Spring Lake
Aquatic Weed Management Fund Grant

#G030000195

Final Project Report

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King County
Department of Natural Resources and Parks
Water and Land Resources Division
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Preparation for the grant project

In 2002, King County Lake Stewardship Program (KCLSP), King County Noxious Weed Program and the Spring Lake Community worked together to create the Spring Lake Integrated Aquatic Vegetation Management Plan (IAVMP). This process was an excellent way to understand the breadth and depth of the noxious weed problem at Spring Lake as well as get the community involved in selecting the method of treatment for the weeds. The IAVMP effort was also a prerequisite for applying for grant funding from the Aquatic Weed Fund provided by the Washington State Department of Ecology (Ecology).

Slightly before the writing of the IAVMP, a steering committee was established within the Spring Lake community. The Steering committee was established in 2002 and led by community member Ted Barnes; eleven community members participated on the committee. The main mission of the committee was to advise the IAVMP process, the grant application process and execution, as well as participate in community education and help with weed control.

The IAVMP was submitted in October 19, 2002 and Ecology issued final approval for the plan in late 2002. The application for aquatic weed funding was submitted in January 2003 and funding was awarded to begin in June of 2003.

Project Summary

The grant was written to be a seven year aquatic weed control grant with a focus on the eradication and control of four primary weeds: *Myriophillum spicatum* (Eurasian watermilfoil), *Lythrum salicaria* (purple loosestrife), *Iris pseudacorus* (yellow-flag iris) and *Nymphaea odorata* (fragrant waterlily). Aside from the actual treatment of the weeds, the grant also funded project management, in-water work (e.g. surveys), project reports, and education and outreach.

Task 1 – Project Management: involved the maintenance of the project records, submittal of payment vouchers, hiring and managing contractors selected through the RFP process, attainment of permits and submittal of all required performance items.

Task 2 – Herbicide Treatment: required following the approved IAVMP, documenting all treatments in reports, maps of treated areas, dates of treatments and amounts and concentrations applied.

Task 3 – In-water Work: included reporting pre and post treatment work, herbicide surface water samples, aquatic weed survey reports and submitting required performance items.

Task 4 - Education and Outreach: this task included developing and distributing aquatic weed control announcements, developing education workshops, meeting flyers and developing other educational materials as appropriate.

Task 5- Report Writing: this task included writing all required progress reports, the final grant project report and submitting them to Ecology.
The Lake and Aquatic Weed History

The shallow shoreline area (littoral zone) of Spring Lake provides an excellent habitat for aquatic plants. Non-native Eurasian water milfoil (milfoil), posed the greatest threat to aquatic environments, but other noxious weeds are also present at the lake, including fragrant water lily (lily), purple loosestrife (loosestrife), and yellow flag iris (iris). All of these species are considered noxious weeds as listed in WAC 16-750.

These four weeds were identified as the main threat to the native plants and lake ecosystem at Spring Lake. Loosestrife is considered a Class B weeds according to the King County Noxious Weed Board which, while not required for eradication, is required for control and containment, especially in areas where the weeds are not widespread. Milfoil is not listed as a Class B in King County, although it is listed as Class B by the state. King County has milfoil under the non-regulated noxious weeds list. Water lily and iris are ubiquitous around King County, listed as a Class C weed by the King County Noxious Weed Board, meaning they are not mandated for control. It was determined that if milfoil and loosestrife were to be controlled, efforts should be extended to lilies and iris.

Project Summary by Year
The Spring Lake project was a multiyear, intense project that took careful coordination and scheduling. Below is table that lists the dates of treatments and which noxious weed was treated.
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*Table 1: Dates of Spring Lake surveys and treatments. Emergent weed surveys and treatments were combined.*
**2003**

**Milfoil**

**Milfoil Weevil Search**
Prior to milfoil treatment at Spring Lake, the KCLSP staff were curious to know if natural biological controls already existed in lake in the form of the milfoil weevil, *Euhrychiopsis lecontei*. If the species did exist in the lake, it was possible the milfoil was already being controlled by the weevil. It was thought that the presence was possible considering nearby Lake Sawyer has a healthy weevil population.

On July 15, 2003, two King County staff members and Mariana Tamayo, a Ph.D. student at the University of Washington studying milfoil weevils, conducted a survey for the weevil. The dense milfoil near the boat launch was thoroughly inspected, but found no signs of weevil damage on milfoil plants. Based on hours of searching in the dense milfoil stands in the lake, it was determined there were no weevils present. The findings gave KCLSP staff confidence that herbicide control was going to be necessary to control the milfoil.

**Survey**
At the onset of this project the Aquatic Plant and Algae permit (WAG-994154) was held by AquaTechnex, the contractor hired to do the spraying.

The contract between AquaTechnex and King County required that AquaTechnex perform a diver survey to map the milfoil infestation in Spring Lake as well as survey for fragrant water lily, purple loosestrife and yellow flag iris. AquaTechnex found that milfoil was most dense just south of the boat ramp, and in three areas along the southwestern shore of the lake. Outside of these areas, the cove at the northeastern end of the lake had the highest concentration of plants. Smaller patches of milfoil were found throughout the lake. (See maps in Appendix A)

**Treatment**
A total of 24 acres was treated for milfoil on July 29, 2003 by AquaTechnex with the liquid formulation of 2,4-D (DMA*4 IVM). The main treatment area in the lake was a 14-acre shallow area along the southwest and southern shoreline. Five other areas in the lake were also treated. The total acreage of these five treatment areas was approximately 10-acres, with an average depth of 4-5 feet. The largest of these five areas was a 5.5 acre area just north of the boat launch. Other areas were along the northwest shore (1 acre), the northeast cove (2.5 acres) and two small areas along the eastern shore (1 acre total). The herbicide was applied by an airboat with trailing hoses, injecting the herbicide into the water column. (See spray reports in Appendix B)

**Post Treatment Survey**
On August 18, 2003, King County staff members went to snorkel the shallow areas of Spring Lake to assess the success of the treatment. Areas of the lake shallower than 1.5-feet were surveyed by the boat, and snorkelers surveyed all areas of the lake that were between 1.5-feet and 6-feet deep. No live plants were seen during the survey, although snorkelers did find dead milfoil plants on the bottom. These plants had been damaged by the herbicide and were not considered to be capable of propagating new plants.
A second survey was done on September 29, 2003 mimicked the August survey, and again, there were no signs of milfoil growth or any healthy milfoil plants. Based on these findings, a scheduled second milfoil treatment was cancelled.

**Herbicide Monitoring**
Prior to herbicide treatment, water samples were collected from five different sites on the lake. Sample sites were chosen based on the lake morphology and weed location. The purpose of the pre-test was to see how much 2-4,D was in the lake prior to milfoil treatment from sources such as “weed’n’feed” products. All of the samples came back with no-detects. See results in Appendix C.

King County staff collected water samples five days after treatment from station 2 and station 4. Additional water samples were collected 16 days after treatment and 49 days after treatment from the same station. 2,4-D concentrations remained much higher than expected and persisted for a longer period of time.

The 2,4-D treatment was effective in removing known milfoil form the lake, assuming no milfoil survived below depths that were visually surveyed, but the 2,4-D levels remained well above the irrigation standard (100ppb) and the drinking water standard (70ppb) for much longer than anticipated. There were no reports of unintended side effects of elevated 2,4-D levels nor were any observed in the lake during by snorkel surveys.

Based on the area treated and the amount of 2,4-D DMA*4IVM used, calculations and monitoring results show that the applicator applied within-label recommended rates. The reason for the slow degradation of 2,4-D in Spring Lake was never determined conclusively. Due to these results and the possibility for unattended consequences, King County decided not to use 2,4-D in future milfoil control efforts at Spring Lake.

**Fragrant Water Lily, Purple Loosestrife and Yellow Flag Iris**
AquaTechnex also surveyed for fragrant water lily, purple loosestrife and iris at Spring Lake and found that there were three areas with dense patches of fragrant water lily: near the outlet at the southern end of the lake, a small patch along the northwestern shore of the lake, and along the western shoreline north of the boat ramp. Both iris and loosestrife were fairly evenly distributed around the shore of the lake, with several dense iris patches along the northwestern and northeastern shores of the lake, both of which are residential areas of the lake. (See map in Appendix A).

**Treatment**
AquaTechnex performed an AquaPRO® (active ingredient glyphosate) treatment for the three weeds twice during August. The weeds were spot sprayed on the margin of Spring Lake. Areas along the shoreline that were accessible by foot were treated by an applicator wearing a backpack sprayer with a hand pump. Areas difficult or impossible to access on foot were sprayed using a sprayer from an airboat.

**Glyphosate monitoring**
1 hour post-treatment and 24-hour post-treatment samples for both August glyphosate applications were collected. On August 13th, samples were taken adjacent to a dense stand of iris
(approx. 200 square feet) as well as adjacent to the largest treated patch of fragrant water lily (approx. 1250 square feet). All samples were collected from the water surface less than 5 feet from the edge of the weeds. The results show expected patterns of no detection in the baseline samples, higher concentrations in the one-hour samples, and complete degradation/dilution with undetectable concentrations in the 24-hour samples (Appendix C).

**Effectiveness of treatments**
The 2-4,D treatment was highly effective at removing milfoil from the lake, possibly because of the prolonged residual high levels, which meant that milfoil remained in contact with the herbicide throughout the growing season.

Herbicide effectiveness on the lilies and emergent weeds was less apparent. While herbicide damage was seen, healthy stands of all three weeds remained present at the lake at the end of the season.

**2004**

**Milfoil**

**Survey**
In early 2004, King County issued a request for proposals to perform diver surveys to map plants in Spring Lake and remove milfoil by hand, if any was found. Envirovision was awarded the contract.

Two surveys were done for milfoil in the 2004 growing season. The surveys were done with a combination of divers from Envirovision and snorkelers from King County. No milfoil was found in the lake during either survey. Native plants were present, however. Species found included *Elodea canadensis*, *Utricularia vulgaris*, *Nuphar polysepala*, *Ceratophyllum demersum*, *Naja flexilis*, *Utricularia vulgaris*, several species of *Potamogeton* and *Nuphar polysepala*. (See maps in Appendix A)

**Treatment**
The 2,4-D treatment for milfoil in 2003 was so effective that no herbicide control was necessary for 2004.

**Monitoring**
Despite no 2,4-D application in 2004, the Spring Lake Community received a grant from King County to pay for 2,4-D analysis of six water samples to determine if the herbicide was still present in the lake. Samples were collected in both spring and autumn. All samples had very low levels of 2,4-D present but the spring samples showed higher concentrations than the fall samples. Although the values are very low, it was determined that instead of being residual 2,4-D from the 2003 treatment, it was more likely that the source of the herbicide was from “weed-n-feed” type products in use on lawns and gardens in the watershed.
Fragrant Water Lily, Purple Loosestrife and Yellow Flag Iris

Survey
Based on a survey and treatment effort done by AquaTechnex on June 24th, yellow flag iris and purple loosestrife remained in several places around the lake. Purple loosestrife was found all along the west side of the shoreline down into the outlet. Loosestrife seemed to be in lesser populations on the east side of the lake in the natural area. Iris was found around the lake, dense in the natural fen area while in smaller stands along residential shorelines.

Treatment
In June and July of 2004, yellow flag iris and purple loosestrife were treated with glyphosate by AquaTechnex. The June treatment was stopped short due to high winds, but the whole lake was treated during the July treatment event (Appendix B).

Fewer fragrant water lilies were found in the lake so instead of using herbicides, King County staff spent one day cutting them with a weed cutter.

Monitoring
King County continued to monitor the glyphosate concentrations after the treatment. The results showed the expected patterns of no detection in the baseline samples, higher concentrations in the one-hour samples and the complete dilution with undetectable concentrations in the 24-hour samples. See Appendix C for the sample results.

Effectiveness of Treatment
The 2003 herbicide treatment of milfoil was so effective that 2004 work focused on surveys. King County considered milfoil surveys as a top priority, but energy was also spent on surveying and treating the lilies and emergent weeds.

Lilies, loosestrife and iris treatments were contracted out to AquaTechnex by the Spring Lake community. According to spray reports provided by AquaTechnex, emergent weeds were treated twice during the summer at the end of June and then iris was again spot treated at the end of July (Appendix B).

2005

Milfoil

Survey and Hand Pulling
To see if milfoil had returned to Spring Lake in 2005, King County retained Envirovision to perform a diver survey to map locations and densities of all milfoil plants in the lake.

Five surveys occurred with both divers from Envirovision, snorkelers from King County and occasionally members from the Spring Lake community. In June, milfoil was found in the northeast cove of the lake and in the shallow south cove. When found, all plants were pulled. By the end of the summer milfoil was found in the south cove, northeast cove and the boat ramp. The wet weight of all plants pulled during summer was 9.8 kilograms.
See Appendix A for maps of the survey work.

**Fragrant Water Lily, Purple Loosestrife and Yellow Flag Iris**

**Survey**
Plant distribution and density varied slightly in 2005; however, fragrant water lily, purple loosestrife and yellow flag iris were all found in and along the lake. Purple loosestrife was mainly along the residential property shorelines, while iris seemed to be concentrated in the fen in the southwestern portion of the lake. Water lilies were concentrated in the south cove and along the western edge of the fen, with a few just north of the boat ramp in between private residents docks.

**Treatment**
Three treatments for these weeds occurred between the end of June and the end of July. All treatments used Aquamaster® (active ingredient glyphosate). The first two treatments focused on all three weeds, while the last treatment focused only on treating any iris or loosestrife that was missed. Treatment was done by King County staff using backpack sprayers and hand held sprayers. Spray reports can be found in Appendix B.

**Monitoring**
Glyphosate monitoring associated with the June 23rd herbicide application returned anomalous results. Previous sampling efforts associated with glyphosate treatments had followed a pattern of baseline with no detection, 1-hour post treatment which had above detection limits and 24-hours post-treatment which returned to no-detection. However, these samples did not follow the pattern. The samples taken after the June 23rd treatment showed detection of low levels for the baseline sample, one hour after treatment had no detection and 24 hours after treatment had the highest levels of detection. Discussions with the analytic lab showed that there were no bottle labeling errors and the samples were reanalyzed but the results were very similar.

It is possible that sample collection and/or initial bottle labeling errors were responsible. It is also possible that the cause of the high values is attributable to the samples being taken by the same people in the same boat used to mix and apply the herbicide. For further results see Appendix C.

**Effectiveness of Treatment**
Milfoil did return to Spring Lake in 2005 and it was thought that it was newly introduced from a boat at the boat launch. Since the number of plants was so small, hand pulling was chosen as the best method for control, and excellent control was achieved.

Lilies and loosestrife seemed to be better controlled this year. Iris was a continual struggle as the plants were found throughout the fen and were hard to access either by land due to the boggy nature of the soil or by boat due to shallow depth making it hard to reach the shoreline.
2006

Milfoil

Survey and Hand Pulling
Four surveys for Eurasian water milfoil occurred on Spring Lake throughout the 2006 growing season. A combination of snorkel survey and visual boat surveys were done, and no milfoil was found in the first two surveys. However, by August one plant was located north of the boat launch and in September one more plant was found in the northeast cove. Both plants were pulled and no further milfoil was found.

Treatment
No herbicide treatment was necessary this year as only two plants were found and they were hand pulled.

Fragrant Water Lily, Purple Loosestrife and Yellow Flag Iris

Survey
Spring Lake residents hired AquaTechnex directly to survey and treat the lilies, loosestrife and iris.

Treatment
The Spring Lake community hired AquaTechnex to control water lily, purple loosestrife and yellow flag iris. Two treatments were performed during the summer. The first treatment occurred on July 14th and less than 1 acre of purple loosestrife and yellow flag iris were treated and the same amount was treated again on August 16th.

Effectiveness of Treatment
Milfoil remained in low abundance in 2006, making it easy for surveyors to search the lake for milfoil and pull any found. Hand pulling was the appropriate control method for milfoil in 2006 because only two plants were found.

The Spring Lake Community took the lead on the lilies, iris and loosestrife. The contractor treated less than an acre of loosestrife and yellow flag iris twice during the season. Feedback from the community suggested that herbicide damage was observed on the emergent plants that were treated.

2007

Milfoil

Survey and Hand Pulling

Four surveys were done for milfoil during the 2007 growing season. Both visual survey by a boat and snorkel surveys were used. No milfoil was found in the lake until the last survey in early September. A total of 11 plants were found in the south cove and removed by hand.
Although the source of the re-infestation is unknown, one possibility is that one or more milfoil plants were established in the outlet channel. Plants in the outlet channel would not have been found in visual and snorkel surveys. If plants were in the outlet channel, they could have spread fragments out toward the lake, since beaver dams in the outlet have resulted in little or no flow from the lake in the summer months. It is plausible that plant fragments from the outlet channel were prevented from drifting into the rest of the lake by a dense band of *Brasenia schreberi* just north of the outlet.

**Treatment**
No herbicide treatment was done, and milfoil was removed through hand pulling.

**Fragrant Water Lily, Purple Loosestrife and Yellow Flag Iris**

**Survey**
No formal survey of shoreline weeds was done this year. To streamline the surveys and treatments, surveys and treatments were done in conjunction.

