BEFORE THE ENVIRONMENTAL REVIEW APPEALS COMMISSION

STATE OF OHIO

BOARD OF COMMISSIONERS FAIRFIELD COUNTY Appellant, v. JOSEPH KONCELIK, DIRECTOR OF ENVIRONMENTAL PROTECTION Appellee.	:	Case No. ERAC 235929

D E C I S I O N

Rendered on May 12, 2011

Stephen P. Samuels, Esq., Elizabeth E. Tulman, Esq., Joseph Reidy, Esq., Linda Mindrutiu, Esq., for Appellants

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This matter comes before the Environmental Review Appeals Commission ("ERAC," "Commission") upon the July 27, 2006 Notice of Appeal filed by Appellant Board of Commissioners of Fairfield County ("Fairfield County"). The action underlying the instant appeal is the Director of Ohio Environmental Protection Agency's ("OEPA," Ohio EPA," "Agency," "Director") June 30, 2006 issuance of a National Pollutant Discharge Elimination System ("NPDES") permit to Fairfield County. A de novo hearing in this matter was held before the Commission from February 9 through February 13, 2009, during which all documents in the certified record were moved into the record and

admitted into evidence. Based on a review of the evidence admitted at the de novo hearing and applicable laws and regulations, the Commission finds the Director's final action of issuing the NPDES permit to Fairfield County unlawful for failure to satisfy the requirements of Ohio Revised Code ("R.C") 6111.03(J)(3).

FINDINGS OF FACT

Background on Water Quality

{¶1} The United States Congress established the Clean Water Act ("CWA") in 1972. Section 101(a) of the CWA declared that the purpose of the CWA was to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

{¶2} States are required to adopt water quality standards to protect public health or welfare, enhance the quality of water, and serve the purposes of the Clean Water Act. As such, Ohio EPA oversees Ohio's State Water Quality Management ("WQM") Plan as promulgated under Sections 303 and 208 of the Federal Water Pollution Control Act ("FWPC"). State WQM plans describe and promote efficient and comprehensive programs for controlling water pollution from point and nonpoint sources within defined geographic areas as designated by state governors. 33 U.S.C Section 1288(a); www.epa.state.oh.us/dsw/mgmtplans/208whatiswqmpm.asp; 40 CFR 131.2.

{¶3} The Areawide Water Quality Management Plan, or "208 Plan," is a discrete component of Ohio's WQM Plan. Named after Section 208 of the CWA, a 208 Plan framework authorizes the development and implementation of numerous 208

Plans to address pollution in certain regional areas as identified by the governor of each state. Once developed, 208 Plans are subject to a formal adoption process during which Ohio EPA submits a 208 Plan to the governor, who certifies the plan to the U.S. EPA Administrator. The U.S. EPA Administrator then reviews the state's 208 Plan and either approves or rejects the plan. 33 U.S.C. Section 1288(a).

{¶4} Relevant to the instant appeal, Section 303 of the CWA requires each 208 Plan to address nine (9) distinct elements, including setting total maximum daily loads ("TMDL") for water pollutants. The TMDL program, established under Section 303(d) of the CWA, focuses on identifying and restoring polluted rivers, streams, lakes, and other surface water bodies by requiring a written, quantitative assessment of water quality problems and contributing sources of pollution. This quantitative assessment specifies the amount a pollutant must be reduced to meet water quality standards, allocates pollutant load reductions, and provides the basis for taking actions necessary to restore a water body. 33 U.S.C. Section 1228(A)(3); 33 U.S.C. 1313.

Fairfield County's Waste Water Treatment Works

{¶5} Fairfield County operates a waste water treatment works facility ("WWTW," "Tussing Plant" "Plant") located at 10955 Tussing Road, Violet Township, Fairfield County in Pickerington, Ohio. The Tussing Plant serves approximately six thousand, mostly residential, customers and also treats the filter backwash water from the County's nearby water treatment plant. The Tussing Plant is located on the east side of Blacklick Creek, a few hundred yards west of State Route 256 and

approximately one-half mile south of I-70. The Tussing Plant's effluent is discharged at River Mile ("RM") 11.0. Testimony Vogel.

{¶6} Two golf courses are located in the vicinity of the Tussing Plant. Blacklick Creek Golf Course is located along the west bank of Blacklick Creek, approximately one-quarter of a mile north of the WWTW, while Turnberry Golf Course, also located on the west bank, is situated just upstream of the Plant's discharge point between RM 11.0 and RM 9.5. Several large culvert pipes drain the Turnberry Golf Course into Blacklick Creek at various points along the course. Appellant's Exhibits ("Ex.") C, D; Testimony Vogel.

{¶7} Just downstream from the Plant's outfall, on the east bank of Blacklick Creek, is a ravine that drains a shopping mall complex. Further downstream at RM 10.3, a tributary drains a large residential area of Violet Township. The areas north, south, and east of the Plant are also developed with residences and commercial buildings. Testimony Markowitz, Vogel.

{¶8} Fairfield County believes that the location and entities surrounding the WWTW have a significant impact on the overall water quality in the area. According to Ohio EPA's Robert Miltner, who was admitted at the hearing as an expert in water quality standards and aquatic biology, and Mike Bolton, who was admitted as an expert in macroinvertibate ecology, non-point source discharges such as commercial and residential development can adversely influence water quality. It is undisputed that the greater amount of urbanization along a stream, the greater the potential impact on

water quality, including nutrients and pesticides flowing from a golf course. Testimony Bolton, Markowitz, Mendel, Miltner.

{¶9} In 2005, Fairfield County made six million dollars worth of improvements to the Plant, including improving the level of water treatment at the facility and increasing the volume of water that could be treated from two million gallons per day ("MGD") to three MGD. Kerry Hogan, former Director of Public Utilities for Fairfield County and current Director of Water Resources in the Wastewater Group of the Columbus office of URS (an engineering firm), testified at the hearing as an expert in wastewater treatment design. Mr. Hogan, who was involved in the planning and design of the 2005 improvements, testified that representatives of Fairfield County consulted with Ohio EPA regarding plant design and function throughout this expansion. Upon completion of the 2005 expansion, the Tussing Plant was rendered land-locked by commercial and residential development. Testimony Hogan, Vogel.

{¶10} David Frank, who was accepted at the hearing as Fairfield County's expert in wastewater treatment plant design and water treatment plant design, testified that he was responsible for the design of the Tussing Plant expansion that was completed in 2005. He also prepared and submitted to Ohio EPA the permit to install application and plans associated with this expansion. Mr. Frank testified that the 2002 permit to install application issued for the expansion did not include any provision for direct phosphorus or total dissolved solids ("TDS") removal and that Ohio EPA issued the permit to install without requiring such provisions. He further testified that current monitoring data demonstrate that the phosphorus and TDS limits imposed in the 2006

NPDES permit can not be met by the Tussing Plant as currently configured. Testimony Frank.

2006 NPDES Permit

{¶11} Fairfield County submitted an application for an NPDES permit renewal.[1] Ohio EPA employee John Owen, Environmental Specialist 2, Division of Surface Water, Central Office, reviewed Fairfield County's application for completeness, drafted the NPDES permit, and developed the 2006 Permit limits, including permit limits for phosphorus and TDS. Testimony Owen.

{¶12} Mr. Owen testified that Fairfield County's previous NPDES permit, issued prior to Ohio EPA's development of the 2005 TMDL report for the Big Walnut Creek, only required monitoring for phosphorus. In establishing a phosphorus limit in the current NPDES permit for the Tussing Plant, Mr. Owen referred to Ohio EPA's TMDL for Big Walnut Creek and selected the numerical limit for phosphorus, 0.5 mg/l, as stated in the TMDL. Because he believes that Ohio EPA is required to implement the pollution control measures set out in the TMDL, Mr. Owen believes did not conduct an independent analysis to evaluate whether a phosphorus limit was necessary for the Tussing Plant. Testimony Owen.

{¶13} Mr. Owen selected the TDS limit for the permit by inputting specific parameters, such as estimated (low) stream flow, upstream TDS concentration, and Tussing Plant flow into a software program that generated a calculated TDS limit. As with setting limits for phosphorus, Mr. Owen did not engage in any site-specific

[1] The record does not contain a copy of Fairfield County's application for permit renewal, as such the Commission is unable to pinpoint a precise date on which it was submitted to Ohio EPA.

biological or technical analysis to determine if a TDS limit was necessary or what that limit should be. Testimony Owen.

