

To: Minister of Nova Scotia Environment, Margaret Miller

I believe that the proposed project requires a Federal environmental assessment under the Canadian Environmental Assessment Act, 2012 (CEAA) for the following reasons:

1. **The proposed waste process is not better than the current waste process**

Some say, "the effluent has been going out into the Strait for years anyway. " This is only partially true. A study conducted in 2005 showed that healthy mussels deployed into the Pictou Harbour and exposed to mill effluent and untreated municipal sewage for 6 months had developed leukemia. Another study showed that the effluent had never been flushing properly with a large amount settling back into Pictou Harbour. Because the old system was never flushing properly, most of the effluent has been confined to the local shoreline and has been flowing back into Pictou Harbour, rather than into the Strait. This was a good thing for the Strait, but not for area residents, especially Pictou Landing First Nation. In Northern Pulp's proposed new system, waste water would go straight out from the new Abercrombie Point treatment facility into "deeper waters. "This could result in the pollutants affecting a far wider area because of "improved flushing."

***Old Waste Process***

Northern Pulp's proposed new effluent treatment facility differs from the present facility in a number of ways. In the present system, untreated effluent is piped from the mill to the north settling ponds at Boat Harbour, where it remains for 12 hours for primary treatment. It then moves to an aerated stabilization basin where effluent is placed in contact with micro-organisms. The effluent remains there for 8 days for secondary treatment. After 8 days, the effluent is discharged from the aeration basin at what is known as Point C, and treatment is considered finished. At point C, samples are taken for testing to determine whether the treated effluent meets regulations. After point C, the effluent enters the 300-acre Boat Harbour lagoon, also known as Boat Harbour Basin. Boat Harbour Basin was initially used as a stand-alone effluent treatment facility. In 1972, settling ponds and an aerated stabilization basin were constructed to meet stricter regulations for pulp effluent treatment. Additional aeration and other upgrades were added from 1992-1996, as the federal government again adopted stricter regulations. The lagoon at Boat Harbour has not been officially part of the effluent treatment system since 1972. Official or not, treated effluent remains in the lagoon for an additional 20-30 days. Further aeration, settling, cooling, volatilization and breakdown of materials takes place during that time. This is referred to as "polishing" or tertiary treatment. Natural springs and surface run off further dilute the effluent. According to Northern Pulp's figures, during the time in Boat Harbour Basin, total suspended solids (TSS) and biochemical oxygen demand (BOD) decrease up to 30%, before the effluent flows out at the shore edge of the Strait at Point D.

**NOTE : Northern Pulp's effluent meets the regulations at Point C in the above process. Point C is also now a DEAD ZONE.**

Northern Pulp's own reports say that they release over 1000 kg (one metric ton) of suspended solids in their waste water each day. Test results have revealed the presence of dioxins,

furans, chlorinated compounds, halogenated organic compounds and traces of heavy metals. These substances are known to have negative impacts to aquatic life. The study prepared for Northern Pulp by engineering consultants KSH Solutions Inc. clearly shows that there will be very little change in wastewater quality with the new AST facility

### ***The Proposed Waste Proposal***

In the proposed new Activated Sludge Treatment (AST) system on the mill site, effluent will move through a primary clarifier to an aeration basin using micro-organisms to break down pollutants, and then to a secondary clarifier. The process will take less than 24 hours.

Therefore it will not have the 300 acre lagoon to provide further aeration, settling, cooling, volatilization and breakdown of materials that takes place during that time. This is referred to as “polishing” or tertiary treatment. That is one of the main reasons why the proposed system is not better since it doesn’t have the time like the old process to settle, cool down, become further diluted etc.

Northern Pulp states that effluent from the new system, including an added oxygen delignification system (confirmed from mill execs that it will not be ready for the proposed launch of the new effluent system and does not have a timeline), will be similar to treated effluent leaving the present system at point C, with some (unspecified) reduction in biochemical oxygen demand (BOD.)

