PCBS AND FIVE ISLAND LAKE

Five Island Lake Community Liaison Committee
Newsletter #4, December 1996

Dear Fellow Residents

On November 20 we held an Open House and a Community Meeting which were attended by about eighty people. The purpose was to get feedback from the community on a proposed strategy to clean up contaminated sediments in Five Island Lake.

Based on comments and discussion at the meeting we then prepared a report which was submitted to the Minister of Environment, Wayne Adams, and the Minister of Transportation and Public Works, Don Downe.

As promised, this newsletter brings you the recommendations contained in that report, together with information on the community feedback.

We haven't included a feedback form this time, but you are welcome to call us.

We also encourage you to get in touch with the MLA for this area, Bruce Holland, to express your support for this strategy or to convey any concerns you may have. He has been actively supporting the CLC process from the beginning and can be reached by phone 424-5052, by fax 450-1053, or by mail, 110 Chain Lake Drive, Vantage Point Three, Halifax, NS, B3S 1A9.

Finally, we would like to thank all of you who took the time to write, phone or attend the meeting. Without your input and support we could not have prepared these recommendations.

Preparing the Strategy

CLC Mandate

The Five Island Lake Community Liaison Committee was formed in November, 1994, in response to an invitation from the provincial government to the community to participate in finding solutions for the PCB contamination problems in the Five Island Lake area.

The mandate of the Community Liaison Committee is to:

- Help the community and the government exchange information and discuss concerns.
- Work with government to develop a remediation plan that will be environmentally sound, technically viable and acceptable to the community.

Priorities

Since its formation the CLC has met 28 times to discuss issues including:

- securing the site to prevent further migration of contaminants
- ground water monitoring
- off-site clean up of neighbouring properties
- the health advisories
- the options for dealing with contaminated lake sediments.

The PCBs on the site of the former salvage yard are now at least temporarily contained, with no risk of exposure to either humans or wildlife. In contrast, some of the PCBs that washed down Western Brook from the site into Five Island Lake have already entered the food chain.

Since October 1994 residents have been advised not to eat fish caught in certain lakes. There are also concerns that fish-eating wildlife are at risk, as suggested by a study carried out by the Canadian Wildlife Service, Environment Canada.

While the majority of the PCBs in the lake system still appear to be partially contained

within North Bay, PCBs have been detected at sample sites throughout the watershed downstream and continued movement and dispersal appears inevitable.

Therefore the CLC is now focusing on the clean up of contaminated lake sediments as an urgent priority.

This Strategy

The CLC has put out three newsletters distributed to almost 2,000 households and businesses. Feedback from those newsletters has been compiled and carefully read by the Committee. A feedback form was also distributed at the Community Meeting on November 20. This community input has been used to prepare the following 13 points that make up our recommended strategy to clean up contaminated lake sediments. The Strategy makes reference to six options (see Newsletters #2 and #3 for more details):

Option #1
Managing the sediments in place (permanent control weir and use restrictions)
Option #2
Covering the sediments in place
Option #3-A
Sediment removal and disposal in a secure containment berm
Option #3-B
Sediment removal and transportation to Swan Hills, Alberta, for incineration
Option #3-C
Sediment removal, use of *off-site* thermal desorption to extract PCBs, followed by incineration
Option #3-D
Sediment removal, use of *on-site* thermal desorption to extract PCBs, followed by incineration

Recommended Lake Clean-Up Strategy

1. Focus on North Bay Sediments

The CLC agrees that the lake clean-up strategy should deal primarily with the contaminated sediments in North Bay because:

(a) This area contains approximately 70 percent of the total identified PCBs in the Five Island Lake system. If no action is taken they will slowly but steadily disperse downstream.

(b) We understand that retrieving PCBs from the rest of the lake system is not a viable option because it would be technically very difficult, it might not be possible to maintain adequate environmental controls, and the cost would be extremely high compared to resulting benefit.

2. Include Plans to Deal with 49 Containers

The CLC believes that the lake clean-up strategy should include provisions for the 49 containers. The contents of the containers currently present no threat to human health or the environment, but the containers themselves, in their existing location, would prevent timely access to the contaminated site beneath them should this become necessary in the future.

