

**Boeing Canada Operations Ltd.**  
Boeing Canada Winnipeg  
99 Murray Park Road  
Winnipeg, Manitoba, Canada R3J 3M6



November 13, 2015

Tracey Braun, M.Sc., Director  
Environmental Stewardship  
Environmental Approvals Branch  
123 Main Street, Suite 160  
Winnipeg, Manitoba R3C 1A5

Dear Director,

**RE: Notice of Alteration to Environment Act License No. 1301 R – Installation of New Paint Booth  
737 MAX AIB**

This letter is intended to notify the Director about a new paint booth operation at Boeing Canada Operations Ltd. The paint booth operation is proposed to be commissioned at Boeing's 99 Murray Park Rd facility in the City of Winnipeg. The paint booth will be located on the west side of the building in the new building expansion. The building expansion has been constructed to a LEED Silver standard.

The purpose of the additional paint booth is to accommodate the production of the 737 MAX Inner Barrel. The paint booth is targeted to be commissioned by spring 2016.

The proposed addition of the new paint booth is projected to have minimal impact to air quality. Please see attached proposal for more detailed information.

If there are any questions or for more information, please contact the undersigned.

Regards,

**Karrie Zonneveld**

Environmental Specialist | Environment Health & Safety

[Boeing Canada Winnipeg](#)

[Boeing Canada Operations Ltd.](#)

99 Murray Park Road, Winnipeg MB R3J 3M6

204.833.7139 | phone 204.837.2807 | fax

**Proposal for an Additional Paint Booth at  
99 Murray Park Rd**

**737 MAX Inner Barrel**

**Boeing Canada Operations Ltd.  
Winnipeg, Manitoba**

**November 2015**

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### I. Certificate of Title

On file.

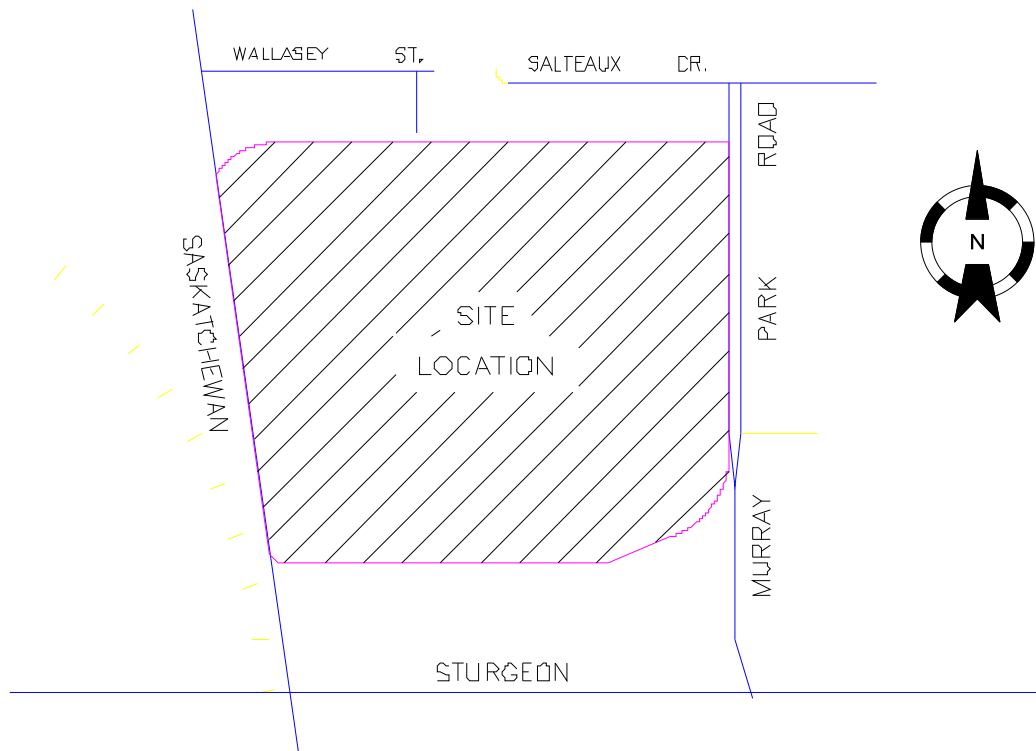
### II. Mineral Rights

Not Applicable

### III. Existing Land Use

The subject property located at 99 Murray Park Road in Winnipeg, Manitoba, Canada has a land area of 518,300 sq m with a developed area of 56,118 sq. m. The commercial space is currently used for manufacturing composite aircraft parts.

The property is located in Murray Park industrial area in the City of Winnipeg. The site is bounded by Murray Park Rd on south, Sturgeon Rd on west, Saskatchewan Ave on north and Saulteaux Cr on east.



