

Proposed Woodfibre LNG Project – Comments #901 – 1000, Table 10 of 17

The following table includes Woodfibre LNG Limited’s responses to comments #901 - 1000 submitted to the BC Environmental Assessment Office (EAO) as part of the 60-day public comment period held between January 22 and March 23, 2015. The following table is sorted chronologically. Where multiple comments were received in one submission, they have been separated to allow for specific responses.

EAO has reviewed the public’s comments and Woodfibre LNG Limited’s responses and is satisfied that Woodfibre LNG Limited has addressed the public’s comments for the purpose of the Application stage of the Environmental Assessment for the proposed Woodfibre LNG Project. The time and effort taken by those who submitted comments to EAO during the public comment period is appreciated and all of the comments received will be considered in the Environmental Assessment of the proposed Woodfibre LNG Project.

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent’s Response	EAO’s Response
901	March 22, 2015	Travis Tetreault - Whistler/Vancouver, British Columbia	<p>Woodfibre LNG = NO VOTE .</p> <p>The Sea to Sky corridor doesn't need a terrible + toxic eyesore Asian owned LNG plant in the heart of it just as marine life is coming back to Howe Sound. All risk , little benefit unless you count the supertankers that will be a constant ticking time bomb piloting the waters.</p> <p>What a shortsighted and stupid plan.</p> <p>How many more Mt Polley' disasters will it take before we stop taking this stupid money from vile industries that don't give a rats ass about anything accept profit margin ?</p> <p>Do we all need to be wearing gas masks 24-7 before the pigs realize they've turned the planet uninhabitable ?</p> <p>Surely this government is not this crooked to accept such a vile and ticking time bomb for a few trinkets, think of all the money you will lose from real estate development and tourism alone.</p> <p>Squamish has such potential to evolve past its logging based past and into a world class tourism destination.</p> <p>It's your job as our government to work for all citizens, not just the dirty resource extractor lobbyist swine that fill your offshore accounts.</p> <p>Think of your children's future and keeping BC one of the most beautiful places on the planet and not resembling Mordor, Northern Alberta.</p> <p>Do the right thing, don't take the short sighted stupid money.</p>	Corporate Ownership LNG Project	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p> <p>Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example.</p> <p>An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p>	

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902(i)	March 22, 2015	Susan Proctor - Bowen Island, British Columbia	<p>This letter declares my opposition to the LNG plant at Woodfibre in Howe Sound.</p> <p>There are many environmental reasons detailed by qualified environmental scientists for refusing this application. One example is the warming of the local seawater by the cooling process used to liquefy the gas. This will certainly affect the marine life.</p>	Effects of Project on Marine Environment	<p>Thank you for the comments.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21°C or 10°C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10°C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1°C above ambient is 125 m3 (for context, this volume is approximately 5% or 1/20th of an Olympic-size pool). This volume will not increase over time.</p> <p>The effects of the Project on marine water quality is assessed in Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System, Marine Mammals and Wildlife information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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902(ii)	March 22, 2015	Susan Proctor - Bowen Island, British Columbia	As well birds and other wildlife will be impacted by noise levels and air quality changes.	Effects of Noise and Air Quality on Wildlife	<p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>The Woodfibre LNG Project will be powered by electricity provided by BC Hydro. By powering the plant with electricity, instead of natural gas, greenhouse gas emissions will be reduced by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.</p> <p>The assessment of potential effects of the Project on air quality is assessed in Section 5.2 Atmospheric Environment (Air Quality) and the assessment of the Project on noise is assessed in Section 5.5 Atmospheric Sound. The assessments concluded that there were no Project-related significant adverse residual effects. Changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant.</p> <p>An assessment of the potential Project-related effects on wildlife has been included in the Application, and includes both noise and air quality. Please refer to Section 5.12 Avifauna, Section 5.14 At Risk Bat Species, and Section 5.17 Marine Birds.</p> <p>Please also refer to Air Quality and Wildlife information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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902(iii)	March 22, 2015	Susan Proctor - Bowen Island, British Columbia	<p>I have lived on Bowen Island for the last 33 years. In the last few years there has been a noticeable increase in the diversity and vibrancy of species in Howe Sound. I saw about 100 dolphins travelling the waters 2 years ago, something I had never seen before. There used to be days when the smell of industry at Woodfibre wafted down Howe Sound badly enough to make it unpleasant to be outside, maybe even dangerous. There is a suspicion that these fumes contributed to the higher than average rate of breast cancer on Bowen. These odours are gone now and are not welcome back. It would be interesting to find some statistics on rates of cancer in the Howe Sound area.</p>	Industrial Legacy Human Health	<p>The Woodfibre site has been used for industrial purposes for 100 years and continues to be zoned for this use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p> <p>The assessment of potential effects of the Project on marine mammals in Howe Sound is described in Section 5.19 of the Application. The most common marine mammal species reported in the upper reaches of Howe Sound, closest to the Project area, are harbour seals, Pacific white-sided dolphins, and killer whales. Additional marine mammals that are sighted in Howe Sound include humpback whales, minke whales, grey whales, harbour porpoises, sea lions, harbour seals and porpoises.</p> <p>The assessment indicated that vessel traffic may cause a short-term change in behaviour of marine mammals due to underwater noise. Woodfibre LNG Limited will develop and implement Underwater Noise Management Plan and a Marine Mammal Management Plan. These plans will include mitigation measures designed to address adverse effects and cumulative effects from underwater noise and monitoring programs.</p> <p>There is no odour associated with LNG facilities. The odour associated with natural gas is an additive called mercaptan, which is a safety feature to warn of potential leaks in homes and businesses. The additive is removed from the natural gas before it is liquefied, and does not produce odours at LNG facilities.</p> <p>In accordance with requirements enforced by the BC Oil and Gas Commission, Woodfibre LNG will not emit any smells or odours beyond the boundaries of the Project site</p> <p>Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects.</p> <p>Please also refer to the Marine Mammals information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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902(iv)	March 22, 2015	Susan Proctor - Bowen Island, British Columbia	The safety record of LNG shipping is excellent so I'm not concerned about a big explosion causing huge damage to the area. Contaminants from the ships are another matter, sewage, garbage and engine oil come to mind. It seems beaches in West Vancouver are already contaminated by sewage from waiting freighters.	Wastewater Discharges	<p>LNG carriers must comply with the <i>Canada Shipping Act 2011</i>, Ballast Water Control and Management Regulations.</p> <p>In addition, all LNG carriers will comply with the International Maritime Organization (IMO) Regulations, MARPOL Annex IV (Prevention of Pollution by Sewage from Ships) and Annex V (Prevention of Pollution by Garbage from Ships). The LNG carriers will carry an International Sewage Pollution Prevention Certificate and Garbage Management Plan that prohibit the discharge of any wastewater or garbage within ports or offshore terminals.</p> <p>Further, as the LNG carriers proceeding to Squamish will initially enter US waters, they must comply with the US Environmental Protection Agency requirements for the National Pollutant Discharge Elimination System Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels.</p>	
902(v)	March 22, 2015	Susan Proctor - Bowen Island, British Columbia	Howe Sound is a beautiful and natural recreation area that can be a destination for British Columbians and tourists. This would also generate income and jobs but in a sustainable manner. Monstrous tankers would be so out of scale as well as posing a real hazard to kayakers, small boats and swimmers just from the wash alone. I once won a sightseeing trip around Howe Sound from Sewell's Marina. It was wonderful but thinking back the enjoyment of the scenery and wildlife would have been severely diminished by tankers the size of aircraft carriers. Or worse the tour by boat might be limited or cancelled by the passage of a LNG tanker.	Tourism / Marine Traffic	<p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example.</p> <p>An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p> <p>There will be three to four LNG carriers that transit to the Woodfibre Project per month. Each transit of an LNG carrier, between the entrance to Howe Sound and the Woodfibre LNG terminal, is anticipated to last 2.5 hours in duration. The loading of each LNG carrier is anticipated to be complete within 24 hours.</p> <p>Please also refer to the Marine Transport and Marine Recreation information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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902(vi)	March 22, 2015	Susan Proctor - Bowen Island, British Columbia	There are also big questions about the financial aspects of this project. Conflicting claims about financial benefits to B.C. cause suspicion. There in fact does not appear to be any real gain by this project that would not be there if the area is developed as a natural recreation destination.	Economic Justification of Project	<p>An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the project (2014 CAD):</p> <ul style="list-style-type: none">• \$83.7 MILLION: Estimated in tax revenue for all three levels of government during the construction phase of the Project.• \$86.5 MILLION: Estimated in tax revenue for all three levels of government per year of operation.• \$243.3 MILLION: Estimated to the District of Squamish, Resort Municipality of Whistler, Electoral Area D of Squamish-Lillooet Regional District, Squamish First Nation communities, and Metro Vancouver gross domestic product (GDP) during construction and more than• \$122.8 MILLION in GDP per year during operation. <p>Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
902(vii)	March 22, 2015	Susan Proctor - Bowen Island, British Columbia	Further there will be damage to the planet by the pipelines and the extraction of natural gas.	Pipeline Hydraulic Fracturing	<p>Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html</p> <p>Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project.</p> <p>Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system.</p> <p>Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site.</p> <p>Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.</p>	

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902(viii)	March 22, 2015	Susan Proctor - Bowen Island, British Columbia	<p>It is short-sighted financial policy to be spending money on the transporting of a non-renewable energy. It is akin to buying a new house and then spending that much again to renovate to accommodate the 3 year old of the family. Instead money should be lavished on research and development of alternative and renewable energy. Fossil fuel should be rationed as it is used for more than running machines and heating buildings. It is used as a raw material in the manufacture of many important everyday objects and for vital medical equipment like prosthetics. These uses will be harder to replicate. And as fossil fuels become less available social problems will arise. Many serious conflicts can be traced to a shortage of a necessary natural resource.</p> <p>The world's economy must sooner or later adjust to a shift from fossil fuel dependence. Undoubtedly it will be a painful process as jobs will change as needs change. But there will still be jobs just as garbage collectors are now recyclers. There will be jobs in research, development and manufacture of new, cleaner technologies. It is time to stop using the need for jobs as an excuse for abusing our life-giving natural environment.</p> <p>For many reasons I feel this proposed LNG plant at Woodfibre is unacceptable. I urge the EAO to recommend it not be accepted.</p>	Renewable Energy	<p>Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period¹.</p> <p>Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.</p> <p>Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.</p>	

¹ Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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903	March 22, 2015	Lynn Wilbur - Squamish, British Columbia	<p>"Here is a better description of ocean acidification and ramifications to all crustaceans, which includes what we know of as plankton.... plankton being the single most significant bio mass in the ocean upon which the entire food chain is built. http://www.universityherald.co...</p> <p>The implication for our little bubble world of howe Sound is this: Ocean acidification goes up, coepods and all calcium shelled organisms go down.... herring goes down...salmon goes down.... orcas and porpoises goes down.... fishermen, tourism and grizzlies goes down. Even the goddamn salmon farms goes down until they dream up how to feed them ground up beetle killed wood from Prince George.</p> <p>Do you see my point? It doesn't matter how many cheques John "Lickspittle" Weston writes for the Streamkeepers, in the end there will not be enough fabric wrapped pilings for herring spawn in all the world because there won't be any copods, only jelly fish. This is happening right now (google shell fish industry ocean acidification) and it will continue at a rapid rate that will collapse ecosystems.</p> <p>Everything - fracking, sacred estuaries, Mikes backhoe work, Logging a tiny little bit of gambier Island - it all doesn't rate in importance to mitigating AGW. If LNG is demonstrably a benefit toward that, we should do it. If it isn't we shouldn't. Its that bloody simple."</p> <p>I am looking for a credible science based response.</p>	GHG Emissions / Climate Change	<p>Thank you for your comments.</p> <p>Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period².</p> <p>Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.</p>	
904(i)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	<p>I am writing to you with concerns about the proposed LNG Woodfibre project in Howe Sound. The Society of International Gas Tanker and Terminal Operators (SIGTTO) has stated that 'LNG projects must be located where they do not conflict with other waterway uses' (which includes fishing and recreational boating). 'Long narrow inland waterways are to be avoided, due to greater navigation risks.' The hazard zones (three are described) dictate that 'three miles should separate civilians from the LNG tanker ships'. The long narrow inland Howe Sound waterway with population centers along the shoreline and its use for fishing and recreational boating does not comply with these regulations.</p>	Safety	<p>Thank you for your comments.</p> <p>Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL (Technical Review Process of Marine Terminal Systems and Transshipment Sites).</p> <p><i>Narrow channel/waterway</i></p> <p>TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. SIGTTO specifies a body of navigable water of width five times the vessel's beam to be a one-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel.</p>	

² Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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					<p>The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres for Woodfibre LNG, to be a narrow channel.</p> <p>SIGTTO's guidance principles also recommend turning circles to have a minimum diameter of twice the overall length of the largest LNG carrier (i.e., 600 m for Woodfibre LNG) and TERMPOL requires turning circle of 2.5 times the length, which equates to 750 m.</p> <p><i>LNG Carriers & Howe Sound Shipping Channel / Route</i></p> <ul style="list-style-type: none">• An LNG carrier needs a 180-metre (one way) wide channel for transit and 600 metre wide channel for turning with tugs.• Howe Sound at its narrowest along the shipping route is 1440 metres, or 4725 feet.• The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2 km or 17,060 feet with nearest distance to Darrell Bay being 2.7 km or 8858 feet and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet. <p><i>Additional Information</i></p> <p>Subject to the recommendations of Transport Canada's TERMPOL Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 metres on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site.</p>	

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904(ii)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	Howe Sound presents the same concerns as Passamaquoddy Bay, New Brunswick. When Downeast LNG proposed LNG sites in this area, various federal and provincial Members of Parliament stated publicly that LNG tankers would be banned in that waterway. A senior federal minister stated, "the Canadian Government views LNG as dangerous cargo that can be banned from transport in Canadian waterways" March 31, 2006. As well, the Canadian Ambassador to the United States stated in May 2013 that Canada continued to oppose development in Passamaquoddy Bay. If it is wrong for the east, why is it not wrong for the west? Why would we take risks that are clearly outlined by the Society of International Gas Tanker and Terminal Operators?	Marine Transport Safety	While it's true that the Government of Canada has taken issue with LNG carriers travelling through a small section of the Atlantic coast, it is due to very specific conditions in the waters of Passamaquoddy Bay, notably the world famous tides of the Bay of Fundy. These conditions do not exist in Howe Sound.	
904(iii)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	The marine life in Howe Sound has recently recovered after years of industrial pollution from the Brakendale Mine and the Squamish Woodfibre operations. Last year people gathered at the head of Howe Sound to witness the success of the restoration project portrayed by the sight of 200 dolphins and 15 orcas returning to these waters.	Recovery of Howe Sound	<p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. As a condition of acquiring the site, Woodfibre LNG required the completion of remediation work on site. On December 22, 2014 the Ministry of Environment issued two Certificates of Compliance (uplands and water lot) evidencing completion of the remediation.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	

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904(iv)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	The LNG project threatens this area again with the expelling of tons of hot chlorinated water into Howe Sound annually, a process that is disallowed in other jurisdiction.	Seawater Cooling System	<p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21°C or 10°C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10°C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1°C above ambient is 125 m³ (for context, this volume is approximately 5% of an Olympic-size pool). This volume will not increase over time.</p> <p>Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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904(v)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	As opposed to re- industrializing Howe Sound, why would we not continue to focus on this prime location for eco-tourism as economically viable for the area? Many communities in the area, including Bowen island, have been working to effect this over the last few years. It is a breathtakingly beautiful area in close proximity to what is recognized as of the most beautiful cities in the world. How would one reconcile the 377' tall flare stack and also the sulfur smell from this plant?	Effect of the Project on Tourism	<p>There is no odour associated with LNG facilities. The odour associated with natural gas is an additive called mercaptan, which is a safety feature to warn of potential leaks in homes and businesses. The additive is removed from the natural gas before it is liquefied, and does not produce odours at LNG facilities. Regulations are set by the Oil and Gas Commission (OGC) to ensure that there are no smells or odours emitted from the boundary of an LNG facility.</p> <p>As part of Woodfibre LNG's Application, air dispersion modelling based on planned activities and equipment use — including marine vessels — were undertaken to predict air emissions from the Project operation phase. The results of the dispersion modelling were compared against federal and provincial standards and guidelines; and, all predicted concentrations were below these standards and guidelines.</p> <p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example.</p> <p>An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p> <p>Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects.</p> <p>Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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904(vi)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	The ferry traffic in Howe Sound is considerable, (60 ferry sailings a day) with routes (for both tourists and residents) to Nanaimo, Gibsons, and Bowen Island and water-taxis to Bowen, Bowyer, Gambier and Keates Islands. How would the ferries, water-taxis and recreational hunters be restricted in order to comply with the 1.6 km travelling exclusion zone around the tankers and their guide boats?	Effect of the Project on Marine Traffic Exclusion Zone	<p>There is currently no regulation which stipulates an exclusion zone in Canada; however, Woodfibre LNG will complete a voluntary Transport Canada Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) for the Project. The review will include a comprehensive risk assessment to ensure safety of vessel transits from terminal to open ocean; the development of recommendations to improve safety and minimize risk; and, the development of detailed safety procedures and emergency response plans.</p> <p>The assessment of marine transport (e.g. Project-related vessel interactions with BC Ferries) and marine recreational boating activities is included in Section 7.3 Marine Transport of the Application. The assessment concludes that with mitigation measures, there are no significant Project-related adverse effects to marine transport.</p> <p>Following detailed discussions with BC Ferries, Pacific Pilotage Authority and BC Coast Pilots, it has been determined that there will be no serious effect to BC Ferries when sharing the waterway near Horseshoe Bay with LNG carriers. Coordination with these vessels will follow normal communication protocols under the Marine Communication and Traffic Services (MCTS). Subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 m in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice.</p> <p>Please also refer to the Marine Transport information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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904(vii)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	As well, how would this affect recreational boaters (including sailboats) and fishermen in these waters? We, and our children, currently use these waters for such.	Effect of the Project on Marine Recreation	<p>The assessment of marine transport (e.g. Project-related vessel interactions with BC Ferries) and marine recreational boating activities is included in Section 7.3 Marine Transport of the Application. The Application concluded that with mitigation measures, there are no significant Project-related adverse effects to marine transport.</p> <p>Section 7.3.2.3.4 Small Vessel Traffic includes data on recreational boating routes and destinations, and marine based tourism activities.</p> <ul style="list-style-type: none">• The waters in Queen Charlotte Channel are shown to have the highest number of hours for large pleasure craft and yacht vessels (which excludes smaller vessels of less than 30 m) within the local assessment area, based on data available for 2010. These waters also represent the highest density of large commercial vessel traffic in the local assessment area.• Recreational boating is reported to be busiest in July and August, but the main boating season runs from May until September and can occur year-round. Recreational boating routes to destinations in the local assessment area are shown to follow the established shipping route to Squamish, and intersect it at various locations including Anvil Island, Lions Bay, Bowyer Island, Bowen Island, Horseshoe Bay, Snug Cove Whytecliff Point and Fisherman's Cove. <p>According to the Canadian Coast Guard, there were a total of 12,909 large vessel movements in Howe Sound in 2013, all enabled by existing navigational aids along the route. The Woodfibre LNG Project will bring three to four LNG carriers to the site each month.</p> <p>Woodfibre LNG Limited has committed to further consultation with recreation stakeholder groups in Howe Sound to identify concerns and, where practical, additional mitigation measures to reduce effects.</p> <p>Please also refer to the Marine Recreation information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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904(viii)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	There are grave concerns about the effects of an explosion of a tanker, however remote that possibility is. Is that possibility not increased in a narrow waterway with a history of heavy marine traffic? How would an explosion of an LNG tanker affect the population that lives in Howe Sound?	Safety	<p>At Woodfibre LNG, safety is the number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC.</p> <p>Liquefied natural gas has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards.</p> <p>The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Please also refer to Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
904(ix)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	What experience does Woodfibre LNG have in operating an LNG plant?	Corporate Ownership	<p>The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish.</p> <p>Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain.</p>	
904(x)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	<p>It seems that the pressure to have an LNG project complete in the near future is pushing this project ahead without the regulatory rules in place to assure the safety of the inhabitants in the area and the safeguarding of the marine ecosystems.</p> <p>Howe Sound is the wrong location for a Class A Hazard Industry</p>	LNG Project	<p>Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC.</p> <p>The Project will also require a Facility Permit from the OGC as well as numerous other environmental permits. The construction and operation of the Project will be regulated by the OGC and the BC Safety Authority and Woodfibre LNG Limited anticipates that the appropriate government agencies will inspect the facility as required.</p> <p>Should an Environmental Assessment Certificate be granted for the Project, a Table of Conditions will be developed that outlines all of the requirements with which the Project will have to comply. Woodfibre LNG Limited will be legally responsible for ensuring all conditions are met.</p>	

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905	March 22, 2015	Personal Information Withheld - Vancouver, British Columbia	<p>SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would tha t guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound.</p> <p>Sources: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards</p> <p>ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic le gacies of previous industries. This is unacceptable.</p> <p>HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine</p>	LNG Project	Thank you for your comment. For a response to this comment, please refer to the "Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions", comment # 11-21, 45, and 46.	

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			<p>particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs \$42,000 per tonne, and nitrous oxides cost \$67,000 per tonne. Sources:</p> <p>Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change</p> <p>SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility</p> <p>On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing \$500,000 – \$750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released?</p> <p>Sources:</p> <p>http://www.cbc.ca/news/multimedia/every-fault-line-in-british-columbia-1.2919420</p> <p>Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4</p> <p>B.C. Ministry of Energy and Mines</p> <p>ECONOMY: The requested socio-economic study has not been provided</p> <p>During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-</p>			

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			<p>time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound?</p> <p>CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable</p> <p>Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general.</p> <p>GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues</p> <p>There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill.</p> <p>ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life</p> <p>Woodfibre LNG has secured the water license to extract water from Mill Creek, which flows through the Woodfibre site. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else to protect this important stream habitat which is home to several native fish species.</p> <p>ENVIRONMENT: Missing baseline studies</p> <p>The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed</p>			

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			<p>before any decisions can be made regarding this project.</p> <p>VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact views from the Sea to Sky highway and the gondola</p> <p>BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound view which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory.</p> <p>ENVIRONMENT: 9000 year old glass sponge reefs endangered by tanker traffic</p> <p>LNG tankers do not have enough clearance to get over the 9000 year old reef if they go off course. These 9000 year old glass sponge reefs have been called "Living Fossils" by National Geographic as until recently this species was thought to have gone extinct over 60 million years ago. MLA Jordan Sturdy recently made a statement in the House about the importance of this discovery in Halkett Bay near Gambier Island, and to support the proposal to expand the Provincial Park Protected Area to ensure these reefs are protected.</p> <p>Sources:</p> <p>http://news.nationalgeographic.com/news/2013/10/131018-glass-sponge-reef-canada-ocean-science/</p> <p>http://jordansturdymla.ca/bcltv_videos/mla-sturdy-halkett-bays-glass-sponges/</p> <p>ENVIRONMENT: Will there be smog? Will there be a smell?</p> <p>Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels. Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory</p>			

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			<p>effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in Howe Sound is of particular concern as recent research has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor.</p> <p>Recent research (by MSc student Annie Seagram, studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentrations of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma.</p>			

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906(i)	March 22, 2015	Anneliese Schultz - Richmond, British Columbia	<p>As someone who lived on Howe Sound for several years, I did not need to do much research to see that the proposed Woodfibre LNG project is clearly unsafe, health-threatening and environmentally unacceptable</p> <p>Even if you were to take nothing else into consideration, it would be folly to construct such a facility within this moderate-to-high earthquake risk zone, on two known thrust faults.</p>	Seismic Hazard	<p>Thank you for your comments.</p> <p>Woodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline network, and access to BC Hydro electricity.</p> <p>At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site.</p> <p>The Project will be designed:</p> <ul style="list-style-type: none">• For a one in 2,475 year earthquake.• In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants.• To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site• If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby.• Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction.• Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode.	

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906(ii)	March 22, 2015	Anneliese Schultz - Richmond, British Columbia	And absolute bottom line, if we want a livable province and world for our children, it is essential that we greatly reduce CO2 emissions rather than irresponsibly increasing them through this dangerous and costly project.	GHG Emissions	<p>Woodfibre LNG Limited is of the view that natural gas – the cleanest burning fossil fuel – is the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year, equates to taking 557,000 cars off the roads over the same time period³.</p> <p>Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.</p>	
907	March 22, 2015	Personal Information Withheld - West Vancouver, British Columbia	All environmental risks are valid. Too risky!	LNG Project	<p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	

³ Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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908	March 22, 2015	Sheila Banks - Powell River, British Columbia	It is extremely short-sighted to consider allowing the Woodfibre LNG Project to go ahead. Surely our Government cannot continue to propose that such a project is to our benefit when it clearly puts the environment and one of Canada's premier tourism destinations at risk! Believe me, the public is getting very tired of being ignored by our government.	LNG Project	<p>Thank you for the comment.</p> <p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example.</p> <p>An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
909	March 22, 2015	Personal Information Withheld - Vancouver, British Columbia	<p>SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guid eline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound.</p> <p>Sources: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards</p>	Safety	Thank you for the comment. For a response to this comment, please refer to the “Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions”, comment # 11.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
910(i)	March 22, 2015	Matthew Bennett - Whistler, British Columbia	I am opposed to woodfibre LNG project. Howe sound was once considered to be home to one of the worst point sources of marine pollution anywhere. After many years, and much mitigation, marine life is finally returning to Howe Sound.	Industrial Legacy Recovery of Howe Sound	<p>Thank you for your comments.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. As a condition of acquiring the site, Woodfibre LNG required the completion of remediation work on site. On December 22, 2014 the Ministry of Environment issued two Certificates of Compliance (uplands and water lot) evidencing completion of the remediation.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	
910(ii)	March 22, 2015	Matthew Bennett - Whistler, British Columbia	I do not believe the waterways are safe enough to host tanker traffic.	Safety	<p>Liquefied natural gas (LNG) has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards.</p> <p>The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015.</p> <p>Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site</p>	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
					<p>is not within a narrow waterway as defined by SIGTTO and TERMPOL (Technical Review Process of Marine Terminal Systems and Transshipment Sites).</p> <p><i>Narrow channel/waterway</i></p> <p>TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. SIGTTO specifies a body of navigable water of width five times the vessel's beam to be a one-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel.</p> <p>The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres for Woodfibre LNG, to be a narrow channel.</p> <p>SIGTTO's guidance principles also recommend turning circles to have a minimum diameter of twice the overall length of the largest LNG carrier (i.e., 600 m for Woodfibre LNG) and TERMPOL requires turning circle of 2.5 times the length, which equates to 750 m.</p> <p><i>LNG Carriers & Howe Sound Shipping Channel / Route</i></p> <ul style="list-style-type: none">• An LNG carrier needs a 180-metre (one way) wide channel for transit and 600 metre wide channel for turning with tugs.• Howe Sound at its narrowest along the shipping route is 1400 metres, or 4593 feet.• The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2 km or 17,060 feet with nearest distance to Darrell Bay being 2.7 km or 8858 feet and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet. <p><i>Additional Information</i></p> <p>Subject to the recommendations of Transport Canada's TERMPOL Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 metres on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>Please also refer to Public Safety and Marine Transport Information Sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
911	March 22, 2015	Personal Information Withheld - Furry Creek, British Columbia	Acidification of ocean waters is a reality. Woodfibre LNG will contribute to the acidification of Howe Sound waters. The proposed cooling system will take in living sea water to cool the gas and spew out dead and acidic sea water, This process will kill untold numbers of aquatic life. The cooling system that is proposed has been outlawed in other parts of the world. Why are we rushing to construct this facility in a pristine natural environment? We need to develop a management plan for the entire Sound and take the time to study the full impacts of each application. We should not rush into any agreement without proper study.	Effects of the Project on Marine Water Quality	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the <i>Fisheries Act</i>. The seawater cooling system will require a waste discharge permit under section14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System Information Sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
912(i)	March 22, 2015	Diane - Surrey, British Columbia	There is no argument "for" this LNG plant in Woodfibre. I don't think we should ever do anything that would have any danger at all of hurting our environment. We are caretakers for this beautiful part of the world and we have to put it's well-being before money.	Industry	<p>Thank you for the comments.</p> <p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p>	
912(ii)	March 22, 2015	Diane - Surrey, British Columbia	In the long-run, the jobs are very minimal. We can do better than this.	Employment	<p>An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the Project (2014 CAD):</p> <p>CONSTRUCTION JOBS</p> <ul style="list-style-type: none"> • Create 650+ jobs each year of construction. • Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. <p>LONG-TERM OPERATION JOBS</p> <ul style="list-style-type: none"> • Create 100+ local jobs during operation. • Create an additional 330+ local jobs (indirect* and induced**) during operation. <p>*Indirect impacts arise from changes in activity for suppliers.</p> <p>**Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses.</p> <p>For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services.</p> <p>Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
913	March 22, 2015	Joseph & Joanne Ronsley - Lions Bay, British Columbia	The glass sponges endemic to Howe Sound are only one more reason to preserve the Sound against the ravages of industrialization. With its spectacular beauty and the conservation of rich marine life, it should be an international heritage site, and any enlightened society would take every measure to make it so by protecting it.	Glass Sponge Reefs	<p>Thank you for your comment.</p> <p>Glass sponges are addressed in both the Application document (Section 5.16.2.4.1) and Marine Baseline Studies Report (Appendix 5.10).</p> <p>Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation.</p> <p>The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface.</p> <p>The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. At depths ranging between 20 m and 40 m (i.e., associated depths where glass sponge reefs have been observed at these locations), the velocity produced by a propeller wash is considered negligible due to dissipation of the prop-wash with distance from sailing line.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p>	

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914	March 22, 2015	Loraine Anchor - Maple Ridge, British Columbia	I'm concerned about the ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recove ring from the toxic legacies of previous industries. This is unacceptable.	Effects of the Project on marine Water Quality, Marine Life	Thank you for your comment. For a response to this comment, please refer to the "Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions", comment # 12.	
915	March 22, 2015	Personal Information Withheld - Darlene Sanders, British Columbia	I strongly object to the proposed Woodfibre LNG facility. We would be taking a giant step backwards re emerging alternative fuel technology, care for the environment and the health and safety of all living things in Howe Sound.	LNG Project	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	
916(i)	March 22, 2015	Personal Information Withheld - Whistler, British Columbia	<p>I am opposed to bringing Woodfibre LNG to Howe Sound, my top 3 reasons:</p> <p>Firstly- I am very concerned about safety, since LNG terminals should not be placed in narrow waterways- which this proposed site definitely IS- this is not acceptable.</p>	Safety	<p>Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL (Technical Review Process of Marine Terminal Systems and Transshipment Sites).</p> <p><i>Narrow channel/waterway</i></p> <p>TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. SIGTTO specifies a body of navigable water of width five times the vessel's beam to be a one-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel.</p>	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
					<p>The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres for Woodfibre LNG, to be a narrow channel.</p> <p>SIGTTO's guidance principles also recommend turning circles to have a minimum diameter of twice the overall length of the largest LNG carrier (i.e., 600 m for Woodfibre LNG) and TERMPOL requires turning circle of 2.5 times the length, which equates to 750 m.</p> <p><i>LNG Carriers & Howe Sound Shipping Channel / Route</i></p> <ul style="list-style-type: none">• An LNG carrier needs a 180-metre (one way) wide channel for transit and 600 metre wide channel for turning with tugs.• Howe Sound at its narrowest along the shipping route is 1400 metres, or 4593 feet.• The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2 km or 17,060 feet with nearest distance to Darrell Bay being 2.7 km or 8858 feet and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet. <p><i>Additional Information</i></p> <p>Subject to the recommendations of Transport Canada's TERMPOL Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 metres on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice. Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site.</p>	

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916(ii)	March 22, 2015	Personal Information Withheld - Whistler, British Columbia	Secondly- I am a Registered Nurse and I am extremely concerned about the potential health impacts of the pollution this site will create, (respiratory illness, etc) and the effect this will have on residents living and working in the area and surrounding communities.	Effect of the Project on Human Health	<p>The Woodfibre LNG Project will be powered by electricity from BC Hydro. By powering the plant with electricity, instead of natural gas, Woodfibre LNG will reduce its greenhouse gas emissions by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.</p> <p>The majority of Woodfibre LNG air emissions will come from elements removed from the natural gas prior to liquefaction, which are incinerated.</p> <p>Estimated emissions in tonnes per year for the LNG plant powered by electric drive vs. the plant powered by gas turbines:</p> <table><tr><th></th><th>Electric Drive</th><th>Gas Turbine</th></tr><tr><td>GHG</td><td>80,000</td><td>450,000</td></tr><tr><td>NOx</td><td>20</td><td>310</td></tr><tr><td>SOx</td><td>17</td><td>17</td></tr></table> <p>As part of Woodfibre LNG's Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — were undertaken to predict air emissions from the Project operation phase. Baseline air quality data from Langdale, Squamish, and Horseshoe Bay were used in the model. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria.</p> <p>Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects.</p> <p>Woodfibre LNG Limited expects that monitoring of plant air emissions will be required as part of the waste discharge permit under section 14 of the Environmental Management Act.</p> <p>Please also refer to the Air Quality Information Sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>		Electric Drive	Gas Turbine	GHG	80,000	450,000	NOx	20	310	SOx	17	17	
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916(iii)	March 22, 2015	Personal Information Withheld - Whistler, British Columbia	Thirdly, the environmental concern with this project is staggering. Pumping huge amounts of chlorinated water into Howe Sound every hour of every day for the proposed 25 years poses large risks to the well-being of sea life, plants and animals alike, and could drastically alter & damage a fragile ecosystem that is still recovering from previous industrial assaults.	Seawater Cooling System	<p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the <i>Fisheries Act</i>. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammal Information Sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
917(i)	March 22, 2015	Lorna Murphy - Furry Creek, British Columbia	Woodfibre LNG [WFLNG] and Environmental Stewardship - On the one hand WFLNG is cleaning up the site but on the other hand, it proposes to use a cooling system that will cause acidification of Howe Sound waters. This is not environmental stewardship.	Seawater Cooling System	<p>Thank you for your comments.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the <i>Fisheries Act</i>. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammal Information Sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
917(ii)	March 22, 2015	Lorna Murphy - Furry Creek, British Columbia	Woodfibre commits to meeting the highest Marine Safety Standards. These are just words that need to be followed by actions. I am sure the same was said for the Mt Polley mine construction too. Now look at the environmental devastation caused by someone's lack of knowledge or slipshod adherence to a standard. Standards are not foolproof guarantees. Do we need to take this risk?	Regulatory Requirements	<p>Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC.</p> <p>The Project will also require a Facility Permit from the OGC as well as numerous other environmental permits. The construction and operation of the Project will be regulated by the OGC and the BC Safety Authority and Woodfibre LNG Limited anticipates that the appropriate government agencies will inspect the facility as required.</p> <p>Should an Environmental Assessment Certificate be granted for the Project, a Table of Conditions will be developed that outlines all of the requirements with which the Project will have to comply. Woodfibre LNG Limited will be legally</p>	

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					responsible for ensuring all conditions are met.	

