

OCT 15 2003

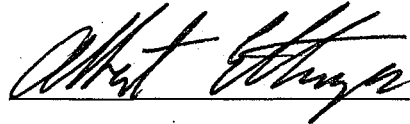
BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

STATE OF ILLINOIS
Pollution Control Board

INTERIM PHOSPHORUS EFFLUENT)	
STANDARD, PROPOSED 35 ILL. ADM.)	R2004-026
CODE 304.123(G-K))	Rulemaking - Water
)	

NOTICE OF FILING

PLEASE TAKE NOTICE that I have filed the attached PRE-FILED TESTIMONY OF
JOHN R. SHEAFFER.



Albert F. Ettinger (Reg. No. 3125045)
Counsel for Environmental Law & Policy
Center, Prairie Rivers Network, and Sierra
Club

DATED: October 15, 2004

Environmental Law & Policy Center
35 East Wacker Drive, Suite 1300
Chicago, IL 60601
312-795-3707

OCT 15 2003

IN THE MATTER OF:)
INTERIM PHOSPHORUS EFFLUENT)
STANDARD, PROPOSE 35 ILL. ADM)
CODE 304.123(G-K))

R2004-026
Rulemaking STATE OF ILLINOIS
Pollution Control Board

PRE-FILED TESTIMONY OF JOHN R. SHEAFFER

Introduction

Sheaffer International, L.L.C. submits the following Pre-Filed Testimony of John R. Sheaffer for presentation at the October 26-27, 2004 hearing scheduled in the above-referenced matter:

Testimony of John R. Sheaffer, Ph.D.

My name is Jack Sheaffer. I am Chairman of Sheaffer International, L.L.C. (SIL) in Glen Ellyn, Illinois and serve as Chairman of the Environmental Commission of DuPage County, Illinois. I have a B.S. in Science from Millersburg State University (Pennsylvania) and a M.S. and Ph.D. from the University of Chicago. When the Illinois General Assembly created the Lake Michigan and Adjoining Lands Study Commission to create a Bill of Rights for Lake Michigan, I served as the Executive Director of the Commission. The Bill of Rights provided the framework for the Clean Water Act, which was enacted by Congress. The goal of the Act is to eliminate the discharge of pollutants into the navigable waters. Senator Muskie stated that the act meant one simple thing: streams and rivers are no longer a part of the sewage treatment process. In my service as Science Advisor to the Secretary of the Army, I helped to develop the 1972 Clean Water Act. In recognition of this, I received a Decoration for EXCEPTIONAL CIVILIAN SERVICE by the Secretary of the Army. Also, I served a term on the Science Advisory Board of the International Joint Commission. I worked with the Illinois EPA on the formulation of the ILLINOIS DESIGN STANDARDS FOR SLOW RATE LAND APPLICATION OF TREATED WASTEWATER, 35 Ill. Adm Code PART 372 in 1995.

In my professional work at SIL (and predecessor firms), I have directed the planning, design, engineering, permitting and implementation of approximately 25 "Sheaffer" Modular Reclamation and Reuse Systems in the State of Illinois since 1980. The Illinois Environmental Protection Agency (IEPA) issued "no-discharge" permits to construct, own and operate each of these Sheaffer Systems. The IEPA has renewed the operating permits for all Sheaffer Systems operating in conformance with SIL design and O&M guideline since 1980.

It is my testimony that the Board should adopt and enforce limitations on the discharge of Phosphorus (P), Nitrogen (N) and other nutrients contained in sewage effluent that is discharged into the surface waterways of the State of Illinois. The alternative available

to all concerned entities and localities is to use the no-discharge method that is prescribed in IEPA's Land Application of Treated Wastewater Standards. The Sheaffer System is one technology that is proven to be cost-effective as a permissible no-discharge system. The Sheaffer System is a reliable method of attaining the desired end of "no adverse impact" on the waters of the State of Illinois.

Under the IEPA no-discharge permit terms and conditions, the Sheaffer System:

- Eliminates the discharge of pollutants, including nutrients, into the surface waterways—rivers, streams, lakes—of the State of Illinois.
- Beneficially reuses (recycles) the water and the nutrients on the land to nourish growing vegetation on farms, golf courses, parklands, forest preserves, campus landscapes, and open space.
- Effectively contains and eliminates organic sewage solids (sludge) for up to 40 years in the reclamation facilities, thereby preventing these undesirable pollutants from degrading the environment.
- Reliably controls the nuisance of odors and abates the emission of air pollutants from the reclamation facilities.
- Is cost effective to design, permit, construct, operate and maintain.
- Is suitable for use in reclaiming wastewater generated from municipal, residential, industrial, commercial, recreational and institutional users.
- Is affordable for application in a wide range of sizes, from individual buildings to entire communities.
- Protects the quality of our water resources (drinking water) and therefore, the public health of the people of the State of Illinois.

The Board's anti-degradation regulations that became effective on February 22, 2002 (R 01-013) resulted in the IEPA's permit review and issuance process for authorizing a new or increased discharge of wastewater into water of the state. Specifically:

...The revised anti-degradation regulations focus less on the requirements necessary to meet water quality standards (although compliance with these standards is still necessary) and more on what kind of treatment system can be designed to have the least adverse impact on the receiving water.