## **2. Additional Air Quality Issues**

The new proposal also shows a plan to burn contaminated sludge in power boiler which raises new threats to air quality. The waste sludge contains toxins which would be released through the stacks of the mill’s power boiler. The proposal is to “dewater the sludge prior to mixing it with bark and other woodwaste for combustion in the mill’s power boiler.” This is the same power boiler that is currently and repeatedly failing stack emissions tests. Problems with air quality from mill emissions have been documented for years. Lack of appropriate monitoring and enforcement already puts area residents at risk. Now, Northern Pulp is considering adding sludge containing toxins to the combustion mix, increasing health risks from NP’s air emission

Recently a group of scientists decided to measure the levels of VOCs (volatile organic compounds) in Pictou County with an ambient air monitor. They chose Granton as the location and they found that when the mill blew toward the monitoring station that the cancer risk thresholds for VOC levels were exceeded. They also studied the seasonal wind directions and determined that the mill mostly blew in other directions where no monitoring stations were ever located to measure VOC levels. The study concludes by recommending that monitoring stations should be installed in higher populated areas such as the town of Pictou where exposure is greater. But instead of installing more monitoring stations to measure VOC levels the Provincial Government removed the monitoring station in Granton. The VOC monitoring

station in Granton was decommissioned - An email response from NSE (Nova Scotia Environment) states "Environment Canada decided to decommission the Granton VOC monitor in 2015 after they analyzed the 10 years of data and determined there were no pollutants of concern in the area" - Yet this attached study is contradictory to the findings of this ambient air study.

According to the NPRI data on Environment Canada's website the VOC levels were not reduced since the installation of the new precipitator at Northern Pulp. The precipitator is designed to filter out visible particulate but does not lower the VOC levels. So Northern Pulp is still currently releasing cancer causing levels of VOCs and we can only assume this would become much worse once they would begin to burn their dried up waste sludge in their already failing power boiler.

The study shows that VOC levels (volatile organic compounds) in the air around Pictou County "exceeded their respective cancer risk thresholds and are of primary health concern in terms of population risk. Results highlight associations with wind direction and the Granton NAPS site's ambient VOC concentrations in relation to location of the pulp mill"

But most importantly the study revealed that there are no monitoring stations located in many of the populated areas that are susceptible to the pollution coming from the mill - "Findings suggest that Granton's NAPS site is not positioned to accurately represent ambient levels of toxicity in PC." And the study concludes that NSE should install the proper monitoring stations such as in Pictou where there is "higher residential exposure". This should also include places like New Glasgow, Trenton, Pictou Landing, Westville, Stellarton and other areas around the County where the population is being exposed.

Northern Pulp also doesn't have "Continual Emissions Monitoring" CEM on all of their stacks like other mills in Canada are required to do with live streaming to a website for everyone to see exactly what chemical compounds are being released and whether or not they are surpassing the risk thresholds.

Since this study was done (and since the new precipitator was installed), the NPRI data on the Environment Canada's website shows very little change in the amounts of VOCs being emitted to the present day. AND for some reason the Granton VOC air monitoring station was decommissioned approximately three years ago.

From NPRI data - Northern Pulp's Self Reported VOC Levels from 2010-2016:

2010 - 118

2011 - 108

2012 - 143

2013 - 144

2014 - 140

2015 - 132

See Volatile organic compounds <http://ec.gc.ca/inrp-npri/donnees-data/index.cfm...>

In light of this new information about high cancer causing VOC levels coming from the mill, the Provincial government has not shown the desire or ability to act on this and therefore requires Federal involvement immediately.

Several monitoring stations would be required because readings from any one monitoring station will only detect pollutants from the mill if the wind happens to be blowing that way - the mill is the point source. An even better solution would be the mill having continuous air monitoring (CEM) on each of the three main stacks with set limits monitored by a third party and real time data made available to the public.

Now that this information has been released to the public doesn't the government have the responsibility to act to protect the citizens? The study has revealed that cancer causing pollutants are being emitted from the mill and the air is not safe anytime you are downwind from the mill.

Another study in 2008 shows Pictou County had the highest rates of cancer in Nova Scotia with stillbirths and infant deaths amongst the highest in the province.

