Memo to Robin Brown

From R.W. Macdonald, M.G. Ikonomou, S.C. Johannessen and P. S. Ross

Subject: Response to your e-mail of January 28, 2010 regarding proposed wastewater regulations and what we see as emergent problems for DFO.

Sophie, Michael and I met briefly yesterday and I summarized that meeting with the text below. Peter has independently evaluated the document, with his commentary pasted below. You will see quite a bit of commonality in our findings:

1. Issues with SARA
2. Issues with monitoring
3. Approach of end of the pipe as opposed to ecosystem management
4. The likelihood of discharges escaping this regulation either because they come from unregulated sources (landfill leachate) or because the two 'partners', EC and DFO, have had a rather bad history of co-managing this sort of thing as manifestly noted by an Auditor General Review (see Peter's lengthy discussion of this topic).

The regulations are focussed mostly on catching and eliminating short-term effects on benthos and fish (ignoring high trophic-level animals like seals or whales), and the control of solids, BOD, ammonia. DFO's desire for an ecosystem approach to management of its coastal waters is, in principle, invested in preventing long-term degradation of habitat and sub-lethal effects that eventually lead to population damage or demise. The end-of-the-pipe, acute toxicity approach to the regulations might be necessary, but it is certainly not sufficient for DFO's purposes. As a prime example, persistent contaminants, some of which target high trophic levels rather than benthos or fish, slip through this net, as will future emerging contaminants. Pharmaceuticals come to mind. The removal of solids will also take out some ill-specified amounts of these contaminants, but there seems to be little direction of how the biosolids are to be dealt with. The desire in these regulations also appears to be to abandon any sort of monitoring as quickly as possible – specifically on page 69 it says "*…if there is no effect of concern on the benthic invertebrate community and no effect of concern on the fish population reported in two successive interpretive reports under sections 11 and 14 or under section 14, as the case may be, no subsequent water quality monitoring study and no subsequent biological monitoring study need be conducted.*" This seems to be a "two strikes and you walk forever" kind of policy.

There are no real sediment guidelines: there have historically been many approaches to these and there is certainly no one approach that would fit all circumstances. Here, grain size and organic content are specified parameters, but these alone certainly would fail in the broader context to identify scope and seriousness of chemical damage to sediments. Organic carbon remaining in sediments might, indeed, have no particular importance as it consists of un-metabolizable, inert material.

In the general scheme of controlling anthropogenic inputs from land by regulating outfalls, it seems that landfill leachate flies under the radar. This sort of leachate can enter into municipal wastewater treatment systems where it would then be subject to the

controls, but it can also enter directly into the ocean and, at present, this route seems completely unregulated. Moreover, this pathway would be rather directly to shallow, nearshore water including the intertidal.

The regulations might better be served by 1) specifying a process to encourage source control, and 2) Providing a mechanism for regular chemical screening and/or scientific oversight that could identify emerging chemicals that may require removal or control.

For the minister of DFO, there are going to be issues with the Species at Risk Act where outfalls impinge directly on identified critical habitat, as they do at Iona and Macaulay Point.

Independent comments from Peter Ross

- I believe that one of the main arguments against national standards in the past is related to the fact that the nature and vulnerability of the receiving waters vary widely across Canada, and between freshwater and marine areas. That said, a major argument made in proposing regulations is that the inconsistency of having 'site specific' permits has weakened the abilities of governments to charge operators of WWTP when deemed in contravention of s.36(3) of the Fisheries Act. This may be evidenced by the stalemate in Victoria (CRD) where DFO considered CRD to be in contravention of the Fisheries Act but EC did not pursue charges. Having national minimal standards would make it easier to establish more black-and-white assessments of infractions (one might argue that antional stds are the norm for most pieces of legislation so having a ramshackle approach for WWTP is a little archaic). In this way, the proposed regs do clarify and simplify the enforcement option.
- the current site-specific monitoring and permitting approach is costly, as is site-specific evaluation of risks and compliance with a 'moving regulation target'. New standards would lead to tremendous efficiencies at the research, monitoring and enforcement levels.

