

 PORT METRO vancouver		VANCOUVER FRASER PORT AUTHORITY (VFPA) PROJECT AND ENVIRONMENTAL REVIEW PROJECT REPORT AND PERMIT
PER No.:	15-295-1	
Tenant:	Kinder Morgan Canada	
Project:	Amendment - Supplementary Offshore Geotechnical Investigation	
Project Location:	Westridge Marine Terminal, Burnaby BC	
VFPA SID No.:	BBY092	
Land Use Designation:	Port Terminal	
Applicant(s):	Golder Associates Ltd. obo Kinder Morgan Canada	
Applicant Address:	200-2920 Virtual Way, Vancouver BC V5M 0C4	
Category of Review:	B	
Date of Approval:	November 10, 2015 Amendment: December 9, 2015	
Date of Expiry:	November 30, 2016	

1. INTRODUCTION

The Vancouver Fraser Port Authority (VFPA), a federal port authority doing business as Port Metro Vancouver (PMV), manages lands under the purview of the *Canada Marine Act*, which imparts responsibilities for environmental protection. VFPA accordingly conducts project and environmental reviews of works and activities undertaken on these lands to ensure that the works and activities will not be likely to cause significant adverse environmental effects. This project and environmental review report and project permit (the Permit) documents VFPA's project and environmental review of **PER No. 15-295-1: Supplementary Offshore Geotechnical Investigation (the Project)** proposed by **Golder Associates Ltd. working on behalf of Kinder Morgan Canada (the Applicant)**.

This project and environmental review was carried out to address VFPA's responsibilities under the *Canada Marine Act*, and to meet the requirements of the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), as applicable. The proposed Project is not a CEAA 2012 "designated project" and an environmental assessment as described in CEAA 2012 is not required. However, VFPA authorization is required for the proposed Project to proceed and in such circumstances, where applicable, Section 67 of CEAA 2012 requires federal authorities to assure themselves that projects will not be likely to cause significant adverse environmental effects. This review provides that assurance. In addition, VFPA considers other interests, impacts and mitigations through the project and environmental review.

The project and environmental review considered the application along with supporting studies, assessments and consultations carried out or commissioned by the Applicant, as well as other information provided by the Applicant. In addition, this project and environmental review considered other information available to VFPA and other consultations carried out by VFPA. A full list of information sources germane to the review is provided in the following pages of this report.

This Permit is the authorizing document allowing the Applicant to proceed with the Project subject to the listed project and environmental conditions.

2. PROJECT DESCRIPTION

Golder Associates on behalf of Kinder Morgan Canada proposes to conduct geotechnical investigations to obtain subsurface soil information in support of potential future development. This work is an extension of the offshore drilling works permitted under authorization 14-113. The project consists of advancing boreholes using barge-mounted drilling at twenty-six (26) distinct locations. Twenty-one (21) boreholes will be drilled using a Sonic rig (to a depth of 13 m to 90 m below seabed), eight (8) boreholes will be drilled using mud rotary technique (to a depth of 25 m to 65 m below seabed) and thirteen (13) seismic cone penetration tests will be completed (to a depth of 8 m below seabed). The work is scheduled to commence once permitted after November 12th, for a duration of approximately 11 weeks, with 24/7 operations. Continual operations are required as it is not feasible to complete a single drill sample within standard hours of operation and it is not practical to stop and restart the drilling and sampling process.

A portion of the drilling area is within the Rockfish Conservation Area, established by Fisheries and Oceans Canada. As a condition of permit approval, Golder Associates is required to ensure that the drilling barge is provided an attending tug which must remain on site and ready to render assistance at all times, and not only to assist with barge movements. A support vessel will be present the entire time for crew movements and emergency access and response.

All of the mitigation measures identified in the Environmental Management Plan prepared for the project will be implemented during the geotechnical investigation. Some of these mitigation measures include:

- No discharge of drilling fluids, drill cuttings, oil spills, gray water or deleterious substances.
- Drilling barge and support vessels will avoid known areas of eelgrass and bull kelp.
- Night operations will use flood lights focused on deck of the barge work platform, not the adjacent water.
- A full-time Environmental Monitor will be present.
- The Environmental Monitor will conduct underwater sound monitoring with a hydrophone and water quality monitoring for turbidity plumes and hydrocarbon sheaths, and implement appropriate mitigation measures as required.
- The Environmental Monitor will monitor noise-related marine mammal avoidance behaviour and implement appropriate mitigation measures as required.
- Drilling operations will be shut down if marine mammals show signs of distress.
- Full-time program of noise level monitoring near the residence closest to the proposed drilling location.
- Spill prevention and emergency response procedures.
- Hazardous materials management.
- Waste materials management.
- Navigational hazards management, including issuing a Notice to Shipping and submitting daily schedule updates to the Kinder Morgan Canada terminal.

