



GX Technology Canada Ltd.'s LabradorSPAN 2D Seismic, Gravity and Magnetic Survey

Environmental Assessment Amendment

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1 Purpose

This document is submitted to the Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) as an amendment to GX Technology Canada Ltd.'s (GXT's) Environmental Assessment (EA) for its LabradorSPAN 2-D Seismic, Gravity and Magnetic Survey, 2013-2015 (LGL/GXT 2013a). The EA documents (including the EA Addendum and a request to increase the maximum streamer length – LGL/GXT 2013b; LGL/GXT 2013c) were filed with the C-NLOPB in 2013. The assessment concluded that potential effects from the Project were predicted to be not significant with the identified mitigations in place (see EA Sections 5, 6 and 7). Similarly, C-NLOPB stated in its Letter of Determination (dated 14 August 2013): “We have considered this information and the advice of the Boards’ advisory agencies and have determined that the proposed project, following the application of mitigation measures, is not likely to cause significant adverse environmental effects” (C-NLOPB 2013a), as it did in its August 2013 Screening Report concerning the Project: “The C-NLOPB is of the opinion that, taking into account the implementation of the proposed mitigation measures set out in the conditions above and those committed to by GX Technology Canada Ltd., the Project is not likely to cause significant adverse environmental effects” (C-NLOPB 2013b, p. 27).

This Amendment proposes the following changes to the Project: (1) extending the temporal scope from 2013-2015 to 2020; and (2) increasing the potential maximum annual production of 8,500 line km (full fold) to 16,000 line km. This Amendment also assesses these proposed changes to the project description.

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3 Project Description

The following sections summarize the main elements of GX Technology Canada Ltd.'s 2-D Seismic, Gravity and Magnetic Survey for the Labrador Shelf Area as described in the 2013 EA document and subsequent 2013 filings, and as considered by the C-NLOPB in its Screening Report and Letter of Determination (LGL/GXT 2013a, 2013b, 2013c).

All the project objectives, methods and components described in the original 2013 submissions would be the same for work conducted under the amended EA.

3.1 Program Objectives

GXT's LabradorSPAN Program is a regional Basin Span survey, which aims to examine very deep geological formations in the Labrador Shelf and Slope areas. GXT's Span surveys are different from other past surveys of the shelf and provide new and different information because they examine very broad and deep geological formations in and around basin areas using advanced geophysical techniques. They provide information on the geologic evolution, deep basin architecture, and the depositional and structural histories of an entire region. Surveying these ultra-deep formations allows for a better evaluation of the evolution of the geological basin areas, including identifying source rocks, migration pathways, and play types. These surveys are not designed to identify specific or potential drilling locations.

The primary objective of the LabradorSPAN survey Program is to assist the understanding of the formation of the Labrador Basin area in order to further assess the petroleum system on a broad basin-level scale (a Basin Span). It is enhancing the knowledge of the area's hydrocarbon development potential, and assisting exploration activities. This is a significant resource for companies interested in the area's hydrocarbon potential and for new development and licensing opportunities.

3.2 Project Overview and Methodology

Currently, GXT's 2-D Seismic, Gravity and Magnetic Survey for the Labrador Shelf Area is a 2-D (single streamer) marine geophysical survey to collect seismic, gravity, and magnetic data, potentially starting as early as 1 June and concluding as late as 30 November in any or all years from 2013 to 2015. The survey is restricted to a defined Project Area (Figure 1), focused mainly on the Labrador Shelf and Slope, using a conventional seismic ship which tows a sound source (compressed air array) up to 6300 in³ in volume, and a single hydrophone streamer (buoyant cable) up to 12 km long. The seismic vessel also passively collects and records gravity and magnetic data, and has an echosounder for depth soundings. A support vessel would also be used as needed to scout for fishing gear or hazards, and potentially for re-supply or crew changes.¹

GXT's SPAN programs are different in design from most 2D surveys in that they use very long lines to image the subsea basins, and the array activates about half as often as most typical 2D surveys. This is to allow time between array activations to listen for the very deep signal returns.

¹ Although the 2013 EA names a specific ship and other equipment for the purpose of the assessment, it is intended to represent, and the assessment conclusions apply to, any equivalent configuration (ship, array, streamer etc.) used in the same way with the same mitigations applied. As stated in the 2013 EA, "a different ship may need to be used in some years, given the realities of contract finalization and other considerations. If another vessel needs to be used instead as the seismic source ship, it will be equivalent in all respects related to environment and safety. This would not alter acquisition methods, mitigations or impact predictions" (p. 9).