{¶14} In December 2005, Ohio EPA issued the draft NPDES permit to Fairfield County. On February 7, 2006, Fairfield County timely submitted comments regarding the draft NPDES for the Tussing Plant to Ohio EPA. Of particular relevance to the instant matter are the following comments regarding effluent limits of phosphorus and TDS:

> * * *
>
> The County suggests that the Agency eliminate the 0.5 mg/l **phosphorus** limit for Tussing Road WRF. This overly stringent limit would require the County to implement a chemical feed (or other measures), which would in turn mandate the installation of additional biosolids handling infrastructure. Blacklick Creek is in full attainment of WQS for the area in the vicinity of the Tussing Road WRF and actually improves downstream of the effluent outfall. To the County's knowledge, there have been no algae outbreaks in Blacklick creek. The Water Quality Report (2004) fails to include the largest source of nutrient and organic enrichment to Blacklick Creek in this stretch, the Turnberry Golf Course. In addition, there are several field tiles that discharge to Blacklick Creek along the stretch (upstream and down stream) of the Tussing Road outfall. Imposing a restrictive phosphorus limit on the Tussing Road WRF will not solve a situation created by others; nor should Fairfield County customers be held financially responsible for correcting a 'problem' caused by others. The County believes that more information is needed to determine the cause and extent of nutrient issues, if any, within this stretch of Blacklick Creek. Fairfield County would be amenable to discussing with OEPA a joint cooperative sampling program of Blacklick Creek to determine the extent and causes of any nutrient impairment. Regardless of the final concentration limit, the County requests the monthly loading limit be rounded to the nearest tenth to be consistent with the other permit limits.
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> * * *
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> **Total Dissolved Solids.** (TDS) As of the date of preparing these comments the County has not had the opportunity to **fully** evaluate the WLA that serves as the basis for this (and other) effluent limits. In

> addition, as noted above, the County believes that stream flow used by the OEPA in the model is incorrect. Also, it appears that the Agency used 2004 plant data. Although certainly not unreasonable on its face, the Tussing Road facility was in 'shakedown' mode during part of this year, which likely also impacts the quality of the data set. Finally, before an effluent limit is imposed on the facility, the County would request that it be given an opportunity to gather additional upstream data and evaluate certain housekeeping measures that the County believes may obviate the 'need' for a TDS limit in the permit. (Emphasis sic.) Certified Record ("CR") Items 5, 7, 9; Joint Ex. 11. [2]

{¶15} To address the concerns outlined in Fairfield County's letter, Eric Nygaard, Environmental Specialist, Division of Surface Water ("DSW"), Permits and Compliance section of Ohio EPA, asked Matt Fancher, Ohio EPA, DSW employee in the Modeling and Assessment section, to prepare a memorandum reviewing the basis for the phosphorus limit in the NPDES permit. Mr. Nygaard testified that he did not perform an in-depth evaluation of the biological impact of current or future discharges of phosphorus or TDS from the Tussing Road outfall. He did, however, rely on Mr. Fancher's memorandum dated April 11, 2006, which included a table demonstrating, that based on a 2002 assessment of the Big Walnut Creek basin, Blacklick Creek was in "full-attainment" of its Warm Water Habitat designation. The table also documented sampling results at various river miles upstream and downstream of the Tussing Plant and appeared as follows:

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[2] In preparation for hearing, Fairfield County engaged the expert services of Mr. Frank, the engineer who designed the 2005 plant expansion. Mr. Frank's December 2007 report entitled "Fairfield County Utilities, Tussing Road Water Reclamation Facility (WRF), Permit Compliance Study" examined the Tussing Plant's existing effluent data and the 2006 NPDES permit limits; Total Phosphorus data, reduction costs, and alternatives; and TDS data and reduction alternatives. Based on his data and analysis, Mr. Frank determined that the final permit limit for phosphorus of 0.5 mg/l could only be met with the installation of five million dollars of additional equipment and the TDS limit was not technically feasible. Testimony Frank; Joint Ex. 30.

River Mile Fish/Invert.	IBI	MIwb	ICI	QHEI	Attainment Status	Comment
13.7	46.0	8.5	MG	71.5	FULL	Main St.
11.3	39.0	8.0	48	76.5	FULL	Ust. Tussing WRF
11.14/11.10	*40.0*	*7.0*	*F/F*	*NA*	*NA*	*Tussing WRF Mixing Zone*
11.0	44.0	8.6	38	70.5	FULL	Dst. Tussing WRF
8.8/8.9	46.0	9.4	40	70.5	FULL	Refugee Rd.

Testemony Nygaard; CR Item 6 (emphasis sic).

{¶16} Mr. Fancher's memorandum first began by stating that the Big Walnut Creek TMDL Study recommended a 2,073 kg/yr wasteload allocation for the Tussing Road Plant. Additionally, Mr. Fancher's memorandum outlined the stream conditions as assessed in 2000 and documented in a report titled Biological and Water Quality Study of the Big Walnut Creek Basin. The Commission summarizes and comments on key points in Mr. Fancher's memorandum, as follows:

> 1) A 10-point decline in the ICI[3] score immediately downstream from the Tussing Road outfall. "The decline was caused by an increased predominance of pollution-tolerant taxa * * *" and "indicated mild organic/nutrient enrichment from the Tussing WRF." Despite the 10-point swing, both the upstream and downstream ICI scores met the biocriteria standard used to measure attainment;
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> 2) A greater fluctuation in diurnal dissolved oxygen ("DO") at RM 10.2 than at RM 11.25. Despite the greater fluctuation, all DO levels met numerical DO water quality standards;
>
> 3) A conclusion that the "larger diurnal fluctuation recorded at the downstream site is characteristic of the excessive algal production association with a nutrient enriched condition";

[3] Invertebrate Community Index, or ICI, is a scoring system developed by Ohio EPA to assess the health of aquatic macroinvertebrates in a stream. An ICI is one of the three biocriteria standards Ohio EPA employs to measure attainment of aquatic uses. The other indices measure the health of the fish community in the stream: 1) the Index of Biotic Integrity or IBI; and 2) the Modified Index of well being or MIwb. Ohio Adm.Code 3745-1-07(B) and Table 7-15.

> 4) A "dramatic" increase in total phosphorus immediately downstream of the Tussing Plant; and
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> 5) A generalized concern that future violations of water quality might occur if the flow through the Plant increases at some point in the future. No calculations or documents were included to fully substantiate Ohio EPA's concern. CR Item 6.

{¶17} Additionally, Mr. Fancher conducted the modeling for Fairfield County's NPDES permit employing a simple model, rather than the more complex "receiving stream" model, to calculate loads from nonpoint sources and other sources to Blacklick Creek. The "receiving stream" model, used further upstream from the Tussing Plant but not in the calculations for the NPDES permit, "estimates the changes in chemical constituent or physical parameter in the water quality and sometimes the transport of constitutes along with the flow." Unlike the simple model, the "receiving stream" model accounts for assimilation consistent with the biological community. In other words, the "receiving stream" model accounts for the stream's natural ability to assimilate the constituent, thus the number produced by the simple method may be too conservative given the conditions of the stream. Testimony Fancher.

{¶18} When testifying at the hearing, Mr. Fancher stated that his conclusions were based upon his interpretation of data summaries, and he had never visited Blacklick Creek. He acknowledged that his "knowledge of the stream is limited to what the presented data shows" and that he has never personally witnessed any nuisance growths of algae at Blacklick Creek. Testimony Fancher.

{¶19} During the hearing, Fairfield County responded to several points raised by Mr. Fancher's memorandum, specifically to Ohio EPA's position on phosphorus, dissolved oxygen, and future impairments to the stream.

{¶20} Mr. Markowitz, an expert for Fairfield County, explained the relationship between phosphorus and dissolved oxygen as they impact the stream and its inhabitants. Phosphorus, Mr. Markowitz testified, is essential to plants and aquatic life because without its presence, streams would be unable to support the plant life on which fish and bugs feed. Excessive amounts of phosphorus, however, will produce an overgrowth of plants, and potentially result in a "nuisance."[4] When plants grow in excess, too much dissolved oxygen is generated during the daytime because the plants are photosynthesizing, taking in CO_2 and releasing dissolved oxygen. Then, at night, when the plants no longer engage in photosynthesis, they begin taking in dissolved oxygen and releasing CO_2, a process known as respiration. Thus, in water bodies where excessive plant growth is present, known as eutrophic lakes and streams, the concentration of dissolved oxygen can plummet to very low levels at night as it is adsorbed, yet be very high during the day as it is released. The change between nighttime and daytime dissolved oxygen levels is known as "diurnal swing." Mr. Markowitz further testified that he is unaware of any study or report generating a specific number or phosphorus limit that can be universally applied in all situations. He

[4] Ohio Adm.Code 3745-1-04 provides:

> [t]he following general water quality criteria shall apply to all surface waters of the state including mixing zones. To every extent practical and possible as determined by the director, these waters shall be: * * * (E) Free from nutrients entering the waters as a result of human activity in concentrations that create nuisance growths of aquatic weeds and algae.

believes a stream's simulative capacity, or ability to use phosphorus effectively without generating a eutrophic condition, is dependent on several factors including the stream's habitat, flow, existing aquatic life, and temperature. Testimony Markowitz.