**Treatment**
On two dates in June the Spring Lake community and King County staff wore backpack sprayers and hand held sprayers to treat iris with Aquamaster®.

In July, King County staff members cut water lilies around the lake using a razor blade cutter. Because water lilies do not propagate from fragments and the total biomass of the infestation was small, plant fragments were left in the lake. By early September, water lilies cut on July 18 had re-grown. At this point, King County staff treated the new growth with glyphosate. Areas treated were the same as those cut on July 18th, maps and spray reports are included in Appendix B.

In September, the few remaining purple loosestrife plants along the shoreline of the lake were flowering. To prevent spread of seeds, flower heads were clipped and bagged. The foliage of each plant was sprayed with glyphosate. Spray reports and maps of treatments are included in Appendix B.

**Effectiveness of Treatment**
Again, hand pulling was a reasonable method for milfoil control, although the plants were being found in the south cove which is difficult to access, especially when snorkeling to perform the hand pulling. In hindsight, perhaps another method of control should have been employed to take care of the milfoil in the south cove because it was hard to survey and ensure all plants were accounted for and pulled.

**2008**

**Milfoil**

**Survey and Hand Pulling**
Three surveys for milfoil were done during the 2008 growing season starting in July. From the first survey it was determined milfoil was back with an abundance not seen since the initial
treatment in 2003. Hand pulling again was the chosen method for control to see if it could be as effective as previous years (Appendix A).

Hand pulling was easy in the deeper areas of the lake, but unfortunately one of the heaviest infestations was found at the south end. A diver and a kayaker tried to tackle this infestation through hand pulling, but access was hard and plants were fragmenting. It was quickly realized that there was no way to remove all the milfoil from the lake and herbicide would have to be used in 2009.

**Fragrant Water Lily, Purple Loosestrife and Yellow Flag Iris**

*Survey and treatment*
Most of the emergent effort focused on iris. Three days were dedicated to treating iris with Aquamaster®. It was a joint effort between King County staff and the Spring Lake community. Iris was easily controlled along private shoreline properties but again, the fen in the south proved to be the most vexing with access issues and the sheer number of plants.

Community residents took on the task of locating and controlling purple loosestrife plants in 2008. When community members found plants, they clipped and bagged the flowering seed heads, and then pulled plants out by their roots. To help support their efforts, King County staff circled the shoreline in July of the lake to find and pull flowering purple loosestrife plants. Roughly 40 loosestrife plants from five sites in the northern half of the lake and one station in the fen were clipped, pulled and disposed of.

Little water lily treatment was necessary this year, although one day of treatment was done with backpack sprayers full of glyphosate from a boat.

*Effectiveness of Treatment*
Milfoil was back at higher levels and in areas unreasonable for hand pulling. In retrospect, herbicide perhaps should have been applied in 2008 to control the milfoil. The community was very active in emergent weed control. They managed to achieve excellent control of iris along residential shoreline and loosestrife, but iris in the fen remained a frustrating aspect of emergent weed control, due to difficulty accessing and treating plants.

**2009**

**Milfoil**

*Survey*
On July 28th, 2009 three staff members from King County WLDRD snorkeled Spring Lake to assess the milfoil infestation. It was determined that this snorkel event would be for survey purposes only and no hand pulling would occur since the lake would be treated with Renovate OTF ® (active ingredient triclopyr) later in the summer.

As determined in 2008, milfoil had returned to the south and north coves of the lake. The heaviest infestation was in the shallow south cove. There were dense patches of plants present
that were hard to access due to the extremely shallow depths. Although it was not surveyed, it is likely that milfoil had reached the outlet.

The infestation in the north cove was robust but much more contained. It was much easier to survey the north cove as the water was deeper allowing for good access to both the boat and the snorkelers, and thus giving a much more thorough and detailed view of the infestation.

**Treatment**

Spring Lake was treated on August 5th, 2009 with Renovate OTF®, active ingredient triclopyr. The herbicide was applied by using a spreader that was worn around the neck and broadcast through a grinding action, also known as a “belly grinder”.

Work began in the south cove. A boat with an electric motor was driven by one person, while a second staff person sat on the bow and dispersed the herbicide from the belly grinder. The south cove was difficult to treat due to the shallow water conditions, causing the boat motor to periodically get stuck. Also, a large patch of watershield entangled the motor, making consistent herbicide distribution difficult.

After spreading herbicide in the south end, work immediately went to the north cove. Spreading the herbicide in the north cove was much easier and more efficient due to the depth of the water and lack of emergent vegetation. Also, a modified backpack leaf blower, called the “Granblow”, was used to distribute the herbicide, making for a smoother and more efficient coverage.

Spray reports can be found in Appendix B.

**Monitoring**

After the milfoil treatment, herbicide levels were monitored to determine when watering restrictions could be lifted. These water tests are called FasTests and are delivered to SePro, the company that manufactures the herbicide and has the specialized equipment to look at herbicide concentrations. Samples were taken every two weeks after the initial treatment in August. In order for lakeside property owners to use water for irrigation, the levels had to be below 1 ppb. There were no restrictions for recreation, and there are no potable water intakes on the lake that might be affected. The levels started high, but declined with each successive sample. The southern sampling station took longer to decrease in concentration. It did appear that herbicide levels were trending downwards by the last sampling event in September, suggesting that a level of 1 ppb would have been achieved shortly. However, sampling stopped in late September as the rainy season hit the Northwest and the need to monitor for watering purposes became a non-issue.

**Post Treatment Survey**

When herbicide samples for milfoil were collected, a visual survey of the milfoil was done by boat. Definite herbicide damage was observed, particularly in the south end.
Fragrant Water Lily, Purple Loosestrife and Yellow Flag Iris

Community Involvement
The community took on full responsibility for yellow flag iris and purple loosestrife control. Two residents became licensed aquatic weed herbicide applicators through the Washington State Department of Agriculture during the spring of 2009.

Survey and Treatment
The community members’ first treatment of the season was during the weekend of July 18th and 19th, 2009. The community licensed applicators worked with a team of residents to tackle the yellow flag iris and purple loosestrife populations still present along the shoreline of the lake. No water lily work was done in 2009 because none were present in the lake.

In July, eight community members worked on treating the spring lake shoreline with Aquamaster (active ingredient glyphosate). On these two dates it was found that the undeveloped south-western shoreline of the lake is the most infested and hardest to reach due to wet, swampy walking conditions. The residential shoreline of the lake was less infested and easier to navigate, allowing the team to cover a greater area. It is still true that on Spring Lake, the yellow flag iris is the predominant noxious emergent weed and purple loosestrife is less abundant.

Six community members returned in August to treat again. The focus of the work was the from the boat launch south to the outlet. The main weed targeted was yellow-flag iris but purple loosestrife was treated when found.

The goal for the community group was to get back out again in the summer to finish the south eastern part of the shoreline, but due to time constraints, it did not happen.

Spray reports and treatment maps are included in Appendix B.

Effectiveness of Treatment
It was the first time since 2003 that herbicide had to be used at Spring Lake to control Eurasian watermilfoil. A new herbicide was used and, based on talking with the chemical company and staff at Ecology, it was felt one treatment should be enough because of the slow rate of chemical decomposition in other King County lakes. Iris remained the most frustrating emergent plant due to its abundance in the hard to access fen. Purple loosestrife was still present but very manageable and easy to target. Lilies were successfully removed from the lake.

2010

Milfoil

Survey
In July, three County staff members surveyed Spring Lake for Eurasian watermilfoil. Two snorkelers surveyed the lake while one staff member provided visual survey and supported the snorkelers. One plant was found on the west side of the shore near the fen but unfortunately was not pulled by the roots. That was the only plant found during this survey event.
On August 23rd, King County WLRD staff received an e-mail message from a Spring Lake resident alerting them to the presence of two milfoil plants found along the west shore and south end. The King County staff advised the community member to partner up with other community members and perform visual surveys of the lake throughout August. By the end of August it was clear that milfoil was still present in the south cove and along the western shore as well as the northeastern cove. Spring Lake community members pulled as many plants as they could but most of the plants in the south end were not pulled due to the access issues with the water being so shallow.

King County staff believed that the cold spring and mild summer resulted in milfoil showing up later than normal. It was apparent that milfoil was still present and treatment had to be done.

**Treatment**

Treatment occurred on September 16th and was done by two King County WLRD staff members. Based on surveys, it was determined that the focus of the work should be on the south cove. This was a late treatment due to the cold spring and lack of finding any milfoil plants in the mid summer survey. It was identified that the south cove was the heaviest infestation and that is where the treatment focused. One bag of Renovate OTF® (active ingredient triclopyr) was used in about two acres of lake which allowed for 0.75 ppm concentration to be applied. It was applied by dispersing the flakes with a scoop throughout the treatment area.

**Monitoring**

Samples to check for residual triclopyr were taken on October 4th. Levels were a little higher than 1ppb but very low and the rainy season hit the northwest, so no further samples were taken because the need for property irrigation was gone.

Results of the Fastest can be found in Appendix C.

**Fragrant Water Lily, Purple Loosestrife and Yellow Flag Iris**

**Survey and Treatment**

There were three surveys done for purple loosestrife and yellow flag iris during the 2010 growing year. The first two surveys done at the end of June and mid July focused on yellow-flag iris, while the third survey and treatment date focused on purple loosestrife. Due to the pervasive presence of the iris, survey and treatment were done at the same time.

The Spring Lake community worked together on the iris treatment and surveys and was led by two licensed applicators within the community. A total of 2.67 acres (or 7,800 linear feet of shoreline with an average of 15 feet from shore) were treated for iris using Aquamaster, (a.i. glyphosate). A total of 1950 mL was used for a concentration of 2.5 %. A combination of hand held sprayers and a back pack sprayer were used.

The purple loosestrife survey and treatment was done in August while the plant was blooming. Five members from the community helped a representative from the King County Noxious Weed Control Program. They spent one day working around the lake treating loosestrife and any iris that was not previously treated. The group covered 1.79 acres (7800 linear feet of shoreline with a 10 foot average distance from shore). Again, Aquamaster was the herbicide used and 200 mL
were used to achieve a 2.5% solution. The plants were spot treated when found using hand held sprayers and one back pack sprayer.

**Monitoring**

No monitoring for glyphosate was done this year as the treatments occurred landward from Spring Lake. The lilies were absent from the lake and the majority of the emergent weeds are upland of the lake.

**Effectiveness of Treatment**

Milfoil came back in late summer early fall to Spring Lake at densities that had not been seen in several years. The trickiest part of the milfoil treatment was getting good coverage in the south cove due to its soft sediments and very shallow water depths. In the other areas where milfoil was found, the community managed to hand pull most of them but it does seem likely that some treatment will be necessary in 2011.

Purple loosestrife and lilies are being successfully managed at Spring Lake. As of 2010, there were no fragrant water lilies present at the lake and purple loosestrife has been controlled to low levels that can be controlled in one day of treatment.

Controlling, yellow flag iris continues to be a battle at the lake. While excellent control has been achieved around the residential properties, the south area in the fen has proven to be very problematic due to the water depth when trying to access the shoreline and the difficulty of reaching the iris.

**Education and Outreach**

Much of the education and outreach was done at the beginning of the grant to educate the community on the problem, the project and how to identify the weeds. All outreach materials can be found in Appendix D.

**Community Involvement**

**Steering Committee**

A steering committee meeting was established, made up of the most active members of the Spring Lake community. They worked on the Integrated Aquatic Vegetation Plan, drafting the grant and helping to guide each step of the planning process and act as liaisons to the wider community.

**Kick off meeting**

On June 19th, 2003 a kickoff presentation was a help for the aquatic weed eradication project at a Spring Lake Community Club Meeting. Extra money was collected at the meeting to help establish funds for indentifying and controlling new weed infestations after the Ecology-funded efforts end.
**Milfoil Patrol**
Eight lakeside residents participated in an on-lake training to learn how to identify milfoil and to agree upon several reference points around the lake. These residents formed a Milfoil Patrol to routinely survey Spring Lake for weeds over the course of the project.

**Seattle Post Intelligencer**
On July 29, 2003 the Seattle PI ran a front-page article about the Spring Lake project and other weed control efforts. A Spring lake resident was prominently featured in the article.

**Herbicide Applicators License**
Two Spring Lake residents tested and received their herbicide applicator licenses with an aquatic endorsement. This allowed for the community to take over treatment of the emergent weeds in the last years of the project and set themselves up for continued treatment of the emergent weeds in the future.

**Meetings**
Aside from the initial meetings in the beginning of the project, the Spring Lake community group ran meetings themselves and appointed a citizen liaison to receive information from KCLSP staff and to pass the information along to the residents.

**Printed Materials**

**Educational Brochures**
The steering committee created an educational brochure to outline the problem with aquatic weeds and the proposed treatment plan. The brochure was mailed to all watershed residents and a copy of the brochure is included in Appendix D.

**Overall Project Results**

While milfoil has been reintroduced into Spring Lake after several years of excellent control, the project has been successful overall.

The largest success of this project has little to do with directly controlling the weeds, but rather that a community has learned how to identify and manage for invasive, noxious weeds on their own. It is a huge testament to this project that a core group of community members organized themselves to guide and advise on each aspect of the project. Two residents even went so far as to get themselves licensed for aquatic herbicide treatment so they could manage the weeds as a community without the need for much oversight by the county. The Spring Lake community is a model for other community-based aquatic noxious weed projects in the way that they internalized much of the work and cooperated with the county. This dedicated group of citizens kept other residents up to date on the weed work through their community club meetings and e-mail alerts to the residents. The citizen participation and commitment to restoring the native plants of Spring Lake is one of the best outcomes of this grant project.

However, the goals of the grant continue be an ongoing challenge. Milfoil was removed from the lake in 2003 with a 2,4-D treatment. Upon its return in 2005, hand pulling was sufficient to
remove the few plants that were found. In 2008, herbicide should have been the control method instead of hand pulling due to the difficult access and shallow waters of the south end of the lake. Triclopyr seemed to definitely have an effect on the milfoil plants, but it was not as drastic or as immediate as the 2,4-D that was used in the first season. Triclopyr was used in the end because success had been noticed in the use of the herbicide at Cottage Lake, and it was anticipated that it would be successful at Spring Lake as well.

There were several complications to the last years of treatment at Spring Lake. The first obstacle was the shallowness of the south end making treatment very difficult for a regular boat with an outboard motor. The second complicating factor was milfoil often showed up later in the season at Spring Lake, often late July so treatments were later in the season making them potentially less effective. Triclopyr in Spring Lake had the same issue as in Cottage Lake with residual levels staying higher much longer than the label states.

In hindsight, greater success would probably have been achieved if a contractor was hired to apply 2,4-D to treat the lake as soon as the milfoil reappeared in the lake and have King County perform surveys to assess infestation and treatment effects.

Water lilies and purple loosestrife were very well controlled. While it may have taken a few years to get control of these two plants, lilies have now been eradicated from the lake and are unlikely to come back unless someone plants them along their shoreline. Purple loosestrife is still present, but not nearly to the same degree it was in 2003 and the community has been taking control of the loosestrife since 2008, with limited help from the County.

Over the seven year project, controlling iris has proven to be most difficult. The County and the community have been successful in controlling it in easily accessed areas, especially along privately owned shorelines, mainly due to the firm ground, maintenance of people’s yards and easy access. The hardest part of the treatment has been in the south fen area. The fen has very soft soils and is often overgrown with cattails and other emergent vegetation. This makes locating and treating the iris very difficult. It is also hard to access the iris along the shoreline in the fen by boat due to the very shallow water. The community remains committed to tackling the iris in the fen and staying vigilant along residential shorelines.

**Budget**

The Spring Lake project began in 2003, making it an intensive eight year project. Over the course of eight years, 89% of the budget was spent (Table 1). This budget will change due to the last billing which will be done in January 2011, this will include the summer treatment and survey work as well as the writing of the final project report.
Table 1: Budget summary of the Spring Lake Milfoil Project through June 30, 2010

<table>
<thead>
<tr>
<th>Task</th>
<th>Grant</th>
<th>Match</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Management</td>
<td>$ 6,504.00</td>
<td></td>
<td>$ 7,279.93</td>
</tr>
<tr>
<td>Herbicide Treatment</td>
<td>$ 27,466.00</td>
<td>$ 2,632.50</td>
<td>$ 32,505.26</td>
</tr>
<tr>
<td>In-water Work</td>
<td>$ 41,026.00</td>
<td>$ 5,172.96</td>
<td>$ 35,445.53</td>
</tr>
<tr>
<td>Education and Outreach</td>
<td>$ 9,552.00</td>
<td>$ 2,295.00</td>
<td>$ 4,178.80</td>
</tr>
<tr>
<td>Project Reports</td>
<td>$ 2,168.00</td>
<td></td>
<td>$ 2,751.60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$ 86,716.00</strong></td>
<td><strong>$ 10,100.46</strong></td>
<td><strong>$ 82,161.12</strong></td>
</tr>
</tbody>
</table>

The budget above reports the best estimate for how the final project budget numbers will end up. The tasks were tracked within the King County system but it was not clear how these were grouped for billing as billing was never reported by task. The tasks set forward in the contract were project management, herbicide treatment, in-water work (surveys, monitoring), education and outreach and project reports. It is known that the majority of the expenses went to the in-water work and herbicide treatments as they were the most labor intensive, in some cases required contractors and happened every year. However, the project management and project reports tasks went over budget as it always takes more time and money to perform these tasks than originally thought.