### **3. Bleach Chlorine Mills and the Impacts on Marine Life**

The molecular chlorine or chlorine-containing compounds currently used as bleaching agents by the pulp and paper sector react with materials released from wood during the pulping process, resulting in the formation of chlorinated organic compounds which are in part discharged into the aquatic environment via effluents. Canadian mills are estimated to use over 610 000 tonnes of chlorine annually to produce over 10 million tonnes of bleached pulp and to release over a million tonnes of chlorinated organic compounds to the aquatic environment.

- a. The dioxins and furans are part of the bleaching process and are considered "toxic" under Sections 11(a) and 11(c) of the Canadian Environmental Protection Act and I believe the Federal Government has more expertise and resources to assess this compared to the province.
- b. TSS and BOD are regulated under Sections 34 and 36 of the Fisheries Act which is a Federal act thus requiring Federal involvement.
- c. The chemical composition of bleached pulp mill effluents is variable and not well characterized. Approximately 250 compounds have been identified in bleachery effluents but many more remain unidentified. Thus, substantial quantities of chlorinated organic compounds, both of known and of unknown composition, enter the Canadian aquatic environment from bleached pulp mill discharges.

- d. Many of these chlorinated organic compounds are persistent and have been detected in water, sediments and biota up to 1400 km from bleached pulp mills outfalls. Compounds with low chlorine substitution degrade within hours to days, whereas highly chlorinated organic compounds may persist from days to weeks or longer. Persistence may be longer in winter, especially under ice. Some chlorinated organic compounds can be biologically degraded or transformed and transformation may lead to more persistent and bioaccumulative compounds.
- e. Chloroveratroles, for example, transformation products of chloroguaiacols which are unique to bleached pulp mill effluents, are capable of accumulating in fish up to 25 000 times the concentration in water.
- f. Some other chlorinated organic compounds detected in biological tissues downstream of bleached pulp mills reflect repeated or long-term exposure rather than high bioaccumulative potentials.
- g. Seventy-five percent of Canadian bleached pulp mills discharge effluents that are acutely lethal to fish, sometimes at concentrations as low as 3.2% effluent. A few individual chlorinated organic compounds in these effluents approach or surpass concentrations that cause mortalities in aquatic organisms ranging from algae to fish.
- h. Seventy percent of Canadian freshwater bleached pulp mills discharge whole effluent that, even upon dilution by the receiving waters, are at levels which cause chronic effects. Chronic effects, such as reproductive anomalies, biochemical changes, and behavioural alterations in aquatic organisms, have been observed in Canadian field studies at 0.5 to 5 % whole effluent.
- i. Laboratory studies using individual chlorinated organic compounds that are commonly discharged from bleached pulp mills have demonstrated such chronic effects as deformities, and embryo and larval mortalities in fish. These chronic effects include significant irreversible factors which jeopardize the continuance of the species and the integrity of the ecosystem. Thus, the levels of whole effluents discharged from Canadian bleached pulp mills to the aquatic environment and the resulting acute and chronic effects observed both in the field and in the laboratory combine to represent a significant risk to the aquatic ecosystem.

Supporters of piping the effluent into the Strait say waste water will be diluted in the larger body of water, so the effluent will not cause harm to the fisheries or the larger environment. But that's not accurate. Even diluted, the toxins can have serious effects on aquatic life and the overall environment. Levels may be low at any one moment, but cumulative impacts over the longer term would have negative effects on aquatic life and the aquatic environment. In the case of NP's effluent, the volume of contaminants contained in the waste effluent is

significant. Studies show that exposure even to low concentrations of heavy metals and other chemicals over time can disrupt reproduction, weight gain, and food sources of aquatic life. Also, bioaccumulation of toxins including heavy metals in aquatic species is of great concern.

Northern Pulp's proposal boasts about using an Activated Sludge Treatment (AST) effluent treatment system similar to the system used at Port Hawkesbury Paper for their treatment facility but it ignores the differences between the mills. Both mills produce pulp, but PHP is a thermomechanical pulp (TMP) mill, while NP is a chemical bleached kraft mill.

