

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

MAILED

NOV 18 1999

CERTIFICATE OF APPROVAL  
PUBLIC FRESHWATER LAKE

**APPLICATION #:** PL-17,776

**LAKE** : Lily Lake

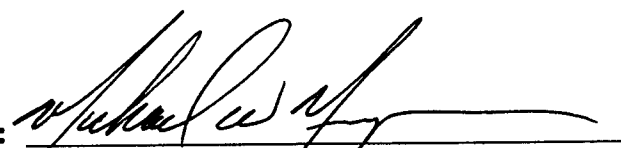
**APPLICANT** : LaPorte Waste Water Department  
Jerry Jackson  
2101 Boyd Boulevard  
LaPorte IN 46350-6745

**AGENT** : J. F. New & Associates, Inc.  
Dustin F. New  
708 Roosevelt Road  
Walkerton IN 46574

**AUTHORITY** : IC 14-26-2 with 310 IAC 6-2

**DESCRIPTION** : A lake level control structure will be installed on Lily Lake in LaPorte County in order to maintain Pine, Stone, and Lily lakes at their legally established level. The control structure will consist of a 42" diameter siphon intake pipe set in a concrete headwall. The intake pipe will have an inlet invert elevation of 793.0', MSL, and be equipped with a 48" x 48" aluminum slide gate to control the intake of water from the lake. The intake structure will be located at the legal shoreline of the lake. Water which enters the siphon intake structure will be pumped into the proposed Head Creek Wetland before its release into Travis Ditch. Details of the project are contained in plans and information received at the Division of Water on April 17, 1998, July 21, 1998, August 5, 1998, May 20, 1999, and October 28, 1999.

**LOCATION** : East shore of Lily Lake at LaPorte, Center Township, LaPorte County  
NE $\frac{1}{4}$ , NE $\frac{1}{4}$ , SW $\frac{1}{4}$ , Section 35, T 37N, R 3W, La Porte East Quadrangle  
UTM Coordinates: Downstream = 4606600 North, 522550 East

**APPROVED BY** :   
Michael W. Neyer, PE  
Director  
Division of Water

**APPROVED ON** : November 18, 1999

Attachments: Notice Of Right To Administrative Review  
General Conditions  
Special Conditions  
Service List

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

NOTICE OF RIGHT TO ADMINISTRATIVE REVIEW

APPLICATION #: PL-17,776

This signed document constitutes the issuance of a permit by the Natural Resources Commission, or its designee, subject to the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

The permit or any of the conditions or limitations which it contains may be appealed by applying for administrative review. Such review is governed by the Administrative Orders and Procedures Act, IC 4-21.5, and the Department's rules pertaining to adjudicative proceedings, 312 IAC 3-1.

In order to obtain a review, a written petition must be filed with the Division of Hearings within 18 days of the mailing date of this notice. The petition should be addressed to:

Mr. Stephen L. Lucas, Director  
Division of Hearings  
Room W272  
402 West Washington Street  
Indianapolis, Indiana 46204

The petition must contain specific reasons for the appeal and indicate the portion or portions of the permit to which the appeal pertains.

If an appeal is filed, the final agency determination will be made by the Natural Resources Commission following a legal proceeding conducted before an Administrative Law Judge. The Department of Natural Resources will be represented by legal counsel.

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GENERAL CONDITIONS

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- ( 1 ) If any archaeological artifacts or human remains are uncovered during construction, federal law and regulations (16 USC 470, et seq.; 36 CFR 800.11, et al) and State law (IC 14-21-1) require that work must stop and that the discovery must be reported to the Division of Historic Preservation and Archaeology within 2 business days.

Division of Historic Preservation and Archaeology  
Room W274  
402 West Washington Street  
Indianapolis, Indiana 46204

Telephone: (317) 232-1646, FAX: (317) 232-8036

- ( 2 ) This permit must be posted and maintained at the project site until the project is completed.
- ( 3 ) This permit does not relieve the permittee of the responsibility for obtaining additional permits, approvals, easements, etc. as required by other federal, state, or local regulatory agencies. These agencies include, but are not limited to:

<u>Agency</u>	<u>Telephone Number</u>
Detroit District, U.S. Army Corps of Engineers	(313) 226-2218
Indiana Department of Environmental Management	(317) 233-2471
Local city or county planning or zoning commission	Check local directory

- ( 4 ) This permit must not be construed as a waiver of any local ordinance or other state or federal law.
- ( 5 ) This permit does not relieve the permittee of any liability for the effects which the project may have upon the safety of the life or property of others.
- ( 6 ) This permit may be revoked by the Department of Natural Resources for violation of any condition, limitation, or applicable statute or rule.
- ( 7 ) This permit shall not be assignable or transferable without the prior written approval of the Department of Natural Resources. To initiate a transfer contact:

Mr. Michael W. Neyer, PE, Director  
Division of Water  
Room W264  
402 West Washington Street  
Indianapolis, Indiana 46204

Telephone: (317) 232-4160, In-State Toll Free: (877) 928-3755  
FAX: (317) 233-4579

- ( 8 ) The Department of Natural Resources shall have the right to enter upon the site of the permitted activity for the purpose of inspecting the authorized work.
- ( 9 ) The receipt and acceptance of this permit by the applicant or authorized agent shall be considered as acceptance of the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

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SPECIAL CONDITIONS

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**PERMIT VALIDITY:** This permit is valid for 24 months from the "Approved On" date shown on the first page. If work has not been completed by November 18, 2001 the permit will become void and a new permit will be required in order to continue work on the project.

This permit becomes effective 18 days after the "MAILED" date shown on the first page. If both a petition for review and a petition for a stay of effectiveness are filed before this permit becomes effective, any part of the permit that is within the scope of the petition for stay is stayed for an additional 15 days.

**CONFORMANCE** : Other than those measures necessary to satisfy the "General Conditions" and "Special Conditions", the project must conform to the information received by the Department of Natural Resources on: April 17, 1998, July 21, 1998, August 5, 1998, May 20, 1999 and October 28, 1999. Any deviation from the information must receive the prior written approval of the Department.

Number Special Condition

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- ( 1 ) all excavated material must be properly spread or completely removed from the project site such that erosion and off-site sedimentation of the material is prevented
- ( 2 ) vegetation must be established on any disturbed areas as soon as possible using straw mulch or erosion control blankets to enhance stand establishment and prevent erosion
- ( 3 ) minimize the movement of resuspended bottom sediment from the immediate project area
- ( 4 ) if sediment is removed hydraulically and transported to an upland dewatering basin, adequate slurry detention time and sediment removal measures must be used to ensure that the water returned to the lake is not carrying excessive sediment back to the lake
- ( 5 ) the siphon system for the control of the water level of Pine, Stone, and Lily lakes must be operated in strict accordance to the "CITY OF LAPORTE PINE LAKE LEVEL CONTROL OPERATION PLAN: PL 17,776" dated October 5, 1999, copy attached
- ( 6 ) the "Head Creek Wetlands" must be protected in perpetuity with a conservation easement; the conservation easement must be developed in coordination with IDNR Division of Water legal staff and granted within 60 days of permit application approval

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SERVICE LIST

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2101 Boyd Boulevard  
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J. F. New & Associates, Inc.  
Dustin F. New  
708 Roosevelt Road  
Walkerton IN 46574

\*Jomary Crary  
Division of Water  
Project Development Section

David Ambers, Attorney at Law  
2006 I Street  
LaPorte IN 46350

Mr. and Mrs. Eugene Koontz  
0444 West 850 South  
Union Mills IN 46382

Robert Boklund  
Pine Lake Plaza  
208 Pine Lake Aveune  
LaPorte IN 46350

Regulatory Functions Branch  
Detroit District, USACOE  
c/o Mr. Gary Mannesto  
P.O. Box 1027  
Detroit MI 48231-1027

LaPorte County  
Soil and Water Conservation District  
100 Legacy Plaza West  
Laporte IN 46350

Division of Law Enforcement, IDNR  
North Region Headquarters (Dist 10)  
c/o Capt. Bruce Clear  
RR 6, Box 344  
Peru IN 46970

LaPorte City Plan Commission  
Courthouse, 801 Michigan Avenue  
LaPorte IN 46350

LaPorte County Plan Commission  
Courthouse  
LaPorte IN 46350

Staff Assignment

Administrative: Darlene Emerson  
Technical : George F. Menze  
Environmental : Stephen H. Jose

CITY OF LAPORTE  
PINE LAKE LEVEL CONTROL OPERATION PLAN: PL 17,776  
October 5, 1999

1. Project Goals

- a) Do no harm to downstream neighbors, property, or environment.
- b) Prevent flooding around the lake system.
- c) Create an improved area for wildlife at Head Creek Wetlands.