3.3 Spatial and Temporal Boundaries

The Project Area is located on the Labrador Shelf and Slope between approximately 61°N and 50.5°N, as depicted in Figure 1, below. No acquisition or gear deployment will occur in any Canadian waters outside this Project Area. The EA Study Area includes the Project Area plus a 20 km buffer area around the Project Area (Figure 1) to account for the propagation of seismic survey sound. The Project Area is located within Canada's Exclusive Economic Zone (EEZ) and does not enter the waters of either Canada's Territorial Sea, or the Nunatsiavut Zone (The Zone) (the Tidal Waters of the Labrador Inuit Settlement Area, as defined in the Labrador Inuit Land Claims Agreement). Acquisition lines will end approximately 6 km short of the Zone boundary to ensure that line turns can be made without seismic equipment (array or streamer) entering the Zone. No portion of the survey will be conducted within Gilbert Bay, Nain Bight or Hamilton Inlet. Survey lines and activities will also remain outside of the Hawke Channel area (closed to mobile fishing gear). The western limit of the Project Area is at least 22 km from the Labrador mainland. The communities closest to the Project Area are approximately 40–50 km away.

Timing of the acquisition of specific lines within the LabradorSPAN Project Area in any year depends on several factors, including commercial fish harvesting, the local weather, sea state, ice conditions in specific locations, and on the timing of parts of GXT's program in other areas or jurisdictions (if any).

3.4 Survey Vessels

As described in Section 2.2.6 of the 2013 LabradorSPAN EA (LGL/GXT 2013), the Project will be conducted using a conventional seismic ship, which will tow the sound source (airgun array) and a single streamer containing receiving hydrophones. The seismic vessel will also passively collect gravity and magnetic data at the same time, and use an echosounder for depth soundings. The seismic ship will likely deploy a workboat to repair the streamer when necessary, and the workboat can also be used as a Fast Rescue Craft and for ship-to-ship personnel transfers. Part-time support, will be provided by a support vessel as needed. Any ships used will be inspected before operations, will meet all criteria for working safely in the Project Area, and will have oil spill/pollution prevention and emergency response plans.

No helicopter use is planned, and only existing Newfoundland and Labrador port infrastructure will to be used. As stated in the 2013 EA, it is also possible that the project might hire another smaller boat to assist with scouting operations (i.e., locating gear) near areas that might have active fisheries.

3.5 Seismic Energy Source and Streamer

The 2013 EA and subsequent C-NLOPB Screening were conducted on the basis of the seismic ship using a compressed air array comprising airguns with a maximum total volume of 6300 in³ and a nominal firing pressure of 2000 pounds per square inch (psi). The shot interval will be 19 to 22 seconds, about half as many shots per kilometre as most 2-D surveys owing to the deeper target imaging of GXT's program. The survey speed will be ~8.5 km/h.