Port Hawkesbury Paper uses peroxide bleach and thermo-mechanical refining (no chemicals) to break down the lignin in wood fiber to produce pulp. Northern Pulp uses chemicals to produce pulp, plus additional chemicals to bleach the pulp. Northern Pulp bleaches with chlorine dioxide (ECF), and while, switching to ECF was an improvement from an older method used pre-1997, it does not eliminate the presence of dioxins, furans or other toxins in the effluent.

NOTE: Environment Canada has "Effluents From Pulp Mills Using Bleaching" listed as a toxic substance. This includes any mills still utilizing a chlorine or chlorine dioxide process. NP does not have an oxygen delignification system as most other modern pulp mills do. Oxygen delignification aids in reducing chemical usage and environmental impact. In addition, many mills recycle water, while NP does not.

A chemical-bleached kraft mill like Northern Pulp produces approximately 4 times more wastewater than Port Hawkesbury Paper. NP's waste water contains toxins that are not found in PHP's waste water, or in the waste water of most mills using AST systems that employ the use of oxygen delignification and recycle water. The new system proposed by Northern Pulp for treating effluent would use a multi-stage process to separate liquids and solids and then aerate. The wastewater would still contain toxic chemicals and traces of heavy metals which would accumulate at the 'point source' outflow location in the Strait.

#### **4. The Northumberland Strait - Depth and Ice Scouring**

The Strait is shallow and ice scouring occurs in the Winter. This presents a huge risk for the effluent pipe to get damaged. The Stantec Receiving Water Report calls this out - The general information provided below was obtained from the Canadian Coast Guard on Ice Climatology and Environmental Conditions (CCG, 2012). Generally, or normally, the first ice formation in the Gulf of St. Lawrence occurs in the St. Lawrence River in early to mid-December and progressively moves to Saguenay River and then forms along the coast of New Brunswick and progressively moves eastward. In January, the ice concentrations have reached very closepack range in the Northumberland Strait. By the end of February, thin first-year ice may be found in the Northumberland Strait. It is emphasized, however, that ice conditions in the Northumberland Strait are highly variable and the ice cover varies considerably from year-to-year.

There have been years when the entire Strait is frozen and totally ice-covered, while other years the Strait is relatively ice-free. It is quite possible for drift ice to be blown into the shore with winds out of the north. There is also the possibility of some ice-rafting along Nova Scotia's Northumberland shore where ice sheets over-ride each other and stack-up along the shore. Fast ice (ice which forms and remains fast along the coast) for most coastal regions in the Gulf has limited extents as it forms in smaller bays and inlets which might be more typical and expected in Pictou Harbour (ENSR 1999).

The 1999 ENSR report included a review of available ice data for the Pictou area including consultation with researchers and review of published literature. It was determined that quantitative data in Pictou Road and Pictou Harbour was unavailable, while ice in the Northumberland Strait has been measured and studied extensively. Of particular interest were the events of ice scouring as it is well known that pipelines, outfalls, diffusers, and submarine cables are at risk during ice scour events.

It was reported (in ENSR, 1999) that Maritime Telephone and Telegraph (MT&T) performed an ice evaluation in support of an optical communication cable deployment across the Northumberland Strait. Based on MT&T's review, the estimated potential for damage to the cable from ice scour extended to water depths of 12 to 14 m. In 1991 their cable was trenched and buried to a selected depth (depth is unknown) and left on the surface of the sea bottom at greater depths. Unfortunately, the winter of 1991/1992 was severe and the cable was severed by ice keels at a water depth greater than 18 m towards the Woods Island, PEI side of the Northumberland Strait.