The containers were intended, in any case, to be only a temporary solution, and there are ongoing maintenance and inspection costs.

Preferably the same process used to remediate the contaminated lake sediments would also be used to deal with the containers. If for any reason this is not possible, the removal and disposal of the soils in the containers should be the next priority.

3. Criteria To Be Met

The CLC agrees that any recommended lake clean-up strategy must meet the following criteria:

- It must prevent the escape of any more PCBs from North Bay into the rest of the lake system.
- It must prevent the further movement of the PCBs in North Bay through the food chain.
- It must include a plan for dealing with the contents of the 49 containers.
- It must provide a reliable long term solution (i.e. for the foreseeable future).
- It must be technically proven.
- It must be implementable in a timely manner.
- It must meet all applicable regulations.
- It must be acceptable to residents of the area.

4. The Role of Cost

The CLC agrees that once these criteria have been met, the cost of the strategy then

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The CLC agrees that once these criteria have been met, the cost of the strategy then becomes an important factor because it will determine if and when action is taken.

5. Remove Contaminated Sediments from North Bay

The CLC agrees that the PCB contaminated sediments should be removed from North Bay by dredging because:

(a) Managing the sediments in place through construction of a control weir and use restrictions (*Option 1*) would reduce but not prevent movement of PCBs through the food chain, and would probably cause rapid eutrophication in North Bay

(b) Covering the sediments in place (*Option 2*) is not considered to be a reliable long term solution because of the potential for damage to any covering material.

6. The Removal Process Must Not Permit Further Escape of PCBs from North Bay

The CLC recognizes that the removal process may cause some contaminated sediments to be temporarily resuspended. It is essential that the remediation process not contribute to the further dispersal of PCBs from North Bay. Therefore the CLC recommends that:

(a) Pilot testing be carried out to determine that sediment removal can be carried out in an environmentally acceptable manner.

(b) All appropriate environmental controls be applied during the removal process.

7. First Steps: Provide Water Access and Construct Temporary Control Weir

Restrictions on boating in North Bay have adversely affected a number of property owners with deeded access to Five Island Lake. Alternate water access for these owners should be provided on the main lake side of the railroad right-of-way as soon as possible and maintained until it is possible to use North Bay again.

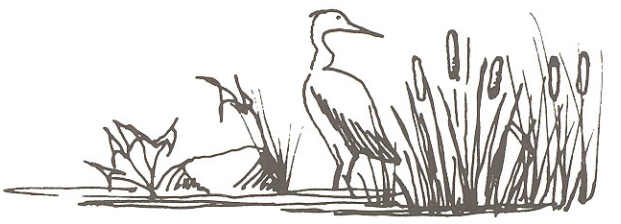
A temporary control weir should be constructed at the railway trestle as a first step in the remediation process to reduce the likelihood that contaminated sediments would escape from North Bay into the rest of the lake. Once the contaminated sediments have been taken out of North Bay, the control weir should be removed.

8. PCBs in North Bay Sediments Should be Destroyed not Stored

The CLC agrees that once the contaminated sediments have been removed from North Bay, the PCBs they contain should be destroyed because this will be a permanent solution. The CLC also agrees that the PCBs in the 49 containers should be destroyed, preferably at the same time and by the same process.

9. Transportation of Sediments to Swan Hills Incinerator Acceptable but Costly

Transporting all PCB contaminated sediments to Canada's only incinerator licensed to burn PCBs in Swan Hills, Alberta (Option 3-A) would be an acceptable option, but the CLC recognizes that the cost is likely to be prohibitive.



10. Carry Out Pilot Tests to Investigate Feasibility of Thermal Desorption to Reduce Costs

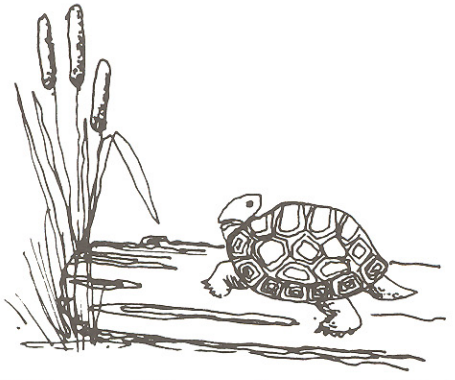
The CLC feels that thermal desorption would be the most cost effective solution to deal permanently with both PCB contaminated sediments and the soils stored in the 49 containers.