**Figure 3.1 Site Location<sup>1</sup>**

<sup>1</sup> Lot 1, Block 3, Plan 10634; C.T. No. 110634

There is no surface water located on the property. The nearest significant surface water body is the Red River located approximately 3.5 kilometers to the southeast of the property.

#### **IV. Land Use Designation & Zoning Designation**

The land use designation according to The City of Winnipeg Zoning By-law 6400/94 for 99 Murray Park is M-2 (Manufacturing - General) with additional PDO Airport Vicinity zoning.

#### **V. Previous Studies and Authorizations**

Not Applicable.

#### **VI. Planning**

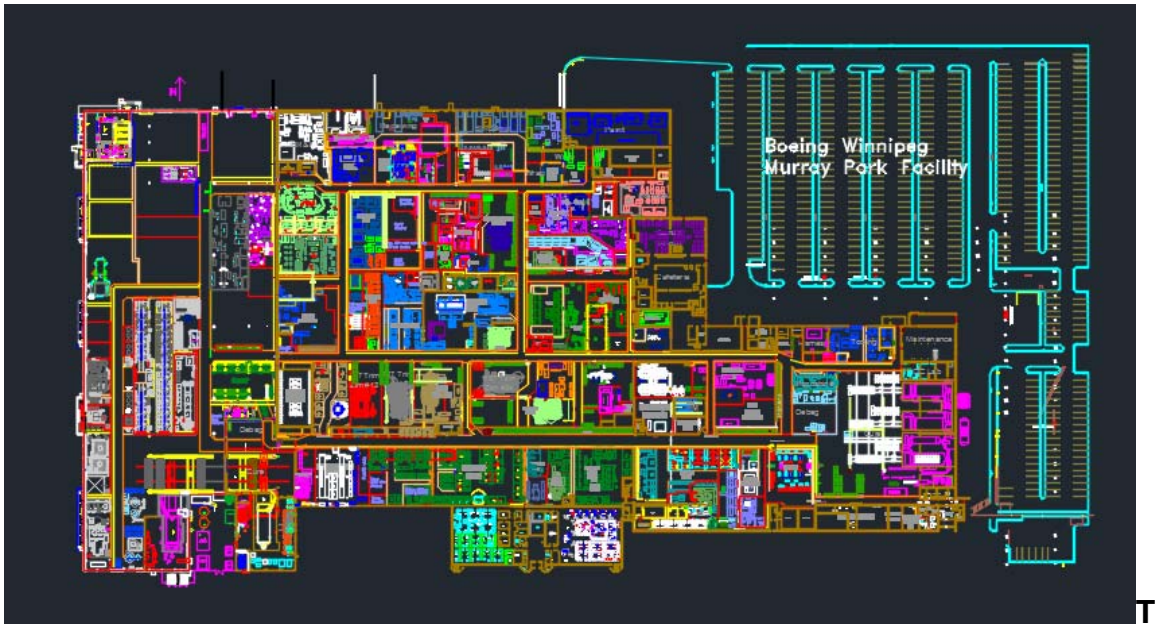
Currently, Boeing Canada Operations Ltd. utilizes the property at 99 Murray Park for composites aircraft parts manufacturing processes.

The proposed change to the building is the installation of an additional paint booth operation for painting 737Max component parts. Figure 6.1 depicts an overall layout of the building including an indication of the proposed location of the paint booth. Figure 6.2 depicts a detailed layout of the proposed paint booth.

Table 6.1 describes the physical outer dimensions of the paint booth. The design of the booth is such that it is an open-face, dry filter, side-draft exhaust booth.

**Table 6.1 Dimensions of Proposed Paint Booth, Flash-off Room and Cure Room**

	<b>Length (m)</b>	<b>Width (m)</b>	<b>Height (m)</b>
Paint Booth	5.1	5.1	4.3
Flash-off Room	3.3	3.4	4.0
Cure Room	6.4	3.4	4.0



**Figure 6.1 Location of New 737MAX Paint Booth, Flash-off and Cure Rooms at 99 Murray Park Road**

**a. Paint Booth Air Handling Equipment Description**

The proposed booth will be exhausted to the outdoors through a booth mounted exhaust fan, running at 22,200 CFM. The makeup air will be supplied directly to booth via roof mounted indirect-fired natural gas unit.