Based on the above, substantial ice pile-up should be expected near shore of the Northumberland Strait and ice scour is possible and should be anticipated anywhere in Pictou Road and the Northumberland Strait area. Available information suggests that there is a potential for damage to the pipe, outfall, and diffusers in the areas of Pictou Road out into the Northumberland Strait, based on ENSR (1999)

## **5. The Northumberland Strait Cannot withstand Additional Pressures**

The Northumberland Strait Ecosystem Overview Report, prepared for DFO in 2007, documents increasing stresses on the Strait. "Increased nutrient loading from land-based activities was identified as the most important MEQ [Marine Environment Quality] issue in the near shore areas such as the estuaries, harbours, and bays. The principal sources of nutrients to the coastal areas of the Northumberland Strait are sewage, agricultural runoff, fish plant effluents, and pulp mill effluent." The Ecosystem Overview Report also states, "In addition to individual impacts of the various elements identified as having an impact on the environment in the Northumberland Strait, there can be cumulative impacts that exceed the individual effects." Ocean stresses are increasing generally. Anoxic areas, where there is insufficient oxygen for marine life, are growing, and are expected to continue to do so due to global warming and other factors. The discharge of pulp effluent, with significant amounts of total suspended solids, biochemical oxygen demand, chemical oxygen demand and

contaminants including heavy metals and AOX, has to be evaluated in the context of cumulative impacts on an increasingly stressed ecosystem. The consequences will be greater now and in coming decades than they would have been 50 or 25 years ago in healthier oceans.

## **6. Weak Regulations**

Pulp and Paper Effluent Regulations (PPER) in Canada cover two matters; total suspended solids (TSS) and biochemical oxygen demand (BOD.) Even though total discharges of TSS and BOD in pulp and paper effluent decreased by approximately 90% and 97% respectively from 1970-2008, pulp mill effluents continue to have harmful impacts on fish, fish habitat and the environment. Information gathered through environmental effects monitoring (EEM) at all Canadian mills points to the disturbing conclusion that although mills are meeting regulations and passing the PPER toxicity test, 70% are having harmful effects on aquatic life and habitat, and 55% are having harmful effects on the larger environment.

This information led the federal department of Environment and Climate Change to undertake a modernization review of pulp and paper effluent regulations in 2017. “Results from EEM studies and the changing realities of the pulp and paper industry indicate a need to modernize the PPER to improve environmental protection,” the department states. If meeting regulations is not enough to prevent harm, neither is passing toxicity tests. Only one toxicity test is required under Canadian pulp and paper regulations. The required LC-50 test is for acute lethality. For this test, an effluent is considered acutely lethal if the treated effluent at 100% concentration kills more than 50% of the Rainbow Trout exposed to it during a 96-hour period. Long-term effects, including impacts on reproduction or growth, cumulative impacts on fish habitat and the larger environment or accumulation of substances harmful for human consumption are not regulated under the PPER. Testing for environmental effects is required for information purposes.

Only two mills in Canada test for and report impacts of effluent on the usability of fish resources by humans. Effluent from pulp and paper mills is regulated at the federal level principally by the Pulp and Paper Effluent Regulations (PPER), which form part of the Fisheries Act. The standards that apply to pulp effluent today were adopted in 1992 and have remained unchanged for 25 years. Highly toxic dioxins and furans are regulated under a separate Act.

70% of pulp & paper mills are having harmful effects on aquatic life and habitat despite meeting current regulations . Long term impacts on reproduction and growth are not regulated under PPER. Federal regulations cover only a few of the recognized harmful substances in pulp mill effluent. For example, there are no federal regulations for AOX compounds, a component of pulp effluent in mills that bleach with chlorine or a chlorine compound. AOX compounds are recognized as extremely toxic. They are not easily broken down by bacteria and thus bioaccumulate in the environment. Yet they are not included in PPER regulations. Neither are phenols, toluene, chloroform or chemical oxygen demand (COD).



For 25 yrs the regulations that apply to pulp effluent have remained unchanged. Provinces may go beyond Federal standards and adopt stricter regulations for effluent from pulp mills. British Columbia, Alberta, Ontario and Quebec have adopted stricter regulations. Nova Scotia does not have regulations, but sets limits through individual industrial approvals. The EU has more protective regulations than Canada does.

