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**APA Project Permit
2013-136**

Date Issued: **September 16, 2013**

In the Matter of the Application of

**NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION**

for a permit pursuant to 9 NYCRR Part 578

To the County Clerk: This permit must be recorded on or before **November 15, 2013**. Please index this permit in the grantor index under the following names:
1. State of New York

SUMMARY AND AUTHORIZATION

The New York State Department of Environmental Conservation (hereinafter: NYSDEC or DEC) is granted a permit, on conditions, authorizing the restricted use of an aquatic piscicide (Prenfish Toxicant, hereinafter: Prenfish) with the active ingredient rotenone in Lower Sargent Pond (DEC Pond No.294 SL). The lake and its inlet and outlet contain wetlands subject to Agency jurisdiction. The lake is located in the Sargent Ponds Wild Forest by the Official Adirondack Park Land Use and Development Plan Map. It is located in the Town of Arietta, Hamilton County.

This project may not be undertaken until this permit is recorded in the Hamilton County Clerk's Office. This permit shall expire unless so recorded on or before November 15, 2013, in the names of all persons listed on the first page hereof and in the names of all owners of record of any portion of the project site on the recordation date.

This project shall not be undertaken or continued unless the piscicide application authorized herein is completed prior to the end of 2015.

Nothing contained in this permit shall be construed to satisfy any legal obligations of the applicant to obtain any governmental approval or permit from any entity other than the Agency, whether federal, State, regional or local.

AGENCY JURISDICTION

The project consists of a regulated activity requiring a wetlands permit pursuant to 9 NYCRR 578.2 and 578.3(n)(2)(i) and 578.8(i).

PROJECT SITE DESCRIPTION

The project site is the 131±-acre Lower Sargent Pond, its inlet and outlet. The lake is located in Town of Arietta, Hamilton County, on the southerly side of County Route 3 (on tax parcel 38-1-1). The lake is located in the Sargent Ponds Wild Forest by the Official Adirondack Park Land Use and Development Plan Map.

PROJECT DESCRIPTION AS PROPOSED

The project as proposed by the NYSDEC is summarized as a whole lake reclamation using the piscicide Prenfish Toxicant (a toxicant containing 5% rotenone, EPA Reg. No. 655-422) for purposes of restoring a native brook trout population.

The project site to be treated with Prenfish includes Lower Sargent Pond (2,429 acre-feet) and its inlet and outlet (to the fish barrier located approximately 300 feet downstream of the pond). A total of 810 gallons of the piscicide Prenfish will be applied to achieve a target concentration of 1.0 ppm for 24 hours in the pond, outlet, and inlet.

The piscicide will be stored following NYS Bureau of Pesticides guidelines at DEC facilities prior to the day of use and will be applied in accordance with all label restrictions.

The piscicide will be applied by NYSDEC-licensed pesticide applicators (NYSDEC staff) using portable pumps and spray from boats and hand spraying from backpack applicators from the shoreline. It is expected that the one-time treatment will be completed in the fall, 2013 during open water conditions and daylight hours. The treatment is expected to be complete within 48 hours after starting.

Dead fish will be allowed to decay in the pond and the pond will be re-stocked with brook trout.

Use of a detoxifier is not proposed.

The pond and its access points will be posted prior to treatment with the required minimum 14 day swimming, cooking and drinking use restrictions. The signs will be removed following natural detoxification.

The efficacy of treatment will be determined by a subsequent netting survey.

CONDITIONS

BASED UPON THE FINDINGS BELOW AND INFORMATION CONTAINED IN THE PROJECT FILE, THE PROJECT IS APPROVED SUBJECT TO THE FOLLOWING CONDITIONS:

1. The project shall be undertaken as described in the completed application, the Project Description as Proposed and Conditions herein. In the case of conflict, the Conditions control.
2. This permit is binding on the applicant and all agents undertaking all or a portion of the project. Copies of this permit and all the approved maps and plans referred to herein shall be furnished by the applicant to all contractors prior to undertaking the project.
3. This permit only authorizes one Prenfish treatment of Lower Sargent Pond as described in the permit application and Findings of Fact contained herein. No other "regulated activity" as defined in the Agency's Freshwater Wetland Regulations (9 NYCRR Part 578) shall occur on the project site without prior Agency approval. Such activities include, but are not limited to, new land use or development, dredging or filling of a wetland, or any other activity, whether or not occurring within the wetland, which pollutes it or substantially impairs its functions, benefits or values.
4. The "use of fish as bait" regulations signs shall be posted and maintained at existing access points to Lower Sargent Pond.
5. No more of the piscicide Prenfish shall be applied than is necessary to achieve a 24 hour target concentration of 1.0 ppm. The total amount to be applied shall be determined by bioassay tests not more than 24 hours after the initial application, unless there are extenuating circumstances preventing access within that time, in which case, as soon as possible. The additional product applied to each strata shall not exceed the calculated gallons required to achieve a concentration of 1.0 ppm. In all cases, the Agency shall be informed in writing within two business days after treatment if the actual quantity of Prenfish applied is more or less than 810 gallons, with the reason(s) for the changed amount, and copies of the rotenone concentrations based on bioassay worksheets. The piscicide shall be applied to ensure successful treatment, including dispersal under and into wetland vegetation, spring holes, deep waters, and any flowing streams or inlets with fish present or waters capable of supporting fish at the time of treatment.

