Trans Mountain Pipeline ULC
Trans Mountain Expansion Project
NEB Hearing Order MH-052-2018
Responses to Information Request No. 1 regarding
NEB Reconsideration of Aspects of its Recommendation Report
as directed by Order in Council P.C. 2018-1177 from
District of North Vancouver (District of N Vancouver)

1.1 Marine Tanker Traffic

Reference:

A77045-1 National Energy Board Report Trans Mountain Expansion Project in OH-001-2014

Preamble:

The description of the Project and anticipated increased marine shipping was from an estimated average of 5 to 34 Aframax vessels per month.

Requests:

a) What has been the actual marine vessel traffic for Westridge Marine Terminal on a monthly basis for the years 2013 to 2018? Please include data on the class of tankers.

b) Has there been any change to the previously estimated increase in marine vessel traffic for Westridge Marine Terminal?

c) Is there an update on the Project-related increase in marine traffic within Burrard Inlet given there has been an overall increase in marine shipping in the Port of Vancouver?

Responses:

a) Although the information requested is not relevant to the NEB's List of Issues identified in Appendix 1 to Hearing Order MH-052-2018 (Filing ID A6I7I8), Trans Mountain offers the following response to this request.

As shown below, Trans Mountain has provided an update in Table 1.1a-1 to the information provided in Trans Mountain's response to Eliesen M IR No. 1.09b (Filing ID A3X6D1) from the OH-001-2014 proceeding for the years 2014 through 2018.

TABLE 1.1a-1

TRANS MOUNTAIN OIL DELIVERIES AND TANKERS, 2006-2018

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018F
Ex Edmonton Deliveries (bpd)													
Westridge Dock	25,239	38,365	42,806	74,799	79,238	44,243	60,835	58,005	55,474	37,903	22,888	28,651	60,108
Domestic Destination	100,172	103,985	72,008	96,245	81,207	84,801	85,376	77,097	86,336	95,698	98,230	112,844	75,143
Export Destinations	90,338	101,871	110,728	100,118	128,522	135,026	131,828	128,778	138,411	174,456	190,811	166,327	151,797
Ex Kamloops Deliveries (bpd)													
Domestic Destination	11,008	8,328	6,401	4,998	4,295	5,596	8,745	7,216	7,098	5,771	3,671	447	-
Export Destinations	2,673	5,969	5,231	4,270	4,105	3,909	4,049	6,097	5,062	2,312	-	-	-
Tankers (#)	27	36	40	65	69	32	51	49	40	30	15	18	43

b) No, there has been no change in the estimated marine vessel traffic increase.

c) No. As described in Section 6.10 of Trans Mountain Reply Evidence (Filing ID A6L9U8 page 35):

> "The cumulative effects assessment for marine transportation conducted in the Application (Volume 8A, Section 4.4 [A3S4Y3]) was based on future vessel traffic projections, which were derived from projected growth rates in vessel movements (by vessel type) in the marine RSA. These projections were detailed in Section 6 of TERMPOL 3.2 – Origin, Destination & Marine Traffic Volume Survey (Volume 8C, TR8C-2 [A3S4R7, A3S4R8]), and were also presented in Section 4.4.1.4.2 of Volume 8A. The projections incorporated increased vessel traffic from specific terminals, including Roberts Bank Terminal 2, as well as general (i.e., non terminal-specific) growth. Roberts Bank Terminal 2 is specifically identified as a contributor to future vessel traffic increases – in Section 6.2.2 of TERMPOL 3.2 (PDF pg. 28) and in Section 4.4.1.4.2 of Volume 8A (PDF pg. 225). Cumulative effects from other projects were fully addressed in the OH-001-2014 proceeding."

1.2 Use of Dispersants in Spill Response

Reference:

A95299-20, Department of Justice (on behalf of various Federal Departments and Agencies), Opening statement and direct evidence Reference 2.E.2 Oil Spill Fate, Behavior and Response Technology

Preamble:

The OPP alternate response measures program includes spill treating agents, including dispersants, surface washing agents and other chemical treatments to mitigate the environmental impacts of a spill. There is a recognition that that these approaches include a different suite of benefits and risks. It is our understanding that a science-informed analysis of the risks associated with each available option (i.e. net environmental benefits analysis (NEBA)) would be evaluated as part of the spill response.

The intended purpose of dispersants is to break up oil slicks on the water's surface by increasing the rate at which oil droplets forma and move into the water column. Chemical dispersion does not reduce the amount of oil entering into the marine environment; rather, it changes where it goes and how quickly it gets there. The District previously asked questions on the use of Corexit and was advised that it was not approved for use in Canada and was not likely to be used in Burrard Inlet.

There is new information that Corexit was approved for use in Canada in June 2016.

Requests:

a) Is there any change in Trans Mountain's response to IR 5.10(i) previously provided which determined that Corexit was not suitable for use in the Port Metro Vancouver area?

b) How is the potential impact to human health taken into account in the analysis of the use of a dispersants?

c) In light of the recent research on the dispersants, have any concerns been identified for human health if dispersants are used near populated areas?

d) Is there new research available for human health risk assessment specifically on the acute and chronic toxicity for a combination of dispersant(s) and the diluted bitumen products expected to be transported in the Trans Mountain Expansion Project?

Responses:

a) As noted in Trans Mountain's Reply Evidence Section 5.3 Dispersant Use (A96612-2, PDF, p. 24), the use of Spill Treating Agents, including dispersants, in Canadian waters is prohibited under various federal environmental statutes for use during oil spill response for oil tankers. There has been no change to its prohibition for use during oil

spill response for oil tankers, including in relation to any hypothetical spill by Project-related tankers.

b) Please see Trans Mountain's response to District of N Vancouver Reconsideration IR No. 1.2a.

c) Please see Trans Mountain's response to District of N Vancouver Reconsideration IR No. 1.2a.

d) Please see Trans Mountain's response to District of N Vancouver Reconsideration IR No. 1.2a.

