5 SU and 6.6 SU, respectively. Alkalinity was 33 and 25 mg/l, respectively. These values (pH and alkalinity) are similar to those mentioned by the Region at RTC C6, issued with the final permit. Based on

this information the Concord WWTF discharge has not had a negative effect on downstream River pH. While this data is over 20 years old, as demonstrated below, it is nonetheless representative of current conditions in the River.

2. Billerica WWTF WET Testing Database

In connection with its WET testing program, Billerica measures ambient pH and alkalinity in the River. See Exhibit K attached. Those data are available from Massachusetts DEP files. Considering the more recent data from March 2006 through March 2012, a total of 27 measurements are available for pH and 28 measurements are available for alkalinity. For pH, the range of values was 6.5 to 7.7 SU, with an average of 7.12 SU, i.e., slightly alkaline, not acidic. Nineteen of the measurements were 7 SU or higher, and only eight of the measurements were less than 7 SU. For alkalinity, the range of values was 5 to 68 mg/l, with an average of 26 mg/l. These measurements are consistent with the data from the 1990 survey mentioned above, suggesting that conditions with regard to these two parameters have not noticeably changed in twenty years.

The above data demonstrate that the Concord WWTF discharge is not having a deleterious effect on downstream River pH. The data cited by the Region at RTC C6 for ambient pH and alkalinity upstream of the Concord WWTF discharge show an average pH of 6.8 SU, with a range of 6.3 to 7.23 SU, and an average alkalinity of 24 mg/l, with a range of 12.5 to 40.7 mg/l. These values are indeed quite similar to those cited above, indicating that conditions upstream and downstream of the Concord WWTF are also similar and even a bit more alkaline (i.e., higher pH). Therefore, the Region's concern that the Concord WWTF discharge will have a deleterious effect on River pH is unfounded. The Board should remand the Permit to the Region with the direction to revise the pH limit to the draft permit limits.

D. Region 1's Requirement for Monitoring of Di(2-ethylhexyl) Phthalate is Clearly Erroneous and an Abuse of Discretion.

The draft permit proposed and the final permit requires that the Town conduct quarterly monitoring for di(2-ethylhexyl) phthalate (DEHP). This decision is apparently based on four data points. RTC Appendix A, p.16. One data point was non-detect and the other three were between 6.6 and 19 ug/l.

The National Recommended Water Quality Criteria for DEHP are established for protection against carcinogenic human health effects - 1.2 ug/l where consumption of water and organisms occurs, and 2.2 ug/l where consumption of only organisms occurs. Clearly no one is consuming River water at the point of discharge from the Town's wastewater treatment plant. The Town of Billerica uses the River as a source of water supply further downstream (approximately 4-5 miles downstream).

In its comments, Concord noted that trace levels of DEHP, similar to the levels detected in its effluent, are universally detected, and asked the Region to remove the monitoring requirement from the permit, or alternatively, that monitoring be reduced with an "opt-out" provision if monitoring provides no value. Concord Comment Letter, p. 6.

In its response to comments, the Region states that the data "in its present quantities . . . exceed the human health criteria before dilution in the receiving water," and that, because there is a drinking water source downstream, "there is ample justification for the monitoring requirement." RTC A13.

The facts cited by the Region hardly demonstrate "ample justification" for this new monitoring requirement. First, while the Region acknowledged in the Fact Sheet that there is no reasonable potential for WWTF effluent to cause or contribute to an exceedance of the human health criteria for DEHP, in its response to comments, the Region sets forth for the first time its

human health criteria analysis based on 314 CMR 4.03(3)(d). (RTC Appendix A page 17 of 19). For carcinogenic human health impacts, the receiving water harmonic mean flow is used to determine the need for effluent limitations. 314 CMR 4.03(3)(d). The Region states that the harmonic mean flow in the Concord River is about 7 times the 7Q10 flow, i.e, $26.1 \times 7 = 183$ cfs leading to a dilution factor of approximately 100. At that dilution factor, even the highest observed effluent concentration would not result in a receiving water concentration exceeding either of the human health criteria for DEHP. Second, the Region acknowledges that DEHP breaks down quickly in the presence of oxygen in a stream. (RTC Appendix A page 17 of 19). Consequently, DEHP will dissipate quickly, long before it ever has the potential to impact the Billerica water supply intake. Third, the Region acknowledges that DEHP is “commonly detected in the environment due to the wide spread use of plastic products.” DEHP is ubiquitous, especially at levels that are equivalent to but a few drops of water in a swimming pool. Finally, the Region acknowledges that the DEHP sampling and analysis itself can give rise to detections, informing that the Town should be aware that stringent QA/QC should be exercised in such sampling and analysis.

