

June 10, 2020

**Maple Leaf Foods**

870 Lagimodiere Blvd.  
Winnipeg MB

**REPORT**

Attention: Mr. Joel Grant, National Manager of Environmental Affairs

**RE: DISPERSION MODELLING, BACON EXPANSION 2020**

**INTRODUCTION**

Maple Leaf Foods (MLF) is planning an expansion of bacon processing at the Lagimodiere Blvd facility. The project includes installation of additional smoking and cooking capacity.

The air contaminants of concern from these processes mainly result from the use of smoke flavouring in smokehouses. The smoke flavour is added through the use of "liquid smoke", or smoke generated from woodchips. The smokehouses can be a source of particulate matter (PM) and volatile organic compounds (VOCs) such as acetic acid and formaldehyde. These compounds contribute to odour emitted from the facility.

Ramboll was asked to provide a screening level assessment of the emissions that may be expected from the existing and planned future smokehouses.

**PLANNED MODIFICATIONS**

The facility currently operates 13 ham and sausage smokehouses, and 3 bacon smokehouses. The planned expansion will add one additional bacon smokehouse, [REDACTED], and will increase bacon production capacity.

The current production capacity (as presented in the 2012 Notice of Alteration) and the expanded production capacity are provided in Table 1. The table also provides quantities of materials used to add smoke flavour.

**PROCESS EMISSIONS**

Natural smoke is generated by heating woodchips in a smoke generator, and the smoke is ducted into the smokehouse air recirculation system. The process

Ramboll  
2400 Meadowpine Boulevard  
Suite 100  
Mississauga, ON L5N 6S2  
Canada

T +1 289 290 0600  
F +1 905 821 3711  
[www.ramboll.com](http://www.ramboll.com)

Ref 324000454

generates particulate matter (mainly <2.5 µm aerodynamic diameter, or PM2.5), and VOCs. Emissions from this process were estimated using emission factors from US EPA, AP-42, Section 9.5.2 "Meat Smokehouses".

The major constituents of the VOCs from smokehouses are identified in the document as acetic acid and formaldehyde. For the purposes of this conservative screening level assessment, VOC emissions were considered to be 50% acetic acid and 50% formaldehyde.

"Liquid smoke" is a commercial product that can be used to provide smoke flavour. According to Safety Data Sheets (SDS), the only hazardous ingredient in liquid smoke is acetic acid, which may compose up to 10% of the product. Emissions of acetic acid were estimated from the quantity of liquid smoke used, and the assumption that all acetic acid in product will be emitted to air. This is conservative since much of the material will remain in the meat.

Emission rate calculations from the smokehouses are documented in Tables 2 through 4.

In general, smoke is added only during a portion of the smoking cycle, so that emissions will vary constantly through the cycle of each smokehouse. The smokehouses operate independently so that some may be in the smoking portion of the cycle at the same time. With many smokehouses in operation simultaneously, the total emission rate will be somewhat more constant. For the purpose of this screening level assessment, emissions were assumed to be constant over 302 days per year.

██████████ will process meat that has been through the smokehouses, and no additional smoke flavouring is added. ██████████ may result in minor amounts of aerosolized fats/greases within ██████████, but exhaust will be equipped with demisters so that emissions of fats/grease are expected to be negligible. That is, these lines are not expected to emit significant quantities of contaminants, though some odour may be emitted.

## **FACILITY AND SOURCE LOCATIONS.**

The facility and closest sensitive receptors (residences) are shown in Figure 1. The figure also shows the location of the existing smokehouses, and the planned location of the future bacon smokehouse.

## **DISPERSION MODELLING**

Potential off-property concentrations of contaminants were predicted with the US EPA SCREEN3 dispersion model. This is a screening level model that considers a wide range of meteorology and can account for building downwash, but is limited to modelling one source at a time.

The ham and sausage smokehouse exhaust stacks are all relatively close together. All emissions from these sources were assumed to be emitted from a single stack with discharge parameters typical of an individual stack in this group. This is conservative in that it models much higher stack concentrations, and doesn't account for dilution due to physical separation of multiple stacks.

