

INDIGENOUS MONITOR OVERVIEW REPORT

Month: August 2020

Indigenous Monitor days on-site: 20

Project Region: Lower Mainland

Kilometre Posts (KPs) monitored: n/a

Indigenous Monitors on the Trans Mountain Expansion Project – Overview

The Trans Mountain Expansion Project (the Project) has retained Indigenous Monitors as integrated members of its construction Environmental Inspection team. Indigenous Monitors work with Environmental Inspectors to monitor compliance with mitigation measures in order to minimize impacts to traditional resource use and cultural/heritage impacts during construction. Indigenous Monitors have a strategic role in providing traditional knowledge directly and pragmatically to construction oversight practices and bring an Indigenous lens to daily environmental inspection activities.

This Overview Report provides highlights of the Indigenous Monitors' day-to-day work and key mitigation measures observed by the Monitors related to Project construction in the Lower Mainland. The purpose of this report is to provide an update on Indigenous Monitor activity to Indigenous groups.

During this reporting period, key Project activities in the Lower Mainland region involving Indigenous Monitors included construction at Westridge Marine Terminal (WMT) and Burnaby Terminal. Activities included inspection and monitoring of underwater noise monitoring and fish acoustic deterrents, foreshore construction works, erosion and sediment control, site water management (watercourse diversion) and construction site housekeeping.

For more information: email info@transmountain.com or call 1.866.514.6700.

Trans Mountain COVID-19 – Our Response

Trans Mountain is actively monitoring the COVID-19 situation with the help of federal, provincial and local agencies. Trans Mountain's top priority remains the health and safety of our workforce, their families and our communities. Trans Mountain and its construction contractors are working diligently together to adhere to all advice and direction from government and health officials, while ensuring the safe uninterrupted operation of the Trans Mountain Pipeline and the continued, safe construction of the Expansion Project. Measures being undertaken at construction sites include: temperature screening; following physical distancing guidelines; staggering work shifts and breaks; eliminating or minimizing in person meetings; enhancing cleaning and sanitizing; and ensuring workers orientation includes COVID 19 expectations, awareness and prevention.

For more information: transmountain.com/covid19

Underwater Noise Monitoring and Fish Acoustic Deterrents

Offshore pile driving activities are ongoing at WMT. The marine derrick barges continue installing steel piles using vibratory drivers and impact hammers. Standard mitigation measures during all in-water pile driving activities include monitoring underwater noise levels using hydrophones to verify noise levels are below the applicable thresholds for the protection of fish and marine mammals. This is a requirement of the Fisheries and Oceans Canada *Fisheries Act* Authorization for the Project.

During impact pile driving, an underwater bubble curtain must be installed around the pile to reduce underwater noise levels. To further mitigate potential impacts to fish, fish deterrent systems that combine high-intensity light with a low-frequency acoustic signal are deployed prior to impact pile driving. The purpose of the deterrent systems is to temporarily deter fish from the immediate area around the pile where elevated noise levels generated by impact pile driving could result in harm to fish.

The sound signal used by the deterrent systems covers the most sensitive hearing band of the fish and is also within the audible range of humans. However, the signal is significantly below the high-frequency hearing of marine mammals so will not adversely affect marine mammals in the vicinity of the site.

Two acoustic deterrent systems are deployed and operated for approximately 30 minutes immediately prior to the start of impact pile driving. These units are lowered into the water from a barge and positioned at 1/3 and 2/3 water depth. The deterrent systems are used for all offshore impact pile driving. The Indigenous Monitor at WMT has been trained in the operation of the fish deterrent systems.

At WMT, the Indigenous Monitor performs ongoing inspection of the in-water pile driving activities to verify all relevant environmental protection measures and mitigations are being implemented and that these measures are functioning effectively.



Fish deterrent system at WMT.

Erosion and Sediment Control

Erosion and sediment control (ESC) measures are monitored and inspected at WMT and Burnaby Terminal to ensure they are functioning as intended to mitigate erosion and sediment transport from construction sites to downstream areas, watercourses or the marine environment.

On-site ESC mitigations include sediment fences, swales, wattles, straw, polyethylene sheeting, coco matting and hydroseeding, as well as water drainage control measures. Before and after heavy rainfall, the Indigenous Monitors inspect exposed slopes to ensure they are covered with the appropriate ESC measures.



Hydroseeding (ESC) at WMT.