The CLC therefore recommends that the feasibility of thermal desorption, either off-site or on-site (Options 3-C and 3-D respectively) , be further investigated. These investigations would involve both bench-scale tests in a laboratory, and pilot scale tests in a full-size unit.

Given that current cost estimates for both Option 3-C and Option 3-D are relatively close, the CLC would prefer that the PCB

contaminated sediments be sent away to an off-site thermal desorption unit (Option 3-C).

If it is subsequently shown that there are significant cost or other advantages to using an on-site thermal desorption unit (Option 3-D), the CLC is ready to consider this option. However, the CLC believes that it would be harder to obtain community acceptance for the on-site option.



11. If Thermal Desorption is not Viable, a Secure Containment Berm Should Be Considered But Only as a Last Resort

The CLC recognizes there are still uncertainties associated with the use of thermal desorption (its ability to handle North Bay sediments, cost, and regulatory approval).

If Options 3-C and 3-D are not viable, the CLC recognizes that, in order to remove the sediments from North Bay, it will be necessary to consider placing them in a secure containment berm near the site of the former salvage yard(Option 3-A).

The CLC recognizes that there are regulatory uncertainties associated with this option which would need to be resolved, and that there could problems obtaining community acceptance.

Therefore, the CLC believes that:

(a) Use of a secure containment berm should be only considered as the option of last resort

(b) The contents of the 49 containers should be handled separately and should not be placed in this containment berm.

(c) If this option is to be considered, further consultation with the community is essential.

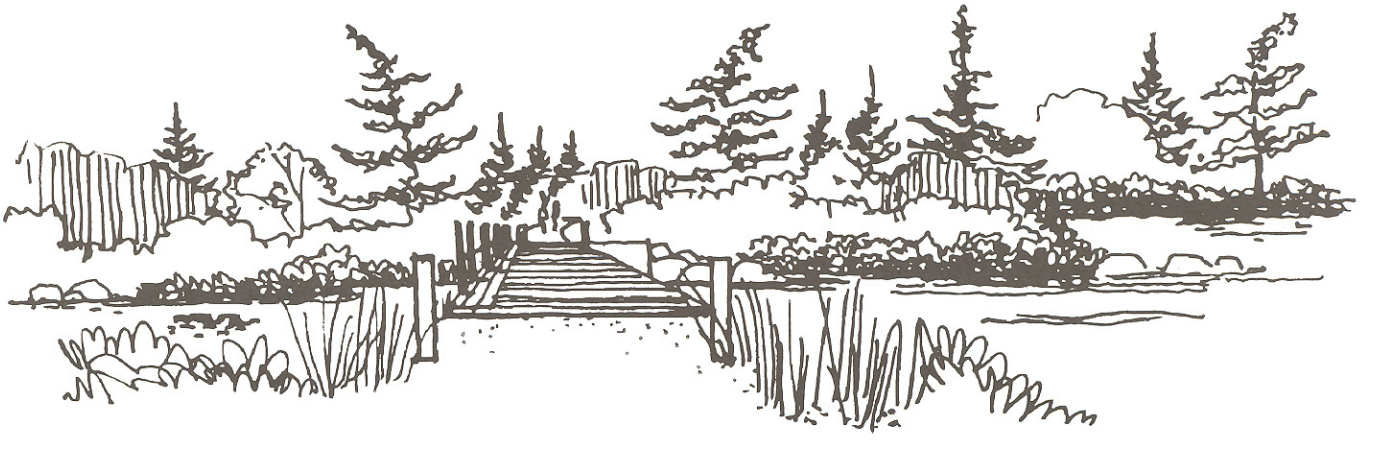
12. Urgency

The CLC believes that time is of the essence, and that the clean-up of North Bay should start as early as possible in 1997 because further delay will (a) increase the risk of negative environmental impacts, and (b) prolong the adverse effect of lowered property values on local residents and businesses.

