

**From:** [Diana Chan](#)  
**To:** [Epps, Deb ENV:EX](#); [Chiang, Eric](#); [Mattu, Gevan \(EC\)](#)  
**Subject:** NES EIA plan update  
**Date:** December 14, 2018 11:44:55 AM

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Hello again, everyone,

I hope you've all been keeping well as we dive into winter (it's a snow day here in Bella Bella). I'm following up to our discussion last summer. Do you have a more recent draft of the EIA Plan based on our last phone call where we discussed the draft that I sent in June? I'm hoping that we'll be able to wrap things up from the technical side soon so we can help the process move forward.

Thank you,

Diana

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**From:** Diana Chan

**Date:** Friday, July 13, 2018 at 4:12 PM

**To:** "Epps, Deb ENV:EX" , "Chiang, Eric" , "Mattu, Gevan (EC)"

**Cc:** Mike Reid , "Brach, Pader W ENV:EX" , "Murdock, Philip" , Marilyn Slett , "Raymond, Chris (EC)"

**Subject:** EIA Plan comment table

Hi Deb, Eric, and Gevan,

Attached please find an updated comment table corresponding with the last tracked changes to the draft EIA Plan that I sent on June 1. Please note the three cells that are highlighted in orange. Those are items that I've added to the ENV/ECCC/DFO Response column because we were responding to your edits, but please feel free to add to/clarify what I've entered if needed.

I'll look forward to your next revisions and responses. Also, if there's anything I can do to help arrange leadership consultation meetings, please let me know. From our last call, we all seem to be aware that there are still higher level discussions that need to take place, and we'd like those higher level issues to be addressed as soon as possible so that the EIA can proceed.

Hope you all have a nice weekend,

Diana

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**Diana Chan**

Assistant Aquatics Manager

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(e): [diana.chan@heiltsuk.ca](mailto:diana.chan@heiltsuk.ca)

**From:** [Diana Chan](#)  
**To:** [Chiang, Eric](#); [Epps, Deb ENV:EX](#); [Mattu, Gevan \(EC\)](#); [Adam La Rusic \(adam.larusic@canada.ca\)](#)  
**Subject:** Re: NES EIA plan update  
**Date:** January 30, 2019 11:14:43 AM  
**Attachments:** [2018 10 01 Seaforth Channel EIA\[1\].pdf](#)

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Hi again everyone,

I'm following up to my last email. I have received the attached updated version of the terms of reference via Heiltsuk's legal counsel (who received it from Department of Justice's legal counsel). I'm hoping that our technical group can reconvene and hopefully reach consensus on a few outstanding items so that a final version of the plan can be sent to our appropriate respective colleagues for the higher level discussions and leadership consultation that are required. If anyone has a copy of the attached draft in a Word document, that would be helpful.

I've created a doodle poll to see if there is a time in the next couple of weeks that might work for us to chat: <https://doodle.com/poll/5tc95whkc5tqxzyi>

Thank you,  
Diana

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**From:** "Chiang, Eric"

**Date:** Tuesday, December 18, 2018 at 10:33 AM

**To:** Diana Chan , "Epps, Deb ENV:EX" , "Mattu, Gevan (EC)" , "Adam La Rusic (adam.larusic@canada.ca)"

**Subject:** RE: NES EIA plan update

Hi Diana, Thank you for your email.

I am writing to let you know that we are working to provide you a response.

Looping in Adam LaRusic of ECCC as well.

(Hope you enjoyed the snow day..)

Eric

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**From:** Diana Chan [<mailto:diana.chan@heiltsuk.ca>]

**Sent:** December-14-18 11:45 AM

**To:** Epps, Deb ENV:EX; Chiang, Eric; Mattu, Gevan (EC)

**Subject:** NES EIA plan update

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# Seaforth Channel

## Environmental Impact Assessment Plan

### Terms of Reference

FINAL DRAFT  
OCTOBER 1, 2018

**Seaforth Channel Environmental Impact Assessment Plan**  
**Terms of Reference**

## Contents

1.0 Introduction .....	3
2.0 Incident Summary .....	4
3.0 Summary of Site Investigation .....	4
3.1 Site Surveys .....	4
3.2 Ephemeral Sampling Program .....	4
4.0 Ecological Risk Assessment .....	5
5.0 Human Health Risk Assessment.....	8
6.0 Archaeological Resources Assessment .....	9
7.0 Environmental Impact Characterization and Summary .....	9
8.0 Data Management and Sharing .....	9
9.0 References .....	9

## 1.0 Introduction

On October 13, 2016, the Nathan E. Stewart tugboat, owned by Kirby Offshore Marine, LLC (Kirby), ran aground on a reef at the entrance to the Seaforth Channel near Athlone Island, British Columbia. The incident occurred within the Heiltsuk First Nation territory. The tugboat, which was carrying marine diesel fuel and lubricants, was pushing an empty petroleum barge at the time of the incident. After running aground, the Nathan E. Stewart sank, leaking diesel fuel and lubricants into the environment.

Unified Command (UC) for the response consisted of the Canadian Coast Guard (CCG), Kirby, Heiltsuk First Nation and the BC Ministry of Environment and Climate Change Strategy (BC MOE). The Environment Unit (EU) consisted of representatives from Kirby, Heiltsuk, BC MoE, Environment and Climate Change Canada (ECCC), Fisheries and Oceans Canada (DFO), Health Canada, First Nations Health Authority, Vancouver Coastal Health and the BC Ministry of Transportation.

To understand the impacts of the spill and to assess whether or not the ecosystem has recovered to its healthy and sustainable state, a robust Environmental Impact Assessment (EIA) is necessary. At the request of Unified Command, an EIA report will be prepared in three phases. Phase 1 of the EIA will include (1) a summary of the incident and response; and (2) a summary of the response-related site information including data collected through March 2017 and a preliminary evaluation of the results, comparing data to the appropriate guidelines. In addition, the results of a formal opinion by a Numerical Standards Approved Professional that the site is or is not a contaminated site under the B.C. Environmental Management Act will be provided as an attachment to the report. Appendices containing the data, including summary tables, figures and maps will be also provided.

Phase 2 of the EIA will include the problem formulations for the Ecological Risk Assessment (ERA) and Human Health Risk Assessment (HHRA) and will be informed, in part, by the data analysis completed in Phase 1 as well as additional information collected by the Heiltsuk First Nation in 2017 and 2018. The draft problem formulations will be circulated for review and comment. The EU will then collectively evaluate comments and provide them to Kirby for incorporation into the final version of the Problem Formulation. The EU lead will provide management of the review and commenting process and function, working with each member. This review and compilation of comments is proposed to be done through a process where EU strives to achieve meaningful dialogue and consensus. Active participation of each participant is encouraged and no participant should have his/her/their position on a matter misunderstood or not given due consideration. When consensus cannot be reached, EU information will be forwarded to UC for a final decision. .

Phase 3 of the EIA will include more detailed interpretation of the data in order to address the following objectives: (1) conduct ecological risk, human health risk, and archeological assessments; (2) provide a comprehensive assessment of short-term and long-term impacts<sup>1</sup> using data collected during the response (including post-response efforts) and the results of the risk assessments; and (3) assess the need for remediation, restoration, and long-term monitoring. Uncertainty and data gaps will be identified throughout the EIA as appropriate.

All phases of the EIA and decision for future monitoring activities will be reviewed by the EU with the intention of achieving consensus. If consensus cannot be reached, information will be forwarded to Unified Command. The EIA will use well-accepted scientific methods, indigenous knowledge, and regulatory guidelines and policies to address the key ecological and archaeological resources and some of the human health concerns associated with this incident. As described in the sections below, the use of multiple lines of evidence will support a comprehensive approach to assessing environmental impacts and risks as related to the incident.

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<sup>1</sup> Short-term refers to impacts that may have occurred from the time of the release until the tug was removed; long-term refers to impacts that may have occurred subsequent to the removal of the tug as well as the potential for future effects based on most recent data collected.

Upon approval of this EIA Terms of Reference, a timeline for completion will be provided.