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918	March 22, 2015	Star Morris - Squamish, British Columbia	<p>5.3 GHG Mangagement Assessment</p> <p>The Application fails to meet requirements as stipulated in the CEAA letter of clarification for the EA Substitution: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_408_37636.html which states "the substituted EA process will consider environmental effects set out in section 5 and subsection 19(1) of CEAA 2012, including any changes the Project may cause to the environment outside of Canada.</p> <p>As indicated in the IPCC – AR5, the majority (>50%) of GHG emissions occur at end use from combustion through power plant operations. The Project will be supplying a GHG-emitting product outside Canada [Asia] that is a recognized contributing factor to climate change with environmental impacts. To a lesser degree, additional emission will come from marine transport carriers as well as the regasificaton process.</p> <p>The Project will, in effect, create a demand for the resource (gas) currently in the ground, to be extracted. GHG emissions associated with the extraction and transportation (pipelines and compressor stations) needs to also be factored in.</p> <p>As such, full life-cycle GHG emissions need to be considered in order to meaningfully account for any cumulative environmental effects that are likely to result from this Project.</p>	GHG Emissions	<p>The Application has been developed in adherence with the scope of the approved Application Information Requirements. Assessing either the upstream or the downstream effects of the Project on climate change or greenhouse gas emissions is outside the scope of the environmental assessment, as defined in the section 11 order.</p>	<p>For more information related to comments on the Environmental Assessment process please see “EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015” under the Application Review EAO Generated Documents [Link].</p>

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
919	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>With respect to Captain Brown's interesting letter.</p> <p>Question: the Howe Sound portion of the shipping lane has been traditionally used by ships that are much smaller than the proposed 1000' LNG supertankers. I don't see how the fact that other ships using the lane has somehow suggested that there is no concern about the tankers using that lane.</p> <p>Question: could you please explain the rationale that the shipping lane somehow suggests that the tanker traffic is automatically safe.</p>	Shipping Route	<p>Thank you for your question.</p> <p>The assessment of potential Project-related effects on marine traffic in Howe Sound due to LNG carrier movements is included in Section 7.3 Marine Transport of the Application. The Application concluded that with mitigation measures, there are no significant Project-related adverse effects to marine transport.</p> <p>Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL (Technical Review Process of Marine Terminal Systems and Transshipment Sites).</p> <p>TERMPOL states that where the vessel's maximum breadth is not the primary consideration the width of a two way navigational lane should be at least 7 times the breadth of the vessel (TERMPOL Appendix 2 1.4) with a water depth allowing for an under keel clearance of at least 15% (Appendix 2 2.1).</p> <p>Within the Howe Sound portion of the shipping lane traditionally used by ships its minimum width is at least 1440 meters which is approximately 32 times the breadth of the LNG carrier and has a minimum water depth of 60 meters, with an LNG carrier requiring a draft of 12 m to 15 m, which is in excess of the requirements for navigation of the 1000' LNG carrier.</p> <p>Subject to the recommendations of TERMPOL, Woodfibre LNG would deploy at least three tugs, at least one of which will be tethered, in an escort pattern to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 metres on either side of the vessel and up to 500 metres and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in maneuvers at very short notice. The carriers will be piloted by BC Coast Pilots who are experts with Howe Sound navigation.</p> <p>Please also refer to the Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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920(i)	March 22, 2015	Alan Wilson - Gabriola Island, British Columbia	<p>I am a resident of Gabriola Island which is a low, forested island directly across Georgia Strait from Howe Sound whose outflow winds often rake our shores. In stormy conditions, should an LNG tanker become adrift, it would blow towards Gabriola which is tinder dry in summer. The possibility of an immense conflagration cannot be ruled out. Considering that the entire shipping route from Squamish right through to the open ocean is lined either by forested shores or developed human habitation, any accident along the entire route could cause a spreading catastrophe that would be very difficult to contain.</p> <p>For 15 years I published an ecotourism magazine (WaveLength Magazine), helping to build up a thriving kayaking and outdoor adventure industry on the BC coast. The image of natural beauty which makes BC one of the world's top ecotourism draws has grown through such efforts by many hardworking individuals over many years, but could vanish in an instant if an accident should occur. Even without an accident, the idea that BC is selling off its birthright beauty to heavy industry will dampen tourist enthusiasm. But in the event of a significant accident, the costs to the province's tourism industry as a whole would be measured in millions of dollars and could take many years to repair.</p> <p>As lifelong boaters, my wife and I travel the coast in our 32 foot boat every year, and already we are concerned about the explosion of boat traffic, both big and small. There are now hundreds of thousands of recreational boaters with varying degrees of experience and competence on the waters, and we simply cannot assume everyone will all the time operate under best practices, ideal weather conditions, etc. We cannot rule out the possibility that some boater will cause an unforeseen accident for an LNG tanker which would result in vast environmental damage and property loss.</p>	Safety	<p>Thank you for your comments.</p> <p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015.</p> <p>Liquefied natural gas (LNG) has been shipped safely around the world for more than 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards.</p> <p>In the unlikely event there is a spill from an LNG carrier, LNG will never mix with water. Instead, it will quickly return to a gas state, and because methane is lighter than air, the gas will rise and dissipate into the air.</p> <p>Subject to the recommendations of Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 m in front and, and being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>Please also refer to Public Safety and Marine Transport Information Sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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920(ii)	March 22, 2015	Alan Wilson - Gabriola Island, British Columbia	I have assisted a marine environmental organization (Georgia Strait Alliance) for almost 25 years and have come to learn how threatened our south coast waters are by both shore and ship pollution. To invite a new polluting industry into this mix is only going to add to the toxic load from run-of-the-mill operations, let alone the consequence of a major accident. We have laboured for decades to promote safeguards for our orca whales which are a threatened species, but even the LNG proponents admit that ship strikes of marine mammals are possible and would likely be lethal to the animals. The loss of even one breeding female could tip the population of south coast residents into long term decline leading to extinction.	Effects of the Project on Marine Life	<p>Woodfibre LNG Limited agrees that the loss of one individual belonging to an at-risk population (such as an orca population) that is limited in size could adversely affect that population.</p> <p>Subject to the recommendations of Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 m in front and, and being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>With implementation of mitigation measures, that is vessel speed restrictions of 8 to 10 knots and the use of escort tugboats, potential vessel strikes on marine mammals are anticipated to be avoided during the life of the Proposed Project (i.e., no individuals are anticipated to be lost as a result of vessel strikes or rare likelihood of occurrence).</p>	
920(iii)	March 22, 2015	Alan Wilson - Gabriola Island, British Columbia	As a parent, I am concerned about all the potential negative impacts of LNG development on our young people and their chance for a healthy, sustainable existence. By placing such a gigantic 'bet' on one sunset industry, we would be mortgaging our children's long term future to provide scant benefits in the short term, and taking unacceptable new risks.	LNG Project	The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound.	
920(iv)	March 22, 2015	Alan Wilson - Gabriola Island, British Columbia	<p>Because you have to consider "the potential adverse environmental, economic, social, heritage and health effects of the proposed Project, including cumulative effects..." the only responsible thing to do is make a recommendation of non-approval to the Minister. The "potential adverse effects" are of such significance that mitigation measures are not the answer.</p> <p>I agree with many of my colleagues who argue that outright rejection is the only answer.</p>	Regulatory Requirements	A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link] .

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921	March 22, 2015	Richard Mellen - West Vancouver, British Columbia	I loved seeing the Harbour Porpoises at dusk this winter. Millions of gallons of hot water is not their thing. Surely there will be other contaminants from the plant in there too. We have come so far.. why ruin it now. Provincial fiscal responsibility is what is required, not an LNG tax cash grab.	Effects of Project on Marine Environment	<p>Thank you for the comments.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21°C or 10°C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10°C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1°C above ambient is 125 m3 (for context, this volume is approximately 5% or 1/20th of an Olympic-size pool). This volume will not increase over time.</p> <p>The effects of the Project on marine water quality is assessed in Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System, Marine Mammals and Wildlife information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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922	March 22, 2015	Claudia Weiland - Brackendale, British Columbia	<p>I am very concerned that Squamish will invite a Trojan Horse into its front yard:</p> <p>I find the credibility and integrity of Woodfibre LNG highly questionable and in fact extremely worrisome. I simply do not trust that Woodfibre LNG has anything else on their mind but the most possible profit and here is why:</p> <ul style="list-style-type: none">• According to their website, Woodfibre LNG "will not make any compromises when it comes to the safety and security (...) of workers, communities and environment."• Here another quote from their website: "We will look to support the environment (...) by being good stewards of the forest, fisheries, wildlife and water resources on the site" <p>Why then do they only decide to run off electric power AFTER the input and feedback generated from community consultation??? Why didn't they decide to do that from the get-go? If the switch to electric power reduces GHG emissions by about 80%, wouldn't that be a no-brainer? Why did they even need community consultations to make that decision?</p> <p>Why then do they only decide to build an onshore liquefaction plant instead of a water-based one AFTER the input and feedback generated from community consultation???</p> <p>Why wouldn't they lead the way (rather than follow) if they really were what they proclaim – "good stewards" who "will not make any compromises"? And I'm only going by their own advertising! That leaves me wondering: What are the things that aren't being advertised???</p> <p>The Woodfibre LNG approach as it has been unfolding leaves me with the bad taste of something that I would summarize as "Let's see how much and how far we can get without being caught". The benefit for the community and the safety of the environment seems to only be of interest insofar as they need enough support to get the go-ahead.</p> <p>After learning about hydraulic fracturing, I am disgusted by the ¼-page ads by Woodfibre LNG that promote LNG as the cleanest burning fossil fuel - odourless, colourless, non-corrosive and non-toxic... That to me comes dangerously close to flat-out lying. It reminds me of my daughter shoving all her clothes into the closet, closing the doors and showing off her "tidied" room with a proud smile. The difference being, that the impact and the consequences of fracking "clean" LNG are terribly devastating. Fracking is destroying the country that we've come to love so much. It breaks my heart!!!</p> <p>Back to my concerns for my immediate neighbourhood, my community, my Squamish: I do not trust Woodfibre LNG! Not even to mention</p>	Corporate Responsibility	<p>The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish.</p> <p>Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain.</p> <p>Woodfibre LNG Limited intends to operate in a manner consistent with its core values of a triple bottom line approach, where results benefit the community, the country and the company.</p> <p>Woodfibre LNG will comply with all applicable regional, provincial and federal laws, regulations, guidelines and standards including but not limited to: employment standards; health and environmental regulations and standards; taxation; and, First Nations agreements.</p> <p>Woodfibre LNG Limited has undertaken public consultation in the form of more than 300 community meetings, two telephone town halls, three rounds of formal public consultations, and has opened a Community Office in Squamish to respond to questions. Woodfibre LNG also regularly engages the public through its web site (woodfibrelng.ca), email, and Facebook page.</p> <p>A public consultation report will be filed with the EAO in accordance with the environmental assessment process.</p> <p>In response to public consultation, Woodfibre LNG has made meaningful changes to the Project. For example, in response to concerns about the possibility that the LNG facility would run on a gas turbine, Woodfibre LNG committed to powering the facility plant using electricity from BC Hydro. This decision will reduce greenhouse gas emissions by about 80 %, and will help make Woodfibre one of the cleanest LNG plants in the world.</p> <p>Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC.</p> <p>The Project will also require a Facility Permit from the OGC as well as numerous other environmental permits. The construction and operation of the Project will be regulated by the OGC and the BC Safety Authority and Woodfibre LNG Limited anticipates that the appropriate government agencies will inspect the facility as required.</p> <p>Should an Environmental Assessment Certificate be granted for the Project, a Table of Conditions will be developed that outlines all of the requirements with which the Project will have to comply. Woodfibre LNG Limited will be legally responsible for ensuring all conditions are met.</p>	

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			<p>Sukanto Tanoto...</p> <p>I do not trust that "Woodfibre LNG will not make any compromises when it comes to the safety and security."</p> <p>I do not trust that "The cornerstone of operations and standard of performance at Woodfibre LNG is based upon the safety of workers, communities and environment."</p> <p>Can I trust YOU to weigh everything carefully enough to shut down Woodfibre LNG?</p> <p>I cannot support the proposed Woodfibre LNG project sited on the old Woodfibre industrial lands, nor anywhere in Howe Sound. It is becoming clear that there are too few benefits (a handful of jobs and minimal revenue in Municipal taxes) that are outweighed by far too many costs to our environment, our health, and the future economic stability of Squamish.</p>			
923	March 22, 2015	Personal Information Withheld - , British Columbia	This line intentionally left blank			
924	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, British Columbia	With respect to Captain Brown's letter re: LNG tanker safety in Howe Sound. I understand that Marine pilotage involves a mariner with extensive knowledge of a local waterway and its ports boarding a vessel to guide it safely to its destination. Question: does the pilot actually steer the ship and give the orders?	Marine Transport	The carriers will be piloted by BC Coast Pilots who are experts with Howe Sound.	
925	March 22, 2015	Soren Robinson - Garibaldi Highlands, British Columbia	Reusing an existing industrial site while cleaning it up is a far better win for the environment than building a whole new site. The industry will fit well with the current tourism industry of Howe Sound and done properly will enhance it. Jobs and tax base are important for Squamish and the industries safety record is exemplary.	Project Benefits	Thank you, this comment is noted.	
926	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>With respect to Captain Brown's letter re: safety of tanker traffic in Howe Sound.</p> <p>January 5, 2015: Teekay's Magellan Spirit, fully loaded LNG tanker ran aground 6 miles off Nigeria in soft mud while under pilotage exiting the Bonny Island LNG terminal. The tanker was refloated some days later having backloaded the cargo via ship-to-ship operation from Excelerate Energy's Excellence LNG carrier which had the capacity to take 80% of Magellan Spirit's cargo.</p> <p>http://www.lngworldnews.com/update-1-teekays-magellan-spirit-back-in-business/</p> <p>This ship was under pilotage and yet was adrift, thankfully in open ocean. Question: what is the process and how quickly can it stop a 1000' tanker in stormy weather goes adrift between Bowen Island and West Vancouver with constant ferry traffic. Who will stop the other traffic until the ship under control before, for example, piling into Snug cover or in the rocks at Whytecliffe?</p>	Safety	<p>Thank you for your question.</p> <p>LNG carriers transiting Howe Sound to and from the Woodfibre LNG terminal will be escorted by at least three powerful tugs, two at the stern (one tethered at all times) and one running ahead.</p> <p>Fast time mission simulations have shown that these powerful tugs can effectively manage the LNG carrier safely during her transit, in the unlikely event of an engine breakdown with the rudder locked in hard over condition. These simulation studies will be reflected in the Woodfibre TERMPOL submission as mitigation measures to avoid incidents such as referenced in the question. Similar fast time mission simulations will be undertaken specific to the Project by the Pilots, tugs and LNG carrier at a simulation center to ensure results generated from the fast time simulations are accurate and sufficient tugs are available to safely manage the LNG carrier in event of an engine breakdown.</p>	

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927	March 22, 2015	Personal Information Withheld - Gambier Island, British Columbia	i'm concerned about the salt water cooling system they could not answer what the chemicals where that they were adding.i don't think our oceans need to get hotter in this day and age 21 degrees is too hot.	Seawater Cooling System	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21°C or 10°C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10°C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1°C above ambient is 125 m³ (for context, this volume is approximately 5% of an Olympic-size pool). This volume will not increase over time.</p> <p>A sodium hypochlorite solution will be used to discourage the growth of marine organisms on the heat exchangers and pipes. The dosage of hypochlorite solution will be optimized and adjusted so that the minimum necessary amount of chemical is added.</p> <p>Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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927(i)	March 22, 2015	Personal Information Withheld - Gambier Island, British Columbia	its not clean energy and i think as a province based in clear water and air we need green energy focus on wind solar tidal hydro.it should be a closed loop system.	LNG Industry	<p>Thank you for your comments.</p> <p>Woodfibre LNG Limited is of the opinion that natural gas – the cleanest burning fossil fuel – is the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG plans to sell our product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year, equates to taking 557,000 cars off the roads.</p> <p>Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.</p>	
927(ii)	March 22, 2015	Personal Information Withheld - Gambier Island, British Columbia	i also feel its a ticking time bomb a easy terrorist bomb	Safety	<p>Transport Canada's marine security programs, including strategies, programs and regulations, protect and preserve the efficiency of Canada's marine transportation system against unlawful interference, terrorist attacks or use as a means to attack our allies. (see http://www.tc.gc.ca/eng/marinesecurity/menu.htm)</p> <p>In addition, as part of the OGC permitting process, Woodfibre LNG Limited will be required to prepare a Safety and Loss Management Plan, which will include an emergency response plan and a security management plan. In addition, the site will be fenced and a control zone around the marine portion of the Project area will be established. The objective for the control zone and fencing is for public safety reasons, but will also be designed to prevent access by saboteurs.</p> <p>Security for LNG carriers in transit will be addressed by the Canadian Coast Guard and Transport Canada. It is unlikely that an attack on a LNG carrier would successfully penetrate an LNG container and result in loss of containment, given the multiple layers of steel that would need to be penetrated. The consequence and frequency for a worst case scenario for potential loss of containment of LNG on an LNG carrier due to grounding and collision with another vessel is considered in Appendix 11-1 of the Application.</p> <p>Is it not anticipated that penetration of an LNG container on an LNG carrier would result in an explosion. It is not anticipated that a collision can result in damage to more than one container. Additional analysis for marine risks will be carried out during the TERMPOL assessment for the Project.</p> <p>Please also refer to the Public Safety Information Sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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928	March 22, 2015	Personal Information Withheld - Bowyer Island, Howe Sound, British Columbia	<p>From the warning in bold red on the EAO Public Comment Page ""EAO may consider comments inappropriate for publication if the comment contains facts or quotes attributed to third parties that are not publicly known or easily verified".</p> <p>So why would BCEAO accept the WF-LNG EA as submitted, which bases many of it's conclusions on interpretations and summaries of third party reports that are not publicly available? - The assessments of geohazards, earthquake risk, tsunami risk in "Knight and Piesold, 2014", Moffat & Nichol(2014), Worley Parsons (2013), Sandwell (2010), AMEC (2014a)" etc are cited in support of assertions in the EA but none of these reports are provided or are publicly available.</p> <p>How can the public have any confidence in any of the conclusions based on these materials if the supporting reports with data and professional opinions are not presented in the EA for assessment and verification?</p> <p>Unless the EA is resubmitted with the reports and data used to justify it's conclusions there is nothing for the public to review or comment on. Many of the concerned public and residents of the area have significant qualifications in these fields and experience of the area from many years of residency in Howe Sound. None of these people can comment on the accuracy of conclusions drawn from reports that are not presented.</p> <p>Neither Woodfibre nor the BCEAO were willing to release these reports for public examination during the public comment period.</p> <p>Unless this serious deficiency is corrected the WFLNG EA will not be an example of a rigorous or defensible EA, particularly in light of the significant public opposition to this project.</p>	EA Process Public Review	<p>The Application has been developed in accordance with the approved Application Information Requirements. The qualifications of professionals involved in preparing the Application are included in Table 2-1 Environmental Assessment Team.</p> <p>Supplementary studies conducted in support of the Application are posted to the EAO website.</p>	<p>For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].</p>

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929	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>With Respect to Captain Brown's letter re: tanker safety in Howe Sound.</p> <p>January 10, 2013 LNG tanker Puteri Nilam Satu collided with LPG tanker Sakura Harmony The LNG tanker (31 crew + master) with two pilots and two escort tugs and the LPG tanker collided.</p> <p>December 18, 2014 from Japan Transport Safety Board Marine Accident Investigation Report</p> <p>Two pilots on board and two escort tugs yet this LNG tanker still managed to collide with an LPG tanker. Question: Does Captain Brown of the shipping chamber have a direct line to God to pay special attention to the tankers in Howe Sound? SIGTTO suggest and other experts like Jerry Havens and Michael Hightower that you always have to think worst case scenario. That even if you can make the case for low risk you have to think of high consequence should a catastrophe occur for whatever unforeseen reason. Howe Sound is simply the wrong place for this class A Hazard facility sited on two earthquake faults and for tankers transitting through a sensitive eco-marine area with population centres along the foreshore and busy commercial and recreational marine traffic.</p>	Safety	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited acknowledges the referenced incident; however, from the stated contributory causes the LPG vessel did not have a pilot onboard and its Master/Captain could not communicate in Japanese with the two pilots aboard the LNG carrier. It is also noteworthy that although the subject collision was broadside and severe in nature, it did not breach the double hull of the LNG carrier or affect its primary containment of LNG.</p> <p>All foreign vessels calling Canada must be able to communicate adequately with Marine Communication Traffic Service (MCTS) in English. Prior arrival and pilotage of these vessels within Canadian waters is mandatory and undertaken by the BC Coast Pilots who have an enviable safety record of piloting vessels within BC.</p> <p>Woodfibre LNG Limited remains committed to the safe transit of LNG carriers within Howe Sound and has committed to implementing all of the recommendations that may arise from its TERMPOL submission to the Technical Review Committee towards safety of navigation and the safety of other users of Howe Sound.</p> <p>LNG vessels are double hulled, technologically advanced and structurally robust due to the nature of the liquefied natural gas they carry.</p>	

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930	March 22, 2015	Personal Information Withheld - Bowyer Island, Howe Sound, British Columbia	<p>Text of communication sent to BCEAO with no response other than automated form letter: Dear Mssrs. Bailey and Shepard February 26, 2015</p> <p>I have been asked as a Professional Geoscientist engaged in the geotechnical engineering sector to review sections of the Woodfibre LNG EA pertaining to effects of the environment on the project, and interactions of these effects upon Accidents and Malfunctions.</p> <p>My conclusion upon reviewing materials related to geohazards, project area characteristics and geotechnical conditions in these sections of the EA document submitted by Woodfibre LNG is that the EA attempts to rely on unpublished materials that are not provided in support of the EA, but are used to justify its' conclusions.</p> <p>To quote the introductory paragraph of Section 5.6 Geotechnical and Natural Hazards: "The information in this section is used to support the potential changes discussed in Section 12.0 Effects of the Environment on the Project"</p> <p>However there is almost no actual geotechnical or natural hazard related information or analysis presented in Section 5.6.</p> <p>The section repeatedly references internal reports to Woodfibre LNG such as "Knight Piesold (2014), Moffat & Nichol(2014), Worley Parsons (2013), Sandwell (2010), AMEC (2014a). Conclusions are presented in the EA "prima facia" without supporting evidence, such as: based on these (absent) reports "it is considered that there is no effect".</p> <p>Table 5-6.4 is titled "Rationale for Interactions between Project Related Activities and Geotechnical and Natural Hazards". However I'm sorry to have to point out that in this table and the section in general the document presents repeated statements of "little or no effect", without any actual rationale beyond those words in support of their statements.</p> <p>In the absence of inclusion of the referenced reports as appendices or attachments, the proponent is not offering anything to be assessed in this section of the EA, unless the referenced reports can be produced for assessment. With only summarizations by Woodfibre's consultants presented it is impossible to assess the work of the relevant professionals who signed the reports referenced.</p> <p>I would hope that the proponent will provide your offices with these reports promptly so that they can be posted as addendums allowing the EA to be resumed in a timely fashion with a corresponding allowance for this delay in provision of supporting materials.</p> <p>Woodfibre LNG declined to provide any of the reports referenced in the EA and suggested that the BCEAO be contacted to request these.</p>	Seismic Hazard EA Process	<p>The Application for an Environmental Assessment Certificate prepared for the Woodfibre LNG Project was conducted according to the methodology of both the BC Environmental Assessment Act and Canadian Environmental Assessment Act (2012) and has been developed in accordance with the approved Application Information Requirements. Section 4.0 Environmental Assessment Methods of the Application describes the assessment process. The qualifications of professionals involved in preparing the Application are included in Table 2-1 Environmental Assessment Team.</p> <p>Supplementary studies conducted in support of the Application are posted to the EAO website, including the Knight Piesold Geotechnical report.</p>	For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link] .

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931	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>December 03, 2012: Loaded with 125,469 m3 of LNG, LNG tanker Aries lost electric power, which disabled the operation of the main engine and subsequent loss of control (blackout) off the southeast of the Toden Ogishima LNG Berth in Section 2 of Kawasaki Quarter, Keihin.</p> <p>http://www.mlit.go.jp/jtsb/marrep.html</p> <p>Question: The high winds that the Squamish/Woodfibre area is known can come up in a very short period of time. Unlucky things happen in life so what is the plan if this happens to one of the tankers coming in to berth beside the welded together LNG storage vessels?</p>	Accidents and Malfunctions	<p>Thank you for your question.</p> <p>LNG carriers transiting Howe Sound to and from the Woodfibre LNG terminal will be escorted by at least three powerful tugs, two at the stern (one tethered at all times) and one running ahead.</p> <p>Fast time mission simulations have shown that these powerful tugs can effectively manage the LNG carrier safely during her transit, in the unlikely event of an engine breakdown with the rudder locked in hard over condition. These simulation studies will be reflected in the Woodfibre TERMPOL submission as mitigation measures to avoid incidents such as referenced in the question. Similar fast time mission simulations will be undertaken specific to the Project by the Pilots, tugs and LNG carrier at a simulation center to ensure results generated from the fast time simulations are accurate and sufficient tugs are available to safely manage the LNG carrier in event of an engine breakdown.</p>	
932(i)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	<p>I am OPPOSED to the Woodfibre LNG project for a number of reasons. If we are to be intelligent citizens of BC and the world, it is time we changed our focus to much more sustainable sources of energy. They already exist, and they can be utilized with much less risk to the environment and to the people of the region. We must take responsibility for our decisions if we want to be able to continue to live amidst the comparatively pristine beauty of BC. The extraction of gas has not been proven to be without risk, short and long-term, the transportation to the proposed plant is clearly risky, and the ocean transportation even more so. It is noted that there is a LNG facility in Delta. Why do we need another one?</p>	Justification of the Project	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited is of the opinion that natural gas – the cleanest burning fossil fuel – is the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG plans to sell our product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year, equates to taking 557,000 cars off the roads.</p> <p>Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.</p>	

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932(ii)	March 22, 2015	Personal Information Withheld - Bowen Island, British Columbia	The Howe Sound area, with its narrow and shallow channels is inappropriate for this type of project and these types of vessels. This proposal seems to prioritize corporate profit much more than providing energy in a safe and sustainable manner. There are better ways, and now is the time to recognize/utilize them.	Narrow channel	<p>Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL.</p> <p>TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel. The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres to be a narrow channel.</p> <p>The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2 km or 17,060 feet with nearest distance, to Darrell Bay, being 2.7 km or 8858 feet and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet.</p> <p>Subject to the recommendations of Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 metres on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site</p>	
933	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>I believe that this project is truly in the best interests of our community based upon the environmental, economic, social, heritage and health benefits the project will offer.</p> <p>Environmental</p> <p>This project has already had a positive impact on the local environment with the environmental remediation from past industrial activates as stipulated in the proponent's purchase agreement with Western Forest Products. The proponent will</p>	Benefits of the Project	Thank you, your comment is noted.	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
			<p>also use substantially less of the site than what was passed used. This will allow the environment to benefit by returning parts of the site to nature.</p> <p>Many other parts of the world will also greatly benefit from access to this significantly cleaner energy alternative. While this project alone will not be able to eradicate coal usage in China, it is certainly part of the solution. This project also has the ability to reduce emissions from residents who commute. This project will inevitably be able to reduce trips to by those who commute to Vancouver by car or those who board a plane to work in remote camp settings like Fort McMurray.</p> <p>Project Opponents are quick to point out that this project may lead to and increase in hydraulic fracturing, but this is an unrelated issue, as the proponent has no</p> <p>upstream operations. I am frankly appalled by the hypocrisy of many opponents considering that this project will use the same sources of natural gas that they use in their own homes.</p> <p>This project will result in very modest emissions, equating to less than 9,000 car trips from Vancouver to Squamish each day (according to project opponents). I feel that these emissions are minimal and will have little to no impact on air quality. I am basing my opinion on the fact that, according to the Ministry of Transportation, there are over 13,000 daily average trips made on the Sea to Sky highway. These trips result in more emissions than Woodfibre LNG ever would and have yet to yield any air quality issues.</p> <p>The environmental issues of this project are negligible and are greatly outweighed by the benefits. I feel this is resulting from the efforts the proponents to listen to the community (e.g. choosing electric drive and placing the plant on land).</p> <p>Economic</p> <p>The economical benefits from this project run deep in the community, from construction to operation. Some local businesses, such as water taxi operators, have already benefited. In a community the size of Squamish, 100 family-supporting jobs are indeed significant.</p> <p>The generous tax proposal from the proponent will positively impact all those in the community by offsetting the need to increase residential property tax rates. This</p> <p>will have the largest impact on the low-income members of the community, as they are most affected by increasing property taxes and stand to benefit most from increased community amenities.</p> <p>In contrast to the views of many opponents, I believe that this project will have little or no impact on tourism. From a visual impact perspective, the</p>			

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			<p>plant will be an improvement on the current site, which currently resembles a vacant parking lot. The minimal ship traffic will likely have no impact on recreational users. The City and District of North Vancouver are excellent examples of industrial and tourism related business thriving together. This project will create a more balanced local economy, and help to insulate from the cyclical nature of the tourism industry.</p> <p>Social</p> <p>The proponent has already proven to be a good member of the community. The company has listened to the concerns of many and made decisions with the community in mind. The company has gone out of their way to inform and seek meaningful consultation of the community.</p> <p>Woodfibre LNG has already sponsored several community organizations, notably several youth sporting events. By choosing to invest in the community early on, Woodfibre LNG has already demonstrated that they are committed to the betterment of society.</p> <p>The proposed project will also provide stable employment for many in our community. These well paying, family supporting industrial jobs is the kind of jobs that anchor families to communities, building strong healthy communities. The project will provide a sense of purpose for our community—many generations will be proud to help create a better world by providing a cleaner energy alternative.</p> <p>Heritage</p> <p>As a community that has deep routes to industry, this project will connect the community with it's proud past of producing sustainable products for export around the world by continuing to do so. The proponents have honored the past of Woodfibre by adopting the name as their own.</p> <p>Woodfibre LNG has shown a great commitment to working with the historical society to preserve the history of the site and the memories of the community. The proponent has also indicated openness to allowing recreational users the opportunity to access the surrounding backcountry through their site.</p> <p>Health</p> <p>By operating a large semi remote facility, the proponents will need to have their own rescue capabilities. These capabilities will provide northern Howe Sound and surrounding area with increased emergency services. This will benefit the community by helping the preserve the scarce emergency resources the community has as its disposal. The community also benefits greatly from the health impacts of a cleaner global environment resulting from a decrease in coal usage.</p>			

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934	March 22, 2015	Personal Information Withheld - New Westminster, British Columbia	<p>Due to the increased risk of a high magnitude earthquake hitting the coast of British Columbia, it is my opinion that a pipeline running up the coast is a mistake.if said pipeline were to be severely damaged from a quake, the aftermath would permanently affect coastal communities and wildlife in British Columbia. Not to mention the people in these communities may have to leave their homes do to the potential severe impact an oil spill after a quake would cause. And if a spill of this magnitude occurs in conjunction with an "off the charts" earth quake most likely the environmental damage would be so devastating that it may never recover. So my question is: is it really worth it to place the entire coast of British Columbia at risk along with the people and habitat that call it their home? Something to think about. I would argue ou r province is priceless.</p>	Seismic Hazard	<p>Thank you for your comment.</p> <p>Woodfibre LNG is designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site.</p> <p>The Project will be designed:</p> <ul style="list-style-type: none">• For a one in 2,475 year earthquake.• In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants.• To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site• If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby.• Project components, including bridges, will be designed for the 200-year instantaneous peak flows on Mill Creek and Woodfibre Creek.• Buildings will be constructed at different elevations that correspond to their risk category in case of flooding.• Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction.• To address the potential effects associated with wildfire, a fuel hazard assessment will be conducted based on the Guide to Fuel Hazard Assessment and Abatement in British Columbia.• Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode.• Project components will be designed to accommodate a sea level rise of 0.5 metres.	

