



## PINE CREEK WATERSHED

- On behalf of the Pine Creek Valley Watershed Association, **we enabled the court to establish that the Pennsylvania Department of Environmental Protection’s approval of a sewage treatment plan “was not lawful and reasonable in light of the facts.”** By demonstrating that there is a significant and credible risk that effluent containing nitrate will degrade an Exceptional Value headwater stream on the property, our client got the permit rescinded. Based on our expert reports and testimony, the judge concluded that approval had not been based on a scientifically accepted model, and that the modeling itself was incorrectly applied to site conditions at a residential subdivision.

The plan had been approved in the belief that an existing wetland would decrease nitrate concentrations in shallow plumes of septic tank effluent from 8-20 mg/L down to the established 0.84 mg/L limit the State said was necessary to protect existing water quality in Pine Creek, a Schuylkill River tributary.

The permittee had used a textbook model based on the observed performance of constructed herbaceous wetlands to estimate the effect of natural forest wetlands on denitrification, in spite of the authors’ numerous cautions that results should not be extrapolated outside the range of empirical conditions from which they had been derived. The theoretical model was applied to a real-world site incorrectly, inconsistently, and virtually without reference to actual onsite conditions. The proposed justification did not withstand our scrutiny when we recalculated the proffered analyses.

Before acknowledging numerous specific errors in the record, the trial judge wrote:

**This case requires us to select among several contradictory expert opinions. ...the weight to be given to an expert’s opinion depends upon such factors as the expert’s qualifications, presentation and demeanor, preparation, knowledge of the field in general and the facts and circumstances of the case in particular, and the quality of the expert’s data and other sources. Perhaps more fundamentally, we look to the opinion itself to assess the extent to which it is coherent, cohesive, objective, persuasive, and well grounded in the relevant facts of the case. As the fact finder, weighing credibility and selecting among competing expert testimony is one of our most basic and important duties.**

**We credit the testimony of James Schmid, Pine Creek’s expert, that using the P-k-C model to make accurate predictions of denitrification outcomes in a natural forested wetland system is not generally accepted in the scientific community. Schmid is an eminently qualified wetlands expert and a distinguished member of the pertinent scientific community. His testimony was lucid, learned, and logical. In demeanor, demonstrated knowledge, and substance, we find his opinions to be highly credible. The testimony of the Department and the Intervenor’s experts on the subject did not compare well, and we find their testimony on this foundational question to be less credible.** [citations omitted]

---Bernard A. Labuskes, Jr., Judge, Pennsylvania Environmental Hearing Board  
Adjudication, EHB Docket No. 2009-168-L, 10 November 2011