It is likely by the final billing the majority of the grant money will be spent. It is possible that there could have been better success and less money spent if the project went straight back to herbicide treatment after the first milfoil plant that returned in 2005. However, the management decision was made to hand-pull and perform surveys which were much more time and labor intensive. It was also felt that surveys were a mandatory part of this project to ensure infestation levels and treatment effectiveness were closely monitored.

**Proposed Management for Future Years**

Spring Lake will be well positioned at the sunset of this grant to continue the work. The Community is highly committed to carrying out eradication work and have set up funds within their community group to help pay for the costs. Milfoil will be the top priority of the community in the coming years, and it will be interesting to see if they can replicate the success of the 2003 herbicide treatment. King County recommends that the community use a contractor with an airboat and possibly try some new herbicides on the market such as the triclopyr, 2,4-D combination that was recently approved by Ecology.

The community has already shown their dedication to treating the emergent weeds along the lake shore and has been working with the King County Noxious Weed group to control purple loosestrife. It is helpful that they have two residents who are licensed herbicide applicators with aquatic endorsements to help guide the treatment and who can be instrumental in hiring the appropriate contractor for the job.
Spring Lake volunteers are also involved with the King County weed watchers group. The goal of the program is to train volunteers to survey for aquatic weeds in small lakes in King County, Washington. Volunteers are trained to identify both native and non-native aquatic plants. The goal of the project is to watch for populations of invasive weeds that are not currently known to occur in King County or that have a very limited distribution, but have the potential to spread and cause damage. Detecting these weeds early allows for eradication before they get too entrenched to remove. This is reassuring for the reason that the Spring Lake community will continue to receive technical assistance and training to keep looking for possible invasive weeds that could damage the Spring Lake ecosystem.
APPENDICIES
Appendix A - Survey maps

Appendix B – Treatment Maps and Spray Reports

Appendix C – Herbicide Monitoring

Appendix D – Education and Outreach
Spring Lake 2003
Purple Loosestrife
Survey Map

* Purple Loosestrife
Spring Lake 2003
Fragrant white waterlily survey map

Fragrant white waterlily areas

- ▲ Dense
- ▼ Moderate
- ▲ Sparse
Table 1 shows all aquatic plants found during the survey. The table also indicates the relative distribution and density of the plants in the lake. No submerged aquatic plants were found growing at depths deeper than thirteen feet.

**Table 1.** List of all submerged, floating-leaved, and emergent aquatic plants (including macroalgae) found during survey at Spring Lake on July 20th, 2004.

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Distribution/Density[^1]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceratophyllum demersum</td>
<td>Coontail</td>
<td>1</td>
</tr>
<tr>
<td>Elodea canadensis</td>
<td>American waterweed</td>
<td>3</td>
</tr>
<tr>
<td>Najas flexilis</td>
<td>Slender water-nymph</td>
<td>3</td>
</tr>
<tr>
<td>Potamogeton pusillus</td>
<td>Small pondweed</td>
<td>2</td>
</tr>
<tr>
<td>Potamogeton epihydrus</td>
<td>Ribbonleaf pondweed</td>
<td>3</td>
</tr>
<tr>
<td>Utricularia vulgaris</td>
<td>Common bladderwort</td>
<td>1</td>
</tr>
<tr>
<td>Brasenia schreberi</td>
<td>Watershield</td>
<td>2</td>
</tr>
<tr>
<td>Nuphar polysepala</td>
<td>Spatterdock</td>
<td>3</td>
</tr>
<tr>
<td>Nymphaea odorata</td>
<td>Fragrant waterlily (*)</td>
<td>2</td>
</tr>
<tr>
<td>Carex spp.</td>
<td>Sedge spp.</td>
<td>3</td>
</tr>
<tr>
<td>Eleocharis spp.</td>
<td>Spike-rush spp.</td>
<td>2</td>
</tr>
<tr>
<td>Iris pseudacorus</td>
<td>Yellow-flag iris (*)</td>
<td>3</td>
</tr>
<tr>
<td>Juncus spp.</td>
<td>Rush spp.</td>
<td>2-3</td>
</tr>
<tr>
<td>Ludwigia palustris</td>
<td>Water purslane</td>
<td>2</td>
</tr>
<tr>
<td>Lythrum salicaria</td>
<td>Purple loosestrife (*)</td>
<td>2</td>
</tr>
<tr>
<td>Scirpus spp.</td>
<td>Bulrush spp.</td>
<td>2</td>
</tr>
<tr>
<td>Spiraea douglasii</td>
<td>Hardhack</td>
<td>3-4</td>
</tr>
<tr>
<td>Typha angustifolia</td>
<td>Narrowleaf cattail</td>
<td>2-3</td>
</tr>
<tr>
<td>Typha latifolia</td>
<td>Common cattail</td>
<td>2-3</td>
</tr>
<tr>
<td>Chara</td>
<td>Muskggrass</td>
<td>2</td>
</tr>
<tr>
<td>Nitella</td>
<td>Stonewort</td>
<td>2-3</td>
</tr>
</tbody>
</table>

[^1]: Ecology distribution value definitions as follows: 1 = few plants in only one or a few locations, 2 = few plants, but with a wide patchy distribution, 3 = plants growing in large patches and co-dominant with other plants, 4 = plants in nearly mono-specific patches and dominant, 5 = thick growth covering the substrate at the exclusion of other species.

* State-listed noxious weed.

Ribbonleaf pondweed American waterweed and slender water-nymph were the dominant submerged plants in the lake, and in some areas formed dense monotypic stands. Slender water-nymph was especially abundant in deeper (>8 feet) waters near the public boat ramp. The floating-leafed plant spatterdock (a.k.a. yellow water lily) was present in most of the nearshore areas, especially in the northern and southern ends of the lake and along the western shoreline. Although documenting shoreline plants was not the primary focus of the survey, cattails, hardhack, sedges, and rushes were the most common emergent plants growing along the shoreline.
Aquatic Plants Map

- Floating
- Emergent
- Submergent
- No plants or sparse
- No plants—deep
- N. American watermilfoil
- Milfoil
- Shoreline
- Section boundary

Lake Area: 69.1 acres
Mean Depth: 19 feet
Maximum Depth: 32 feet
2007 Treatment Areas

Iris 21-June-2007
Iris 02-June-2007

Note: Shaded areas depict the extent of the areas where plants were growing, not total area treated with herbicide.
2007 Treatment Areas

2007 Lilies - cut, treated

Note: Shaded areas depict the extent of the areas where plants were growing, not total area treated with herbicide.
2007 Treatment Areas

Spring_2007_Loosestrife
APPENDIX B

TREATMENT MAPS, SPRAY REPORTS AND HERBICIDE MONITORING RESULTS
PESTICIDE APPLICATION RECORD (Version 1)

NOTE: This form must be completed same day as the application and it must be retained for 7 years (Ref. RCW 17.21)

1. Date of Application - Year: 2023 Month: July Day: 29 Time: 7am-1pm

2. Name of Person for whom the pesticide was applied: King County DNR

3. Licensed Applicator's Name (if different from #2 above): Terry McNabb

4. Name of person(s) who applied the pesticide (if different from #3 above):

5. Application Crop or Site: Spring Lake, Washington

6. Total Area Treated (acre, sq. ft., etc.): 13.8 Acres in Area One, 10.1 acres in remaining areas

7. Was this application made as a result of a WSDA Permit? ☐ No ☐ Yes (if yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide in the tank mix):

<table>
<thead>
<tr>
<th>a) Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dow DMA 4 IVM (area 1)</td>
<td>62719-3</td>
<td>29 gallons</td>
<td>2.1 / acre</td>
<td>n/a</td>
</tr>
<tr>
<td>Dow DMA 4 IVM (other areas)</td>
<td>62719-3</td>
<td>71 gallons</td>
<td>7 gallons / acre</td>
<td>n/a</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

This application was made to areas of Spring Lake infested with Eurasian Milfoil, they are shown on the attached map. Area One is the shallows on the southwest and south shoreline with an average depth of 1.5 feet at time of treatment. All other areas had an average depth of 4 feet.

10. Wind direction and estimated velocity during the application: calm

11. Temperature during the application: 75 degrees

12. Apparatus license plate number (if applicable):  

13. ☐ Air ☐ Ground ☐ Chemigation

14. Miscellaneous Information:

This was an aquatic application made by airboat with drop hoses to inject herbicide into the lake.
Location of Application: If the application covers more than one township or range, please indicate the township & range for the top left section of the map only:

Township: ........................................................................................................ N
Range: E OR W (please indicate) .................................................................
Section(s): ......................................................................................................
County: ............................................................................................................

PLEASE NOTE:

The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Approximate GPS location of lake is 47.26.15 North, 122.05.15 West

Miscellaneous Information:
July 29th Treatment Areas

UTM
10 North
NAD 1983 (Conus)

Scale 1:10,000

spring1.cor
8/28/2003
GPS Pathfinder® Office
Trimble®
PESTICIDE APPLICATION RECORD (Version 1)

NOTE: This form must be completed same day as the application and it must be retained for 7 years (Ref. RCW 17.21)

1. Date of Application - Year: 2003 Month: August Day: 13 Time: 7am-1pm

2. Name of Person for whom the pesticide was applied: King County DNR
   Firm Name (if applicable): King County DNR
   Street Address: 201 S Jackson Street City: Seattle State: WA Zip: 98124

3. Licensed Applicator’s Name (if different from #2 above): Terry McNabb
   License No.: 7973
   Firm Name (if applicable): Aquatechnex, LLC
   Street Address: PO Box 118 City: Centralia State: WA Zip: 98531

4. Name of person(s) who applied the pesticide (if different from #3 above):

5. Application Crop or Site:
   Spot sprayed noxious weeds on the margins of the lake totaling approx. 3 acres

6. Total Area Treated (acre, sq. ft., etc.):

7. Was this application made as a result of a WSDA Permit? □ No □ Yes (if yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide in the tank mix):

<table>
<thead>
<tr>
<th>a) Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>AquaPRO</td>
<td>62719-324-67690</td>
<td>67 oz</td>
<td>1.5 / %solution</td>
<td>1.5 %solution</td>
</tr>
<tr>
<td>LI 700 Surfactant</td>
<td>n/a</td>
<td>44.8 oz</td>
<td>1 / %solution</td>
<td>1%solution</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: if the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.
   This application was made from an airboat and from the shoreline using backpack sprayers as mapped on attached documents

10. Wind direction and estimated velocity during the application: calm

11. Temperature during the application: 78 degrees

12. Apparatus license plate number (if applicable):

13. □ Air □ Ground □ Chemigation

14. Miscellaneous Information:
Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only):

Township: ............................................................................................................. N
Range: E OR W (please indicate) ..............................................................................
Section(s): ...........................................................................................................
County: ...................................................................................................................

PLEASE NOTE:

The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Approximate GPS location of lake is 47.26.15 North, 122.05.15 West

Section: ................................................. Section: .................................................

Section: ................................................. Section: .................................................

Section: ................................................. Section: .................................................

Section: ................................................. Section: .................................................

Miscellaneous Information:
August 13th Treatment Sites

UTM
10 North
NAD 1983 (Conus)

Scale 1:10,000

0 1,250 Feet

spring2.ssf
8/28/2003

GPS Pathfinder Office
Trimble
PESTICIDE APPLICATION RECORD (Version 1)

NOTE: This form must be completed same day as the application and it must be retained for 7 years (Rev. RCW 17.21)

1. Date of Application - Year: 2003 Month: August Day: 26 Time: 7am-12:00 pm

2. Name of Person for whom the pesticide was applied: King County DNR
   Firm Name (if applicable): King County DNR
   Street Address: 201 S. Jackson Street City: Seattle State: WA Zip: 98124

3. Licensed Applicator's Name (if different from #2 above): Terry McNabb
   License No.: 7973
   Firm Name (if applicable): Aquatechnix, LLC
   Street Address: PO Box 118 City: Centralla State: WA Zip: 98531

4. Name of person(s) who applied the pesticide (if different from #3 above):
   License No(s). if applicable:

5. Application Crop or Site: Spring Lake, Washington

6. Total Area Treated (acre, sq. ft., etc.): spot sprayed noxious weeds totaling approximately 1 acre

7. Was this application made as a result of a WSDA Permit? ☐ No ☑ Yes (if yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide in the tank mix):

<table>
<thead>
<tr>
<th>a) Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>AquaPRO</td>
<td>62719-324-67690</td>
<td>34.4 oz</td>
<td>1.5 /% solution</td>
<td>1.5% solution</td>
</tr>
<tr>
<td>LI 700 surfactant</td>
<td>n/a</td>
<td>23 oz</td>
<td>1 /% solution</td>
<td>1 % solution</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: if the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

   This application was made to noxious emergent weeds (P Loosestrife, W Water Lily and Y Iris on the margins of Spring Lake as shown on attached map

10. Wind direction and estimated velocity during the application: variable 0-5 mph

11. Temperature during the application: 65 degrees

12. Apparatus license plate number (if applicable): 

13. ☐ Air ☐ Ground ☑ Chemigation

14. Miscellaneous Information:

   This application was made by airboat and from the shoreline using backpack sprayers
**Location of Application** (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only):

Township: ....................................................................................................................... N
Range: E OR W (please indicate) ......................................................................................
Section(s): ......................................................................................................................
County: .............................................................................................................................

**PLEASE NOTE:**

The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Approximate GPS location of lake is 47.26.15
North, 122.05.15 West

Miscellaneous Information:
August 26th Treatment Sites

UTM
10 North
NAD 1983 (Conus)

Scale 1:10,000

spring2.ssf
8/28/2003

GPS Pathfinder®Office
Trimble
July 29th Treatment Areas

UTM
10 North
NAD 1983 (Conus)

Scale 1:10,000

spring1.cor
8/28/2003

GPS Pathfinder® Office
Trimble®
PESTICIDE APPLICATION RECORD (Version 3)

NOTE: This form must be completed same day as the application and it must be retained for 7 years (Ref. RCW 17.21)

1. Date of Application - Year: Dec, Month: December, Day(s): 29th

2. Name of Person for whom the pesticide was applied:
   Firm Name (if applicable): Spraying Ltd
   Street Address: ........................................... City: ........................................... State: WA Zip: .................................

3. Licensed Applicator’s Name (if different from #2 above): Tommy Ellis License No. 66397
   Firm Name (if applicable): August Ellis
   Street Address: ........................................... City: Made Valley State: WA Zip: .................................

4. □ Air □ Ground □ Chemigation

5. Application Crop or Site: Spraying Ltd

6. Total Area Treated (acre, sq. ft., etc.): ...........................................

7. Was this application made as a result of a WSDA Permit?  □ No □ Yes (if yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide in the tank mix):

<table>
<thead>
<tr>
<th>a) Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agrowor</td>
<td>62714 - 324 - 6X20</td>
<td>30 gal</td>
<td>1</td>
<td>1.5%</td>
</tr>
<tr>
<td>L-700</td>
<td>1A0 360-08 -700-04</td>
<td>15 gal</td>
<td>1</td>
<td>1.75%</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: if the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Date: 6/29
   11. Name of person(s) making the application: Tommy Ellis
   12. License No: 66397
   13. Apparatus Lic. Plate No: 70X: 12-4S
   14. Time Start: 7:00
   15. Acres Completed: 2
   16. Wind Dir: 8.5º
PESTICIDE APPLICATION RECORD (Version 3)

NOTE: This form must be completed same day as the application and it must be retained for 7 years (Ref. chapter 17.21 RCW)

1. Date of Application - Year: 2004          Month: July          Day(s): 30

2. Name of Person for whom the pesticide was applied:
   Firm Name: Spring lake
   Street Address: ...........................................................
   City: ................................ State: ................... Zip: ........

3. Licensed Applicator’s Name (if different from #2 above): Christopher Clinton
   License No 62749
   Firm Name (if applicable): AquaTechnex, LLC
   Tel. No. : (360) 330-0152
   Street Address: P.O. Box 118
   City: Centralia ................................ State: WA ........... Zip: 98531

4. Air~Ground~Chemigation

5. Application Crop or Site: lake

6. Total Area Treated (acre, sq. ft., etc.): ........................................... Spr+ treat

7. Was this application made as a result of a WSDA Permit? Yes

8. Pesticide Information (list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
<th>f) Depth of Application (chemigation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AquaPro</td>
<td>62719-324-67690</td>
<td>40 ounces</td>
<td></td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>LI-700</td>
<td>AW36208-70004</td>
<td>20 ounces</td>
<td></td>
<td>0.75%</td>
<td></td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: if the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

    6/30/04 Christopher Clinton 62749 C138 6:00 am 10:00 am none none 65°
PESTICIDE APPLICATION RECORD (Version 1)

NOTE: Application records must be completed same day as the application. Records must be retained for 7 years.