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935	March 22, 2015	Jan Ulrich - Squamish, British Columbia	The LNG project is a bad idea. We have seen the signs of global warming this year, by how little snow the coast mountains got. Ski resorts were closing early because of the dearth of snow. This is just a harbinger of what's to come if we don't work to prevent climate change. This LNG export facility would increase greenhouse gas emissions in the province. Leaked methane from the fracking wells, the transmission lines, and the liquification facility is a much more potent greenhouse gas than CO2.	GHG Emissions	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited is of the opinion that natural gas – the cleanest burning fossil fuel – is the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG plans to sell our product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year, equates to taking 557,000 cars off the roads.</p> <p>Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.</p>													
935	March 22, 2015	Jan Ulrich - Squamish, British Columbia	As for the local impact, the LNG facility is a big health concern. We need strong regulations for cancer causing volatile organic compounds that are released as the gas is purified during liquification. This impacts the air we breath here in our community of Squamish. The air quality will also be impacted by nitrogen dioxide and sulfur dioxide emissions.	Effects of the Project on Air Quality	<p>The Woodfibre LNG Project will be powered by electricity from BC Hydro. By powering the plant with electricity, instead of natural gas, Woodfibre LNG will reduce its greenhouse gas emissions by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.</p> <p>Estimated emissions in tonnes per year for the LNG plant powered by electric drive vs. the plant powered by gas turbines:</p> <table><tr><th></th><th>Electric Drive</th><th>Gas Turbine</th></tr><tr><td>GHG</td><td>80,000</td><td>450,000</td></tr><tr><td>NOx</td><td>20</td><td>310</td></tr><tr><td>SOx</td><td>17</td><td>17</td></tr></table> <p>The majority of Woodfibre LNG air emissions will come from elements removed from the natural gas prior to liquefaction, which are incinerated.</p> <p>As part of Woodfibre LNG's Environmental Assessment Certificate Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — were undertaken to predict air emissions from the Project operation phase. Baseline air quality data from Langdale, Squamish, and Horseshoe Bay were used in the model. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria.</p> <p>Woodfibre LNG Limited expects that monitoring of plant air emissions will be required as part of the waste discharge permit under section 14 of the <i>Environmental Management Act</i>.</p> <p>At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is well below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act.</p>		Electric Drive	Gas Turbine	GHG	80,000	450,000	NOx	20	310	SOx	17	17	
	Electric Drive	Gas Turbine																
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					<p>Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The purpose of the human health risk assessment (HHRA) is to quantify the potential health risks to people from the baseline case (present-day) and application case (predicted using modelling) environmental quality in the Project area, and to determine any effects resulting from the Project. The Application concluded that there were no Project-related significant adverse effects to human health.</p> <p>Please also refer to the Air Quality information sheet that has been prepared as part of the Woodfibre LNG response to public comments.</p>	
936	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>I believe that this project is truly in the best interests of our community based upon the environmental, economic, social, heritage and health benefits the project will offer.</p> <p>Environmental</p> <p>This project has already had a positive impact on the local environment with the environmental remediation from past industrial activities as stipulated in the proponent's purchase agreement with Western Forest Products. The proponent will also use substantially less of the site than what was passed used. This will allow the environment to benefit by returning parts of the site to nature.</p> <p>Many other parts of the world will also greatly benefit from access to this significantly cleaner energy alternative. While this project alone will not be able to eradicate coal usage in China, it is certainly part of the solution. This project also has the ability to reduce emissions from residents who commute. This project will inevitably be able to reduce trips to by those who commute to Vancouver by car or those who board a plane to work in remote camp settings like Fort McMurray.</p> <p>Project Opponents are quick to point out that this project may lead to and increase in hydraulic fracturing, but this is an unrelated issue, as the proponent has no upstream operations. I am frankly appalled by the hypocrisy of many opponents considering that this project will use the same sources of natural gas that they use in their own homes.</p> <p>This project will result in very modest emissions, equating to less than 9,000 car trips from Vancouver to Squamish each day (according to project opponents). I feel that these emissions are minimal and will have little to no impact on air quality. I am basing my opinion on the fact that, according to the Ministry of Transportation, there are over 13,000 daily average trips made on the Sea to Sky highway. These trips result in more emissions than Woodfibre LNG ever would and have yet to yield any air quality issues.</p>	Benefits of the Project	Thank you, your comment is noted.	

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			<p>The environmental issues of this project are negligible and are greatly outweighed by the benefits. I feel this is resulting from the efforts the proponents to listen to the community (e.g. choosing electric drive and placing the plant on land).</p> <p>Economic</p> <p>The economical benefits from this project run deep in the community, from construction to operation. Some local businesses, such as water taxi operators, have already benefited. In a community the size of Squamish, 100 family-supporting jobs are indeed significant.</p> <p>The generous tax proposal from the proponent will positively impact all those in the community by offsetting the need to increase residential property tax rates. This</p> <p>will have the largest impact on the low-income members of the community, as they are most affected by increasing property taxes and stand to benefit most from increased community amenities.</p> <p>In contrast to the views of many opponents, I believe that this project will have little or no impact on tourism. From a visual impact perspective, the plant will be an improvement on the current site, which currently resembles a vacant parking lot. The minimal ship traffic will likely have no impact on recreational users. The City and District of North Vancouver are excellent examples of industrial and tourism related business thriving together. This project will create a more balanced local economy, and help to insulate from the cyclical nature of the tourism industry.</p> <p>Social</p> <p>The proponent has already proven to be a good member of the community. The company has listened to the concerns of many and made decisions with the community in mind. The company has gone out of their way to inform and seek meaningful consultation of the community.</p> <p>Woodfibre LNG has already sponsored several community organizations, notably several youth sporting events. By choosing to invest in the community early on, Woodfibre LNG has already demonstrated that they are committed to the betterment of society.</p> <p>The proposed project will also provide stable employment for many in our community. These well paying, family supporting industrial jobs is the kind of jobs that anchor families to communities, building strong healthy communities. The project will provide a sense of purpose for our community—many generations will be proud to help create a better world by providing a cleaner energy alternative.</p> <p>Heritage</p>			

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			<p>As a community that has deep routes to industry, this project will connect the community with it's proud past of producing sustainable products for export around the world by continuing to do so. The proponents have honored the past of Woodfibre by adopting the name as their own.</p> <p>Woodfibre LNG has shown a great commitment to working with the historical society to preserve the history of the site and the memories of the community. The proponent has also indicated openness to allowing recreational users the opportunity to access the surrounding backcountry through their site.</p> <p>Health</p> <p>By operating a large semi remote facility, the proponents will need to have their own rescue capabilities. These capabilities will provide northern Howe Sound and surrounding area with increased emergency services. This will benefit the community by helping the preserve the scarce emergency resources the community has as its disposal. The community also benefits greatly from the health impacts of a cleaner global environment resulting from a decrease in coal usage.</p>			
937	March 22, 2015	Lynda Peach-Akerhielm - Lions Bay, British Columbia	<p>These reefs are priceless nurseries for fish and themselves represent thousands of years of growth by tiny sponge colonies. It has been said that finding them is like finding a herd of dinosaurs alive, on land. And yet when researchers with Natural Resources Canada surveyed the glass sponge reefs in northern British Columbia in 2001, they discovered that more than half of the reefs were damaged—most likely by trawling.</p> <p>Last October, Liberal MLA Jordan Sturdy rose in the Legislature to remark on their presence in Howe Sound, citing evidence that shows they have been there nine thousand years. He noted that Halkett Bay is presently the only place in the world where glass sponges can be accessed by traditional scuba diving. He welcomed initiatives to expand the protected area around Halkett Bay.</p> <p>Yet now I have learned that the tankers do not have enough clearance to get over this 9000 year old reef if any off course action happens. So why would we allow LNG tankers in this area at all?</p>	Effects of the Project on Glass Sponges	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface.</p> <p>The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the glass sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. The glass sponge reefs are located at depths ranging between 20 m and 40 m at these locations.</p> <p>Please also refer to the Marine Transport information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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938	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>July 26, 2012: Kuala Lumpur, Malaysia : Rescue crew in Labuan are now scrambling to prevent a potential catastrophe following the explosion of the MSC tanker, Bunga Alpinia 3, here this morning. Sources from the Maritime Response Coordination Centre (MRCC) told Malaysian Digest that as of 11am, rescue personnel were still trying to put out the blaze on the tanker, which was believed to be laden with liquefied natural gas (LNG).</p> <p>http://www.malaysiandigest.com/archived/index.php/12-news/local2/9739-gas-tanker-explodes-in-labuan-at-least-one-dead-and-six-missing.html</p> <p>The MRCC spokesman told Malaysian Digest that their main concern now is to prevent the tanker from hitting the nearby Labuan Petronas methanol silo.</p> <p>Tanker Inferno: Disaster If Vessel Hits Nearby Gas Silo</p>	Accidents and Malfunctions	<p>Thank you for your comment.</p> <p>In response to the accident referenced in the comment: the Bunga Alpinia 3 was a chemical tanker loading methanol at the Labuan Petronas Methanol silo when the vessel was struck by lightning and a fire developed that devastated the vessel.</p> <p>However, the Bunga Alpinia 3 was incorrectly reported as an LNG vessel in the Malaysian digest and inadvertently referenced in the comment.</p> <p>This catastrophe, though a severe event, is not linked to the transport of LNG.</p> <p>The loading operation of LNG carriers is a closed loop process and the vapours displaced during loading are returned to LNG facility and not emitted into the atmosphere. This greatly reduces the probability of LNG vapours being ignited by lightning.</p> <p>Further, in compliance with safe terminal operations, loading operations are always suspended whenever lightning is observed in the vicinity.</p>	
939(i)	March 22, 2015	Personal Information Withheld	<p>I am opposed to this project for many reasons. The first is that LNG requires fracking or hydraulic fracturing. Fracking contaminates groundwater. Fracking threatens drinking water. Fracking depletes water resources. Fracking poses serious health risks.</p>	Hydraulic Fracturing	<p>Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project.</p> <p>Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system.</p> <p>Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site.</p> <p>Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.</p>	
939(ii)	March 22, 2015	Personal Information Withheld	<p>In addition to being opposed to fracking, I am also opposed to the Woodfibre LNG proposal. Fortis BC trying to drill borehole tests in the Squamish Estuary is wrong. After Squamish council denied them the right to do this, Fortis is now taking the district of Squamish to court. For a corporation to think that their rights are greater than the rights of the citizens of Squamish to a clean, healthy environment is wrong. I am adamantly opposed to Fortis drilling in a sensitive estuary, as much as I am adamantly opposed to the possibility of Fortis installing an LNG pipeline through this same sensitive estuary.</p>	Pipeline	<p>Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information:</p> <p>http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html</p>	

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939(iii)	March 22, 2015	Personal Information Withheld	I am also opposed to the compression facility that will be built which will require millions of gallons of seawater to cool the gas as it is compressed, followed by dumping of this treated, warmed water back into Howe Sound, with an unknown effect on the marine and aquatic life in Howe Sound. Howe Sound is beginning to rejuvenate after years of pollution. Orca whales, dolphin and herring are just a few of the examples of wildlife returning to Howe Sound. Howe Sound is beginning to rejuvenate after years of pollution. Orca whales, dolphin and herring are just a few of the examples of wildlife returning to Howe Sound.	Seawater Cooling	<p>Woodfibre LNG Limited acknowledges community concerns about the potential effects of the Project on the waters, and marine and plant life in Howe Sound and is committed to a Project that includes environmental stewardship.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the <i>Fisheries Act</i>. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammal information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
939(iv)	March 22, 2015	Personal Information Withheld	Another point is the glass sponge reefs that are extremely rare and sometimes referred to as marine dinosaurs. The glass sponge reefs are extremely delicate and require further study to determine what effect the proposed Woodfibre LNG facility would have on their survival. I would expect a detailed study on the impact such a facility would have on all of the marine and aquatic life before it should be given any consideration.	Glass Sponge Reefs	<p>Glass sponges are addressed in both the Application document (Section 5.16.2.4.1) and Marine Baseline Studies Report (Appendix 5.10).</p> <p>Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation.</p> <p>The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface.</p> <p>The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. At depths ranging between 20 m and 40 m (i.e., associated depths where glass sponge reefs have been observed at these locations), the velocity produced by a propeller wash is considered negligible due to dissipation of the prop-wash with distance from sailing line.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p>	

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939(v)	March 22, 2015	Personal Information Withheld	I would also expect a detailed study on the impact of air quality for the citizens of Squamish who are extremely concerned about the possible negative implications on our health and our quality of life.	Effects of the Project on Air Quality, Human Health	<p>The Woodfibre LNG Project will be powered by electricity from BC Hydro. By powering the plant with electricity, instead of natural gas, Woodfibre LNG will reduce its greenhouse gas emissions by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.</p> <p>Estimated emissions in tonnes per year for the LNG plant powered by electric drive vs. the plant powered by gas turbines:</p> <table><tr><th></th><th>Electric Drive</th><th>Gas Turbine</th></tr><tr><td>GHG</td><td>80,000</td><td>450,000</td></tr><tr><td>NOx</td><td>20</td><td>310</td></tr><tr><td>SOx</td><td>17</td><td>17</td></tr></table> <p>The majority of Woodfibre LNG air emissions will come from elements removed from the natural gas prior to liquefaction, which are incinerated.</p> <p>As part of Woodfibre LNG's Environmental Assessment Certificate Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — were undertaken to predict air emissions from the Project operation phase. Baseline air quality data from Langdale, Squamish, and Horseshoe Bay were used in the model. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria.</p> <p>Woodfibre LNG Limited expects that monitoring of plant air emissions will be required as part of the waste discharge permit under section 14 of the <i>Environmental Management Act</i>.</p> <p>At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is well below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act.</p> <p>Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The purpose of the human health risk assessment (HHRA) is to quantify the potential health risks to people from the baseline case (present-day) and application case (predicted using modelling) environmental quality in the Project area, and to determine any effects resulting from the Project. The Application concluded that there were no Project-related significant adverse effects to human health.</p> <p>Please also refer to the Air Quality information sheet that has been prepared as part of the Woodfibre LNG response to public comments.</p>		Electric Drive	Gas Turbine	GHG	80,000	450,000	NOx	20	310	SOx	17	17	
	Electric Drive	Gas Turbine																
GHG	80,000	450,000																
NOx	20	310																
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939(vi)	March 22, 2015	Personal Information Withheld	Also the impacts of property value for those citizens who moved to Squamish and called it their home because of the positive direction the community is headed, with a focus on tourism and outdoor recreation, versus short sighted focus on industry and not long term outlook on health of citizens and preservation of the environment and marine, aquatic and wildlife that call Howe Sound home. I am opposed to Woodfibre LNG for all of these reasons.	Sustainable Economy Effects of the Project on Property Values	<p>Woodfibre LNG Limited is of the view that tourism and industry can work together to create responsible economic development in Squamish.</p> <p>An assessment of the potential effects of the Project on local businesses is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy.</p> <p>The Project site is accessible by water only, and there are no permanent residences or private property adjacent to or within several kilometres of the Project site. Real Estate Value was not selected as a valued component as the Project site is zoned for industrial use and a change of land use designation and zoning is not required.</p> <p>Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG response to public comments.</p>	
940(i)	March 22, 2015	Personal Information Withheld - North Vancouver, British Columbia	I am opposed to the Woodfibre LNG application due to the narrow width of Howe Sound,	Narrow channel	<p>Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL.</p> <p>TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel. The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres to be a narrow channel.</p> <p>The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2 km or 17,060 feet with nearest distance, to Darrell Bay, being 2.7 km or 8858 feet and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet.</p> <p>Subject to the recommendations of Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 metres on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p>	

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					Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site. Please also refer to the Marine Transport information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	
940(i)	March 22, 2015	Personal Information Withheld - North Vancouver, British Columbia	the outdated cooling methods,	Seawater Cooling	<p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the <i>Fisheries Act</i>. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammal Information Sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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940(iii)	March 22, 2015	Personal Information Withheld - North Vancouver, British Columbia	the air pollution and greenhouse gas emmisiions.	GHG Emissions Air Quality	<p>Woodfibre LNG Limited is of the opinion that natural gas – the cleanest burning fossil fuel – is the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG plans to sell our product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year, equates to taking 557,000 cars off the roads.</p> <p>Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.</p> <p>The Woodfibre LNG Project will be powered by electricity provided by BC Hydro. By powering the plant with electricity, instead of natural gas, greenhouse gas emissions will be reduced by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.</p> <p>Woodfibre LNG undertook air dispersion modelling based on planned activities and equipment use — including marine vessels — to predict air emissions from the Project operation phase. The results of the dispersion modelling were compared against federal and provincial standards and guidelines; and all predicted concentrations were below these standards and guidelines.</p> <p>Woodfibre LNG characterized current climate and climate trends using the Squamish Airport climate station. At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act.</p> <p>For more information, please see:</p> <ul style="list-style-type: none">• Section 9.2.2 Human Health Risk Assessment includes an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects.• Section 5.2 Atmospheric Environment (Air Quality) of the Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant. <p>Please also refer to Air Quality information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
941	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>February 11, 2008: Teekay Corp. LNG Tanker Catalunya Spirit Adrift Off Cape Cod Needs Rescue Coast Guard and tugboat crews rescued a liquefied natural gas tanker crippled off Cape Cod after many hours of drifting at sea at the mercy of powerful winds and high waves. Just 5-years-old, the fully laden LNG carrier was corraled by four tugboats about 25 miles east of Provincetown. Apparently, about 3 a.m. Monday its propulsion system shut down because of a computer malfunction according to the Coast Guard. The 933-foot Spanish-flagged LNG tanker Catalunya Spirit was heading from Trinidad to the LNG facility in Everett. 2/15/08 After several days of troubleshooting, repair specialists determined a malfunctioning boiler feed pump, which supplies water to the main propulsion boilers, caused the Catalunya Spirit's loss of power and propulsion. Captain of the Port of Boston reviewed and approved the final repair certification presented by Lloyd's Register and Teekay Corporation. The LNG delivery through Boston Harbor was cancelled.</p> <p>Coast Guard vessels and aircraft were assisting a liquefied natural gas tanker adrift 35 miles off Cape Cod on Monday after the mammoth vessel lost power on its way into Boston Harbor.</p> <p>http://www.professionalmariner.com/February-2008/LNG-tanker-adrift-off-Cape-Cod-after-losing-propulsion/</p> <p>Question: It is my understanding that LNG tankers being 100' high approximately have a great problem with wind. If caught either berthing or turning before berthing and the wind gusts up to 70mph with surging waters what is the plan? Please don't bother with the oft repeated...professionals will design the facility and will be in operation of the tankers etc.</p>	Effects of the Environment on the Project Accidents and Malfunctions	<p>Thank you for your question.</p> <p>LNG carriers transiting Howe Sound to and from the Woodfibre LNG terminal will be escorted by at least three powerful tugs, two at the stern (one tethered at all times) and one running ahead.</p> <p>Fast time mission simulations have shown that these powerful tugs can effectively manage the LNG carrier safely during transit, in the unlikely event of an engine breakdown with the rudder locked in hard over condition. These simulation studies will be reflected in the Woodfibre TERMPOL submission as mitigation measures to avoid incidents such as referenced in the question. As part of the risk assessment within TERMPOL, fast time mission simulations of these manoeuvres have been conducted in high wind and adverse weather conditions to determine if additional mitigations or equipment are required to conduct such operations safely.</p> <p>Similar fast time mission simulations will be undertaken specific to the Project by the Pilots, tugs and LNG carrier at a simulation center to ensure results generated from the fast time simulations are accurate and sufficient tugs are available to safely manage the LNG carrier in event of an engine breakdown.</p>	
942	March 22, 2015	Personal Information Withheld - Howe Sound, British Columbia	<p>Hello,</p> <p>It appears Woodfibre has far bigger LNG export plans than they are admitting to.</p> <p>The evidence is from the size of what Woodfibre LNG is doing that they are not mentioning in the Environmental Assessment (EA):</p> <ul style="list-style-type: none"> -6x larger Hydro installation than needed, -new natural gas pipeline with only a piece missing to enlarge WFLNG supply by 6x -much larger compressor station upgrades than needed for capacity discussed in EA <p>Here is a little detail if you want:</p> <ol style="list-style-type: none"> 1. Hydro upgrade: The Hydro upgrade, built soon for Woodfibre LNG (WFLNG), will give WFLNG about 6x more power than it needs for present plans (happy to send info). 	Pipeline	<p>Thank you for the comment.</p> <p>The Woodfibre LNG Project is licensed to export approximately 2.1 million tonnes of liquefied natural gas (LNG) per year for 25 years. Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. Woodfibre LNG requires approximately 140-150MW of power under normal operating conditions and up to 185MW under peak loading. Woodfibre LNG has communicated this requirement to BC Hydro who in turn has independently assessed the upgrade requirements for the above requirements and 100% redundancy in order to have the expected reliability of the transmission line supply power to the Woodfibre facility.</p> <p>Woodfibre LNG has requested a certain amount of gas from Fortis BC to export up to 2.1MTPA as approved in Woodfibre export licence. Fortis BC has in turn reviewed the engineering of their gas transmission network and derived the required compression to supply this volume of gas to the Woodfibre facility.</p>	<p>Under the <i>BC Environmental Assessment Act</i> (the Act) a certified project must be constructed and operated in accordance with its Certified Project Description. An amendment under the Act would be required in order to construct or operate a certified project, which would deviate from its Certified Project Description.</p> <p>For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].</p>

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			<p>2. New natural gas pipeline: To export LNG, WFLNG needs more natural gas than the old WF pulp mill received. A 24" natural gas pipe starting north of Indian Arm (where new pipe will join the old one) and going to WFLNG is proposed. This is an odd patched together setup, with the new pipe starting out in the middle of nowhere. The 24" pipe will serve only WFLNG. See attached: "Fortis new pipeline for Woodfibre" red =new 24" pipeline, green = old pipeline. The plan does not make sense unless they are planning to add the missing section to complete a six times increase in capacity.</p> <p>If the 24" pipe went from Coquitlam to WFLNG, WFLNG would receive 6x the natural gas presently planned.</p> <p>For the map oriented: A possible route to complete the 24" pipe (Coquitlam to WFLNG), is along Indian Arm. In 1989, 6 routes for the present/old pipe between Coquitlam and Squamish were investigated. The eventual route along Coquitlam Lake (provides Vancouver with drinking water) was very contentious. See attached: "Investigation of pipeline routes 1989" The map of the 6 different routes studied is on pg 5 of the report. 3 routes were assessed re cost.</p> <p>3. Compressor station upgrades: Natural gas is moved through pipelines via compressor stations. The Fortis pipeline upgrade includes significant compressor station upgrades in 3 locations, far more power than needed for the natural gas movement presently planned (happy to send info).</p> <p>Conclusion:</p> <p>If the new 24" natural gas pipe goes from Coquitlam to WFLNG, WFLNG will receive enough natural gas to expand the LNG plant 6x. This would mean one LNG tanker going north by Bowyer each day, and another going south. Recently, expansions have been done without much additional scrutiny by the BC Environmental Assessment Office (Tilbury LNG, Ht Hayes LNG, Port Metro coal exports). 6x WFLNG expansion would greatly increase wave impacts on Bowyer beaches, and vastly increase all of the public safety and environmental impacts (already distasteful) beyond what WFLNG has said in the EA.</p>			

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943	March 22, 2015	linda zafouk butler - Brackendale, British Columbia	I do not support the Woodfibre LNG Project. I do support Mother Nature and the protection of the environment. As a recent resident to Squamish from Eastern Canada, where there are also environmental issues, I was surprised that British Columbia would endorse such a project in Howe Sound. We have used and abused the gifts from the Earth in a disrespectful manner and it is slowly turning against us. Our relationship with nature should and could be symbiotic however we are overstepping the boundaries with projects of this nature. I do not support greed. I do support bartering with nature, however, we are taking more than giving in return. What can the future generations look forward to?? Mother Nature Earth is the best bank if we take care of it..NO to the LNG Project	LNG Project	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	
944	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	September 17, 2005: India, Winds just over a mere 40 knots led to an accident at Petronet LNG Ltd's terminal at Dahej when the tug boats of LNG carrier "Disha" hit Dolphin Piles of the jetty. The LNG ship was casting off after unloading the cargo. Petronet LNG Ltd's is evaluating the extent of damage. Mishap at Dahej LNG unit, supply hit Question: This could be a scene at the Woodfibre plant so how would it be handled?	Effects of Wind	<p>LNG carriers transiting Howe Sound to and from the Woodfibre LNG terminal will be escorted by at least three powerful tugs, two at the stern (one tethered at all times) and one running ahead.</p> <p>Fast time mission simulations have shown that these powerful tugs can effectively manage the LNG carrier safely during her transit, in the unlikely event of an engine breakdown with the rudder locked in hard over condition. These simulation studies will be reflected in the Woodfibre TERMPOL submission as mitigation measures to avoid incidents such as referenced in the question. Similar fast time mission simulations will be undertaken specific to the Project by the Pilots, tugs and LNG carrier at a simulation center to ensure results generated from the fast time simulations are accurate and sufficient tugs are available to safely manage the LNG carrier in event of an engine breakdown.</p>	

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945	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>Norway, September 20, 2004. LNG tanker adrift north of Bergen. A fully loaded LNG tanker with a crew of 14 was adrift west of Fedje, on the west coast of Norway, north of Bergen. The ship's engines had stopped, and the anchors were useless in the stormy weather. Tug boats couldn't get the tanker under tow until the ship was only 30 yards from hitting rocks. There was strong wind and bad weather conditions in the area, and preparations were made to evacuate the 800 persons living on the island of Fedje, for fear that the tanker would explode if it grounded, NRK reports. http://timriley.com/LNG.htm</p> <p>Question: We are always told the nothing will stop the safe transit of an LNG tanker in Howe Sound. There are evidenced by many recorded incidents and accidents, many different unforeseen things that can go wrong. As long as the highest industry standards are followed the safe record for the industry will no doubt proceed but if not, if owners cut corners with willing politicians to cut regulations for them (as appears to be happening) then the story will be very different with high consequences that will impact public and property safety. Would the "decision makers" in this approval process place their safety in the hands of the owner of the W LNG project? They should keep that in mind when making this decision.</p>	Safety	<p>Thank you for your question.</p> <p>LNG carriers transiting Howe Sound to and from the Woodfibre LNG terminal will be escorted by at least three powerful tugs, two at the stern (one tethered at all times) and one running ahead.</p> <p>Fast time mission simulations have shown that these powerful tugs can effectively manage the LNG carrier safely during her transit, in the unlikely event of an engine breakdown with the rudder locked in hard over condition. These simulation studies will be reflected in the Woodfibre TERMPOL submission as mitigation measures to avoid incidents such as referenced in the question. Similar fast time mission simulations will be undertaken specific to the Project by the Pilots, tugs and LNG carrier at a simulation center to ensure results generated from the fast time simulations are accurate and sufficient tugs are available to safely manage the LNG carrier in event of an engine breakdown. Real time simulations also allow the Pilots and tugs to develop sufficient knowledge and practice in the handling of these LNG carriers under various scenarios.</p>	
946(i)	March 22, 2015	Lorna Murphy - Furry Creek, British Columbia	<p>We are presently experiencing a paradigm shift from dependence on fossil fuels to a greater focus on use of renewable resources/greener technologies. Change is difficult and never more so that while in the thick of it. But let us take this as a challenge and a rallying cry to do what is best for our Sound and for generations of human and wildlife to come. The decisions we face today have far reaching implications for the future.</p> <p>While the community is anxious for the jobs and increased tax revenue promised, we must also look at the cost to this & future generations through the degradation of our health, our environment, our water quality and our aquatic life.</p>	Justification of the Project	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	