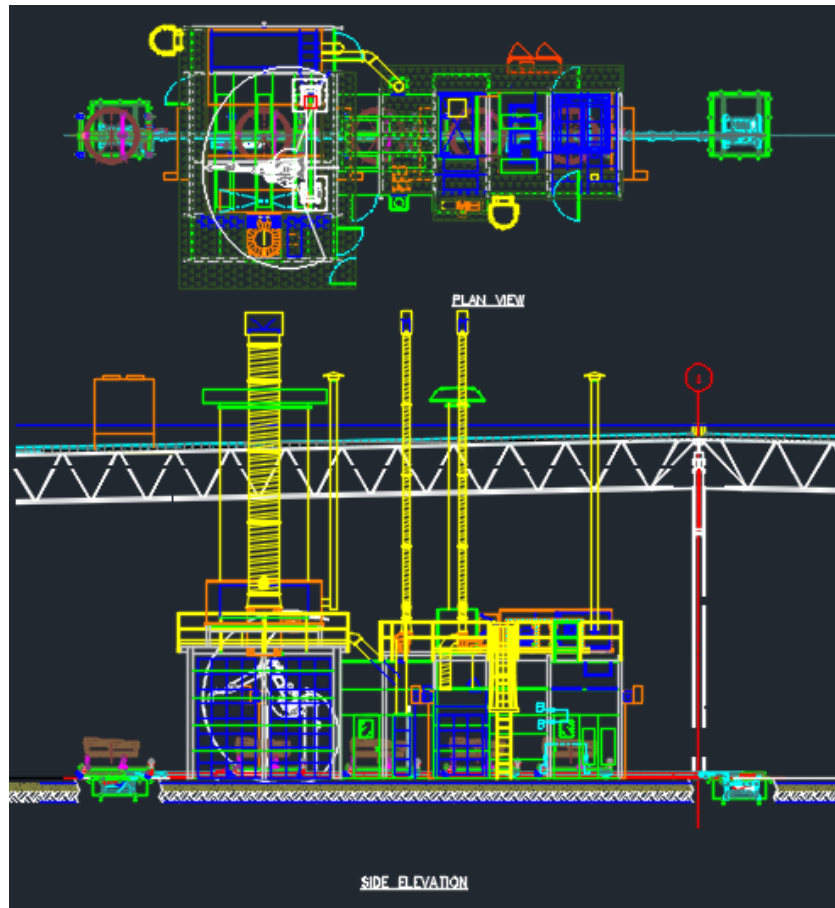
The make-up air will be filtered twice: Once at the make-up air unit and later at the booth discharge.

The exhaust air has three stages of filtration: 1<sup>st</sup> stage, CPA roll media, 2<sup>nd</sup> stage, 20" x 20" MEPT panel filters; 3<sup>rd</sup> Stage, 20" x 20" x 12" bag filters.

**b. Paint Booth Air Handling Process Description**

- i. To begin operation of the paint booth air handling system, the "Fan On" switch will be turned on. This will begin the opening of the air damper which will be located outside.
- ii. 55 seconds later, when the outside damper is fully opened, the booth exhaust fan will come into operation. An air switch in the exhaust duct will "prove" the air discharge and will be closed. This will allow the air to make-up supply for fan to start.
- iii. An air switch in the make-up discharge will then "prove" the airflow and will enable the burner to fire up, provided the system switch is in the "Heat Mode".
- iv. The failure of either the exhaust or the supply air fans will cause the system to shut down and lock out. In the event of a lock out, the system will be reset manually. Compressed

air for the spray guns are activated when the exhaust fan is “on” and “proven”.



**Figure 6.2 Layout of proposed 737MAX Paint Booth, Flash-off and Cure Rooms**

The following section describes a detailed description of paint process and production loads of the proposed paint booth. The paint booth will be used to paint following component parts:

737Max: Acoustic Inner Barrel @ 80 parts per month

**c. General Description of the Paint Process**

- i. The general process is to mast and solvent clean the parts with methyl ethyl ketone (MEK) in the prep area in front of the booth. A Safety Data Sheet is provided in the Appendix B. Other paint related SDS's could be found in subsequent appendices.
- ii. The part is loaded on a cart and automatically loaded into the paint booth with a chain conveyor. An overhead door is automatically opened and closed between each booth.



- iii. The primer finish is applied in the booth with a robotic spray applicator. High volume, low pressure (HPLV) guns are used for spray painting.
- iv. The part is then automatically transferred to the flash-off room for 25 minutes.
- v. The part is then automatically transferred to the cure room for 45 minutes. The cure room has capacity to hold 2 parts.
- vi. The part is then automatically transferred to the unload area.

Table 6.2 describes the process run-times of the paint process.

**Table 6.2 Process Run-Times of the Paint Process**

<b>737Max Inner Barrel</b>	
<b>Process</b>	<b>Time (min)</b>
Paint	5
Flash-off (72F)	25
Cure (160F)	45

The chemical quantities required for the paint process are described in Table 6.3.