6. Standard netting procedures shall be undertaken to determine the efficacy of control. If re-treatment is necessary, the applicant shall advise the Agency in writing of reasons for failure of the prior treatment and re-treatment details, and obtain Agency approval prior to second treatment.
7. No later than 90 days after completion of the reclamation and re-stocking, DEC shall provide the Agency with detailed written reports on compliance with Condition 5. The report shall include field observations of any non-target species mortality, survival and recovery within 24 hours after final application, including but not limited to frogs, turtles, salamanders, mussels, and aquatic insects and detailed report on bioassay tests performed during treatment and verification of detoxification.
8. The Agency may conduct such on-site investigations, examinations, tests and evaluations as it deems necessary to ensure compliance with the terms and conditions hereof. Such activities shall take place at reasonable times and upon advance notice where possible.

FINDINGS OF FACT

Lower Sargent Pond

1. Lower Sargent Pond (DEC Pond No.294 SL) is located wholly within the Sargent Ponds Wild Forest Unit Management Area. Two public hiking trails are maintained to the pond and several campsites are located along the shoreline. The pond is also a float plane fishing trip destination.
2. Lower Sargent Pond is 131± acres in size and has a maximum depth of 27± feet; the total water volume is 2,429± acre-feet. The pond has a watershed area of 511± acres. The shoal water substrate is predominately gravel and coarse sand. The outlet of Lower Sargent Pond flows through a shrub swamp wetland for a distance of approximately 500 feet before entering Boulder Brook (the wetland area above this confluence is less than 1 acre in size). Boulder Brook provides drainage for more than 2,400 acres of undeveloped state land (up-gradient of Lower Sargent Pond). The lake itself contains widely scattered wetland vegetation and only approximately 1± acres of the lake itself contains wetlands subject to Agency jurisdiction
3. Agency staff completed a site visit to Lower Sargent Pond on July 24, 2013. The pond is open water with very small pockets of floating and emergent aquatic vegetation. Aquatic vegetation observed during the site visit included water lobelia (*Lobelia dortmanna*), bur reed (*Sparganium spp.*), pipewort (*Eriocaulon spp.*), and Robbin's pondweed (*Potamogeton robbinsii*). An emergent

marsh and shrub wetland is associated with the outlet of the pond. Pursuant to 9 NYCRR 578.5, due to the cover type, the wetlands within the pond have a value rating of "2" while the wetland complex at the outlet has a value rating of "1" because it has more than 20 acres within the mean high water level of the outlet stream.

4. During the July 24, 2013 site visit Agency staff observed "use of fish as bait" regulation signs were posted at existing access points to Lower Sargent Pond and at campsites located along the shoreline.
5. There are no beaver dams or other geographic features such as large wetland complexes where it is more difficult to treat and where fish could find refuge from the piscicide.

Prior Reclamations

6. Lower Sargent Pond was previously reclaimed in 1956, 1962, and 1971. A 1933 biological survey of the pond reported brook and lake trout, white sucker, smallmouth bass, and yellow perch while a 1955 survey reported lake trout, common shiner, white sucker, brown bullhead, pumpkinseed, and yellow perch. In 1965 brook trout, common shiner, white sucker, brown bullhead, yellow perch, and creek chub were reported. After substantial improvements to the fish barrier were made in 1971 only brook trout were reported from the 1973 and 1974 surveys. In 1997 golden shiners, brook trout and brown bullhead were caught during a survey and in 2009 largemouth bass, golden shiners, and brook trout were netted and during this survey no small brook trout were collected. The results of the last survey, which occurred in October 2012, show that the lake is now dominated by non-native golden shiner (*Notemigonus crysoleucas* - abundant), and largemouth bass (*Micropterus salmoides* - abundant), brown bullhead (*Ictalurus nebulosus* - common), and brook trout (*Salvelinus fontinalis* - rare). Small brook trout were again absent from the survey; the lack of new recruits indicates high mortality on fingerling trout.
7. The pond is being reclaimed due to the presence of largemouth bass. This fish was not present prior to 2004 and the New York State Department of Environmental Conservation's Fisheries staff believes the bass became established by an unauthorized introduction. The reclamation will also eliminate the golden shiner population from the pond as well. Historic research suggests that this fish is not native to the Adirondacks.