For all of these reasons, the Town should not be burdened with an additional sampling analysis requirement. The Region has not justified this requirement. The monitoring requirement for DEHP is clearly erroneous an abuse of discretion. The permit should be remanded with the direction to the Region to strike this requirement.

The Region provided no response to Concord’s request that if the DEHP monitoring requirement is not eliminated, monitoring be reduced with an “opt-out” provision if monitoring provides no value. Concord Comment Letter, p. 6. Thus, in the alternative, the Board should remand the permit directing the Region to provide such an “opt-out” provision if the monitoring

requirement is not eliminated. Such an “opt-out” provision should be reasonably based on eight data points collected seasonally, and for monitoring to cease provided that the data remains at the same level.

E. Region 1’s Mandate for Collection System Mapping, Preparation of a Collection System Operation and Maintenance Plan, and Submission of Annual Reports on the Same are Unnecessarily Burdensome, Clearly Erroneous, Contrary to Law and an Abuse of Discretion.

In its comments, Concord objected to the provisions at Part I.C. of the Draft Permit requiring a Collection System Mapping and Operations and Maintenance Plan, and annual reporting, on the grounds that they are too prescriptive, require a significant level of effort and paperwork, expand greatly upon what could be reasonably be considered NPDES authority and prescribe elements of a program not necessary in a NPDES permit. Concord Comment Letter, p. 5. Concord noted it already has a robust mapping system as well as regular operation and maintenance procedures in place, and asked the draft permit be modified to provide a more general requirement for proper mapping and an operation and maintenance plan, and strike the annual reporting requirement. *Id.*

The Region chose not to modify the permit. The Region’s stated basis for Collection System Mapping and Operations and Maintenance Plan is clearly erroneous and contrary to law. The Region justifies its Operations and Maintenance requirements, which it acknowledges have only recently been included as specific permit conditions found in Parts I.C, I.D, and I.E in all reissued municipal permits, “as reasonable and logical practices that will ensure ‘proper operation and maintenance.’” RTC A9. As a NPDES permittee, Concord is required to “properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) . . . to achieve compliance with the conditions of this permit.” 40 CFR 122.41(e). Nothing at 40 CFR 122.41(e), or elsewhere in the regulations, suggests that the

Region has authority to prescribe the detailed mechanisms or steps by which a permittee is to achieve compliance or otherwise suggests that requiring mapping and Operations and Maintenance plans will assure proper operation and maintenance. To the contrary, 40 CFR 122.41(e), says 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 a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.” Nothing about mapping or O&M Plans. Thus, the Region has no authority to require mapping and O&M Plans.

All that the Region can offer to justify its mandate that Concord generate mapping and a O&M plan based on elements dictated by the Region is that they “are reasonable” and are “now being included as standard requirements in NPDES permits for POTWs in both NH and MA.” The Region's response ignores that Concord already has a robust mapping system and regular operation and maintenance procedures in place. The Region makes no reference to what Concord already has and is doing, and makes no suggestion that is has ever examined Concord’s mapping or plan, assessed their quality, or made any finding that Concord’s efforts to “properly operate and maintain all facilities and systems of treatment and control” under 40 CFR 122.41(e) are somehow deficient. It instead imposes the same requirement on all MA and NH NPDES permit holders without giving any consideration to what each facility is doing to assure compliance with 40 CFR 122.41(e). Without such an individual analysis, the Region’s action can not be characterized as “reasonable” or “practical.”

The mandate on the permittee is to comply with 40 CFR 122.41(e). Permittees knows this. There are industry practices and standards that each facility individually chooses to use to achieve compliance with 40 CFR 122.41(e). *See e.g.*, The American Public Works Association

(APWA), American Society of Civil Engineers (ASCE) National Association of Clean Water Agencies (NACWA) and the Water Environment Federation's (WEF), *Core Attributes of Effectively Managed Wastewater Collection Systems* (July 2010) <http://www.nacwa.org/images/stories/public/2010-08-02fca.pdf> . (Noting EPA has not established national guidance for design or operation of sanitary sewer systems). The NPDES permitting regulations do not say a Regional office of EPA can impose permitting conditions more specific than those set forth at 40 CFR 122.41(e) simply because the Region believes they are "a reasonable and practical practice" and has included them in other permits.

Finally, The Region's response that "smaller towns with fewer financial resources than the Town of Concord have complied with the O&M plan" (RTC A9) misses the point. Concord has a robust mapping system and operation and maintenance procedures in place. It works for the Town. The eleven items listed in the Permit to be included in such mapping and the seven items required for the plan (Permit Part I.C. 4. 5.) are subject to interpretation and may not be the best way to achieve compliance with 40 CFR 122.41(e). There is no reason for Concord to adopt or follow the Region's framework for such mapping and plans, and submit a report annually and be subject to violation if it does not, to assure that Concord complies with a specific regulatory requirement set forth at 40 CFR 122.41(e) where its current mapping and plans have worked to achieve that outcome. While the Region says its O&M requirements "are intended to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment," there is nothing in the record indicating that Concord's existing mapping and O&M plans do not already minimize that risk. As result, the O&M requirements are clearly erroneous and should be stricken.