2. Level Control System

a) Prohibitions

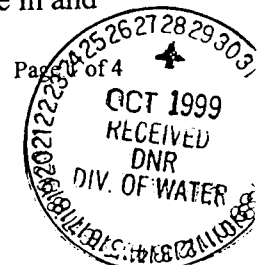
- i*) Do not operate system during rains of ½ inch per hour or heavier.
- ii*) Do not operate system during periods of high Travis Ditch levels:
  - when the gauge at CR250 South exceeds 1.3 feet or 744.43 feet MSL (gauge datum is 743.13 feet MSL)
  - when the gauge at CR400 South exceeds 1.2 feet or 728.39 feet MSL (gauge datum is 727.19 feet MSL)
  - when the gauge at CR1200 South exceeds 2.0 feet or 677.55 feet MSL (gauge datum is 675.55 MSL)
- iii*) Do not operate system when Zebra Mussel Decision Tree (attached) indicates that zebra mussel veligers may be present:
  - do not siphon from April through October
  - do not siphon when water temperature is equal to or greater than 11 °C
  - do not siphon when sampling indicates that veligers are present
- iv*) Do not operate siphon if lake level is below 797.2 feet (MSL); legal lake level is 796.2 feet (MSL).

b) Operation subject to above prohibitions.

- i*) Operate siphon at normal rate (approx. 5 mgd) when lake level exceeds 798.1 feet (MSL).
- ii*) Cease removal of water when lake system is less than 797.7 feet (MSL) except during winter draw down.
- iii*) Beginning in December, draw down lake system to 797.2 feet (MSL) in preparation for winter and spring precipitation.
- iv*) Operate system at the emergency rate (approximately 10 mgd) when lake level exceeds 799.0 (MSL) feet.
- v*) Water entering the siphon will be filtered through a 3 millimeter mechanically cleaned screen to prevent entry of settled (non pelagic) zebra mussels.
- vi*) The pump (siphon) house will be kept dry in the off season to prevent it from being colonized by zebra mussels.

4) Head Creek Wetlands

- a) Purpose of the Head Creek Wetland is to provide a vegetated discharge point for the lake water which will moderate flows into Travis Ditch. Vegetation and substrate in and



near the wetland will be monitored for its suitability as a control point for the movement of zebra mussels between the siphon and the wetland.

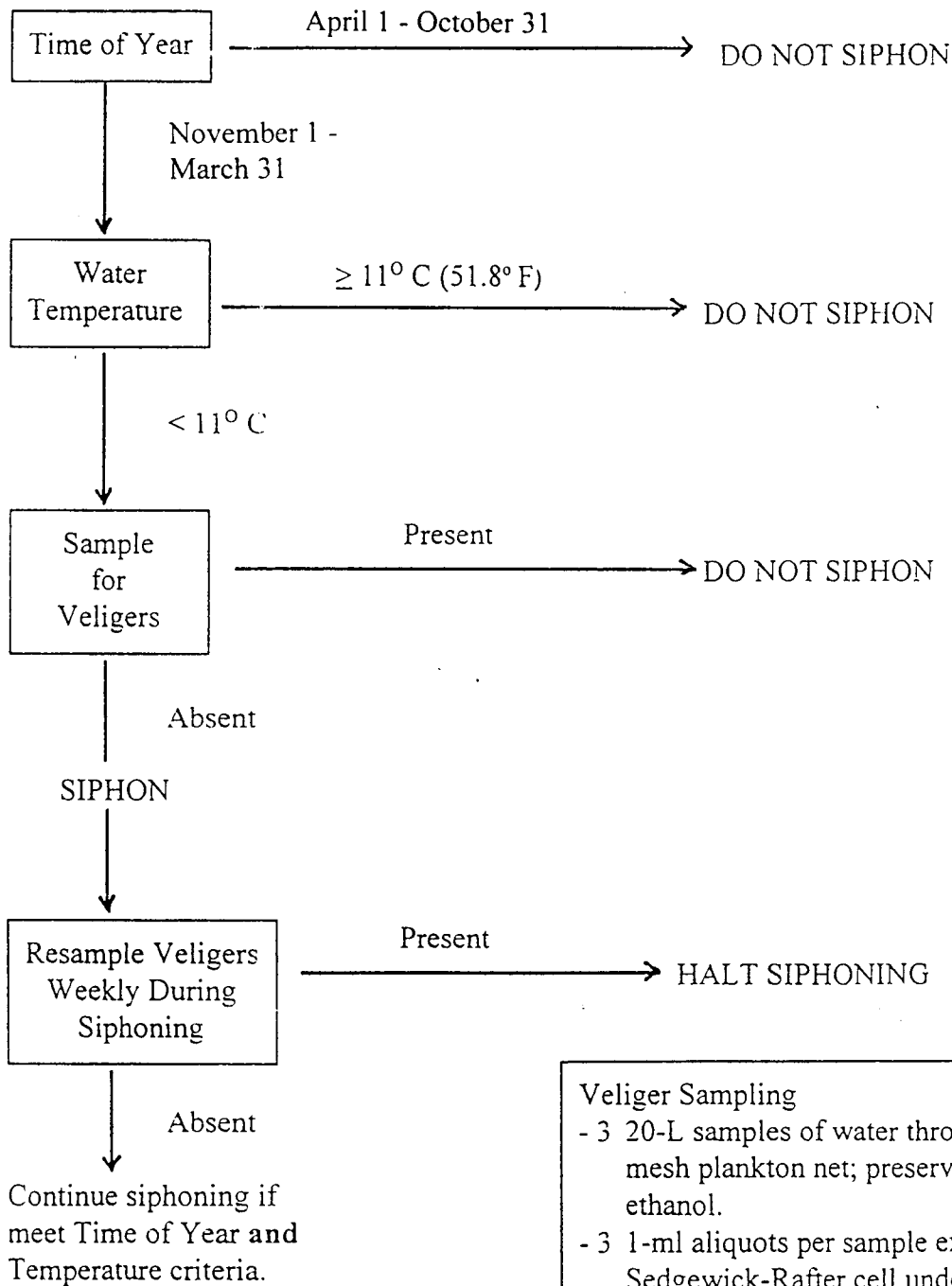
- b) Maintain water variance within 18 inches of weir elevation (764.33 feet MSL).
- c) Maximize water storage for wet season use.