8. Fish management activities in upland Adirondack waters are often directed towards salmonid game fish, including, but not restricted to brook trout. The Adirondack Park is regionally and nationally important as an area of lakes and ponds well suited to trout and salmon. Since 1951, DEC has chemically reclaimed more than 150 waters, mostly in the Adirondack Park.
9. Unauthorized introduction of non-native fish species represent a threat to Adirondack water bodies. Restriction and Prohibited Use or Introduction of nonnative fish species regulations promulgated by the NYSDEC are important to maintaining a healthy brook trout population in Lower Sargent Pond.

Rotenone

10. Rotenone is made from root extracts from certain species of tropical plants (i.e., South American cube plant). In New York State it has been used for eradication of unwanted fish species for over 60 years.
11. In addition to being a piscicide, rotenone is also registered as an organic home and commercial garden insecticide.
12. Current and historic peer reviewed literature identify rotenone as the most environmentally benign fish poison available and it is the only fish toxicant employed by the NYSDEC for lake reclamation projects. Published studies indicate that other than the use of a pesticide the only way to reclaim a lake or pond is through repeated draining the body of water, an alternative not available for consideration at the project site.
13. Rotenone is more toxic under low alkalinity conditions and persists longer in colder waters. Water clarity, turbidity, and temperature can change the effectiveness of the treatment. Degradation of rotenone will occur by natural exposure to sunlight, oxygen, and warm water temperatures; rotenone has a half-life of one to three days. Nearly all of the toxicity of the compound is lost within five to six days when exposed to spring sunlight and within two to three days when exposed to summer sunlight. Due to the rapid degradation of the active ingredient, the treatment of Lower Sargent Pond must be completed as quickly as possible and thus the proposal to treat the entire lake within 48 hours of the commencement of treatment. Rotenone ultimately breaks down to carbon dioxide and water.

14. Rotenone acts as a respiratory inhibitor, affecting cellular aerobic respiration. Gill breathing organisms, including fish and gill breathing states of amphibians and insects, are susceptible to rotenone. Observations by fisheries staff during and following previous rotenone treatments demonstrate that amphibians survive the fall treatments at the concentrations used in Adirondack ponds.
15. If summer or spring treatments are undertaken, other impacts, due to the greater abundance of amphibians in the water bodies at those times of year, could occur. While some species of salamanders utilize shallow vegetative areas of ponds, most of the populations of salamanders depend on ephemeral pools for breeding habitat, and all species found in the Adirondack post-treatment observations by DEC staff have shown that salamanders and frog tadpoles are not significantly impacted by treatment levels of 1.0 ppm.
16. The Final Programmatic Environmental Impact Statement on "Fish Species Management Activities of the Department of Environmental Conservation" dated June 1980 and the Final Programmatic Environmental Impact Statement on "Undesirable Fish Removal by the Use of Pesticides" by the Department of Environmental Conservation dated March 24, 1981 lists the generic impacts of use of rotenone. Short-term impacts include temporary elimination of certain planktonic organisms (e.g. cladocerans), temporary reduction of certain benthic organisms (e.g. mayfly, dragonfly, damselfly larvae) and gill breathing stages of amphibians, mortality of fish, temporary loss of fishing until restocking. The treatment will also result in a restriction in the use of water for drinking and swimming for a minimum of 14 days after treatment, and temporary odors from the piscicide. The document also concluded "there are no significant long-term adverse effects on the environment which are attributable to lake and pond reclamation activities using rotenone...".
17. Many Adirondack ponds provide feeding and breeding habitat for birds and waterfowl which depend in part on fish or benthos for food, including kingfishers, rails, grebes, mergansers, buffleheads, goldeneye, bald eagles, osprey, and common loon. However, juveniles are generally fledged from mid-July through August and adults are capable of feeding on other waters. Four lakes (Grass, Middle, Upper, and Haymarsh Ponds) are located within 0.75 miles of Lower Sargent Pond while Racquette and Utowana Lakes are located within 2.25 miles of the project site.
18. Based on review of office records, significant habitat maps, and the New York State Heritage Program, the DEC staff did not identify any endangered, threatened, species of special

concern, or unique natural communities for the pond. While there is no record of common loons nesting on Lower Sargent Pond, Agency staff did observe two adult loons and one chick on the pond during a July 24, 2013 site visit. The loon chick did not appear to have fledged at the time of the visit. Other than the loons, there are no other rare, threatened or special concern wildlife species, including invertebrates, amphibians and fish known to be located in the pond.