## 2.0 Incident Summary

An incident summary will be developed to provide background and supporting information on the release, cleanup activities, and site investigation efforts (e.g., surveys and sampling) conducted to support the response. Ephemeral data (e.g., transient data that can only be obtained in the first few hours or days after a spill) collected during and immediately after the response will be included in this summary. This immediate sampling and survey effort is critical in a spill event with materials such as diesel that quickly degrade in the environment and are metabolized in biota. Ephemeral data includes the sampling and chemical analysis of site media (e.g., water, sediment, and tissue) and other investigative surveys such as Shoreline Cleanup Assessment Technique (SCAT), wildlife surveys and monitoring efforts, and archaeological surveys. These intensive sampling and survey efforts were designed to assess the spatial and temporal extent of contamination and will provide a basis for the evaluation of potential impacts. The incident summary will include the following:

- Site location and description of the area (physical and ecological), including maps
- Definition of the spatial and temporal extent of oil and/or sheen (e.g., aerial surveys, trajectories, unmanned aerial vehicle [UAVs], reconnaissance surveys, sampling)
- Chemical characterization, environmental fate and effects, and physical impacts of the spilled material(s)<sup>2</sup>
- Potential for persistence of spilled materials in environmental receptors A more detailed Mass Balance evaluation than what was previously conducted will be prepared, including an estimate of diesel and other lubricants lost, volumes recovered via pumping, skimming and absorption (e.g., boom); modelling efforts to quantify evaporation of source product over time; and the estimate of the volume of product released to the environment and timing of such release.

## 3.0 Summary of Site Investigation

A summary of the site activities conducted during the response, including surveys and sampling activities, will be developed. A preliminary evaluation of the results from ephemeral sampling efforts comparing data to the appropriate guidelines will also be conducted.

### 3.1 Site Surveys

Site survey activities, including the types of surveys conducted, frequency and location, and notes on significant findings, will be summarized. For each survey type, the objectives, materials and methods, and a summary of results, including how the objectives were achieved, will be provided.

- SCAT Surveys and Clean-up/Sign-off Inspections
- Wildlife Reconnaissance/Carcass Surveys
- Archaeological Surveys

### 3.2 Ephemeral Sampling Program

An overview of the ephemeral sampling program and a preliminary evaluation and summary of the results will be presented. The objectives, field materials and methods, analytical methods, and a review of the Quality

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<sup>2</sup> The chemicals of potential concern include petroleum hydrocarbons quantified as volatile organic compounds (BTX, MTBE, styrene), hydrocarbons (EPH, LEPH, HEPH, VPH, F1-F4, and volatile hydrocarbons), parent PAHs (including non-alkyl substituted) and alkylated PAH compounds as well as the following metals typically associated with diesel: nickel, copper, cadmium, lead, iron, zinc and chromium.

Assurance/Quality Control (QA/QC) protocols will be provided. A discussion of if and how the sampling program met the objectives outlined in the Ephemeral Sampling Plan will also be included. Comprehensive maps showing sample locations and results as well as tables and graphs will be provided to support the preliminary evaluation of the results. The data will be evaluated as follows:

- Concentrations of chemicals of potential concern (COPC) will be compared with B.C. MOE water and sediment criteria (including those for edible tissue) (B.C. MOE 2017), Canadian Council of Ministry of the Environment (CCME) water quality and interim sediment quality guidelines and probable effects levels (CCME 2014), and water and soil standards under the Environmental Management Act, Contaminated Sites Regulation (EMA 1996).
- COPC detections above detection limits will be summarized for control/reference sites, lab blank, trip blank, environmental background contamination (noise), oil fingerprinting (source oil compared to field samples).
- Spatial and temporal trends related to distribution of COPCs will be summarized.
- Data gaps and uncertainties will be identified and the need for further sampling will be assessed. Should additional sampling be necessary, a proposal for these efforts will be developed for review by the EU and approval by Unified Command. The need for further sampling will be assessed during Phase 1 of the EIA. The results of this assessment will be shared as soon as data are reviewed and will not be contingent on the completion of all components of Phase 1. As such, additional sampling may be conducted prior to the completion of the EIA.
- The Heiltsuk Nation has conducted additional studies independently, outside the auspices of the Unified Command structure. While these studies would not necessarily have been directed by Unified Command, the studies may be scientifically relevant to the Environmental Impact Assessment. Therefore information from the Heiltsuk studies will be considered and included as relevant. The studies that have been conducted are as follows:
  - Report on biomarker assessment of bivalves in the Seaforth Channel spill area and reference sites near Bella Bella, BC (Kennedy 2017).
  - Using Heiltsuk Knowledge to assess the health of individual clams, clam populations, and surrounding ecosystems following the *Nathan E. Stewart* oil spill (draft) (Chan et al. 2018).
  - Additional investigation on benthic community structure in the intertidal zones – (D. Chan personal communication).

Conclusions regarding the potential for adverse effects associated with measured concentrations of COPC in site media will be provided. Additionally, results of the formal determination that the site is or is not contaminated under Section 44 of the Environmental Management Act (EMA 2003) will be provided.

## 4.0 Ecological Risk Assessment

An ERA<sup>3</sup> will be conducted as part of the EIA as it provides a transparent well-understood method to evaluate the potential risk associated with exposure to COPC. We expect that based on findings to date, the site will not be deemed a “contaminated site” under the Environmental Management Act, but confirmation will be provided by opinion of a Numerical Standards Approved Professional in Phase 1 of the EIA. Regardless, the ERA will follow best practices as described in documents under the Environmental Management Act, including, but not limited to, the B.C. MOE Supplemental Guidance for Risk Assessments (e.g., B.C. MOE, Lands and Parks 1998; B.C. MOE 2013, 2015a, b) as well as relevant federal guidance (CCME 1996, 1997; ECCC 2012). Accordingly, the ERA will include:

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<sup>3</sup> A risk based Contaminated Sites Approved Professional (CSAP) will be brought in as necessary to consult on specific issues including a determination that the site is or is not contaminated under Section 44 of the Environmental Management Act. A Qualified Environmental Professional already engaged in the project will assure that appropriate risk-based standards are used where needed and that appropriate methodologies are used absent available standards.

- Problem Formulation
- Exposure Assessment
- Effects Assessment
- Risk Characterization
- Uncertainty Analysis

A very general description of these components of the ERA follow with some detail with regards to methods. However, the ERA is a tiered process whereby each step in the ERA helps to define the following step. For example, while we can suggest potential endpoints that would be included in an ERA, until the problem formulation is complete it would be premature to be more specific in this plan. The appropriate level of detail and transparency will be provided in the ERA.

The first step in ERA is Problem Formulation, which includes a description of site management goals and the assessment goal of the ERA; regulatory context; background information from incident summary; identification of COPC, ecological receptors, potential exposure pathways; Conceptual Site Model (CSM); statement of protection goals and acceptable effect levels; identification of assessment and measurement endpoints; and development of multiple lines of evidence, including chemical, biological, and Indigenous knowledge. Problem formulation will also be the stage to set out assessment and measurement endpoints appropriate to the incident cultural, spatial and temporal context, including addressing concerns on health of resources such as measured by diversity and/or abundance. The draft problem formulation will be reviewed by the EU collectively as part of Phase 2 of the EIA.

The Heiltsuk First Nation has done significant work identifying important ecological resources in their territory. These ecological resources were identified by the Heiltsuk as at-risk during the response and will be evaluated together with other available data on species and ecosystems that may be present (e.g., B.C. Species and Ecosystems Explorer<sup>4</sup>, B.C. Conservation Data Centre<sup>5</sup>) to identify representative ecological receptors to be carried through the risk assessment. Resources that will be included for evaluation will include, but not be limited to, vegetation (e.g., kelp), shellfish, sea cucumbers, fish, birds and marine mammals<sup>6</sup>. As it is typically not feasible to study all species in a study area, surrogate species will be selected to represent receptor groups (e.g., piscivorous birds, herbivorous small mammals) based on potential exposure and sensitivity to site stressors, dominance in the biological community, being recognized as good indicators or surrogate species and value (commercial, aesthetic and other) to humans (CCME 1997). Surrogate species are selected conservatively using animals with, for example, small home ranges (e.g., more likelihood for exposure from a localized source). Species at risk are included as receptors for the risk assessment at the level of the individual. Heiltsuk Traditional Knowledge is also another important source of information that will be considered and incorporated into the EIA as relevant.

The CSM identifies the primary pathways by which receptors can come into contact with the spilled material(s). If there are no possible exposure pathways from a source to a receptor, then there is no potential for adverse effects from exposure.