1. Date of Application - Year: 2005, Month: June, Day: 23, Time: 12:00

2. Name of person for whom the pesticide was applied: Spring Lake Community Club
   Firm Name (if applicable): King County...Wake and Land Resource Division
   Street Address: 201 S. Jackson St. Seattle, WA State: WA Zip: 98104

3. Licensed Applicator's Name (if different from #2 above): Beth Cullen
   Firm Name (if applicable): King County
   Street Address: 201 S. Jackson St. Seattle, WA State: WA Zip: 98104

4. Name of person(s) who applied the pesticide (if different than #3 above): Marivic Walker
   License No: 1234

5. Application Crop or Site: 1215 Nymphaea Odorata (fragrant water lily)

6. Total Area Treated (acre, sq. ft., etc.): 1.5

7. Was this application made as a result of a WSDA Permit? No

8. Pesticide Information (please list all information for each pesticide in the tank mix):
   a) Product Name
      Aquaneem
      Agripel
   b) EPA Reg. No.
      24343
      59880094-44
   c) Total Amount of Pesticide Applied in Area Treated
      12 oz
      16 oz
   d) Pesticide Applied per Acre
      4.021 Ac Spot Spray 2 oz/gal
      2.021 Ac Spot Spray 1 oz/gal

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.
   Spring Lake, King Co, WA
   Map attached

10. Wind direction and estimated velocity during the application: 5 mph

11. Temperature during the application: 80° F

12. Apparatus license plate number (if applicable):

13. Air ☐ Ground ☐ Chemigation ☐

14. Miscellaneous information:
Spring Lake
June 23, 2005 – Herbicide treatment areas

Legend
- Estimated Yellow Flag Iris Treatment
- Estimated Fragrant Water Lily Treatment

King County
PESTICIDE APPLICATION RECORD (Version 1)

NOTE: Application records must be completed same day as the application. Records must be retained for 7 years.

1. Date of Application - Year: 2005... Month: June... Day: 30... Time: 9:50

2. Name of person for whom the pesticide was applied: Spring Lake Community Club
   Firm Name (if applicable): ..........................................................
   Street Address: ........................................................... City: ................................ State: ... Zip: ........................................

3. Licensed Applicator's Name (if different from #2 above): Beth Chilling
   King Co. Water and Land Resources
   Tel. No. (206) 263-6242
   Street Address: 201 S. Jackson St. Seattle... City: Seattle... State: WA... Zip: 98104

4. Name of person(s) who applied the pesticide (if different than #3 above):

5. Application Crop or Site: Leis, pseudocerus, (Yellow flag yegs), Aphymia, dacea, (Grass sheet mosaic)

6. Total Area Treated (acre, sq. ft., etc.): Spot spray

7. Was this application made as a result of a WSDA Permit? No □ Yes (if yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide in the tank mix):

<table>
<thead>
<tr>
<th>a) Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied per Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquamasles</td>
<td>524343</td>
<td>24 oz</td>
<td>Spot Spray</td>
<td>2 oz/gal</td>
</tr>
<tr>
<td>Agricidix</td>
<td>0526051004-4A</td>
<td>16 oz</td>
<td>Spot Spray</td>
<td>1 oz/gal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sprayed</td>
<td>1</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

Spring Lake, King Co. WA

Map Attached.

10. Wind direction and estimated velocity during the application: None

11. Temperature during the application: 35-80

12. Apparatus license plate number (if applicable): ..................................................

13. □ Air □ Ground □ Chemigation

14. Miscellaneous Information:
PESTICIDE APPLICATION RECORD (Version 1)

NOTE: Application records must be completed same day as the application. Records must be retained for 7 years.

1. Date of Application - Year: 2023, Month: July, Day: 29, Time: 10:00

2. Name of person for whom the pesticide was applied: Spring Lake Community Club

   Firm Name (if applicable): 
   Street Address: 
   City: 
   State: 
   Zip: 

3. Licensed Applicator's Name (if different from #2 above): Beth Gallman
   License No: 116.248
   Firm Name (if applicable): King County Water & Land Resources
   Street Address: 201 S. Jackson St. 98001
   City: Seattle
   State: WA
   Zip: 98104

4. Name of person(s) who applied the pesticide (if different than #3 above): 

   License No(s), if applicable: 

5. Application Crop or Site: 

6. Total Area Treated (acre, sq. ft., etc.): 

7. Was this application made as a result of a WSDA Permit? □ No □ Yes (if yes, give Permit No.) # 

8. Pesticide Information (please list all information for each pesticide in the tank mix):

   a) Product Name
      b) EPA Reg. No.
      c) Total Amount of Pesticide Applied in Area Treated
      d) Pesticide Applied per Acre (or other measure)
      e) Concentration Applied


9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

   Spring Lake, King Co., WA
   Map Attached

10. Wind direction and estimated velocity during the application:

11. Temperature during the application:

12. Apparatus license plate number (if applicable):

13. □ Air □ Ground □ Chemigation

14. Miscellaneous Information:
Spring Lake
July 29, 2005 – Herbicide treatment areas

Legend
- Estimated Yellow Flag Iris Treatment
- Estimated Purple Locust Iris Treatment
- Estimated Fragrant Water Lily Treatment

King County
Spring Lake
June 30, 2005 – Estimated herbicide treatment areas

For information contact Michael Murphy at 206-296-8008
1. Date of Application - Year: 2006, Month: July, Day: 14, Time: 8:00 am

2. Name of Person for whom the pesticide was applied: Terry McNabb

3. Licensed Applicator's Name (if different from #2 above): Tommy Elder

4. Application Crop or Site: Purple Loosestrife and Yellow Flag Iris

5. Total Area Treated (acre, sq. ft., etc.): less than 1 acre

6. Was this application made as a result of a WSDA Permit? No

7. Pesticide Information (please list all information for each pesticide in the tank mix):

<table>
<thead>
<tr>
<th>a) Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rodeo</td>
<td>62719-324</td>
<td>15 oz</td>
<td>4 pints / acre</td>
<td>1.5% solution</td>
</tr>
<tr>
<td>LI-700</td>
<td>AW36208-70004</td>
<td>7.5 oz</td>
<td>2 pints / acre</td>
<td>0.75% solution</td>
</tr>
</tbody>
</table>

8. Address or exact location of application. NOTE: if the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

Spring Lake shoreline.

9. Wind direction and estimated velocity during the application: 0-5 mph sw

10. Temperature during the application: 65

11. Apparatus license plate number (if applicable): N/A

12. Air / Ground / Chemigation

13. Miscellaneous Information:
1. Date of Application - Year: 2006, Month: August, Day: 16, Time: 2:00 pm

2. Name of Person for whom the pesticide was applied: Ted
   Firm Name (if applicable): Spring Lake HOA
   Street Address: 201 South Jackson, Suite 600, City: Seattle, State: WA, Zip: 98104-3855

3. Licensed Applicator’s Name (if different from #2 above): Terry McNabb
   License No.: 7973
   Firm Name (if applicable): Aquatechnex, LLC
   Street Address: PO Box 118, City: Centralia, State: WA, Zip: 98531

4. Name of person(s) who applied the pesticide (if different from #3 above): Tommy Elder

5. Application Crop or Site: Purple Loosestrife and Yellow Flag Iris

6. Total Area Treated (acre, sq. ft., etc.): less than 1 acre

7. Was this application made as a result of a WSDA Permit? ☐ No ☐ Yes (if yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide in the tank mix):

<table>
<thead>
<tr>
<th>a) Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rodeo</td>
<td>62719-324</td>
<td>40 oz</td>
<td>4 pints / acre</td>
<td>1.5% solution</td>
</tr>
<tr>
<td>LI-700</td>
<td>AW36208-70004</td>
<td>20 oz</td>
<td>2 pints / acre</td>
<td>0.75% solution</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: if the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.
   Spring Lake shoreline.

10. Wind direction and estimated velocity during the application: 0-5 mph sw

11. Temperature during the application: 68

12. Apparatus license plate number (if applicable): N/A

13. ☐ Air ☐ Ground ☐ Chemigation

14. Miscellaneous Information:
1. Date of Application - Year: 2007
   Month: June
   Day: 2
   Start Time: 0900
   Stop Time: 1600

2. Name of person for whom the pesticide was applied: King County - Spring Lake
   Firm Name (if applicable): King County Department of Natural Resources & Parks
   Street Address: 201 S Jackson St
   City: Seattle
   State: WA
   Zip: 98104

3. Licensed Applicator's Name (if different from #2 above): Michael F. Murphy
   License No.: 74407
   Firm Name (if applicable): King Co. DNR
   Street Address: same as above
   City: 
   State: 
   Zip: 

4. Name of person(s) who applied the pesticide (if different from #3 above):

5. Application Crop or Site: Spring Lake

6. Total Area Treated (acre, sq. ft., etc.): < .5 acres

7. Was this application made as a result of a WSDA Permit? No
   Yes (if yes, give Permit No.) # WAC 993.000

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>App嘣mother</td>
<td>E24 - 343</td>
<td>634 ml</td>
<td>~1200 ml/acre</td>
<td>1.7 %</td>
</tr>
<tr>
<td>Lc 700</td>
<td>34704-50035</td>
<td>211 ml</td>
<td>~400 ml/acre</td>
<td>.5 %</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map or page two of this form.

10. Wind direction and estimated velocity (mph) during the application: Light & Variable

11. Temperature during the application: 69° F

12. Apparatus license plate number (if applicable):

13. □ Air  □ Ground  □ Chemigation

14. Miscellaneous Information:
   Spot treatment of yellow ir's along margin of lake
Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only.)

Township: 23 N

Range: 6  E  □ W (please indicate)

Section(s): 31

Block: __________________________  Farm Unit: __________________________

or GPS: ________________________

County: ________________________

PLEASE NOTE:
The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Miscellaneous Information:

See Attached Map
PESTICIDE APPLICATION RECORD (Version 1)

NOTE: This form must be completed same day as the application and it must be retained for 7 years (Ref. chapter 17.21 RCW)

1. Date of Application - Year: 2007 Month: June Day: 21 Start Time: 1000 Stop Time: 1500

2. Name of person for whom the pesticide was applied: King County DNRP - Spring Lake
   Firm Name (if applicable): KC DNRP
   Street Address: 2015 Jackson St. Suite 600 City: Seattle State: WA Zip: 98104

3. Licensed Applicator’s Name (If different from #2 above): Michael Murphy
   License No.: 74407
   Firm Name (if applicable): King Co DNRP
   Tel No.: 206-296-8008
   Street Address: SAME AS ABOVE City: State: Zip:

4. Name of person(s) who applied the pesticide (If different from #3 above): 

5. Application Crop or Site: Spring Lake < .25 acre

6. Total Area Treated (acre, sq. ft., etc.): 

7. Was this application made as a result of a WSDA Permit? ☐ No ☑ Yes (If yes, give Permit No.) # WA# 993000

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquamaster</td>
<td>524-343</td>
<td>180 ml</td>
<td>720 ml/ac</td>
<td>1.5%</td>
</tr>
<tr>
<td>L1700</td>
<td>34704-50035</td>
<td>60 ml</td>
<td>240 ml/ac</td>
<td>5%</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Wind direction and estimated velocity (mph) during the application: South < 5 kts

11. Temperature during the application: 17°C

12. Apparatus license plate number (if applicable): 

13. ☐ Air       ☐ Ground       ☐ Chemigation

14. Miscellaneous Information: Follow up spot treatment of IRIS
Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only.

Township: 23 N
Range: 6 ☐ E ☐ W (please indicate)
Section(s): 31
Block: Farm Unit:
or GPS: 
County: King

PLEASE NOTE:
The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Miscellaneous Information:

See attached map
1. Date of Application - Year: 2007  
   Month: September  
   Day: 5  
   Start Time: 11:00  
   Stop Time: 15:00

2. Name of person for whom the pesticide was applied:  
   King County - Spring Lake

3. Licensed Applicator's Name (if different from #2 above):  
   Michael Murphy

4. Name of person(s) who applied the pesticide (if different from #3 above):

5. Application Crop or Site: Spring Lake

6. Total Area Treated (acre, sq. ft., etc.): < .25 acre

7. Was this application made as a result of a WSDA Permit?  
   ☑ No  ☐ Yes (If yes, give Permit No.) # Treated under Ecology Aquatec permit.

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agranamaster</td>
<td>624-343</td>
<td>120 ml</td>
<td>480 ml/acre</td>
<td>1.5%</td>
</tr>
<tr>
<td>L700</td>
<td>34704-50x35</td>
<td>40 ml</td>
<td>160 ml/acre</td>
<td>.5%</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Wind direction and estimated velocity (mph) during the application: Light & Variable

11. Temperature during the application: 20°C

12. Apparatus license plate number (if applicable):

13. ☑ Air  ☐ Ground  ☐ Chemigation

14. Miscellaneous Information: Treated patches of fragrant lily and some loosestrife.
1. Date of Application - Year: 2023  Month: August  Day: 13  Start Time:  
Stop Time:  

2. Name of person for whom the pesticide was applied: King County WARD  

3. Licensed Applicator's Name (if different from #2 above): Michael Marquay  

4. Name of person(s) who applied the pesticide (if different from #3 above):  

5. Application Crop or Site:  

6. Total Area Treated (acre, sq. ft., etc.):  

7. Was this application made as a result of a WSDA Permit? □ No  □ Yes (If yes, give Permit No.) #  

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>Full Product Name</th>
<th>EPA Reg. No.</th>
<th>Total Amount of Pesticide Applied in Area Treated</th>
<th>Pesticide Applied/Acre (or other measure)</th>
<th>Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquamox 50EC</td>
<td>624-343</td>
<td>15 ml</td>
<td>60 ml/acre</td>
<td>1.5%</td>
</tr>
<tr>
<td>L1 700</td>
<td>31704-50000</td>
<td>5 ml</td>
<td>20 ml/acre</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>643390-67009</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.  

10. Wind direction and estimated velocity (mph) during the application: NA  

11. Temperature during the application: 76°F  

12. Apparatus license plate number (if applicable):  

13. □ Air  □ Ground  □ Chemigation  

14. Miscellaneous Information:
Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only.)

Township: __N__

Range: __E__ □ E □ W (please indicate)

Section(s): ____________________________

Block: ____________________________ Farm Unit: ____________________________

or GPS:

County: ____________________________

PLEASE NOTE: The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Miscellaneous Information:
PESTICIDE APPLICATION RECORD (Version 1)

NOTE: This form must be completed same day as the application and it must be retained for 7 years (Ref. chapter 17.21 RCW)

WSDA
Washington State Department of Agriculture
Pesticide Management Division
PO Box 42560
Olympia WA 98504-2560
(877) 301-4555

1. Date of Application - Year: 2008 Month: July Day: 10 Start Time: 9pm Stop Time: 3pm

2. Name of person for whom the pesticide was applied:
Firm Name (if applicable): Wasirrgloo State Department of Agriculture
Firm Address: 25 S. Jackson St. Suite 200
City: Seattle
State: WA Zip: 98104

3. Licensed Applicator's Name (if different from #2 above):
Firm Name (if applicable):
Firm Address:
City: Seattle
State: WA Zip:

4. Name of person(s) who applied the pesticide (if different from #3 above):
License No(s). If applicable:

5. Application Crop or Site:

6. Total Area Treated (acre, sq. ft., etc.):

7. Was this application made as a result of a WSDA Permit? ☐ No ☐ Yes (If yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aqua master</td>
<td>524 343</td>
<td>390ml</td>
<td>195ml/acre</td>
<td>1.5%</td>
</tr>
<tr>
<td>LI 700</td>
<td>W03805-70004</td>
<td>150 ml</td>
<td>75 ml/acre</td>
<td>1.5%</td>
</tr>
<tr>
<td></td>
<td>W03426-89427</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Wind direction and estimated velocity (mph) during the application: 3 mph

11. Temperature during the application: 80°F

12. Apparatus license plate number (if applicable):

13. ☐ Air ☐ Ground ☐ Chemigation

14. Miscellaneous Information:
**Location of Application** (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only.)

<table>
<thead>
<tr>
<th>Township:</th>
<th>23 N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range:</td>
<td>6</td>
</tr>
<tr>
<td>Section(s):</td>
<td>31</td>
</tr>
</tbody>
</table>

**Block:**

<table>
<thead>
<tr>
<th>Farm Unit:</th>
<th>...........................</th>
</tr>
</thead>
</table>

**or GPS:**

<table>
<thead>
<tr>
<th>County:</th>
<th>...........................</th>
</tr>
</thead>
</table>

**PLEASE NOTE:**

The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

<table>
<thead>
<tr>
<th>Section:</th>
<th>Section:</th>
<th>Section:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**One Mile**

<table>
<thead>
<tr>
<th>N</th>
<th></th>
</tr>
</thead>
</table>

**Miscellaneous Information:**
Washgln
Stale
Departrned
of
Agriculture

PESTICIDE APPLICATION RECORD (Version 1)

PO BOX
42560
Olympia WA 98504-2560
(877) 301-4555

NOTE: This form must be completed same day as the application and it must be retained for 7 years (Ref. chapter 17.21 RCW)

1. Date of Application - Year: 2008 Month: June Day: 2, 13 Stop Time: 9am

2. Name of person for whom the pesticide was applied: WLRD King County
Firm Name (if applicable):
Street Address: 201 S Jackson St Ste 600 City: Sen State: WA Zip: 98104