19. Risk of human health effects from either consumption of treated fish or drinking treated waters is very low due to several factors, including: humans are protected by effective oxidizing enzyme systems; slow, inefficient gastrointestinal absorption; the low percentage of rotenone (1 to 5%) commonly used in commercial preparations; rotenone's extremely low solubility in water; rotenone's unstable nature in air and light; and rotenone residues in the edible flesh of poisoned fish are insignificant. The oral LD50 of rotenone to humans is 132 ppm; treated waters contain 1.0 ppm or less, and humans are unlikely to become ill from drinking them.

Governmental Approvals

20. Based upon a completed Local Government Notice Form, dated received on June 19, 2013, the project does not require local approval. A comment on the form indicated that not every pond needs to have trout and that the current fish are acceptable.
21. The New York State Department of Environmental Conservation issued a Type 1 Negative Declaration under SEQRA on March 13, 2013. No NYSDEC permit is required for the treatment pursuant to 6 NYCRR 328.1(c). Approval for chemical reclamation projects are granted by Bureau of Fisheries Central Office. New York State restricts the use of Preenfish concentrations to 1.0 ppm, an application rate below what is common in other states (2.0 ppm in California, up to 5.0 ppm in Minnesota).
22. Reasonable advance notice of the treatment and water use restrictions to users of Lower Sargent Pond is an important mitigative measure, although timing of the treatment after the peak camping/hiking season could reduce recreational impacts.

Compliance With State Land Master Plan

23. Agency State Land staff have reviewed the project and have determined that, while the unit does not have an adopted Unit Management Plan, the project is in compliance with the Guidelines for Fisheries management in Wilderness, Primitive, and Canoe Areas (Adopted by the Adirondack Park Agency on April 26, 1990 and amended July 10, 1992).

Public Notice and Comment

24. No public concerns were expressed as a result of notice in the Environmental Notice Bulletin.

Project Impacts

25. The project will have no impact to wetland vegetation nor will it result in a change in existing wetland values.
26. Reclaiming the pond in fall will mitigate the impacts to amphibians. Larvae hatched during the spring and summer will have matured beyond the gill breathing stage and thus not be susceptible to the rotenone treatment.
27. Research shows that populations of gill breathing benthic organisms and zooplankton impacted by rotenone treatments generally recover over the spring and summer following treatment.
28. Hikers and campers visiting the project site will experience short term impacts (i.e., water use restrictions for a minimum of 14 days as well as odors for several days) following the treatment. Fresh potable water would still be available from Boulder Creek, upstream of the confluence with the Lower Sargent Pond Outfall.
29. Fisherman will be impacted until such time as the brook trout population is restocked and becomes established in the lake.
30. Although re-stocking the pond will not occur the same year of treatment, returning adult birds can utilize other water bodies and wetlands in the vicinity and utilize alternate foods including aquatic insects, mollusks, crustaceans and amphibians as well as terrestrial organisms.

31. There are no alternative fish control options available to fisheries biologists which can effectively eliminate a fish population from an entire water body. As such, the project approved herein is the only reasonable method available to achieve the objective.
32. The project will not cause any change in the quality of "registered," "eligible," or "inventoried" property as those terms are defined in 9 NYCRR 426.2 for the purposes of implementing §14.09 of the New York State Historic Preservation Act of 1980.

CONCLUSIONS OF LAW

If undertaken in compliance with the conditions herein:

1. The project would not have an undue adverse impact upon the natural, scenic, aesthetic, ecological, wildlife, historic, recreational or open space resources of the Park or upon the ability of the public to provide supporting facilities and services made necessary by the project, taking into account the economic, social and other benefits that might be derived therefrom.
2. The Agency has considered the public policy of the State set forth in ECL § 24-0103, the statement of legislative findings set forth in ECL § 24-0105, and the effects of the project pursuant to ECL § 24-0705(1).
3. Based on the Findings of Fact made herein, the Agency concludes that the project is approvable and complies with the statutory and regulatory criteria set forth in Section 24-0801(2) of the Freshwater Wetlands Act (ECL Article 24, Title 8) and 9 NYCRR §§ 578.9 and 578.10.

PERMIT issued this day
of , 2013

ADIRONDACK PARK AGENCY

BY: _____
Terry Martino, Executive Director

STATE OF NEW YORK)
) ss.:
COUNTY OF ESSEX)

On the day of in the year 2013, before me, the undersigned, a Notary Public in and for said State, personally appeared Terry Martino personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that they executed the same in their capacity, and that by their signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Notary Public

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