A shoreline survey conducted by Golder Associates demonstrates that the proposed drilling locations will not interfere with existing infrastructure.

In addition to the geotechnical drilling activity, Golder Associates will also conduct a geophysical survey over approximately two days. They will conduct multichannel seismic reflection surveys from the shoreline to a water depth of 24 meters. This work uses a twenty-four channel hydrophone streamer, spaced 3 to 5 meter apart and trailed between 10 and 100 meters behind a vessel. A seismic source will be fired underwater every 3 to 10 meters of travel during transit. The data is collected using a seismograph. The seismic source will be a sparker or air gun (10 to 40 cubic inches) with a frequency range between 30 Hz and 2 kHz. The marine mammal safety zone will be 200 meters and underwater noise will be monitored.

In this project permit, the Project means the physical activities authorized by VFPA to be carried out pursuant to **PER No. 15-295-1**, as described below.

3. VANCOUVER FRASER PORT AUTHORITY INTERNAL REVIEWS

The following VFPA departments have reviewed the application and support approval of the Project subject to the listed project and environmental conditions.

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Planning/Environmental Programs | <input checked="" type="checkbox"/> Engineering | <input checked="" type="checkbox"/> Marine Operations |
| <input checked="" type="checkbox"/> Project Communications | <input checked="" type="checkbox"/> Real Estate | <input checked="" type="checkbox"/> Aboriginal Affairs |

4. ABORIGINAL CONSULTATION

The Pre-Consultation Report was completed and it was determined that the duty to consult was not triggered.

5. NOTIFICATIONS

5.1 Municipal notification

The proposed Project was assessed by Planning to have potential impacts to municipal interests. The Applicant will be sending a notification letter to the City of Burnaby prior to the commencement of physical activities, notifying them of the proposed Project.

5.2 Community Notification

The proposed Project was assessed by Community and Aboriginal Affairs to have potential impacts to community interests, particularly noise. The Applicant will be sending a notification to the adjacent community and public through a mail drop on prior to commencement of physical activities, along Bayview Drive, Malibu Drive, Sierra Drive, Northcliffe Crescent, Inlet Drive and Barnet Road.

6. INFORMATION SOURCES

VFPA has relied upon the following sources of information in its review of the Project.

- Application form and materials submitted by Kinder Morgan Canada on September 16, 2015.
- All Project correspondence from September 16, 2015 to December 9, 2015.
- Environmental Management Plan for Supplementary Offshore Geotechnical Investigation, Westridge Marine Terminal, Burnaby BC, November 26, 2015, Golder Associates
- Proposed Test Hole Location Plan for Supplementary Offshore Geotechnical Investigation, Westridge Marine Terminal, Burnaby BC, November 4, 2015, Golder Associates and Moffatt & Nichol.
- Additional Geotechnical and Geophysical Works Proposed for the Kinder Morgan Westridge Marine Terminal Site Memo, November 26, 2015, Golder Associates
- Email from Golder Associates to VFPA on December 9, 2015 regarding "Kinder Morgan Marine Terminal site – additional work proposed".

7. PROJECT AND ENVIRONMENTAL CONDITIONS

VFPA has undertaken and completed a review of the Project in accordance with the *Canada Marine Act* and Section 5 of the Port Authorities Operations Regulations and, as applicable, Section 67 of the *Canadian Environmental Assessment Act, 2012*

If at any time the Applicant fails to comply with any of the project and environmental conditions set out in the project permit (the Permit) below, or if VFPA determines that the Applicant has provided any incomplete, incorrect or misleading information in relation to the Project, VFPA may, in its sole and absolute discretion, cancel its authorization for the Project or change the project and environmental conditions to which such authorization is subject.

Pursuant to Section 29 of the Port Authorities Operations Regulations, VFPA may also cancel its authorization for the Project, or change the project and environmental conditions to which such authorization is subject, if new information is made available to VFPA at any time in relation to the potential adverse environmental and other effects of the Project.

The following are the minimum conditions that must be followed by the Applicant to mitigate potential or foreseeable adverse environmental and other effects.