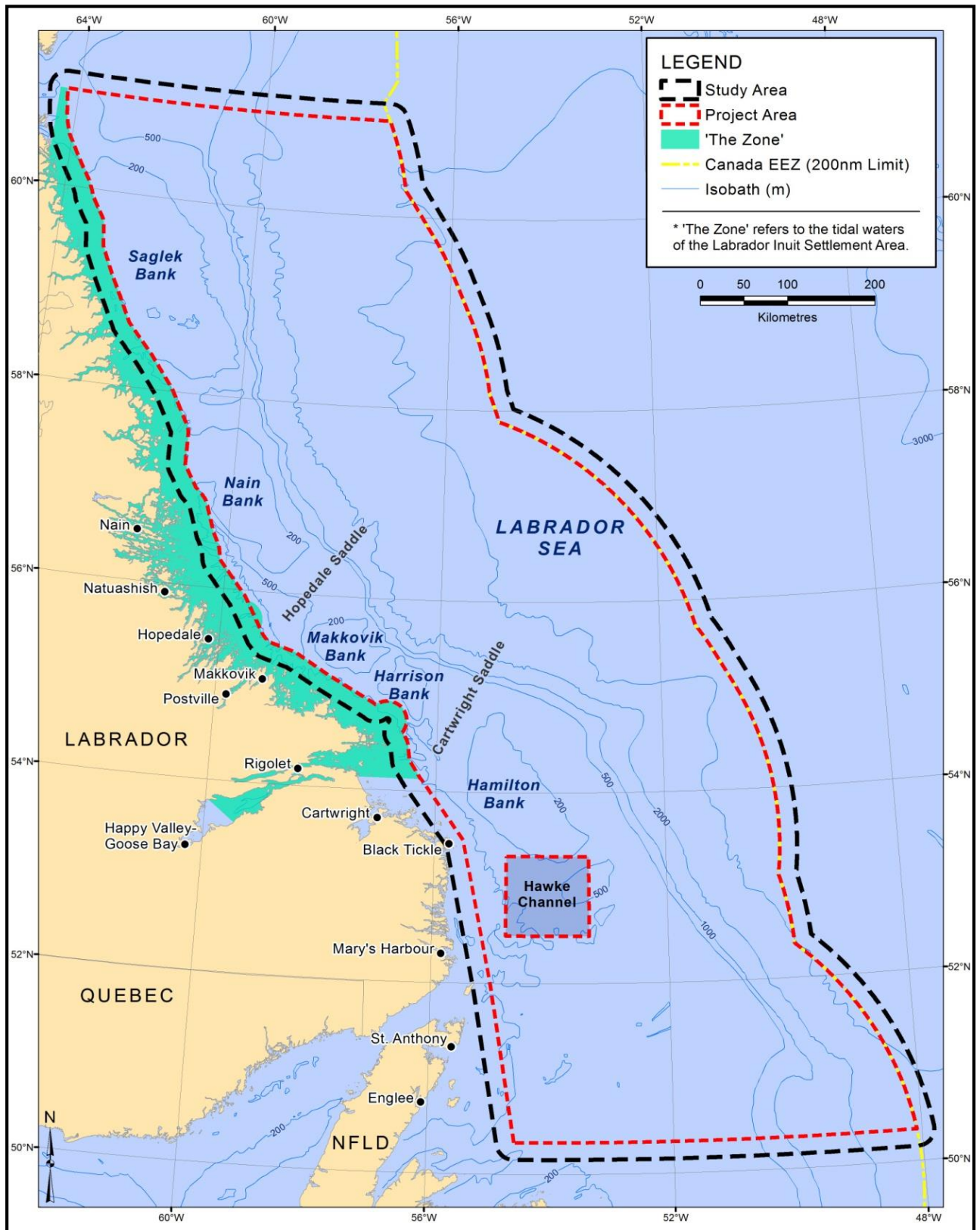


Figure 1. Locations of the Project Area and Study Area for GXT's LabradorSPAN seismic program(s), 2013 to 2015 and 2016-2020.

The ship will also tow a single passive hydrophone cable streamer up to 12 km long, deployed near the ocean surface.

3.6 Other Equipment

Gravity and magnetic data will also be collected passively using a marine gravity metre system. The seismic vessel will also be equipped with an echosounder for depth soundings.

3.7 Project Work to Date

To date, GXT's only survey of the LabradorSPAN program was conducted in 2013, between 24 August and 1 November. During that 70-day program, a total of 6,574.65 km of seismic data were acquired, an average of 94 km per day. This equates to about 9 hours of production per survey day, meaning that approximately 38% of the time from start to finish was spent in actual acquisition mode. Most of the downtime was the result of weather conditions, port calls, the presence of icebergs, and to a lesser extent, routine maintenance. The majority of the production was on lines that GXT had designated High Priority. In most cases, production on lower priority lines was the result of reduced opportunity on the high priority lines, mainly owing to the avoidance of fixed-gear fisheries surveys and to a lesser extent, weather conditions in some areas. During the 2013 survey, a 6040 in³ array was used, towed at a depth of ~10 m, and discharged approximately every 22 seconds. The single streamer used was 10.2 km-long streamer towed at a depth of ~15 m. Gravity and magnetic data were also passively collected by the seismic ship. The seismic vessel also used an echosounder to collect water depth information.