Northern Pulp is aware that piping effluent into the Northumberland Strait will impact the fisheries. The conclusion of the Stantec Receiving Waters Study prepared for Northern Pulp (August, 2017) states: Among the four potential outfall locations ... the Alt-D outfall location provides the smallest potential long-term cumulative effects on the fishery and socio-economic environments, and therefore is considered the better outfall location for the discharge of the treated wastewater from the mill. (Conclusion 2.4) Northern Pulp's chosen effluent outfall point is based only on a comparison between four generally similar options, all points in the nearer or deeper Strait area. The proposed outfall was determined based on comparing how effectively the effluent can be dispersed at each point. How much actual impact on fisheries will this "better outfall location" have?

There has been no evaluation of actual impact on fisheries, fish, fish habitat or the larger eco-system. Fish studies have not been done. Further, the Stantec report did not even correctly identify where fishing takes place in the Northumberland Strait close to the proposed outfall site. Similar proposals to discharge pulp effluent into the Northumberland Strait have been dropped or rejected in the past due to environmental concerns. The fishermen know this. Northern Pulp knows it. (ie. 1993 proposal)

It's 2018. Fisheries are a crucial part of the economy in Nova Scotia and neighboring provinces. Oceans are under increasing stress. Dead zones are growing. Protection of fish, fish habitat and fisheries in present conditions means we cannot sweep identified risks under the rocks based on soothing assurances of "meets regulations" and "passes toxicity tests."

## **7. Effluent Make up Unknown**

Hot water is a hazard to marine environment. NP presently releases 80 to 90 million litres of wastewater per day. This waste currently enters Boat Harbour at a temperature of approximately 40 degrees . A cooling tower as proposed by NP for its new treatment facility should lower waste effluent temperature to 32-36 degrees C. This would represent a 20 to 28-degree C water shock to marine life, if this water entered a marine habitat. This thermal shock would kill any marine life within meters of the discharge point. This thermal loading should be contrary to the Fisheries Act. Yet this issue is not addressed in KSH's design proposal for a new facility. There is no plan to bring wastewater to within 1 to 5 degrees of the natural habitat. Further to this, Northern Pulp has been unable to release the exact composition of this proposed effluent.

## **8. Economics**

The Nova Scotia Economy exports \$1.5 Billion dollars worth of Shellfish per year. Shellfish that are caught in the Strait are sold under the “Atlantic Canadian” brand. Contamination of even a few shellfish would destroy the excellent reputation Atlantic Canada has in regards to this resource. The results for Atlantic Canada would be catastrophic. Examples of similar situations would be:

- i. In 2003, one case of mad cow disease was discovered in Alberta. The result, it collapsed the Canadian Beef market.
- ii. In 2018, a trace of GMO Wheat that came from Canada was discovered in Asia. The result, Asia declared they no longer would buy wheat from Canada until the issue was addressed.

Besides the \$2 Billion dollar Commercial Fishery in NS, The Northumberland Strait also employs a lot of people in Tourism. There are 3200 jobs in this industry along the Strait that generates \$200 Million in revenue and brings in about \$24 Million in Tax Revenue.

In addition to those two industries, The NS Sportfishing industry is growing and more emphasis is being placed on attracting Fishers from outside our Province. This industry is currently worth \$65 Million dollars to the economy, with the Strait bringing in a big piece of that. The Strait has 15 + rivers that come in off of the Strait that all have world class Atlantic Salmon, Brook Trout and Brown Trout. These species are considered in the top 5 in the world for Sport Fish.

## **9. Pictou Town Water Supply**

Although very little info has been released by Northern Pulp on this, the latest proposed route show the effluent pipe going through the Pictou Town water supply. Should this pipe be compromised like it has multiple times with the current waste prices, the Pictou Town water supply would be contaminated.

## **10. Trust/History**

Northern Pulp has had over a dozen infractions since 2014 and 2 very large effluent spills that they did not report in a timely manner nor in an accurate manner per the judge presiding over one these spills.

## **11. Outdated info**

Northern Pulp's receiving water study is based on dated modeling of the Northumberland Strait. This modeling, to have any chance at accuracy, needs to be made current and be from the Caribou area.

#### **12. Marine Protected Area**

The receiving water area is part of a Marine Protected Area and a scallop buffer zone.