{¶21} Fairfield County also asserted that the dissolved oxygen data cited in Mr. Fancher's memorandum do not establish the presence of a nutrient rich environment downstream of the Tussing plant. In support, Fairfield County sited several concerns about the quality of the data and Mr. Fancher's interpretation. Additionally, Mr. Krejsa, Fairfield County's expert witness who testified about impact evaluation, aquatic biology and ecology, water quality, biological surveys, and biological criteria, asserted that collection of the dissolved oxygen data did not comport with Ohio EPA's own protocol for sampling dissolved oxygen. Specifically, the data reviewed in Mr. Fancher's memorandum was collected over a two day period, rather than the seven day period generally required by Ohio EPA. Sampling over a longer period of time reduces the wide-swinging variables that can affect dissolved oxygen results. Testimony Krejsa.

{¶22} Mr. Markowitz disagreed with Mr. Fancher's conclusion that the larger diurnal swing at RM 10, which is about one mile downstream of the Plant, was determinative that the WWTW was causing excessive nutrient enrichment. Mr. Markowitz explained that in areas where nutrient enrichment is a problem a dense algal mass can be observed, along with a nighttime dissolved oxygen level that violates the water quality standards. By comparison, Mr. Markowitz had recently reviewed an extensive data set of dissolved oxygen measurements in the Columbus area, 38 sites monitored over a summer period. Within the data set he found differences comparable

to those found in Blacklick Creek and observed that such differences were not indicative of algal growth. Notably, in this instance, all dissolved oxygen data collected from Blacklick Creek met the warm water habitat water quality standards applicable Blacklick Creek, and no nuisance growths of algae have ever been observed in the creek downstream of the Plant. Testimony Markowitz.

{¶23} Fairfield County also asserted that the locations selected for sampling dissolved oxygen would not likely lead to an accurate determination of whether the effluent from the Tussing Plant was impacting water quality. Mr. Michael Mendel, Fairfield County's witness admitted in this hearing as an expert in aquatic biology, macroinvertebrate ecology, and biostatistics, testified that golf courses adjoin well over one mile of Blacklick Creek. Golf courses are known contributors of significant quantities of nitrogen and phosphorus into nearby water bodies, and he has personally observed excessive algal growth resulting from run-off from golf courses. Mr. Mendel believes that the golf courses closely located to Blacklick Creek are a likely explanation for the diurnal swings observed in the stream downstream of the Tussing Plant. Testimony Mendel.

{¶24} In his final analysis, Mr. Fancher also expressed concern about future impairment of Blacklick Creek due to increased Plant flows. Mr. Fancher analyzed Ohio EPA's concerns about increased Plant flow and stated the following:

> * * * It is possible the increased loading from the Tussing WRF has exacerbated the enriched condition found in Blacklick Creek. That possibility is what the TMDL recommendation is intended to protect against. Should the instream condition below the Tussing WRF discharge in fact deteriorate, then it could very likely be found in nonattainment when next assessed. * * * CR Item 6.

{¶25} Fairfield County counters by arguing that the basis for imposing a phosphorus limit can not be whether some worsening might occur, rather Ohio EPA must present a valid factual foundation to establish that limiting the concentration of phosphorus to the final limit of 0.5 mg/l is necessary to assure that phosphorus will not cause or contribute to a violation of biocriteria. To demonstrate that Ohio EPA did not engage in independent analysis of the phosphorus, Fairfield County points to Nygaard's testimony where he states the following:

> Q: And you did not independently evaluate the biological impact that discharge of phosphorus from the plant would have on the stream at 3 million gallon per day flow, did you?
>
> A: I did not.
> Testimony Nygaard, Transcript Volume III, p. 198.

{¶26} It is undisputed that nutrient enrichment in the form of algal growth has never been observed below the Tussing Plant and neither have other characteristics of nonattainment typically associated with an increased phosphorus load. Testimony Krejsa, Markowitz, Mendel, Vogel.

{¶27} Ultimately, on June 30, 2006, the Director issued NPDES permit number 4PU0004*HD ("Permit") to Fairfield County for its wastewater treatment plant. The NPDES permit became effective on August 1, 2006 and contained a phosphorus limit of 0.5 mg/l and a TDS limit of 1646 mg/l concentration and 18692 mg/l monthly loading. Joint Ex. 4.

{¶28} On July 27, 2006, Fairfield County timely appealed the Director's issuance of the 2006 Permit and later amended its Notice of Appeal on October 11, 2007.

Fairfield County's Amended Notice of Appeal sets out the following eleven assignments of error:

- The discharge limitation of Total Dissolved Residue (Solids) ('TDS') are unreasonable and unlawful.

- The discharge limitations on Total Phosphorus [("TP")] are unreasonable and unlawful.

- The schedule of compliance for TDS is unreasonable and unlawful.

- The schedule of compliance for Phosphorus is unreasonable and unlawful.

- Ohio EPA acted unlawfully, in violation of OAC 3745-33-04(C)(3), when it issued the renewal permit to Tussing Road WRF in 2006 with limits more stringent that those developed by Ohio EPA when it issued the PTI for Fairfield County's construction of new facilities in 2002.

- Ohio EPA acted unlawfully and unreasonably in imposing water-quality based limits for TP and TDS in the renewal permit for Tussing Road WRF because the receiving stream, Blacklick Creek, is already in attainment of [Warm Water Habitat].

- Ohio EPA acted unlawfully and unreasonably in imposing limits for TP and TDS in the renewal permit for Tussing Road WRF without consideration of the numerous non-point sources contributing these pollutants to Blacklick Creek.

- Ohio EPA acted unlawfully and unreasonably in imposing a TDS limit in the renewal permit for Tussing Road WRF because there is no technology that can be added to the recently constructed Tussing Road WRF to meet the TDS limit.

- Ohio EPA acted unlawfully and unreasonably in imposing TP limits in the renewal permit for Tussing Road WRF because the cost of compliance to Fairfield County and its users is economically unreasonable and would impose an undue financial hardship on the County and its residents out of proportion to the benefits, if any, that would be achieved by meeting the limits.

- Ohio EPA acted unlawfully and unreasonably in imposing TP and TDS limits in the renewal permit for Tussing Road WRF because Ohio EPA has

not demonstrated that the Tussing Road WRF is the primary source of nonattainment of WQS in Blacklick Creek, as required by OAC 3745-1-07(A)(6)(b).

- Ohio EPA acted unlawfully and unreasonably, and in violation of ORC 6111.03(J)(3), in imposing a (sic) TP and TDS limits in the renewal permit for Tussing Road WRF because Ohio EPA did not give consideration to or base its decision on the economic reasonableness and technical feasibility of removing either TP or TDS from the waste water treated at the Tussing Road WRF to meet the limits in the 2006 renewal permit. Case File Items A, U.

{¶29} At the outset it is important to recognize a critical distinction in this matter is how the Director and Fairfield County view the TMDL process and its impact on NPDES permitting in the state of Ohio. The Director asserts that in geographic areas where TMDLs have been established, NPDES permits must be consistent with the limits set out in the TMDL. Conversely, Fairfield County believes that current in-stream data should be evaluated and incorporated into the Director's decision to impose a discharge limit, even if the limit Ohio EPA selected is precisely the limit expressed in the TMDL. Fairfield County further argues, that when selecting a discharge limit, the Director must consider economic reasonableness and technical feasibility of removing the pollutant from the discharge. The Director counters that he is required to issue permits consistent with the CWA and need only consider the economic and technical factors to the extent consistent with the CWA.

{¶30} Substantively, the assignments of error in this matter can be divided into two categories - those relating to phosphorus limits and those relating to TDS limits. Before addressing Fairfield County's assignments of error, the Commission will first examine the overall condition of Blacklick Creek.

Condition of the Blacklick Creek

{¶31} At hearing, both Fairfield County and Ohio EPA presented data regarding the condition of Blacklick Creek. Biological surveys and Ohio EPA's biocriteria assessments involve evaluating the health of fish and macroinvertebrates, as well as an assessment of their habitats. As briefly noted earlier in this opinion, the principal biological evaluation tools employed by Ohio EPA are the Index of Biotic integrity (IBI), the Modified Index of Well-Being (MIwb), and the Invertebrate Community Index (ICI). These three indices assess numerous factors, including species richness, trophic composition, diversity, presence of pollution-tolerant individuals or species, abundance of biomass, and the presence of diseased or abnormal organisms. "Habitat drives everything," and the impact of a discharger on aquatic life can be assessed by selecting appropriate sample locations upstream and downstream of the discharger. Testimony Bolton, Krejsa.

{¶32} A good upstream data collection point, or "reference site," is a location that is representative of stream conditions, absent the pollutant source being evaluated, and yet, is otherwise similar to the conditions found downstream of the discharge source. Ohio EPA chose RM 11.3, which is just north of the Tussing Plant, as a reference site for macroinvertebrates. For fish data, Ohio EPA chose as its reference sites RM 13.7 and RM 11.3 in 2000 and RM 11.3 in 1996. Testimony Krejsa, Markowitz.

{¶33} Fairfield County also collected data in the stream and contracted with EnviroScience in 2007 to assess whether the discharge from the Tussing Plant was causing an adverse impact on Blacklick Creek and to determine whether a direct

correlation between water quality and TDS or phosphorus discharges was present. At the time of EnviroScience's work, the Tussing Plant discharge flows were near 2.0 MGD, which is approximately 50% higher than the discharge flows during Ohio EPA's 2000 study. Testimony Krejsa, Markowitz.