Fuel bunkering operations, re-supplying and crew changes were conducted during the two port calls in St. Anthony. The crew achieved the Health and Safety Targets that were established before the start of the program. From the perspective of ship operations, the flow of information from the shore side resulted in very little to no interference for both the seismic survey and commercial fishing activities. All stated mitigations were implemented, including the use of Marine Mammal and Seabird Observers (MMOSs) and Fisheries Liaison Officers (FLOs), and no environmental incidents occurred.

No seismic surveys were conducted in either 2014 or 2015. A report detailing the application of mitigations, monitoring, communications and reporting was filed with the C-NLOPB in early 2014.

4 Proposed Changes to the Project Description

GXT's proposes to amend its program (as described in the 2013 filings) in two ways: (1) extend the annual temporal scope from 2013-2015 to 2020, and (2) to increase the potential maximum annual full-fold production (now 8,500 km) to 16,000 km. All other aspects of the Project scope, methodology, and mitigation measures would remain as they were presented and assessed in 2013.

4.1 Temporal Scope

As described above, GXT is proposing to extend its program temporal scope from 2013-2015 to 2013-2020. Only one partial survey has been conducted thus far; a 70-day program from 24 August to 1 November 2013. Surveying was not undertaken during either 2014 or 2015 because of various factors including vessel availability, competing priorities and demands in other areas, and changing fiscal circumstances. Extending the temporal scope to 2020 renews the opportunity to complete more of the plans and meet more of the data needs described in the original 2013 project assessment.

The proposed increase in overall temporal scope brings it more in line with the program temporal scope durations of other recent EAs related to the Newfoundland and Labrador offshore. The safeguard used to ensure that the EA conclusions remain valid over the program temporal scope is the requirement of the C-NLOPB to prepare and submit an EA update before a survey can be authorized in any year of the temporal scope. These EA Updates include plans for the year, any additional information related to Valued Environmental Components (VECs), expected fishing activities, additional information related to other offshore activities considered for cumulative effects, implications of any such environmental changes, and information on consultations regarding that year's program.

4.2 Maximum Production

The other proposed change to the LabradorSPAN project is to increase the maximum annual production from 8,500 km to 16,000 km. The initial maximum value of 8,500 km was chosen largely because it seemed a reasonable estimate of what could be done given the anticipated marine conditions on the Labrador Shelf area. However, the 2013 survey demonstrated that good acquisition production could be achieved, so that a higher annual total could be practical.

Having the option to acquire more production in a good year is especially important considering the higher expense of mounting a survey offshore Labrador owing to greater distances between a survey area and major ports and other infrastructure, restricted access by helicopter, the potential for harsh weather, and other northern operating considerations. Thus, an increase in the maximum annual production makes any single survey mobilization in the area more cost effective and more viable in any program year.

Increasing the maximum acquisition to 16,000 km is moderate compared to some other recent 2D surveys proposed for the Newfoundland and Labrador Sector (e.g., 21,000 km per year) (see <http://www.cnlopb.ca/assessments>).

5 Effects Assessment of the Activities on the Environment

The assessment of the potential effects of seismic surveying presented in GXT's original EA (LGL/GXT 2013) is directly applicable to the assessment of the effects of both the extended temporal scope of the project and the increase in the maximum annual production. Neither of these activities introduces new potential effects not already assessed in the 2013 EA.

All project activities and their potential interactions with the various VECs described in GXT's original LabradorSPAN EA (see 2013 EA, Section 5.3) are therefore applicable to the proposed changes. The relevant assessment tables in the 2013 EA are indicated in Table 1 below.

**Table 1. Assessment Tables for all VECs (from LGL/GXT 2013)
Applicable to Assessment of Amendment Activities**

VEC	Interactions Tables	Assessment Tables	Significance Tables
Fish and Fish Habitat	Table 5.3	Table 5.4	Table 5.5
Fisheries	Table 5.6	Table 5.7	Table 5.8
Seabird	Table 5.9	Table 5.10	Table 5.11
Marine Mammals	Table 5.12	Table 5.13	Table 5.14
Sea Turtles	Table 5.12	Table 5.15	Table 5.16
Species at Risk	Table 5.17	Table 5.18	Table 5.19
Sensitive Areas	Refers to tables for other VECs	Refers to tables for other VECs	Refers to tables for other VECs

5.1 Mitigation and Monitoring

The effects assessment in both the 2013 EA and in this Amendment is considered in light of the mitigation measures that will be applied for this Project. The purpose of these measures is to eliminate or reduce the potential impacts of Project activities on the area’s VECs. GXT recognizes that the thorough implementation of these measures will be essential for ensuring that the Project does not result in unacceptable environmental consequences.