For each receptor group, assessment endpoints (e.g., community structure, abundance and viability of populations) and associated measurement endpoints (e.g., comparison of measured concentrations to promulgated guidelines or modeled exposure values to literature based toxicity reference values [TRVs] -

<sup>4</sup> The B.C. Species and Ecosystems Explorer is a comprehensive online database managed by the B.C. MOE that allows users to search for information about plants, animals, and ecosystems. The database is available online at: <http://a100.gov.bc.ca/pub/eswp/>

<sup>5</sup> <http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre>

<sup>6</sup> Abalone impacts are being addressed separately by DFO under Section 35 Authorization.

described below<sup>7</sup>, toxicity tests, surveys, current and baseline condition provided by Heiltsuk knowledge etc.) are used as lines of evidence to assess potential for adverse effects for each receptor group. The kind and number of lines of evidence will vary by receptor group.

The Exposure Assessment integrates information on the identified spilled material(s), their concentration in environmental media and potential exposure pathways in order to determine the magnitude of exposure to ecological receptors. This exposure data is used as input for the evaluation of each line of evidence. Data collected during the response and post-tug removal (e.g., sampling, aerial surveys, Heiltsuk Knowledge) will be used for the assessment as lines of evidence in a multiple lines of evidence approach set out in EIA. Exposure will be estimated directly through measured water, sediment and tissue concentrations or through food chain modeling as appropriate. Both the potential for short and long term exposure will be evaluated.

The Effects Assessment evaluates the relationship between dose or degree of exposure and the incidence, probability and/or severity of organism response for each line of evidence (SABCSB 2008). This may include an exposure-response analysis, a causality assessment determining the likelihood that an observed effect in one of the lines of evidence would be related to site COPC, and/or the determination of toxicity reference values (a dose or concentration associated with no, or very low, probability of adverse effects) for comparison with site-specific exposure data. Provincial and federal guidance (B.C. MOE 2015b; CCME 1999a; CCME 1999b; Environment Canada 2010) documents are available that support the development of TRVs from the published scientific literature. All assumptions used in TRV development will be provided.

The Risk Characterization uses information generated in the Problem Formulation, Exposure Assessment and Effects Assessment to determine the potential for population responses in receptor species to the spilled material(s), or individual response for species at risk (CCME 1996). For example, measured concentrations in site media (e.g., maximum, 95% upper confidence limit) could be screened against guidelines where they exist or used in the target lipid model (TLM). A hazard assessment approach which involves taking the ratio of the total estimated exposure and the appropriate TRV are used to evaluate risk. Hazard Quotients (HQs), also called Exposure Ratios (CCME 1996), <1 indicate that the likelihood of risk is small and no further action may be necessary. HQs >1 indicate that there is potential for risk and a need for further studies or action (Suter 1993).

In any risk assessment, the findings are based on available data from the study area and the scientific literature in conjunction with a number of stated assumptions. Every effort is made to ensure these assumptions and data adequately represent conditions at the study area. However, data and scientific understanding of key environmental processes and factors is often limited, resulting in uncertainty in the assessment. Indigenous knowledge can help fill these data gap. Varying degrees of uncertainty are introduced at all stages of the risk assessment process. In order to clearly interpret the results of any risk assessment, the major sources of uncertainty must be acknowledged and documented. Where uncertainty exists, assumptions are made, and data are selected so as to err on the conservative side. This ensures that potential impacts are much more likely to be overestimated rather than understated. This precautionary approach is in accordance with the ultimate goal of ecological risk assessment - protection of the environment. As with the sources of uncertainty, it is important that key assumptions used in the assessment are acknowledged, agreed upon, and documented and that their impact on the results of the assessment are clearly understood.

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<sup>7</sup> Measurement endpoints are based on individual-level effects, whereas assessment endpoints are protective of populations.

## 5.0 Human Health Risk Assessment

The HHRA will follow the protocols that are legally required under the Environmental Management Act and the relevant additional guidance identified in the B.C. MOE *Supplemental Guidance for Risk Assessments* (B.C. MOE 2015a, b). Accordingly, the HHRA will include the following steps:

- Problem Formulation
- Exposure Assessment
- Effects Assessment
- Risk Characterization
- Uncertainty Analysis

Problem Formulation for the HHRA entails the following activities. Chemicals of potential concern in the spilled material and human receptors/receptor age groups with potential for exposure will be identified. This may include residents (First Nations, other) and site workers, recognizing that people may fall into both categories. The draft problem formulation will be circulated for review as part of Phase 2 of the EIA. Several exposure scenarios will be considered in the Exposure Assessment including ingestion of contaminated seafood (e.g. shellfish, kelp), incidental ingestion of surface water and sediment, inhalation and dermal exposure. Modeling will be conducted for each of the exposure scenarios including receptor-specific assumptions (e.g., body size and ingestion rates) and frequency and duration of exposure. The Effects Assessment will use guidelines from, in order of preference, British Columbia, CCME, other Canadian jurisdictions, and the United States Environmental Protection Agency. The Risk Characterization will evaluate exposure scenarios and effects scenarios for both carcinogens and non-carcinogens.

The theoretical increased lifetime cancer risks and non-cancer hazards associated with the ingestion of clams and other species exposed to the release will be calculated using the methods outlined in the *Federal Contaminated Site Risk Assessment in Canada, Part I - Guidance on Human Health Preliminary Quantitative Risk Assessment* (Health Canada 2012). Two general exposure scenarios will be evaluated, one for subsistence community members who consume clams and other aquatic species, and another that represents the general consumer who purchases clams and other commercially harvested species from the area. Additional scenarios for community members would consider susceptible age groups (e.g., children and the elderly), hypersensitive individuals (e.g., pregnant women), and vulnerable individuals known to suffer from health conditions (B.C. MOE 2015). Generic Health Canada (2012) guidelines will be used for body weight as well as exposure frequency and duration for residential exposure (Richardson and Stantec 2013). Site-specific consumption rates will be used, however if they are not available, consumption rates for similar receptor groups (e.g., subsistence aboriginal fisherman) will be used in their place. For example, the upper bound clam consumption rate from Wiseman (1998) based on a Haisla Dietary Survey from 1994 of 72 g/day may be used. The TRVs for each chemical were obtained from federal guidelines when available (Health Canada 2010). For chemicals without a Health Canada TRV, toxicity criteria were obtained from the United States Environmental Protection Agency (USEPA 2016).

All potential exposures that may have occurred from the beginning of the incident will be considered (e.g., food consumption, dermal exposure, incidental ingestion) and Hazard Quotients will be summed to calculate a Hazard Index which will be compared with a risk threshold of 1. The theoretical increased lifetime cancer risks and non-cancer hazards associated with short term inhalation and dermal exposure will be calculated using the methods outlined in the *Federal Contaminated Site Risk Assessment in Canada, Part I - Guidance on Human Health Preliminary Quantitative Risk Assessment* (Health Canada 2012) and using the TRVs presented in Health Canada (2010). A combination of the available air concentration data and the model estimates of air and surface water

concentrations near the spill area will be used to evaluate the risk and hazards associated with inhalation and dermal exposure. Standard methods will be used to estimate air concentrations to supplement available data. Available information regarding exposure duration and frequency in the days immediately following the spill will be incorporated in these models.

Separate discussions related to a health impact assessment will take place outside of this plan.

## 6.0 Archaeological Resources Assessment

An assessment of potential physical impacts to archaeological and cultural sites/structures and resources and traditional resources will be conducted based on site-specific data that can be provided by the Heiltsuk First Nation. If specific information on site locations, culturally important resources, and documentation of potential impacts can be provided, the assessment will follow the technical guidance for assessing physical and cultural structures and sites under the Canadian Environmental Assessment Act (CEAA 2012), the Heritage Conservation Act, and/or other appropriate B.C. standards.

## 7.0 Environmental Impact Characterization and Summary

Multiple lines of evidence will be used to characterize observed and potential environmental impacts associated with the Seaforth Channel Incident. Short term impacts related to the release of hazardous chemicals, such as oil spills, are typically associated with observations of oiling or observed mortalities (e.g., fish kill, beached carcasses) of fish and wildlife. Evidence of these impacts for the Seaforth Channel Incident will be evaluated using data collected during the response, including focused surveys (i.e., wildlife, SCAT), observations made during other response activities (e.g., environmental sampling), analytical data and results from marine mammal and avian necropsies. The potential for long term exposure and impacts will be characterized using the results of the site investigation and the ecological and human health risk assessments. Observed and potential impacts will be summarized, any data gaps will be identified, and the need for additional sampling and/or studies to assess environmental impacts will be determined. The EU will also review and discuss results and long term monitoring considerations. Additionally, the need for a remediation and/or restoration plan will be identified and any plans would be developed subsequent to completion of the EIA.