13. Continued Involvement of the Five Island Lake Community Liaison Committee

The CLC wishes to commend the N.S. Departments of Environment and Transportation and Public Works for their commitment to, and participation in, the Community Liaison Committee process.

The CLC strongly recommends that this process continue, to ensure that the community remains informed and involved. We believe such involvement is essential if the PCB contamination problems at Five Island Lake are to be successfully resolved.



Community Response

At the November 20 Community Meeting, at which the outline of this strategy was presented, people in attendance were asked to fill out a feedback form which asked these basic questions:

- Should the contaminated sediments be removed from North Bay or left where they are?
- If you think they should be *left where they are*, which management options (Options #1 and #2) would be acceptable to you?
- If you think they should be *removed*, which management options (Options #3-A, 3-B, 3-C and 3-D) would be acceptable to you?

Fifty-four forms were returned, and the results were as follows:

- **Most people (90 percent) want the contaminated sediments to be removed from North Bay.**
- **Either off-site thermal desorption or incineration at Swan Hills is acceptable to about two thirds of the respondents. On-site thermal desorption would be acceptable to half of the respondents.**
- **Storing the contaminated sediments in a secure containment berm would be acceptable to only 11 percent.**

Sediment Removal and Environmental Impacts

The CLC believes that the results of this informal poll are also supported by the comments received from readers of the three newsletters. However, the CLC recognizes that a number of people have raised legitimate concerns about sediment removal — through the feedback forms, at the meeting held with the Woodens River Watershed Environmental Organization, and at the Community Meeting.

It appears that most people who raise questions about sediment removal or who oppose it are concerned that disturbing the sediments will result in more PCBs leaving North Bay and moving downstream into the rest of the lake system.

From information we have received, the CLC believes that there are proven techniques to minimize and control the temporary resuspension of sediments during the removal process. Construction of a temporary control weir at the railway trestle will add another margin of safety, and in the event of a problem, it will be possible to temporarily cut off drainage from North Bay into the rest of the lake system.

However, the CLC acknowledges this concern and in response included Point 6 to the strategy (*The Removal Process Must Not Permit Further Escape of PCBs from North Bay*

Feedback

We received many responses to Newsletter #3. The majority favoured removing the contaminated sediments from North Bay and destroying the PCBs.

.....I feel that the clean-up should be as complete as possible, not relying on future generations to keep the upkeep to a specific level.....

.....Dredge, remove, concentrate and burn the PCBs. No other solution is considered acceptable or viewed as feasible for an acceptable end result for the watershed! .

However, a number of people did support Options #1 or #2 which involve leaving the sediments in North Bay and managing them in place. Their reasons included (a) concern that sediment removal would make matters worse ...*disturbing the sediment seems like opening Pandora's box* ... (b) confidence that better technologies may come along soon ... *with developments in the world of science progressing at a fast rate we can expect within a few years less complicated and less expensive means of destroying PCBs* ..., and (c) a belief that the risks of PCBs have been greatly exaggerated ... *the PCB threat has been overblown. I see no need to "over-react"*

The Committee has taken these concerns seriously, and has based its recommendations on the following conclusions:

- Sediment removal can and must be carried out in such a way that contaminated sediments don't escape out of North Bay.
- There is no convincing evidence that better, cheaper technologies to handle highly chlorinated PCBs (such as the Arochlor 1260 found in Five Island Lake) are "just around the corner". If we wait 5 or 10 years, the PCBs in North Bay will simply disperse further through the lake system and the food chain.
- The threat of PCBs has indeed been exaggerated in the past, but the pendulum shouldn't be allowed to swing too far back in the opposite direction. PCBs in the environment represent a significant ecological risk and can also be a risk to human health if people are exposed to them.

What Happens Next

We have submitted this strategy to the Minister of Environment and the Minister of Transportation and Public Works, and we have asked for a response *as soon as possible*. We will let the community know as soon as we hear something.

Your Community Representatives on the Five Island Lake Community Liaison Committee

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