{¶34} Though EnviroScience followed Ohio EPA macroinvertebrates sampling procedures, it believes it enhanced the accuracy of the data results by placing Hester-Dendy[5] samplers in locations more carefully designed to isolate the Tussing Plant's impact on Blacklick Creek. Specifically, Fairfield County asserted that Ohio EPA's upstream reference site, placed upstream of a tributary that drains surface water from a residential community and road run-off, failed to accurately reflect the quality of the water reaching the Tussing Plant. Thus, because Ohio EPA's upstream data did not account for all pollutants already in the stream just prior to the water reaching the Plant, Fairfield County believes Ohio EPA's assessment of the impact of the Tussing Plant effluent was skewed such that it depicted the Tussing Plant as having a greater impact on water quality than was actually occurring. Testimony Vogel.

{¶35} In contrast, EnviroScience situated its upstream reference site below the tributary at the Tussing Road Bridge to better account for the impacts of residential development and road run-off. In other words, Fairfield County believes that EnviroScience's upstream reference point more accurately assessed water quality as it reached the Tussing Plant because it included the external impacts of road run-off and

[5] A Hester-Dendy sampler is a multiple plate device designed for substrata sampling of macroinvertebrate organisms found in rivers, streams, lakes, and tidal flats. Testimony Mendel.

residential activity that was present, whereas Ohio EPA's reference site excluded those impacts. Testimony Markowitz.

{¶36} EnvironScience's downstream sampling site was located in essentially the same place as Ohio EPA's. Neither Ohio EPA's nor EnviroScience's downstream sampling site could fully isolate effects of the Plant's effluent, because a shopping center parking lot and nearby golf course both drain into the Tussing Plant's mixing zone. Testimony Markowitz.

{¶37} In addition to selecting different reference points, Ohio EPA and EnviroScience employed slightly different data collection procedures and calculations for sampling macroinvertebrates. Ohio EPA counted and identified a portion of the organisms in the collected samples, about 2%, and then multiplied the hand-counted results by a specific factor to calculate expected percentages and make outcome predictions. Conversely, in an attempt to more precisely characterize the sample, EnviroScience's Mr. Mendel counted and identified each organism collected in the Hester-Deny sampling devices. Testimony Mendel.

{¶38} Predictably, the results gathered from EnvironScience's and Ohio EPA's reference sites showed great disparity due to the distinctly different upstream Hester-Dendy placements. EnviroScience reported an ICI score of 34, while Ohio EPA reported an ICI score of 48. The results from the downstream sampling were similar to each other; Ohio EPA's ICI score downstream was 38 in their 2000 study, while in 2007, EnviroScience documented an ICI score of 36. Significantly, both upstream and

downstream ICI scores are considered in attainment for water quality standards for that area. Appellant's Ex. Q; Testimony Mendel.

{¶39} Mr. Mendel's hand-count of ICI-related taxa provided great insight into the types of macroinvertebrates thriving in the stream. In the upstream reference location, Mr. Mendel found fewer pollution-sensitive species than he did in the downstream location, and predictably, the upstream location had more pollution-tolerant species than the downstream location. Mr. Mendel testified that if the Tussing Plant were adversely impacting the Blacklick Creek downstream, he would have observed the opposite outcome, an increase in the pollution sensitive taxa downstream of the WWTW's outfall. Appellant's Ex. O; Testimony Mendel.

{¶40} Fairfield County also argued that, when evaluating the upstream fish and macroinvertebrate data, Ohio EPA neglected to account for a concept called "within site" variability. "Within site" variability is a phenomenon documented in benthic communities in watershed studies conducted by Ohio EPA employee, Jeff DeShon. Mr. DeShon leads Ohio EPA's fish and macroinvertebrates biosurvey group, in which Mike Bolton is also employed. At the hearing, Fairfield County submitted an Ohio EPA field sampling manual, which included a field study conducted in 1987, titled "Biological Criteria for the Protection of Aquatic Life: Volume III: Biological Field Sampling and Laboratory Methods for Assessing Fish and Macroinvertebrate Communities." In this volume of the study, Mr. DeShon obtained ICI scores from 19 juxtaposed Hester-Dendy samplers in an anthropogenically unimpacted area of Darby Creek with similar natural conditions to assess whether there was any natural variability between the samples

themselves. Mr. DeShon reported an ICI score range of 28 to 44, revealing a 16-point difference between the high and low ICI scores and a 10-point difference between the median and high ICI score. Testimony Krejsa, Mendel.

{¶41} Mr. Krejsa, Fairfield County's expert, believes because a stream is a dynamic biological system, the wide range of the ICI scores represents the natural variability that is present in valid, but wide ranging, ICI data scores. Mr. Mendel also reviewed Ohio EPA's Darby Creek ICI scores and compared the score range to the ICI results compiled by Ohio EPA in Blacklick Creek upstream of the Plant. Looking at the scope of natural variability, Mr. Mendel believed that the ICI score of 48 upstream of the Tussing plant was a number consistent with a "within site" median ICI score of 39.25[6]. The difference between the high ICI score and the median ICI score in Darby Creek was 14 points, while in Blacklick Creek the difference was only 10 points. To Mr. Mendel, the ICI score of 48, though an anomaly when considered with the other data points in the stream, was within the site's natural variability. Thus, the 10 point drop observed downstream from the Tussing Plant was not remarkable or uniquely definitive of the Blacklick Creek's condition - and certainly not so given that the downstream site was also considered in attainment as defined by Ohio EPA. Appellant's Ex. Q; Testimony Krejsa, Mendel.

{¶42} Additionally, Mr. Mendel testified about an inherent error that can occur if a pilot study is not conducted prior to subsampling, the technique used by Ohio EPA to calculate ICI scores. Mr. Mendel asserted that subsampling, by its nature, introduces

[6] The median ICI score for all data points immediately downstream and those upstream and in attainment in Blacklick Creek is 39.25 Testimony Krejsa.

errors; therefore, the samples must be randomized and a pilot study must be first conducted to assess how well the subsampling represents the total sample. He further argued that because Ohio EPA did not randomize the samples or conduct a pilot study, Ohio EPA's ICI data from its upstream and downstream points are insufficient to draw a reliable conclusion regarding the differences between the two macroinvertebrate populations. Testimony Markowitz, Mendel.

{¶43} Mr. Mendel's final point regarding the ICI data collected by Ohio EPA addressed biological consistency. He queried whether the data "makes sense" when viewed in light of the other data collected in and known about the stream. Mr. Mendel asked the Commission to consider Ohio EPA's own fish data, the IBI and MIwb scores, along with Ohio EPA's classification of the stream as in attainment. Both the IBI and MIwb numbers improved downstream of the Tussing Plant, which is highly significant because as all the testifying experts agreed, fish communities are more sensitive to phosphorus conditions than are macroinvertebrate communities. Testimony Mendel.

{¶44} Further, Robert Miltner, one of the authors of a report titled, "Associations Between Nutrients, Habitat, and the Aquatic Biota in Ohio Rivers and Streams," commonly referred to as the Associations Report, demonstrated the presence of a strong direct correlation between habitat and biocriteria and correspondingly, a lesser direct correlation between nutrients (predominately phosphorus) and biocriteria. In the Blacklick Creek at the upstream sampling location the Qualitative Habitat Evaluation Index[7] ("QHEI") is 76.5, while downstream the QHEI is 70.0. Mr. Mendel believes the

[7] The Qualitative Habitat Evaluation Index is an index based on the following six metrics: 1) substrate; 2) instream cover; 3) channel morphology; 4) riparian and bank condition; 5) pool and riffle

drop in the QHEI score is a more plausible explanation for the differentiation between the upstream ICI scores and the 10-point lower downstream ICI score. Joint Ex. 21; Testimony Mendel.

{¶45} And finally, in his expert capacity, Mr. Mendel concluded that to a reasonable degree of scientific certainty he believes Ohio EPA lacked sufficient data to support imposing a phosphorus limit of 0.5 mg/l. Testimony Mendel.

{¶46} Based on the evidence presented at hearing, the Commission constructed the following chart to better understand the health of the fish communities in Blacklick Creek:

River Mile	IBI/MIwb in 1996	IBI/MIwb in 2000
RM 13.7	—	46/8.5
RM 11.3	38/7.8	39/8.0
Plant	—	—
RM 11.0	39/8.6	44/8.6

{¶47} Fairfield County did not conduct in-stream data collection and analysis for the fish community, as it did for the macroinvertebrate population. Instead, Fairfield County assembled the information previously collected by Ohio EPA and asked an expert to review and interpret the data.