## 8.0 Data Management and Sharing

All non-confidential documentation generated during the Emergency Response (e.g., ICS forms, plans, field notes, maps, GPS data, photos, etc.) will be collated into a central data depository. The EU Lead will be responsible to work with all groups on issues relating to data management, administration and sharing, including looking for a depository.

## 9.0 References

British Columbia Ministry of Environment (B.C. MOE). 1993. Ambient Water Quality Criteria for Polycyclic Aromatic Hydrocarbons (PAHs) Environmental Protection Division. Available at [http://www.env.gov.bc.ca/wat/wq/BCguidelines/pahs/pahs\\_over.html](http://www.env.gov.bc.ca/wat/wq/BCguidelines/pahs/pahs_over.html)). Accessed December 6, 2016.

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Chan, D.E., Brown, C., Brown, E., Humchitt, G., Green, J., Jackson, H., Housty, G., Humchitt, A., Johnson, R., Reid, M., Waterfall, P. and K.A. Artelle. Using Heiltsuk knowledge to assess the health of individual clams, clam populations, and surrounding ecosystems following the *Nathan E. Stewart* oil spill: Preliminary report on phase 1 of testing. 2018.

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**From:** [Diana Chan](#)  
**To:** [Epps, Deb ENV:EX](#); [Chiang, Eric](#)  
**Cc:** [Adam La Rusic \(adam.larusic@canada.ca\)](#); [Herborg, Matthias](#)  
**Subject:** Re: NES EIA plan update  
**Date:** February 9, 2019 9:49:22 AM

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Sent: January-30-19 11:14 AM  
To: Chiang, Eric <[Eric.Chiang@dfo-mpo.gc.ca](mailto:Eric.Chiang@dfo-mpo.gc.ca)<<mailto:Eric.Chiang@dfo-mpo.gc.ca>>>; Epps, Deb ENV:EX <[Deb.Epps@gov.bc.ca](mailto:Deb.Epps@gov.bc.ca)<<mailto:Deb.Epps@gov.bc.ca>>>; Mattu, Gevan (EC) <[gevan.mattu@canada.ca](mailto:gevan.mattu@canada.ca)<<mailto:gevan.mattu@canada.ca>>>; Adam La Rusic (adam.larusic@canada.ca<<mailto:adam.larusic@canada.ca>>)<[adam.larusic@canada.ca](mailto:adam.larusic@canada.ca)<<mailto:adam.larusic@canada.ca>>>

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From: "Chiang, Eric" <Eric.Chiang@dfo-mpo.gc.ca<<mailto:Eric.Chiang@dfo-mpo.gc.ca>>>  
Date: Tuesday, December 18, 2018 at 10:33 AM  
To: Diana Chan <diana.chan@heiltsuk.ca<<mailto:diana.chan@heiltsuk.ca>>>, "Epps, Deb ENV:EX" <Deb.Epps@gov.bc.ca<<mailto:Deb.Epps@gov.bc.ca>>>, "Mattu, Gevan (EC)" <gevan.mattu@canada.ca<<mailto:gevan.mattu@canada.ca>>>, "Adam La Rusic (adam.larusic@canada.ca<<mailto:adam.larusic@canada.ca>>>)" <adam.larusic@canada.ca<<mailto:adam.larusic@canada.ca>>>  
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Looping in Adam LaRusic of ECCC as well.

(Hope you enjoyed the snow day..)

Eric

From: Diana Chan [<mailto:diana.chan@heiltsuk.ca>]  
Sent: December-14-18 11:45 AM  
To: Epps, Deb ENV:EX; Chiang, Eric; Mattu, Gevan (EC)  
Subject: NES EIA plan update

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From: Diana Chan <diana.chan@heiltsuk.ca<<mailto:diana.chan@heiltsuk.ca>>>  
Date: Friday, July 13, 2018 at 4:12 PM  
To: "Epps, Deb ENV:EX" <Deb.Epps@gov.bc.ca<<mailto:Deb.Epps@gov.bc.ca>>>, "Chiang, Eric" <Eric.Chiang@dfo-mpo.gc.ca<<mailto:Eric.Chiang@dfo-mpo.gc.ca>>>, "Mattu, Gevan (EC)" <gevan.mattu@canada.ca<<mailto:gevan.mattu@canada.ca>>>  
Cc: Mike Reid <mike.reid@heiltsuk.ca<<mailto:mike.reid@heiltsuk.ca>>>, "Brach, Pader W ENV:EX" <Pader.Brach@gov.bc.ca<<mailto:Pader.Brach@gov.bc.ca>>>, "Murdock, Philip" <Philip.Murdock@dfo-mpo.gc.ca<<mailto:Philip.Murdock@dfo-mpo.gc.ca>>>, Marilyn Slett <marilyn.slett@heiltsuk.ca<<mailto:marilyn.slett@heiltsuk.ca>>>, "Raymond, Chris (EC)"

<chris.raymond@canada.ca<<mailto:chris.raymond@canada.ca>>>

Subject: EIA Plan comment table

Hi Deb, Eric, and Gevan,

Attached please find an updated comment table corresponding with the last tracked changes to the draft EIA Plan that I sent on June 1. Please note the three cells that are highlighted in orange. Those are items that I've added to the ENV/ECCC/DFO Response column because we were responding to your edits, but please feel free to add to/clarify what I've entered if needed.

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Hope you all have a nice weekend,  
Diana

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Diana Chan  
Assistant Aquatics Manager  
Heiltsuk Integrated Resource Management Department  
PO Box 731, Bella Bella, BC V0T 1Z0  
(p): 250.957.2303 ext. 232 | ~~§~~.22  
(e): [diana.chan@heiltsuk.ca](mailto:diana.chan@heiltsuk.ca)<<mailto:diana.chan@heiltsuk.ca>>

**From:** [Diana Chan](#)  
**To:** [LaRusic, Adam \(EC\)](#); ["Chiang, Eric"](#); [Epps, Deb ENV:EX](#)  
**Cc:** [Herborg, Matthias](#)  
**Subject:** Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018  
**Date:** February 11, 2019 9:07:19 AM

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Hi Adam,

Thanks so much for sharing the Word version of the latest draft ToR.

I understand that Heiltsuk's counsel has responded to the letter from Julie Gascon. If this group thinks it would be helpful, I'm happy to request a copy to be shared with you all.

Have we settled on a time for a phone call?

Thanks,

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**Sent:** Monday, February 11, 2019 8:06 AM  
**To:** 'Chiang, Eric'; Diana Chan; Epps, Deb ENV:EX  
**Cc:** Herborg, Matthias  
**Subject:** Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018

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Thanks,

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Adam La Rusic  
Manager, Preparedness and Response – Pacific  
National Environmental Emergencies Centre (NEEC) - Vancouver Office

Environmental Protection Operations Directorate  
Environment and Climate Change Canada / Government of Canada  
adam.larusic@canada.ca / Tel: 604-666-1320 / Mobile : s.22 / Emergencies 24/7 : 1-866-283-2333

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adam.larusic@canada.ca / Tél. : 604-666-1320 / Cell : s.22 / Urgences 24/7 : 1-866-283-2333

-----Original Message-----

From: Chiang, Eric  
Sent: February 10, 2019 10:15 am  
To: Diana Chan ; Epps, Deb ENV:EX  
Cc: LaRusic, Adam (EC) ; Herborg, Matthias  
Subject: RE: NES EIA plan update

Hi Diana  
Re: word version - I believe we can get it and checking in right now with Adam. Please stay tuned.  
Thanks  
Eric

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Date: Tuesday, December 18, 2018 at 10:33 AM

To: Diana Chan >, "Epps, Deb ENV:EX" >, "Mattu, Gevan (EC)" >, "Adam La Rusic  
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Heiltsuk Integrated Resource Management Department

PO Box 731, Bella Bella, BC V0T 1Z0

(p): 250.957.2303 ext. 232 | (s.<sup>22</sup>

(e): diana.chan@heiltsuk.ca

**From:** [Diana Chan](#)  
**To:** [Epps, Deb ENV:EX](#); [LaRusic, Adam \(EC\)](#)  
**Cc:** [Chiang, Eric](#); [Herborg, Matthias](#)  
**Subject:** Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018  
**Date:** February 11, 2019 12:55:24 PM  
**Attachments:** [2018-09-07 LET LCF-JGascon \(CCG\) re response to Aug 30 ltr^final.pdf](#)

---

Hi all,

Attached please find the follow-up correspondence to Julie Gascon's letter from Heiltsuk.