Connected with the Region's O&M and reporting requirements is Part I.A.1, footnote 7 (Page 3 of 14), providing that the "chemical dosing rate for all chemicals added for the purpose of phosphorus removal shall be reported for each day of the month." The Region's "rationale for this requirement is that reporting of dosing level will provide verification that nutrient removal occurs throughout the month without more frequent effluent monitoring." RTC Appendix A, page 4 of 19. The WWTF's CoMag process allows for rapid changes in phosphorus removal by adjusting the dosing levels of the chemicals used in the process. *Id.*

The rationale of using chemical dosing as a compliance "verification" for nutrient removal is clear error. Concord's WWTF receives influent that varies in quality and quantity daily. As such, the facility may require more or less chemicals to be added to meet phosphorus limits on the day it is also required to sample for phosphorus. On other days, the CoMag may provide the same level of phosphorus removal utilizing less chemicals, due to different volume and loading of the influent. Also, the use of chemicals is dependent on the performance of upstream biological treatment, which may vary, especially in colder months. Comparing the chemical dose for different days may lead the Region to believe that the Town is using higher chemicals to meet the phosphorus limits on the day of sampling, where in fact, changes in chemical dosing are inherent to the treatment process and still results in phosphorus levels that are lower than the applicable permit limit.

Part I.A.1, footnote 7 (Page 3 of 14) also requires Concord to report with its DMRs if any additional phosphorus sampling is conducted, including process control samples and the individual phosphorus results. Taking process samples to optimize treatment processes are an integral part of any treatment process be it a water treatment or a wastewater treatment. Requiring the operators to log these samples in the DMR will introduce additional and

unreasonable burdens, drawing their attention away from performing the core duty of operating and maintaining the treatment facility to achieve environmental compliance. Like the O&M plan and reporting requirements above, the permittee's duty is to meet a standard. These prescriptive requirements expand greatly upon what could reasonably be considered NPDES authority. The Board should consider these requirements and remand to the Region with the direction to remove them from the Permit.

RELIEF SOUGHT

Concord respectfully seeks for review by the EAB the appeal terms and provisions of the final NPDES Permit. After such review, Concord requests:

1. the opportunity to present oral argument in this proceeding and a briefing schedule for this appeal to assist the EAB in resolving the issues in dispute;
2. a remand to EPA Region 1 with an order to issue an amended NPDES Permit that conforms to the EAB's findings on the terms and provisions appealed by Concord; and
3. any such other relief that may be appropriate under these circumstances.

Respectfully submitted,

TOWN OF CONCORD, DEPARTMENT OF
PUBLIC WORKS

By its Attorneys

/s/

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STATEMENT OF COMPLIANCE WITH WORD LIMITATIONS

I hereby certify that this petition for review, including all relevant portions, contains less than 14,000 words.

/s/

Robert D. Cox, Jr.

Date: September 9, 2013

ATTACHMENT A
TERMS OR PROVISIONS FROM NPDES
PERMIT NO. MA0100668 SUBJECT TO THE TOWN OF CONCORD'S APPEAL

	Part	Page of Permit	Term or Provision Appealed	Subject Matter
1.	Part I. A. 1. 1.	Page 2 of 14	Flow 1.2 MGD	Flow
2.	Part I. A.1. 1.	Page 2 of 14	Di (2-Ethelhexyl) Phthalate	Phthalate limit
3.	Part I. A. 1. 1.	Page 2 of 14	Total recoverable aluminum	Aluminum limit
4.	Part I. A. 1.	Part 3 of 14 Note 7.	Chemical dosing rate and reporting	Chemical dosing rate and reporting
5.	Part I. A. 1. b.	Page 5 of 14	pH Limit	pH limit
6.	Part I. C. 1., 2. 3.	Pages 6-7 of 14	Provisions requiring description in Collection System O&M Plan required pursuant to Section C. 5.	O&M Plan
7.	Part I. C. 4.	Page 7 of 14	Collection System Mapping requirements	Collecting system mapping
8.	Part I. C. 5.	Page 8 of 14	Collection System Operation and Maintenance Plan	O&M Plan
9.	Part I. C. 6.	Page 9 of 14	Annual reporting requirements	Annual reporting
10.	Part I. F.	Page 13 of 14	Special Conditions - pH limit	pH limit

CERTIFICATE OF SERVICE

I, Robert D. Cox, Jr., hereby certify that on this 9th day of September, 2013, I served a copy of the foregoing Petition for Review, Statement of Compliance with Word Limitations on the parties identified below by U.S. first class mail, postage prepaid.

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