pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Northeast Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0065358**
Facility Type	**Pesticides**	APS ID	**777628**
Permit Type	**Individual**	Authorization ID	**1170369**

NPDES PERMIT FACT SHEET PESTICIDES

Applicant and Facility Information

Applicant Name	**Arrowhead Lake Community Association**	Facility Name	**Arrowhead Lake Pesticide Treatment Area**
Applicant Address	961 Arrowhead Drive Pocono Lake, PA 18347-7856	Facility Address	961 Arrowhead Drive Pocono Lake, PA 18347
Applicant Contact	Eric Usbeck	Facility Contact	William Kirkpatrick (agent/applicator)
Applicant Phone	(570) 646-1771	Facility Phone	(717) 264-9778
Client ID	33104	Site ID	558647
SIC Code	0782	Municipality	Coolbaugh and Tobyhanna Townships
SIC Description	Agriculture - Lawn And Garden Services	County	Monroe
Date Application Received	February 8, 2017	WQM Required	No
Date Application Accepted	May 12, 2017	EPA Waived	No

Purpose of Application: Renewal of Individual Pesticides NPDES Permit.

Internal Review and Recommendations

This NPDES permit renewal and modification (**with Chapter 91.38 Joint Permit No. NE-45-15-12**) is for the usage of pesticides to treat 180 acres of the 216.5 acres Arrowhead Lake (Trout Creek, EV per basin designation, stream code # 4526, Joint Permit application indicating warmwater species present, average depth of 4.5 feet). Trout Creek flows to the Lehigh River. **Chapter 91.38 Joint Permit application included in application package.**

Background:

- Lake Uses: Recreational (fishing and swimming); Joint Permit application does not indicate any water supply usage. Application indicates lake is used for fishing, boating, and swimming, but no water supply usage.
- Permittee: Arrowhead Lake Community Association is the existing NPDES "permittee", "operator" (40 CFR 122.2 and 122.21) with financial control (not a contractor), and applicant/client. The Association is also the NPDES Permit Part A.II-defined "Decision-Maker", "Operator" and "Applicator" except as the POA has delegated their responsibilities to the For-Hire Applicator/Lake Management Consultant as their agent.
- For-Hire Applicator and Lake Management Consultant: Aquatic Environmental Consultants, Inc., William H. Kirkpatrick (Certification # 831328 BU 1299) is the "agent" of the permittee.
- Pesticide Application Areas: 180 acres exceeds the 80 acres surface area threshold requiring an Individual Pesticides NPDES Permit.
    - See attached table 1 for breakdown of Treatment Areas, targeted species, and pesticide usage via the use of pesticides/herbicides for Weeds & Algae control within the June – August time-frames.
    - **New Treatment Area 5 (and its proposed Clipper Herbicide for enhanced bladderwort control) was not previously proposed, with no grandfathering (as a newly registered Aquatic usage pesticide, target area overlapping the existing Treatment Area Nos. 1 & 2). The most recent (June 14, 2018) EPA-approved label does not specifically mention bladderwort, but the applicator (an aquatic biologist) states the combination of Clipper Herbicide/Reward is based upon a successful treatment**

Approve	Deny	Signatures	Date
X		James D. Berger, P.E. / Environmental Engineer	July 1, 2019
X		Amy M. Bellanca, P.E. / Environmental Engineer Manager	

Internal Review and Recommendations

program at Locust Lake (Chapter 91.38 Permit No. 4513820, Trib 04530 To Trout Creek) which was identified as a "feeder lake" to Arrowhead lake.

- **Usage Rate: 198 lbs at 1.1 lbs/acre-foot to achieve 200 PPB as the lowest label application rate and was indicated as effective in controlling bladderwort when used with Reward Herbicide at 1 gallons/acre rate (Treatment Area 1).**
- **DEP Biologist (JR Holtsmaster) Input: The DEP Biologist indicated that this combination of pesticides is used by other applicators at other sites. He okayed the Draft Joint Permit.**

- **Pesticide Treatment Area coordinates: They have subdivided some previous treatment areas:**
  - Area 1: 41º, 09', 12"; -75º, 33', 54"
  - Area 2a: 41º, 09', 14"; -75º, 33', 41"
  - Area 2b: 41º, 09', 04"; -75º, 34', 08"
  - Area 3a: 41º, 09', 08"; -75º, 33', 26"
  - Area 3b: 41º, 09', 19"; -75º, 34', 16"
  - Area 4a: 41º, 09', 12"; -75º, 34', 18"
  - Area 4b: 41º, 09', 46"; -75º, 34', 03"
  - Area 4c: 41º, 09', 25"; -75º, 33', 41"
  - **Area 5: 41º, 09', 01"; -75º, 34', 08" (new)**
- **There are no public water supplies located within 5 miles downstream of the lake outlet, as determined using the Surface Water Intake Locator GIS tool provided by the Safe Drinking Water Program in prior permitting and verified by DEP E-maps.**