**Table 6.3 Quantities of Chemicals Required for the Paint Process**

<b>Paint Usage (per month)</b>	<b>(L)</b>
Type 10 Aluminized Epoxy Primer (BAC5755)	136

## **VII. Storage of Dangerous Goods**

The chemicals proposed to be used at 99 Murray Park are regulated under the Transportation of Dangerous Goods (TDG) Act. Table 7.1 shows the chemicals and respective information such as TDG Class, UN Number and packaging group number.

**Table 7.1 Paint Types in each Assembly Usage at 99 Murray Park Rd**

	<b>TDG Class</b>	<b>UN Number</b>	<b>P.G.</b>
Type 10 Aluminized Epoxy Primer (BAC5755)	Class 3	UN 1263	II

These paints will be stored in FM approved flammable storage cabinets. Methyl Ethyl Ketone or MEK (UN1993, class 3, PG II) will be required for cleaning parts. MEK will also be stored in a Flammable Storage Cabinet. It is estimated that the total amount of all regulated goods under TDGA will not surmount 50 liters at any given time.

### **VIII. Potential Environmental Impacts**

Following sections describe the potential impacts on the environment that might arise due to the proposed paint operation.

#### **a. Impacts to the Air Quality**

The addition of the paint booth operation to the existing processes at 99 Murray Park Rd is not predicted to create any change in air quality of the immediate or surrounding areas. This booth is vented directly to the outdoors. The assembly operations do not generate any particulate matter.

The environmental impacts of the proposed paint spray operation on air quality are estimated to be very minimal. The emission release from the new paint booth is predicted to be low as the triple stage filters will further minimize particulate emissions. In addition, the average paint time of 20 minutes per day is considered insignificant. No noticeable odor emissions are expected as the filter system is designed to minimize these effects.

Hence, it is not predicted that the proposed operation will have any significant environmental impacts on air quality.

#### **b. Impacts due to Odors from Volatile Organic Compounds (VOCs)**

Any noticeable odor emissions are expected to be minor due to the low volumes of product being used and the minimal application times. The average paint time is expected to be 20 minutes per day. The average paint volume is expected to be around 6.8 liters per day. More information about the VOCs could be found in the attached SDS.

#### **c. Impacts to the Water Quality**

It is not predicted that there will be any effects on surface water or groundwater.

#### **d. Impacts to Land**

It is not predicted that there will be any effects on the wildlife, fisheries, forestry, or heritage resources being that the proposed operation is going to be established in an industrial zone.

It is not predicted that there will be any effects on wild life and fisheries. In addition, it is not predicted that there will be any socio-economic effects considering that the operation is relatively small-scale.

## **IX. Environmental Management Practice**

### **a. Air Quality Management**

Following measures will be taken to minimize ambient air quality effects from the paint booth operations:

- i. Preventative maintenance will be performed on the paint booth. This will ensure that the booth is working at maximum efficiency.
- ii. A bi-weekly inspection will be completed to examine the condition of the booth paint arrestors and filters. Filters are changed bi-weekly or soon if required.
- iii. Weekly manometer/magnahelic gauge readings are done to ensure efficiency of filter changes.

**Emergency:** In the event of failures of the exhaust or the air supply fans, the system will automatically shut down and locked out. When a lock out occurs, the system must be manually reset. Compressed air for the spray guns will only be activated when the exhaust fan is “on” and “proven”.

### **b. Solid Hazardous Waste Management**

The Boeing Canada Technology facility at 99 Murray Park Rd is currently registered (Provincial ID No. MBG00001) under the Manitoba Regulation 175/87 (Generator Registration and Carrier Licensing Regulation). The solid hazardous waste generated from paint operations will fall under Transportation of Dangerous Goods class 3, UN1263, Packing Group II, shipping name Waste Paint.

The hazardous waste generated from the proposed paint process will be disposed by an approved Boeing Canada Operations Ltd. contractor. At present, Miller Environmental Corporation is responsible for transporting and disposing of all hazardous waste streams generated at 99 Murray Park Rd.

Currently, there are no plans for decommissioning of the process if the paint booth was to cease operation. In all likelihood if this situation did arise, the booth would be decommissioned in an environmentally friendly manner.

### **c. Water Quality Management**

Since there are no surface water bodies, the paint booth operation will not have any effect on the surface water quality. In addition, the proposed operation will not involve any process water or liquid discharge that might affect the soil quality of the property or adjacent areas.

**d. Soil Quality Management**

The proposed operation will be conducted in the developed area, i.e., on the factory shop floor. Hence, the soil quality of the surrounding undeveloped areas will not be affected.

# **Appendices**

**Appendix A SDS:**  
**463-6-4 Aluminized Epoxy Primer Base**  
**X-306 Aluminized Epoxy Primer Cure Solution**

**Appendix B SDS:**  
**MEK IndusPac SurSeal Propak**