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quality; and 6) gradients. These metrics have been shown to correlate with stream fish communities. "Highest scores are assigned to the habitat parameters that have been shown to be correlated with streams that have high biological diversity and biological integrity, with progressively lower scores assigned to less desirable habitat features. www.epa.ohio.gov/portals/35/documents/BioCrit88_QHEIIntro.pdf

{¶48} Of the three biocriteria utilized by Ohio EPA to assess stream conditions, ICI, IBI, and MIwb, the fish-related indices, IBI and MIwb, are more sensitive to the impacts of phosphorus, meaning excess phosphorus would present itself sooner in the fish-related data and have a greater impact on the fish community than on the macroinvertebrates population. Or, as Mr. Krejsa opined, fish are more adversely affected by excess phosphorus than are macroinvertebrate organisms. Appellant Exs. R, S; Joint Ex. 21; Testimony Krejsa, Mendel.

{¶49} After reviewing the data compiled by Ohio EPA, Mr. Krejsa concluded to a reasonable degree of scientific certainty that phosphorus discharged from the Tussing Plant was not having an adverse impact on the fish community downstream of the WWTW's discharge point. Ohio EPA presented no data to contradict this assertion. Testimony Krejsa.

Big Walnut Creek TMDL History/Phosphorus

{¶50} The presence of a TMDL in the underlying matter is relevant to the ultimate question of whether the Director acted lawfully and reasonably by including in Fairfield County's NPDES permit a Phosphorus limit of 0.5 mg/l. As such, the Commission finds it helpful to review the background and development of Big Walnut Creek's TMDL.

{¶51} Ohio EPA performed a study of the Big Walnut Creek Watershed and developed a TMDL and implementation strategy titled Total Maximum Daily Loads for the Big Walnut Creek Watershed ("TMDL Report") dated August 19, 2005. The TMDL Report identified areas of nonattainment of water quality standards in the Big Walnut

Creek Watershed, which were mostly attributed to nutrient enrichment or excess phosphorus. Further, the TMDL Report stated that, within Big Walnut Creek, a total phosphorus concentration reduction of 62% is necessary to achieve phosphorus targets for that water body. Ohio EPA submitted the TMDL Report to the governor, who then certified the report and forwarded it to U.S. EPA. On September 26, 2005, U.S. EPA notified the Director, via letter and enclosed "decision document," that it had approved the TMDL Report for the Big Walnut Creek Watershed. Appellant Ex. M, N. Joint Ex. 13.

{¶52} To address nutrient enrichment in the Big Walnut Creek Watershed, Ohio EPA's TMDL included specific numeric limits for phosphorus for numerous discharge locations, including the Tussing Plant. Based on the data gathered and the calculations set out in Table 5.2F of the Big Walnut Creek TMDL, Ohio EPA assigned to Fairfield County a total phosphorus limit of 0.5 mg/l for the Tussing Road WWTW. Appellant Ex. M, N; Joint Ex. 13.

{¶53} Ohio EPA maintains that the limits set out in the TMDL are limits that are legally required to appear in an applicable NPDES permit. And, because Fairfield County failed to object to the TMDL report, Ohio EPA believes Fairfield County is now precluded from challenging the phosphorus limit established in the TMDL and subsequently incorporated into the NPDES permit.

{¶54} As noted above, the TMDL program focuses on identifying and restoring polluted rivers, streams, lakes, and other surface water bodies. The TMDL for the Big Walnut Creek Watershed listed certain areas of Blacklick Creek as in nonattainment

and certain areas as in attainment. None of the sections identified as being in nonattainment, however, were near the Tussing Plant; most nonattainment locations were sited in the headwaters of Blacklick Creek, approximately ten miles upstream of Fairfield County's WWTW. Noting that the area of greatest impairment was upstream and due mostly to residential sewage treatment failures, Mr. Markowitz argued that imposing a phosphorus limit of 0.5 mg/l would not correct problems occurring in the headwaters of Blacklick Creek. Joint Ex. 8; Testimony Markowitz.

{¶55} In response to Ohio EPA's assertion that it is required by law to impose 0.5 mg/l Phosphorus limit in the NPDES permit, Fairfield County argues that U.S. EPA's decision document accompanying its approval of the Big Walnut Creek TMDL Report provides the Director with flexibility in imposing limits by stating that:

> 5. Wasteload Allocations (WLAs)
>
> EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to individual existing and future point sources (40 C.F.R. §130.2(h), 40 C.F. R. §130.2(j)). * * *
>
> The individual WLAs may take the form of uniform percentage reductions or individual mass based limitations for dischargers where it can be shown that this solution meets WQSs and does not result in localized impairments. *These individual WLAs may be adjusted during the NPDES permitting process.* If the WLAs are adjusted, the individual effluent limits for each permit issued to a discharger on the impaired water must be consistent with the assumptions and requirements of the adjusted WLAs in the TMDL. If the WLAs are not adjusted, effluent limits contained in the permit must be consistent with the individual WLAs specified in the TMDL. If a draft permit provides for a higher load for a discharger than the corresponding individual WLA in the TMDL, the State/Tribe must demonstrate that the total WLA in the TMDL will be achieved through reductions in the remaining individual WLAs and that localized impairments will not result. All permittees should be notified of any deviations from the initial individual WLAs contained in the TMDL. EPA does not require the establishment of a new TMDL to reflect these revised

> allocations as long as the total WLA, as expressed in the TMDL, remains the same or decreases, and there is no reallocation between the total WLA and the total LA.[8] * * * (Emphasis added.) Appellant Ex. N

Total Dissolved Solids

{¶56} The second main issue in the instant matter involves the limits Ohio EPA placed on TDS in Fairfield County's NPDES permit. Total Dissolved Solids is the generic name for substances that dissolve in water. If the concentrations of certain TDS substances are too high, TDS can harm or kill aquatic life. Both the draft and final NPDES permits set TDS limits at 1646 mg/l on a monthly average and an average loading limit of 18,692 kg/day to be effective on August 1, 2009, approximately 36 months after issuance of the permit. Joint Ex. 4, 8.

{¶57} In 2000, Ohio EPA conducted two sampling events in the Tussing Plant mixing zone[9] to determine if the effluent was toxic to aquatic life. Ohio EPA found that it was not. Testimony Bolton.

{¶58} At hearing, Mr. Owen testified that when selecting effluent limits for an NPDES permit, the Director first determines which applies - a federally-established treatment-technology based limit or a state-imposed water quality effluent limit, a WQBEL[10]. If U.S. EPA has established a treatment-technology based limit for a

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[8] The term load allocation ("LA") relates to the loading capacity attributed to existing and future non-point sources and to the natural background data of the water body. Appellant's Ex. N.

[9] "'Mixing zone' means an area of a water body contiguous to a treated or untreated wastewater discharge. The discharge is in transit and progressively diluted from the source concentration to the receiving system concentration. The mixing zone is a place where wastewater and receiving water mix, not a place where wastes are treated." Ohio Adm.Code 3745-1-02(B)(58)

[10] "'Water quality based effluent limitation' or 'WQBEL' means an effluent limitation determined on the basis of water quality standards (contained in Chapter 3745-1 of the Administrative Code) or waste

particular pollutant, that limit is the minimum level the Director must incorporate into the permit. Absent a U.S. EPA treatment-technology based limit for a particular pollutant, the Director must establish a WQBEL for that pollutant. In reaching a WQBEL determination, the Director first assesses the "reasonable potential for that pollutant to cause or contribute to an excursion of any applicable water quality standard" set forth in Ohio Adm.Code 3745-1. Reasonable potential is determined by comparing the preliminary effluent limit ("PEL"), or waste load allocation, to the projected effluent quality ("PEQ"). Ohio EPA relied on Fairfield County's monitoring data to calculate the PEQ. In simplest form, Ohio EPA calculates "reasonable potential" by comparing the average PEL to the average PEQ and the maximum PEL to the maximum PEQ. Then, based on the outcome of the PEQ-PEQ comparisons, the pollutant is placed in one of five groups.[11] Ohio Adm.Code 3745-2-06, 3745-33-01; Joint Ex. 8; Testimony Owen.

{¶59} Mr. Owen explained that TDS is classified as a Group Five Pollutant and detailed the calculations Ohio EPA employed to assess TDS at the Facility. Additionally, Mr. Owen noted the survey data compiled for TDS indicted that TDS would exceed the statewide water quality standard of 1500 mg/l. Joint Ex. 8; Testimony Owen.

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load allocation procedures (contained in Chapter 3745-2 of the Administrative Code)." Ohio Adm.Code 3745-33-01(VV).

[11] Each of the five groups is assigned a water-quality based permit condition recommendation. Pollutants assigned to Group Five represent the highest likelihood of excursions, or violations, of the water quality standards and require the inclusion of a WQBEL in an NPEDES permit. Monitoring requirements may be imposed for pollutants assigned to Groups One through Four, as these groups represent the lowest likelihood of excursions and therefore, do not require the imposition of permit limits as do the pollutants assigned to Group Five. Ohio Adm.Code 3745-2-06; Testimony Owen.