The mitigation measures that were proposed in Section 5.6 of the 2013 EA have not changed. Many were specially tailored to this program, while others are founded in regulations, guidelines, or “best environmental practices”. They are based on or take guidance from several sources, including discussions and advice received during consultations for this Project and for other relevant EAs, the C-NLOPB Scoping Documents, and the Environmental Planning, Mitigation and Reporting guidance in Appendix 2 of the Board’s *Geophysical, Geological, Environmental and Geotechnical Program Guidelines* (C-NLOPB 2012), DFO’s *Statement of Practice with respect to the Mitigation of Seismic Sound in the Marine Environment* (Appendix 2 of C-NLOPB 2012) and other standards and guidance, such as the *One Ocean Protocol for Seismic Survey Programs in Newfoundland and Labrador* (2013).

Table 2, organized by VEC, summarizes the measures which were in place for the 2013 survey and will be applied during all surveys conducted up to and including 2020.

Table 2. Summary of Mitigations Measures by Potential Effect

Potential Effects	Primary Mitigations
Interference with fishing vessels / mobile and fixed gear fisheries	<ul style="list-style-type: none"> • Advance communications, liaison and planning to avoid active fishing areas • Continuing communications throughout the program • On-board Fisheries Liaison Officers (FLOs) - 1 representing FFAW and 1 representing Inuit/Nunatsiavut interests • Single Point of Contact (SPOC) • Other advisories and communications - e.g. continuing e-mails, dedicated toll-free 24/7 telephone contact, dedicated web site (www.gxtspan.com), newsletters, notices to Coast Guard, CBC and OK coastal radio • Accessing Vessel Monitoring System (VMS) data • Avoidance • Start-up meetings on ships
Fishing gear damage	<ul style="list-style-type: none"> • Upfront communications, liaison and planning to avoid fishing gear • Use of scout vessel • SPOC; 24/7 toll-free telephone contact • Other advisories and communications • FLOs • Compensation program • Reporting and documentation • Start-up meetings on ships
Interference with shipping	<ul style="list-style-type: none"> • Advisories and at-sea communications • FLOs (for fishing vessels) • Use of scout vessel • SPOC (fishing vessels) • Accessing Vessel Monitoring System (VMS) data (for fishing vessels)
Interference with DFO/FFAW research program	<ul style="list-style-type: none"> • Plotting locations • Communications and scheduling • Avoidance
Temporary or permanent hearing damage/disturbance to marine animals	<ul style="list-style-type: none"> • Pre-watch of safety zone • Delay start-up if marine mammals or sea turtles are within 500 m • Ramp-up of airguns • Shutdown of airgun arrays for <i>endangered</i> or <i>threatened</i> marine mammals and sea turtles within 500 m • Use of qualified marine mammal and seabird observers (MMSOs) to monitor for marine mammals and sea turtles during daylight seismic operations
Temporary or permanent hearing damage/disturbance to Species at Risk or other key habitats	<ul style="list-style-type: none"> • Pre-watch of safety zone • Delay start-up if marine mammals or sea turtles are within 500 m • Ramp-up of airguns • Shutdown of airgun arrays for <i>endangered</i> or <i>threatened</i> marine mammals and sea turtles within 500 m • Use of qualified MMSO(s) to monitor for marine mammals and sea turtles during daylight seismic operations.
Injury (mortality) to stranded seabirds	<ul style="list-style-type: none"> • Daily monitoring of vessel • Handling and release protocols • Minimize lighting if safe
Seabird oiling	<ul style="list-style-type: none"> • Adherence to MARPOL • Spill contingency and response plans • Use of solid streamer

5.2 Assessment Implications of Temporal Scope Extension

Extending the temporal scope of the Project to 2020 does not alter any of the assessment criteria, outcomes or conclusions since it does not change any of the interactions with any VEC considered and assessed in the 2013 EA nor introduce any new potential VEC interactions. All Project objectives, methods and components remain the same, and all described mitigations would be implemented in each Project year. Thus the only further effects would be cumulative effects resulting from any additional years of operation. (Cumulative effects related to the amendment are addressed below in Section 6.)