#### **13. Federal Fishing Zone**

The receiving water area is part of a Federal fishing zone.

#### **14. Pictou Landing First Nations**

The Aboriginal rights of PLFN need to be considered. The new discharge location still has a direct affect on them and their livelihood, as it pertains to fishing.

#### **15. Three Provinces impacted**

The Northumberland Strait borders on Prince Edward Island, New Brunswick and Nova Scotia. There are fishers from all three provinces, including First Nations, that will be impacted by this proposed effluent.

#### **16. Species at Risk and Species of Concern**

There are 'Species at Risk' that potentially will be negatively affected that are listed on the DFO website.

#### **17. Wild life Sanctuary**

The proposed discharge location is directly adjacent to Caribou-Munroe's Island Park; a bird and wildlife sanctuary.

#### **18. Conflict of Interests**

I believe that the Minister of Environment for the Province of Nova Scotia is unable to conduct an unbiased environmental assessment under the Nova Scotia Environment Act of Northern Pulp's proposed new effluent treatment facility (ETF).

I believe that the Nova Scotia Government has significant conflicts of interest which compromise its neutrality and prevent the Provincial Environment Minister from conducting an unbiased environmental assessment of Northern Pulp's proposed new ETF. The circumstances giving rise to these conflicts of interest are set out below. Due to the Province's compromised position, I believe that the environmental assessment of this project should not be left in Provincial hands.

- i. The Province has a direct financial and proprietary interest in the current design and construction of the proposed ETF.

- a. The Province does not have an arm's length relationship to the new ETF.
  - b. The Province is closely linked, or has the appearance of being linked, to the new ETF in several ways which preclude it from conducting a neutral and unbiased assessment of the environmental effects of the project.
  - c. The Province has acknowledged the significant possibility that it may become the owner/operator of the new ETF and has invested heavily in the current design of the ETF.
  - d. Within an environmental assessment, the Province will have to assess that very design and may have to pay for any changes to it. The Province therefore has a strong motivation to approve the design without changes, and ignore or minimize the environmental risks posed by the proposed ETF.
- ii. The Province may face direct and significant financial consequences and litigation if it does not quickly approve the environmental assessment
- a. In 1995, an Indemnity Agreement 7 was signed by the Province of Nova Scotia in favour of Scott Maritimes. This Indemnity has been transferred to Northern Pulp as a successor owner of the pulp mill at Abercrombie Point. In general terms, it obligates the Province to indemnify the mill owner against any losses, expenses or costs arising from any legal claim put forward by anyone in relation to the existing effluent treatment facility (the Boat Harbour Treatment Facility), including costs arising from compliance with covered by those agreements.
- iii. The Province has been unwilling to communicate with the local community that would be affected by the proposed ETF
- a. The Province has been co-operating with Northern Pulp on the proposed new ETF project, and providing significant funding to Northern Pulp for project design, but has been unwilling to speak with or provide information to fishermen's groups or citizens' groups concerned about the project's potential risks. The Minister of Environment has received requests for meetings about the project from fishermen's organizations, tourism organizations, and community representatives. Neither the Minister of Environment originally responsible for this file, nor the new Minister, has agreed to a meeting with any of these groups.
- iv. The former lawyer and lobbyist for Northern Pulp is now a senior civil servant in the Provincial Government

- a. Mr. Bernie Miller was a registered lobbyist for Northern Pulp from 2009 to 2014. He moved from this role to a position in the Premier's office in 2014, when he was appointed Deputy Minister, Office of Planning and Priorities and Senior Executive Advisor, Executive Council Office, for the Province, reporting directly to the Premier. In addition to his position as registered lobbyist for Northern Pulp, Mr. Miller served as the pulp mill's lawyer on environmental compliance for many years prior to moving to the Premier's office. Mr. Miller was present at the signing of the 1995 Indemnity Agreement on behalf of Scott Maritimes. When Mr. Miller took the position in the Premier's office in 2014, questions were raised as to whether he would be in a conflict of interest. Conflict of Interest Commissioner Merlin Nunn found that his position would be a conflict. Premier McNeil has stated that Mr. Miller would have nothing to do with the Northern Pulp file.
- b. Mr. Miller currently holds the position of Deputy Minister of the Office of Strategy Management (2017 to present), and reports directly to the Premier. He also holds the position of Deputy Minister for the Department of Business, reporting to Minister Geoff MacLellan.