{¶60} Ohio EPA arrived at TDS limits by using a loading test, set out in Ohio Adm.Code 3745-2-06-(b)(1)(b) (sic), that determines how much of a pollutant can be discharged without exceeding water quality criteria. Specifically, Mr. Owen calculated the effluent load by multiplying the design flow of the Plant by the permissible concentration and the background concentration of the stream to determine the amount of TDS that can be discharged into the stream. Mr. Owen made no assessment of the biological data when assigning the TDS limit. Joint Ex. 8; Testimony Owen.

{¶61} Fairfield County's expert, Mr. Mendel, reviewed Ohio EPA sampling data and assessed the biological impact of TDS discharges into the stream; he did not, however, attempt to replicate the computer-generated, calculated TDS limits established by Mr. Owen. Testimony Mendel.

{¶62} Fairfield County believes the inclusion of the selected TDS limit in the NPDES permit was unlawful, and further, the Director lacked a valid factual foundation for its inclusion in the Permit. Fairfield County asserts that TDS discharged from the Plant is not toxic to aquatic life as evidenced by Ohio EPA's own data. Ohio EPA conducted two TDS sampling events in the Tussing Plant mixing zones as part of the 2000 Big Walnut Creek assessment. Ohio EPA concluded that the effluent was not toxic, a conclusion supported by the IBI, MIwb, and ICI scores near the site. Mr. Mendel reviewed the Whole Effluent Toxicity[12] ("WET") tests performed by Ohio EPA on the Plant's effluent and noted that the WET tests revealed that the effluent was "not toxic to aquatic organisms." He further stated that if the effluent were toxic, the toxicity

[12] Whole Effluent Toxicity tests evaluate the toxicity of undiluted effluent on aquatic organisms. Testimony Markowitz.

would have presented itself in lower IBI, Mlwb and ICI scores. Indeed, finding no toxicity threat in the mixing zone, Ohio EPA no longer requires Fairfield County to perform WET tests on the Plant's effluent. Joint Ex. 4; Testimony Bolton, Markowitz, Mendel.

{¶63} Mr. Frank, who was responsible for the design of the Plant's 2005 expansion, concluded that Fairfield County lacked any technically feasible options to treat or remove TDS. He first considered the most common method of treating TDS, reverse osmosis membrane, which filters the wastewater at the molecular level to remove the salt ions. Mr. Frank stated that if Fairfield County utilized this method several hundred gallons of TDS-heavy wastewater would need to be hauled from the facility daily. Mr. Frank also reviewed the no-discharge alternative, which requires storing then land-applying the treated wastewater. He calculated that approximately 130 acres of land would be necessary to construct an adequate number of storage ponds to house about 90 or 120 days worth of wastewater, which he concluded would be adequate storage to ensure that land application could occur in an appropriate manner. And finally, Mr. Frank evaluated Ohio EPA's suggestion that Fairfield County could dilute the wastewater with water from the wells the County uses to supply its water treatment plant. Mr. Frank discarded this solution because the groundwater itself contains TDS, and the aquifer from which the wells draw is already depressed due to current operational standards and more stress on the aquifer would not be an advisable solution for Fairfield County. Testimony Frank.

{¶64} Mr. Frank testified that although he was aware that in arid states such as Arizona TDS is being removed from water so that the water can be reused, he knew of none in Ohio. Notably, Mr. Owen, Ohio EPA's NPDES permit drafter, was unaware of whether any publicly owned treatment plants in Ohio were treating TDS. Testimony Frank, Owen.

{¶65} The Director asserts that he is not required to consider the economic reasonableness or the technical feasibility of phosphorus or TDS removal. Relying on Ohio Revised Code (R.C.) 6111.03(J)(3), the Director asserts that he is only required to consider economic reasonableness or technical feasibility "to the extent consistent with" the CWA and that any economic reasonableness or technical feasibility analysis that might have been considered could not override the Director's obligation to impose water quality criteria promulgated in the CWA. Testimony Owen.

CONCLUSIONS OF LAW

{¶66} Revised Code 3745.05 sets forth the standard ERAC must employ when reviewing a final action of the Director. The statute provides, in relevant part, that "[i]f, upon completion of the hearing, the commission finds that the action appealed from was lawful and reasonable, it shall make a written order affirming the action, or if the commission finds that the action was unreasonable or unlawful, it shall make a written order vacating or modifying the action appealed from." R.C. 3745.05.

{¶67} The term "unlawful" means "that which is not in accordance with law," and the term "unreasonable" means "that which is not in accordance with reason, or that

which has no factual foundation." *Citizens Committee to Preserve Lake Logan v. Williams* (1977), 56 Ohio App.2d 61, 70. This standard does not permit ERAC to substitute its judgment for that of the Director as to factual issues. *CECOS Internatl., Inc. v. Shank* (1992), 79 Ohio App.3d 1, 6. "It is only where [ERAC] can properly find from the evidence that there is no valid factual foundation for the Director's action that such action can be found to be unreasonable. Accordingly, the ultimate factual issue to be determined by [ERAC] upon the de novo hearing is whether there is a valid factual foundation for the Director's action and not whether the Director's action is the best or most appropriate action, nor whether the board would have taken the same action." Id.

{¶68} In cases "[w]here qualified, credible expert witnesses disagree on a matter within their expertise, the Commission defers to the decision of the Director." *Tube City Olympic of Ohio v. Jones* (Mar. 5, 2003), Case No. 994681, 203 WL 1154125 *6. See also, *Copperweld Steel Co. v. Shank* (Oct 24, 1989, Case No. EBR 781787, 1989 WL 137282, *8 (where "the question of what levels of treatment or design are necessary to protect public health or ground water are the subject of legitimate debate or dispute between qualified experts, the Board will defer to the action of the Director where that action is otherwise reasonable and lawful").

{¶69} The Commission is required to grant "due deference to the Director's 'reasonable interpretation of the legislative scheme governing his Agency.'" *Sandusky Dock Corp. v. Jones* (2005), 106 Ohio St.3d, 274, citing *Northwester Ohio Bldg. & Constr. Trades Council v. Conrad* (2001), 92 Ohio St.3d 282; *State ex rel. Celebrezze v. National Lime & Stone Co.* (1994), 68 Ohio St.3d 377; *North Sanitary Landfill, Inc. v.*

Nichols (1984), 14 Ohio App. 3d. The deference is not, however, without limits. (See e.g., *B.P. Exploration and Oil, Inc., et al v. Jones*, Ruling on Motion for Summary Adjudication and Final Order, issued March 21, 2001, in which the Commission noted that such deference must be granted to the Director's interpretation and application of his statutes and rules, "particularly if the Director's interpretation is not at variance with the explicit language of the regulations.")

{¶70} Ohio Revised Code 6111.03(J)(1) authorizes the Director to issue permits for the discharge of wastes into "waters of the state, and for the installation or modification of disposal systems or any parts thereof in compliance with all requirements of the Federal Water Pollution Control Act * * *." The Director shall deny a permit or renewal if, among other things, the "director determines that the proposed discharge or source would conflict with an areawide waste treatment management plan adopted in accordance with section 208 of the Federal Water Pollution Control Act; * * *" R.C. 6111.03(J)(2)(b).

{¶71} Ohio Revised Code 6111.03(J)(3) states the following:

> To achieve and maintain applicable standards of quality for the waters of the state adopted pursuant to section 6111.041 of the Revised Code, the director shall impose, where necessary and appropriate, as conditions of each permit, water quality related effluent limitations in accordance with sections 301, 302, 306, 307, and 405 of the Federal Water Pollution Control Act and, *to the extent consistent with that act, shall give consideration to, and base the determination on, evidence relating to the technical feasibility and economic reasonableness of removing the polluting properties* from those wastes and to evidence relating to conditions calculated to result from that action and their relation to benefits to the people of the state and to accomplishment of the purposes of this chapter. (Emphasis added.)

{¶72} Similarly, state regulations governing the issuance of NPDES permits require the Director to deny an application for a permit or renewal thereof if the Director "determines that the proposed discharge or source would conflict with an areawide waste treatment management plan adopted in accordance with section 208 of the act; * * * ." Ohio Adm.Code 3745-33-04(A)(2)(b). Further, the criteria for decision by the Director require that the permit not "result in a violation of any applicable laws." Ohio Adm.Code 3745-42-04(A)(2).

{¶73} A required component of a 208 Plan, a TMDL for a particular pollutant is defined as:

> "the sum of the existing and/or projected point source, nonpoint source, and background loads for the pollutant to a specified * * * water body segment. A TMDL sets and allocates the maximum amount of a pollutant that may be introduced into the water and still ensures attainment and maintenance of water quality standards." 40 C.F.R. 130.6(c)(1); Ohio Adm.Code 3745-2-02(A)(63).

{¶74} Simply stated, a TMDL plan establishes TMDLs for a particular water body or watershed. Ohio Adm.Code 3745-12-2(A)(2). Section 303(d) of the CWA does not specifically require an implementation plan for TMDLs, but does, however, require that wasteload allocations be implemented through NPDES programs. More specifically, a TMDL plan "shall be determined as the sum of all significant existing or projected loads of a pollutant to the TMDL assessment area from point sources, nonpoint sources, and background sources. The sum of the loads shall not be greater than the loading capacity of the receiving water for the pollutant minus the sum of a specified margin of safety and any capacity reserved for future growth." Ohio Adm.Code 3745-2-12(B).