I think Deb's suggestion makes sense. That said, I'm in all day meetings from now through Thursday, so I may not be able to provide my comments as far in advance as I'd like to if we end up having our call this Friday.

Best,  
Diana

---

**From:** Epps, Deb ENV:EX  
**Sent:** Monday, February 11, 2019 10:43 AM  
**To:** LaRusic, Adam (EC)  
**Cc:** Diana Chan; Chiang, Eric; Herborg, Matthias  
**Subject:** Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018

Hi everyone, I wonder if it would help to share comments or concerns via email or track changes prior to the call so we can come prepared to discuss?

Deb

Sent from my iPhone

On Feb 11, 2019, at 10:32 AM, LaRusic, Adam (EC) > wrote:

That would be useful, thank you.

The Doodle Poll is closed, but I should be able to make most times work.

I'll suggest a time for the call today and send out an invitation.

Thanks

Adam

From: Diana Chan >

Sent: February 11, 2019 9:07 am

To: LaRusic, Adam (EC) >; 'Chiang, Eric' >; Epps, Deb ENV:EX >

Cc: Herborg, Matthias >

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Page 031 of 170 to/à Page 032 of 170

Withheld pursuant to/removed as

s.16

**From:** [Diana Chan](#)  
**To:** [Chiang, Eric](#); [Epps, Deb ENV:EX](#); [LaRusic, Adam \(EC\)](#)  
**Cc:** [Herborg, Matthias](#)  
**Subject:** Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018  
**Date:** February 13, 2019 7:43:43 AM

---

Hi all,

Just following up. I haven't seen a call invitation yet (double-checking that I didn't miss it), and just want to flag that I'm no longer available this Friday afternoon during the times I had originally indicated.

Best,

Diana

---

**From:** Chiang, Eric  
**Sent:** Monday, February 11, 2019 1:28 PM  
**To:** Diana Chan; [Epps, Deb ENV:EX](#); [LaRusic, Adam \(EC\)](#)  
**Cc:** [Herborg, Matthias](#)  
**Subject:** RE: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018  
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**Subject:** Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018

Hi all,

Attached please find the follow-up correspondence to Julie Gascon's letter from Heiltsuk. I think Deb's suggestion makes sense. That said, I'm in all day meetings from now through Thursday, so I may not be able to provide my comments as far in advance as I'd like to if we end up having our call this Friday.

Best,

Diana

---

**From:** [Epps, Deb ENV:EX](#) <[deb.epps@gov.bc.ca](mailto:deb.epps@gov.bc.ca)>  
**Sent:** Monday, February 11, 2019 10:43 AM

**To:** LaRusic, Adam (EC)

**Cc:** Diana Chan; Chiang, Eric; Herborg, Matthias

**Subject:** Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018

Hi everyone, I wonder if it would help to share comments or concerns via email or track changes prior to the call so we can come prepared to discuss?

Deb

Sent from my iPhone

On Feb 11, 2019, at 10:32 AM, LaRusic, Adam (EC) <[adam.larusic@canada.ca](mailto:adam.larusic@canada.ca)>> wrote:

That would be useful, thank you.

The Doodle Poll is closed, but I should be able to make most times work.

I'll suggest a time for the call today and send out an invitation.

Thanks

Adam

From: Diana Chan <[diana.chan@heiltsuk.ca](mailto:diana.chan@heiltsuk.ca)>>

Sent: February 11, 2019 9:07 am

To: LaRusic, Adam (EC) <[adam.larusic@canada.ca](mailto:adam.larusic@canada.ca)>>; 'Chiang, Eric' <[eric.chiang@dfo-mpo.gc.ca](mailto:eric.chiang@dfo-mpo.gc.ca)>>; Epps, Deb ENV:EX <[deb.epps@gov.bc.ca](mailto:deb.epps@gov.bc.ca)>>

Cc: Herborg, Matthias <[matthias.herborg@dfo-mpo.gc.ca](mailto:matthias.herborg@dfo-mpo.gc.ca)>>

Subject: Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018

Hi Adam,

Thanks so much for sharing the Word version of the latest draft ToR.

I understand that Heiltsuk's counsel has responded to the letter from Julie Gascon. If this group thinks it would be helpful, I'm happy to request a copy to be shared with you all.

Have we settled on a time for a phone call?

Thanks,  
Diana

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From: LaRusic, Adam (EC) <adam.larusic@canada.ca>>  
Sent: Monday, February 11, 2019 8:06 AM  
To: 'Chiang, Eric'; Diana Chan; Epps, Deb ENV:EX  
Cc: Herborg, Matthias  
Subject: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of  
Reference - Final Draft, Oct 1, 2018

Hello all,

As requested, please find attached the final version of the Terms of Reference for the  
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incident. I've attached a Word version and a pdf version.

I've also attached the Coast Guard's correspondence that triggered the review of the NEX ToR by  
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Thanks,

Adam

Adam La Rusic  
Manager, Preparedness and Response – Pacific  
National Environmental Emergencies Centre (NEEC) - Vancouver Office  
Environmental Protection Operations Directorate  
Environment and Climate Change Canada / Government of Canada  
adam.larusic@canada.ca> / Tel: 604-666-1320 / Mobile :s.22 / Emergencies 24/7 : 1-  
866-283-2333

Adam La Rusic  
Gestionnaire, Préparation et intervention – Pacifique  
Centre national des urgences environnementales (CNUE) - Bureau de Vancouver  
Direction des activités de protection de l'environnement  
Environnement et Changement climatique Canada / Gouvernement du Canada

adam.larusic@canada.ca> / Tél. : 604-666-1320 / Cell :s.22  
283-2333

/ Urgences 24/7 : 1-866-

-----Original Message-----

From: Chiang, Eric <Eric.Chiang@dfo-mpo.gc.ca>>

Sent: February 10, 2019 10:15 am

To: Diana Chan <diana.chan@heiltsuk.ca>>; Epps, Deb ENV:EX <Deb.Epps@gov.bc.ca>>

Cc: LaRusic, Adam (EC) <adam.larusic@canada.ca>>; Herborg, Matthias  
<Matthias.Herborg@dfo-mpo.gc.ca>>

Subject: RE: NES EIA plan update

Hi Diana

Re: word version - I believe we can get it and checking in right now with Adam. Please stay  
tuned.

Thanks

Eric

-----Original Message-----

From: Diana Chan <diana.chan@heiltsuk.ca>>

Sent: February-09-19 9:49 AM

To: Epps, Deb ENV:EX <Deb.Epps@gov.bc.ca>>; Chiang, Eric <Eric.Chiang@dfo-  
mpo.gc.ca>>

Cc: Adam La Rusic (adam.larusic@canada.ca) <adam.larusic@canada.ca>>; Herborg, Matthias  
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Subject: Re: NES EIA plan update

Thanks for the updates, Eric and Deb. Eric, Adam, or Matthias: do you have a copy of the latest  
draft of the ToR in Word document format (as opposed to PDF)? I think that would be helpful to  
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I've filled out the doodle poll and look forward to connecting on this soon.

Have a great weekend,

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On 2019-02-08, 7:16 PM, "Epps, Deb ENV:EX" <Deb.Epps@gov.bc.ca>> wrote:

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Thanks Eric,

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Sent from my iPhone

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<https://doodle.com/poll/b3xt8wfcdk7xzw2u>

Thank you for your patience,

Eric

From: Diana Chan <diana.chan@heiltsuk.ca>>>

Sent: January-30-19 11:14 AM

To: Chiang, Eric <Eric.Chiang@dfo-mpo.gc.ca>>>; Epps, Deb ENV:EX

<Deb.Epps@gov.bc.ca>>>; Mattu, Gevan (EC) <gevan.mattu@canada.ca>>>; Adam La Rusic

(adam.larusic@canada.ca>>) <adam.larusic@canada.ca>>>

Subject: Re: NES EIA plan update

Hi again everyone,

I'm following up to my last email. I have received the attached updated version of the terms of reference via Heiltsuk's legal counsel (who received it from Department of Justice's legal counsel). I'm hoping that our technical group can reconvene and hopefully reach consensus on a few outstanding items so that a final version of the plan can be sent to our appropriate respective colleagues for the higher level discussions and leadership consultation that are required. If anyone has a copy of the attached draft in a Word document, that would be helpful.