- Arrowhead Lake Dam (No. 45-207) is a B-1 High Hazard Dam.
- Lehigh River TMDL (AMD) applies to watershed (aluminum, iron, Manganese, pH)

Antidegradation: No further degradation of the EV waters is expected:

- **Existing Pesticide Application Areas (1 through 4):** No new, additional or increased pesticide usage loading is proposed on the existing Pesticide Areas (except for overlapping new Pesticide Area 5 as discussed below).
  - Previous NPDES Permit IRR noted that the four previously used pesticides had been in use since 1999 (pre-dating the reclassification of the stream to EV in 2011). EPA previously evaluated the four pesticides via FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) per the 2012 IRR.
  - Applicator Aquatic Biologist indicated that Aquaneat treats "Splatterdock", a type of Water Lily.
  - No adverse incidents reported in annual pesticide reports for 2013 – 2016.
  - Spraying dam breasts (above water level for vegetation control) should not cause degradation in the lake.
- **New Pesticide Application Area No. 5: A new/additional loading (60 acres Treatment Area No. 5 with new Clipper Herbicide) is proposed in this renewal. This area overlaps Area No. 1 (where Reward is used to control bladderwort). The application indicates the new pesticide (in conjunction with Reward) will better control bladderwort in high density areas than Reward alone (while being not toxic to fish and will not impact native species of desirable pondweeds, water lily, and watershield outside of the application area). Other bladderwort lake areas were indicated to be adequately controlled by Reward alone. Usage at lowest recommended range. Antidegradation Evaluation:**
  - **Non-Discharge Alternatives: Based on our evaluation of the non-discharge alternatives proposed, non-discharge alternatives are not feasible. The applicant proposes use of appropriate pesticides for the purpose, with minimum effects to non-targeted species, and application at the lowest effective dose. These factors will minimize short-term impacts on water quality. EPA has previously evaluated the registered pesticide(s) in accordance with FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) for usage as Aquatic Pesticide(s), taking into account human health and ecological risk assessment, and determined that usage following the most recent pesticide label was protective. Therefore, the requirements of §93.4a and §93.4c (b)(1)(i) are satisfied and the application is approved.**
  - **Combination with Reward (Area 1 overlapping): The Clipper Herbicide/Pesticide label did not identify bladderwort as a targeted species. However, the Applicator Aquatic Biologist (Kirkpatrick) indicates this combination is in effective use elsewhere, and he will use lowest dosage. The DEP Biologist has confirmed that this combination is used by other applicators at other sites, and he was not aware of any resulting problem. Therefore, the Department will defer to the expertise of the applicator aquatic biologist.**
  - **Biodegradable Active ingredient: The Active ingredient is a "contact herbicide" that rapidly**

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biodegrades from the water (due to high pH around photosynthesizing plants and microbial action), and is not toxic to fish at the application rates. It is not expected to move from the treatment area. It does not bind or leave a residue in the hydrosoil. Label confirms it is rapidly absorbed by target plants and also breaks down quickly in water with >8.5 SU pH (found in water surrounding mats of submersed vegetation due to photosynthetic processes by early to mid-day). Pondweed outside of the treatment area will not be impacted by pesticide usage.

- **Lack of non-degrading alternative: No alternative option (other than increased application of Reward which would increase loadings of that pesticide on the lake):**
  - **Harvesting is not an option due to large amount of stumps, rocks and other obstructions in lake.**
  - **Use of Triploid carp is not allowable due to lake outlet structure design and impact on the diverse aquatic plant community.**
  - **Drawdowns are not effective for bladderwort control.**

Part C Special Conditions: The previous NPDES Permit had three Part C Special Conditions with requirements not found in the standard Pesticide template conditions. They have been retained due to the Exceptional Value of the receiving lake/stream and due to potential for EPA-approved label changes during the permit term:

- **Part C.I (COMPLIANCE WITH LABEL): The permittee and applicator shall comply with the most recent EPA-approved pesticide label, developed in accordance with, and regulated by, the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). The applicator shall review the most recent EPA-approved pesticide label prior to each treatment/application.**
- **Part C.II (AUTHORIZED PESTICIDE USE): Pesticide use shall be in accordance with the attached Joint Permit for Use of an Algicide, Herbicide or Fish Control Chemical in Waters of the Commonwealth (Permit No. NE-45-15-12). The Draft Joint Permit has been updated to have an expiration date simultaneous with the NPDES Permit and to correct a copper usage rate typo error (2.72 lbs, not 2.27 lbs).**
- **Part C.III (SIGNS): Prior to each pesticide treatment/application, the permittee shall post signage regarding water usage restrictions (if any) in accordance with the most recent EPA-approved pesticide label recommendations at public access points to the lake.**

Compliance History: No open violations per 7/1/2019 WQM Query (Open Violations per Client Number).

