AQUATIC CONTROL TECHNOLOGY
POND AND LAKE MANAGEMENT SPECIALISTS

May 9, 2013

Mr. Michael Allard, President
Namaske Lake Association
MEAllard@AllardVentures.com

Re: 2013 Proposal/Agreement for an Herbicide Treatment Program to Control Invasive Variable Milfoil Growth in Namaske Lake in Goffstown, New Hampshire REVISED

Dear Mr. Allard:

Please accept this as our REVISED Bid/Proposal for a treatment program to control invasive variable milfoil (*Myriophyllum heterophyllum*) in portions of Namaske Lake during the 2013 season.

INTRODUCTION AND RECOMMENDED TREATMENT APPROACH

Aquatic Control Technology was selected for and performed the two previous herbicide treatment programs at Namaske Lake in 2010 and 2012. 2,4-D BEE granular (Navigate) was the herbicide used for both treatments. 2,4-D BEE generally provides fairly effective milfoil control in New Hampshire lakes due to its systemic mode of action that targets the entire plant including the root structures. Nearly complete control of milfoil is usually observed within one-month of 2,4-D BEE treatments, but the duration of control has varied. This has become more evident over the past couple of years as post-treatment monitoring efforts have intensified. The 2012 treatment at Namaske Lake did appear to control more than 95% of the pre-treatment milfoil biomass, but some late season recovery of milfoil was seen. After researching potential causes of the inconsistent control following 2,4-D BEE granular (Navigate) applications, it seems as if the most likely explanation is that there either delayed or incomplete release of the active ingredient off of the clay granule carrier, which is not insuring that the herbicide concentration-exposure-time (CET) is sufficient to maximize the duration of control following treatment.

There was a labeling change to Navigate in 2012 to volumetric dose calculations, which will allow for higher application rates to be used; however, we are not convinced that this will solve the problem. Based on our experience at Namaske Lake and other NH lakes that we have treated with Navigate herbicide, we believe that a different treatment approach should be tried to try and improve the duration of milfoil control. It is doubtful that all 40 acres shown on the map will require treatment in 2013. We expect that smaller spot-treatments will be required and we still do believe that there are benefits to using granular herbicide formulations that will allow for targeted herbicide placement and will release the herbicide in the bottom of the water column where it will be less subject to dilution and where there may be increased herbicide absorption based on recent research. In the table below we compared several alternative treatment strategies and suggest our recommended treatment approach for the 2013 season.

Herbicide(s)	Approach	Comments	Cost estimate to treat all 20 acres
Renovate Max G (2,4-D amine & triclopyr amine granular) ***RECOMMENDED***	Spring or fall treatment targeting 1.5 ppm in water column or 113 lbs/ac	May provide enhanced control because of two active ingredients; longer water use restrictions esp. irrigation	$12,585
Sculpin G (2,4-D amine) *2nd CHOICE*	Spring or fall treatment targeting 2 ppm in water column or 131 lbs/ac	CET should be higher due to faster release; will have shorter irrigation restrictions than Renovate Max G	$11,525
Navigate (2,4-D BEE granular) *BACK-UP*	Spring or fall treatment targeting 2 ppm in water column or 111 lbs/ac	Concern over achieving sufficient CET resulting in incomplete control; same product used in recent years	$12,185

At Namaske Lake, we believe that Renovate Max G is the best product choice for 2013. The combination of two active ingredients may provide enhanced milfoil control, especially where portions of the lake have now been treated with Navigate on several occasions. Based on our observations of milfoil growth in the lake in August 2012, we do not expect that treatment of more than 10-15 acres will be needed in 2013.

SCOPE OF SERVICES

Permitting:
Aquatic Control will prepare and file a Special Permit application for this treatment project on behalf of the Client. Tasks completed during permitting will include:

- Completing the Special Permit Application form and assembling the normal attachments.
- Assembling names and mailing addresses for abutting property owners that can be keyed to Town Tax Maps, querying abutting property owners as to their source of domestic water.
- Completing all normal mailings and newspaper notifications required by the Special Permit.

Treatment:
Aquatic Control's New Hampshire licensed chemical applicators will apply USEPA/State registered herbicide(s) to designated treatment areas in accordance with the Special Permit issued by the NH Division of Pesticide Control. Final decisions on the product(s) applied, application rate(s) used, specific area(s) treated and the date(s) of treatment, will be made by mutual agreement between ACT, the Client and DES and will follow all requirements and conditions of the Special Permit.

Depending on the time of year and specific areas of treatment, the treatment will be performed using either an Airboat or aluminum work skiff powered by a conventional outboard motor. Granular herbicides will be applied using mechanical cyclone spreaders, an eductor system that delivers the granules in stream of water using fan shaped nozzles, or a hand-held granular blower. Application equipment will be properly calibrated and a Differential/WAAS GPS system will be on board the treatment boat(s) during the application to insure that the herbicide is evenly applied throughout the designated treatment areas.