Any discharge of treated wastewater to surface waters has the potential to cause the quality of the receiving water to become degraded. Therefore, systems that do not discharge should be considered and must be deemed not feasible before a discharging system can be considered. Examples of non-discharging systems are golf course, agricultural land, and other types of spray irrigation, seepage fields, and other types of subsurface discharges. (Thomas G. McSwiggin, P.E., Manager, Permit Section, Division of Water Pollution Control, IEPA, July 18, 2002, emphasis added).

Each Sheaffer System permitted by the IEPA is deemed to be a no-discharge system. Therefore, the cost-effective Sheaffer System eliminates the discharge of P and N into the waters of the state. With this alternative available and encouraged by IEPA, the establishment of (stringent) limits on the discharge of P, N and other nutrients in treated

effluent into the waters of the state should be considered appropriate in order to conform to the anti-degradation regulation adopted by the Board. This was stated clearly in Mr. McSwiggin's letter of July 18, 2002:

The primary purpose of the anti-degradation analysis is to ensure that new (or expanded) discharges do not cause degradation in the water into which discharge occurs unless absolutely necessary...the degradation must be held to the smallest amount practically achievable...

Of course, a Sheaffer System achieves this purpose by eliminating the discharge and by beneficially recycling the nutrients. If discharges are shown to be unavoidable, an effort needs to be made to limit the discharges of P and N, to the degree practical. This means establishing and enforcing (stringent) limits.

It is argued by some that "little is really known about the variability of performance of natural systems. The ability of such systems to consistently meet stringent TN and TP effluent limits on a consistent basis in cold climates like Illinois is yet unknown. These systems are subject to the whims of nature and noncompliance may be a significant problem." [Illinois Association of Wastewater Agencies, April 14, 2003.]

The Sheaffer System and the IEPA permitting process prove such statements to be uninformed and inaccurate. In fact, extensive data is readily available on the Sheaffer Systems, including performance, health effects and costs—all parts of the method to determine the feasibility of any treatment process. It should be pointed out that any comprehensive analysis of the "technical feasibility and cost to meet nutrient standards in the state of Illinois", should have considered and utilized this readily available data on no-discharge reuse systems such as the Sheaffer System. Therefore, I question the effectiveness and credibility of the report prepared by Consoer Townsend Envirodyne Engineers because it did not do this.

The goals of the State and of the Nation call for the move to technology that eliminates the discharge of nutrients into navigable waters. The Clean Water Act declares, "It is the National goal that the discharge of pollutants into the navigable waters be eliminated by 1985." The National Pollution Discharge Elimination System (NPDES) permits seek to eliminate discharges, not accommodate them. Therefore, I believe the report's documentation of feasible ways to meet nutrient standards in the state of Illinois has injudiciously limited its focus to treatment processes that fundamentally go against the goals of the State and of the Nation.

The population in Illinois is estimated to be 12,600,620. At a usage of 100 gallons per day (gpd) per person, the domestic wastewater flow would be 1,260,062,000 gpd. If all of this water was reclaimed and reused, 367,805 acres could be supplied with water and nutrients. Since there are 27,700,000 acres of farmland in Illinois, only 0.013% of the farmland could be irrigated. The 367,805 acres would have the potential to sequester about 110,341,500 tons of carbon annually. (The equivalent amount of carbon discharged by 89,700,000 automobiles). Corporations are paying as much as \$10.00 per

ton of carbon sequestered. Thus, there is a potential benefit of \$1,103,415,000 per year from this segment of the wastewater reclamation and reuse technology. A single program has the potential to simultaneously improve both water quality, air quality and enhance land quality.

As a result, I support discharge limits on total phosphorus and total nitrogen in the state of Illinois.

CERTIFICATE OF SERVICE

I, Albert F. Ettinger, certify that on October 12, 2004, I filed the attached PRE-FILED TESTIMONY OF JOHN R. SHEAFFER. An original and 9 copies was filed, on recycled paper, with the Illinois Pollution Control Board, James R. Thompson Center, 100 West Randolph, Suite 11-500, Chicago, IL 60601, and copies were served via United States Mail to those individuals on the included service list.



Albert F. Ettinger (Reg. No. 3125045)
Counsel for Environmental Law & Policy
Center, Prairie Rivers Network, and Sierra
Club

DATED: October 15, 2004

Environmental Law & Policy Center
35 East Wacker Drive, Suite 1300
Chicago, IL 60601
312-795-3707

SERVICE LIST

Sanjay K. Sofat, Assistant Counsel
Illinois Environmental Protection Agency
1021 N. Grand Avenue East
PO Box 19276
Springfield, IL 62794

Darin Boyer
City of Plano
17 E. Main Street
Plano, IL 60545

Roy M. Harsch
Gardner Carton & Douglas
191 N. Wacker Drive, Suite 3700
Chicago, IL 60606

Matthew J. Dunn, Chief
Office of the Attorney General
100 W. Randolph, 11th Floor
Chicago, IL 60601

Robert A. Messina, General Counsel
Illinois Environmental Regulatory Group
3150 Roland Avenue
Springfield, IL 62703

John McMahon
Wilkie & McMahon
8 East Main Street
Champaign, IL 61820

Jonathan Furr
Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702

Richard Lanyon
MWRDGC
100 E. Erie
Chicago, IL 60611

David Horn, Asst. Prof., Biology
Aurora University
347 Gladstone Avenue
Aurora, IL 60506