3. Licensed Applicator’s Name (if different from #2 above): Beth Allen License No.: 66298
Firm Name (if applicable):
Street Address: Same as above City: Sen State: WA Zip: 98104
Tel No.:

4. Name of person(s) who applied the pesticide (if different from #3 above):

5. Application Crop or Site: Yellow Flag Iris, purple loosestrife

6. Total Area Treated (acre, sq. ft., etc.): Spot sprayed for approx. 10 acres

7. Was this application made as a result of a WSDA Permit? □ No □ Yes (If yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquanamaster</td>
<td>624-343</td>
<td>1020 ml</td>
<td>510 ml/1 acre</td>
<td>1.5%</td>
</tr>
<tr>
<td>41 700</td>
<td>AW34208-7007</td>
<td>340 ml</td>
<td>170 ml/1 acre</td>
<td>0.5%</td>
</tr>
<tr>
<td>41 700</td>
<td>AW34208-6407</td>
<td>340 ml</td>
<td>170 ml/1 acre</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Wind direction and estimated velocity (mph) during the application: ____________________________

11. Temperature during the application: 75°F

12. Apparatus license plate number (if applicable):

13. □ Air □ Ground □ Chemigation

14. Miscellaneous Information:
Location of Application  (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only.

Township: 23 N

Range: 6 ☐ E ☐ W (please indicate)

Section(s): 31

Block: __________________ Farm Unit: ____________________________

or GPS: _______________________________________________________  

County: King

PLEASE NOTE:
The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Miscellaneous Information:
1. Date of Application - Year: 2009 Month: July Day: 18 Start Time: 8am pm
Stop Time: 8pm 1 pm

2. Name of person for whom the pesticide was applied: King County WFRD

3. Licensed Applicator's Name (if different from #2 above): Tom Rohr

4. Name of person(s) who applied the pesticide (if different from #3 above): Valerie Weber

5. Application Crop or Site: yellow flag iris

6. Total Area Treated (acre, sq. ft., etc.): 13 ac

7. Was this application made as a result of a WSDA Permit? No Yes (If yes, give Permit No. #)

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquamaster</td>
<td>524-343</td>
<td>540 mL</td>
<td>48.4 fl oz/gal/L</td>
<td>1.5%</td>
</tr>
<tr>
<td>L1-700</td>
<td>34704-04097</td>
<td>190 mL</td>
<td>140 mL/acre</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Wind direction and estimated velocity (mph) during the application: NW 4 mph

11. Temperature during the application: 79°F

12. Apparatus license plate number (if applicable):

13. □ Air □ Ground □ Chemigation

14. Miscellaneous Information:
Location of Application: (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only.

Township: 23

Range: _E_ W (please indicate)

Section(s): ____________

Block: ____________ Farm Unit: ____________

or GPS: ____________

County: ____________

PLEASE NOTE:
The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Miscellaneous Information:
### PESTICIDE APPLICATION RECORD (Version 1)

**NOTE:** This form must be completed same day as the application and it must be retained for 7 years (Ref. chapter 17.21 RCW)

1. Date of Application - Year: **2009** Month: **August** Day: **12** Start Time: **8am** Stop Time: **1pm**

2. Name of person for whom the pesticide was applied: **King County WIRD**
   
   Firm Name (if applicable): .................................................................
   
   Street Address: 201 S Jackson St Ste 600 City: Sea State: WA Zip: 98054

3. Licensed Applicator's Name (if different from #2 above): **Tim Roberts** License No.:**78579**
   
   Firm Name (if applicable): .................................................................
   
   Street Address: 18096 W Spring Lk Dr Se City: Renton State: WA Zip: 98058

4. Name of person(s) who applied the pesticide (if different from #3 above): **Valerie Weber** License No.**78579**

5. Application Crop or Site: **Yellow flag iris / purple loosestrife**

6. Total Area Treated (acre, sq. ft., etc.): **0.82**

7. Was this application made as a result of a WSDA Permit?  □ No □ Yes (If yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquarmaster</td>
<td>524-343</td>
<td>670 g/500 ml</td>
<td>160 / acre</td>
<td>1.5%</td>
</tr>
<tr>
<td>L1700</td>
<td>34769-04007</td>
<td>230 ml</td>
<td>230 / acre</td>
<td></td>
</tr>
</tbody>
</table>

9. Address or exact location of application. **NOTE:** If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Wind direction and estimated velocity (mph) during the application: **NW**

11. Temperature during the application: **°F / °F**

12. Apparatus license plate number (if applicable): .................................................................

13. □ Air □ Ground □ Chemigation

14. Miscellaneous Information:

---

AGR FORM 619-4228 (R4/07) Page 1 of 3
Location of Application: (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only.)

Township: 23  N

Range: 6  ☑ E  ☐ W (please indicate)

Section(s): 31

Block:  

Farm Unit:  

or GPS:  

County:  

PLEASE NOTE: The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Miscellaneous Information:

AGR FORM 640-4226 (RN/07) Page 2 of 3
Pesticide Application Record

Dates: August 1 & 2, 2009

Applied for: King County Department of Natural Resources
Contact: Beth Cullen, Lake Stewardship Program

Licensed Applicators:

- Thomas Rohrer (Lead Supervising) - License #78576
  18026 W Spring Lake Dr SE
  Renton WA 98058
  425-433-8369

- Valerie Weber - License #78579
  18026 W Spring Lake Dr SE
  Renton WA 98058
  425-433-8369

Supervised applicators (all residents of W Spring Lake Dr SE):

- Mike O'Brien
- Leah Mickelson
- Caren Adams
- Darcie MaeEwen

Application Site: Ground application to Spring Lake shoreline for Yellow Iris and Purple Loosestrife

Total Treated Area: 0.82 acre (2370 linear ft of shoreline x 15 ft avg distance from shore)

WSDE Permit #: WAG - 993000

Pesticide Information

- Full Product Name: Aquamaster
- EPA Reg #: 524-343
- Total Applied: 570 ml Aquamaster (in 38 liters 1.5% solution)
- Pesticide per acre: 695 ml Aquamaster / acre (46 liters solution / acre)
- Concentration: 1.5% solution

Adjuvant Information

- Full Product Name: LI-700 Penetrant Acidifier Deposition Aid Drift Control Agent
- WA Reg #: 34704-04007
- Total Applied: 190 ml LI-700 (in 38 liters solution)
- Adjuvant per acre: 232 ml LI-700 / acre (46 liters solution / acre)
- Concentration: 0.5%
Pesticide Application Record

Specific Application information:

<table>
<thead>
<tr>
<th>Date</th>
<th>Applicators</th>
<th>Time</th>
<th>Acres</th>
<th>Wind</th>
<th>Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/01/2009</td>
<td>Tom Rohrer (Lic. #78576)</td>
<td>1700-1900</td>
<td>0.16</td>
<td>NW - 10 mph</td>
<td>88 F</td>
</tr>
<tr>
<td></td>
<td>Valerie Weber (Lic. #78579)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mike O'Brien</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leah Mickelson</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Darcie MacEwen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Location: 460 linear ft of shoreline along Spring Lake outlet (230 linear ft on each side). (see map attached)
Total Pesticide Applied: 180 ml. Aquamaster (in 12 liters 1.5% solution)

<table>
<thead>
<tr>
<th>Date</th>
<th>Applicators</th>
<th>Time</th>
<th>Acres</th>
<th>Wind</th>
<th>Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/02/2009</td>
<td>Tom Rohrer (Lic. #78576)</td>
<td>0900-1330</td>
<td>0.66</td>
<td>NW - 8 mph</td>
<td>71-84 F</td>
</tr>
<tr>
<td></td>
<td>Valerie Weber (Lic. #78579)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mike O'Brien</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leah Mickelson</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Caren Adams</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Darcie MacEwen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Location: 240 linear ft of shoreline from boat launch south; 1670 linear ft of shoreline from point 830 ft south of boat launch along western shore to Spring Lake outlet. (see map attached)
Total Pesticide Applied: 390 ml. Aquamaster (in 26 liters 1.5% solution)
Pesticide Application Record

Spring Lake

Area treated 08/01/2009

Area treated 08/02/2009

Boat Launch

Spring lake outlet
PESTICIDE APPLICATION RECORD (Version 1)

NOTE: This form must be completed same day as the application and it must be retained for 7 years (Ref. chapter 17.21 RCW)

1. Date of Application - Year: 2009 Month: August Day: 5 Start Time: 10 AM Stop Time: 12:30

2. Name of person for whom the pesticide was applied: King County WLRD

   Firm Name (if applicable): .................................................................
   Street Address: 201 S. Jackson St. Ste 600 City: Sea State: WA Zip: 98104

3. Licensed Applicator's Name (if different from #2 above): Beth Cullen

   License No.: AE298

   Firm Name (if applicable): Same as above
   Street Address: ................................................................. City: .... State: Zip: 

4. Name of person(s) who applied the pesticide (if different from #3 above):

5. Application Crop or Site: Spring Lake - Eurasian milfoil

6. Total Area Treated (acre, sq. ft., etc.): 1.5 acre

7. Was this application made as a result of a WSDA Permit? No ☐ Yes (If yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renovate OTF</td>
<td>67640-42</td>
<td>240 lbs</td>
<td>1 /</td>
<td>1.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Wind direction and estimated velocity (mph) during the application: N/A

11. Temperature during the application: 62°F

12. Apparatus license plate number (if applicable): .................................................................

13. ☐ Air ☐ Ground ☐ Chemigation

14. Miscellaneous Information:
Spring 2009 Treatment
2009 Iris and Loosestrife Treatment
Date Treated
- 7/13/2009
- 7/19/2009
- 9/1/2009
- 8/2/2009

0 0.03 0.06 0.12 Miles

N
1. Date of Application - Year: 2010          Month: July          Day: 14          Start Time: Stop Time: 

2. Name of person for whom the pesticide was applied: King County WLRD
   Firm Name (if applicable): 
   Street Address: 301 S. Jackson St Skwlo City: Seattle State: WA Zip: 98115
3. Licensed Applicator's Name (if different from #2 above): Tom Rebeck
   Firm Name (if applicable): 
   Street Address: 18026 W Sprung Lk Dr S E City: Renton State: WA Zip: 98058
4. Name of person(s) who applied the pesticide (if different from #3 above): Valerie Wibber
   License No(a). If applicable: 78579
5. Application Crop or Site: yellow flag iris
6. Total Area Treated (acre, sq. ft., etc.): 41
7. Was this application made as a result of a WSDA Permit?  No □ Yes (If yes, give Permit No.) #
8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquamaster</td>
<td>524-343</td>
<td>425 mL</td>
<td>1020 mL/acre</td>
<td>2.5%</td>
</tr>
<tr>
<td>L1 700</td>
<td>24764-04067</td>
<td>85 mL</td>
<td>209 mL/acre</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Wind direction and estimated velocity (mph) during the application: 
11. Temperature during the application: 
12. Apparatus license plate number (if applicable): 
13. □ Air □ Ground □ Chemigation
14. Miscellaneous Information:
Location of Application: (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only.)

Township: 

Range: 

Section(s): 

Block: 

Farm Unit: 

or GPS: 

County: 

PLEASE NOTE:
The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Miscellaneous Information:
PESTICIDE APPLICATION RECORD (Version 1)

1. Date of Application - Year: 2010, Month: June, Day: 22, Start Time: 4:30 pm, Stop Time: 8:30 pm

2. Name of person for whom the pesticide was applied: King County WPFD
   Firm Name (if applicable): 201 S. Jackson St, Seattle, WA 98164
   Street Address: 201 S. Jackson St, Seattle, WA 98164
   City: Seattle, State: WA, Zip: 98164

3. Licensed Applicator's Name (if different from #2 above): Tom Rohrer
   License No.: 78576
   Firm Name (if applicable): 18026 W. Spring Lk Dr SW, Renton, WA 98055
   Street Address: 18026 W. Spring Lk Dr SW, Renton, WA 98055
   City: Renton, State: WA, Zip: 98055

4. Name of person(s) who applied the pesticide (if different from #3 above): Valerie Weber
   License No(s). If applicable: 78576

5. Application Crop or Site: yellow flag iris

6. Total Area Treated (acre, sq. ft., etc.): 0.5 acre.

7. Was this application made as a result of a WSDA Permit? No

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>a) Full Product Name</th>
<th>b) EPA Reg. No.</th>
<th>c) Total Amount of Pesticide Applied in Area Treated</th>
<th>d) Pesticide Applied/Acre (or other measure)</th>
<th>e) Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquamaster</td>
<td>524-343</td>
<td>1,525 mL</td>
<td>AT 2.5%</td>
<td>2.5%</td>
</tr>
<tr>
<td>L-700</td>
<td>WA31600-0010</td>
<td>305 mL</td>
<td>AT 0.5%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Wind direction and estimated velocity (mph) during the application: 

11. Temperature during the application: 

12. Apparatus license plate number (if applicable): 

13. □ Air □ Ground □ Chemigation

14. Miscellaneous Information:
**Location of Application**  (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only.)

<table>
<thead>
<tr>
<th>Township:</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range:</td>
<td>□ E  □ W (please indicate)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section(s):</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Block:</th>
<th>Farm Unit:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>or GPS:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>County:</th>
</tr>
</thead>
</table>

**PLEASE NOTE:**
The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

<table>
<thead>
<tr>
<th>Section:</th>
<th>Section:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>One Mile</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Section:</th>
<th>Section:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Section:</th>
<th>Section:</th>
</tr>
</thead>
</table>

**Miscellaneous Information:**
PESTICIDE APPLICATION RECORD (Version 1)

NOTE: This form must be completed same day as the application and it must be retained for 7 years (Ref. chapter 17.21 RCW)

1. Date of Application - Year: 2010 Month: September Day: 10 Start Time: 12:00
   Stop Time: 13:00

2. Name of person for whom the pesticide was applied: King County
   Firm Name (if applicable):
   Street Address: 201 S. Jackson St Seattle City: Seattle State: WA Zip: 98104

3. Licensed Applicator's Name (if different from #2 above): Julie Colton
   License No.: 78139
   Firm Name (if applicable): King County
   Street Address: 201 S. Jackson St Seattle City: Seattle State: WA Zip: 98104

4. Name of person(s) who applied the pesticide (if different from #3 above):
   License No(s). If applicable:

5. Application Crop or Site: Eurasian milfoil

6. Total Area Treated (acre, sq. ft., etc.): 2 acres

7. Was this application made as a result of a WSDA Permit? No Yes (If yes, give Permit No.) #

8. Pesticide Information (please list all information for each pesticide, including adjuvants (buffer, surfactant, etc.), in the tank mix):

<table>
<thead>
<tr>
<th>Full Product Name</th>
<th>EPA Reg. No.</th>
<th>Total Amount of Pesticide Applied in Area Treated</th>
<th>Pesticide Applied/Acre (or other measure)</th>
<th>Concentration Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>RENOVATE OETF</td>
<td>676946</td>
<td>10 lbs</td>
<td>20 lbs/acre</td>
<td>0.75 ppm</td>
</tr>
</tbody>
</table>

9. Address or exact location of application. NOTE: If the application is made to one acre or more of agricultural land, the field location must be shown on the map on page two of this form.

10. Wind direction and estimated velocity (mph) during the application: <3 mph

11. Temperature during the application: 65°F / 18°C

12. Apparatus license plate number (if applicable):

13. ☐ Air ☐ Ground ☐ Chemigation

14. Miscellaneous Information:
Location of Application (If the application covers more than one township or range, please indicate the township & range for the top left section of the map only.)

Township: N

Range: ______________________ □ E □ W (please indicate)

Section(s): ____________________________

Block: ______________________ Farm Unit: ____________________________

or GPS: ____________________________

County: ____________________________

PLEASE NOTE:
The map is divided into 4 sections with each section divided into quarter-quarter sections. Please complete it by marking the appropriate section number(s) on the map and indicate as accurately as possible the location of the area treated.