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946(ii)	March 22, 2015	Lorna Murphy - Furry Creek, British Columbia	This LNG export terminal is purported to be one of the cleanest running LNG plants yet to be build but once up and running it is going to produce its share of air pollution that will travel up and down Howe Sound, affecting all in its path.	Air Quality	<p>The Woodfibre LNG Project will be powered by electricity provided by BC Hydro. By powering the plant with electricity, instead of natural gas, greenhouse gas emissions will be reduced by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.</p> <p>Woodfibre LNG undertook air dispersion modelling based on planned activities and equipment use — including marine vessels — to predict air emissions from the Project operation phase. The results of the dispersion modelling were compared against federal and provincial standards and guidelines; and all predicted concentrations were below these standards and guidelines.</p> <p>Woodfibre LNG characterized current climate and climate trends using the Squamish Airport climate station. At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act.</p> <p>For more information, please see:</p> <ul style="list-style-type: none">• Section 9.2.2 Human Health Risk Assessment includes an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects.• Section 5.2 Atmospheric Environment (Air Quality) of the Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant. <p>Please also refer to Air Quality information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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946(iii)	March 22, 2015	Lorna Murphy - Furry Creek, British Columbia	<p>There are too many unknowns about this proposal and we need to take the time to study it carefully. We need to have a strategic plan for the management of Howe Sound that is inclusive of all the districts, and communities that border it. This is not one issue but the tip of the iceberg.</p> <p>We are being asked to put our faith in the lawmakers, regulators, politicians and senior company executives that they know what they are doing and all will be well. I may be called cynical, but politicians are only interested in what is expedient in getting them re-elected, company executives are on a career fast track and those in place today will most likely be someplace else in five years' time. They will have been recruited to other senior management level positions for other companies, especially if they become the poster child for LNG!</p> <p>I simply cannot believe that this project is good for Howe Sound. I believe that it will have a negative impact on the balance of nature in Howe Sound. We have only to look at Mt Polley, Lac Megantic, Prince William Sound in Alaska [Exxon Valdez] and the BC Ferry 'Queen of the North' sinking to know that despite assurances to the contrary bad things happen. All of these environmental disasters were never going to happen and I am sure there were plenty of assurances given by the governments and regulators that the highest standards and strictest regulations were being followed and adhered to.</p> <p>We can not afford to take this risk. It is not worth it on any level!</p>	Regulatory Requirements	<p>Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC.</p> <p>The Project will also require a Facility Permit from the OGC as well as numerous other environmental permits. The construction and operation of the Project will be regulated by the OGC and the BC Safety Authority and Woodfibre LNG Limited anticipates that the appropriate government agencies will inspect the facility as required.</p> <p>Should an Environmental Assessment Certificate be granted for the Project, a Table of Conditions will be developed that outlines all of the requirements with which the Project will have to comply. Woodfibre LNG Limited will be legally responsible for ensuring all conditions are met.</p>	

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947	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>2014: Angola LNG shuts down until 2015 for major re-build.</p> <p>The troubled Angola LNG project looks likely to be out of action until the middle of 2015 while the owners and EPC contractor Bechtel conduct inspections and correction work to substantial portions of the plant. The news comes in the wake of an accident in April which led to a release of hydrocarbon vapour from a ruptured pipe.</p> <p>The \$10 billion, 5.2 mtpa project – which came on stream in the middle of last year, eighteen months late – has been plagued by a string of accidents and engineering failures. These have included electrical fires, pipe ruptures and the capsizing of a drilling rig.</p> <p>http://www.gastechnews.com/lng/angola-lng-shuts-down-until-2015-for-major-re-build/</p> <p>Question: Who will carry the liability for the WLNG sole owned project in the face of a similar fate as this facility? The offshore Woodfibre Export Pte Ltd. owns the gas , export license and apparently organizes the tankers. Should anything go wrong there will be lawsuits all over the place but who will they sue? A number company owning one ship? An off-shore registered company? A local company that perhaps owns nothing? Just like with so many oil pipelines and natural gas pipeline accidents there is no one who takes real responsibility except the taxpayer.</p>	Liability	<p>Both Woodfibre LNG Limited and the LNG carriers will carry appropriate levels of insurance, including coverage for any accidents, potential spills or discharge of pollutants, both marine and on-land.</p> <p>Every vessel that is employed for Woodfibre LNG Limited will carry compulsory insurance for \$1 billion under the Civil Liability Convention (CLC) for oil pollution.</p> <p>In event of a pollution event, and after all reasonable steps have been taken to recover payment of compensation from the owner of the ship or if the owner of the ship is not liable by reason of any of the defenses described in subsection 77(3), Article III of the Civil Liability Convention or Article 3 of the Bunkers Convention, and neither the International Fund or the Supplementary Fund are liable or in the event the claim exceeds the owners maximum liability under the CLC Convention the liability will be covered by the Canadian Ship-source Oil Pollution Fund.</p> <p>Every vessel destined to a Canadian Port will hold a valid contractual arrangement with the Western Canada Marine Response Corporation under the Canada Shipping Act 2001 Part I – Pollution Prevention and Response.</p>	

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948	March 22, 2015	John Robb - Lions Bay, British Columbia	I am not anti-development in Howe Sound. But I am strongly against this project for a host of reasons, most specifically because the risk to the marine environment is simply too great, both in the immediate area of the site, and from tanker traffic. We have just got regular herring spawning again which is altering the food chain back into something that resembles a pre-development state; and the significant likelihood of ecological damage to glass sponges - communities that we can never get back once lost - is inconceivable. Please do not approve this project.	Effects of the Project on Marine Life	<p>Thank you for your comment.</p> <p>Woodfibre LNG Limited is committed to building a project that is right for Squamish and right for BC — that includes protecting the waters of Howe Sound.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the <i>Fisheries Act</i>. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>The effects of the Project on marine water quality is assessed in Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16, including glass sponge reefs), Forage Fish and Other Fish (Marine) (Section 5.18, including herring) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System and Marine Mammals information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
949	March 22, 2015	fred - Squamish, British Columbia	The fish are back in the Howe Sound , why poluting again, NO LNG, NO FRACKING... We have to stop before its to late , if its not to late.	LNG Industry Hydraulic Fracturing	<p>Thank you for the comment.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. As a condition of acquiring the site, Woodfibre LNG required the completion of remediation work on site. On December 22, 2014 the Ministry of Environment issued two Certificates of Compliance (uplands and water lot) evidencing completion of the remediation.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and ecosystem restoration in the Project area once the property sale is complete. Plans for additional remediation include the removal of approximately 3000 existing creosote-coated piles from the waterfront in the</p>	

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					<p>Project area, the creation of a Green Zone around Mill Creek, and the containment and closure of the on-site landfill. This work will be carried out in partnership with the local Streamkeepers Society and other relevant groups, where suitable so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p> <p>Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project.</p> <p>Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system.</p> <p>Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site.</p> <p>Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.</p>	
950	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	I am supportive of the WLNG project proceeding following the existing process. It is land that is zoned for industrial activities and I believe the project is proceeding in an environmentally proactive manner. Industry is a requirement for our society to exist and as long as it is done responsibly it will provide great benefit to our community and others.	Support for the Project	Thank you, your comment is noted.	

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951(i)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	I am concerned about possible negative environmental impacts of the proposed LNG project. I believe that with the recent return of a host of sea life to Squamish, nothing should be done to compromise this.	Effects of the Project on the Marine Environment	<p>Thank you for the comment.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. As a condition of acquiring the site, Woodfibre LNG required the completion of remediation work on site. On December 22, 2014 the Ministry of Environment issued two Certificates of Compliance (uplands and water lot) evidencing completion of the remediation.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and ecosystem restoration in the Project area once the property sale is complete. Plans for additional remediation include the removal of approximately 3000 existing creosote-coated piles from the waterfront in the Project area, the creation of a Green Zone around Mill Creek, and the containment and closure of the on-site landfill. This work will be carried out in partnership with the local Streamkeepers Society and other relevant groups, where suitable so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the <i>Fisheries Act</i>. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p>	

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951(ii)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>Further, I think it was unjustified to not include the discussion of fracking in the Squamish committee that was out together to discuss whether Squamish should approve this project.</p> <p>I think Canada needs to be moving away from environmentally destructive practice such as fracking, because I think the entire model of constant growth, upon which Western society is built is unsustainable. Why not start this shift now. It might already be too late, but we should try.</p>	Hydraulic Fracturing	<p>Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project.</p> <p>Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system.</p> <p>Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site.</p> <p>Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.</p>	
952(i)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>Several Species at Risk Act (SARA) listed species were identified in the January 2015 report as occurring (or potentially occurring) within the project footprint. Some SARA species have 'critical habitat' identified within their SARA recovery documents. The report does not clearly identify whether legally identified SARA critical habitats occur within or adjacent to project footprint. If SARA critical habitats may be impacted by the project, how will the proponent ensure that the SARA requirement for 'no critical habitat destruction' be met, and how will impacts monitored over the long term?</p>	Species at Risk	<p>Woodfibre LNG acknowledges that two SARA-listed Species at Risk have potential to be present in the Project area: northern goshawk and marbled murrelet. Federally designated critical habitat for northern goshawk has not been identified within the Project footprint. The closest federally identified critical habitat for this species is greater than 30 km from the Project footprint, and will not be affected by Project-related activities. Therefore, no critical habitat destruction as defined under SARA will occur to northern goshawk as a result of the Project.</p> <p>Marbled murrelet critical habitat has been designated by Environment Canada based on identification through modeling and Woodfibre LNG recognizes that some areas of mapped critical habitat overlap the Project area. These areas were investigated in the field in November 2014 following provincial standards for aerial assessment of marbled murrelet habitat. This field based investigation found that the modelled critical habitat does not contain forest characteristics typical of suitable marbled murrelet nesting habitat (see Appendix 5.1-1 Attachment 2 in the Application).</p> <p>There are no anticipated effects to marbled murrelet terrestrial breeding habitats. However, Woodfibre LNG acknowledges that there is potential for Project components to affect marbled murrelet movements between foraging and breeding habitat as a result of noise and light. In order to provide a more informed understanding of marbled murrelet movement corridors, Woodfibre LNG has committed to undertake radar counts as part of the pre- and post-construction surveys that will be completed for the Marine Bird Management Plan (M5.17-8), beginning in June 2015.</p>	
952(ii)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>How will the water removal/ diversion plan from the creeks in or near the project area minimize the effects of low summer creek flow on resident freshwater fish species?</p>	Effects of the Project on Freshwater Fish	<p>Woodfibre LNG Limited has committed to maintaining minimum instream flow releases, which will be determined by a qualified professional. This means that the water licence could not be used to capacity during low flows, and flows that are protective of fish and fish habitat will remain in Mill Creek.</p>	

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952(iii)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	How will the proponent monitor and minimize effects to glass sponge reefs in Howe Sound?	Glass Sponge Reefs	<p>Glass sponges are addressed in both the Application document (Section 5.16.2.4.1) and Marine Baseline Studies Report (Appendix 5.10).</p> <p>Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation.</p> <p>The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface.</p> <p>The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. At depths ranging between 20 m and 40 m (i.e., associated depths where glass sponge reefs have been observed at these locations), the velocity produced by a propeller wash is considered negligible due to dissipation of the prop-wash with distance from sailing line.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p>	
952(iv)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	Table 22-1. Actions M5. 10-1, M5. 17-10 - do not include management plans/ work stoppages in the event marine mammals are in or near the work area.	Mitigation Measures for Marine Mammals	Please refer to M5.19-2 Marine Mammals Management Plan for mitigation measures specific to marine mammals.	

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952(v)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	Management actions for mitigating 'visual quality' impacts will not be able to mitigate the impact as viewed from the Sea to Sky Gondola (or other elevated viewpoints). This 'visual quality' impacts of the project does not align with other local government efforts (e.g. 'outdoor recreational capital') in the Sea to Sky Corridor.	Visual Impacts	<p>The Project's visual effects are expected to be minor given their scale and the historical and current level of human-related disturbance within the regional assessment area.</p> <p>Woodfibre LNG is designing the facility to reduce the size of the disturbed area and to blend it into the environment as much as possible.</p> <p>Mitigation measures have been developed to avoid, minimize, restore onsite or offset the potential adverse effects of the Project. Mitigation measures that would be implemented to reduce the visibility of the facility would include the following:</p> <ul style="list-style-type: none">• reducing the level of contrast of buildings by using external surface finishing that has low glare and natural colours• monitoring and maintaining natural screening to ensure minimal visibility of infrastructure• providing additional screening of land-based infrastructure through temporary or permanent plantings where possible and safe to do so <p>For more information, please see Section 7.5 Visual Quality of the Application, which includes an assessment of the potential effects of the Project on the viewscape, including from the Sea-to-Sky Gondola. Woodfibre LNG has consulted directly with representatives of the Sea-to-Sky Gondola to address concerns associated with that viewscape and to consider potential mitigation measures.</p>	
952(vi)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	After the closures of the Britannia Mine and Woodfibre mill, ecological restoration efforts were undertaken. The results of those are now being seen in the ecological recovery of the Howe Sound area. I remain concerned that the cumulative effects of this project have the potential to reverse those multi-year efforts.	Recovery of Howe Sound	<p>The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound.</p> <p>The Woodfibre site has been used for industrial purposes for 100 years and is zoned for this use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p>	

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					A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.													
952(vii)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	Lastly, the consultation time period did not allow enough time to adequately review the very large volume of documentation provided under "Application and Supporting Studies" (Jan and Feb 2014).	EA Review	At the request of Woodfibre LNG Limited, the EAO extended the public comment period from 46 days to 60 days, ending on March 23, 2015.	For more information related to comments on the Environmental Assessment process please see “EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015” under the Application Review EAO Generated Documents [Link] .												
953	March 22, 2015	Iorraine Lewin - Squamish, British Columbia	Concerned about health issues. Healthy environment of Howe Sound waters and human health a concern for me.	Effects of the Project on Health	<div><div>Thank you for your comments.</div><div>The Woodfibre LNG Project will be powered by electricity from BC Hydro. By powering the plant with electricity, instead of natural gas, Woodfibre LNG will reduce its greenhouse gas emissions by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.</div><div>Estimated emissions in tonnes per year for the LNG plant powered by electric drive vs. the plant powered by gas turbines:</div><table><tr><th></th><th>Electric Drive</th><th>Gas Turbine</th></tr><tr><td>GHG</td><td>80,000</td><td>450,000</td></tr><tr><td>NOx</td><td>20</td><td>310</td></tr><tr><td>SOx</td><td>17</td><td>17</td></tr></table><div>The majority of Woodfibre LNG air emissions will come from elements removed from the natural gas prior to liquefaction, which are incinerated.</div><div>As part of Woodfibre LNG's Environmental Assessment Certificate Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — were undertaken to predict air emissions from the Project operation phase. Baseline air quality data from Langdale, Squamish, and Horseshoe Bay were used in the model. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria.</div><div>Woodfibre LNG Limited expects that monitoring of plant air emissions will be required as part of the waste discharge permit under section 14 of the <i>Environmental Management Act</i>.</div><div>At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is well below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act.</div></div>		Electric Drive	Gas Turbine	GHG	80,000	450,000	NOx	20	310	SOx	17	17	
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					<p>Section 9.2.2 Human Health Risk Assessment included an assessment of the potential effects on humans by Project-related emissions. The purpose of the human health risk assessment (HHRA) is to quantify the potential health risks to people from the baseline case (present-day) and application case (predicted using modelling) environmental quality in the Project area, and to determine any effects resulting from the Project. The Application concluded that there were no Project-related significant adverse effects to human health.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	
954(i)	March 22, 2015	Personal Information Withheld - West Vancouver, British Columbia	This project should not get an Environmental Assessment Certificate. It is a project proposed in absolutely the wrong place. Howe Sound is a people intensive area with very narrow channels and passage ways.	Narrow Channel	<p>Thank you for your comments.</p> <p>At Woodfibre LNG, safety is the number one priority.</p> <p>Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL.</p> <p>TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel. The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres to be a narrow channel.</p> <p>The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2 km or 17,060 feet with nearest distance, to Darrell Bay, being 2.7 km or 8858 feet and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet.</p> <p>Subject to the recommendations of Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend</p>	

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					<p>up to 50 metres on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site.</p> <p>Please also refer to the Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
954(ii)	March 22, 2015	Personal Information Withheld - West Vancouver, British Columbia	It is also becoming one of the outdoor recreation hotspots in Canada. i.e. Squamish billing itself as the "Outdoor Capital" of Canada.	Effect of the Project on Outdoor Recreation	<p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example.</p> <p>An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p> <p>Please also refer to the Marine Recreation information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
954(iii)	March 22, 2015	Personal Information Withheld - West Vancouver, British Columbia	When you overlay this with an LNG project that negatively impacts air quality, ocean water quality and brings concerns about wave size, vessel size and the escape zone (fire risk) around the shipping vessel there are enough unresolvable issues to put this initiative to permanent rest.	Air Quality Marine Water Quality Shipping	<p>Section 5.2 Atmospheric Environment (Air Quality) of the Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the <i>Fisheries Act</i>. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required</p>	

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					<p>to comply with all requirements as outlined in the permit.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>As part of the Application, a Vessel Wake Assessment was carried out by Moffatt & Nichol. Moffatt & Nichol is a leading global infrastructure advisor with a BC presence specializing in the planning and design of facilities that shape coastlines, harbours and rivers, as well as an innovator in the planning for transportation complexities associated with the movement of freight.</p> <p>The vessel wake assessment estimated that the wake generated by the carriers in normal conditions would be less than 10 centimetres at 50 metres away from the LNG carrier, which is less than the wind-generated waves typically encountered in Howe Sound. In addition, it identified that any wake generated by a LNG carrier along the shipping route would diminish in size the further it traveled away from an LNG carrier, and would be unnoticeable at the shoreline, given the natural occurrence of typical wind-generated waves in Howe Sound.</p> <p>Indirect wake effects from shipping activities were considered in the assessment (Section 7.3.3.2.1 Potential Interactions) and, based on the analysis by Moffatt & Nichol, the potential wake effects were determined to be negligible (i.e., they would not have a measurable change).</p> <p>For more information on the Vessel Wake Assessment, please see Appendix 7.3-2 of the Application. Additional information on the vessel wakes was provided to the EAO on April 23, 2015.</p> <p>The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System, Air Quality, Marine Transport and Public Safety</p>	

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					information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	

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955	March 22, 2015	Laurie Parkinson - Bowyer Island, Howe Sound, British Columbia	<p>Marine Water Quality Federal Fisheries Act Pg 5.10-2</p> <p>First bullet point: "Federal Fisheries Act prohibits any work, undertaking, or activity that results in serious harm to fish that are part of a commercial, recreational, or aboriginal fishery, or to fish that support such a fishery."</p> <p>The once through cooling system will harm fish (babies and adults) plus larvae of intertidal organisms, as is mentioned on pg 5.15-26 and in Marine Mammals, Table 5.19-9 Operational Phase pg 5.19-26 under "pre-treatment and liquefaction of natural gas at the LNG facility". Little tax revenue will come from this plant and the profits will go overseas. 100 long term jobs are promised.</p> <p>Why is once through cooling allowed when it will reduce the quantity of all fish, and kill the bottom of the food chain (pg 5.16-26 just above bullet points)?</p>	Seawater Cooling System	<p>Thank you for your question.</p> <p>The text on page 5.16-26 is as follows "<i>Without mitigation measures to minimize the effects of impingement and entrainment, adverse effects on marine benthic habitat will occur. Mortality rates due to impingement and entrainment vary by species and are difficult to quantify. For the purposes of this assessment it is assumed that mortality rates of organisms that become impinged or entrained will equal 100%.</i>" The rationale for this assumption is to ensure a conservative estimate in the assessment of the effect on marine benthic habitat, conducted in the absence of mitigation measures.</p> <p>The following design measures are recommended to mitigate effects associated with entrainment or impingement (See Section 5.16.3.2.4 (Marine Benthic Habitat)):</p> <ul style="list-style-type: none">• <i>The intake will be located in deep water (greater than 25-m depth), below the photic zone; consequently, effects to marine vegetation (macroalgae) are not likely.</i>• <i>The intake will be located 2 m above the seafloor to reduce the potential for entrainment or impingement of benthic fauna.</i>• <i>The intake will contain a screen with mesh size no larger than 4.75 mm to prevent entrainment of adult and juvenile benthic invertebrates.</i>• <i>The intake will contain a maximum approaching velocity of 3.0 cm/s for a stationary screen or 12.0 cm/s for a self-cleaning screen.</i>• <i>The intake screen will contain a minimum of 50% open screen area as a percentage of the total screen area to maintain average through-screen velocity.</i> <p><i>The intake will be sited away from subtidal rock reefs containing significant abundances of macrophytes that provide nursery habitat for juvenile fish and benthic invertebrates. Entrainment of plankton and larvae will potentially occur as a result of the water intake demands for the LNG cooling process. The implementation of mitigation and environmental design features will further reduce entrainment and impingement associated with the intake. As a result, measurable changes in the distribution of native marine species relative to baseline conditions are not likely.</i></p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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956	March 22, 2015	Laurie Parkinson - Bowyer Island, Howe Sound, British Columbia	<p>WF EA pg 5.10-2 Re Marine Water Quality Federal Fisheries Act Second bullet point: Federal Fisheries act Section 36 – prohibits the deposit of a deleterious substance in waters frequented by fish – chlorine. Chlorine is damaging to sensitive tissues such as fish gills – they produce mucous. They are in the water all the time. And chlorination of ocean water produces toxic bromoamines and organobromines, due to the interaction between naturally occurring Bromine and Chlorine. What leads DFO to allow chlorination of ocean water, especially when this plant will bring almost no taxes to BC or Canada and the profits will go overseas to Singapore (only 100 long term jobs will be gained)?</p>	Effects of the Project on Marine Water Quality	<p>Thank you for your question.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the <i>Fisheries Act</i>. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L.</p> <p>Please refer to Section 2.2.6.2.10 Seawater Cooling System: Hypochlorite will be produced on site in a modular electro chlorination process using seawater as the feed stock. The hypochlorite strength will be less than 1% as active chlorine. Prior to discharge, the seawater will pass through a de-aeration tank and, if required, a de-chlorination agent will be added to the water. Studies are currently underway regarding to determine the appropriate system, the optimal dosing, and the dosing regimen (i.e., continuous vs. shock treatment). The concentration of residual chlorine at the edge of the initial dilution zone will be below the Canadian Water Quality Guideline of 0.5µg/L (CCME n.d.). The concentration of residual chlorine within the initial dilution zone cannot be acutely toxic and therefore must be 0.02 mg/L or less.</p>	
957(i)	March 22, 2015	Dennis Perry - West Vancouver, British Columbia	<p>This project should not get an Environmental Assessment Certificate. It is a project proposed in absolutely the wrong place. Howe Sound is a people intensive area with very narrow channels and passage ways.</p>	Narrow Channel	<p>Thank you for your comments.</p> <p>At Woodfibre LNG, safety is the number one priority.</p> <p>Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL.</p> <p>TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel. The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres to be a narrow channel.</p> <p>The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2 km or 17,060 feet with nearest distance, to Darrell Bay, being 2.7 km or 8858 feet and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet.</p> <p>Subject to the recommendations of Transport Canada's Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC</p>	

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					<p>Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 metres on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site.</p> <p>Please also refer to the Public Safety and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
957(ii)	March 22, 2015	Dennis Perry - West Vancouver, British Columbia	It is also becoming one of the outdoor recreation hotspots in Canada. i.e. Squamish billing itself as the "Outdoor Capital" of Canada.	Effect of the Project on Outdoor Recreation	<p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example.</p> <p>An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p> <p>Please also refer to the Marine Recreation information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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957(iii)	March 22, 2015	Dennis Perry - West Vancouver, British Columbia	When you overlay this with an LNG project that negatively impacts air quality, ocean water quality and brings concerns about wave size, vessel size and the escape zone (fire risk) around the shipping vessel there are enough unresolvable issues to put this initiative to permanent rest.	Air Quality Marine Water Quality Shipping	<p>Section 5.2 Atmospheric Environment (Air Quality) of the Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the <i>Fisheries Act</i>. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>As part of the Application, a Vessel Wake Assessment was carried out by Moffatt & Nichol. Moffatt & Nichol is a leading global infrastructure advisor with a BC presence specializing in the planning and design of facilities that shape coastlines, harbours and rivers, as well as an innovator in the planning for transportation complexities associated with the movement of freight.</p> <p>The vessel wake assessment estimated that the wake generated by the carriers in normal conditions would be less than 10 centimetres at 50 metres away from the LNG carrier, which is less than the wind-generated waves typically encountered in Howe Sound. In addition, it identified that any wake generated by a LNG carrier along the shipping route would diminish in size the further it traveled away from an LNG carrier, and would be unnoticeable at the shoreline, given the natural occurrence of typical wind-generated waves in Howe Sound.</p> <p>Indirect wake effects from shipping activities were considered in the assessment (Section 7.3.3.2.1 Potential Interactions) and, based on the analysis by Moffatt & Nichol, the potential wake effects were determined to be negligible (i.e., they would not have a measurable change).</p> <p>For more information on the Vessel Wake Assessment, please see Appendix 7.3-2 of the Application. Additional</p>	

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					<p>information on the vessel wakes was provided to the EAO on April 23, 2015.</p> <p>The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System, Air Quality, Marine Transport and Public Safety information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
958	March 22, 2015	Laurie Parkinson - Bowyer Island, Howe Sound, British Columbia	<p>WF EA pt 5.10-2 Re Federal Fisheries Act 3rd bullet point: Federal Fisheries Act Section 38(4): Requires notification of unauthorized serious harm to fish that are part of commercial, recreational, or Aboriginal fishery, or to fish that supports such a fishery.</p> <p>Once through cooling will kill fish and larvae of intertidal organisms. See Marine Mammals Table 5.19-9 pg 5.19-26 Operational Phase "Pretreatment and liquefaction....".</p> <p>How can it be legal for once through cooling to kill recreational or Aboriginal fishery fish, and forage fish? I could see it if there was substantial public gain, but there will be little BC or Federal tax from Woodfibre LNG, and all the profits will go overseas. Only 100 long term jobs, many too highly skilled for Squamish residents, unfortunately.</p>	Seawater Cooling System Effects of the Project on Marine Life	<p>Thank you for your question.</p> <p>See Table 5.19-1 Potential for Interactions between Project-related Activities and Marine Mammals: The "Installation of seawater cooling system, including inlet and outlet structures" has a minor interaction with marine mammals. The Nature of Interaction and Rationale for Interaction Rating is "changes in food availability due to direct loss of forage fish habitat from construction of infrastructure¹". Footnote: "¹ = rationale to support the minor interaction rating: As described in Section 5.18 Forage Fish and Other Fish (Marine), it is unlikely that significant adverse effects will result from the Project effects related to forage and other fish habitat in terms erosion and sediment, cementitious material, legacy contaminant, mortality of forage fish and loss of forage fish habitat, all of which relate to key habitat factors important to marine mammals. Consequently these related interactions are considered minor and therefore are not carried forward for further assessment."</p> <p>Efforts have been made though Project Design and other mitigation measures to minimize the risk to fish and larvae.</p> <p>See Section 5.18.3.3.2 Characterization of Mortality from Impingement or Entrainment at Seawater Cooling System Intake: Mitigation measures to minimize impingement and entrainment will minimize the overall effect on forage fish and other fish communities. The intake will be located in an area that is largely degraded habitat with fine sediment and wood debris. Placement of the intake 2 m above the seafloor will limit the effect on bottom-dwelling fish adults and larvae; siting of the intake away from spawning grounds and ecologically important areas (i.e., rocky reefs with high macrophyte cover) will limit the effects on sensitive life stages of fish. Implementing intake screen design that limits screen size and flow-through velocity of the intake will minimize the number of organisms which may become entrained.</p> <p>See Section 5.18.3.3.3 Characterization of Potential Mortality and Loss of Habitat from Seawater Cooling Due to Temperature and Residual Chlorine: Seawater cooling system temperature of 10°C above the ambient temperature will be below the temperature identified as acutely lethal for salmonids; therefore, there is not likely to be an acute</p>	

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					<p>mortality effect on fish from the temperature change. The Canadian water quality guidelines and BC water quality guidelines indicate that there shall not be a change in the marine environment of +/-1°C from background. This temperature applies at the limits of the initial dilution zone (MOE 2001).</p> <p>The assessment shows that there will be no fish mortality due to temperature change as a result of cooling water discharge.</p> <p>See Section 5.18.6 Monitoring and Follow-up Programs: Performance indicators and benchmarks will be developed to assess the Project environmental performance. These will include but will not be limited to treated process water and stormwater and seawater cooling system discharge (temperature, total suspended solids, turbidity, and pH) criteria. Where possible, an adaptive management approach will be used to modify management plans as needed based on the results of the monitoring program.</p>	
959	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>The Woodfibre project has divided the town of Squamish. The proponents in this EA do not probably address the issue of destabilizing the community and stretching its resources. This growing town has only so much emergency services, hospitals, mental health professionals. How will the project effect this? For 2 years of construction, what kind of a town will we become? Roads torn up for the pipeline. Disruption to people's lives who live along a pipeline route. Disruption to businesses along the construction route. What will happen to rental rates? We don't have enough accommodation in this town right now for people who chose to live here WITHOUT INDUSTRY. Right now people have moved here for the pristine conditions and the quality of life.</p>	Effects of the Project on Community	<p>Woodfibre LNG notes that the comment about the pipeline is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html</p> <p>An assessment of the potential effects of the Project on community resources is included in Section 7.2 Infrastructure and Community Services, and including housing and accommodation, community infrastructure and services, and emergency services. The Application concluded that, with the implementation of mitigation measures, there will be no Project-related adverse effects to infrastructure and community services.</p>	
959	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>This EA does not properly address what will happen to our emerging Tourism, the potential of citizens moving away due to pollution, the potential reduction in property values.</p>	Effects of the Project on Tourism Effects of the Project on Air Quality Effects of the Project on Real Estate	<p>Thank you for your comment.</p> <p>An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p> <p>Section 5.2 Atmospheric Environment (Air Quality) of the Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant.</p> <p>The Project site is accessible by water only, and there are no permanent residences or private property adjacent to or within several kilometres of the Project site. Real Estate Value was not selected as a valued component as the Project site is zoned for industrial use and a change of land use designation and zoning is not required.</p>	

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					Please also refer to Air Quality information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.	