As noted above, the requirement to prepare and submit an EA update before a survey can be authorized in any given year ensures that if there are any additions or changes in information related to the VECs (e.g., species at risk status) the implications of those changes will be considered before operations proceed. The annual update would also include information about consultations about that year's program and the reporting of any new stakeholder issues or activities.

Therefore, with the mitigations, monitoring and other commitments in place, activities associated with extending the program temporal scope to 2020 are predicted to have *no significant* effects on any of the VECs.

5.3 Assessment Implications of Maximum Production Increase

As with the proposed temporal extension (above), increasing the potential annual maximum seismic acquisition from 8,500 km to 16,000 km also does not affect the original assessment conclusions since it does not alter any of the interactions with VECs identified in the 2013 EA. Since all Project methods and components will remain the same, and all described mitigations will be implemented, the only further potential effects would be cumulative, resulting from continuing acquisition beyond 8,500 km. (Cumulative effects related to the amendment are addressed below in Section 6.)

Therefore, with the mitigations, monitoring and other commitments in place, activities associated with increasing the potential maximum annual acquisition to 16,000 km are predicted to have *no significant* effects on any of the VECs.

6 Cumulative and Residual Effects Assessment Summary

6.1 Cumulative Effects

Cumulative effects on all VECs are considered in Sections 5.5.5 and 6 of the 2013 EA (LGL/GXT 2013), and in Section 7 the 2014 Update (LGL/GXT 2014). Cumulative effects will also be reviewed in the annual EA Updates. This is particularly valuable because the updates consider this from the more timely perspective of current-year marine activities (e.g. other exploration and fisheries), which is important for a proper understanding of the situation and specific mitigations needs (such as simultaneous operation plans) for that season.

Since the proposed changes to the GXT LabradorSPAN program do not introduce any new areas of operation, no new activities or equipment, and no changes in methods, the potential cumulative effects assessed in the 2013 EA do not change.

6.1.1 Within-Project Cumulative Effects

This section considers effects from the GXT Project alone resulting from its cumulative activities over time (within a single season and over multiple seasons). For the proposed changes, the potential for additional within-project cumulative effects would result from more activity over time since the changes will not affect the amount of activity/sound exposure that will occur in any single program day, week or month. Thus, any potential within-project cumulative effects resulting from these changes will be additive, not multiplicative or synergistic.

A further factor diminishing the likelihood of adverse within-project cumulative effects is the typically long lengths and wide separation of the SPAN survey lines as described in the 2013 EA. As stated, the seismic lines will be long and widely spaced except for occasional crossing points “effectively resulting in ‘one time’ exposures of biota and fishing grounds to maximum energy from the discharging airguns” (Section 5.5.5, Within-Project Cumulative Effects),” and “The layout of GXT’s Basin Span surveys (see typical line pre-plots presented in Figure 1.2), with very long and widely spaced lines - typically several hundred kilometres long and 50 to 100 km apart except where they cross in some locations, means that in most areas (fishing grounds and wildlife habitat) there will be only a one-time exposures to project activities, unlike most 2D or 3D seismic surveys. With the seismic ship travelling at ~9 km hour, for any given location, the survey will be 10 - 20 km away within a few hours and will not return there, except for the crossing points, which will likely be separated by several days or even weeks in timing. Typically, only parts of a few of the lines would pass over any key fishing ground in any program year.” (Section 5.6). This last point also applies to other VECs, and holds true for additional activities associated with the amendment changes since GXT would not re-survey the same lines in any additional program years, unless there had been significant data gaps.

It should be noted that only one year of the potential three years of successive operations considered in the 2013 EA has taken place, so that no successive year cumulative effects from the Project over the 2013 – 2015 period considered in the original EA have occurred. In addition, of the potential 25,500 km of the GXT seismic program that might have been acquired during the 2013-2015 period, just 6,575 km were recorded, further limiting any intra-project cumulative effects to date.

Considering these factors with the mitigations identified, the changes related to the proposed amendment do not alter the conclusions of the original assessment, and any potential effects on VECs are predicted to be *not significant*.

6.1.2 Between-Project Cumulative Effects

This section considers possible cumulative effects resulting from the Project being conducted in conjunction with other marine activities operating in the same area at the same time, or other project activities over time. Other marine activities that typically occur in and near the GXT Project Area (as described in the 2013 EA) are

- Commercial fisheries and fisheries research
- Other oil and gas exploration activities, and
- Marine transportation (passenger and cargo).

