

G3 Terminal Vancouver Limited Partnership
11720 Borman Drive
St. Louis, MO
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Attention: Mr. Loren Polak
Environmental Director

**RE: G3 TERMINAL VANCOUVER, ENVIRONMENTAL NOISE ASSESSMENT
– ADDENDUM MEMO**

INTRODUCTION

G3 Terminal Vancouver Limited Partnership (G3) is proposing to construct and operate a grain export terminal on leased lands within Port of Vancouver (PV, or the Port). Existing facilities will be demolished to make way for the new facility. The new grain terminal will be a state of the art facility, and is designed to create the most effective and efficient receiving, processing, storage and shipping throughput operation on Canada's west coast.

Under the Canadian Environmental Assessment Act, 2012 (CEAA 2012), PV is required to conduct an environmental review of any proposed project on Port lands. Ramboll Environ US Corporation (Ramboll Environ) previously prepared an Environmental Noise Assessment (ENA)¹ dated November 2, 2015 to support PV's Project and Environmental Review (PER) process. G3 has since revised the facility design and some elements of these revisions are expected to have an impact on overall noise emissions from the facility. The following G3 Vancouver design changes are expected to be of most acoustical significance:

- Placement of reclaim belt drives at heads of reclaim conveyors
- Product elevators on outside of cleaning building with elevated drives
- The use of plenum fans for air-supported belt conveyors (ASBC)
- New and moved spot filters throughout conveyance lines, due to implementation of ASBC
- An additional belt-tensioner tower servicing conveyance for a new ship-loading bulk-weigher
- New conveyance lines, with belt drives and spot filters, on west side of cleaning building
- Revised silo configuration
- Revised cleaning building configuration

A revised noise modeling assessment was prepared to evaluate the potential impacts that the changes identified above could have on facility-wide noise

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¹ Ramboll Environ (2015). G3 Western Grain Terminal, Environmental Noise Assessment, November 2, 2015. Project Ref. CA12-00639A.

emissions. The assessment was completed using the same noise model that was used for the ENA (CadnaA), with edits and revisions based on information provided by G3.

Preliminary results of the revised modeling assessment indicate that, at some receptor locations, unmitigated facility-wide emissions would be higher than was predicted in the ENA. With consideration of PV's objective to reduce facility-wide noise emissions to a level that is acceptable to PV and the surrounding communities, Ramboll Environ has been tasked with completing a comprehensive noise mitigation assessment.

The revised mitigation assessment is currently underway, in cooperation with the G3 design team. The following are elements of the revised site design currently under consideration for noise mitigation:

Belt Tensioner Tower Motors

- A new belt tensioner tower is proposed, for a total of five (5), each driven by two (2) approximately 500-Hp motors. Noise mitigation of the tensioner towers, including the new bulk weigher tensioner tower, could be achieved by extending tower walls to the ground and/or installing acoustical panels or treatment on north-facing side(s) of towers.

Belt Drives

- Belt drives are comprised of a motor and a gearbox, and are commonly loud sources of noise, especially at higher Hp ratings. Mitigation of belt drive noise is being reviewed for multiple drives at the G3 Vancouver facility, and may include one or more of partial barriers, enclosures, or selection of quiet motors (e.g., lower RPM) and quieter gearboxes. Locations of belt drives currently under consideration for noise mitigation include:
 - Reclaim conveyors at north end of silos, south of cleaning building
 - Conveyors on west side of cleaning building
 - Bucket elevators fitted with high-Hp drives located at or above the roof of cleaning building

Dust Collection

- Dust collection at the G3 Vancouver facility includes baghouses at the cleaning building, scale tower, and rail unloading building, as well as spot filters throughout the conveyance system and at the scale tower and bulk-weigher tower. Mitigation of noise from dust collection is being reviewed and for each dust collection noise source may include one or more of partial barriers, partial enclosures, or exhaust silencers. Locations of dust collection currently under consideration for noise mitigation include:
 - Baghouses on top of cleaning building. The November ENA concluded that noise mitigation of these units would be warranted, and this conclusion stands under the revised site layout. Currently under consideration, as reported in the ENA, are exhaust silencers and exhaust openings that face away from residents in City of North Vancouver and commercial properties in District of North Vancouver.
 - Baghouse at rail unload building. Noise reduction through use of an exhaust silencer, as reported in the ENA.
 - Drive motors and blowers for baghouses located on top of cleaning building.
 - Baghouse drive motor and blower at rail unload building.

Air-Supported Belt Conveyors (ASBC)

- Plenum fans that provide air for ASBC. Currently reviewing quieter ASBC plenum fans than were assumed for the revised assessment; the revised assessment was based on measurement data of ASBC plenum fans at a similarly designed facility.

Rail Squeal

- Additional rail lubricators and/or friction modifiers may be implemented to further minimize the potential for rail squeal throughout the G3 facility.

Alarms

- The feasibility and suitability of using broadband and/or ambient-sensing backup alarms for mobile equipment and facility operations is being reviewed. Alternative alarm types would be required to meet stringent G3 safety requirements.

CLOSING REMARKS

We trust that the above provides sufficient information regarding the implications of the revised G3 Vancouver design on the potential for noise impact and mitigation. This memorandum reflects G3's commitment to minimizing the potential for annoyance and impact in the surrounding communities, consistent with the PV noise mitigation objectives. Please contact the undersigned should you have any comments or questions regarding this addendum.

Yours sincerely

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