No.	GENERAL CONDITIONS
1.	This Permit is conditional on a valid tenure agreement with respect to the subject premises being in place. No construction or any other physical activities may commence in the absence of a valid tenure agreement.
2.	This Permit is granted subject to the fulfillment of all other requirements of VFPA, relating to the Project. Furthermore, prior to commencing construction or any other physical activities the Applicant shall ensure that it has complied with all other necessary legal requirements and that all necessary regulatory approvals have been obtained.
3.	This Permit in no way endorses or warrants the design, engineering, or construction of the Project and no person may rely upon this Permit for any purpose other than the fact that VFPA has permitted the construction of the Project, in accordance with the terms and conditions of this Permit.
4.	In consideration of the granting of this Permit by VFPA the Applicant agrees to indemnify and save harmless VFPA against any and all actions, claims, loss, damages or other expenses in any way arising or following from or caused by the granting of this Permit or the construction or operation of the Project as contemplated by this Permit.
5.	The Applicant shall undertake and deliver the Project to total completion in a professional, timely and diligent manner in accordance with the Application submitted by the Applicant and the applicable standards and specifications set out in the sections above entitled Project Description and Information Sources The Applicant shall not carry out any other physical activities unless expressly authorized by VFPA.
6.	The Applicant shall establish a spill prevention, containment and clean-up plan for hydrocarbon products (including fuel, oil and hydraulic fluid) and any other deleterious substances using standards, practices, methods and procedures to a good commercial standard, conforming to applicable law and using that degree of skill and care, diligence, prudence and foresight which would be reasonably and ordinarily expected from a qualified, skilled and experienced person engaged in a similar type of undertaking under the same or

	similar circumstances. The Applicant shall ensure that appropriate spill containment and clean-up supplies are available on site at all times and that all personnel working on the project are familiar with the spill prevention, containment and clean-up plan.	
7.	The Applicant shall be solely responsible for reviewing DFO's Projects Near Water website (http://www.pac.dfo-mpo.gc.ca/habitat/know-savoir-eng.htm) to assess whether the Project requires DFO's involvement. The Applicant is solely responsible for submitting any necessary information through DFO's Project Review Process.	
8.	The Applicant shall cooperate fully with VFPA in respect of any review by VFPA of the Applicant's compliance with these conditions including, without limitation, providing any information or documentation required by VFPA.	
9.	The Applicant shall make a copy of this Permit available to all employees, agents, contractors, licensees and invitees prior to commencing any physical activities. The Applicant shall be solely responsible for ensuring that all such employees, agents, contractors, licensees and invitees comply with these conditions.	
10.	The Applicant shall make available upon request by any regulatory authority (such as a Fishery Officer) a copy of this Permit.	
11.	Unless otherwise noted, the Applicant shall submit all documents required for VFPA approval to email: per@portmetrovancover.com; fax: 1-866-284-4271 and referencing PER No.15-295-1.	
No.	CONDITIONS - PRIOR TO COMMENCING CONSTRUCTION OR ANY PHYSICAL ACTIVITIES	SUBMISSION TIMING (business days)
12.	The Applicant shall submit a Marine Event Permit for the works.	2 days before commencing physical activities
13.	The Applicant shall notify the Fisheries and Oceans Canada (DFO), Conservation and Protection Field Supervisor for Fraser Valley West in Langley, British Columbia (tel: 604-607-4150; fax: 604-607-4199). The Applicant shall copy VFPA Environmental Programs and the Harbour Master on this notification (email: EnvironmentalPrograms@portmetrovancover.com and Harbour_Master@portmetrovancover.com ; fax: 1-866-284-4271).	2 days before commencing physical activities
14.	The Applicant shall distribute an updated notice to property owners along Bayview Drive, Malibu Drive, Sierra Drive, Northcliffe Crescent, Inlet Drive and Barnet Road in Burnaby. The Applicant shall provide a copy of this notification to the City of Burnaby. The Applicant shall copy VFPA on this notification.	5 days before commencing physical activities
15.	Prior to the commencement of any vessel-related activities, the Applicant shall contact the appropriate Canadian Coast Guard ("CCG") Marine Communications and Traffic Services ("MCTS") centre regarding the issuance of a Notice to Shipping ("NOTSHIP") to advise the marine community of potential hazards associated with the Project.	As per Coast Guard requirements