Section 6.0 of the EA of the LabradorSPAN Survey addressed the potential cumulative effects from past, present and reasonably foreseeable projects/activities such as these. For the most part, patterns of fisheries and other users in the Labrador Sea have not changed in any significant way since 2013. The primary difference in activities identified is a small number of new oil and gas exploration projects listed on the C-NLOPB’s Public Registry during 2014 and 2015.

Although these programs (and possible future programs) have potential to be active in some part of GXT's Project Area in during 2016 – 2020, those that will be active when GXT is present, if any, are not yet know. However, as discussed above, the required EA Updates will identify other marine activities most likely to occur during those years.

If GXT's operations do overlap spatially with another exploration project on the Labrador Shelf in any year, seismic operators will need to communicate with each other to ensure a spatial and/or temporal separation of operations. This is a standard practice in the industry, as stated in the 2013 EA and 2014 Update. Concurrent seismic programs in the same general area have occurred several times in Atlantic Canada in recent years, as well as in other jurisdictions. A key mitigation approach for all of these programs is a simultaneous operations plan, which would aim to establish a minimum separation distance that both/all seismic operators would maintain while acquiring seismic data. Not only is this important for mitigating cumulative effects by way of a spatial buffer, but separation is also necessary to prevent the sound from nearby arrays from interfering with each other's data recording.

The general avoidance of fishing activities described in the mitigations and in the 2013 EA, will also reduce the likelihood of additional fisheries/project cumulative effects. Other marine shipping/transportation use of the area remains low compared to traffic in other parts of the Canadian east coast offshore, and the addition of the activities associated with the amendment changes will not add a significant environmental stress in either any one year or over the 2016-2020 timeframe.

Considering these factors with the mitigations identified, the proposed changes described in this Amendment will not alter the conclusions of the original assessment, and potential effects on all VECs are predicted to be *not significant*.

6.2 Residual Effects

The residual effects, with mitigations in place, are as assessed in the 2013 EA. All predictions made relating to the 'significance' of the residual effects of Project activities on the various VECs remain the same for the residual effects associated with the proposed extension of the program temporal scope to 2020, and the increase of the potential maximum annual seismic acquisition.

A summary of the residual effects of the Project (as amended) on the environment are shown in Table 3. All activities associated with the proposed amendment are predicted to have *no significant* effects on any of the VECs.

Table 3. Significance of Potential Residual Environmental Effects of the Proposed Seismic Program on VECs in the Study Area

Valued Ecosystem Component: Fish and Fish Habitat, Fisheries, Birds, Turtles, Marine Mammals, Species at Risk, Sensitive Areas				
Project Activity	Significance Rating	Level of Confidence	Likelihood (Significant Effect Only)	
	Significance of Predicted Residual Environmental Effects		Probability of Occurrence	Scientific Certainty
Vessel Presence/Lights	NS	3	-	-
Sanitary/Domestic Wastes	NS	3	-	-
Air Emissions	NS	3	-	-
Sound				
Array – physical effects	NS	2-3	-	-
Array – behavioural effects	NS	2-3	-	-
Seismic Vessel	NS	3	-	-
Support Vessel	NS	3	-	-
Echosounder	NS	3	-	-
Presence of Vessels				
Seismic Vessel and Streamer	NS	3	-	-
Support Vessel	NS	3	-	-
Accidental Spills	NS	2-3	-	-
Key:				
Residual environmental Effect Rating: S = Significant Negative Environmental Effect NS = Not-significant Negative Environmental Effect P = Positive Environmental Effect		Probability of Occurrence: based on professional judgment 1 = Low Probability of Occurrence 2 = Medium Probability of Occurrence Effect 3 = High Probability of Occurrence P = Positive Environmental Effect		
Significance is defined as a medium or high magnitude (2 or 3 rating) and duration greater than 1 year (3 or greater rating) and geographic extent >100 km ² (4 or greater rating).		Scientific Certainty: based on scientific information and statistical analysis or professional judgment: 1 = Low Level of Confidence 2 = Medium Level of Confidence 3 = High Level of Confidence		
Level of Confidence: based on professional judgment: 1 = Low Level of Confidence 2 = Medium Level of Confidence 3 = High Level of Confidence				

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