Miscellaneous Information:
Pesticide Application Record

Date: August 18, 2010
Applied for: King County Department of Natural Resources
Contact: Beth Cullen, Lake Stewardship Program

Licensed Applicators:

Thomas Rohrer (Lead Supervising) - License #78576
18026 W Spring Lake Dr SE
Renton WA 98058
425-433-8369

Valerie Weber - License #78579
18026 W Spring Lake Dr SE
Renton WA 98058
425-433-8369

Supervised applicators (all residents of W Spring Lake Dr SE except Stevenson):

Ted Barnes
Darcie MacEwen
Leah Mickelson
Ann Stevens (from King County DNR Noxious Weed Control Program

Application Site: Ground application to Spring Lake shoreline for Purple Loosestrife and Yellow Iris
Total Treated Area: 1.79 acres (7800 linear ft of shoreline x 10 ft avg distance from shore)
WSDE Permit #: WAG – 993000

Pesticide Information

Full Product Name: Aquamaster
EPA Reg #: 524-343
Total Applied: 200 ml. Aquamaster (in 8 liters solution)
Pesticide per acre: 112 ml. Aquamaster / acre (4.5 liters solution / acre)
Concentration: 2.5% solution

Adjuvant Information

Full Product Name: LI-700 Penetrant Acidifier Deposition Aid Drift Control Agent
WA Reg #: 34704-04007
Total Applied: 40 ml. LI-700 (in 8 liters solution)
Adjuvant per acre: 207 ml. LI-700 / acre (4.5 liters solution / acre)
Concentration: 0.5%
Specific Application information:

<table>
<thead>
<tr>
<th>Date</th>
<th>Applicators</th>
<th>Time</th>
<th>Acres</th>
<th>Wind</th>
<th>Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/18/2010</td>
<td>Tom Rohrer (Lic. #78576)</td>
<td>1600-2030</td>
<td>1.79</td>
<td>S - 7 mph</td>
<td>70 F</td>
</tr>
<tr>
<td></td>
<td>Valerie Weber (Lic. #78579)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ted Barnes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Darcie MacEwen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leah Mickelson</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mike O'Brien</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ann Stevens</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Location: All 7800 linear feet of Spring Lake shoreline as shown in attached map. Treatment to average of 10 feet from shore for treatment area of 1.79 acres. Spot-treated individual Purple Loosestrife and Yellow Iris plants.
Purple Loosestrife and Yellow Iris treatment - August 18, 2010
Pesticide Application Record

Date: July 14, 2010

Applied for: King County Department of Natural Resources
Contact: Beth Cullen, Lake Stewardship Program

Licensed Applicators:

Thomas Rohrer (Lead Supervising) - License #78576
18026 W Spring Lake Dr SE
Renton WA 98058
425-433-8369

Valerie Weber - License #78579
18026 W Spring Lake Dr SE
Renton WA 98058
425-433-8369

Supervised applicators (all residents of W Spring Lake Dr SE):

Darcie MacEwen
Leah Mickelson
Mike O'Brien

Application Site: Ground application to Spring Lake shoreline for Yellow Iris

Total Treated Area: 0.41 acres (1200 linear ft of shoreline x 15 ft avg distance from shore)

WSDE Permit #: WAG – 993000

Pesticide Information

Full Product Name: Aquamaster
EPA Reg #: 524-343
Total Applied: 425 ml. Aquamaster (in 17 liters solution)
Pesticide per acre: 1037 ml. Aquamaster / acre (42 liters solution / acre)
Concentration: 2.5% solution

Adjuvant Information

Full Product Name: LI-700 Penetrant Acidifier Deposition Aid Drift Control Agent
WA Reg #: 34704-04007
Total Applied: 85 ml. LI-700 (in 17 liters solution)
Adjuvant per acre: 207 ml. LI-700 / acre (42 liters solution / acre)
Concentration: 0.5%
Specific Application information:

<table>
<thead>
<tr>
<th>Date</th>
<th>Applicators</th>
<th>Time</th>
<th>Acres</th>
<th>Wind</th>
<th>Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/14/2010</td>
<td>Tom Rohrer (Lic. #78576)</td>
<td>1600-2030</td>
<td>0.41</td>
<td>NW - 4 mph</td>
<td>78 F</td>
</tr>
<tr>
<td></td>
<td>Valerie Weber (Lic. #78579)</td>
<td></td>
<td>(1200 ft)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Darcie MacEwen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leah Mickelson</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mike O'Brien</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spot-treated individual Yellow Iris plants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Location: 1200 linear feet of Spring Lake shoreline as shown in attached map. Treatment to average of 15 feet from shore for treatment area of 0.41 acres. Spot-treated individual Yellow Iris plants.
Pesticide Application Record

Date: June 22 and 23, 2010

Applied for: King County Department of Natural Resources
Contact: Beth Cullen, Lake Stewardship Program

Licensed Applicators:

Thomas Rohrer (Lead Supervising) - License #78576
18026 W Spring Lake Dr SE
Renton WA 98058
425-433-8369

Valerie Weber - License #78579
18026 W Spring Lake Dr SE
Renton WA 98058
425-433-8369

Supervised applicators (all residents of W Spring Lake Dr SE):

Ted Barnes
Darcie MacEwen
Leah Mickelson
Mike O'Brien

Application Site: Ground application to Spring Lake shoreline for Yellow Iris

Total Treated Area: 2.27 acres (6600 linear ft of shoreline x 15 ft avg distance from shore)

WSDE Permit #: WAG – 993000

Pesticide Information

Full Product Name: Aquamaster
EPA Reg #: 524-343
Total Applied: 1525 ml. Aquamaster (in 61 liters solution)
Pesticide per acre: 672 ml. Aquamaster / acre (27 liters solution / acre)
Concentration: 2.5% solution

Adjuvant Information

Full Product Name: LI-700 Penetrant Acidifier Deposition Aid Drift Control Agent
WA Reg #: 34704-04007
Total Applied: 305 ml. LI-700 (in 61 liters solution)
Adjuvant per acre: 134 ml. LI-700 / acre (27 liters solution / acre)
Concentration: 0.5%
Specific Application information:

<table>
<thead>
<tr>
<th>Date</th>
<th>Applicators</th>
<th>Time</th>
<th>Acres</th>
<th>Wind</th>
<th>Temp</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/22/2010</td>
<td>Tom Rohrer (Lic. #78576)</td>
<td>1600-2030</td>
<td>1.17</td>
<td>NW - 3 mph</td>
<td>72 F</td>
</tr>
<tr>
<td></td>
<td>Valerie Weber (Lic. #78579)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ted Barnes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Darcie MacEwen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leah Mickelson</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mike O'Brien</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06/23/2010</td>
<td>Tom Rohrer (Lic. #78576)</td>
<td>1600-2030</td>
<td>1.10</td>
<td>none</td>
<td>75 F</td>
</tr>
<tr>
<td></td>
<td>Valerie Weber (Lic. #78579)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ted Barnes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Darcie MacEwen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leah Mickelson</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mike O'Brien</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Location: 6600 linear feet of Spring Lake shoreline as shown in attached map. Treatment to average of 15 feet from shore for treatment area of 2.27 acres. Spot-treated individual Yellow Iris plants.
APPENDIX C

HERBICIDE MONITORING RESULTS
### Certificate of Analysis - EPA 547

<table>
<thead>
<tr>
<th>Sample:</th>
<th>Collect Date:</th>
<th>Date Analyzed:</th>
<th>Date Received:</th>
<th>Lab Sample #:</th>
<th>Analyte</th>
<th>Result</th>
<th>Units</th>
<th>PQL</th>
<th>Analyst</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPRING LAKE - 1</td>
<td>8/13/2003</td>
<td>8/19/2003</td>
<td>8/18/2003</td>
<td>03X1709-01</td>
<td>Glyphosate</td>
<td>ND</td>
<td>mg/L</td>
<td>0.01</td>
<td>JWC</td>
</tr>
<tr>
<td>SPRING LAKE - 2</td>
<td>8/13/2003</td>
<td>8/19/2003</td>
<td>8/18/2003</td>
<td>03X1709-02</td>
<td>Glyphosate</td>
<td>0.03</td>
<td>mg/L</td>
<td>0.01</td>
<td>JWC</td>
</tr>
<tr>
<td>SPRING LAKE - 3</td>
<td>8/14/2003</td>
<td>8/19/2003</td>
<td>8/18/2003</td>
<td>03X1709-03</td>
<td>Glyphosate</td>
<td>ND</td>
<td>mg/L</td>
<td>0.01</td>
<td>JWC</td>
</tr>
<tr>
<td>CC #1</td>
<td>8/13/2003</td>
<td>8/19/2003</td>
<td>8/18/2003</td>
<td>03X1709-04</td>
<td>Glyphosate</td>
<td>ND</td>
<td>mg/L</td>
<td>0.01</td>
<td>JWC</td>
</tr>
<tr>
<td>CC #2</td>
<td>8/13/2003</td>
<td>8/19/2003</td>
<td>8/18/2003</td>
<td>03X1709-05</td>
<td>Glyphosate</td>
<td>ND</td>
<td>mg/L</td>
<td>0.01</td>
<td>JWC</td>
</tr>
<tr>
<td>CC #3</td>
<td>8/14/2003</td>
<td>8/19/2003</td>
<td>8/18/2003</td>
<td>03X1709-06</td>
<td>Glyphosate</td>
<td>ND</td>
<td>mg/L</td>
<td>0.01</td>
<td>JWC</td>
</tr>
</tbody>
</table>

**Laboratory Supervisor** 8/19/03
## Certificate of Analysis - EPA 547

<table>
<thead>
<tr>
<th>Sample:</th>
<th>Collect Date:</th>
<th>Date Received:</th>
<th>Lab Sample #</th>
<th>Date Analyzed</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPR LK - B</td>
<td>8/14/2003</td>
<td>8/18/2003</td>
<td>03X1710-02</td>
<td>8/19/2003</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Result</th>
<th>Units</th>
<th>PQL</th>
<th>Analyst</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glyphosate</td>
<td>0.31</td>
<td>mg/L</td>
<td>0.01</td>
<td>JWC</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>ND</td>
<td>mg/L</td>
<td>0.01</td>
<td>JWC</td>
</tr>
</tbody>
</table>

Laboratory Supervisor 8/19/03
DATE: August 15, 2003

TO: Michael Murphy
   King Co WLRD Lake Stewardship
   201 S. Jackson St. Suite 600
   Seattle, WA  98104

PROJECT: Spring Lake 2,4-D Monitoring

REPORT NUMBER: 115255

TOTAL NUMBER OF PAGES: 8

Enclosed are the test results for two samples received at STL Seattle on August 4, 2003.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie
Project Manager
<table>
<thead>
<tr>
<th>Lab. No.</th>
<th>Client ID</th>
<th>Date/Time Sampled</th>
<th>Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>115255-1</td>
<td>SPR2-03AUG03</td>
<td>08-03-03 11:35</td>
<td>Liquid</td>
</tr>
<tr>
<td>115255-2</td>
<td>SPR4-03AUG03</td>
<td>08-03-03 11:48</td>
<td>Liquid</td>
</tr>
</tbody>
</table>

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This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.
STL Seattle

Client Name: King Co WLRD Lake Stewardship
Client ID: SPR2-03AUG03
Lab ID: 115255-01
Date Received: 8/4/2003
Date Prepared: 8/5/2003
Date Analyzed: 8/8/2003

% Solids
Dilution Factor: 50

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Recovery Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>125</td>
<td>Flags Low 42   High 131</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>4.85</td>
<td>0.97</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
STL Seattle

Client Name: King Co WLRD Lake Stewardship
Client ID: SPR4-03AUG03
Lab ID: 115255-02
Date Received: 8/4/2003
Date Prepared: 8/5/2003
Date Analyzed: 8/8/2003
% Solids: -
Dilution Factor: 50

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Flags</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>134</td>
<td>X8</td>
<td>42</td>
<td>131</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>325</td>
<td>4.82</td>
<td>0.964</td>
<td></td>
</tr>
</tbody>
</table>
STL Seattle

Lab ID:
Method Blank - HW0280
Date Received: 8/5/2003
Date Prepared: 8/8/2003
Date Analyzed: 8/8/2003
% Solids -
Dilution Factor 0.5

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Flags</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>107</td>
<td></td>
<td>42</td>
<td>131</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>ND</td>
<td>0.05</td>
<td>0.01</td>
<td></td>
</tr>
</tbody>
</table>
Blank Spike/Blank Spike Duplicate Report

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Compound Name</th>
<th>Blank Result (ug/L)</th>
<th>Spike Amount (ug/L)</th>
<th>BS Result (ug/L)</th>
<th>BS % Rec.</th>
<th>BSD Result (ug/L)</th>
<th>BSD % Rec.</th>
<th>RPD</th>
<th>Flag</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>0</td>
<td>5</td>
<td>5.83</td>
<td>117</td>
<td>5.7</td>
<td>114</td>
<td>-2.6</td>
<td></td>
</tr>
</tbody>
</table>
DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.

C3: Second analysis confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be ≤ 30%.

C4: Second analysis confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 30%. The original analysis was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level
MDL: Method Detection Limit
MRL: Method Reporting Limit
N: See analytical narrative
ND: Not Detected
PQL: Practical Quantitation Limit
X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be __________.
X2: Contaminant does not appear to be "typical" product.
X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.
X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.
X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.
X5: Matrix spike recovery was not determined due to the required dilution.
X6: Recovery and/or RPD values for matrix spike/(matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.
X7: Recovery and/or RPD values for matrix spike/(matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.
X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.
X8: Surrogate recovery was not determined due to the required dilution.
X9: Surrogate recovery outside advisory QC limits due to matrix interference.
TRANSMITTAL MEMORANDUM

DATE: August 26, 2003

TO: Michael Murphy
King Co WLRD Lake Stewardship
201 S. Jackson St. Suite 600
Seattle, WA 98104

PROJECT: Spring Lake 2,4-D Monitoring (WA)

REPORT NUMBER: 115524

TOTAL NUMBER OF PAGES: 7

Enclosed are the test results for one sample received at STL Seattle on August 15, 2003.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Kate Downie
Project Manager

STL Seattle is a part of Severn Trent Laboratories, Inc.

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.
## Sample Identification:

<table>
<thead>
<tr>
<th>Lab. No.</th>
<th>Client ID</th>
<th>Date/Time Sampled</th>
<th>Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>115524-1</td>
<td>SPR2-14 AUG03</td>
<td>08-14-03 09:24</td>
<td>Liquid</td>
</tr>
</tbody>
</table>

STL Seattle is a part of Severn Trent Laboratories, Inc.

*This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender immediately at 253-922-2310 and destroy this report immediately.*
<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Flags</th>
<th>Recovery Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>120</td>
<td></td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>131</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>235</td>
<td>4.89</td>
<td>0.978</td>
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</tbody>
</table>
Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Flags</th>
<th>Recovery Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>93.5</td>
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<td>Low</td>
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<table>
<thead>
<tr>
<th>Analyte</th>
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<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>ND</td>
<td>0.05</td>
<td>0.01</td>
<td></td>
</tr>
</tbody>
</table>
## STL Seattle

Blank Spike/Blank Spike Duplicate Report

<table>
<thead>
<tr>
<th>Compound Name</th>
<th>Blank Result (ug/L)</th>
<th>Spike Amount (ug/L)</th>
<th>BS Result (ug/L)</th>
<th>BS % Rec.</th>
<th>BSD Result (ug/L)</th>
<th>BSD % Rec.</th>
<th>RPD</th>
<th>Flag</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>0</td>
<td>5</td>
<td>3.39</td>
<td>67.8</td>
<td>3.73</td>
<td>74.7</td>
<td>9.7</td>
<td></td>
</tr>
</tbody>
</table>
DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

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X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.
### Chain of Custody Record

**Client:** King Co. WLRD - Lake Stewardship  
**Address:** 201 S. Jackson St., Suite 600  
**City:** Seattle, WA 98104  
**Project Name and Location (State):** Lake 2.4-D Monitoring (WA)  

<table>
<thead>
<tr>
<th>Sample I.D. and Location/Description</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPR.2 - 14 AUG 03</td>
<td>14 Aug 03</td>
<td>0924</td>
</tr>
</tbody>
</table>

**Comments:**

- DISTRIBUTION: WHITE - Stays with the Samples; CANARY - Returned to Client with Report; PINK - Field Copy

---

**General Information:***

- **Project Manager:** Michael F. Murphy  
- **Date:** 15 Aug 03  
- **Chain of Custody Number:** 04171  
- **Address:** 201 S. Jackson St., Suite 600  
- **City:** Seattle, WA 98104  
- **Telephone Number (Area Code)/Fax Number:** 206-296-8008 / 206-296-0192  
- **Lab Number:** 7582171

**Analysis (Attach list if more space is needed):**

- **Matrix:**
  - [ ] Air  
  - [ ] Aquatic  
  - [ ] Sediment  
  - [ ] Soil  
  - [ ] Lipids  
  - [ ] AOB  
  - [ ] NOB  
  - [ ] HCO  
  - [ ] pH  
  - [ ] Salinity  
  - [ ] Dissolved O2

**Disposal:**

- [ ] Return To Client  
- [ ] Disposal By Lab  
- [ ] Archive For 1 Months  

**Possible Hazard Identification:**

- [X] Non-Hazard  
- [ ] Flammable  
- [ ] Skin Irritant  
- [ ] Poison B  
- [ ] Unknown

**QC Requirements (Specify):**

- [ ] 24 Hours  
- [ ] 48 Hours  
- [ ] 5 Days  
- [ ] 10 Days  
- [ ] 15 Days  
- [ ] Other

**Turn Around Time Required (business days):**

- [ ] 24 Hours  
- [ ] 48 Hours  
- [ ] 5 Days  
- [ ] 10 Days  
- [ ] 15 Days  
- [ ] Other

**Sample Disposal:**

- [ ] Return To Client  
- [ ] Disposal By Lab  
- [ ] Archive For 1 Months  

**Comments:**

- [ ] 24 Hours  
- [ ] 48 Hours  
- [ ] 5 Days  
- [ ] 10 Days  
- [ ] 15 Days  
- [ ] Other
DATE: July 31, 2003

TO: Michael Murphy
   King Co WLRD Lake Stewardship
   201 S. Jackson St. Suite 600
   Seattle, WA 98104

PROJECT: Spring Lake 2,4-D Monitoring

REPORT NUMBER: 114943

TOTAL NUMBER OF PAGES: 10

Enclosed are the test results for five samples received at STL Seattle on July 18, 2003.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