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959	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	Much opposition to this project and the concerns have been expressed in social media, at town hall meetings and in the EA. We don't want Woodfibre LNG and all of the components (Fortis BC's compressor station and pipeline, BC Hydro and the 63M wide swaths of land logged to service this project). It is the wrong place to put an LNG plant. We the citizens don't want it for all the ongoing expressed reasons.	LNG Project Pipeline	Thank you for the comment.	
959	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	The recent Hydro open house showing the storyboard and the amount of land to be logged to put in powerlines should be included with the WFLNG EA. Why was it not included? How will this effect the Sea to Sky Gondola view? The fact that WFLNG now wants to buy more land is troublesome. Is this in the EA? NO. People in this town are upset and concerned that their lives make change overnight by allowing this project that brings nothing to Squamish but instead costs too much. Their are way too many questions that have not been answered.	Visual Quality	Potential effects from FortisBC pipeline and BC Hydro substation projects are acknowledged and considered in the cumulative effects section for Visual Quality (Section 7.5), based on the information that was available at the time of the assessment. It is important to note that discussions continue between BC Hydro and Woodfibre LNG Limited; a number of different scenarios are being looked at, and no final decision has been made.	
960	March 22, 2015	Kate Vincent - Vancouver, British Columbia	There is no good place to put this project. Why endanger the ecosystem of Howe Sound and spend taxpayers money on perpetuating the use of a resource that will contribute to global warming? The era of fossil fuels is coming to an end whether the industry is in denial or not. It is a bad investment for the government and a major threat to our future. I urge you to show leadership and look to developing more sustainable energy sources.	LNG Industry Climate Change GHG Emissions Health of Howe Sound	<p>Thank you for the comment.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p> <p>Woodfibre LNG Limited is of the view that natural gas – the cleanest burning fossil fuel – is the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year, equates to taking 557,000 cars off the roads.</p> <p>Section 5.3 Greenhouse Gas Management of the Application includes an assessment of the potential Project-related effects to greenhouse gases. The influence of Project-related greenhouse gas emissions on climate change was evaluated by assessing whether any measurable change in climate could result from the Project-generated greenhouse gas emissions. The relatively minor increase in global emissions associated with the Project would correspond to a change in climate that is unlikely to be measurable.</p>	

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					<p>Current forecasts are that the global demand for energy will increase by 35% by 2035, and the specific demand for natural gas is expected to increase by 55% .</p> <p>The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand . China's energy demand increases by 5% annually . Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017).</p>	
961	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>This comment addresses the EA's Social Pillar</p> <p>I urge the EAO to consider the significant negative social impact this project is having and will continue to have on Howe Sound communities if approved.</p> <p>WLNG has divided our communities at a pivotal time when we should be pulling together and striving to develop our economy in sustainable, responsible ways. WLNG project will not benefit our community in the long term. Whatever jobs and tax revenue are created will vanish when the facility is eventually decommissioned. We all know that resource extraction is a short-sighted way to inject money into a local economy. Look what has just happened in Alberta.</p> <p>This project has already been a significant source of anxiety and social unrest within the community. I wonder how many thousands of "person hours" have already been spent by people on both sides of the fence opposing or defending the project? Hours that could and should have been spent in different, better ways. Look at all the petitions, marches, protests, Facebook pages and debates that this project has spurred. Let's think about how all those "person hours" could have been directed towards community improvement.</p> <p>Please ensure that the Social Pillar of the EA is thoroughly addressed, and that the many social impacts of this project are investigated in detail.</p>	Effects of the Project on Community, Social Values	<p>Thank you for the comment.</p> <p>Woodfibre LNG has undertaken public consultation in the form of more than 300 community meetings, two telephone town halls, three rounds of formal public consultations, and has opened a Community Office in Squamish to respond to questions. Woodfibre LNG also regularly engages the public through its web site (woodfibrelng.ca), email, and Facebook page.</p> <p>A public consultation report will be filed with the EAO in accordance with the environmental assessment process.</p> <p>In response to public consultation, Woodfibre LNG has made meaningful changes to the Project. For example, in response to concerns about the possibility that the LNG facility would run on a gas turbine, Woodfibre LNG committed to powering the facility plant using electricity from BC Hydro. This decision will reduce greenhouse gas emissions by about 80 per cent, and will help make Woodfibre one of the cleanest LNG plants in the world.</p> <p>An independent third party economic impact assessment of the Project is included in the Application. Accounting and Consulting firm MNP projected the following economic benefits of the Project (2014 CAD):</p> <p>CONSTRUCTION JOBS</p> <ul style="list-style-type: none">• Create 650+ jobs each year of construction.• Create an additional 1,080+ jobs (indirect* and induced** employment) during the construction phase of the Project. <p>LONG-TERM OPERATION JOBS</p> <ul style="list-style-type: none">• Create 100+ local jobs during operation.• Create an additional 330+ local jobs (indirect* and induced**) during operation. <p>*Indirect impacts arise from changes in activity for suppliers.</p> <p>**Induced impacts arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses.</p> <p>The Project will be designed for a minimum operation life of 25 years. The estimated number of direct jobs by area of residence for the construction phase is included in Table 6.2-8 of the Application. Woodfibre LNG Limited intends to source all operation phase workers from the local assessment area (District of Squamish, Resort Municipality of Whistler, Squamish-Lillooet Regional District Electoral Area D, Squamish First Nation communities, and Metro Vancouver).</p>	

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					<p>Woodfibre LNG will develop a Local Hiring Strategy, a Local Training Strategy and Local and Regional Procurement Strategy in order to ensure that the local workforce and economy can realize (to the maximum extent possible) the potential economic benefits of the Project. These strategies will ensure that the labour force is well-positioned to seek Project employment based on individual capacities to supply needed skills; maximize employment opportunities for residents in Squamish, Whistler and Metro Vancouver; and ensure that local and regional businesses can access the benefits of increased demand for goods and services from the Project.</p> <p>For more information, please refer to Section 2.6 Project Benefits of the Application. Additional benefits from the Project are described in greater detail in Section 6.2 Labour Market, Section 6.3 Sustainable Economy and Section 7.2 Infrastructure and Community Services.</p>	
962	March 22, 2015	Laurie Parkinson - Bowyer Island, Howe Sound, British Columbia	<p>WF EA Pg 5.10-2 4th bullet point: Federal Fisheries Act Section 38(5) Requires notification of the deposit or imminent danger of deposit of deleterious substance in waters frequented by fish. Chlorine is deleterious to both adult and juvenile salmon and forage fish – damaging to gills, and confusing for navigation (confuses their sense of smell) See Marine Mammals Table 5.19-9 pg 5.19-26 Operational Phase "Pretreatment and liquefaction....". Changes in food availability due to mortality of fish from warm cooling water and residual chlorine. Please explain why chlorination of once through cooling water can be allowed, in light of this fisheries regulation? I could see if it WFLNG was going to give substantial financial benefit to Squamish/BC/Canada, but that's not the case. Low BC and Federal taxes for a long time, all profits go overseas, few long term jobs....about the same # as Squamish Gondola.....except many will be too high skilled for Squamish residents, unfortunately. How will you mitigate this problem for the fish? What material will you use? That hasn't been answered so far. What are its environmental effects? Please give references.</p>	Effects of the Project on Marine Life	<p>Thank you for your questions. See Table 5.19-2 Potential for Interactions between Project-related Activities and Marine Mammals: The "Pre-treatment and liquefaction of natural gas at the LNG facility" has a minor interaction with marine mammals. One point on the Nature of Interaction and Rationale for Interaction Rating is "changes in food availability due to mortality of forage fish from thermal outfall discharge and residual chlorine ". Footnote: "1 = rationale to support the minor interaction rating: As described in Section 5.18 Forage Fish and Other Fish (Marine), it is unlikely that significant adverse effects will result from the Project effects related to forage and other fish habitat in terms erosion and sediment, cementitious material, legacy contaminant, mortality of forage fish and loss of forage fish habitat, all of which relate to key habitat factors important to marine mammals. Consequently these related interactions are considered minor and therefore are not carried forward for further assessment." See Section 2.2.6.2.10 Seawater Cooling System: Hypochlorite will be produced on site in a modular electro chlorination process using seawater as the feed stock. The hypochlorite strength will be less than 1% as active chlorine. Prior to discharge, the seawater will pass through a de-aeration tank and, if required, a de-chlorination agent will be added to the water. Studies are currently underway regarding to determine the appropriate system, the optimal dosing, and the dosing regimen (i.e., continuous vs. shock treatment). The concentration of residual chlorine at the edge of the initial dilution zone will be below the Canadian Water Quality Guideline of 0.5µg/L (CCME n.d.). The concentration of residual chlorine within the initial dilution zone cannot be acutely toxic and therefore must be 0.02 mg/L or less. See 5.18.3.3.3 Characterization of Potential Mortality and Loss of Habitat from Seawater Cooling Due to Temperature and Residual Chlorine: "a chlorine treatment plant will be used onsite to remove chlorine from water before release into the marine environment; therefore, the chlorine concentration in the discharge is likely to be negligible and it is likely that any adverse residual effects will also be negligible."</p>	

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963(i)	March 22, 2015	Martin Clarke - Bowen Island, British Columbia	The LNG Woodfibre project is in the wrong place at the wrong time. There is a real concern that Howe Sound will be changed by this project from a profitable tourism based economy to an industrial economy with dubious benefits .	Tourism	<p>Thank you for your comments.</p> <p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example.</p> <p>An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p> <p>Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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963(ii)	March 22, 2015	Martin Clarke - Bowen Island, British Columbia	Once again, the waters of Howe Sound might well become a industrial dumping ground with the efforts of many people over many years of re-establishing a healthy marine environment coming to nothing. Again, this project in the wrong place at the wrong time.	Effects of the Project on the Environment	<p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. As a condition of acquiring the site, Woodfibre LNG required the completion of remediation work on site. On December 22, 2014 the Ministry of Environment issued two Certificates of Compliance (uplands and water lot) evidencing completion of the remediation.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	

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964(i)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	My primary concern is that this project does not fit with our community of the present day. I am most concerned about the environmental consequences which could be a huge detriment to the ongoing restoration of Howe Sound.	Effects of the Project on the Environment	<p>Thank you for your comments.</p> <p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. As a condition of acquiring the site, Woodfibre LNG required the completion of remediation work on site. On December 22, 2014 the Ministry of Environment issued two Certificates of Compliance (uplands and water lot) evidencing completion of the remediation.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	

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964(ii)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>Specifically I am concerned about the once-through seawater cooling system proposed by Woodfibre LNG. This method is outdated so why are they using it? To extract seawater from Howe Sound, chlorinate it, heat it, and then put it back into the Sound can only threaten the abundant marine life of the Sound. This method has been banned in other areas such as the US and should not be used here.</p> <p>We are only now seeing the return of marine life to the once dead area around Woodfibre. Why would we want to go backwards in time and cause our Sound to be polluted again.</p>	Seawater Cooling System	<p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit.</p> <p>The release temperature of the seawater will be less than 21°C or 10°C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10°C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1°C above ambient is 125 m³ (for context, this volume is approximately 5% or 1/20th of an Olympic-size pool). This volume will not increase over time.</p> <p>Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L.</p> <p>For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System, Air Quality and Marine Transport information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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964(iii)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	Another concern I have is that we do not have a basic handle on the air pollution which this plant may cause. We have no monitoring of the air quality in place to help determine acceptable levels for the health of the community of Squamish.	Effects of the Project on Air Quality	<p>The Woodfibre LNG Project will be powered by electricity from BC Hydro. By powering the plant with electricity, instead of natural gas, Woodfibre LNG will reduce its greenhouse gas emissions by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.</p> <p>The majority of Woodfibre LNG air emissions will come from elements removed from the natural gas prior to liquefaction, which are incinerated.</p> <p>Estimated emissions in tonnes per year for the LNG plant powered by electric drive vs. the plant powered by gas turbines:</p> <table><tr><th></th><th>Electric Drive</th><th>Gas Turbine</th></tr><tr><td>GHG</td><td>80,000</td><td>450,000</td></tr><tr><td>NOx</td><td>20</td><td>310</td></tr><tr><td>SOx</td><td>17</td><td>17</td></tr></table> <p>As part of Woodfibre LNG's Application, air dispersion modelling based on planned activities and equipment use — including marine vessels and flaring — were undertaken to predict air emissions from the Project operation phase. Baseline air quality data from Langdale, Squamish, and Horseshoe Bay were used in the model. The results of the dispersion modelling were compared against federal and provincial ambient air quality criteria. All predicted concentrations were below the air quality criteria.</p> <p>Woodfibre LNG Limited expects that monitoring of plant air emissions will be required as part of the waste discharge permit under section 14 of the <i>Environmental Management Act</i>.</p> <p>At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is well below the threshold of 0.16 t CO2e per tonne LNG in the <i>Greenhouse Gas Industrial Reporting and Control Act</i>.</p>		Electric Drive	Gas Turbine	GHG	80,000	450,000	NOx	20	310	SOx	17	17	
	Electric Drive	Gas Turbine																
GHG	80,000	450,000																
NOx	20	310																
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964(iv)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	Thirdly, we have also not been given any information about the geotechnical history and earthquake potential of this area. There have been landslides in the past and a small earthquake recently in the area. Is this a safe location for a gas transfer station?	Seismic Hazard	<p>Woodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline network, and access to BC Hydro electricity.</p> <p>At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site.</p> <p>The Project will be designed:</p> <ul style="list-style-type: none">• For a one in 2,475 year earthquake.• In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants.• To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site• If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby.• Project components, including bridges, will be designed for the 200-year instantaneous peak flows on Mill Creek and Woodfibre Creek.• Buildings will be constructed at different elevations that correspond to their risk category in case of flooding.• Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction.• To address the potential effects associated with wildfire, a fuel hazard assessment will be conducted based on the Guide to Fuel Hazard Assessment and Abatement in British Columbia.• Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode. <p>Project components will be designed to accommodate a sea level rise of 0.5 metres.</p>	

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964(v)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	Fourthly, I have seen no mention from the ITA or other provincial government officials about the possibility of a training facility for Squamish. How does the workforce in Squamish get trained for this type of industry? I have a strong suspicion that the so-called local jobs will be filled by trained foreign workers, not Squamish or BC residents. How does this help our economy?	Workforce	Woodfibre LNG will develop a Local Hiring Strategy, a Local Training Strategy and Local and Regional Procurement Strategy in order to ensure that the local workforce and economy can realize (to the maximum extent possible) the potential economic benefits of the Project. These strategies will ensure that the labour force is well-positioned to seek Project employment based on individual capacities to supply needed skills; maximize employment opportunities for residents in Squamish, Whistler and Metro Vancouver; and ensure that local and regional businesses can access the benefits of increased demand for goods and services from the Project.	
964(vi)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	Lastly, I have concerns that there has been no baseline studies done to establish that the industry can meet all of the safety and environmental standards required. Do we go on the word of the company only? Where is the scientific data to judge the cumulative effect on the air, marine life, etc. of this project. I just cannot believe with so little research and study that this project could possibly be approved. It does not fit with my vision of this community.	Baseline Studies	<p>The terms of reference for the baseline studies and the cumulative impact assessment for the Woodfibre LNG Project (the Project) are outlined in the approved Application Information Requirements (approved AIR) for the Woodfibre LNG Project. The Application for an Environmental Assessment Certificate for the Woodfibre LNG Project (the Application) was formally accepted for review by the Environmental Assessment Office (EAO) on December 29, 2014, which means that the Application fulfills the requirements outlined in the approved AIR for the Woodfibre LNG Project.</p> <p>Baseline studies completed for the Project are suitable for the description of existing conditions as defined within the "Guideline for the Selection of Valued Components and Assessment of Potential Effects" outlined by the Environmental Assessment Office (EAO 2013): "For each selected VC, the existing conditions within the study area should be described in sufficient detail to enable potential project-VC interactions to be identified, understood, and assessed."</p> <p>For a further response to this comment, please refer to the "Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions", comment # 19.</p>	

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964(vii)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	As a 35 year resident of this town, I have grown to love the surrounding and very beautiful landscapes and recreational opportunities the Sound brings. I cannot picture LNG tankers and kite surfers in the same area. I cannot picture looking down from the top of the Gondola and staring at an LNG plant. The economic benefits do not outweigh the concerns I have for the environment. This project is not a proper place to put an LNG plant. Please stop it now!	Recreation Effects of the Project on Visual Amenity	<p>Woodfibre LNG acknowledges the importance of recreation in Squamish.</p> <p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p> <p>The Project's visual effects are expected to be minor given their scale and the historical and current level of human-related disturbance within the Regional Assessment Area.</p> <p>Woodfibre LNG is designing the facility to reduce the size of the disturbed area and to blend it into the environment as much as possible.</p> <p>Mitigation measures have been developed to avoid, minimize, restore onsite or offset the potential adverse effects of the Project. Mitigation measures that would be implemented to reduce the visibility of the facility would include the following:</p> <ul style="list-style-type: none">• reducing the level of contrast of buildings by using external surface finishing that has low glare and natural colours• monitoring and maintaining natural screening to ensure minimal visibility of infrastructure• providing additional screening of land-based infrastructure through temporary or permanent plantings where possible and safe to do so. <p>For more information, please see Section 7.5 Visual Quality of the Application, which includes an assessment of the potential effects of the Project on the viewscape, including from the Sea-to-Sky Gondola.</p>	

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965	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>Based on the EA it seems that the tankers do not have enough clearance to get over the 9000 year old reef if any off course action happens. What will that do to the glass sponge reef? We can't accept that risk! Even Jordan Sturdy has highlighted how important they are.</p> <p>http://jordansturdymla.ca/bcltv_videos/mla-sturdy-halkett-bays-glass-sponges/</p> <p>What kind of studies have been done to ensure they are not harmed?</p>	Effects of the Project on Glass Sponge Reefs	<p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>Woodfibre LNG expects that three to four LNG carriers will arrive at the site each month. The carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean. The carriers will be escorted by at least three tug boats, at least one of which will be tethered, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>The minimum water depth along the shipping route is 60 metres, and the LNG carriers draft will sit approximately 12 metres to 15 metres below the water surface.</p> <p>The sailing line (shipping route) is a minimum of 1300 metres (and typically more than 1500 metres) from the location of the glass sponge reefs located at Halkett Point and Lost Reef between Pam rocks and Christie Islets. The glass sponge reefs are located at depths ranging between 20 m and 40 m at these locations.</p> <p>Please also refer to the Marine Transport information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
965	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>Will Sandia Labs be hired to do modeling on LNG in Howe Sound. This would help Transport Canada assess the safety of the site. Every detail of this EA shows how devastating of a project it will be on the Recovered Howe Sound. Stop this please.</p>	Safety	<p>Thank you for the comment.</p>	

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966	March 22, 2015	Laurie Parkinson - Bowyer Island, Howe Sound, British Columbia	<p>WF EA, Marine Water Quality Marine Water Baseline Study Appendix 5.10-1/3</p> <p>This Appendix begins by saying study was conducted over 15 days –2013: July 3-5 and Sept 16-18, and 2014: April 1-4 and June 25-28, however there was also May 2014 sampling for some work.</p> <p>How did you come to the decision to study for such a short time? What other credible studies have been done in such a short time? Please give references.</p>	Marine Water Baseline Study	<p>Thank you for the question.</p> <p>Marine Water Baseline Studies were conducted to collect background data for marine water quality, to understand the pre-project state of the environment, so future monitoring data can be assessed against the effects assessment.</p> <p>The studies were conducted during five sessions from various sites within the Project area and reference areas to represent seasonal and special variability at the study area. In addition to sample collection described in Section 3. Study Design and Approach (page 55) of Appendix 5.10, water quality samples were collected for hydrology assessment from the LAA in May 2014 and used in the report. The samples were collected from different depth horizons to account for vertical structure of the water column. In addition, water quality data collected by Keystone Environmental in 2006 for contaminated sites submission was used and referenced in Appendix 5.10 (Section 2.3.2 p 8) The sampling effort is commensurate or exceeding studies conducted for similar energy projects on the Pacific BC coast. The project studies that can be referenced are:</p> <ul style="list-style-type: none"> • LNG Canada Export Terminal Project (Kitimat). • Pacific Northwest LNG (Prince Rupert) • Kitimat LNG Terminal Project (Bish Cove) <p>Information on these projects can be found on the BC Government Project Information Center web-site at:http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_home.html</p>	
967	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>To whom it may concern</p> <p>The purpose of this letter was to bring to light some of the issues that people may not realize. I'm very concerned about the Woodfibre LNG project. One issue is how close it is to Squamish parameters and how air quality will be effected. The project could create air that could have fine particulate matter that will be released into the air 2.5 µm 10 µm. There is good reason to be concerned considering that from April till fall the winds blow from that project right into downtown Squamish during the warmer months when the land is warmer than the water. This causes a temperature difference. The temperature difference creates a pressure difference. The pressure difference creates winds that blow from the ocean to the land and this happens on a regular occurrence.</p> <p>Other concerns that I have are during the times when there is very little wind stagnant conditions can occur. Little was mentioned about this in the baseline study. On the BC Ministry of environment website for air quality's distribution and dispersion modeling in British Columbia, it is noted that light winds or no winds could lead to high concentration of omissions that can build up in an area or transport slowly downward with very little mixing. Stagnant conditions occur when little wind or no wind conditions. This can persist for many hours or even days and commonly occurs in British Columbia valleys especially under winter time</p>	Air Quality	<p>Thank you for your comments.</p> <p>The assessment of PM_{2.5} in the EA is based on compliance with the B.C.'s ambient air quality objectives. For annual averaging period, the regulatory objective is 8 µg/m³, with voluntary goal being 6 µg/m³. The maximum annual PM_{2.5} concentrations predicted (5.9 µg/m³) in the study areas, which is located adjacent to the Project, is below voluntary goal of 6 µg/m³. The maximum predictions further away from the Project will be well below the predicted maximum annual concentration 5.9 µg/m³.</p> <p>Woodfibre LNG plans to meet applicable regulatory emission standards to reduce the effects of the Project's emissions on the environment and human health.</p> <p>The dispersion model used in the assessment is CALPUFF with full (three dimensional) meteorology.</p> <p>The model uses 3D gridded meteorology as an input to predict puff dispersion; the model is able to properly simulate calm wind conditions (zero wind conditions). Puffs are tracked hour by hour based on the meteorology and other dispersion parameters, and the amalgamated puff concentrations result in the dispersion predictions.</p> <p>Therefore, even in stagnant wind conditions puffs are emitted and dispersed based on diffusion parameters; when the calm periods subside and the wind picks up the puffs are then dispersed based on wind patterns.</p> <p>The 36 km resolution referenced in the IR is not the resolution of the meso-scale meteorological (MM5) data. The 36 km resolution is part of the downscaling algorithms of MM5.</p>	

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			<p>Arctic air mass conditions.</p> <p>The meteorological base study was done on a 36km resolution using a small amount of weather stations. I question how good the modeling can be done on 36km resolution using data from one weather station in the area. The company that did the baseline study they will argue that they followed the ministry department guidelines which I will agree the models that they've used are used for other studies around the world for air-quality. However when I looked at the guidelines for these models under the conditions guess fields, I don't believe these models can simulate the true conditions in the boundary layer. The study was done without the support of upper air weather stations. Without upper air support it's very questionable if these models can produce realistic meteorological fields. I based that on American meteorological study that was done over the Great Lakes that tested CalMat. The final conclusion was that these models air-quality models are highly unlikely to perform to their best without an upper air support.</p> <p>I would like to see the federal government do an assessment on the meteorological base study.</p>		<p>With regards to the meteorological resolution, the modelling used CALMET (the meteorological pre-processor to CALPUFF) nested grid option which allows for a large coarser (300 m) grid resolution farther away from the sources and a finer (100 m) grid resolution close to the source and areas of interest. The meteorological data at 100-m resolution was applied to an area of 15 by 25 km centred on the Project location. The meteorological data at 300-m resolution was applied to an area outside of the 100-m resolution data set, up to 85 km by 83 km from the Project location (illustration in Appendix 5.2-2, Figure 1 in the EA). Within CALPUFF model, puffs move freely between the 300 m and 100 m grid. The selection of the size of the domain is consistent with BC MOE recommendations provided in Air Quality Dispersion Modelling in British Columbia (BC MOE 2008) as well as deemed appropriate by BC MOE based on consultation with the BC MOE at an early stage of the EA process.</p> <p>The meteorological verification of the air quality models can be found in Appendix 5.2-2 of the EA. The model verification included:</p> <ul style="list-style-type: none">• Model predicted meteorological parameters (wind speed and direction, temperature and precipitation) were compared against observation data measured at existing meteorological stations in both the major and nested domains;• Two locations were selected (in the valley that the Project is located in) and model predicted meteorological parameters were extracted. These locations are referred as validation point 1 (in nested domain) and validation point 2 (in major domain). These points were selected based on the valley structure near the Project such that the wind patterns are influenced by the surrounding terrain features;• Stability class is a measure of the ability of air to move vertically in the atmosphere; stability class provides an indication of a plume's ability to disperse in the atmosphere. Stability class predictions at the Project location were analyzed to determine if stability classes are behaving as expected;• Mixing height is the depth of the atmosphere driven by mechanical and turbulent mixing. Plume dispersion will occur in the mixing zone, the area below the mixing height. Mixing height predictions at the Project location were analyzed to determine if mixing heights are behaving as expected; Wind vectors are the composite of wind direction and wind speed. Figures showing the wind pattern over the nested domain were plotted for different atmospheric conditions, for different heights and for three consecutive hours to illustrate that winds are behaving as expected; and• Wind patterns at the Project location (nested domain) were extracted and diurnal wind roses were plotted to illustrate night and daily wind patterns. <p>BC MOE is reviewing the meteorological data used by the dispersion model as a part of the regulatory application review process.</p>	

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968(i)	March 22, 2015	Marion von Dehn - Squamish, British Columbia	<p>My name is Marion von Dehn, a resident of Squamish,BC and I am writing to voice my concerns and comments regarding the proposed Woodfibre LNG in Squamish, BC. I am adamantly opposed to the this LNG facility for the following reasons:</p> <p>Environment: The method that Woodfibre LNG proposes to use has been banned in California and several other places as it is very damaging to marine life such as herring, plankton and juvenile salmon. proposing to extract 17,000 tons of seawater from Howe Sound, chlorinate it, heat it and then spit it back out into the sound every hour of every day for the next 25 years will greatly impact the quality of habitat that has finally started to be restored. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable.</p> <p>HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrous oxides (NOx) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease.A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs includ e the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs \$42,000 per tonne, and nitrous oxides cost \$67,000 per tonne.</p> <p>Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change</p> <p>SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens,</p>	LNG Project	<p>Thank you for your comment. For a response to this comment, please refer to the “Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions”, comment # 11-21.</p>	

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			<p>people within this zone risk death by asphyxiation, or death injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic.</p> <p>Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound.</p> <p>Source: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards</p> <p>SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing \$500,000 – \$750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released?</p> <p>Source: B.C. Ministry of Energy and Mines</p> <p>ECONOMY: The requested socio-economic study has not been provided During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of</p>			

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			<p>Squamish. How will this project impact existing small businesses and existing industries in Howe Sound?</p> <p>I do not see that the jobs that are being promised are what we want for this community long term. We want jobs that are sustainable, promote community and health and are viable over the long term. Squamish needs jobs that will allow those living here to actually work here. Social workers, teachers, health care providers, advocacy groups, computer techs, recreation companies, shop owners, not industry which results in boom and bust economies (what this town and those like it have had to endure). LNG's promises will not fulfill the need for a social worker like me to find work in my own home town.</p> <p>CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general.</p> <p>GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill.</p> <p>ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life Woodfibre LNG has bought the water license to take water from Mill Creek. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else.</p> <p>ENVIRONMENT: Missing baseline studies The following baseline studies are either missing or are inadequate as they do not conform to any ecognized scientific standards: fish, birds, marine</p>			

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			<p>mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project.</p> <p>VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact views from the Sea to Sky highway and the gondola BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory.</p> <p>ENVIRONMENT: Will there be smog? Will there be a smell? Will there be noise?</p>			
968(ii)	March 22, 2015	Marion von Dehn - Squamish, British Columbia	<p>Why isn't the government considering the desires of the community in which LNG is being imposed? We are the ones who have to live with the consequences of LNG and if this community doesn't want this business here, then why shouldn't we have the final say?</p>	Social License	<p>Thank you for the comment.</p> <p>Woodfibre LNG has undertaken public consultation in the form of more than 300 community meetings, two telephone town halls, three rounds of formal public consultations, and has opened a Community Office in Squamish to respond to questions. Woodfibre LNG also regularly engages the public through its web site (woodfibrelng.ca), email, and Facebook page.</p> <p>A public consultation report will be filed with the EAO in accordance with the environmental assessment process.</p> <p>In response to public consultation, Woodfibre LNG has made meaningful changes to the Project. For example, in response to concerns about the possibility that the LNG facility would run on a gas turbine, Woodfibre LNG committed to powering the facility plant using electricity from BC Hydro. This decision will reduce greenhouse gas emissions by about 80 per cent, and will help make Woodfibre one of the cleanest LNG plants in the world.</p>	

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969	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	I am against the Woodfibre LNG plan on the basis that shipping natural gas to foreign countries for little money when there is a market here that will pay much more, is wasteful and doesn't serve the local population and only enriches global corporations that pay no tax.	Justification for the Project	<p>February 2015 and is already contributing to the District of Squamish's tax revenue. Woodfibre LNG is expected to pay an estimated \$2 million (+) per year during operation, should the project go ahead.</p> <p>The Environmental Assessment Certificate application includes information on the economic benefits of the Woodfibre LNG project, should it go ahead.</p> <ul style="list-style-type: none"> • \$83.7 MILLION: Estimated in tax revenue for all three levels of government during the construction phase of the Project. • \$86.5 MILLION: Estimated in tax revenue for all three levels of government per year of operation. • \$243.3 MILLION: Estimated to the District of Squamish, Resort Municipality of Whistler, Electoral Area D of Squamish-Lillooet Regional District, Squamish First Nation communities, and Metro Vancouver gross domestic product (GDP) during construction and more than \$122.8 MILLION in GDP per year during operation. <p>For more information see Section 2.6 Project Benefits of Woodfibre LNG's Environmental Assessment Certificate Application. Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
970	March 22, 2015	Hilary Clark	I have crewed on a friend's sail boat for 30 years, and the thought of an oil spill in Howe Sound, our playground(!) makes me physically sick!	LNG Transport	<p>Thank you for the comment.</p> <p>The LNG carriers will navigate through the established commercial shipping route in/out of Howe Sound (through Queen Charlotte Channel) to the Strait of Georgia and out to the Pacific Ocean.</p> <p>The carriers will be escorted by at least three tug boats, and will be piloted by BC Coast Pilots who are experts with Howe Sound. BC Coast Pilots, who are responsible for piloting all large commercial ships in transit in BC waters, have told Woodfibre LNG Limited that because Howe Sound is generally a mile or more wide with a minimum channel width of 0.8 nautical miles and few outlined navigational hazards, they would not characterize Howe Sound as a narrow waterway (BC Coast Pilots, pers. comm).</p> <p>The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015.</p> <p>The response to a spill of fuel oil from an LNG carrier or other Project-related vessels to the marine environment would vary depending on several factors. These factors include the physical and chemical characteristics of the spill, the nature of the affected environment (e.g., sensitive riparian habitat, rocky, impermeable shoreline, open waters), and the quantity of the spilled substance. All cleanup and restoration activities for permanently altered habitat would be approved by the</p>	

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					<p>appropriate regulatory agencies. Appropriate actions and Best Management Practices for accidents and malfunctions under Woodfibre LNG Limited's jurisdiction, to be outlined in greater detail in the Emergency Response Plan for the Project, will include the following:</p> <ul style="list-style-type: none">• notifying the vessel master;• notifying the appropriate regulatory agencies, affected stakeholders, and Aboriginal groups;• containing spilled material to prohibit migration from the release site;• assessing spill response and cleanup options;• implementing spill response and cleanup measures (e.g., deployment of absorbent pads or booms), including disposal of recovered product at approved hazardous waste facilities;• completing event reports (internal and external for regulatory authorities, as required); and• depending on the severity of the event, Woodfibre LNG Limited may engage the services of a third-party spill response contractor to support the spill response.	
971(i)	March 22, 2015	Personal Information Withheld - Burnaby, British Columbia	I am very concerned about the desire to put in a pipeline and gas liquefaction plant in Howe Sound. As a Burnaby resident of the area that previously had a pipeline explosion near the water, I have absolutely ZERO faith in the human ability to keep a fast moving toxic substance secure inside a man made pipe.	Pipeline	<p>Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities.</p> <p>Woodfibre LNG notes that the comment is directed to the Fortis BC Eagle Mountain Pipeline Expansion Project. FortisBC's Eagle Mountain – Woodfibre Gas Pipeline Project is undergoing a separate environmental assessment certificate application review process. Please see EAO website for more information:</p> <p>http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_406_38521.html</p>	
971(ii)	March 22, 2015	Personal Information Withheld - Burnaby, British Columbia	I fear that human greed will ultimately be our undoing as we march forward in income-driven plans with no regard for our future and the cleanliness of the air we breathe and the water we drink. I can already see the difference in our air quality over the city since we allowed so many more tankers in English Bay. The air never looked so yellow on hot days when I was young.	Air Quality	<p>The Woodfibre LNG Project will be powered by electricity provided by BC Hydro. By powering the plant with electricity, instead of natural gas, greenhouse gas emissions will be reduced by about 80%. This will make Woodfibre LNG one of the cleanest LNG facilities in the world.</p> <p>Woodfibre LNG undertook air dispersion modelling based on planned activities and equipment use — including marine vessels — to predict air emissions from the Project operation phase. The results of the dispersion modelling were compared against federal and provincial standards and guidelines; and all predicted concentrations were below these standards and guidelines.</p> <p>Woodfibre LNG characterized current climate and climate trends using the Squamish Airport climate station. At peak capacity, the Project will have a greenhouse gas intensity of 0.059 t CO2e per tonne LNG, which is below the threshold of 0.16 t CO2e per tonne LNG in the Greenhouse Gas Industrial Reporting and Control Act.</p> <p>For more information, please see:</p> <ul style="list-style-type: none">• Section 9.2.2 Human Health Risk Assessment includes an assessment of the potential effects on humans by Project-related emissions. The Application concluded that there were no Project-related significant adverse effects.• Section 5.2 Atmospheric Environment (Air Quality) of	

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					<p>the Application includes an assessment of the potential Project-related effects to air quality. The Application concluded that the changes to air quality as a result of Project-related effects are below ambient air quality criteria for all indicator compounds and the residual effects are considered negligible or not significant.</p> <p>Please also refer to Air Quality information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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971(iii)	March 22, 2015	Personal Information Withheld - Burnaby, British Columbia	We all know that the oil industry is reaching its end and is grabbing on with a choke hold as hard as it can to stick around. I have seen what fracking does to the water table in the surrounding area.	Hydraulic Fracturing	<p>Natural gas is the cleanest burning fossil fuel and has been identified as the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG Limited plans to sell its product. In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year equates to taking 557,000 cars off the roads over the same time period⁴.</p> <p>Woodfibre LNG acknowledges the expressed concern regarding hydraulic fracturing. Hydraulic fracturing activities are outside the EA scope of the Project.</p> <p>Woodfibre LNG Limited is not engaged in oil or gas extraction or production activities. The gas delivered to the Project site will be supplied to the Project from western Canadian market hubs through an expansion of the existing gas transmission system by Fortis BC, and is the same gas that is supplied to Squamish, Metro Vancouver, Whistler, the Sunshine Coast and Vancouver Island through the Fortis BC pipeline system.</p> <p>Like other customers along the pipeline route, Woodfibre LNG will buy its feed gas from third party suppliers, potentially including aggregators. This natural gas will be delivered in a co-mingled stream through the Fortis BC pipeline to the site.</p> <p>Natural gas liquefied in the Woodfibre LNG facilities will be produced and processed primarily in the northeastern region of BC, but may also originate from other wells connected to the Western Canadian Gas Transmission System. The Oil & Gas Commission (OGC) regulates these extraction activities under the Oil & Gas Activities Act and related regulations.</p>	
971(iv)	March 22, 2015	Personal Information Withheld - Burnaby, British Columbia	Squamish prides itself in being an outdoor adventure mecca of Canada and yet to satisfy a few people we are going to risk ruining the Howe Sound area? Please no!!	Outdoor Recreation	<p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p> <p>Please also refer to the Marine Recreation information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

⁴ Centre for Liquefied Natural Gas. http://www.lngfacts.org/resources/CLNG-PACE_Study_one-pager.pdf.