{¶75} A TMDL plan need not bring the water body into attainment all at once.

> A TMDL implementation plan may be based on attaining water quality standards over a period of time, with specific controls on individual sources being implemented in stages. Where implementing a TMDL implementation plan will not immediately attain water quality standards, the TMDL implementation plan shall reflect reasonable assurances that water quality standards will be attained in a reasonable period of time. Ohio EPA shall determine the reasonable period of time in which water quality standards will be met considering, at a minimum, the following factors:
>
> (1) Receiving water characteristics;
>
> (2) Persistence, behavior and ubiquity of pollutants of concern;
>
> (3) Type of remediation activities necessary;
>
> (4) Available regulatory and non-regulatory controls; and
>
> (5) Other requirements for attainment of water quality standards. Ohio Adm.Code 3745-2-12(E).

{¶76} As noted in our Findings of Fact, U.S. EPA's decision document accompanying its approval of Ohio EPA's Big Walnut Creek TMDL provides the Director with authority to adjust individual WLAs and states the following:

> * * *
>
> The individual WLAs may take the form of uniform percentage reductions or individual mass based limitations for dischargers where it can be shown that this solution meets WQSs and does not result in localized impairments. *These individual WLAs may be adjusted during the NPDES permitting process. If the WLAs are adjusted, the individual effluent limits for each permit issued to a discharger on the impaired water must be consistent with the assumptions and requirements of the adjusted WLAs in the TMDL.* If the WLAs are not adjusted, the effluent limits contained in the permit must be consistent with the individual WLAs specified in the TMDL. *If a draft permit provides for a higher load for a discharger than the corresponding individual WLA in the TMDL, the State/Tribe must demonstrate that the total WLA in the TMDL will be achieved through*

> *reductions in the remaining individual WLAs and that localized impairments will not result. All permitees should be notified of any deviations from the initial individual WLAs contained in the TMDL.* EPA does not require the establishment of a new TMDL to reflect these revised allocations as long as the total WLA, as express in the TMDL, remains the same or there is no reallocation between the total WLA and the total LA.
>
> * * * (Emphasis added.)

{¶77} In dissecting the above text, it is clear that individual WLAs may be adjusted during the NPDES permitting process in accordance with U.S. EPA's prescribed standards for adjustments. The guidelines and requirements for adjustments are as follows: 1) any individual adjustments must be "consistent with the assumptions and requirements of the adjusted WLAs in the TMDL"; 2) "*[i]f a draft permit allows for a higher discharge load than corresponding individual WLA in the TMDL, Ohio EPA must demonstrate that the total WLA in the TMDL will be met through adjustments in other individual WLAs and localized impairments will not occur as a result of the adjustment";* 3) if an adjustment to an individual WLA is made, Ohio EPA must notify all permitees of the changes; and 4) if allocations are revised, Ohio EPA is not required to establish a new TMDL, as long as the total WLA remains the same or reallocation between LAs and WLAs does not occur. (Emphasis added.)

{¶78} Based on a plain reading of U.S. EPA's decision document, U.S. EPA granted to Ohio EPA the authority to make adjustments to the WLA in the NPDES permitting process. Altering individual WLAs is not a mandate, but an option available to Ohio EPA allowing it to modify individual WLAs for point sources, providing that other established requirements are satisfied. United States EPA is clear, however, that

should the Director decide to an alter individual WLAs, the total WLA must remain the same and no reallocation between WLAs and LAs may occur.

{¶79} Fairfield County's appeal of the phosphorus limit imposed in its NPDES permit centers around two basic claims. First, Fairfield County asserts the Director lacked a valid factual foundation for selecting a 0.5 mg/l phosphorus limit for the Tussing Plant, and the Director unreasonably and unlawfully failed to consider the technical feasibility and economic reasonableness of the phosphorus limits. And second, it was unlawful and unreasonable for the Director to impose the phosphorus limit as it appeared in the TMDL for Big Walnut Creek without allowing Fairfield County an opportunity to appeal that specific discharge limit.

{¶80} In summary, Fairfield County's fundamental question regarding the phosphorus limit is simple: Noting that the portion of the stream impacted by the Tussing Plant is deemed in attainment, how can the imposition of phosphorus restrictions on the County result in a reduced phosphorus impact in the water body upstream from the Tussing Plant or further downstream from the Plant away from the Plant's potential influence? The Commission is unable to answer this question squarely, but must rest its decision on an analysis of the laws relating to TMDLs and implementation of those limits in a NPDES permit.

{¶81} As to whether the Director lacked a valid factual foundation for selecting the phosphorus limit, Fairfield County argues that regardless of what limits are contained in the TMDL neither the in-stream data gathered by Ohio EPA nor the more recent data gathered by Fairfield County supports the imposition of a 0.5 mg/l

phosphorus limit. Thus, the limit is unreasonable because the Director lacked a valid factual foundation for imposing the phosphorus limit. The data collected by both entities revealed that the applicable stream conditions below the discharge point were deemed in attainment, while the nonattainment portions of the stream were either several river miles upstream from the Tussing Plant or sufficiently downstream so that intervening factors greatly affected the condition of the stream.

{¶82} Fairfield County also argues that the Director's action of imposing a 0.5 mg/l phosphorus limit was unlawful or unreasonable because he failed to give consideration to the technical feasibility or economic reasonableness of the phosphorus limit. Fairfield County estimated the cost of meeting the phosphorus limit would be greater than five-million dollars. Ohio EPA employee, Mr. Owen, testified he could not recall if he gave consideration to the technical feasibility or economic reasonableness of whether Fairfield County could meet the 0.5 mg/l phosphorus limit appearing in the NPDES permit. Similarly, Mr. Fancher did not conduct an analysis of whether the phosphorus limit could be met or what those costs might include. Testimony Fancher, Owen.

{¶83} A final concern articulated by Fairfield County was its inability to appeal the 0.5 mg/l phosphorus limit contained in the TMDL prior to that limit appearing in their NPDES permit. Ohio EPA argued that Fairfield County could have either commented on the 208 Plan or appealed U.S. EPA's approval of the Big Walnut Creek TMDL. The Commission notes that neither the documents inviting comment to the 208 Plan nor U.S. EPA's approval and accompanying decision document contains explicit language

authorizing any specific appeal rights. To the Commission, it appears that the first clear opportunity for Fairfield County to appeal the Director's action imposing 0.5 mg/l phosphorus limit was when that limit appeared in the instant NPDES permit.

{¶84} In the instant matter, the Director's issuance an NPDES permit containing the 0.5 mg/l phosphorous limit articulated in the Big Walnut Creek TMDL fits squarely within the designs of the TMDL and NPDES process as set out in the CWA and applicable state statutes and regulations. Further, the Director's action appears not to be "at variance with the explicit language" of the applicable regulations regarding TMDLs and NPDES permits. As evidenced by the testimony surrounding Mr. Fancher's memorandum, which was written and reviewed prior to the Director's issuance of the Permit, the Director considered the overall impact that phosphorus discharge from the Tussing Plant was having on the water body. It was at this point that the Director could have exercised the option to adjust the WLA as detailed in U.S. EPA's decision document. Based on his own review of Fairfield County's impacts on the phosphorus levels in the stream and the totality of the Big Walnut Creek TMDL, the Director left in tact the phosphorus limit approved by U.S. EPA and articulated in the TMDL. Thus, the Commission believes the Director possessed a valid factual foundation when he selected for Fairfield County's NPDES permit a phosphorus limit of 0.5 mg/l.

{¶85} Regarding the Director's alleged failure to consider the technical feasibility and economic reasonableness of complying with the phosphorus limit, the Director counters that in addition to his duty to comply with the U.S. EPA-approved limits set out

in the TMDL, he is required to impose conditions in NPDES permits that are necessary and appropriate to achieve and maintain the state's water quality standards and that he need only consider technical and economic matters to "the extent consistent with" the Federal Water Pollution Control Act ("FWPCA").

{¶86} The Commission disagrees with the Director's interpretation of R.C. 6111.03(J)(3) and believes that a plain reading of the statute make the Director's duties clear. As previously cited, Ohio Revised Code 6111.03(J)(3), in pertinent part, states the following:

> To achieve and maintain applicable standards of quality for the waters of the state * * *, the director shall impose, where necessary and appropriate, * * * water quality related effluent limitations * * * and, *to the extent consistent with that act, shall give consideration to, and base the determination on, evidence relating to the technical feasibility and economic reasonableness of removing the polluting properties* from those wastes and *to evidence relating to conditions calculated to result from that action and their relation to benefits to the people of the state and to accomplishment of the purposes of this chapter.* (Emphasis added.)