No.	CONDITIONS - DURING CONSTRUCTION OR ANY PHYSICAL ACTIVITIES
16.	Construction and any physical activities related to the Project may be conducted for 24 hours a day, 7 days a week over a 11 week period . No construction works shall occur during statutory holidays. These hours shall not be modified without prior approval from VFPA.
17.	The applicant shall ensure that the drilling barge is provided an attending tug which must remain on site and ready to render assistance at all times.
18.	<p>In the event that evidence of what is suspected to be an archaeological resource is encountered, the Applicant shall:</p> <ul style="list-style-type: none"> a) Immediately stop any activities that might disturb the archaeological resource or the site in which it is contained ("Site"). b) Not move or otherwise disturb the artifacts or other remains present at the Site. c) Stake or flag off the Site to prevent additional disturbances. d) Immediately notify VFPA.
19.	The Applicant shall not, directly or indirectly: (a) deposit or permit the deposit of a deleterious substance of any type in water frequented by fish in a manner contrary to Section 36(3) of the <i>Fisheries Act</i> ; or (b) adversely affect fish or fish habitat in a manner contrary to Section 35(1) of the <i>Fisheries Act</i> .
20.	The Applicant shall ensure that debris and waste material resulting from the Project are contained, collected, and disposed of at suitable upland locations using standards, practices, methods and procedures to a good commercial standard, conforming to applicable law and using that degree of skill and care, diligence, prudence and foresight which would be reasonably and ordinarily expected from a qualified, skilled and experienced person engaged in a similar type of undertaking under the same or similar circumstances.
21.	The Applicant shall ensure that all equipment is in good mechanical condition and maintained free of fluid leaks, invasive species, and noxious weeds.
22.	The direct or indirect release or deposit of sediment or sediment laden water into the aquatic environment shall be minimized during the works. In this regard, reference should be made to the water quality criteria described in the British Columbia Water Quality Guidelines (Criteria): January 2010 Edition produced by the BC Ministry of Environment.
23.	The Applicant shall not permit barges or other vessels used during the project to ground on the foreshore or seabed or otherwise disturb the foreshore or seabed (including disturbance as a result of vessel propeller wash), except for the minimum contact required to maintain the bow of a barge in position for safe loading/unloading. Works requiring contact with the foreshore or seabed for loading/unloading should be kept to a minimum. The Applicant shall ensure that appropriate measures are taken to mitigate the effects of the contact, including ensuring that rip rap or other materials on the foreshore are not dislodged or otherwise adversely affected. Use may be made of vertical spuds to hold barges in place.

24.	There shall be no disturbance to the seabed, except for the minimum disturbance required within the area where the works are to be conducted.	
25.	During any vessel-related activities, the Applicant shall: <ol style="list-style-type: none"> a) Position vessels and equipment associated with the Project in such a manner so as not to obstruct line of sight to navigational aids or markers. b) As per the International Regulations for Preventing Collisions at Sea, exhibit the appropriate lights and day shapes at all times. c) Monitor the VHF channel used for MCTS communications in the respective area at all times and participate as necessary. d) Be familiar with vessel movements in areas affected by the Project. The Applicant shall plan and execute the Project in a manner that will not impede navigation or interfere with vessel operations. 	
26.	The work must be done in a manner which does not impact vessel traffic.	
No.	CONDITIONS - UPON COMPLETION	SUBMISSION TIMING (Business Days)
27.	The Applicant shall notify VFPA upon completion of the Project.	Within 10 days of completion
28.	The Applicant shall confirm the Project was constructed within the tenured area by providing to VFPA: <ol style="list-style-type: none"> a) Digital photographs of the tenured area, both before and after construction of the Project, from the land and water side of the tenured area. b) A marine survey plan. 	Within 40 days of completion
29.	The Applicant shall submit a copy of their noise monitoring data from the residential location once all works are completed.	Within 40 days of completion
30.	The Applicant shall submit a copy of their underwater noise monitoring data from the geophysical survey.	Within 10 days of completion
VFPA reserves the right to rescind or revise these conditions at any time that new information warranting this action is made available to VFPA.		
LENGTH OF PERMIT VALIDITY		
The Project must be completed no later than November 30, 2016 (the Expiry Date).		
AMENDMENTS		
<ul style="list-style-type: none"> • Details of any material proposed changes to the Project, including days and hours when construction and any physical activities will be conducted, must be submitted to VFPA for consideration of an amendment to this Permit. • For an extension to the Expiry Date, the Applicant must apply in writing to VFPA no later than 30 days prior to that date. <p>Failure to apply for an extension as required may, at the sole discretion of VFPA, result in termination of this Permit.</p>		

8. ENVIRONMENTAL REVIEW DECISION

In completing the environmental review, VFPA has reviewed and taken into account relevant information available on the proposed project, has considered the information and proposed mitigations provided by the Applicant and other information as listed elsewhere in this document, and concludes that with the implementation of proposed mitigation measures and conditions described in the project and environmental conditions section above, the Project is not likely to cause significant adverse environmental effects.

Original Signed

December 9, 2015

Vancouver Fraser Port Authority

DATE OF DECISION

9. CONCLUSION

In completing the project and environmental review, VFPA concludes that with the implementation of proposed mitigation measures and conditions described in the project and environmental conditions section above, the Project has appropriately addressed all identified concerns.

10. PROJECT AND ENVIRONMENTAL REVIEW DECISION

PROJECT PERMIT PER No. 15-295-1 IS APPROVED BY:

Original Signed

December 9, 2015

Vancouver Fraser Port Authority

DATE OF APPROVAL

CONTACT INFORMATION:

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Revision		
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