[Signature]
Katie Downie
Project Manager
<table>
<thead>
<tr>
<th>Lab. No.</th>
<th>Client ID</th>
<th>Date/Time Sampled</th>
<th>Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>114943-1</td>
<td>SPR1-17JUL03</td>
<td>07-17-03 12:50</td>
<td>Liquid</td>
</tr>
<tr>
<td>114943-2</td>
<td>SPR2-17JUL03</td>
<td>07-17-03 13:05</td>
<td>Liquid</td>
</tr>
<tr>
<td>114943-3</td>
<td>SPR3-17JUL03</td>
<td>07-17-03 13:40</td>
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</tr>
<tr>
<td>114943-4</td>
<td>SPR4-17JUL03</td>
<td>07-17-03 14:15</td>
<td>Liquid</td>
</tr>
<tr>
<td>114943-5</td>
<td>SPR5-17JUL03</td>
<td>07-17-03 14:30</td>
<td>Liquid</td>
</tr>
</tbody>
</table>
## Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Flags Low</th>
<th>Flags High</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>110</td>
<td>42</td>
<td>131</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Result (ug/L)</th>
<th>PQL (ug/L)</th>
<th>MDL (ug/L)</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>ND</td>
<td>0.0488</td>
<td>0.00976</td>
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</tr>
</tbody>
</table>
Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Flags</th>
<th>Recovery Limits</th>
</tr>
</thead>
<tbody>
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<td>2,4-Dichlorophenylacetic acid</td>
<td>109</td>
<td>42</td>
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<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>ND</td>
<td>0.0503</td>
<td>0.0101</td>
<td></td>
</tr>
</tbody>
</table>
STL Seattle

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Flags</th>
<th>Recovery Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>105</td>
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<td>131</td>
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<thead>
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<th>Analyte</th>
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<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
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<td>0.0511</td>
<td>0.0102</td>
<td></td>
</tr>
</tbody>
</table>
### Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Recovery Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>109</td>
<td>Flags Low 42 High 131</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>ND</td>
<td>0.0501</td>
<td>0.01</td>
<td></td>
</tr>
</tbody>
</table>
STL Seattle

Client Name: King Co WCRD Lake Stewardship
Client ID: SPR5-17JUL03
Lab ID: 114943-05
Date Received: 7/18/2003
Date Prepared: 7/24/2003
Date Analyzed: 7/26/2003
% Solids: 0.5
Dilution Factor:

Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Flags</th>
<th>Recovery Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>115</td>
<td>42</td>
<td>131</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
</tr>
</thead>
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<td>2,4-D</td>
<td>ND</td>
<td>0.0498</td>
<td>0.00996</td>
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</tr>
</tbody>
</table>
STL Seattle

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Recovery Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>88.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low  High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>42   131</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>ND</td>
<td>0.05</td>
<td>0.01</td>
<td></td>
</tr>
</tbody>
</table>
**Blank Spike/Blank Spike Duplicate Report**

<table>
<thead>
<tr>
<th>Compound Name</th>
<th>Blank Result (ug/L)</th>
<th>Spike Amount (ug/L)</th>
<th>BS Result (ug/L)</th>
<th>BS % Rec.</th>
<th>BSD Result (ug/L)</th>
<th>BSD % Rec.</th>
<th>RPD</th>
<th>Flag</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>0</td>
<td>5</td>
<td>4.88</td>
<td>97.5</td>
<td>5.12</td>
<td>102</td>
<td>4.5</td>
<td></td>
</tr>
</tbody>
</table>
DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

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X9: Surrogate recovery outside advisory QC limits due to matrix interference.
## Chain of Custody Record

**Severn Trent Laboratories, Inc.**

**STL Seattle**
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.stl-inc.com

**Client**
King Co WLRD - Lake Stewardship

**Project Manager**
Michael F. Murphy

**Date**
18 July 03

**Chain of Custody Number**
0838

### Project Name and Location
**Spring Lake 2.4-D Monitoring**

### Address
201 S. Jackson St. Ste 400

### City
Seattle

### State Zip Code
WA 98104

### Telephone Number
(206) 296-9008

### Site Contact
SAME

### Lab Contact
SAME

### Analysis (Attach list if more space is needed)

### Sample I.D. and Location/Description (Containers for each sample may be combined on one line)

<table>
<thead>
<tr>
<th>Sample I.D. and Location/Description</th>
<th>Date</th>
<th>Time</th>
<th>Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPR1 - 17 JUL 03</td>
<td>17 Jul 03</td>
<td>12:50</td>
<td>X</td>
</tr>
<tr>
<td>SPR2 - 17 JUL 03</td>
<td>17 Jul 03</td>
<td>1:05</td>
<td>X</td>
</tr>
<tr>
<td>SPR3 - 17 JUL 03</td>
<td>17 Jul 03</td>
<td>1:40</td>
<td>X</td>
</tr>
<tr>
<td>SPR4 - 17 JUL 03</td>
<td>17 Jul 03</td>
<td>1:15</td>
<td>X</td>
</tr>
<tr>
<td>SPR5 - 17 JUL 03</td>
<td>17 Jul 03</td>
<td>1:30</td>
<td>X</td>
</tr>
</tbody>
</table>

### Possible Hazard Identification
- ☑ Yes
- ☐ No
- ☑ Non-Hazard
- ☐ Flammable
- ☐ Skin Irritant
- ☐ Patent B
- ☐ Unknown
- ☐ Return To Client

### Sample Disposal
- ☑ Disposal By Lab
- ☐ Archive For ___ Months

### QC Requirements (Specify)

### Turn Around Time Required (business days)
- ☑ 24 Hours
- ☑ 48 Hours
- ☑ 5 Days
- ☑ 10 Days
- ☑ 15 Days
- ☐ Other

### Cooler
- ☑ Yes
- ☐ No
- Cooler Temp:
  - ☑ Non-Hazard
  - ☐ Flammable
  - ☐ Skin Irritant
  - ☐ Patent B
  - ☐ Unknown
  - ☐ Return To Client

### Special Instructions/Conditions of Receipt

---

**DISTRIBUTION:**
- **WHITE** - Stays with Samples
- **CANARY** - Returned to Client with Report
- **PINK** - Field Copy

---

**1. Reinquished By**
Michael F. Murphy (KC WLRD) 18 JUL 03 1:22

**1. Received By**
COACH STL

**2. Reinquished By**
COACH STL 17 AUG 03 10:40

**2. Received By**
Kim 7/18/03 10:24

**3. Reinquished By**
COACH STL 17 AUG 03 10:50

**3. Received By**

---

**Comments**

---
DATE: September 10, 2003

TO: Michael Murphy  
King Co WLRD Lake Stewardship  
201 S. Jackson St. Suite 600  
Seattle, WA 98104

PROJECT: Spring Lake 2,4-D Monitoring

REPORT NUMBER: 115849

TOTAL NUMBER OF PAGES: 8

Enclosed are the test results for two samples received at STL Seattle on September 3, 2003.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

Katie Downie  
Project Manager
STL Seattle

Sample Identification:

<table>
<thead>
<tr>
<th>Lab. No.</th>
<th>Client ID</th>
<th>Date/Time Sampled</th>
<th>Matrix</th>
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<tbody>
<tr>
<td>115849-1</td>
<td>SPR2-02SEP03</td>
<td>09-02-03 13:25</td>
<td>Liquid</td>
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<tr>
<td>115849-2</td>
<td>SPR10-03SEP03</td>
<td>09-03-03 09:00</td>
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### Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Surrogate</th>
<th>% Recovery</th>
<th>Flags</th>
<th>Low</th>
<th>High</th>
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<tr>
<td>2,4-Dichlorophenylacetic acid</td>
<td>154</td>
<td>X9</td>
<td>42</td>
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<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
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<tbody>
<tr>
<td>2,4-D</td>
<td>158</td>
<td>2.4</td>
<td>0.48</td>
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Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

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<th>Recovery Limits</th>
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<td>2,4-Dichlorophenylacetic acid</td>
<td>105</td>
<td>Low 42 High 131</td>
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<th>Analyte</th>
<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
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<tr>
<td>2,4-D</td>
<td>ND</td>
<td>0.0486</td>
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Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
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<th>% Recovery</th>
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<th>Recovery Limits</th>
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<td>2,4-Dichlorophenylacetic acid</td>
<td>111</td>
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<td>Low 42</td>
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<tr>
<td></td>
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<td></td>
<td>High 131</td>
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</table>

<table>
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<tr>
<th>Analyte</th>
<th>Result (ug/L)</th>
<th>PQL</th>
<th>MDL</th>
<th>Flags</th>
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<tbody>
<tr>
<td>2,4-D</td>
<td>ND</td>
<td>0.05</td>
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### Chlorinated Herbicides by USEPA Method 8151 GC/MS Modified

<table>
<thead>
<tr>
<th>Compound Name</th>
<th>Blank Result (ug/L)</th>
<th>Spike Amount (ug/L)</th>
<th>BS Result (ug/L)</th>
<th>BS % Rec.</th>
<th>BSD Result (ug/L)</th>
<th>BSD % Rec.</th>
<th>RPD</th>
<th>Flag</th>
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</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>0</td>
<td>5</td>
<td>4.45</td>
<td>88.9</td>
<td>4.45</td>
<td>88.9</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.

C3: Second analysis confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be ≤ 30%.

C4: Second analysis confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 30%. The original analysis was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

MRL: Method Reporting Limit

N: See analytical narrative

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be ____________.

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike/(matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery and/or RPD values for matrix spike/(matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.
# Chain of Custody Record

**Client:** King Co. WLRA - Lake Stewardship  
**Address:** 201 S. Jackson St. Suite 600  
**City:** Seattle  
**State:** WA  
**Zip Code:** 98104

**Project Name and Location (State):** Spring Lake 24-D Monitoring

**Carrier/Waybill Number:**

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<th>Sample I.D. and Location/Description</th>
<th>Date</th>
<th>Time</th>
<th>Ar</th>
<th>Na</th>
<th>K</th>
<th>Mg</th>
<th>Ca</th>
<th>Mn</th>
<th>Fe</th>
<th>Cu</th>
<th>Zn</th>
<th>Pb</th>
<th>Ni</th>
<th>Mo</th>
<th>As</th>
<th>Hg</th>
<th>Sample Disposal</th>
<th>Disposal By Lab</th>
<th>QC Requirements (Specify)</th>
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<tr>
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<td>1325</td>
<td>X</td>
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<td>Archive For 1 Months</td>
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**Cooler:** Yes  
**Temperature:**  
**Possible Hazard Identification:** Non-Hazard

**Turn Around Time Required (business days):** 24 Hours

1. **Relinquished By:** Michael F. Murphy  
   **Date:** 3 Sep 03  
   **Time:** 1101

2. **Relinquished By:**  
   **Date:**  
   **Time:**

3. **Relinquished By:**  
   **Date:**  
   **Time:**

**Comments:**

**Distribution:** WHITE - Stays with the Samples; CANARY - Returned to Client with Report; PINK - Field Copy

**STL Seattle**
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.stl-inc.com
<table>
<thead>
<tr>
<th>Sample:</th>
<th>SPRING LAKE 01</th>
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<th>6/28/2004</th>
<th>Lab Sample #:</th>
<th>04X1567-01</th>
<th>Date Analyzed</th>
<th>7/12/2004</th>
<th>Analyte</th>
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<th>PQL</th>
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Laboratory Supervisor 7/13/2004
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<th>Sample</th>
<th>Date(s) Treated</th>
<th>Herbicide</th>
<th>Date Collected</th>
<th>Rate Applied</th>
<th>Acres Treated</th>
<th>Sample Location Description</th>
<th>Results UOM</th>
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<tr>
<td>1.</td>
<td>08/05/09</td>
<td>Renovate</td>
<td>8/19/2009</td>
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<td>Spring 2</td>
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<td>Spring 3</td>
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</tbody>
</table>

Depth Sample Collected:  
Date Sample Received: 8/21/2009  
Storage Conditions: Analyzed upon receipt  
Date Shipped to SePRO: 8/20/2009  
Condition of Sample(s) Box/Water Containers: Excellent  
Date Analysis was Performed: 8/21/2009  
Date Results Sent to Cooperator: 8/21/2009  

Run #: TR0156  
% Control Rec: 106  
Correlation: 0.997  

Name of Waterbody: Spring Lake  
Size of Waterbody in Acres: 68  
Target Plant(s) to Control: Eurasian watermilfoil
<table>
<thead>
<tr>
<th>Sample</th>
<th>Date(s) Treated</th>
<th>Herbicide</th>
<th>Date Collected</th>
<th>Rate Applied</th>
<th>Acres Treated</th>
<th>Sample Location Description</th>
<th>Results</th>
<th>UOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>08/05/09</td>
<td>Renovate 3</td>
<td>9/2/2009</td>
<td>160lb/ac</td>
<td>1.5ac</td>
<td>Spring 1 (north end)</td>
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<td>Renovate 3</td>
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<td>1.5ac</td>
<td>Spring 2 (mid station-no treatment)</td>
<td>0.012</td>
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<tr>
<td>3.</td>
<td>08/05/09</td>
<td>Renovate 3</td>
<td>9/2/2009</td>
<td>160lb/ac</td>
<td>1.5ac</td>
<td>Spring 3 (south end)</td>
<td>0.012</td>
<td>ppm</td>
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<td>4.</td>
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</tbody>
</table>

Depth Sample Collected: surface

Storage Conditions: Refrigerated

Date Shipped to SePRO: 9/3/2009

Date Analysis was Performed: 9/8/2009

Date Results Sent to Cooperator: 9/8/2009

Run #: TR0163E

% Control Rec: 98

Correlation: 0.998

Name of Waterbody: Spring Lake

Size of Waterbody in Acres: 68

Target Plant(s) to Control: Eurasian watermilfoil
Chain of Custody 74E4F013-5

### Customer Company
- **Company Name:** King County WRLD
- **Address:** 201 S. Jackson St. Ste. 600
- **City:** Seattle
- **State:** WA

### Customer Contact
- **Contact Person:** Beth
- **E-mail Address:** beth.cullen@kingcounty.gov

### Payment Information
- **Payment Type:** PO Number
- **Card Number/Expiration Num:** 68382

### Waterbody Information
- **Waterbody:** Spring Lake
- **Waterbody Size (acres):** 0.00
- **Depth Average:** 2.00
- **Target Plants:** Eurasian Watermilfoil

### Sample Information

<table>
<thead>
<tr>
<th>Sample Site ID</th>
<th>Date Treated</th>
<th>Date Sample Collected</th>
<th>Sample Location</th>
<th>Products</th>
<th>Acres Treated</th>
<th>Rate</th>
<th>Active</th>
<th>Result</th>
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<tbody>
<tr>
<td>Spring 3A</td>
<td>09/16/2010</td>
<td>09/29/2010</td>
<td>outside watershed patch</td>
<td>Renovate OTF</td>
<td>1</td>
<td>0.75</td>
<td>Triclopyr</td>
<td>0.003 ppm</td>
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<td>Spring 3</td>
<td>09/16/2010</td>
<td>09/29/2010</td>
<td>outlet</td>
<td>Renovate OTF</td>
<td>1</td>
<td>0.75</td>
<td>Triclopyr</td>
<td>0.004 ppm</td>
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</tbody>
</table>

### Laboratory Information
- **Date Received:** 11/1/2010
- **Date Analysis Performed:** 11/1/2010
- **Date Results Sent:** 11/1/2010
- **Storage Conditions:** Analyzed Immediately
APPENDIX D

EDUCATION AND OUTREACH
Noxious aquatic weeds are overgrowing Spring Lake. The sooner we act, the more likely we can totally get rid of the weeds.
Eurasian watermilfoil (Myriophyllum spicatum) is a submersed aquatic plant native to Europe and Asia that grows very rapidly when introduced to lakes in the northwest. It is a listed Noxious weed in Washington State. Unchecked, milfoil will quickly expand throughout the lake, creating thick, tangled mats of weeds.

Dense mats of milfoil will:
• make swimming very dangerous
• snag fishhooks on every cast
• make boating difficult
• harm fish, plants, and animals
• degrade the lake for years to come

Some of your neighbors are working with King County on a proposal to the Washington Department of Ecology for a grant to fund weed removal efforts.

They need your input to help decide:
• The best short-term weed removal strategy
• The best long-term community-based options for monitoring and control

Please attend a watershed-wide meeting to discuss plans to control aquatic weeds threatening Spring Lake.

Thursday August 22, 7-9 pm
17956 W Spring Lake Drive SE Renton, 98058
(Greg and Donna Smith’s Guest House)

Parking is limited - please walk (or boat) if possible. And bring a folding chair if you can.

For information about the meeting contact Michael Murphy at King County 206-296-8008 or michael-wlr.murphy@metrokc.gov

For more information about problem aquatic weeds, check out the Department of Ecology’s website: http://www.ecy.wa.gov/programs/wq/plants/index.html
Noxious aquatic weeds are overgrowing Spring Lake. The sooner we act, the more likely we can totally get rid of the weeds.
Eurasian watermilfoil (*Myriophyllum spicatum*) is a submersed aquatic plant native to Europe and Asia that grows very rapidly when introduced to lakes in the northwest. It is a listed Noxious weed in Washington State. Unchecked, milfoil will quickly expand throughout the lake, creating thick, tangled mats of weeds.