Foreshore Expansion – Turbidity Curtain

A custom-built turbidity curtain is installed surrounding the Westridge Marine Terminal foreshore expansion area to protect the marine environment during construction. Turbid water (i.e., water containing suspended sediment) may be generated by wavy conditions, rainfall or construction activities on the foreshore. The turbidity curtain is designed to contain this turbid water within the immediate construction work area. It is an important environmental protection mitigation which is implemented year-round and is monitored and inspected regularly for its integrity and effectiveness.

The Indigenous Monitor is performing ongoing inspection and monitoring of the turbidity curtain at the Westridge Marine Terminal foreshore, including regular maintenance of the curtain.



Turbidity curtain surrounding the foreshore expansion at WMT.



WMT turbidity curtain being cleaned.

Watercourse Diversion

Various watercourses within the Burnaby Terminal footprint are currently being diverted, with mitigation strategies focusing on maintaining instream flow and water quality downstream of the Project site. Instream water flow is maintained during construction by diverting water through Burnaby Terminal to existing downstream connections in the Eagle Creek and Silver Creek watersheds.

Upstream water quality will be maintained during construction by implementing effective mitigation measures focusing on erosion and sediment control, sealed culverts and conveyance systems, water treatment systems through the existing tertiary containment areas and settling ponds. Water quality is tested regularly within the tributaries through discrete and continuous monitoring systems.

The Indigenous Monitor at Burnaby Terminal regularly inspects the diversions into Eagle and Silver Creek tributaries to ensure proper environmental mitigation measures are being followed and equipment (like pumps) are working properly.



Diversion pumps at Eagle Creek at Burnaby Terminal.

Contaminated Soil Removal

In some areas where construction excavation is occurring at Burnaby Terminal, historical contaminants in the soil have been identified. When contaminated soil is identified, the approved Contamination Discovery Contingency Plan is enacted and the Environmental Inspector and Trans Mountain Contaminated Sites Resource Specialist are consulted to determine the necessary mitigation. In all instances, the migration of the contamination from the disturbed construction area must be minimized and impacted soils are properly disposed of where the construction footprint overlaps.

As outlined in the Contamination Discovery Contingency Plan within the Facilities Environmental Protection Plan, mitigation measures for working with contaminated soil include isolating impacted material away from rainfall and surface drainage, excavate and load onto trucks for proper disposal, soil characterization and sampling, and prevent cross contamination.



Truck being loaded with soil for removal from site.

<p>Contaminated Soil Removal (cont'd)</p> <p>The Indigenous Monitor at Burnaby Terminal is inspecting and monitoring the excavation and removal of the contaminated soil.</p>	
<p>Construction Site Housekeeping and Spill Prevention</p> <p>The Indigenous Monitors at WMT and Burnaby Terminal regularly conduct inspections of the various construction areas for general housekeeping measures. This includes observing and documenting garbage and recycling disposal, scrap metal management, waste storage, fuel storage and proper use of vehicle and equipment spill kits. The Indigenous Monitors also inspect food waste containers to make sure they are wildlife proof throughout the site. Limiting human and wildlife interactions is a key mitigation measure in the Environmental Protection Plan.</p> <p>While conducting inspections at WMT and Burnaby Terminal, the Indigenous Monitors report any observed spot spills left from vehicles or machinery. The Environmental Inspector is immediately notified and approves methods to remove or reclaim the contaminated soil as prescribed in the Environmental Protection Plan – Spill Contingency Plan. Effects from small spot spills can generally be minimized and will not result in the suspension of activities if the appropriate actions like containing and cleaning up the substance are conducted promptly.</p>	 <p>Spill kit disposal container.</p>

Indigenous Monitor Request Dashboard

Indigenous Monitors are provided daily on-site field support from Environmental Inspectors and office support from Indigenous Monitor Coordinators. Indigenous Monitors can also make specific support requests or submit questions through their daily report. Examples include but are not limited to; request for Project reports, input from an environmental resource specialist or on-site support from an Elder or other cultural knowledge holder. Monthly requests and their completion status are noted below.

Status	Number and Type of Requests				
	Project Reports/ Documents	Environmental Resource Specialists	Elder/Cultural Knowledge Holder	Other	Total
Total	0	0	0	0	0
Fulfilled	-	-	-	-	-
Outstanding	-	-	-	-	-

This report has been reviewed by the active Indigenous Monitor(s)