## **19. Inadequate Human Health Evaluation**

- a) Presently, there is no regulatory requirement to conduct a human health risk assessment (HHRA) study in association with the NPNS project. The project is currently in a Class 1 EA Process in Nova Scotia that does not specifically require the completion of a HHRA in advance of registration of an EA. Section 9-15 page 489
- b) The HHE does not include quantitative exposure and risk analysis approaches at this time that would typically comprise the HHRA steps of exposure assessment, toxicity assessment and risk characterization. The HHE is not a HHRA, though it does necessarily comprise some elements of a HHRA, as noted above. *EA. Section 9-15 page 489*
- c) Tasmania Pulp mill used for comparison for the Human Health Evaluation. The Tasmania pulp mill was assumed to process mainly hardwood eucalyptus chips. There is some uncertainty regarding how the wood chips processed at the NPNS mill, which are from softwood coniferous species, would compare to eucalyptus chip processing, with respect to potential effluent chemistry differences. *EA. Section 9-15 page 492*
  - Tasmania has not undergone regulatory review by Health Canada
  - The Tasmania mill did not open and faced many environmental challenges in court [https://en.wikipedia.org/wiki/Bell\\_Bay\\_Pulp\\_Mill](https://en.wikipedia.org/wiki/Bell_Bay_Pulp_Mill)
- d) *Potential Risks*
  - Chemicals present in treated effluent that is released to the marine receiving environment may come into contact with human receptors in marine sea water or sediments.

- Some of the chemicals present in treated effluent may accumulate within certain marine food items that are harvested by local community members.
  - Air emissions of certain contaminants to the atmosphere, during construction and operation (and maintenance) of the project, may present a potential inhalation exposure pathway for human receptors in communities located within the study area.
  - As the current proposed pipeline route traverses a drinking water supply area, there is a potential that accidental releases from the effluent pipeline in this area (should they occur) could potentially impact potable water supplies.
  - *EA. Section 9-15 page 492*
- e) Only using these contaminants for their assessment.
- Carbon monoxide (CO).
  - Hydrogen sulphide (H<sub>2</sub>S).
  - Nitrogen dioxide (NO<sub>2</sub>).
  - Sulphur dioxide (SO<sub>2</sub>).
  - Total suspended particulate matter (TSP).
  - Fine particulate matter (PM<sub>2.5</sub>). *EA. Section 9-15 page 503*
- f) Downplaying the independent air quality study performed by Hoffman et al from Dal *EA. Section 9-15 page 494*
- g) Due to uncertainty regarding effluent composition and approximate concentrations of substances present in the future treated effluent (which will not be verified until the project is operational), the identified candidate COPCs in effluent are considered preliminary at this time. Refinement of the candidate COPCs would be anticipated for a potential HHRA study of the project, should one be required (wherein various screening approaches, as previously described above, would be applied to refine and reduce the candidate list of COPCs down to a more reasonable and representative set of COPCs). The same types of screening considerations apply to the potential assessment of impacted drinking water, in the event the effluent pipeline experiences accidental releases in the sections that traverse drinking water supply areas.
- h) Candidate COPCs in future treated effluent were determined primarily on the basis of:
- A review and synthesis of historical data and reports for areas near the NPNS project, particularly areas that are or were influenced by the NPNS mill current or historical effluent discharges.
  - The outcomes of the COPC identification processes that were applied in the Toxikos (2006) HHRA study.
  - Selected additional relevant scientific literature. *EA. Section 9-15 page 506*
- i) The sludge will be used as a fuel for the NPNS power boiler *EA. Section 1-7 page 43-44*
- j) Current NPNS Mill Effluent Chemistry being downplayed yet they state the end state is unknown. *EA. Section 9-15 page 515*