That said, the proposed regulations lack clarity (at least for me) on the following scales:
- the list of endpoints of concern is restricted to BOD matter, suspended solids, residual chlorine, and un-ionized ammonia. These are with little doubt of concern in a sensitive receiving environment, and are cheap and easy to monitor. However, the only mention of other entities of concern (e.g. pharmaceuticals and personal care products, PCBs, PBDEs, E coli, other pathogens) is in the 'anticipated benefits' of secondary treatment. There appears to be no legal requirement to monitor for these, consider their fate in the receiving environment, or document the way in which treatment will help 'resolve' these issues in either the effluent or the retained sewage sludge.
- monitoring is to be carried out by the WWTP operators... I don't need to mention the fox in the henhouse, but surely there has to be a program for compliance monitoring that involves conservation officers... While I trust the operators, are they really likely to hand over data reports that may end up being used against them in a court of law...? (remember Walkerton on a slightly different issue...).
- Ocean Disposal regs under CEPA also govern the deposition of harmful materials in fish habitat. Interestingly, these regulations include a list of the following targetted classes of compounds that require screening: PCBs, PAHs, Hg, Cd and plastics. An obvious disconnect, albeit with a rationale. Nonetheless it would be nice to see even a

less frequent monitoring of some of these CEPA priority contaminants of concern in the WW System Effluent Regs.
- SARA: many WWTPs will release effluent into either Critical Habitat for SARA-listed species, or into their general habitat. Clarification as to the permitting that will be required under S. 74 and 75 of SARA is needed in the context of these Effluent Regs.
- there is mention of increased scrutiny of CSOs, but I was not convinced by the available information of there being a requirement under these proposed regulations to eliminate CSO's. This could be perceived as a gap which might allow some operators to monitor their 'treated effluent' for compliance under the new regs, but have overflows releasing liquid that would fail if considered as WWTP effluent.
- a major shortcoming from a monitoring, research and enforcement perspective can be gleaned from the 2009 Auditor General's report that stated the following (***under my last bullet below). Failure to clarify these deficiencies makes it difficult to imagine how the purported 'clarity' of having national standards and regulations will be resolved. EC and DFO must agree upon their respective responsibilties under the Fisheries Act since this is the tool by which these WWTP regulations will be enforced!.
- the proposed regulations do little to elucidate the CCME Strategy (p.9) which states under "Science and Research": "To promote coordinated research and disseminate information within the municipal WW effluent sector a committee is needed..." This latter section is very disappointing. I have trouble agreeing that "Setting up a committee" is the top priority for science and research; rather I would suggest that a national fund be set up to encourage good, peer-reviewed research that is relevant to WWTP effluent and habitat impacts. This latter would go a very long way towards an improved understanding of emerging contaminant issues, receiving environment impacts, risk-benefit evaluation of WWTPs, etc. If a national pot of research funds were available, then a committee could help consolidate and disseminate relevant information from and/or to WWTP operators. A committee with no money sounds like yet another layer of red tape.
- finally, if national standards are enforced, there is likely to be less support for research that is relevant to the health of fish and fish habitat. However, given the lack of requirements for monitoring for any of the 25,000 chemicals on the Canadian Domestic Substances List (DSL), I would argue that MORE research will be necessary since many of the existing localized research and monitoring programmes are likely to be gutted as operators move to a common treatment denominator across Canada. While dedicated national WWTP-oriented research funding would be a priority, it would also be important for an agency such as DFO to document the impacts of the upgraded facilities and/or compounds not evaluated under the terms of the regulations on fish and fish habitat.

***From the Office of the Attorney General (2009):

"Cooperation between the two departments is lacking

1.127 The Minister of Fisheries and Oceans continues to be legally responsible to Parliament for all sections of the *Fisheries Act*, including administration of the pollution prevention provisions that have been assigned to Environment Canada. The Habitat Policy and the Compliance and Enforcement Policy promote the concept of Fisheries and Oceans Canada and Environment Canada working cooperatively to achieve the policies’

objectives. We expected to find that the two departments had formal arrangements to establish the expectations for administration of the pollution prevention provisions of the *Fisheries Act* and that they had implemented the cooperative arrangements reflected in the policies.

1.128 A 1985 Memorandum of Understanding (MOU) between Fisheries and Oceans Canada and Environment Canada sets out their collective responsibilities for administration of the pollution prevention provisions of the *Fisheries Act*. It is not being actively implemented by the two departments. For example, the MOU calls for regular, at least annual, meetings between senior officials to discuss operational, regulatory, and national policy considerations. These meetings are not held.

1.129 In response to our 2001 audit, Fisheries and Oceans Canada noted that the Memorandum of Understanding would be reviewed in the near future to further clarify the respective roles and expectations of the two departments in administering the pollution prevention provisions. This has not been done.

1.130 **Implementing the policies.** We found that Fisheries and Oceans Canada and Environment Canada have few formal interactions related to the policies. The Habitat Policy indicates that Fisheries and Oceans Canada is to work with Environment Canada to establish federal priorities. The Policy also stipulates that Fisheries and Oceans Canada is to provide criteria for fisheries protection to Environment Canada to guide it in its effort to protect fish and fish habitat from pollution. This has not been done.