5) The "Pine Lake Level Control Operation Plan: PL 17,776" can only be modified by the City of LaPorte (Board of Public Works and Safety) with the written approval of the Indiana Department of Natural Resources. This plan may be revised if new information indicates that modification of the plan is necessary.

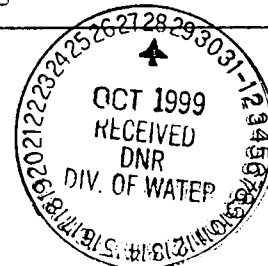
6) IDNR will be notified by telephone within 24 hours of the system being shut down due to the presence of zebra mussel veligers in lake water samples (contact is Director, Division of Water 317-232-4160). An annual "Operation Report" will be provided to IDNR (contact is Director, Division of Water, IDNR, Room W264, 402 West Washington Street, Indianapolis, IN 46204) by April 30 of each year describing the operation of the siphon in the previous season. At a minimum, the report will list the dates of siphon operation, water temperature at start up and shut down of the siphon and, dates and results of veliger sampling.



### ZEBRA MUSSEL DECISION TREE



**Veliger Sampling**  
- 3 20-L samples of water through 63µm mesh plankton net; preserve in 95% ethanol.  
- 3 1-ml aliquots per sample examined in Sedgewick-Rafter cell under cross-polarized light at 20X.



Notes for Zebra Mussel Decision Tree:

1) Temperature Sensing

Temperature will be electronically measured continuously at the siphon inlet structure. The sensor will be connected to a computer which will control the siphon. The computer will automatically shut down the siphon when the temperature reaches 11°C.

2) Zebra Mussel Veliger Sampling

The objective of the veliger sampling will be to maximize the probability of detecting veligers if they are present. From studies in the Great Lakes, veligers are known to be most abundant in the epilimnion (mixed upper layer) of the lake (Fraleigh et al. 1993, in *Zebra Mussels: Biology, Impacts, and Control*). Veligers can be patchily distributed, but tend to be higher in abundance in nearshore regions than in offshore areas (Reissen et al. 1993, *ibid*). Thus, the best strategy for detecting veligers is to focus sampling on the epilimnion near the lake shore. Because the water potentially drawn by the siphon is of most concern, sampling will focus on that water because veligers may be absent from other areas of the lake while being present at the siphon if an adult source population exists nearby.

Sampling will be accomplished by filtering 20 liters of water through a plankton net (62 µm mesh<sup>1</sup>) through the water at 3 locations near the siphon (one sample directly out into the lake from the inlet, one to the left and, one to the right). The contents of the sample will be preserved in 90% ethanol. In the laboratory, three 1 ml aliquots of each concentrated sample will be examined for the presence of veligers under a dissecting microscope using the cross-polarized light technique (Johnson 1995. *Hydrobiologia* 32:139-146). The presence of veligers in any sample will result in a shutdown of the siphon (spring), or delay in startup (fall), until resampling shows that veligers are no longer present.

Sampling will occur under the following regimen:

- 1) Once weekly when the siphon is being operated and the temperature is between 9 and 10.9°C.
- 2) Every two weeks when the siphon is being operated and the temperature is between 7 and 9°C.
- 3) In the fall of a year when water level control is anticipated, sampling will occur weekly when the temperature is between 13 and 11°C.

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<sup>1</sup> A mesh of 63 µm is standard to collect veligers (Hopkins and Leach 1993. In: *Zebra Mussels: Biology, Impacts, and Control*. Nalepa and Schlosser, eds). The size of newly fertilized egg to trochophore stage is 70µm. The planktonic veliger stage is 90-100 µm and settling occurs at 200-300 µm. Therefore, 63 µm mesh will collect even the smallest veligers.