I've created a doodle poll to see if there is a time in the next couple of weeks that might work for us to chat: <https://doodle.com/poll/5tc95whkc5tqxzyi>

Thank you,  
Diana

From: "Chiang, Eric" <[Eric.Chiang@dfo-mpo.gc.ca](mailto:Eric.Chiang@dfo-mpo.gc.ca)>>>

Date: Tuesday, December 18, 2018 at 10:33 AM

To: Diana Chan <[diana.chan@heiltsuk.ca](mailto:diana.chan@heiltsuk.ca)>>>, "Epps, Deb ENV:EX"

<[Deb.Epps@gov.bc.ca](mailto:Deb.Epps@gov.bc.ca)>>>, "Mattu, Gevan (EC)" <[gevan.mattu@canada.ca](mailto:gevan.mattu@canada.ca)>>>, "Adam La Rusic (adam.larusic@canada.ca>>) <adam.larusic@canada.ca>>>

Subject: RE: NES EIA plan update

Hi Diana, Thank you for your email.

I am writing to let you know that we are working to provide you a response.

Looping in Adam LaRusic of ECCC as well.

(Hope you enjoyed the snow day..)

Eric

From: Diana Chan [<mailto:diana.chan@heiltsuk.ca>]

Sent: December-14-18 11:45 AM

To: Epps, Deb ENV:EX; Chiang, Eric; Mattu, Gevan (EC)

Subject: NES EIA plan update

Hello again, everyone,

I hope you've all been keeping well as we dive into winter (it's a snow day here in Bella Bella). I'm following up to our discussion last summer. Do you have a more recent draft of the EIA Plan based on our last phone call where we discussed the draft that I sent in June? I'm hoping that we'll be able to wrap things up from the technical side soon so we can help the process move forward.

Thank you,

Diana

From: Diana Chan <[diana.chan@heiltsuk.ca](mailto:diana.chan@heiltsuk.ca)>>>

Date: Friday, July 13, 2018 at 4:12 PM

To: "Epps, Deb ENV:EX" <[Deb.Epps@gov.bc.ca](mailto:Deb.Epps@gov.bc.ca)>>>, "Chiang, Eric" <[Eric.Chiang@dfo-mpo.gc.ca](mailto:Eric.Chiang@dfo-mpo.gc.ca)>>>, "Mattu, Gevan (EC)" <[gevan.mattu@canada.ca](mailto:gevan.mattu@canada.ca)>>>

Cc: Mike Reid <[mike.reid@heiltsuk.ca](mailto:mike.reid@heiltsuk.ca)>>>, "Brach, Pader W ENV:EX" <[Pader.Brach@gov.bc.ca](mailto:Pader.Brach@gov.bc.ca)>>>, "Murdock, Philip" <[Philip.Murdock@dfo-mpo.gc.ca](mailto:Philip.Murdock@dfo-mpo.gc.ca)>>>, Marilyn Slett <[marilyn.slett@heiltsuk.ca](mailto:marilyn.slett@heiltsuk.ca)>>>, "Raymond, Chris (EC)" <[chris.raymond@canada.ca](mailto:chris.raymond@canada.ca)>>>

Subject: EIA Plan comment table

Hi Deb, Eric, and Gevan,

Attached please find an updated comment table corresponding with the last tracked changes to the draft EIA Plan that I sent on June 1. Please note the three cells that are highlighted in orange. Those are items that I've added to the ENV/ECCC/DFO Response column because we were responding to your edits, but please feel free to add to/clarify what I've entered if needed.

I'll look forward to your next revisions and responses. Also, if there's anything I can do to help arrange leadership consultation meetings, please let me know. From our last call, we all seem to be aware that there are still higher level discussions that need to take place, and we'd like those higher level issues to be addressed as soon as possible so that the EIA can proceed.

Hope you all have a nice weekend.

Diana

--

Diana Chan

Assistant Aquatics Manager

Heiltsuk Integrated Resource Management Department

PO Box 731, Bella Bella, BC V0T 1Z0

(p): 250.957.2303 ext. 232 | (s.22

(e): diana.chan@heiltsuk.ca>>

**From:** [Diana Chan](#)  
**To:** [LaRusic, Adam \(EC\)](#); [Epps, Deb ENV:EX](#); [Chiang, Eric](#)  
**Cc:** [Herborg, Matthias](#)  
**Subject:** Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018  
**Date:** February 13, 2019 10:40:53 AM

---

Great, thanks Adam.

---

**From:** LaRusic, Adam (EC)  
**Sent:** Wednesday, February 13, 2019 10:31 AM  
**To:** Epps, Deb ENV:EX; Diana Chan; Chiang, Eric  
**Cc:** Herborg, Matthias  
**Subject:** Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018  
Sorry folks, I have been having some difficulty with my email program lately. I'll send the invite later.

Feb 22, 2:00 to 3:30.

Thx

Adam  
s.22

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----

From: "Epps, Deb ENV:EX"  
Date: 2019-02-13 7:49 AM (GMT-08:00)  
To: 'Diana Chan' , 'Chiang, Eric' , 'LaRusic, Adam (EC)'  
Cc: "Herborg, Matthias"  
Subject: RE: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018

Hi everyone,  
I haven't seen an invite either. However based on the doodle poll results Eric sent out, it looks like we are all available next Friday, Feb 22, from 2-3pm. Adam does this time work for you? If so, please respond and send out invite for call as our calendars are filling up.

Thank you,

Deb

*Deborah Epps, MSc., RPBio.*

*Section Head, Provincial Water Quality*

*Ministry of Environment and Climate Change Strategy*

*Phone 250-751-3146*

*Cell s.22*

*Email: [Deb.Epps@gov.bc.ca](mailto:Deb.Epps@gov.bc.ca)*

---

**From:** Diana Chan [mailto:diana.chan@heiltsuk.ca]  
**Sent:** February-13-19 7:44 AM  
**To:** Chiang, Eric; Epps, Deb ENV:EX; LaRusic, Adam (EC)  
**Cc:** Herborg, Matthias  
**Subject:** Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018

Hi all,

Just following up. I haven't seen a call invitation yet (double-checking that I didn't miss it), and just want to flag that I'm no longer available this Friday afternoon during the times I had originally indicated.

Best,  
Diana

---

**From:** Chiang, Eric  
**Sent:** Monday, February 11, 2019 1:28 PM  
**To:** Diana Chan; Epps, Deb ENV:EX; LaRusic, Adam (EC)  
**Cc:** Herborg, Matthias  
**Subject:** RE: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018  
Re: Doodle poll closed. Sorry I have no idea how to work this. It keeps showing closed for some reason. Adam – Go ahead and suggest a best time based on what you see.  
<https://doodle.com/poll/b3xt8wfcdk7xzw2u>  
Eric

---

**From:** Diana Chan  
**Sent:** February-11-19 12:55 PM  
**To:** Epps, Deb ENV:EX ; LaRusic, Adam (EC)  
**Cc:** Chiang, Eric ; Herborg, Matthias  
**Subject:** Re: Nathan E Stewart (Seaforth Channel) - Environmental Impact Statement Terms of Reference - Final Draft, Oct 1, 2018  
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**Sent:** Monday, February 11, 2019 10:43 AM  
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**Cc:** Diana Chan; Chiang, Eric; Herborg, Matthias  
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Cc: Mike Reid <[mike.reid@heiltsuk.ca](mailto:mike.reid@heiltsuk.ca)>>>, "Brach, Pader W ENV:EX" <[Pader.Brach@gov.bc.ca](mailto:Pader.Brach@gov.bc.ca)>>>, "Murdock, Philip" <[Philip.Murdock@dfo-mpo.gc.ca](mailto:Philip.Murdock@dfo-mpo.gc.ca)>>>, Marilyn Slett <[marilyn.slett@heiltsuk.ca](mailto:marilyn.slett@heiltsuk.ca)>>>, "Raymond, Chris (EC)" <[chris.raymond@canada.ca](mailto:chris.raymond@canada.ca)>>>  
Subject: EIA Plan comment table

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Diana Chan  
Assistant Aquatics Manager  
Heiltsuk Integrated Resource Management Department  
PO Box 731, Bella Bella, BC V0T 1Z0  
(p): 250.957.2303 ext. 232 | s.22  
(e): diana.chan@heiltsuk.ca>>

**From:** [Diana Chan](#)  
**To:** [Adam La Rusic \(adam.larusic@canada.ca\)](#); [Herborg, Matthias](#); [Chiang, Eric](#); [Epps, Deb ENV:EX](#)  
**Subject:** EIA ToR Comments  
**Date:** February 21, 2019 10:07:19 AM  
**Attachments:** [2018-10-01\\_NES-EIA-ToR\\_Final-Draft\\_Feb\\_2019\\_DC.docx](#)

---

Hi everyone,

I'm attaching some comments on the most recent draft for our discussion tomorrow.