Similarly, the existing bacon smokehouse stacks and the planned future smokehouse stack are relatively close together. All emissions from these sources were assumed to be emitted from a single stack with discharge parameters typical of an individual stack in this group.

The input parameters used in the SCREEN3 model are provided in Table 5. Each stack was modelled individually with a unit emission rate of 1 g/s.

## RESULTS

The model yields the maximum 1-hour average concentration over a range of distances from the source. For this project, the maximum concentration that occurred at any distance beyond the property line was used in the subsequent analysis. The model output files are included in Appendix C.

Model results and maximum off-property concentrations are summarized in Table 6. The table provides the 1-hour average concentration resulting from a unit emission rate (i.e. 1 g/s). The associated 24-hour average concentration was calculated following the methodology of the Air Dispersion Modelling Guideline of Ontario (ADMGO), section 4.4. These unit emission results were then used as dispersion factors to calculate the maximum concentration of each contaminant emitted from that stack, for the appropriate averaging period.

As a conservative screening assessment only, the maximum concentrations predicted for each stack were summed together and compared to appropriate limits. This is very conservative, since the maximum concentrations from the two stacks will not occur at the same location, and thus this methodology overstates the maxima that will actually occur.

The predicted maximum concentrations are compared to Manitoba Ambient Air Quality Criteria (AAQC) in Table 6. There is no Manitoba AAQC for acetic acid, so the limit was taken from the Ontario Air Contaminants Benchmarks (ACB) list, Version 2, April 2018.

## CONCLUSIONS

The addition of a bacon smokehouse and [REDACTED] (i.e. the planned expansion) will not increase the maximum projected use of smoke flavouring compared to that projected in the 2012 Notice of Alteration. This is mainly because the 2012 projections proved to be overly conservative. As a result, the expansion does not increase the maximum projected emissions of PM and VOC compared to the 2012 projections. The expansion will add one smokehouse to the existing 16 smokehouses, which is expected to result in a minor increase in emissions relative to current, actual levels.

For this screening level assessment, emissions were estimated and off-property concentrations were predicted using several simplifying, but conservative, assumptions. As shown in Table 6, the resulting concentrations do not exceed applicable air quality limits.

## Ramboll Canada

### **Paul Geisberger**

Principal Consultant

D +1 289 290 0613

M +1 647 203 4135

[pgeisberger@ramboll.com](mailto:pgeisberger@ramboll.com)

**APPENDIX A**  
**Tables**

**Table 1. Production and Material Use Projections**

**Production Projections**

	2012 Expansion (kg/year)	2020 Expansion (kg/year)
Ham and Sausage	24,000,000	24,000,000
Bacon	37,000,000	45,324,396
Total	61,000,000	69,324,396

**Smoke Flavour Materials**

	2012 Expansion	2020 Expansion
Woodchips Usage (kg/year)	126,000*	126,000*
Liquid Smoke Usage (kg/year)		64,000

\* 2012 projections were conservative, and will not be exceeded with the 2020 expansion

**Table 2. Emissions from Wood Chips**

Emissions calculated based on emission factors from US EPA AP-42, 9.5.2 "Meat Smokehouses", Table 9.5.2-1 for Batch Smokehouse.

Total PM	53 lb/ton* or	0.0265 kg/kg
VOC	44 lb/ton* or	0.022 kg/kg

\* expressed as lb of emission per ton of wood used

	Bacon	Ham & Sausage	Total
Quantity of woodchips used (kg/year)	79,000	47,200	126,200
<b>Total PM</b>			
Emission Factor (kg/kg)	0.0265	0.0265	
Emission Rate (kg/year)	2,094	1,251	3,344
(kg/day)**	6.93	4.14	11.1
(g/s)**	0.120	0.072	0.192
<b>VOC</b>			
Emission Factor (kg/kg)	0.022	0.022	
Emission Rate (kg/year)	1,738	1,038	2,776
(kg/day)**	5.75	3.44	9.19
(g/s)**	0.0666	0.0398	0.106

\*\* calculated based on processing 302 days per year.