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971(v)	March 22, 2015	Personal Information Withheld - Burnaby, British Columbia	Our water is already polluted by the Mount Polley mine toxic water spill, we don't need any more risk of our beautiful land! What will happen to the livelihood of Squamish if there is a huge spill nearby?	Safety	<p>At Woodfibre LNG, safety is the number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC.</p> <p>Liquefied natural gas does not persist in the environment, is odourless, colourless, and non-corrosive, leaves no residue, and is non-toxic to marine biota. Multiple layered passive and active containment systems are designed to prevent spills from entering the water.</p> <p>The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015.</p> <p>Please also refer to the Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
971(vi)	March 22, 2015	Personal Information Withheld - Burnaby, British Columbia	<p>A closing thought. When the Vancouver area finally gets its big monstrous earthquake and bridges and buildings fall down and PIPELINES RUPTURE, how many people will we have on hand to stop the flow of oil instead of save lives? Next to no one would be my guess. Toxic sludge will pour out of the pipe all over the place and we will finally hang out heads in shame as we finally realized we pushed it too far.</p> <p>Please stop this madness before we have done something we can't repair.</p>	Seismic Hazard	<p>Woodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline network, and access to BC Hydro electricity.</p> <p>At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site.</p> <p>The Project will be designed:</p> <ul style="list-style-type: none">• For a one in 2,475 year earthquake.• In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants.• To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site• If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with	

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					<p>assistance from the tugs on standby.</p> <ul style="list-style-type: none">• Project components, including bridges, will be designed for the 200-year instantaneous peak flows on Mill Creek and Woodfibre Creek.• Buildings will be constructed at different elevations that correspond to their risk category in case of flooding.• Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction.• To address the potential effects associated with wildfire, a fuel hazard assessment will be conducted based on the Guide to Fuel Hazard Assessment and Abatement in British Columbia.• Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode.• Project components will be designed to accommodate a sea level rise of 0.5 metres.	
972	March 22, 2015	Stephanie and Barrie Macleod - West Vancouver, British Columbia	<p>It is a shame that our provincial government is not staging independent scientific research into the viability of the Woodfibre proposal for an LNG operation in Howe Sound. Hence, it is fortunate that within the large body of concerned citizens in the community, there are individuals who are both highly qualified and keenly motivated to devote themselves to the task of studying all the relevant scientific literature. Both of us have endeavoured to read as much of the background resource information as possible and have concluded that the research and analysis of these individuals is credible and must be thoroughly and respectfully evaluated by both the proponent and our government.</p> <p>Within the community organization, My Sea To Sky, the assembled facts have been compiled in the points to follow. Most likely, you will have seen this comprehensive list before now; however, we wish to express our total endorsement and feel it merits repetition. Our unequivocal conclusion is that an LNG operation in Howe Sound would be an ideologically misguided and devastating oversight.</p> <p>SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk</p> <p>As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities</p>	LNG Project	<p>Thank you for the comment. For a response to this comment, please refer to the "<i>Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions</i>", comment # 11-21, 45, and 46.</p>	<p>For more information related to comments on the Environmental Assessment process please see "EAO Response to Public Comments – Application Review Public Comment Period for Woodfibre LNG, January 22 – March 23, 2015" under the Application Review EAO Generated Documents [Link].</p>

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			<p>will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guideline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound.</p> <p>Sources: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards</p> <p>ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated</p> <p>Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton that are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable.</p> <p>HEALTH: Social costs and health impacts of air pollution</p> <p>Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic</p>			

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			<p>Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs \$42,000 per tonne, and nitrous oxides cost \$67,000 per tonne.</p> <p>Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change</p> <p>SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility</p> <p>On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing \$500,000 – \$750,000 in damages (Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released?</p> <p>Sources: http://www.cbc.ca/news/multimedia/every-fault-line-in-british-columbia-1.2919420</p> <p>Bornhold, B.D. , 1983, Fiords, GEOS, no. 1, p 1-4 B.C. Ministry of Energy and Mines</p> <p>ECONOMY: The requested socio-economic study has not been provided</p> <p>During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound?</p> <p>CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable</p>			

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			<p>Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general.</p> <p>GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues</p> <p>There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill.</p> <p>ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life</p> <p>Woodfibre LNG has secured the water license to extract water from Mill Creek, which flows through the Woodfibre site. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else to protect this important stream habitat that is home to several native fish species.</p> <p>ENVIRONMENT: Missing baseline studies</p> <p>The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project.</p> <p>VIEWSCAPES:</p> <p>BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact views from the Sea to Sky highway and the gondola</p> <p>BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound view</p>			

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			<p>which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory.</p> <p>ENVIRONMENT: 9000 year old glass sponge reefs endangered by tanker traffic</p> <p>LNG tankers do not have enough clearance to get over the 9000 year old reef if they go off course. These 9000 year old glass sponge reefs have been called "Living Fossils" by National Geographic as until recently this species was thought to have gone extinct over 60 million years ago. MLA Jordan Sturdy recently made a statement in the House about the importance of this discovery in Halkett Bay near Gambier Island, and to support the proposal to expand the Provincial Park Protected Area to ensure these reefs are protected.</p> <p>Sources: http://news.nationalgeographic.com/news/2013/10/131018-glass-sponge-reef-canada-ocean-science/ http://jordansturdymla.ca/bcltv_videos/mla-sturdy-halkett-bays-glass-sponges/</p> <p>ENVIRONMENT: Will there be smog? Will there be a smell?</p> <p>Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels. Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in</p>			

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			<p>Howe Sound is of particular concern as recent research has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor.</p> <p>Recent research (by MSc student Annie Seagram, studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentrations of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma.</p>			
973	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>EA application 12.0 Effects of the Environment on the project</p> <p>12.1 Project setting: the project area is located in Howe Sound, a fjord approximately 3km wide and 42 km long.</p> <p>Question: Why does WLNG not supply measurements that include the islands?</p> <p>For example: Between Bowen and passage island it is 1 nautical mile and the shipping lane goes between Bowen (near snug cove) and West Vancouver near Whytecliff it is 1.03 nautical miles.</p> <p>According to Sandia Lab's Michael Hightower to each side of the ship for one mile the hazard zones overlap the land. I, for example live in zone two just above Horseshoe Bay. It might be low risk that anything happens but if it does the event will be high consequence to those living in the hazard zones. Question: will WLNG provide appropriate map with true measurements instead of a measurement at the widest point unimpeded by an island. It is a little deceptive.</p>	Project Description	<p>Thank you for your question.</p> <p>Howe Sound at its narrowest along the shipping route is 1440 metres, or4725 feet. The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2km or 17,060 feet with nearest distance to Darrell Bay being 2.7 km or 8858 feet, and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet.</p> <p>Please also refer to the Public Safety information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
974	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	<p>No thank you. Clean renewable energy would be welcome industry but not something thats contributing to destroying our environment.</p>	LNG Industry	<p>Thank you for the comment.</p> <p>Woodfibre LNG Limited is of the view that natural gas – the cleanest burning fossil fuel – is the best and most reliable way to help transition away from high-emission fuels such as oil and coal. This is particularly true in energy-hungry Asian markets, where Woodfibre LNG plans to sell its product.</p> <p>In fact, replacing just one 500 Megawatt coal-fired power plant with natural gas fueled power generation for one year, equates to taking 557,000 cars off the roads⁵.</p>	

⁵ Note on Source: A 2009 independent study commissioned by CLNG (Centre for Liquefied Natural Gas) and performed by Pace Global Energy Services found that existing U.S. coal fired power generation produces more than double the lifecycle greenhouse gas emissions than power generation fueled by regasified LNG.

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975	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>12.0 Effects of the Environment on the project</p> <p>12.1 Project setting</p> <p>The project area is within the zone of moderate to high earthquake risk of coastal BC valleys along the shoreline of Howe Sound, have steep slopes with active and historic mass wasting events and potentially unstable terrain.</p> <p>Now this statement alone from the E Application should be enough to stop any consideration of Howe Sound as appropriate for siting such a class A Hazard industry. But seemingly not.</p> <p>Question: Since WLNG finds itself sitting astride two earthquake faults in a moderate to high risk earthquake zone and there was just recently an earthquake in Squamish, will the proponent consider doing the responsible thing and withdraw his application for approval?</p>	Seismic Hazard	<p>Woodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline network, and access to BC Hydro electricity.</p> <p>At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site.</p> <p>The Project will be designed:</p> <ul style="list-style-type: none">• For a one in 2,475 year earthquake.• In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants.• To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site• If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby.• Project components, including bridges, will be designed for the 200-year instantaneous peak flows on Mill Creek and Woodfibre Creek.• Buildings will be constructed at different elevations that correspond to their risk category in case of flooding.• Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction.• To address the potential effects associated with wildfire, a fuel hazard assessment will be conducted based on the Guide to Fuel Hazard Assessment and Abatement in British Columbia.• Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode. <p>Project components will be designed to accommodate a sea level rise of 0.5 metres.</p>	

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976	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	I see no way for tourism and LNG to be compatible. Regardless, I do not support the LNG plant/project in any way. I believe we have come too far in returning our landscape to a healthy and vibrant environment to run the risk of ruining all the time, money and energy inputted to accomplish that. Any benefits LNG might bring do not even come close to outweighing the costs to our population, town and our planet.	Tourism	<p>Thank you for the comment.</p> <p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>Woodfibre LNG Limited is also of the view that tourism and industry can work together to create responsible economic development in Squamish. BC Ferries and Squamish Terminals have shown how industry can successfully coexist with local tourism and recreation, and Woodfibre LNG Limited is working hard to follow that example.</p> <p>An assessment of the potential effects of the Project on tourism is included in Section 6.2 Labour Market and Section 6.3 Sustainable Economy. The Application concluded that there were no Project-related significant adverse residual effects to the economy.</p> <p>The Application assesses the potential effects of the Project to outdoor recreation in Section 7.4 Land and Resource Use. With the proposed mitigation, it is not likely that there will be significant residual effects to outdoor recreation.</p> <p>Please also refer to the Sustainable Economy information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
977(i)	March 22, 2015	Qurban Naismith - Bowen Island, British Columbia	I live on Bowen island - my two daughters live on Bowen Island. If there was one safety failure their health and well being is at risk. I ride the ferry back and forth sometimes daily - having those huge tankers come through once a week doesn't strike me as making my life safer either. If a BC ferry can sink for ridiculous circumstances then sadly so can one of those tankers. One accident and the health of my daughters, wife and me are compromised.	Safety	<p>At Woodfibre LNG, safety is our number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC.</p> <p>The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. Subject to the recommendations of Transport Canada's TERMPOL Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 metres on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier.</p> <p>This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice. Please also refer to the Public Safety and Marine Transport</p>	

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					information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.	
977(ii)	March 22, 2015	Qurban Naismith - Bowen Island, British Columbia	We swim in the ocean almost daily in the summer time and that would also be taken away from us in case of an accident - one of the most beautiful parts of our life swimming in the ocean gone. The ocean is horribly abused and taking 50 Olympic pools of water out daily is another abuse it doesn't need. All this for no financial benefit to Bowen Island at all. There are other ways to invest our money in environmentally friendly ways.	Effect of the Project on Marine Water Quality	<p>All discharges to the marine environment will meet or exceed applicable legislation and guidelines, including the BC Water Quality Criteria (marine and estuarine life), the Canadian Environmental Quality Guidelines (water quality guidelines for the protection of aquatic life – marine), and the Fisheries Act. The seawater cooling system will require a waste discharge permit under section 14 of the <i>Environmental Management Act</i>. Woodfibre LNG Limited is legally required to comply with all requirements as outlined in the permit. The seawater cooling system will be designed to meet BC water quality guidelines. The release temperature of the seawater will be less than 21°C or 10°C above ambient water temperature of Howe Sound, whichever is less. Near-field simulation modeling shows that, with a release temperature of 10°C greater than the ambient temperature, the total volume of water that would have a temperature greater than 1°C above ambient is 125 m³ (for context, this volume is approximately 5% of an Olympic-size pool). This volume will not increase over time.</p> <p>Residual levels of chlorine at the discharge ports will be less than 0.02 mg/L. This is much less than the chlorine in drinking water, which is approximately 0.04 mg/L to 2.0 mg/L.</p> <p>The effects of the Project on marine water quality have been assessed in Section 5.10 Marine Water Quality of the Application. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). The assessments in the Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
978	March 22, 2015	Personal Information Withheld - Vancouver, British Columbia	<p>I believe that this project is truly in the best interests of our community based upon the environmental, economic, social, heritage and health benefits the project will offer.</p> <p>Environmental</p> <p>This project has already had a positive impact on the local environment with the environmental remediation from past industrial activities as stipulated in the proponent's purchase agreement with Western Forest Products. The proponent will also use substantially less of the site than what was passed used. This will allow the environment to benefit by returning parts of the site to nature.</p> <p>Many other parts of the world will also greatly benefit from access to this significantly cleaner energy alternative. While this project alone will not be able to eradicate coal usage in China, it is certainly part of the solution. This project also has</p>	Benefits of the Project	Thank you, your comment is noted.	

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			<p>the ability to reduce emissions from residents who commute. This project will inevitably be able to reduce trips to by those who commute to Vancouver by car or those who board a plane to work in remote camp settings like Fort McMurray.</p> <p>Project Opponents are quick to point out that this project may lead to and increase in hydraulic fracturing, but this is an unrelated issue, as the proponent has no upstream operations. I am frankly appalled by the hypocrisy of many opponents considering that this project will use the same sources of natural gas that they use in their own homes.</p> <p>This project will result in very modest emissions, equating to less than 9,000 car trips from Vancouver to Squamish each day (according to project opponents). I feel that these emissions are minimal and will have little to no impact on air quality. I am basing my opinion on the fact that, according to the Ministry of Transportation, there are over 13,000 daily average trips made on the Sea to Sky highway. These trips result in more emissions than Woodfibre LNG ever would and have yet to yield any air quality issues.</p> <p>The environmental issues of this project are negligible and are greatly outweighed by the benefits. I feel this is resulting from the efforts the proponents to listen to the community (e.g. choosing electric drive and placing the plant on land).</p> <p>Economic</p> <p>The economical benefits from this project run deep in the community, from construction to operation. Some local businesses, such as water taxi operators, have already benefited. In a community the size of Squamish, 100 family-supporting jobs are indeed significant.</p> <p>The generous tax proposal from the proponent will positively impact all those in the community by offsetting the need to increase residential property tax rates. This will have the largest impact on the low-income members of the community, as they are most affected by increasing property taxes and stand to benefit most from increased community amenities.</p> <p>In contrast to the views of many opponents, I believe that this project will have little or no impact on tourism. From a visual impact perspective, the plant will be an improvement on the current site, which currently resembles a vacant parking lot. The minimal ship traffic will likely have no impact on recreational users. The City and District of North Vancouver are excellent examples of industrial and tourism related business thriving together. This project will create a more balanced local economy, and help to insulate from the</p>			

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			<p>cyclical nature of the tourism industry.</p> <p>Social</p> <p>The proponent has already proven to be a good member of the community. The company has listened to the concerns of many and made decisions with the community in mind. The company has gone out of their way to inform and seek meaningful consultation of the community.</p> <p>Woodfibre LNG has already sponsored several community organizations, notably several youth sporting events. By choosing to invest in the community early on, Woodfibre LNG has already demonstrated that they are committed to the betterment of society.</p> <p>The proposed project will also provide stable employment for many in our community. These well paying, family supporting industrial jobs is the kind of jobs that anchor families to communities, building strong healthy communities. The project will provide a sense of purpose for our community—many generations will be proud to help create a better world by providing a cleaner energy alternative.</p> <p>Heritage</p> <p>As a community that has deep routes to industry, this project will connect the community with it's proud past of producing sustainable products for export around the world by continuing to do so. The proponents have honored the past of Woodfibre by adopting the name as their own.</p> <p>Woodfibre LNG has shown a great commitment to working with the historical society to preserve the history of the site and the memories of the community. The proponent has also indicated openness to allowing recreational users the opportunity to access the surrounding backcountry through their site.</p> <p>Health</p> <p>By operating a large semi remote facility, the proponents will need to have their own rescue capabilities. These capabilities will provide northern Howe Sound and surrounding area with increased emergency services. This will benefit the community by helping the preserve the scarce emergency resources the community has as its disposal. The community also benefits greatly from the health impacts of a cleaner global environment resulting from a decrease in coal usage.</p>			

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979	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, British Columbia	<p>With respect to Captain Brown's glowing letter re; tanker traffic and former Premier Harcourts Sun Oped re: WLNG as a model to follow when it comes to the environment I can only conclude that neither has paid any attention to the earthquake risk or the fact that the facility will sit not only over two earthquake faults in a moderate to high earthquake zone but also on an alluvial fan that could liquify if the earthquake is high not moderate. The foreshore has slipped into the ocean taking buildings with it in the past. Unless everyone working for Woodfibre and the pro-WLNG administration has an open conference call with God to ensure everyone living around Howe Sound that there won't ever be such an earthquake I wonder what the response will be in the face of such a catastrophe?</p>	Seismic Hazard	<p>Woodfibre LNG Limited looked at several sites for its Project before finding one that was the right fit for an LNG facility. Home to industry and shipping for more than 100 years, the Woodfibre site features: industrial zoning, a deepwater port, access to a FortisBC pipeline network, and access to BC Hydro electricity.</p> <p>At Woodfibre LNG, safety is the number one priority. This includes designing and building a facility that prevents or minimizes the potential effects of geotechnical and natural hazards. Third party independent experts have conducted a detailed investigation and review of geotechnical and natural hazards of the Woodfibre site.</p> <p>The Project will be designed:</p> <ul style="list-style-type: none">• For a one in 2,475 year earthquake.• In accordance with CSAZ276, Liquefied Natural Gas Production, Storage and Handling, with respect to their specific requirements for seismic design of LNG plants.• To address the potential for liquefaction, ground improvements will be undertaken as part of Project construction and if deemed necessary, critical infrastructure will be moved to other locations within the project site• If a ship is at dock at the time of a seismic event, and the movement between the LNG carrier and the floating storage and offloading unit (FSO) is outside safe operating parameters, the LNG transfer will safely shutdown and release the LNG carrier from its mooring and allow it to naturally move away from the FSO with assistance from the tugs on standby.• Qualified professionals will be engaged to conduct a debris flow and debris hazard assessment prior to construction.• Seismic monitors will be installed on critical process equipment and linked to the facility's ESD (Emergency Shutdown System). Should a seismic event occur, and the vibration experienced is outside the designed parameters of the seismic monitors, the facility (via the ESD) will automatically trip and place itself in fail-safe mode.	

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980	March 22, 2015	Personal Information Withheld - Valleycliffe, British Columbia	<p>I believe that this project is truly in the best interests of our community based upon the environmental, economic, social, heritage and health benefits the project will offer.</p> <p>Environmental</p> <p>This project has already had a positive impact on the local environment with the environmental remediation from past industrial activates as stipulated in the proponent's purchase agreement with Western Forest Products. The proponent will also use substantially less of the site than what was passed used. This will allow the environment to benefit by returning parts of the site to nature.</p> <p>Many other parts of the world will also greatly benefit from access to this significantly cleaner energy alternative. While this project alone will not be able to eradicate coal usage in China, it is certainly part of the solution. This project also has the ability to reduce emissions from residents who commute. This project will inevitably be able to reduce trips to by those who commute to Vancouver by car or those who board a plane to work in remote camp settings like Fort McMurray.</p> <p>Project Opponents are quick to point out that this project may lead to and increase in hydraulic fracturing, but this is an unrelated issue, as the proponent has no upstream operations. I am frankly appalled by the hypocrisy of many opponents considering that this project will use the same sources of natural gas that they use in their own homes.</p> <p>This project will result in very modest emissions, equating to less than 9,000 car trips from Vancouver to Squamish each day (according to project opponents). I feel that these emissions are minimal and will have little to no impact on air quality. I am basing my opinion on the fact that, according to the Ministry of Transportation, there are over 13,000 daily average trips made on the Sea to Sky highway. These trips result in more emissions than Woodfibre LNG ever would and have yet to yield any air quality issues.</p> <p>The environmental issues of this project are negligible and are greatly outweighed by the benefits. I feel this is resulting from the efforts the proponents to listen to the community (e.g. choosing electric drive and placing the plant on land).</p> <p>Economic</p> <p>The economical benefits from this project run deep in the community, from construction to operation. Some local businesses, such as water taxi operators, have already benefited. In a community the size of Squamish, 100 family-supporting jobs are indeed significant.</p> <p>The generous tax proposal from the proponent will</p>	Benefits of the Project	Thank you, this comment is noted.	

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			<p>positively impact all those in the community by offsetting the need to increase residential property tax rates. This will have the largest impact on the low-income members of the community, as they are most affected by increasing property taxes and stand to benefit most from increased community amenities.</p> <p>In contrast to the views of many opponents, I believe that this project will have little or no impact on tourism. From a visual impact perspective, the plant will be an improvement on the current site, which currently resembles a vacant parking lot. The minimal ship traffic will likely have no impact on recreational users. The City and District of North Vancouver are excellent examples of industrial and tourism related business thriving together. This project will create a more balanced local economy, and help to insulate from the cyclical nature of the tourism industry.</p> <p>Social</p> <p>The proponent has already proven to be a good member of the community. The company has listened to the concerns of many and made decisions with the community in mind. The company has gone out of their way to inform and seek meaningful consultation of the community.</p> <p>Woodfibre LNG has already sponsored several community organizations, notably several youth sporting events. By choosing to invest in the community early on, Woodfibre LNG has already demonstrated that they are committed to the betterment of society.</p> <p>The proposed project will also provide stable employment for many in our community. These well paying, family supporting industrial jobs is the kind of jobs that anchor families to communities, building strong healthy communities. The project will provide a sense of purpose for our community—many generations will be proud to help create a better world by providing a cleaner energy alternative.</p> <p>Heritage</p> <p>As a community that has deep routes to industry, this project will connect the community with it's proud past of producing sustainable products for export around the world by continuing to do so. The proponents have honored the past of Woodfibre by adopting the name as their own.</p> <p>Woodfibre LNG has shown a great commitment to working with the historical society to preserve the history of the site and the memories of the community. The proponent has also indicated openness to allowing recreational users the opportunity to access the surrounding backcountry through their site.</p> <p>Health</p>			

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			By operating a large semi remote facility, the proponents will need to have their own rescue capabilities. These capabilities will provide northern Howe Sound and surrounding area with increased emergency services. This will benefit the community by helping the preserve the scarce emergency resources the community has as its disposal. The community also benefits greatly from the health impacts of a cleaner global environment resulting from a decrease in coal usage.			
981	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>12.0 Impact of the Environment on the Project</p> <p>12.2.4 Likelihood</p> <p>Likelihood refers to whether or not a residual effect is likely to occur.</p> <p>Question: What will be WLNG and government response if the deemed unlikely occurs? Almost every catastrophe in every industry is unexpected and unlikely. That is only important in insurance talk, not unfortunately within the communities that are affected by a rare and catastrophic event. That is then a high consequence event that all those around the sound will have to experience.</p>	Safety	<p>At Woodfibre LNG, safety is the number one priority. Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC.</p> <p>The Accidents and Malfunctions section (Section 11.0) of the Application assessed the consequence and frequency of effects resulting from credible worst case scenarios for the Project. It showed that potential risks to the public were within the tolerable risk criteria regulated by the BC Oil and Gas Commission (OGC). The OGC will include a review of the quantitative risk assessment for this Project in the permit application review to confirm that the study and results meet the regulated requirements. Additional information on accidents and malfunctions was provided to the EAO on April 29, 2015. During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from these accidents, and include design requirements that avoid these accidents.</p> <p>Liquefied natural gas (LNG) has been shipped safely around the world for 50 years. There has never been a recorded incident involving a loss of containment of an LNG carrier at sea. LNG carriers are among the most modern and sophisticated ships in operation. These ships have robust containment systems, double-hull protection and are heavily regulated by international and federal standards.</p> <p>Please also refer to the Marine Transport and Public Safety information sheets that have been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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982(i)	March 22, 2015	Paul and Audrey Grescoe - Bowen Island, British Columbia	<p>Audrey and Paul Grescoe - Bowen Island We sit here in our house overlooking Howe Sound pondering LNG and asking ourselves the following questions:</p> <p>1. Do we trust governments?</p> <p>In February 2007, the Canadian Government said it would prohibit the passage of LNG tankers through the environmentally-sensitive and navigationally-challenging marine and coastal areas in New Brunswick because this would "present risks to the region... and its inhabitants that the Government of Canada cannot accept."</p> <p>Yet in February 2015, Prime Minister Stephen Harper announced a substantial tax cut to help spur the development of Liquefied Natural Gas export terminals in British Columbia.</p>	Marine Transport	<p>While it's true that the Government of Canada has taken issue with LNG carriers travelling through a small section of the Atlantic coast, it is due to very specific conditions in the waters of Passamaquoddy Bay, notably the world famous tides of the Bay of Fundy. These conditions do not exist in Howe Sound.</p> <p>The Canaport LNG receiving and regasification terminal in St John, New Brunswick has been operating as an LNG import terminal since 2008 and has the capacity to distribute 1.2 billion cubic feet of LNG per day.</p>	
982(ii)	March 22, 2015	Paul and Audrey Grescoe - Bowen Island, British Columbia	<p>2. Do we think B.C. will make money on exporting LNG?</p> <p>The answer: not soon. The proponent company will not pay royalties on the units of gas it buys. It will pay tax on its net profits. The tax rate is set at 3.5 percent but while the company is recovering its capital investment and net operating losses, the tax rate will be only 1.5 percent.</p> <p>In the meantime, the International Monetary Fund says Canada's subsidization of the natural gas industry "massive".</p> <p>3. Do we believe B.C. will make lots of money on LNG?</p> <p>Pacific Oil & Gas Ltd. (a subsidiary of a Singapore-based multinational) intends to sell the LNG in Asia in competition with a dozen other LNG-producing nations at a time when Asian demand for LNG has shrunk and Japan was planning this year to restart its nuclear-power facilities. In the past two months, the benchmark Henry Hub price for North American natural gas has continued to fall from \$4 to \$2.79.</p>	Economic Justification of the Project	<p>An independent third party economic impact assessment of the proposed Woodfibre LNG project is included in the Application. Accounting and Consulting firm MNP found the following economic benefits of the project (2014 CAD):</p> <ul style="list-style-type: none">• \$83.7 MILLION: Estimated in tax revenue for all three levels of government during the construction phase of the Project.• \$86.5 MILLION: Estimated in tax revenue for all three levels of government per year of operation.• \$243.3 MILLION: Estimated to the District of Squamish, Resort Municipality of Whistler, Electoral Area D of Squamish-Lillooet Regional District, Squamish First Nation communities, and Metro Vancouver gross domestic product (GDP) during construction and more than• \$122.8 MILLION in GDP per year during operation. <p>As LNG Projects involve significant capital investment which is recovered over a long period of time, final investment decisions (FIDs) on LNG projects are not made lightly, nor are they based on the price of oil or gas on any given day, or even a given year. Rather, FIDs are made based on long-term forecasts and take into account numerous factors, many of which are specific to the project or the proponent(s).</p> <p>Current forecasts are that the global demand for energy will increase by 35% by 2035, and the specific demand for natural gas is expected to increase by 55%⁶.</p> <p>The increasing standards of living and rapid economic growth in Asia (6-8% GDP growth annually) are the key triggers for the increase in demand⁷. China's energy demand increases by 5% annually⁸. Not only is Asia seeking new sources of energy to meet needs (diversify), Asia is looking for cleaner alternatives (e.g. China aims to reduce coal consumption to less than 65% total energy usage by 2017)⁹.</p>	

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BP Statistical Review of World Energy Report, June 2013. < http://www.bp.com/content/dam/bp/pdf/statistical-review/statistical_review_of_world_energy_2013.pdf>

7

ICIS. China Natural Gas Annual Report <<http://www.icis.com/energy/channel-info-about/china-natural-gas-annual-report/>>

8

Wood Mackenzie. LNG Service Tools: Understanding the dynamics of the global LNG industry < http://public.woodmac.com/content/portal/energy/highlights/wk3_Nov_13/LNG%20Service%20and%20Tool.pdf>

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National Development and Reform Commission. 2014. Social Development and National Economics Statistics Bulletin 2011 – 2013.