{¶87} The relevant phrases of R.C. 6111.03(J)(3) begin, "* * * the Director *shall* impose * * *" limits" and "* * * to the extent consistent with" the FWPCA, he "*shall give consideration to, and base the determination on*, evidence relating to the technical feasibility and economic reasonableness of removing the polluting properties from those wastes and to evidence relating to conditions calculated to result from that action and their relation to the benefits of the people of the state and to accomplishment of the purposes of this chapter."

{¶88} The facts support that the Director did not give consideration to or base his decision on information regarding the technical feasibility and economic

reasonableness of removing phosphorus nor did he "give consideration to, and base his decision on, * * * evidence relating to conditions calculated to result from that action and their relation to the benefits to the people of the state and to accomplishment of the purposes of this chapter."

{¶89} Therefore, the Commission must conclude that the Director's action of imposing a phosphorus limit without satisfying the mandates of R.C. 6111.03(J)(3) was unlawful. After considering these factors, the Director may indeed determine the 0.5 mg/l phosphorus limit as identified in Big Walnut Creek TMDL satisfies the requirements of R.C. 6111.03(J)(3), but a technical feasibility and economic reasonableness analysis must be conducted for Fairfield County's NPDES permit to be lawful.

{¶90} Regarding TDS, Fairfield County asserts that the Director lacked a valid factual foundation to impose in Fairfield County's NPDES permit a TDS design flow limit of 1646 mg/l and a monthly average loading limitation of 18,692 kg per day. In support, Fairfield County highlighted the results of the WET testing, the numerous years of compliant downstream biocritera measurements, the absence of toxicity in the mixing zone, the expert testimony of Ms. Mendel and Dr. Markowitz, and the lack of contrary testimony from Ohio EPA. Fairfield County also cites Ohio Adm.Code 3745-1-07(A)(6)(a) arguing that the Director failed to consider the following:

> (a) Demonstrated attainment of the applicable biological criteria in a water body will take precedence over the application of selected chemical-specific aquatic life or whole-effluent criteria associated with these uses when the director, upon considering appropriately detailed chemical, physical and biological data, finds that one or more chemical-specific or whole-effluent criteria are inappropriate. * * *

{¶91} Citing to its duty to achieve and maintain the state's water quality standards under R.C. Chapter 6111, Ohio EPA countered that because the compiled stream survey data indicated that TDS would exceed the statewide water quality standard of 1500 mg/l, regardless of what other stream assessments revealed, the Director was required to assign a TDS limit to Fairfield County.

{¶92} In response to Fairfield County's reference to Ohio Adm.Code 3745-1-07(A)(6)(a), the Director urged the Commission to consider the entirety of the regulation. In pertinent part, Ohio Adm.Code 3745-1-07 states the following:

> (A) Water quality standards contain two distinct elements: designated uses; and numerical or narrative criteria designed to protect and measure attainment of the uses.
>
> * * *
>
> (6) Biological criteria presented in table 7-15 of this rule provide a direct measure of attainment of the warmwater habitat, exceptional warmwater habitat and modified warmwater habitat aquatic life uses. Biological criteria and the exceptions to chemical-specific or whole-effluent criteria allowed by this paragraph do not apply to any other use designations.
>
> (a) Demonstrated attainment of the applicable biological criteria in a water body will take precedence over the application of selected chemical-specific aquatic life or whole-effluent criteria associated with these uses when the director, upon considering appropriately detailed chemical, physical and biological data, finds that one or more chemical-specific or whole-effluent criteria are inappropriate. In such cases the options which exist include:
>
> (i) The director may develop, or a discharger may provide for the director's approval, a justification for a site-specific water quality criterion according to methods described in "Water Quality Standards Handbook, 1983, U.S. EPA Office of Water";

> (ii) The director may proceed with establishing water quality based effluent limits consistent with attainment of the designated use.

{¶93} Fairfield County asserts that because the applicable biological criteria in the water body were deemed in attainment, attainment status should take precedent over selection of a limit on TDS. While that may be true, our inquiry does not end here. The Commission must consider the entirety of the applicable regulation, and as such, finds support for the Director's position in the balance of Ohio Adm.Code 3745-1-07.

{¶94} More specifically, Ohio Adm.Code 3745-1-07, among other things, outlines the Director's options regarding what may occur when selecting a chemical-specific or whole-effluent criteria if a water body is deemed in attainment of applicable biological criteria. The applicable portion of the rule begins by stating that in water bodies deemed in attainment, biological criteria will take precedence over a chemical specific or whole-effluent criteria *"when the director, upon considering appropriately detailed chemical, physical and biological data,"* finds that chemical-specific or whole-effluent criteria are inappropriate. (Emphasis added.) Ohio Adm.Code 3745-1-07(A)(6)(a). The rule continues and offers two options on how to proceed - the "director may develop, or a discharger may provide for the director's approval," justification for site-specific criterion; or the director may establish effluent limits consistent with attainment of the water's designated uses. Id.

{¶95} Certainly in reviewing the data before him and selecting a TDS limit above the statewide water quality criterion for TDS, the Director established a water quality based effluent limit "consistent with attainment of the designated use." The limit for

TDS is 1500 mg/l. Ohio Adm.Code 3745-1-07 Table 7-1. In selecting the TDS design flow limit of 1646 mg/l and monthly average loading limitation of 18,692 kg per day, the Director observed, that although Fairfield County's TDS discharge exceeded 1500 mg/l, the portion of the stream affected by Fairfield County was considered in attainment for the water's designated uses and data at the site routinely demonstrated that TDS discharged from the Tussing Plant was not negatively affecting the water body.

{¶96} Based on the facts offered at hearing, Fairfield County did not "provide for the Director's approval a justification for site-specific water quality criterion," and it is unclear whether the Director's review of TDS impacts would rise to the level of a "justification" as set out in the Ohio Adm.Code 3745-1-07.

{¶97} Fairfield County's also argues that the Director's action was unreasonable and/or unlawful because he failed to consider the technical feasibility and economic reasonableness of meeting the TDS limit established in the NPDES permit. Fairfield County asserted that none of the treatment methods it evaluated were technically feasible or economically reasonable ways to dispose of the excess TDS. Ohio EPA does not claim to have evaluated the technical feasibility or economic reasonableness of the TDS limit prior to issuing the permit and was unaware whether any publicly owned treatment plants in Ohio were treating TDS; but, as with the phosphorus limit, the Director asserts he was only required to consider technical feasibility and economic reasonableness so long as the limit imposed was consistent with the FWPCA.

{¶98} Again, the facts are clear that the Director did not give consideration to or base his decision on information regarding the technical feasibility and economic

reasonableness of meeting the TDS limit nor did he "give consideration to, and base his decision on, * * * evidence relating to conditions calculated to result from that action and their relation to the benefits to the people of the state and to accomplishment of the purposes of this chapter."

{¶99} The Commission finds that the Director failed to satisfy the full requisites of R.C. 6111.03(J)(3). Therefore, the Commission must conclude that the Director's action of imposing a TDS limit without satisfying the mandates of R.C. 6111.03(J)(3) was unlawful.

FINAL ORDER

Based upon the foregoing, the Commission finds Appellee Director acted unlawfully in issuing the NPDES permit to Fairfield County without full consideration of the technical feasibility and economic reasonableness of the phosphorus and TDS limits contained in the permit, as required by R.C. 6111.03(J)(3). Accordingly, the portions of Fairfield County's NPDES permit relating to phosphorus and TDS limits are hereby VACATED AND REMANDED to the Director for further action consistent with the decision as issued herein.

The Commission, in accordance with Ohio Adm.Code Section 3746-13-01, informs the parties that:

> Any party adversely affected by an order of the commission may appeal to the Court of Appeals For Franklin County, or if the appeal arises from an alleged violation of law or regulation, to the court of appeals of the district in which the violation was alleged to have occurred. The party so appealing shall file with the commission a notice of appeal designating the order from which an appeal is being taken. A copy of such notice shall also be filed by the appellant with the court, and a copy shall be sent by certified mail to the director or other statutory agency. Such notices shall

be filed and mailed within thirty days after the date upon which appellant received notice from the commission of the issuance of the order. No appeal bond shall be required to make an appeal effective.

THE ENVIRONMENTAL REVIEW APPEALS COMMISSION

Lisa L. Eschleman, Chair

Melissa M. Shilling, Vice-Chair

Shaun K. Petersen, Member

Entered into the Journal of the Commission this 10th day of May, 2011.

COPIES SENT TO:

BOARD OF COMMISSIONERS FAIRFIELD COUNTY [CERTIFIED MAIL]
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Linda Mindrutiu, Esq.
Jessica B. Atleson, Esq.
L. Scott Helkowski, Esq.

CERTIFICATION

I hereby certify that the foregoing is a true and accurate copy of the DECISION in **Board of Commissioners Fairfield County v. Joseph Koncelik, Director of Environmental Protection**, Case No. ERAC 235929 entered into the Journal of the Commission this 12th day of May, 2011.

Julie A. Slane, Executive Secretary

Dated this 12th day of
May, 2011, at Columbus, Ohio.