I'd also like to propose adding a cost estimation piece to the agenda. It probably makes the most sense to have that conversation after we've gone through the ToR, so we might have to add it to a future agenda if we don't get to it tomorrow.

Thanks,

Diana

Page 049 of 170 to/à Page 059 of 170

Withheld pursuant to/removed as

s.13; s.16

**From:** [Diana Chan](#)  
**To:** [LaRusic, Adam \(EC\)](#); ["Herborg, Matthias" \(Matthias.Herborg@dfo-mpo.gc.ca\)](#); [Chiang, Eric \(Eric.Chiang@dfo-mpo.gc.ca\)](#); [Epps, Deb ENV:EX](#)  
**Subject:** Re: Nathan E Stewart EIA Terms of Reference  
**Date:** March 1, 2019 11:38:45 AM

---

Thanks Adam. I'm not going to be able to review these documents before our call this afternoon (I'm in meetings until then), but I'd be happy to continue to going through the rest of the draft ToR that we didn't get to last week and/or talk through the documents you just sent with the understanding that we may need to go away and reconvene later for more detailed review.

Best,  
Diana

---

**From:** "LaRusic, Adam (EC)"  
**Date:** Friday, March 1, 2019 at 11:09 AM  
**To:** "'Herborg, Matthias' (Matthias.Herborg@dfo-mpo.gc.ca)" , "Chiang, Eric (Eric.Chiang@dfo-mpo.gc.ca)" , "Epps, Deb ENV:EX" , Diana Chan  
**Subject:** Nathan E Stewart EIA Terms of Reference  
Update:  
Teleconference Number: 1-877-413-4791  
Conference ID: ~~s~~.15

I apologize for sending these out late. I was away most of the week and my plans to finish this after hours didn't turn out. If you don't feel there is enough time to review these documents by later this afternoon, I'm happy to reschedule. Attached are:

- Draft Minutes of our Meeting on February 22
- Marked up version of the current draft of the EIA ToR

I hope I have appropriately captured our discussion and decisions. Please let me know if you have any comments or concerns (or we can discuss during our call).

Also, to address Deb Epps availability, I've ended the call at 4:00 instead of 4:30.

Thanks

Adam

Hello,

This is for the second meeting to try to finalize the Terms of Reference for the Nathan E Stewart EIA. Just a placeholder for now. I'll provide the teleconference number, my notes from last Friday's meeting and copy of the EIA ToR based on discussions from last week.

Thanks

Adam

**Adam La Rusic**

Manager, Preparedness and Response – Pacific

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/ Emergencies 24/7 : 1-866-

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**Adam La Rusic**

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[adam.larusic@canada.ca](mailto:adam.larusic@canada.ca) / Tél. : 604-666-1320 / Cell : s.22 / Urgences 24/7 : 1-866-283-2333

**From:** [Diana Chan](#)  
**To:** [LaRusic, Adam \(EC\)](#); [Chiang, Eric](#); ["Herborg, Matthias" \(Matthias.Herborg@dfo-mpo.gc.ca\)](#); [Epps, Deb ENV:EX](#)  
**Subject:** NES EIA ToR call follow-up  
**Date:** March 11, 2019 4:40:57 PM  
**Attachments:** [Dáduqvlá Committee Report.pdf](#)  
[Artelle et al 2018.pdf](#)  
[Ban et al 2018.pdf](#)  
[2019-02-22 DRAFT-Meeting-Minutes NES-EIA-ToR\[1\] DC.docx](#)  
[2019-03-01 DRAFT-Meeting-Minutes NES-EIA-ToR DC.docx](#)  
[2019-03-08 NES-EIA-ToR Working-Draft-Clean\[1\] DC.docx](#)

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Hi everyone,

Hope you all had a nice weekend. I'm attaching proposed edits in the attached documents in tracked changes.

As discussed, I'm also providing some other reference documents that I think could be helpful context for our conversation and for the EIA in general:

- [Dáduqvlá qntxv Ğvıłásař | To look at our traditional laws: Decision of the Heiltsuk \(Hałtzaqv\) Dáduqvlá Committee Regarding the October 13, 2016 Nathan E. Stewart Spill](#)
  - Helpful information about the Hałtzaqv people and an articulation of Ğvıłás
- Values-led management: the guidance of place-based values in environmental relationships of the past, present, and future. Artelle et al. 2018.
  - May be helpful in understanding the need to root the EIA in the values of Ğvıłás
- Incorporate Indigenous perspectives for impactful research and effective management. Ban et al. 2018.
  - On using Indigenous knowledge and ecological science for better management

I didn't want to overwhelm you with readings, so am just sending a few, but if there are particular topics of interest please let me know and I can try to send other documents on those areas.

Also, I think it would be helpful for our group to keep apprised of all the developments in the Environmental Assessment processes (e.g. p.3 of "What Changes to B.C.'s Environmental Assessment Act Mean for The Public, Indigenous Nations & Industry"

[https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/environmental-assessments/environmental-assessment-revitalization/images/what\\_changes\\_mean\\_for\\_public\\_indigenous\\_nations\\_industry.pdf](https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/environmental-assessments/environmental-assessment-revitalization/images/what_changes_mean_for_public_indigenous_nations_industry.pdf);

"Infographic: Key amendments to Bill C-69 for Indigenous communities"

<https://www.canada.ca/en/services/environment/conservation/assessments/environmental-reviews/bill-c-69.html#indigenous>). Granted our post-spill EIA isn't exactly the same thing as an EA

for a proposed project, but there is a relationship as they share a common goal to assess impacts, and ideally a robust EA will minimize the need for a post-incident EIA in the future. As Canada and BC increasingly recognize the role of Indigenous leadership and knowledge in the EA process, I would hope that there would be increasing comfort in recognizing the same in EIAs.

Lastly, there was a comment on our last call along the lines of "I wish there was a course about this." I've been thinking that that could be a great idea to try to set something up. One of our community members co-instructs a field school through UVic called "Indigenous Knowledge, Science, and Resource Management." Another community member is a life-long educator who has taught about cultural awareness and Ğvıłás. I'd have to confirm their interest and availability, but I think there could be huge value in arranging a seminar for the EU group before the EIA begins.

Best,  
Diana

--

**Diana Chan**

Assistant Aquatics Manager

Heiltsuk Integrated Resource Management Department

PO Box 731, Bella Bella, BC V0T 1Z0

(p): 250.957.2303 ext. 232 | (c) s.22

(e): diana.chan@heiltsuk.ca



Dáduqvłá<sup>1</sup> q̣ṇtxv Ğvıłásaǵ  
*To look at our traditional laws*

<sup>1</sup> Dáduqvlá - to watch Dáduqvlántkv – we (excluding listener) watch

Page 065 of 170 to/à Page 131 of 170

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*Synthesis*

## **Values-led management: the guidance of place-based values in environmental relationships of the past, present, and future**

*Kyle A. Artelle*<sup>1,2,3,4</sup>, *Janet Stephenson*<sup>2</sup>, *Corey Bragg*<sup>2</sup>, *Jessie A. Housty*<sup>5</sup>, *William G. Housty*<sup>5,6</sup>, *Merata Kawharu*<sup>2,7</sup> and *Nancy J. Turner*<sup>8</sup>

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# Incorporate Indigenous perspectives for impactful research and effective management

Indigenous knowledge and ecological science have complementary differences that can be fruitfully combined to better understand the past and predict the future of social-ecological systems. Cooperation among scientific and Indigenous perspectives can improve conservation and resource management policies.

Natalie C. Ban, Alejandro Frid, Mike Reid, Barry Edgar, Danielle Shaw and Peter Siwallace

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Page 151 of 170 to/à Page 165 of 170

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s.13; s.16

**From:** [Diana Chan](#)  
**To:** [LaRusic, Adam \(EC\)](#); [Epps, Deb ENV:EX](#); [Chiang, Eric \(Eric.Chiang@dfo-mpo.gc.ca\)](#)  
**Cc:** [Herborg, Matthias](#)  
**Subject:** Re: Nathan E Stewart EIA Terms of Reference  
**Date:** April 17, 2019 12:51:55 PM

---

Hi everyone,

I'm sorry, but I'm not able to join the call this afternoon. I have a pre-existing meeting at the same time. I'd responded to the calendar invitation the other day, but I'm figuring that my message didn't go through.