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982(iii)	March 22, 2015	Paul and Audrey Grescoe - Bowen Island, British Columbia	<p>4. Do we think tankers transporting LNG are safe?</p> <p>Interesting isn't it that safety or exclusion zones may (or may not) be required as tankers move up and down Howe Sound?</p> <p>We've seen a map that draws a circle around the area enclosing Horseshoe Bay and Snug Cove on Bowen Island. This is labelled an exclusion area. That suggests that no other vessels will be allowed in that area while a tanker passes by. Three coastal ferries (60 sailings a day), water taxis, cruise ships, and pleasure craft are in the habit of transiting this area. So what? Let them wait?</p> <p>And isn't it telling that Dr. Mike Hightower, one of the authors of the Sandia Report (ordered by the U.S. Department of Energy), commented that Bowen Island and parts of West Vancouver within a 1,600-meter radius of tankers would be highly at risk if there is a spill.</p>	Exclusion Zone	<p>There is currently no regulation which stipulates an exclusion zone in Canada; however, Woodfibre LNG will complete a voluntary Transport Canada Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) for the Project. The review will include a comprehensive risk assessment to ensure safety of vessel transits from terminal to open ocean; the development of recommendations to improve safety and minimize risk; and, the development of detailed safety procedures and emergency response plans.</p> <p>Subject to the recommendations of TERMPOL Woodfibre LNG has always maintained that it would deploy at least three tugs, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 meters on either side of the vessel and up to 500 m in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>Please also refer to the Marine Transport information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	
982(iv)	March 22, 2015	Paul and Audrey Grescoe - Bowen Island, British Columbia	<p>And furthermore, isn't it frightening that the Americans, aware of terrorist attacks, close bridge traffic and divert airplanes, when LNG tankers are entering Boston harbour?</p>	Terrorism	<p>Transport Canada's marine security programs, including strategies, programs and regulations, protect and preserve the efficiency of Canada's marine transportation system against unlawful interference, terrorist attacks or use as a means to attack our allies. (see http://www.tc.gc.ca/eng/marinesecurity/menu.htm)</p> <p>In addition, as part of the OGC permitting process, Woodfibre LNG Limited will be required to prepare a Safety and Loss Management Plan, which will include an emergency response plan and a security management plan. In addition, the site will be fenced and a control zone around the marine portion of the Project area will be established. The objective for the control zone and fencing is for public safety reasons, but will also be designed to prevent access by saboteurs.</p> <p>Security for LNG carriers in transit will be addressed by the Canadian Coast Guard and Transport Canada. It is unlikely that an attack on a LNG carrier would successfully penetrate an LNG container and result in loss of containment, given the multiple layers of steel that would need to be penetrated. The consequence and frequency for a worst case scenario for potential loss of containment of LNG on an LNG carrier due to grounding and collision with another vessel is considered in Appendix 11-1 of the Application.</p> <p>Is it not anticipated that penetration of an LNG container on an LNG carrier would result in an explosion. It is not anticipated that a collision can result in damage to more than one container. Additional analysis for marine risks will be carried out during the TERMPOL assessment for the Project.</p> <p>Please also refer to the Public Safety Information Sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

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982(v)	March 22, 2015	Paul and Audrey Grescoe - Bowen Island, British Columbia	<p>5. Are there costs to the province that have not been revealed?</p> <p>The Sandia Report advises risk-management strategies such as emergency response measures—among them firefighting. Now, we can't help wondering which firefighters will be responding to an accidental LNG spill somewhere along the 38 kilometres of Howe Sound. Such a spill may never happen but who will be trained and standing on guard and at whose expense? (It wouldn't be the Coast Guard now stationed in Richmond, would it?) Who will maintain the "areas of refuge" all along the coast that the Sandia Report recommends?</p> <p>Summing up: we strongly oppose the shipment of LNG by tankers through the waters of Howe Sound, which we conclude is a potential risk to humans and the environment for dubious economic benefit.</p>	Emergency Response	<p>It is Woodfibre LNG Limited's intention to be self-sufficient for all possible emergency situations and it is not anticipated that Woodfibre LNG Limited would require First Responder emergency services. In addition, Woodfibre LNG Limited will continue discussions with local government and other emergency service providers in the LAA to ensure a robust communications plan in the unlikely event of an emergency related to the Woodfibre LNG Project.</p>	
983	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>12.0 Effects of the Environment on the Project</p> <p>12.3.1.1 Description of events</p> <p>The information provided below has been summarized from engineering reports for the Project (Worley Parsons 2013, Moffat & Nichol 2014 and AMEC 2014 (of Mount Polley fame)</p> <p>Question: According to other experts the wave study left out consideration of the energy beneath the surface of the water. Why was that? The communities along the foreshore and within the, especially where the ship passes within the one mile distance of the land that energy will be high and the potential of damaging the marinas, beaches and piers is high. Does anyone remember the damage that occurred from the fast cat ferries?</p>	Wake	<p>As part of the Application, a Vessel Wake Assessment was carried out by Moffatt & Nichol. Moffatt & Nichol is a leading global infrastructure advisor with a BC presence specializing in the planning and design of facilities that shape coastlines, harbours and rivers, as well as an innovator in the planning for transportation complexities associated with the movement of freight.</p> <p>The vessel wake assessment estimated that the wake generated by the carriers in normal conditions would be less than 10 centimetres at 50 metres away from the LNG carrier, which is less than the wind-generated waves typically encountered in Howe Sound. In addition, it identified that any wake generated by a LNG carrier along the shipping route would diminish in size the further it traveled away from an LNG carrier (at depth and distance), and would be unnoticeable at the shoreline, given the natural occurrence of typical wind-generated waves in Howe Sound.</p> <p>Indirect wake effects from shipping activities were considered in the assessment (Section 7.3.3.2.1 Potential Interactions) and, based on the analysis by Moffatt & Nichol, the potential wake effects were determined to be negligible (i.e., they would not have a measurable change).</p> <p>For more information on the Vessel Wake Assessment, please see Appendix 7.3-2 of the Application. Additional information on the vessel wakes was provided to the EAO on April 23, 2015.</p>	
984(i)	March 22, 2015	T. Carroll - Squamish, British Columbia	I am AGAINST THE WOODFIBRE LNG PROJECT AND THE FORTIS COMPRESSION PLANT/PIPELINE PROJECT WHICH IS TIED TO THE wflng.	Pipeline	Thank you for the comment.	

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984(ii)	March 22, 2015	T. Carroll - Squamish, British Columbia	<p>I am particularly concerned about the inadequate attention paid by the pr0ponents to the Canada Shipping Act and the Guide to Canada's Ballast Waster Control and Management Regulations (TP 13617E).</p> <p>The release of contaminated ballast water into Canada's waters, offshore or near shore, and the consequent introduction of invasive species, could be highly dangerous and hazardous to the species that inhabitant Canadian waters in and around the Salish Sea and Howe Sound up to Squamish, individually, collectively, and to the whole ecosystem. As far as I can see, the proponents have minimized and underestimated the impacts and consequences of either deliberate or unintentional release of ballast waters by foreign vessels/LNG tankers, especially from China, Singapore, Indonesia, etc. where regulations are less stringent than in Canada, and possibly even by certain Canadian ones.</p> <p>TO WHAT EXTENT HAVE THE PROPONENTS TAKEN INTO ACCOUNT THE FOLLOWING ASPECTS OF THE GUIDE ISSUED BY TRANSPORT CANADA AND THE SHIPPING ACT, WITH RESPECT TO THE RELEASE AND CONTROL OF BALLAST WATER IN CANADIAN & BC WATERS.? SEE BELOW:.....FOR ADDITIONAL QUESTIONS>>>></p> <ol style="list-style-type: none">1. WHAT PRE-PLANNING IN TERMS OF BALLAST WATER MANAGEMENT PLAN HAS BEEN UNDERTAKEN IN ACCORDANCE WITH THE GUIDE BELOW? DOES THIS ENCOMPASS:2. BALLAST WATER EXCHANGE?3. BALLAST WATER TREATMENT?4. REPORTING & MONITORING REQUIREMENTS, ESPECIALLY OF HARD-TO-CONTROL FOREIGN VESSLES/TANKERS?5. WHAT WOULD BE DONE IF VESSELS FAILED TO COMPLY WITH BALLAST WATER REQUIREMENTS? WHAT ENFORCEMENT WOULD OCCUR, & HOW? WHAT FINES?6. WHAT WOULD BE DONE ABOUT FOREIGN LOADED VESSELS WITH RESIDUAL (AND THUS POSSIBLY CONTAMINATED) BALLAST WATER? HOW WOULD THAT BE HANDLED?7. WHO WOULD BE RESPONSIBLE FOR UNDERTAKING REPORTING & MONITORING?8. HAS THE PROPONENT DETERMINED HOW ADHERENCE TO THE MODEL BALLAST WATER PLAN DEVELOPED BY ICS AND INTERTANKO WOULD BE DONE, AND BY WHOM?	Ballast Water	<p>LNG carriers must comply with the Canada Shipping Act 2011, Ballast Water Control and Management Regulations. The regulations state that ballast taken onboard a vessel outside of waters under Canadian jurisdiction must be discharged at least 200 nautical miles from shore where water depth is at least 2000 m in order to avoid aquatic invasive species from foreign waters entering Canadian jurisdiction.</p> <p>In addition, all LNG carriers will comply with the International Maritime Organization (IMO) Regulations, MARPOL Annex IV (Prevention of Pollution by Sewage from Ships) and Annex V (Prevention of Pollution by Garbage from Ships). The LNG carriers will carry an International Sewage Pollution Prevention Certificate and Garbage Management Plan that prohibit the discharge of any wastewater or garbage within ports or offshore terminals.</p> <p>Further, as the LNG carriers proceeding to Squamish will initially enter US waters, they must comply with the US Environmental Protection Agency requirements for the National Pollutant Discharge Elimination System Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels.</p>	

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			<p>9. IF INVASIVE SPECIES WERE RELEASED INTO SALISH SEA/HOWE SOUND/SQUAMISH WATERS, DELIBERATELY OR UNINTENTIONALLY BY VESSELS/TANKERS, WHAT CLEAN-UP PLAN IS OR WOULD BE IN PLACE AND WHO WOULD BEAR THE COST (THE FOREIGN TANKERS/OWNERS, CANADIANS, LOCAL RESIDENT TAXPAYERS, OR THE PROPONENTS)?</p> <p>10. IF THE TANKERS/VESSELS, EITHER THROUGH THE RELEASE OF BALLAST WATER OR DUE TO SIZE & SCALE OF THE TANKERS SCRAPING THE BOTTOM OR SHORE-LINE OF THE HOWE SOUND AND ENVIRONS, DAMAGED, DEMOLISHED OR KILLED OFF THE FRAGILE AND NEAR EXTINCT/ENDANGERED GLASS SPONGE CORAL, WHAT STEPS WOULD THE PROPONENTS, THE VESSEL OR FOREIGN OWNERS TAKE TO MITIGATE, REMEDIATE, REPAIR, AND COMPENSATE FOR THAT DAMAGE AND EVEN EXTINCTION OF THE ENDANGERED SPONGE GLASS CORAL?</p> <p>PLEASE REFER TO TRANSPORT Canada's: Transport Publication TP 13617 E</p> <p>The purpose of this guide is to provide information on the application of the Ballast Water Control and Management Regulations (the Regulations) made pursuant to the Canada Shipping Act. The purpose of the Regulations is to protect waters under Canadian jurisdiction from non-indigenous aquatic organisms and pathogens that can be harmful to ecosystems. When a new organism is introduced to an ecosystem, negative and irreversible changes may result including a change in biodiversity. Ballast water may have been associated with the unintentional introduction of a number of organisms into Canadian waters; several of which may have been extremely harmful to both the ecosystem and the economic well being of the nation. The Ballast Water Control and Management Regulations are intended to minimize the probability of future introductions of harmful aquatic organisms and pathogens from ships' ballast water while protecting the safety of ships. This guide is to be used as a companion document to the Regulations and should not be seen as adding to or detracting from existing statutory or regulatory requirements that will prevail in the case of conflict with this guide.</p> <p>Voluntary provisions for ballast water exchange were first introduced in Canada in 1989 for ships traveling to the Great Lakes. Since that time, a number of significant developments have been made, including the following:</p>			

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			<ul style="list-style-type: none">• in 1991 ballast exchange guidelines were introduced by the International Maritime Organization (IMO) - these were revised in 1997 as resolution A.868(20), Guidelines for the Control and Management of Ships Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens;• in 1993 the US Coast Guard introduced mandatory regulations that required ballast exchange for ships traveling to the Great Lakes – these were amended in 2004 to make reporting mandatory for all US waters and again in 2005 to make ballast water management mandatory in all US waters;• in 2000 the application of the Canadian guidelines was expanded to cover all waters under Canadian jurisdiction and they were renamed to the Guidelines for the Control of Ballast Water Discharge from Ships in Waters under Canadian Jurisdiction, TP 13617;• in 2002 the St. Lawrence Seaway Management Corp., under agreement with the St. Lawrence Seaway Development Corp., amended their joint Practices and Procedures, to make compliance with best management practices a mandatory prerequisite for transit of the Seaway system; and• in 2004 the IMO finalized the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 – this new Convention introduced a performance standard for ballast water treatment and calls for the eventual phasing out of ballast water exchange, but is not yet in force. <p>The new Ballast Water Control and Management Regulations are harmonized to the maximum extent possible with current U.S. and international provisions, including the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004.</p> <p>1. Interpretation</p> <p>1.1 For the purposes of this Guide:</p> <p>"exclusive economic zone" consists of an area of the sea beyond and adjacent to the territorial sea of Canada that has as its inner limit the outer limit of the territorial sea of Canada and as its outer limit the line every point of which is at a distance of 200 nautical miles from the nearest point of the baselines of the territorial sea of Canada or as specified in the Oceans Act.</p> <p>"IMO" means the International Maritime Organization</p>			

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			<p>"residual ballast" means ballast water, including sediments that are unable to be pumped out of a ballast tank under a vessel's normal operational procedures.</p> <p>2. allast Water Management Plan</p> <p>2.1 Recognizing the importance of pre-planning in order to conduct any ballast water management procedure in a safe and effective manner, sections 11 and 12 of the Regulations outline the requirement for the preparation and carriage of a ballast water management plan.</p> <p>2.2 A Canadian vessel registered under the Canada Shipping Act, 2001 is required to submit four copies of its ballast water management plan to a Regional Marine Safety Office.</p> <p>2.3 Plans carried on Canadian and non-Canadian vessels should be reviewed by the national Administration, but do not have to be approved.</p> <p>2.4 Ballast water management plans must include the information listed in section 11 of the Regulations. The following documents may be useful in preparing a ballast water management plan:</p> <ul style="list-style-type: none">▫ IMO Resolution A.868(20), Guidelines for the Control and Management of Ships Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens, in particular section 7.1.▫ the Model Ballast Water Management Plan developed by the International Chamber of Shipping (ICS) and the International Association of Independent Tanker Owners (INTERTANKO.)▫ Regulation B-1 of the IMO's Regulations for the Control and Management of Ships' Ballast Water and Sediments (not yet in force).▫ Part B of the Annex to Resolution MEPC.127(53), Guidelines for Ballast Water Management and Development of Ballast Water Management Plans which is included as Schedule 1 of this Guide. <p>2.5 Vessels that conduct best management practices in accordance with section 5 of the Regulations and section 7 of this Guide should incorporate these practices into their ballast water management plan.</p> <p>3. Ballast Water Exchange</p> <p>3.1 With the exception of vessels specifically exempted from the provision of the Regulations, all vessels are expected to exchange or treat their ballast prior to discharge in waters under Canadian jurisdiction.</p>			

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			<p>3.2 When conducting ballast water exchange in order to meet the provisions of the Regulations, Part A of the IMO Guidelines For Ballast Water Management and Development of Ballast Water Management Plans and the IMO Guidelines for Ballast Water Exchange should be followed. The IMO Guidelines are included as Schedule 1 and 2 to this Guide.</p> <p>3.3 The Regulations specify the procedures that must be followed for vessels on transoceanic and non-transoceanic voyages, including the recognition that under certain circumstances, for reasons of safety, equipment failure or practicality, the preferred option for management of ballast water may not always be possible. In these cases, those alternatives that are acceptable have been identified, particular to specific voyages. Cases where exchanging ballast would be impractical, such as where the voyage was not of sufficient length in waters suitable for exchange, shall be considered exceptional circumstances and the Minister shall be notified in accordance with section 13 of the Regulations.</p> <p>3.4 In cases where the preferred option or alternatives are not complied with, the Master should be able to provide clear proof of why compliance was not possible.</p> <p>3.5 In dealing with the exceptional circumstance where a vessel cannot comply with the specific provisions of the Regulations, the vessel will be required to implement one or more of the measures listed in subsection 13(5) of the Regulations. At a minimum, vessels would be required to discharge only the amount of ballast water operationally necessary for cargo operations. The Master may wish to suggest suitable measures to Transport Canada for consideration.</p> <p>3.6 If, when verifying compliance through an onboard inspection, it is determined that the vessel does not comply with the Regulations (for example the salinity of the ballast is found to be below 30 parts per thousand as required in paragraph 8(2)(b) of the Regulations) or it is determined that the reasons provided for not complying were unjustified, then Transport Canada will treat the vessel the same as an exceptional circumstance and require the vessel to comply with one or more of the measures listed in subsection 13(5) of the Regulations.</p> <p>3.7 A vessel shall not be required to deviate from its intended voyage, or delay the voyage, in order to conduct an exchange beyond 200 nautical miles from shore or</p>			

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			<p>beyond 50 nautical miles from shore as referred to in sections 6(1), 6(2), 6(4)(b), 7(1), 7(2) and 7(3)(b) of the Regulations. A vessel may however be required to deviate from its intended voyage or delay its voyage in order to conduct an exchange within waters under Canadian jurisdiction, as referred to in sections 6(3), 6(4)(a), 6(4)(c), 6(4)(d), 6(5), 7(3)(c) and 7(3)(d) of the Regulations.</p> <p>3.8 In addition to the mandatory provisions in the Regulations, for vessels traveling to and from ports in the Bay of Fundy, it is recommended that exchange occur in the Gulf of Maine in waters greater than 100 metres deep, as indicated in Figure 1. It is also recommended that vessel traffic crossing the Gulf of Maine and using a coastal route along the Scotian Shelf should exchange in the Gulf of Maine in waters deeper than 100 metres.</p> <p>3.9 Figure 1 also indicates the alternate exchange zone for transoceanic voyages to east coast ports referred to in paragraph 6(4)(a) of the Regulations and for non-transoceanic voyages along the east coast of North America referred to in paragraph 7(3)(a) of the Regulations.</p> <p>Recommended ballast water exchange zones</p> <p>Figure 1. Recommended ballast water exchange zones on the Scotian Shelf and Gulf of Maine</p> <p>The magenta zone indicates that traffic transiting to/from the Bay of Fundy should exchange in the Gulf of Maine, in water deeper than 100 m. The yellow zone indicates that traffic crossing the Gulf of Maine and using a coastal route on the Scotia Shelf should exchange in the Gulf of Maine, in water deeper than 100 m. The green zone is the exchange zone for onshelf traffic heading to/from Nova Scotia, plus vessels following a shelfbreak path. Vessels should exchange in waters deeper than 1,000 m, west of Sable Island and the Gully and away from the entrance to N.E. Channel.</p> <p>Please note that the coordinates for the Yellow and Magenta zones are not to be considered as strict geographical boundaries, but rather to illustrate the advice regarding exchanging in waters greater than 100 m in the Gulf of Maine.</p> <p>Vessels are therefore strongly recommended to ensure that exchanges occur in depths greater than 100 m.</p>			

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			<p>Yellow Zone – Traffic crossing the Gulf of Maine</p> <p>Lat North</p> <p>Long West</p> <p>Remarks</p> <p>42.70</p> <p>070.10</p> <p>To</p> <p>42.20</p> <p>066.40</p> <p>To</p> <p>42.70</p> <p>070.10</p> <p>Magenta Zone – Traffic to/from the Bay of Fundy</p> <p>Lat North</p> <p>Long West</p> <p>Remarks</p> <p>41.55</p> <p>069.25</p> <p>To</p> <p>41.30</p> <p>068.80</p> <p>to</p> <p>44.10</p> <p>066.90</p> <p>To</p> <p>44.30</p> <p>067.50</p> <p>To</p> <p>41.55</p> <p>069.25</p> <p>The Green Zone is the exchange zone for on-shelf traffic heading to/from Nova Scotia, plus vessels following a shelf-break path. Vessels are strongly recommended to exchange in waters deeper than 1,000 m, west of Sable Island and the gully and away from the entrance to the Northeast Channel.</p> <p>Green Zone – Traffic heading to/from Nova Scotia</p> <p>Lat North</p> <p>Long West</p> <p>Remarks</p> <p>43.00</p> <p>060.00</p> <p>To</p> <p>43.40</p>			

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			<p>062.90 To 41.25 066.00 Following along the 1,000 m line to 39.90 069.25 To 39.38 068.75 To 43.00 060.00</p> <p>3.10 Notices to Mariners #995/1982 has imposed ballast water discharge restrictions for the Grande Entrée Lagoon of the Iles-de-la-Madeleine or within 10 miles of the Iles-de-la-Madeleine archipelago, to reduce the threat of introduction of toxic phytoplankton to local mussel farming industries.</p> <p>Under this notice discharging of ballast water within 10 nautical miles of the Islands is prohibited unless the ballast water were pumped on board in a designated area off Canada's east coast at minimum distance of 5 miles from the shore.</p> <p>All vessels planning to deballast in the protected waters defined above shall, at least three days in advance, notify the area Manager, DFO, in Cap-aux-Meules, telephone (418) 986-2095.</p> <p>4. Ballast Water Treatment</p> <p>4.1 For ships choosing to use a treatment method other than ballast water exchange, the method will be acceptable if the ballast water, after treatment, meets the standard specified in section 9 of the Regulations. This standard is the same as the Ballast Water Performance Standard specified in Regulation D-2 of the IMO's Regulations for the Control and Management of Ships' Ballast Water and Sediments. It should be pointed out that the purpose of section 9 of the Regulations is to acknowledge that the use of IMO treatment systems is acceptable for ships coming to Canada, but there is no obligation at this time for any ship to fit such systems.</p> <p>4.2 Treatment systems shall be installed and certified in accordance with the IMO Guidelines for Approval of Ballast Water Management Systems (Resolution MEPC.125(53)) and, in the case of systems that use an active substance, the IMO</p>			

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			<p>Procedure for Approval of Ballast Water Management Systems that make use of Active Substances (Resolution MEPC.126(53)).</p> <p>4.3 In the case of prototype systems being tested and evaluated, this should be done in accordance with the procedures in the IMO Guidelines for Approval and Oversight of Prototype Ballast Water Treatment Technology Programmes (Resolution MEPC.140(54)).</p> <p>4.4 The use of a treatment system that does not meet the standard specified in section 9 of the Regulations may also be acceptable if it is at least equivalent to ballast water exchange, but such systems would have to be evaluated and accepted by Transport Canada on a case by case basis.</p> <p>5. Reporting Requirements</p> <p>5.1 If a ship is unable to manage its ballast water as required under section 4 of the Regulations, subsection 13(1) requires them to notify the Minister of Transport at least 96 hours before entry into the territorial sea of Canada. Where this is not possible because the ship is not aware that it is unable to manage its ballast water, notification should be made as soon as possible. Notification should be made to the appropriate Centre listed in section 5.3 of this Guide and should provide the following information:</p> <p>1. an explanation as to the inability to carry out exchange, and</p> <p>2. what equivalent process the ship intends to carry out to minimize the threat of introduction of aquatic invasive species potentially entrained in the ballast water prior to entry into waters under Canadian jurisdiction.</p> <p>For vessels proceeding to areas situated on the East Coast, in Quebec or in Ontario (Great Lakes Basin):</p> <ul style="list-style-type: none">to Marine Communications and Traffic Services (ECAREG) by facsimile: (902) 426-4483, telex: 019 22510, or telephone: (902) 426-4956. <p>For vessels proceeding to areas situated north of 60° N, including all the waters of Hudson Bay, Ungava Bay, and James Bay:</p> <ul style="list-style-type: none">to Marine Communications and Traffic Services (NORDREG) by facsimile: (867) 979-4236, telex: 063 15529, or telephone: (867) 979-5724. <p>For vessels proceeding to areas situated on the West Coast:</p>			

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			<div>▪ to Marine Communications and Traffic Services, by Email to: offshore@rmic.gc.ca, by facsimile: (604) 666-8453 or telephone: (604) 666-6011.</div> <div>5.2 As required by subsection 14(1) of the Regulations, the Master of a ship destined for a Canadian port, shall provide as soon as possible after a management process is performed or a measure determined by the Minister is implemented a fully completed ballast water reporting form as set out in section 10 of this Guide by e-mail transmission, or by other means described in section 5.3. It is requested that whenever possible the form be submitted prior to entry into waters under Canadian jurisdiction.</div> <div>5.3 The Master of the ship shall provide the completed ballast water reporting form as follows: For vessels proceeding to areas situated on the East Coast, in Quebec or in Ontario (Great Lakes Basin): <div>▫ by Email to: atlanticballastwater@tc.gc.ca, or by facsimile: (902) 426-6657 For vessels proceeding to areas situated north of 60° N, including all the waters of Hudsons Bay, Ungava Bay, and James Bay:</div><div>▫ by Email to atlanticballastwater@tc.gc.ca, or by facsimile: (902) 426-6657 For vessels proceeding to areas situated on the West Coast: •by Email to: pacballastwater@tc.gc.ca or by facsimile: (604) 666-9177</div></div> <div>5.4 Vessels subject to the Regulations that have not submitted a fully completed form in accordance with section 14 of the Regulation will be requested to provide the appropriate Marine Communication and Traffic Services Centre with the following information as part of the MCTS interrogative: <div>1. Whether a ballast water reporting form signed by the Master has been provided by facsimile to the appropriate agency (i.e. Transport Canada Marine Safety, port authorities or the U.S. Coast Guard) or has been submitted by electronic or other acceptable means.</div><div>2. Whether ballast water is being carried.</div><div>3. If the answer to (b) is affirmative:</div><div>4. Whether the vessel has a Ballast Water Management Plan appropriate to that vessel.</div></div>			

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			<p>5. Whether the Ballast Water Management Plan has been reviewed by a classification society or flag administration.</p> <p>6. Whether ballast water management procedures have been performed prior to entering Canada's exclusive economic zone</p> <p>7. If the answer to (f) is negative:</p> <p>8. What is the reason for non-performance?</p> <p>9. What procedures, are proposed to protect Canada's waters prior to discharge of ballast?</p> <p>5.5 Under section 191 of the Canada Shipping Act, 2001 it is an offence to contravene any provision of the regulations.</p> <p>6. Pleasure Craft and Search and Rescue Vessels</p> <p>6.1 Under subsection 2(2) of the Regulations ships used for search and rescue operations or pleasure craft that are less than 50 m in overall length and that have a maximum ballast water capacity of 8 m3 are exempted from the application of the Regulations.</p> <p>6.2 If carrying ballast, these vessels should, insofar as practicable, either comply with the requirements of the Regulations or meet the provisions of the IMO Guidelines for Ballast Water Management Equivalent Compliance contained in Resolution MEPC.123(53). The IMO Guidelines are included as Schedule 3 to this Guide.</p> <p>7. Loaded Vessels with Tanks Containing Residual Ballast Water</p> <p>7.1 Loaded vessels coming from outside waters under Canadian jurisdiction normally carry some residual ballast water onboard. Any vessel intending to take on ballast in tanks containing residual ballast water and subsequently discharge it in waters under Canadian jurisdiction, must ensure that proper management procedures have been followed.</p> <p>Vessels must ensure that the residual ballast water has been exposed to salinity conditions equivalent to ballast exchange by complying with one of the following options:</p> <p>1.the residual ballast came from ballast that was properly exchanged at sea; 2.the residual ballast meets the international standard for treated ballast water; 3.the vessel complies with sections 1, 2, 6 and 7 of the Code of Best Practices for Ballast Water Management, published by the Shipping Federation of Canada; or 4.the vessel conducted a saltwater flushing at least 200 nautical miles from shore.</p>			

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			<p>The vessel shall conduct mid-ocean ballast water exchange during ballast-laden voyages in an area 200 nautical miles from any shore and in water 2,000 meters deep whenever possible, prior to entering waters under Canadian jurisdiction. Vessels unable to conduct mid-ocean ballast water exchange during ballast laden voyages shall conduct saltwater flushing of their empty ballast water tanks in an area 200 nautical miles from any shore, whenever possible. Saltwater flushing is defined as the addition of mid-ocean water to empty ballast water tanks; the mixing of the flush water with residual water and sediment through the motion of the vessel; and the discharge of the mixed water, such that the resultant residual water remaining in the tank has as high a salinity as possible, and preferably is greater than 30 parts per thousand (ppt). The vessel should take on as much mid-ocean water into each tank as is safe (for the vessel and crew) in order to conduct saltwater flushing. The master of the vessel is responsible for ensuring the safety of the vessel, crew, and passengers. Vessels reporting only residual ballast water onboard should take particular care to conduct saltwater flushing on the transit to the Great Lakes so as to eliminate fresh and or brackish water residuals in ballast tanks.</p> <p>The St Lawrence Seaway Authorities' mandatory requirement contained in subsection 30(2) of the Seaway Practices and Procedures (http://www.greatlakesseaway.com/en/navigation/handbook.html) which indicates that to obtain clearance to transit the Seaway every vessel entering the Seaway after operating beyond the exclusive economic zone must agree to comply with the "Code of Best Practices for Ballast Water Management" of the Shipping Federation of Canada (see Seaway Notice No. 6 - 2002 at http://www.greatlakes-seaway.com/en/navigation/notice20020322e.html).</p> <p>7.2 Vessels unable to comply with section 7.1 above, shall notify the Minister of Transport, who may, if found that the vessel did not comply with best management practices, in consultation with the Master, request that the any ballast water taken aboard in the St Lawrence River or Great Lakes, be retained on board, treated on board or discharged to a reception facility and the vessel may be subject to inspection and detention if found to have detainable deficiencies.</p>			

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			<p>7.3 Vessels that operate within the Great Lakes and St. Lawrence River should comply with the "Voluntary Management Practices to Reduce the Transfer of Aquatic Nuisance Species Within the Great Lakes by U.S. and Canadian Domestic Shipping" of the Lake Carriers Association and the Canadian Shipowners Association while operating anywhere within the Great Lakes and the Seaway (see Seaway Notice No. 6 - 2002 at http://www.greatlakes-seaway.com/en/navigation/notice20020322e.html).</p> <p>8. Vessels Operating only in Waters Under Canadian Jurisdiction Subsequent to Operating Outside Waters Under Canadian Jurisdiction</p> <p>8.1 Subsection 2(1) of the Regulations provides an exemption for ships operating exclusively in waters under Canadian jurisdiction or certain adjacent waters. Since ships that have operated outside these waters may carry harmful aquatic organisms or pathogens in their residual ballast, the exemption is not applicable to any ship that has made a voyage outside these waters.</p> <p>8.2 Where a ship that has operated outside the waters mentioned in subsection 2(1) of the Regulations and subsequently operates only in these waters (for example an existing ship brought into Canadian registry, a ship on the coasting trade or a Canadian ship employed elsewhere and returning to the Canadian trade) and carries residual ballast that might be discharged directly or after being mixed with other waters, Transport Canada will initially treat the ship the same as an exceptional circumstance and require the ship to comply with one or more of the provisions listed in subsection 13(5) of the Regulations. Transport Canada will determine how long these provisions must be complied with before it can be considered that the ship is no longer discharging ballast taken on board the ship outside of waters under Canadian jurisdiction – at this point the requirements of sections 6 and 7 of the Regulations would no longer be applicable and ballast water management would no longer be necessary.</p> <p>9. Compliance and Enforcement</p> <p>9.1 A vessel may be subject to inspection by Transport Canada inspectors for the purpose of determining whether the vessel is in compliance with the Regulations. Such inspection may include inspection of the ballast water record book, ballast water management plan, sampling of the vessels</p>			

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			<p>ballast water, and any other documentation or assistance as required by the inspector.</p> <p>9.2 When Transport Canada receives a report that a vessel is not able to comply with the provisions of the Regulations, the situation is treated as an "exceptional circumstance" in accordance with section 13 of the Regulations. Transport Canada inspectors will, in consultation with the master, determine the measures that will need to be taken to reduce as much as practicable the likelihood of the introduction of harmful aquatic organisms or pathogens into waters under Canadian jurisdiction. In such cases, masters should be prepared to provide information respecting the nature of the ballast water being carried and possible operations that the vessel could take.</p> <p>9.3 In cases where Transport Canada determines that a vessel did not comply with the Regulations and / or the "Code of Best Practices for Ballast Water Management" published by the Shipping Federation of Canada, as applicable, the vessel may be subject to inspection and detention in accordance with subsection 222(1) of the Canada Shipping Act, 2001.</p> <p>9.4 An example of the inspection form used by Transport Canada is attached as Schedule 4 of this Guide.</p> <p>10. Research</p> <p>10.1 In addition to any inspections to verify compliance with the provisions of the Regulations, vessels may be boarded and samples of ballast water may be collected for scientific analysis in order to further research the effectiveness of ballast water management.</p> <p>10.2 Masters and owners are requested to provide as much assistance as possible to those persons involved with the scientific analysis.</p>			
985	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, British Columbia	Was AMEC still consulting for Mount Polley mines while working WLNG?	Engineering.	Woodfibre LNG has retained AMEC and other engineering firms to perform professional services relating to its Project.	