Permit: PA0065358
Client ID: 33104
Client: All

Open Violations: 0

No data was found using the criteria entered. Please revise your choices and try again.

Application late, and permit not administratively extended. Expired 7/31/2017. Renewal Application was due circa 1/31/2017.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Table 1 (Pesticide Usage Areas)

Treatment Area	Area	Target Species	Pesticide	Number of Treatments per year	Dosage
1	144 acres	Bladderwort	Reward (diquat dibromide) EPA Reg. 100-1091 (10/9/09)	2 (June)	144 gallons @ 1.0 gal/acre for 4 foot depth
2	108 acres, 2 areas in lake	Filamentous and plankton algae	Cutrine-Ultra (elemental copper) EPA Reg. 8959-52 (2/23/17)	1 (June)	259 gallons @ 0.6 gal/acre-ft for 4 foot depth
3	47 acres, subdivided into two areas	Pondweed	Aquathol-K (endothall) EPA Reg. 70506-176 (10/14/16)	1 (June)	188 gallons @ 1.0 gal/acre-foot for 4 foot depth
4	3 acres, 3 areas in lake and Dam Breasts (2 areas)	Water Lily (Spatterdock), Watershield, Phragmites, Shoreline brush (dam breasts)	Aquaneat (Glyphosate) EPA Reg. 228-365 (5/12/15)	1 (August)	0.15 gallons @ 6.0 pints/acre (formerly 2.25 gallons @ 0.75 gal/acre for 1 foot depth)
5 ** **(new)**	**60 acres**	**~~Pondweeds~~ Bladderwort**	**Clipper herbicide (Flumioxazin) EPA Reg. 59639-161 (11/27/12) *** **	**1 (June)**	**198 lbs @ 1.1 lb/acre foot for 3 foot depth**

***To be used to spray dam breasts but not be applied to the water (i.e. this usage being outside scope of this permit and not requiring a new Treatment Area).**

**Within the lake, the treatment area overlaps treatment areas 1, 2, 4.

****Application indicates combination of Clipper Herbicide and Reward (from overlapping Area 1) has proven more effective in controlling bladderwort than Reward alone when plant densities are high. This area was said to have high plant densities. Clipper Herbicide was selected because it does not have an impact on native species of pondweed, water lily, and watershield outside the application area due to biodegradation. It is newly registered contact herbicide for Aquatic usage, and therefore not grandfathered. The lowest subsurface application rate was chosen.** Internet documents (4/23/2014 State of Connecticut "Nuisance Aquatic Vegetation Management: A Guidebook" & January 2012 State of Wisconsin Department of Natural Resources "Flumioxazin Chemical Fact Sheet) indicate Clipper herbicide has a 4 – 5 day half-life in low pH water and can <1 day half-life in high pH waters. Other sources note that floating plant mats can have high pH water due to photosynthetic activities during mid-day hours.

Table 2 (Treatment Area Latitude/Longitude from Application)

Target Area	Area	Latitude	Longitude
1	144 acres	41˚ 09' 12"	75˚ 33' 54"
2 (two subareas)	108 acres	41˚ 09' 14" 41˚ 09' 04"	75˚ 33' 41" 75˚ 34' 08"
3 (two subarea)	47 acres	41˚ 09' 08" 41˚ 09' 19"	75˚ 34' 06" 75˚ 34' 16"
4 (three subareas)	3 acres	41˚ 09' 25" 41˚ 08' 52"	75˚ 33' 41" 75˚ 34' 03"

		41˚ 09’ 11”	75˚ 34’ 08”
5	6 acres	41˚ 09’ 01”	75˚ 34’ 08”

Contact Log:
2/21/2017: Completeness telephone call requesting EIN#, clarification on apparent new pesticide/treatment area, need for pesticide labels, etc.
4/12/2017: Application Incompleteness letter
5/12/2017: Revised Application information received (including revised Joint Permit application).