I am available tomorrow afternoon if others are. Otherwise maybe we could doodle for a time next week?

Best,  
Diana

---

**From:** LaRusic, Adam (EC)  
**Sent:** Wednesday, April 17, 2019 12:24:27 PM  
**To:** Diana Chan; Epps, Deb ENV:EX; Chiang, Eric (Eric.Chiang@dfo-mpo.gc.ca)  
**Cc:** Herborg, Matthias  
**Subject:** Nathan E Stewart EIA Terms of Reference  
**When:** Wednesday, April 17, 2019 1:00 PM-2:30 PM.  
**Where:** Teleconference: 1-877-413-4782, Login Code: 442 7274

Hello all, please find attached details for this afternoon's meeting, including the version of the NES EIA Terms of Reference submitted by Diana, Heiltsuk.

We've been tasked with trying to put together a consensus Terms of Reference for an Environmental Impact Assessment for the Nathan E Stewart.

After our last meeting on March 8, we had worked on the Draft Terms of Reference for the EIA to a point where I think we were all quite close to agreement.

In a March 11 email, Diana provided some suggested edits (attached), one of which included

s.16

- Determine next steps.

The above suggested agenda is of course, open to suggestion.

**From:** [Diana Chan](#)  
**To:** [LaRusic, Adam \(EC\)](#); [Epps, Deb ENV:EX](#); [Chiang, Eric \(Eric.Chiang@dfo-mpo.gc.ca\)](#)  
**Subject:** Re: Nathan E Stewart Terms of Reference - Final Draft for Submission to DoJ  
**Date:** April 26, 2019 2:33:17 PM

---

Hi all,

Thanks Adam. I just noticed one copy edit for the Word doc itself: could you please change the date in the footer so it's consistent with the title page and file name? I know it's minor, but I think it would be good to fix in case people are working with printed copies.

s.14; s.16

Thank you and have a nice weekend,  
Diana

---

**From:** "LaRusic, Adam (EC)"  
**Date:** Friday, April 26, 2019 at 9:42 AM  
**To:** "'Epps, Deb ENV:EX'", Diana Chan, "Chiang, Eric (Eric.Chiang@dfo-mpo.gc.ca)"  
**Subject:** RE: Nathan E Stewart Terms of Reference - Final Draft for Submission to DoJ  
OK will do. Hearing nothing else, I'll submit this today.  
Thanks

Adam

---

**From:** Epps, Deb ENV:EX  
**Sent:** April 25, 2019 1:28 PM  
**To:** LaRusic, Adam (EC) ; 'Diana Chan' ; Chiang, Eric (Eric.Chiang@dfo-mpo.gc.ca)  
**Subject:** RE: Nathan E Stewart Terms of Reference - Final Draft for Submission to DoJ

Hi Adam,

s.16

Thank you  
Deb  
*Deborah Epps, M.Sc., R.P.Bio*  
*Section Head, Environmental Impact Assessment*  
*Ministry of Environment*  
*2080 Labieux Road, Nanaimo BC, V9T 6J9*  
*Phone: 250-751-3146*  
*Cell:250-713-2906*

---

**From:** LaRusic, Adam (EC) [<mailto:adam.larusic@canada.ca>]  
**Sent:** Tuesday, April 23, 2019 3:38 PM  
**To:** 'Diana Chan'; Epps, Deb ENV:EX; Chiang, Eric ([Eric.Chiang@dfo-mpo.gc.ca](mailto:Eric.Chiang@dfo-mpo.gc.ca))  
**Subject:** Nathan E Stewart Terms of Reference - Final Draft for Submission to DoJ  
**Importance:** High

Hello All,

Following our call from last Thursday, I have included the Final Draft of the Nathan E Stewart

Environmental Impact Assessment Terms of Reference. **Please take time for a final review** before I submit this to the Department of Justice (Craig Cameron). Here is the note I intend to send with it. If you have any questions, comments or concerns, please let me know.

Thx

adam

---snip---

Please find attached the Final Draft of the Environmental Impact Assessment Terms of Reference. In February you asked Environment and Climate Change Canada (ECCC) and DFO to work with the Heiltsuk Nation and the BC Ministry of Environment and Climate Change Strategy (BC MoE) to reach agreement on the Terms of Reference. While we couldn't reach complete agreement, we came quite close. Please see the attached document.

s.16

Other than that, we have reached consensus on the Terms of Reference.

The committee drafting the Terms of Reference included:

- Diana Chan, Heiltsuk Nation
- Deb Epps, BC MoE
- Eric Chiang, DFO
- Adam La Rusic, ECCC (Coordinator)

Thank yo

--end snip--

-----Original Appointment-----

**From:** LaRusic, Adam (EC)

**Sent:** April 17, 2019 2:18 PM

**To:** 'Diana Chan'; Epps, Deb ENV:EX; Chiang, Eric ([Eric.Chiang@dfo-mpo.gc.ca](mailto:Eric.Chiang@dfo-mpo.gc.ca))

**Cc:** Herborg, Matthias

**Subject:** Nathan E Stewart EIA Terms of Reference

**When:** April 18, 2019 2:00 PM-3:00 PM (UTC-08:00) Pacific Time (US & Canada).

**Where:** Teleconference: 1-877-413-4782, Login Code: 442 7274

Hello all—Diana, sorry about that. I received your Invitation Declined message but somehow missed it. Rescheduling for tomorrow, Friday April 18 from 2:00 to 3:00. (Also shortened the meeting length to an hour).

Thanks

Adam

Hello all, please find attached details for this afternoon's meeting, including the version of the NES EIA Terms of Reference submitted by Diana, Heiltsuk.

We've been tasked with trying to put together a consensus Terms of Reference for an Environmental Impact Assessment for the Nathan E Stewart.

After our last meeting on March 8, we had worked on the Draft Terms of Reference for the EIA to a point where I think we were all quite close to agreement.

In a March 11 email, Diana provided some suggested edits (attached), one of which included

- Determine next steps.

The above suggested agenda is of course, open to suggestion.

**From:** LaRusic, Adam (EC)  
**To:** "Cameron, Craig"; Murdock, Philip; Craig Cameron  
**Cc:** Bryant, Tanya (EC); JUS, L VAN Caseteam Heiltsuk - Nathan Stewart VAN L, JUS; "Chiang, Eric"; Kieran, Yvette Marie (DFO); Mattu, Gevan (EC); Herborg, Matthias; Payne, Brigid; "Diana Chan"; Epps, Deb ENV:EX  
**Subject:** Nathan E. Stewart - Environmental Impact Assessment Terms of Reference - Final Draft, Technical Committee  
**Date:** May 6, 2019 9:10:05 AM  
**Attachments:** 2019-04-19 NES-EIA-ToR Final-Draft.pdf  
2019-04-19 NES-EIA-ToR Final-Draft.docx  
**Importance:** High

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All:

Please find attached the Final Draft of the Technical Committee for the Environmental Impact Assessment Terms of Reference (EIA ToR), Seaforth Channel (Nathan E. Stewart) Incident. In February, The Department of Justice asked Environment and Climate Change Canada (ECCC) and DFO to work with the Heiltsuk Nation and the BC Ministry of Environment and Climate Change Strategy (BC MoE) to reach agreement on the Terms of Reference. While we couldn't reach complete agreement, we came quite close.

s.14; s.16

Other than that, we have reached consensus on the Terms of Reference.

The committee drafting the Terms of Reference included:

- Diana Chan, Heiltsuk Nation
- Deb Epps, BC MoE
- Eric Chiang, DFO
- Adam La Rusic, ECCC (Coordinator)

If you have any questions, comments or concerns, please feel free to contact me at the coordinates below.

Thank you,

**Adam La Rusic**

Manager, Preparedness and Response – Pacific

National Environmental Emergencies Centre (NEEC) - Vancouver Office

Environmental Protection Operations Directorate

Environment and Climate Change Canada / Government of Canada

[adam.larusic@canada.ca](mailto:adam.larusic@canada.ca) / Tel: Mobile :s.22 / Tel : 604-666-1320 / Emergencies 24/7 : 1-866-283-2333

**Adam La Rusic**

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Page 02 of 12 to/à Page 12 of 12

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