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986	March 22, 2015	Jackie Carney - Squamish, British Columbia	<p>I moved to Squamish 15 years ago after spending a 2 week holiday 2 years previously. The idea of actually living and working in literally 'God's country' was realized. I have seen Squamish grow quite a bit since then, but it was all a positive growth. The idea of seeing huge tankers going up and down the Sound scares me to death and 'death' is the operative word. Over time, this beautiful, clean environment and all it's benefits will gradually fade away. The Sound will become a dirty and empty body of water. There will be no salmon and consequently no wild life that relies on the salmon, such as orcas will be coming here to thrill us. The eagles will have no food either, so they will not be flying here every year and their habitats destroyed and so it goes on - my wonderful, beautiful Squamish will be no more and I will have moved 3000 miles only to see my paradise destroyed. I am 69 years old now and the idea of my children and grandchildren being denied the opportunity to experience this wonderful part of Canada and all it's blessings just breaks my heart.</p> <p>I have a plaque on my wall that I've had for years and the quote on it says "Only after the last tree has been cut down, only after the last river has been poisoned, only after the last fish has been caught, Only then you will find that money cannot be eaten". I believe the quote is a Cree prophecy, but it sure sounds like that's where we are heading today.</p> <p>I beg you to reconsider what you are about to advocate for, we need clean water and a place that will provide for our children and their children, that will provide them with the same beautiful place on earth that we currently enjoy. Do not be short-sighted about this!</p>	LNG Project	<p>Thank you for your comment.</p> <p>The goal of Woodfibre LNG Limited is to develop a project that provides sustained economic growth while continuing to support the work that has been done to improve Howe Sound.</p> <p>The Woodfibre site has been used for industrial purposes for 100 years and is zoned for this use. Woodfibre LNG's purchase of the property was contingent on its former owner, Western Forest Products (WFP), obtaining a Certificate of Compliance (COC) from the BC Ministry of Environment (MOE). On December 22, 2014, the MOE issued two COCs for the Woodfibre property. The COCs confirm that WFP has cleaned up the site to acceptable contaminant levels and existing site contamination does not pose an ecological or human health risk. These COCs include conditions related to monitoring and management of residual contamination, and reporting requirements that must be undertaken by a BC MOE Approved Professional.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	

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987	March 22, 2015	Paddy Kaye - Squamish, British Columbia	I believe that the Howe Sound and Squamish should shift into environmental protection mode, to me the value is in our natural assets trees, beaches, wildlife, marine life, etc. This is our community's long term opportunity... Handing this land over to the gas industry and allowing foreign owners to develop this project is short term thinking... I do NOT support the LNG project.	Corporate Ownership LNG Project	<p>Thank you for your comment.</p> <p>The Woodfibre LNG Project is owned by Woodfibre LNG Limited, a privately held Canadian company based in Vancouver with a Community Office in Squamish.</p> <p>Woodfibre LNG Limited is a subsidiary of Pacific Oil and Gas (PO&G) which develops, builds, owns and operates projects throughout the energy supply chain.</p> <p>Woodfibre LNG Limited intends to operate in a manner consistent with its core values of a triple bottom line approach, where results benefit the community, the country and the company.</p> <p>Woodfibre LNG will comply with all applicable regional, provincial and federal laws, regulations, guidelines and standards including but not limited to: employment standards; health and environmental regulations and standards; taxation; and, First Nations agreements.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	
988	March 22, 2015	Mona Helcermanas-Benge - West Vancouver, British Columbia	<p>12.0 Effects of the Environment on the Project</p> <p>Wind and Waves: Howe Sound is typical of many fjords along the coast of BC that experience strong outflow winds during winter. The strongest winds at the project site are anticipated to be funneled from the northeast and east.</p> <p>Question: my understanding is that the LNG tankers due to their high windage problem must leave the Sound if the winds are over 25 knots. I have seen tables that indicate there are many days when winds can reach as high as 70mph. Will the tankers go into the sound when winds are higher than 25knots? Where will the anchor if they don't?</p> <p>What happens if the ship is loading at berth when the wind is gusting above 25 knots and the water surges against the ship? Does it stay at the berth or leave the Sound? If it leaves half full, isn't that very dangerous?</p>	Effects of the Environment on the Project (Wind)	<p>Thank you for your comment.</p> <p>As part of the TERMPOL review, Woodfibre LNG will present the operational and environmental limitations for docking and undocking of an LNG carrier for appraisal, including cessation, abortion of loading operations and berth evacuation in adverse weather conditions. The limitations will be reflected in the Port Information Book, in conformance with TERMPOL 3.16.</p> <p>In case of an unplanned maintenance event at the terminal that cannot be resolved while the LNG carrier is at the berth, the LNG carrier would be disconnected from the berth and escorted out of Canadian waters until the terminal issue is resolved or rectified.</p>	

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989	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, British Columbia	what is the drift factor if the ship loses propulsion during a high wind situation anywhere in the sound? What is the plan if the tugs cannot control the ship as happened to the Russian freighter up north and it grounds on the rocks on Bowen or Whytecliff?	Safety	<p>Thank you for your question.</p> <p>Fast time simulations will be conducted using high wind and adverse weather conditions for various fail scenarios to determine the number and power of tugs to safely manage an LNG carrier within Howe Sound. The results of this analysis will be submitted as part of the TERMPOL process for risk assessments.</p> <p>From these fast time simulations it has been determined that three powerful tugs, two at the stern (one which will be tethered at all times) and one tug running upfront could safely handle the LNG carrier under all expected wind and weather conditions of Howe Sound with a full engine breakdown and with the rudder in hard over condition.</p> <p>Before the LNG tankers are permitted to navigate Howe Sound, full mission simulations will be conducted to allow the BC Coast Pilots and tugs to practice failure manoeuvres in high wind conditions and determine if any further equipment or mitigations are required and to permit them the practice of handling the LNG tanker under these conditions</p>	
990	March 22, 2015	Personal Information Withheld - Furry Creek, British Columbia	<p>SAFETY: Siting an LNG facility in Howe Sound violates international safety standards and practices, putting Howe Sound residents at risk As LNG tankers transit Howe Sound, there is a high-danger zone for 1,600 metres (1-mile) on either side of the LNG tanker. If an accident happens, people within this zone risk death by asphyxiation, or death/injury by fire or explosion. Every time a tanker travels through Howe Sound (approximately 6-8 transits a month according to Woodfibre LNG) several Howe Sound communities will be in that high-danger zone, including: Bowen Island, Bowyer Island, Anvil Island, Passage Island, Porteau Cove, West Vancouver, and parts of the Sea to Sky highway. The Society of International Gas Tanker and Terminal Operators (SIGTTO) LNG Terminal Siting Standards states that LNG terminals should not be located in narrow, inland waterways with dense local populations and significant commercial, recreational, and ferry traffic. Why would that guid eline not apply to Howe Sound? The proposed siting of the Woodfibre LNG terminal and associated transit of LNG tankers through Howe Sound poses an unacceptable risk to safety of people in communities along the shores of Howe Sound.</p> <p>Sources: Sandia Report, 2004 and SIGTTO LNG Terminal Siting Standards</p> <p>ENVIRONMENT: The once-through seawater cooling system proposed by Woodfibre LNG is outdated Woodfibre LNG is proposing an outdated and damaging cooling method to help cool the LNG facility. They propose to extract 17,000 tonnes (= 3.7 million gallons, or 7 Olympic-sized 50-meter swimming pools) of seawater from Howe Sound, chlorinate it, heat it, and then spit it back out into the sound every hour of every day for the next 25 years. This method has been banned in</p>	LNG Project	<p>Thank you for your comment. For a response to this comment, please refer to the "Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions", comment # 11-21, 45, and 46.</p>	

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			<p>California and several other places as it is very damaging to marine life such as juvenile salmon, herring, and plankton which are the building blocks for all other life in Howe Sound. If the herring are impacted, the dolphins, orcas, and humpbacks are also impacted as they no longer have a food supply. The impacts of increased water temperatures and the addition of chlorinated seawater will likely reverse the recent revival of marine life in Howe Sound, which is just now recovering from the toxic legacies of previous industries. This is unacceptable.</p> <p>HEALTH: Social costs and health impacts of air pollution Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Emissions of NOx and SO2 interact with other compounds to form fine particles, which can affect both the lungs and the heart. Exposure to these particles is linked to increased risk of respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; onset of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. A new study published in the scientific journal, Climatic Change, estimates the true social costs of air pollution that aren't accounted for in the cost of fossil fuels and other pollutants. Social costs include the health impacts of air pollution as well as impacts from climate change. The study found that sulfur dioxide costs \$42,000 per tonne, and nitrous oxides cost \$67,000 per tonne. Sources: Mills et al (2009) Adverse cardiovascular effects of air pollution. Nature Clinical Practice Cardiovascular Medicine 6: 36-44 Shindell (2015) The social costs of atmospheric release. Climatic Change</p> <p>SITE SUITABILITY: The Woodfibre site is not a safe location for a hazardous LNG facility</p> <p>On February 15th, 2015, a 3.4 magnitude earthquake hit Vancouver's coast that was felt throughout Howe Sound. The Woodfibre LNG proposal is located within this zone of moderate to high earthquake risk, on two known thrust faults. The Woodfibre site also has a history of slope failure. In 1955 a wharf and three warehouses collapsed into Howe Sound at the Woodfibre site, causing \$500,000 – \$750,000 in damages (Bornhold, B.D., 1983, Fjords, GEOS, no. 1, p 1-4). A recent, but unreleased, geotechnical study by Knight Piesold identifies that approximately 46% of the study area was mapped as having rapid mass movement. This means landslides and slope slumpage... including existing natural landslide</p>			

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			<p>hazards as well as terrain where construction activity may increase landslide initiation. Why hasn't the geotechnical study by Knight Piesold been released?</p> <p>Sources: http://www.cbc.ca/news/multimedia/every-fault-line-in-british-columbia-1.2919420 Bornhold, B.D., 1983, Fiords, GEOS, no. 1, p 1-4 B.C. Ministry of Energy and Mines</p> <p>ECONOMY: The requested socio-economic study has not been provided</p> <p>During construction, only 4.3% of jobs (=38.5 out of 895) will be for locals living in the Squamish/Whistler corridor (See Table 6.2-8 of the Labour Market section of Woodfibre LNG's environmental assessment application). Why are there so few jobs predicted to be filled by workers in the Squamish/SLRD area? The EA application is also very unclear about how many of the 100 full-time jobs will be filled by residents of Howe Sound once the LNG terminal is operational. What are the benefits to Squamish? What are the costs? There is still no clarity around how much in municipal taxes will be paid to the District of Squamish. How will this project impact existing small businesses and existing industries in Howe Sound?</p> <p>CLIMATE CHANGE: 142 thousand tonnes of greenhouse gas emissions is unacceptable</p> <p>Woodfibre LNG is now estimating greenhouse gas emissions to be 142 thousand tonnes of CO2 equivalent every year. These annual emissions of CO2 equivalent from Woodfibre LNG is equal to adding over 18,000 cars to the highway, driving to Vancouver and back, every day. This is more than six times greater than current highway traffic. It is irresponsible to approve this kind of polluting industry at a time when we need to transition away from fossil fuels to mitigate the risks associated with climate change, and to reduce the economic and health impacts of air pollution in general.</p> <p>GOVERNMENT REGULATION: Inability of government to monitor, enforce, and respond to issues</p> <p>There are no regulations adopted to regulate this LNG industry from a technical standpoint. Any of the current standards are not applicable to the LNG industry. Do the regulators have the knowledge and the expertise and the capacity to oversee this industry or will they be relying on the proponent to monitor themselves and report to the regulator? Self-monitoring industries have created several examples of accidents with resulting environmental destruction in recent years, including the Lac Megantic rail disaster and the Mt Polley tailing pond spill.</p>			

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			<p>ENVIRONMENT: Removal of water from Mill Creek unsustainable for fish life</p> <p>Woodfibre LNG has secured the water license to extract water from Mill Creek, which flows through the Woodfibre site. The Department of Fisheries and Oceans has objected to this because the amount of water that WLNG is proposing to remove will reduce water levels in Mill Creek to levels that will no longer support fish life, especially in the summer months. Woodfibre LNG needs to source water for this project from somewhere else to protect this important stream habitat which is home to several native fish species.</p> <p>ENVIRONMENT: Missing baseline studies</p> <p>The following baseline studies are either missing or are inadequate as they do not conform to any recognized scientific standards: fish, birds, marine mammals, air quality, shipping, water quality, marine sound, and atmospheric sound, marine life near the Woodfibre site, and the cumulative impact assessment. Proper studies need to be completed before any decisions can be made regarding this project.</p> <p>VIEWSCAPES: BC Hydro clearcut of two 64 metre swaths of forest at the Woodfibre site will impact views from the Sea to Sky highway and the gondola</p> <p>BC Hydro is proposing to clearcut two 64 metre swaths of forest at the Woodfibre site which will create visible scars in the Howe Sound viewscape which will be very visible from the highway and the gondola. This information was only made available during the recent BC Hydro open house held on 19th March, near the end of the public comment period. This information is not included in the cumulative impact assessment of the Woodfibre application and it should be. This late release of information pertinent to this project and the timing of the BC Hydro open houses is unsatisfactory.</p> <p>ENVIRONMENT: 9000 year old glass sponge reefs endangered by tanker traffic</p> <p>LNG tankers do not have enough clearance to get over the 9000 year old reef if they go off course. These 9000 year old glass sponge reefs have been called "Living Fossils" by National Geographic as until recently this species was thought to have gone extinct over 60 million years ago. MLA Jordan Sturdy recently made a statement in the House about the importance of this discovery in Halkett Bay near Gambier Island, and to support the proposal to expand the Provincial Park Protected Area to ensure these reefs are protected.</p> <p>Sources: http://news.nationalgeographic.com/news/2013/10/131018-glass-sponge-reef-canada-ocean-science/</p>			

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			<p>http://jordansturdymla.ca/bcltv_videos/mla-sturdy-halkett-bays-glass-sponges/</p> <p>ENVIRONMENT: Will there be smog? Will there be a smell?</p> <p>Woodfibre LNG is estimating air pollution emissions of 295.7 tonnes of nitrogen dioxide (NO2) and 43.8 tonnes of sulfur dioxide (SO2) every year (See Table 5.2-14 of the Air Quality Section of Woodfibre LNG's environmental assessment application). Nitrogen Dioxide (NO2) is a reddish-brown gas with a pungent, irritating odour. It absorbs light and leads to the yellow-brown "smog" pollution haze seen hanging over cities. It is known to irritate the lungs and increase susceptibility to respiratory infections. In combination with either ozone (O3) or sulphur dioxide (SO2), nitrogen dioxide may cause injury at even lower concentration levels. Sulphur Dioxide (SO2) is a toxic gas with a pungent, irritating, and rotten smell. Current scientific evidence links short-term exposures to SO2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. These effects are particularly important for asthmatics at elevated ventilation rates (e.g., while exercising or playing). Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics. The addition of these air pollutants in Howe Sound is of particular concern as recent research has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor.</p> <p>Recent research (by MSc student Annie Seagram, studying under Professor Douw Steyn, Department of Earth, Ocean and Atmospheric Sciences at the University of British Columbia) has shown that the Howe Sound airshed and Lower Fraser Valley airshed are connected. Emissions from Woodfibre LNG will add to the pollution in Howe Sound, exacerbating the existing air quality conditions, particularly in the Squamish-Brackendale corridor. Note that Metro Vancouver annually issues several Air Quality Advisories due to high concentrations of ground-level ozone. This pollution also impacts the Howe Sound and Squamish, and exposure to these pollutants are of particular concern for infants, the elderly, and is directly linked to health issues such as lung or heart disease and asthma.</p>			

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991	March 22, 2015	Steve March - Gibsons, British Columbia	I have a concern regarding the method of cooling the LNG process. Woodfiber is proposing to use Direct sea water cooling. This method is known to affect the marine life in the area. Direct sea water cooling is known to be the cheapest and preferred method in the industry, however most countries will not allow this type of cooling to take place. There are two other methods of cooling which could be used which have less impact on marine life. These other two methods are "Indirect Seawater Cooling" and "Air Cooling". Why have these other methods of cooling not been considered? If the Provincial Government is planning to industrialize our Howe Sound, why would they not insist on the cleanest methods to insure that our waters, our beautiful BC are not polluted?	Seawater Cooling System Alternative Means of Undertaking the Project	<p>Thank you for your comment.</p> <p>In liquefied natural gas (LNG) facilities, seawater cooling is used primarily to remove waste heat generated from the main refrigerant compressors, which are used to cool the gas. Seawater cooling is used widely, including in about half of the LNG facilities currently in operation in the world. Seawater cooling is energy efficient, and produces less environmental noise and less visual effects than air cooling. In selecting a preferred cooling method, Woodfibre LNG Limited considered environmental effects, regulatory issues, and capital and operating cost considerations (e.g., maintenance, reliability, energy efficiency). Reliability and maintainability of heat exchangers is perhaps the most critical factor in the consideration of the preferred cooling media.</p> <p>Linde Group (2014) conducted a cooling study on seawater vs. air cooling, and WorleyParsons (2013) conducted a cooling media study on the following cooling media options:</p> <ul style="list-style-type: none">• air cooling• evaporative cooling• freshwater cooling from local streams• seawater cooling from Howe Sound <p>Through this study, seawater cooling was chosen as the preferred cooling media. Seawater is one of the most abundant and efficient cooling mediums available¹⁰. Seawater cooling produces less environmental noise and visual effects than air cooling. During operation, it is preferable that the cooling medium be at a consistent temperature through the year. The seawater temperature fluctuations are less over the year than the temperature fluctuations of the air or creek water.</p> <p>In addition, Woodfibre LNG Limited would like to note that two of the factors that Woodfibre LNG Limited took into consideration when assessing alternatives was public concern about noise and visual effects from using air cooling. For more information on the effects of the Project on marine water quality please refer to Section 5.10 Marine Water Quality. Additional components of the marine environment that have been assessed include Freshwater Fish and Fish Habitat (Section 5.15), Marine Benthic Habitat (Section 5.16), Forage Fish and Other Fish (Marine) (Section 5.18) and Marine Mammals (Section 5.19). A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that there were no Project-related significant adverse residual effects to the environment.</p> <p>Additional information on the seawater cooling system intake and discharge was provided to the EAO on April 23, 2015. Please also refer to the Seawater Cooling System information sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p>	

¹⁰ Thomas C. and Burlingame R. n.d. Direct Seawater Cooling in LNG Liquefaction Plants. Available at: http://www.ivt.ntnu.no/ept/fag/tep4215/innhold/LNG%20Conferences/2007/fscommand/PO_36_Thomas_s.pdf.

Comment #	Date Received	Author	Comment	Issue / Theme	Proponent's Response	EAO's Response
992	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>12.0 Effects of the Environment on the project</p> <p>Lightning: Over the past 10 years, an average of 61.4% of wildfires in BC were started by lightning strikes...therefore it is reasonable to expect lightning strikes to occur in the project area during the life of the project.</p> <p>Question: what is the plan should a wildfire head for the facility? What is the plan should lightning strike the facility itself and or the storage vessels and or the carrier vessel loading with LNG?</p>	Wildfires Lightning	<p>It is Woodfibre LNG Limited's intention to be self-sufficient for all possible emergency situations and it is not anticipated that Woodfibre LNG Limited would require First Responder emergency services. In addition, Woodfibre LNG Limited will continue discussions with local government and other emergency service providers in the LAA to ensure a robust communications plan in the unlikely event of an emergency related to the Woodfibre LNG Project.</p> <p>In accordance with provincial legislation, Woodfibre LNG Limited will be required to prepare a Fire Preparation Plan under the Wildfire Act and Wildfire Regulation. The Fire Preparation Plan addresses fire outside of the boundaries of the Project. To address the potential effects associated with wildfire, a fuel hazard assessment will be conducted based on the Guide to Fuel Hazard Assessment and Abatement in British Columbia.</p> <p>In addition, Woodfibre LNG Limited is required to prepare a Construction Emergency Response Plan (ERP). The Construction ERP will describe best management practices and procedures for preparing for and responding to fires, including wildfires.</p> <p>Lightning strikes are not uncommon on ships, mainly because at sea, ships represent the highest available target. Steel ships have the capacity to allow the energy from a strike to be transferred directly to the water through its hull without harming its people and its cargo. In addition, LNG carriers do not allow any oxygen (air) in their cargo spaces in order to eliminate the risk of fire in case of a spark caused by any source, including lighting. The FSO will be built to the same standards as normal ships.</p> <p>The marine industry has very stringent requirements for electrical insulation, so that electrical equipment and wiring does not suffer any damage during a lightning strike. Equipment insulation is required to be monitored regularly in order to detect possible deterioration over time.</p> <p>Specific lightning studies will be assessed during detailed design, and should additional engineering mitigation measures being required for either the facility or FSO, they will be implemented then.</p>	
993	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>12.0 Effects of Environment on the project</p> <p>Drought: if there is low flow in both Mill and Woodfibre creeks and WLNG uses the hydro run of river power plants as part of its power needs what is the plan? Or is WLNG selling that power back to Hydro and relying completely on power directly being supplied by BC Hydro?</p>	BC Hydro	<p>The Woodfibre LNG Project will be powered by electricity provided by BC Hydro.</p>	

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994(i)	March 22, 2015	Personal Information Withheld - Squamish, British Columbia	I personally believe that putting our fragile ecosystem at risk for a dangerous and unstable market product is a irresponsible and shortsighted decision for Howe sound and the surrounding area. As a concerned youth and squamish resident I cannot stand idly by and watch our town destroy itself by letting selfish businesses destroy everything in its path for profit.	LNG Project	<p>Thank you for the comment.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>The Woodfibre site has been used for industrial purposes for 100 years and is zoned for industrial use. As a condition of acquiring the site, Woodfibre LNG required the completion of remediation work on site. On December 22, 2014 the Ministry of Environment issued two Certificates of Compliance (uplands and water lot) evidencing completion of the remediation.</p> <p>Woodfibre LNG Limited intends to perform additional remediation and restoration in the Project area. Plans for additional remediation include the removal of approximately 3,000 existing creosote-coated piles from the waterfront in the Project area and the creation of a Green Zone around Mill Creek. This work will be carried out in partnership with the local groups, where suitable, so that local conservation and restoration targets can be met (please refer to Section 2.6.7 Ecological Benefits of the Application).</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	
995	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>12.0 Effects of Environment on the project</p> <p>Fog: Fog data is not available for the project site</p> <p>Question: Why is that? It's not as if fog is a new thing in Howe Sound. What kind of danger does fog have on the tanker movement and on the operation of the facility?</p>	Marine Transport	<p>Thank you for your comment.</p> <p>At Woodfibre LNG, safety is the number one priority.</p> <p>The carriers will be escorted by at least three tug boats, and will be piloted by BC Coast Pilots who are experts with Howe Sound navigation. BC Coast Pilots will source their own wind and weather conditions data, and Woodfibre LNG will meet or exceed and utilize the expertise and intimate local knowledge of the BC Coast Pilots, Pacific Pilotage Authority, Transport Canada and the Canadian Coast Guard.</p> <p>In the event of fog, the carrier would delay transit from the Woodfibre LNG facility. The carriers will be escorted by at least three tug boats, and will be piloted by BC Coast Pilots who are experts with Howe Sound. BC Coast Pilots will source their own wind and weather conditions data, and Woodfibre LNG will comply with and utilize the expertise and intimate local knowledge of the BC Coast Pilots, Pacific Pilotage Authority, Transport Canada and the Canadian Coast Guard.</p>	

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996(i)	March 22, 2015	Joan McCullough – Lions Bay, British Columbia	There is a huge Public Outcry against this project, with regards to the potential destruction of Howe Sound marine life, and threatened safety of citizens along Howe Sound. Why are the safest and best practices being ignored??....Why is WFLNG not following International SIGTOO Rules??	Safety	<p>Thank you for your comments.</p> <p>Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL.</p> <p>At Woodfibre LNG, safety is our number one priority.</p> <p>Woodfibre LNG will be designed for the safe and efficient handling of liquefied natural gas, both on land and on water. This includes standards set out in the BC Oil and Gas Activities Act and the associated Liquefied Natural Gas Facility Regulation, national and BC building codes, as well as national and international standards, guidelines and codes of practice where there are no applicable codes for BC.</p> <p>Section 11.0 Accidents and Malfunctions of the Application assesses the effects of potential accidents and malfunctions for the Project. No high or very high risks were identified, and thresholds established by the Oil and Gas Commission (OGC) and other regulatory bodies are not exceeded for any events.</p> <p>During operation, major accidents at LNG facilities are very rare. LNG is not explosive in an unconfined environment. Two fire / vapour cloud explosions at LNG facilities are known to have occurred in the past 60 years. A vapour cloud and fire in Ohio occurred in 1944 because of leaks from an LNG tank constructed from inappropriate material, and in 2004 an explosion occurred in Algeria because of a steam boiler problem (boilers are not part of the Project design). Standards for modern LNG facilities have benefited from the lessons learned from these accidents, and include design requirements that avoid these accidents.</p> <p>Please also refer to Public Safety Information Sheet that has been prepared as part of the Woodfibre LNG Limited response to public comments.</p> <p>Woodfibre LNG Limited recognizes the community concerns about the potential effects of the Project on the waters and marine and plant life in Howe Sound. From the very beginning, Woodfibre LNG has been committed to listening to the community and building a project that is right for Squamish and right for BC – and this includes environmental stewardship.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	

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996(ii)	March 22, 2015	Joan McCullough – Lions Bay, British Columbia	<p>There is no valid reason to grant these people an Environment Certificate to go ahead. Everything they have proposed will harm the Environment. From the top down, this project is, and continues to be flawed..</p> <p>Please do your due diligence, and deny this application.</p>	LNG Project	<p>Woodfibre LNG Limited is of the view that the Woodfibre site is the right fit for an LNG facility. It features: zoned industrial, more than 100 years of industrial use, deepwater port, access to established shipping routes, access to FortisBC pipeline, access to BC Hydro transmission grid, and access to labour force.</p> <p>An assessment of the potential Project-related effects on the environment is included in Section 5.0 of the Application. A summary of the residual and cumulative environmental effects that cannot be avoided or mitigated through the re-design or relocation of the Project, or through Proponent commitments to mitigation measures are included in Section 21.0 Summary of Project-related Residual Effects. Mitigation measures are summarized in Section 22.0, and include mitigation measures to reduce or avoid effects to the marine environment. The Application concluded that, with mitigation measures in place, there were no Project-related significant adverse residual effects to the environment.</p>	
997	March 22, 2015	Personal Information Withheld - Howe Sound, British Columbia	<p>Please look into who payed Captain Stephen Brown to write his letter in support of LNG marine safety.</p> <p>Look at world standards for LNG transport. Howe Sound is an inappropriate place for LNG container ships.</p>	Safety	<p>Siting of the Woodfibre LNG facility complies in every way with the Society of International Gas Tanker & Terminal Operators Ltd's (SIGTTO) guidance as the location of the site is not within a narrow waterway as defined by SIGTTO and TERMPOL (Technical Review Process of Marine Terminal Systems and Transshipment Sites).</p> <p><i>Narrow channel/waterway</i></p> <p>TERMPOL specifies a body of navigable water of width four times the vessel's beam to be a one-way narrow channel, and seven times the beam to be a two-way narrow channel. SIGTTO specifies a body of navigable water of width five times the vessel's beam to be a one-way narrow channel. So, for a characteristic 45 metre beam LNG carrier calling at the proposed Woodfibre LNG Terminal, this would imply a width of 180 meters for a one-way narrow channel and 315 metres for a two-way narrow channel.</p> <p>The US 5th Circuit court in its judgments has specified that under Rule 9 of the International Regulations for Preventing Collisions at Sea (COLREGS) and the U.S. Inland Navigation Rules, a "narrow channel" to be 1000 feet (305 metres) while other court judgments have considered any body of water with width less than 1060% the beam of the vessel, which would be 488 metres for Woodfibre LNG, to be a narrow channel.</p> <p>SIGTTO's guidance principles also recommend turning circles to have a minimum diameter of twice the overall length of the largest LNG carrier (i.e., 600 m for Woodfibre LNG) and TERMPOL requires turning circle of 2.5 times the length, which equates to 750 m.</p> <p><i>LNG Carriers & Howe Sound Shipping Channel / Route</i></p> <ul style="list-style-type: none">• An LNG carrier needs a 180-metre (one way) wide channel for transit and 600 metre wide channel for turning with tugs.• Howe Sound at its narrowest along the shipping route is 1400 metres, or 4593 feet.• The width of Howe Sound at the proposed Woodfibre LNG terminal is 5.2 km or 17,060 feet with nearest distance to Darrell Bay being 2.7 km or 8858 feet and 60 meters deep with no large vessel movements within 2.7 km or 8858 feet.	

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					<p><i>Additional Information</i></p> <p>Subject to the recommendations of Transport Canada's TERMPOL Review Committee, which includes Transport Canada, Pacific Pilotage Authority, BC Coast Pilots and Canadian Coast Guard, Woodfibre LNG has always maintained that it would deploy at least three tugs in an escort pattern, at least one of which will be tethered, to provide a dynamic safety awareness zone for recreational and pleasure craft around the LNG carrier during its transit within Howe Sound. This dynamic safety awareness zone would extend up to 50 metres on either side of the vessel and up to 500 metres in front and, being dynamic in nature, would be transient with the movement of the LNG carrier. This arrangement of tugs also serves as an emergency provision to address contingencies that may require the vessel to stop or engage in manoeuvres at very short notice.</p> <p>Woodfibre LNG will develop a Squamish Harbour Vessel Traffic Plan to identify strategies to minimize displacement of marine-based recreational activities. As a component of the Squamish Harbour Vessel Traffic Plan, Woodfibre LNG will also work with Matthews Southwest and Bethel Lands Corporation, and District of Squamish, to minimize displacement of recreation activity by Project-associated ferry and water taxi traffic that travels to and from the Project site.</p>	
998	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>12.0 Effect of Environment upon the project</p> <p>12.3.1.3</p> <p>Wind and Waves: Extreme winds can produce high waves, dense blowing sea foam, heavy tumbling of the sea and poor visibility, all of which can make land and marine working conditions hazardous and potentially result in temporary closure of facilities.</p> <p>Question: Commonsense would suggest that high winds alone with surging seas would make Woodfibre a poor choice to site a Class A Hazard facility on an alluvial fan that can liquefy in earthquake. What happens to the welded together storage vessels in the face of surging waters in high winds?</p>	Effects of the Environment on the Project	<p>The two ships will be permanently joined together so they become a single hull, and this new unit will not use conventional ship moorings to (wire/rope) to stay in position, instead will use a permanent mooring that will not allow the vessel to detach even on the most severe weather conditions. However in the very unlikely scenario that the floating storage detaches, they would be guided out of danger by tug-boats to a safe location.</p>	
999	March 22, 2015	Claire Allen - Bowen Island, British Columbia	<p>The following are my concerns at the Woodfibre LNG project to which I would appreciate a response: How long will LNG or natural gas be stored in the floating storage and offloading units at WFLNG? Will the government limit the storage of LNG at any given time in order to minimize the chance of explosion?</p>	LNG Storage Seawater Cooling System Corporate Ownership	<p>Thank you for your comment. For a response to this comment, please refer to the "Woodfibre LNG Limited May 2015 Memo to Frequently Asked Questions", comment # 28, 33 and 35.</p>	

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1000	March 22, 2015	Mona Helcermanas-Benge - Horseshoe Bay, West Vancouver, British Columbia	<p>12.0 Effects of Environment upon the project Wind and Waves Wind conditions in conjunction with tides may create hazardous marine conditions for docked and in transit vessels and shoreline facilities. Wind and sea conditions can affect several aspects of shipping operations, including delaying pilot boarding or disembarking, docking and LNG transfer.</p> <p>Question: What is the plan in this situation when the storage vessels are full and the carrier vessel is full and they are surging together? What happens if the the ship breaks loose which has actually happened before?</p>	Effects of the Environment on the Project	<p>Thank you for your comment.</p> <p>As part of the TERMPOL review, Woodfibre LNG will present the operational and environmental limitations for docking and undocking of an LNG carrier for appraisal, including cessation, abortion of loading operations and berth evacuation in adverse weather conditions. The limitations will be reflected in the Port Information Book, in conformance with TERMPOL 3.16.</p> <p>In case of an unplanned maintenance event at the terminal that cannot be resolved while the LNG carrier is at the berth, the LNG carrier would be disconnected from the berth and escorted out of Canadian waters until the terminal issue is resolved or rectified.</p>	