Dense mats of milfoil will:
- make swimming very dangerous
- snag fishhooks on every cast
- make boating difficult
- harm fish, plants, and animals
- degrade the lake for years to come

Some of your neighbors are working with King County on a proposal to the Washington Department of Ecology for a grant to fund weed removal efforts.

At the first community meeting on August 22 the steering committee (your neighbors and King County staff),
- presented information about why milfoil is a problem
- outlined the options for management
- and got input from the community

At the September 19 meeting, the steering committee will
- present a suggested milfoil management strategy
- outline estimated costs of the project
- Assess community support on the selected management strategy

Your participation at this stage is very important to decision making and the grant application process.

The problem will only get worse if no action is taken.

Please attend the second of two watershed-wide meetings to discuss plans to control aquatic weeds threatening Spring Lake.

**Thursday September 19, 7-9pm**
**18023 E. Spring Lake Drive SE Renton, 98058**
(Curt Heikell’s house)

Parking is limited - please walk (or boat) if possible. And bring a folding chair if you can.

For information about the meeting contact Michael Murphy at King County 206-296-8008 or michael-wlr.murphy@metrokc.gov

For more information about problem aquatic weeds, check out the Department of Ecology’s website: [http://www.ecy.wa.gov/](http://www.ecy.wa.gov/)
NOXIOUS WEED REMOVAL PLAN

SPRING LAKE PLANT LOCATOR

**What:** Eurasian water milfoil
* (Myriophyllum spicatum)
**Description:** Submersed perennial plant with feather-like leaves, which forms dense mats of vegetation below the water surface.
**Spreads:** In late summer and fall, plants break into fragments with attached roots that float with the current and attach elsewhere in the lake.
**Harmful effects:** Crowds out native vegetation and reduces dissolved oxygen; major hindrance to fishing, swimming, and boating.

**What:** Fragrant water lily
* (Nymphaea odorata)
**Description:** Round, floating green leaves with white, pink, or light yellow flowers.
**Spreads:** Through seeds and rhizomes.
**Harmful effects:** Can decrease dissolved oxygen levels, hinder recreational pursuits, and limit native water lily growth.

**What:** Yellow flag iris
* (Iris pseudacorus)
**Description:** Large yellow flowers are a distinguishing characteristic on this shoreline weed, but when not flowering it may be confused with cattail.
**Spreads:** Through seeds and rhizomes.
**Harmful effects:** Alters hydrologic dynamics and, displaces native vegetation.

**What:** Purple loosestrife
* (Lythrum salicaria)
**Description:** Shoreline perennial, can grow to nine feet tall with long spike of magenta flowers.
**Spreads:** Through seeds and by vegetative production through shoots and rhizomes.
**Harmful effects:** Displaces native and beneficial plants and animals and clogs irrigation systems.

HERBICIDE APPLICATION:
- First treatment, for milfoil (using 2, 4-D) and water lilies (using Glyphosate), in July 2003.
- Second treatment, for milfoil, purple loosestrife, and yellow flag iris control, in August 2003.
- Final work will entail a single diver pulling weeds by hand in September 2003.

If you have any questions please contact: Michael Murphy, King County Water and Land Resources, at (206)296-8008, michael-WLR.murphy@metrokc.gov or the Spring Lake Club at SpringLakeClub@aol.com
For more information, please contact the Spring Lake Club at http://www.SpringLakeClub.com
SEVERAL INVASIVE AQUATIC NOXIOUS WEEDS are reaching dense infestation levels in Spring Lake. If left untreated, the worst of these weeds, Eurasian watermilfoil, will blanket the lake in a short time, preventing most recreational uses and eliminating badly needed wildlife habitat. The loss of recreational and conservation areas, combined with financial impacts, will create long-term affects for the residents in this watershed and lake recreationalists.

To combat these noxious weeds, King County, the Spring Lake Community, and the Washington State Department of Ecology have developed a management plan. The plan involves initial control of Eurasian watermilfoil through the use of herbicide followed by manual control – pulling weeds by hand – methods. Purple loosestrife, yellow flag iris, and fragrant water lily will also be controlled using a combination of herbicides and manual control methods.

Combining these techniques with community education and support, Spring Lake will retain its environmental benefits and recreational value and remain a source of pride for its community.
Spring Lake Milfoil Project

Letter of Community Support

September 19, 2002

By signing this letter, we, the members of the Spring Lake community, agree

- that Eurasian watermilfoil and other listed noxious aquatic weeds present a serious threat to the natural beauty, ecological integrity, and safe recreational activities on Spring Lake.
- that controlling the noxious weeds is an immediate priority and that ongoing monitoring and control should be a continuing priority into the future.
- that community-based funding will be necessary to maintain a milfoil-free lake after initial eradication efforts.
- that the proposed treatment strategy outlined below is reasonable but may be altered by experts at the Department of Ecology to achieve the greatest likelihood of success.

Recommended Treatment Strategy

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<tr>
<td><strong>Initial Treatment (Year 1)</strong></td>
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<tr>
<td>Treat infested areas with 2, 4 D</td>
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<td>Diver-dredging</td>
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<td>Install bottom barrier at boat ramp</td>
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<td>Diver surveys</td>
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<td>2,4 D for spot control as necessary</td>
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<td>Diver hand-pulling and dredging as necessary</td>
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## Spring Lake Community Letter of Support

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<td>Mark A. Green</td>
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<td>Jeff Winter</td>
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<td>Leah McLean</td>
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Spring Lake Community Letter of Support
APPENDIX A:

AQUATIC WEEDS ARE CHOKING AREA LAKES, AND FORCES HAVE JOINED TO BATTLE AGAINST THEM
HERBICIDE ISSUE HAS MUDDIED THE WATERS

BY LISA STIFFLER P-I reporter

Tuesday, July 29, 2003

Section: News, Page: A1

Caren Adams doesn't seem like someone who'd endorse the use of herbicides in her beloved Spring Lake.
She's spent most of her 57 years at this watery jewel in rural King County. Gray-haired and fit, she lives in her childhood home, nestled among giant firs and cedars. She knows the lake well enough to recognize the calls of individual Canada geese.
She also knows the lake has a growing problem.
Over the years, invasive weeds have taken root - creeping across the bottom, ringing the shore, squeezing out native plants. To combat the menace, herbicides will be sprayed at the lake, starting this week.
"Exotic weeds create some dilemmas that take more complicated thought," Adams said. "Doing nothing is not an option."
It's not an option at Lake Sammamish, either, where some residents are taking a no-herbicide stand.
"We are spraying toxic chemicals into the lake," said one of the concerned homeowners, Frank Lill. "Although the state approves it, who knows what affect it can have on children swimming in the lake or pets drinking the water?"
Across Washington, property owners, swimmers and boaters are peering into their favorite lakes and rivers to find invasive plants taking over. Water weeds are spreading each year, and new, troublesome varieties keep popping up, experts say.
The solution, however, is murky.
"It's becoming a really, really big issue," said Kathy Hamel, aquatic plant specialist with the state Department of Ecology. "It's worldwide."
Worried about how herbicides might hurt his seven grandkids, Lill grabs a rake and pulls the weeds from his shoreline property every summer. On his dock he heaps a soggy pile of Eurasian milfoil, a feathery weed that can tangle up people, boat propellers and fishing lines.
There are various strategies for battling milfoil and other weeds, but none are permanent or 100 percent effective.
State and county officials say the problem is best tackled on a lake-by-lake basis. For small lakes with limited infestations, hand-pulling and mechanical removal efforts can be effective.
When the weeds carpet a waterway, or in places where boats regularly carry stowaway weeds that reignite infestations, herbicides are the cheapest alternative.
The state permits the use of aquatic herbicides, but after two years lake communities are required to come up with a plan that also incorporates non-chemical controls. That rule also applies to individuals.
"Obviously, these chemicals are not going to be right in front of their homes," Hamel said.
"They're going to drift."
She urged spray-minded residents to "work with their neighbors" to make sure everyone is safe.
This year, applicators received permits to treat more than 1,000 lake and river acres statewide. More than 250 acres are in Lake Washington alone. The state recently started to track herbicide use by acre, so it's unclear whether the numbers are on the rise.
"The concerns with the herbicides are pretty straightforward," said Angela Storey of the Washington Toxics Coalition, which opposes pesticide use. "They pose pretty significant hazards not only to people but to salmon."

Juvenile chinook migrate along lake beaches en route to the sea. The herbicide sprays are timed to reduce the likelihood of exposing fish to the chemicals, but there are no guarantees. Spring Lake residents spent 18 months working with King County officials on their weed-control plan. They weighed all the options before coming up with a plan for their 68-acre lake, settling on a seven-year plan that relies on a broad herbicide application this year, followed by spot spraying and hand-pulling.

At the lake's lone public boat launch, sediment will be blanketed with a fabric that smothers weeds and blocks sunlight. The project is funded primarily by a $65,000 state grant. This week, an aquatic herbicide applicator is scheduled to motor onto the lake and spray 2,4-D into the water to kill the tenacious milfoil.

Fragrant water lilies - another invader - will be individually sprayed with glyphosate, the active ingredient in Roundup and Rodeo. Along the shore, purple loosestrife and yellow flag iris also will be doused with glyphosate.

The weeds "all threaten the quality of the lake environment," Adams said. "The boating, the swimming, the wildlife diversity that we love."

The form of 2,4-D used at Spring Lake has a low toxicity for fish and water birds. At very high levels, the herbicide can be toxic to dogs. Glyphosate has low toxicity for fish and mammals. It's slightly toxic to birds and aquatic bugs, and can remain for months in the sediment. Both chemicals are an eye irritant.

The Spring Lake plan is to use the herbicides in a controlled manner to prevent killing native plants.

"We didn't want to zap everything," Adams said. Natural predators to milfoil remain elusive. Researchers here and elsewhere have been studying a weevil that munches the weeds. But it's been tough to grow the bugs into large enough populations to have an effect. Sunfish - another non-native species - are suspected of gobbling them up. There are also problems with some of the non-herbicide controls. The sediment fabric kills native plants, too, and it needs to be maintained or will be buried and rendered useless. It covers cobbles that could provide spawning habitat for fish. Pulling the milfoil can break bits off that help the plant spread.

But Lill and others would rather work a little harder and settle for some of the tradeoffs than add chemicals to the lake.

As vice president of Save Lake Sammamish, Lill is also concerned about the effect of the dead weeds on water quality. The rotting vegetation can release nutrients, feeding algal blooms. "Spraying with an herbicide does not get rid of it permanently. You're going to be out there doing something every year," said Lill, a retiree who's been a year-round lake resident for nearly 30 years.

Through postcards and e-mails, he's urged neighbors to rake or pay divers to pull the weeds. At least six are still opting for herbicides.

"We're asking people to do it the safe way," he said. "It's a bother, no doubt about that."

P-I reporter Lisa Stiffler

P-I reporter Lisa Stiffler can be reached at 206-448-8042 or lisastiffler@seattlepi.com

This article contained at least one photo or illustration as described below:

**Type:** Color Photo & Chart

**Description:** (1) GILBERT W. ARIAS/P-I: Caren Adams heads to her boat dock on Spring Lake in Maple Valley. Adams and other lakeside residents have joined King County in an effort to control the weeds that are squeezing out native plants in the lake.

(2) SPRAYING PERMITS
Spring Lake Community Newsletter—July 2004

Spring Lake: A Unique Resource

Spring Lake has hosted our community for the past fifty years, but it’s history goes back nearly 11,000 years, to the retreat of the Vashon glacier. The Spring Lake area is unique among King County lakes in that almost half the shoreline is undeveloped, and includes a high quality peat wetland, or fen, at the southeast shore of the lake. It has been called the most pristine wetland in the immediate King County area. The lowland forest surrounding the lake and the myriad plants and animals who know it as home rely on our good stewardship to maintain and preserve the intricate balance that makes Spring Lake such a natural treasure.

Spring Lake is alive, not just with our children playing at the surface and along the shores, but with the building and breaking down of organic matter beneath the surface. Through photosynthesis, algae and plants produce organic matter. Plants, fish and animals then use oxygen to break down the organic matter to create energy. Decomposition follows. Eroded sediments, debris and other pollutants washed from the watershed are deposited via streams and ground water. Through these processes, lakes eventually fill with sediment. Even without human influence, natural lakes move from deep pond, to marsh and finally to lowland forest. In terms of age and productivity, Spring Lake is a mesotrophic lake, in the middle stage of its life. Human activity is accelerating the natural life cycle of the lake.

This wondrous ecosystem is more than waterfront footage for our homes and a pool for swimming and fishing. Its health and vitality are our responsibility, and our actions can have adverse impacts on the lake’s well being. The trees that surround us absorb rainfall and runoff, removing pollutants and slowing introduction of excess waters into the lake. Cutting down trees have the effect of increasing runoff, resulting in warmer lake temperatures, less water clarity and higher lake levels. Emergent native plants along the shoreline naturally filter toxins and pollutants. Removing them to create lawns at lakeside means loss of buffer, even while we are contributing an extra burden with fertilizers and herbicides. Human activity is also responsible for the introduction of invasive, noxious plant species into the lake environment, which can have a major impact on the lake’s natural plant and animal life, as well as the recreational opportunities, such as swimming and fishing. In recent years the lake has experienced the rapid growth of Eurasian Water milfoil, as well as other noxious weeds, which have become the subject of a cooperative weed control plan between the Spring Lake Community Club and King County.

Noxious Aquatic Weed Control Program Update

2003 marked the first year of the project to control noxious weeds in Spring Lake. The King County Department of Natural Resources & Parks are administering the project.
funded with a grant from the state Department of Ecology (DOE). The grant was awarded in late 2002 as a result of an extensive cooperative effort between concerned community club members and the county’s Lake Stewardship Program. The rapid growth of water milfoil was threatening to become a detriment to the lake ecosystem, as well as safety hazard to boaters and swimmers. The goals of the project are to eradicate the water milfoil and prevent re-introduction through a long-term program of monitoring and control that will become the responsibility of the community club once the funding by the grant is completed. In addition three other invasive weeds will be targeted for eradication and control: purple loosestrife, fragrant pond lily and yellow flag iris. All three threaten to displace native vegetation and degrade the ecosystem if not controlled.

Chemical treatment of the lake last summer appears to have effectively removed the water milfoil, according to a survey of the lake this spring by staff members of the county’s Lake Stewardship Program. This is good news for residents and all those that use the lake for boating, fishing and recreation. The lake was treated in late July 2003, with 100 gallons of liquid 2,4-D by a licensed contractor. Six separate shallow areas of the lake where the milfoil growth was concentrated were treated at a rate of 2 to 7 gallons per acre. Diver surveys in late summer and fall reported no surviving milfoil. In August the lake was treated with Glyphosate for the other three noxious weeds. The contractor spot sprayed noxious weeds on the margins of the lake covering about 3 acres. A second treatment was performed 2 weeks later.

Water samples were taken and analyzed to monitor the concentration of both chemicals following the treatments. Sampling for Glyphosate near treatment areas found no measurable concentrations 24 hours after the treatment indicating a very quick degradation of the herbicide. The monitoring of the 2,4-D concentrations revealed a slower degradation. At a mid-lake location the 2,4-D concentration was measured at 405 parts per billion (ppb) 5 days after the treatment. The concentration decayed to 235 ppb after 16 days, 158 ppb after 35 days and .545 ppb after 49 days. A sample taken in the spring of this year measured .37 ppb. This concentration of 2,4-D is well below the drinking water standard (70ppb) and the irrigation standard (150ppb) and therefore poses no threat to lake users. Additional samples will be taken this year, although no more treatments of 2,4-D are planned.

With the survey this spring showing no milfoil and reduced purple loosestrife evidence, the thrust of this year’s program will be the control of yellow flag iris and fragrant water lily. Again, Glyphosate spot treatments will be applied to concentrations of these weeds. A diver survey of the lake is planned for late July. Any remaining milfoil will be hand pulled and a second treatment of Glyphosate will be applied to the water lily and iris as required.

All in all, the noxious weed control program has had a very successful start with the present elimination of the water milfoil. The challenge for upcoming years, when the responsibility for weed control efforts shifts to the Spring Lake community, is to make sure the milfoil and other weeds do not become reestablished in the lake.
Homeowner Actions

All area residents, whether they have waterfront property or not, have a stake in the health of Spring Lake. Here are the top ten things you, as a homeowner, can do to enhance the health of the Spring Lake ecosystem:

1. Do not use weed and feed products.
2. Use only slow release organic fertilizers, and use them sparingly.
3. Resort to pesticide use only if other methods of control have failed, and you are able to positively identify what you are trying to control. Natural Lawn and Garden Hotline 206-633-0224.
4. Make use of native plants when landscaping to reduce water and fertilizer needs. Maintain a native plant buffer at the shoreline.
5. Learn to identify invasive and noxious weeds and how to control them. Call the Noxious Weed Control Program, 206-296-0290 for help.
6. Protect existing trees by removing ivy. English ivy is now classified as a class C noxious weed.
7. Maintain your septic system. Do not use septic system additives and minimize use of a garbage disposal.
8. Use phosphate free biodegradable soaps and laundry detergents.
9. Minimize impervious surfaces on your property.

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