Evaluation of Bluegreen Algae Management Options for Half Moon Lake

	Limnologist time days (7.5			7	Technologist time		
hourly rates, Al Sosiak and Bridgette Halbig	h	h)	cost \$142.00			cost \$45.00	
Time allocated for Al Sosiak, Senior Limnologist Project Startup Meeting, discuss the desired level of productivity in the lake, schedule, etc. Review existing reports, publications; assess adequacy of current background morphometry and water quality data to meet the project objectives; evaluate current	2.0	0.3	\$284.00				
water quality with respect to inlake treatment Review In-lake Treatment Options, and Compile List of Most Promising Management Options (that can be assessed with available information), discuss with applicators and	7.5	1.0	\$1,065.00				
other service providers Evaluate Regulatory Requirements and Effect on Nontarget Organisms of the Potential Management Options (review statutes, pertinent literature, and discuss with provincial	15.0	2.0	\$2,130.00				
regulatory staff)	15.0	2.0	\$2,130.00				
Prepare Cost Estimate Ranges for Potential Management Options	15.0	2.0	\$2,130.00				
Draft report preparation	37.5	5	\$5,325.00				
Review and respond to comments on draft report/forum review	16	2	\$2,272.00				
Print copies of report, unbound if required	1	0.1	\$142.00				
Final report preparation	7.5	1.0	\$1,065.00				
Train Residents on Lake Monitoring Plan	8	1 - 1	\$1,136.00				
total time, (Limnologist)	124.5	15.4	\$17,679.00		days		
					(7.5		
				h	(7.5 h)	cost	
Time allocated for Bridgette Halbig, Technologist					11)	COST	
Project Startup, review and discuss tasks Assemble existing background data and reports, prepare database, plot key water quality				2	0.3	\$90.00	
variables				15	2.0	\$675.00	
Draft report formating				7.5	1	\$337.50	
Final report formating				7.5	1	\$337.50	
total time, (Techologist)				32.0	4.3	\$1,440.00	
Total cost of professional and technical time GST, if required on professional time only						\$19,119.00 \$883.95	
Total Project Cost, including GST						\$20,002.95	

Assumptions

- GST included for now; will be deleted if the client, Half Moon Lake Residents Association, is GST exempt
- Key objectives as defined by R. Normandeau Aug. 2, 2016 are: (1) evaluate the feasibility of options for the control of nuisance bluegreen algae (cyanobacteria) control in Half Moon Lake;
- (2) evaluation to include physical, chemical, and biological control agents; (3) approximate range of costs in Alberta to implement these various options, including up front capital costs and ongoing operating costs.

This will be based on the best available costs estimates from Alberta, or elsewhere in North America for options not used in Alberta; (4) potential secondary impacts of implementing these options on wildlife or other aquatic organisms; (5) identify any concerns or regulatory constraints from the Government of Alberta; (6) this evaluation will be entirely based on the available water quality data and lake morphometry. Critical missing data will be identified. It is anticipated that some options will require further data collection.

- some water quality sampling has been done in at least 1982, 1987, 1990, 2011 by U of A and AB government. Most recent report was done by Lakewatch in 2011, but not intended to evaluate management options.
- -a phosphorus budget would greatly assist treatment option evaluation, if one is available, as it would determine if internal P loading is the most important P source currently -report will be prepared for a non-technical audience
- Up to two copies of the final report, unbound, can be printed if required on our office printer. The final report will be supplied as a pdf file.
- All review comments will be supplied in a compiled deficiency statement, with some sorting to eliminate redundancy.
- Draft and Final Report completion dates acceptable to the client and consultant will be negotiated.
- Will use 0.5 detection limit (DL) substitution, to be consistent with previous AENV work, and because many variables were mostly <DL.
- No incidental costs such as courier or printing.