1.3 Submerged Oil Response

References:

A3S4V5 - Application Volume 7, Risk Assessment and Management of Pipeline and Facility Spills, Section 4.8.2.5 Spill Response Tactics Properties

Composition and Marine Spill Behaviour, Fate and Transport of Two Diluted Bitumen Products from the Canadian Oil Sands: http://www.ec.gc.ca/scitech/6A2D63E5-4137-440B-8BB3-E38ECED9B02F/1633_Dilbit%20Technical%20Report_e_v2%20FINAL-s.pdf

A4D3F1 - Emergency Response Plan; Westridge Marine Terminal; Section 4.6 Response Tactics for Shorelines p. 8 of 15 Section 4.7 Response Tactics for Sunken or Submerged Oil

Preamble:

The District is located along Burrard Inlet and Indian Arm. Water circulation in the Burrard Inlet-Indian Arm system is basically estuarine with lower salinity surface waters flowing down the inlet overlying more saline waters at depth entering from the Strait of Georgia. There are a number of unique conditions in the Burrard Inlet- Indian Arm system, including areas of turbulent mixing in the vicinity of the First and Second Narrows. In Reference (ii), the information on the composition and marine spill behavior of diluted bitumen indicates that it has the potential to sink when mixed with sediments and organic matter with wave action. Reference (iii) differentiates between submerged oil (lies below the surface of the water) and sunken oil (product on the bottom). Oil that has fallen below the surface can also resurface elsewhere.

As new information available since the initial NEB review, the federal government has improved its understanding of the fate and behavior of petroleum products, including diluted bitumen, should they spill into fresh or marine waters. With respect to diluted bitumen specifically, federal scientists have communicated that they have made considerable progress, including peer-reviewed and guidance documents on oil fate and behavior, physical/chemical properties, petroleum forensics, spill countermeasures, field response, remote sensing, and oil spill modelling.

Requests:

a) Does this new information on the fate and behaviour of diluted bitumen in marine waters change the original assessment of the potential for submerged or sunken diluted bitumen product in the vicinity of Cates Park, the Conservation Area at Maplewood Flats, in and around the First and Second Narrows Bridges and in the entrance to Indian Arm?

b) Please describe the anticipated efficacy (e.g. % of submerged and sunken oil recovered) and limitations (conditions in which it cannot be used, (e.g. depth of water, weather, etc.) for the cleanup techniques.

c) Please provide any updated details on field studies or documented examples that demonstrate the physical recovery of submerged or sunken diluted bitumen from an actual spill event.

Response:

a) The new information on the fate and behaviour of diluted bitumen in marine waters has not altered Trans Mountain's original assessment (Filing ID A3S4Y3 VolUme 8A). See Section 8.1.2 of Trans Mountain's Direct Evidence (Filing ID A6J6F4), Attachment 8.1.2 "Dilbit and Related Research – 2015 to 2018, A summary prepared by Polaris Applied Sciences, Inc." (Filing ID A6J6H9) and Trans Mountain's Reply Evidence (Filing ID A6L9U8, PDF p. 25) for further information and studies Trans Mountain has considered related to fate and behaviour of diluted bitumen.

b) This information request was fully addressed in the OH-001-2014 proceeding. Please refer to Trans Mountain's response to DNV IR No. 2.05.02d (Filing ID A4H8L7, PDF p. 91).

c) A comprehensive assessment of strategies for submerged and sunken oil and actual spill cases are described in API 2016 (a, b). In 2013, a heavy Athabasca crude blend spilled in Mayflower, Arkansas, part of which reached Dawson Creek. No oil was observed or found to submerge or sink and conventional methods for on-water response were used (NAS 2016). A 2018 synbit release from a rail incident is described in PAS 2018. Conventional spill response methods for floating oil were the only strategies required for that intervention (see PAS 2018, pg. 5). Several of these studies, and others, were considered in the summary report prepared by Polaris Applied Sciences, Dilbit and Related Research – 2015 to 2018 (Filing ID A6J6H9), included with Trans Mountain's Direct Evidence (Filing ID A6J6F4).

References:

API (American Petroleum Institute). 2016. Sunken Oil Detection and Recovery Operational Guide. API Technical Report 1154-2, First Edition, February 2016, 36p. http://www.oilspillprevention.org/~/media/Oil-Spill-Prevention/spillprevention/r-and-d/inland/sunken-oil-ops-guide.pdf

API. 2016. Sunken Oil Detection and Recovery. API Technical Report 1154-1, First Edition, February 2016, 126p. http://www.oilspillprevention.org/~/media/Oil-Spill-Prevention/spillprevention/r-and-d/inland/sunken-oil-technical-report-pp2.pdf

National Academies of Sciences, Engineering, and Medicine (NAS). 2016. Spills of Diluted Bitumen from Pipelines: A Comparative Study of Environmental Fate, Effects, and Response. Washington, DC: The National Academies Press. ISBN 978-0-309-38010-2, http://www.nap.edu/21834

Other studies and references which demonstrate the physical recovery of submerged or sunken diluted bitumen include:

Lehmann, S. (2006). *Case Studies in Submerged Oil Spill*. Submerged Oil Workshop, CRRC, December 12, 2006. http://www.crrc.unh.edu/workshops/submerged_oil/lehman_presentation.pdf (accessed July 17, 2014).

Michel, J. (2006). *Assessment and Recovery of Submerged Oil: Current State Analysis*. US Coast Guard Research and Development Center. http://www.uscg.mil/hq/cg9/rdc/reports/products/SubmergedOil_Michel_FINAL.pdf (accessed July 17, 2014).