Immediately prior to treatment, shorelines around the treatment areas and for a 200-foot buffer distance will be posted with signs warning of the temporary water use restrictions to be imposed per the Special Permit.

Monitoring and Reporting:
Aquatic Control will complete the following monitoring and reporting tasks to comply with conditions of the Special Permit.

- Perform pre and post treatment surveys of treatment areas.
- Arrange to have the post-treatment herbicide monitoring conducted by an independent, state-certified laboratory.
- Prepare and submit a year-end report.

TENTATIVE SCHEDULE OF PERFORMANCE - 2013

- Prepare and file Special Permit Application with NH DPC ..... January/February
- Pre-treatment survey(s).....May/June and/or August
- Chemical treatments (1 application)..... June or early September
- Post-treatment inspections and reporting.....June-October

CLIENT RESPONSIBILITIES

It would be the Client's Responsibility for compliance and assistance with the following:

- Provide an accurate and current list of all abutting property owners to each treatment area (those located within 200 feet), a copy of the town tax maps that show all the abutting parcels, and an updated inventory of water source (i.e. wells or intakes) for the abutting properties
- Identify and provide names and addresses of any property owners with direct water intakes located within 1200 feet of the proposed treatment areas.
- Identify locations of any community or public wells and their proximity to the treatment areas.
- Providing alternate water to abutters that may have to restrict their water use for drinking or irrigation following treatment, if requested and required.
- Provide a copy of the updated Long-Term Vegetation Management Plan prepared by DES.
- If possible, assist with posting on the day of treatment; or post the lake in advance of treatment. Aquatic Control will provide pre-printed posters.

COST AND PAYMENT SCHEDULE

The total cost of the chemical treatment program, broken down by task, is listed below.

Herbicide Application in spring or fall (June or early-mid September)

Task	Description	Renovate Max G Program Cost 113 lbs/ac *(recommended)*	Sculpin Program Cost 131 lbs/ac *(2nd choice)*	Navigate Program Cost 111 lbs/ac *(back-up)*
1	Prepare and file Special Permit application with NH DPC (inclusive of all required direct and certified mailings to a maximum of 100 abutters and publication of 3 newspaper notices) [1]	$1750	$1750	$1750
2	Perform chemical treatment of up to 20 acres (inclusive of all labor, chemical & equipment) [2]	$9100	$8040	$8700
3	Pre and post-treatment surveys and submittal of the required written reporting to the State	$700	$700	$700
4	Herbicide residue sample collection and analysis (assumes 2 samples are required) [3]	$1035	$1035	$1035
	Herbicide Application Program Total	**$12,585**	**$11,525**	**$12,185**

[1] *Any changes to the 2012 permitting process (i.e. requirements for additional information, different notification requirements, different survey and monitoring requirements, etc.) may incur additional cost. Should a Public Hearing be requested, there will be additional charge of: $500 for Aquatic Control to prepare for and attend the Public Hearing plus any direct costs associated with mailing (certified mail at $7.00 per piece). If either fewer or more abutters require notification based on the final areas being treated, the cost will be adjusted accordingly.*

[2] *Should less acreage require treatment than is listed in bid map, the treatment cost will be calculated using the following formula:*

	Renovate Max G Program Cost ***(recommended)***	**Sculpin Program Cost** ***(2nd choice)***	**Navigate Program Cost** ***(back-up)***
Base cost for certified applicator labor, equipment and mobilization	$2000	$2000	$2000
Per acre unit cost (note: higher application rates will carry a higher per acre cost)	$355	$302	$335

[2] *Requirements for additional sampling will carry additional costs of $200 per sample for sample analysis and $350 per round for sample collection and delivery to the lab.*

Payment of the project total shall be made as follows:

- **$1750** for Task 1 permitting due upon accepting and returning a signed copy of this Proposal/Agreement
- Initial Herbicide Application cost due in full upon completion
- Additional tasks billed upon completion.
- **$500** (balance) due upon submission of project completion report

Payment is due within 14 days of receipt of an invoice. Please contact us in advance if an alternative payment schedule is required.

In the unforeseen event that the NH DPC does not issue a permit for a timely treatment program, you would be obligated to only pay for work and expenses performed on Task 1 (permitting). Our ability to proceed with this treatment program is naturally contingent upon timely receipt of the required NH DPC approved permits. Specific, mutually agreeable date(s) for chemical treatment will be scheduled with you in advance and prior to permitting.

If we are selected for this project, please return a signed copy of this Proposal/Agreement to our office at your earliest convenience. If you have questions or need any additional information please do not hesitate to contact our office.

We look forward to assisting the Namaske Lake Association with its variable milfoil control efforts in 2013. We are confident that our recommended treatment approach will provide effective invasive plant control for the 2013 season, and will lay the groundwork for a more affordable, integrated management program in future years.

Sincerely,

Aquatic Control Technology

Marc D Bellaud

Marc Bellaud
President/Aquatic Biologist

Accepted: Namaske Lake Association

By:_____
(sign name)

_____
(print name)

_____
(date)