1.131 The 2001 Compliance and Enforcement Policy called for a joint review of its implementation by the two departments after five years. Seven years later, we found that neither department was aware of this requirement and the joint review has not been done.

1.132 While there are many ongoing working-level interactions between officials of the two departments, we found that this has not been translated into the specific actions called for under the Habitat Policy and the Compliance and Enforcement Policy.

1.133 **Establishing expectations.** There are no formal arrangements by which Fisheries and Oceans Canada and Environment Canada establish the expectations for administration of the pollution prevention provisions of the *Fisheries Act*. Environment Canada's administration of the provisions has been left to its discretion.

1.134 **Recommendation.** Fisheries and Oceans Canada, with the support of Environment Canada, should clearly establish the expectations for Environment Canada's administration of the pollution prevention provisions, including the expected interactions between the two departments to support the delivery of the 1986 Habitat Policy.

Environment Canada's and Fisheries and Oceans Canada's response. The departments accept this recommendation and, by 31 March 2011, will review the administration of section 36 of the *Fisheries Act*. By 31 March 2012, a renewed

Memorandum of Understanding that better establishes expectations and responsibilities for Environment Canada will be in place.

Conclusion

1.135 Fisheries and Oceans Canada and Environment Canada cannot demonstrate that they are adequately administering and enforcing the *Fisheries Act*, and applying the Habitat Policy and the Compliance and Enforcement Policy in order to protect fish habitat from the adverse impacts of human activity.

1.136 **Habitat Policy.** In the 23 years since the Habitat Policy was adopted, Fisheries and Oceans Canada has not fully implemented the Policy, and little information exists about the achievement of the Policy's overall long-term objective of a net gain in productive fish habitat. Fisheries and Oceans Canada needs to gather information on the state of fish habitat and develop habitat indicators to assess the state of Canada's fish habitat. Through improved information about the state of fish habitat, Canadians will be better informed about whether progress is being made toward the Policy's long-term objective.

1.137 **Environmental Process Modernization Plan (EPMP).** Fisheries and Oceans Canada has made progress in implementing the EPMP so that it can better manage its risks. The EPMP has resulted in a reliance on Canadians' self-compliance with the *Fisheries Act* habitat protection provisions for common, low-risk projects, to allow the Department to use its resources on projects that represent a greater risk to fish habitat. There are shortcomings in implementation of the EPMP. We found that the Department does not have adequate quality assurance and control processes for its new risk-based decision making. It cannot demonstrate that projects that represent a risk to fish habitat have been adequately assessed and a consistent approach has been applied. We found that Fisheries and Oceans Canada reduced its enforcement by half before implementing its new compliance approach. Further, the Department rarely monitors whether project proponents actually comply with the Department's conditions of approval or whether proponents' actions effectively maintained the expected no net loss in habitat.

1.138 **Pollution prevention provisions.** Environment Canada has not clearly identified what it has to do to meet its *Fisheries Act* responsibility for the pollution prevention provisions, including establishing results expectations and appropriate accountability arrangements that provide national coordination and guidance on the administration of the Act. Environment Canada does not use a risk-based approach to the *Fisheries Act* to identify, assess, and address risks associated with non-compliance with the Act that could lead to significant harm to fish habitat. It does not have a *Fisheries Act* compliance strategy for the industries and activities that must comply with the Act's prohibition against the deposit of harmful substances in waters frequented by fish. Environment Canada has not determined whether the results achieved through other legislation (such as the *Canadian Environmental Protection Act, 1999*), other levels of government, and its own enforcement activities meet the Act's stringent pollution prohibition requirement.

1.139 **Review of regulations.** Regulations under the pollution prevention provisions of the *Fisheries Act* allow regulated industries to deposit specified substances into waters frequented by fish within discharge limits. Environment Canada actively administers only two of the six *Fisheries Act* regulations for which it has responsibility. The two regulations cover the pulp and paper industry and metal mines, which have in the past represented risks to fish. However, the remaining four regulations, all of which date to the 1970s, are not actively being administered. The Department considers them to be outdated and difficult to enforce. By not reviewing these regulations to determine whether they still meet their initial policy objectives, Environment Canada is not following the 2007 Cabinet Directive on Streamlining Regulations.

1.140 **Continuing issues.** Many of the issues raised in this chapter have been raised before in previous audit reports, especially as they relate to Fisheries and Oceans Canada. For example, we have previously observed that Fisheries and Oceans Canada had not implemented aspects of the Habitat Policy, did not know whether it was progressing toward the ultimate objective of a net gain in fish habitat, and needed to devote more time and effort to compliance monitoring."