**Table 3. Emissions from Liquid Smoke**

The only hazardous component in liquid smoke is acetic acid as per SDS. Liquid smoke can contain up to 10% acetic acid. Emissions were estimated assuming 100% of acetic acid is emitted to air. There no particulate matter emissions associated with liquid smoke.

	Bacon	Ham & Sausage	Total
Quantity of liquid smoke used (kg/year)	0	64,000	64,000
Quantity of acetic acid in liquid smoke		10%	
Acetic acid emission rate (kg/year)	0	6,400	6400
(kg/day)**	0	21.2	21.2
(g/s)**	0.000	0.245	0.245

\*\* calculated based on processing 302 days per year

**Table 4. Total Emissions to Atmosphere**

VOCs emitted from use of woodchips for smoking are predominantly composed of acetic acid and formaldehyde. For this conservative screening analysis, the emission rate of acetic acid and formadehyde were each set equal to 50% of the VOC emission rate.

Source Group	Total PM (g/s)	Acetic Acid (g/s)	Formaldehyde (g/s)
<b>Ham and Sausage smokehouse exhausts</b>			
From woodchip use	0.0719	0.0199	0.0199
From liquid smoke use	0.0000	0.245	0.0000
Total	0.0719	0.265	0.0199
<b>Bacon smokehouse exhausts</b>			
From woodchip use	0.120	0.0333	0.0333
From liquid smoke use	0.000	0.000	0.000
Total	0.120	0.0333	0.0333

**Table 5. Input Parameters to SCREEN3 Dispersion Model**

Source	Source Type	Emission Rate (g/s)	Stack Discharge Parameters				Receptor Height (m)	Urban / Rural	Building Downwash			Min. Dist. to Property Line
			Height (m)	Diameter (m)	Velocity (m/s)	Temp. (K)			Height (m)	Min. Dim. (m)	Max. Dim. (m)	
Ham and Sausage	P	1	11	0.45	10	336	2	U	8	210	268	80
Bacon	P	1	18.5	0.45	10	336	2	U	8	210	268	20

- Notes:
1. Ham and sausage smokehouse exhaust stacks are relatively close together. Emissions from each will vary continuously through the smoke cycle. All emissions were assumed to be emitted from a single stack with discharge parameters typical of an individual stack in this group.
  2. Bacon smokehouse exhaust stacks are relatively close together. Emissions from each will vary continuously through the smoke cycle. All emissions were assumed to be emitted from a single stack with discharge parameters typical of an individual stack in this group.

**Table 6. Maximum Off-Property Concentrations**

**Ham and Sausage Smokehouse Emissions**

Contaminant	Emission Rate (g/s)	Maximum Concentration <sup>1</sup> (µg/m <sup>3</sup> )	Average Period (hours)	Applicable Limit		% of Limit
				(µg/m <sup>3</sup> )	Reference	
Unit Emission Rate	1	657 262.8	1 24			
PM2.5	0.0719	18.9	24	30	Manitoba AAQC	63%
Acetic Acid	0.265	70	24	2500	Ontario ACB	3%
Formaldehyde	0.0199	13.1	1	60	Manitoba AAQC	22%

**Bacon Smokehouse Emissions**

Contaminant	Emission Rate (g/s)	Maximum Concentration <sup>1</sup> (µg/m <sup>3</sup> )	Average Period (hours)	Applicable Limit		% of Limit
				(µg/m <sup>3</sup> )	Reference	
Unit Emission Rate	1	189.2 75.68	1 24			
PM2.5	0.120	9.11	24	30	Manitoba AAQC	30%
Acetic Acid	0.0333	2.52	24	2500	Ontario ACB	0.1%
Formaldehyde	0.0333	6.30	1	60	Manitoba AAQC	11%

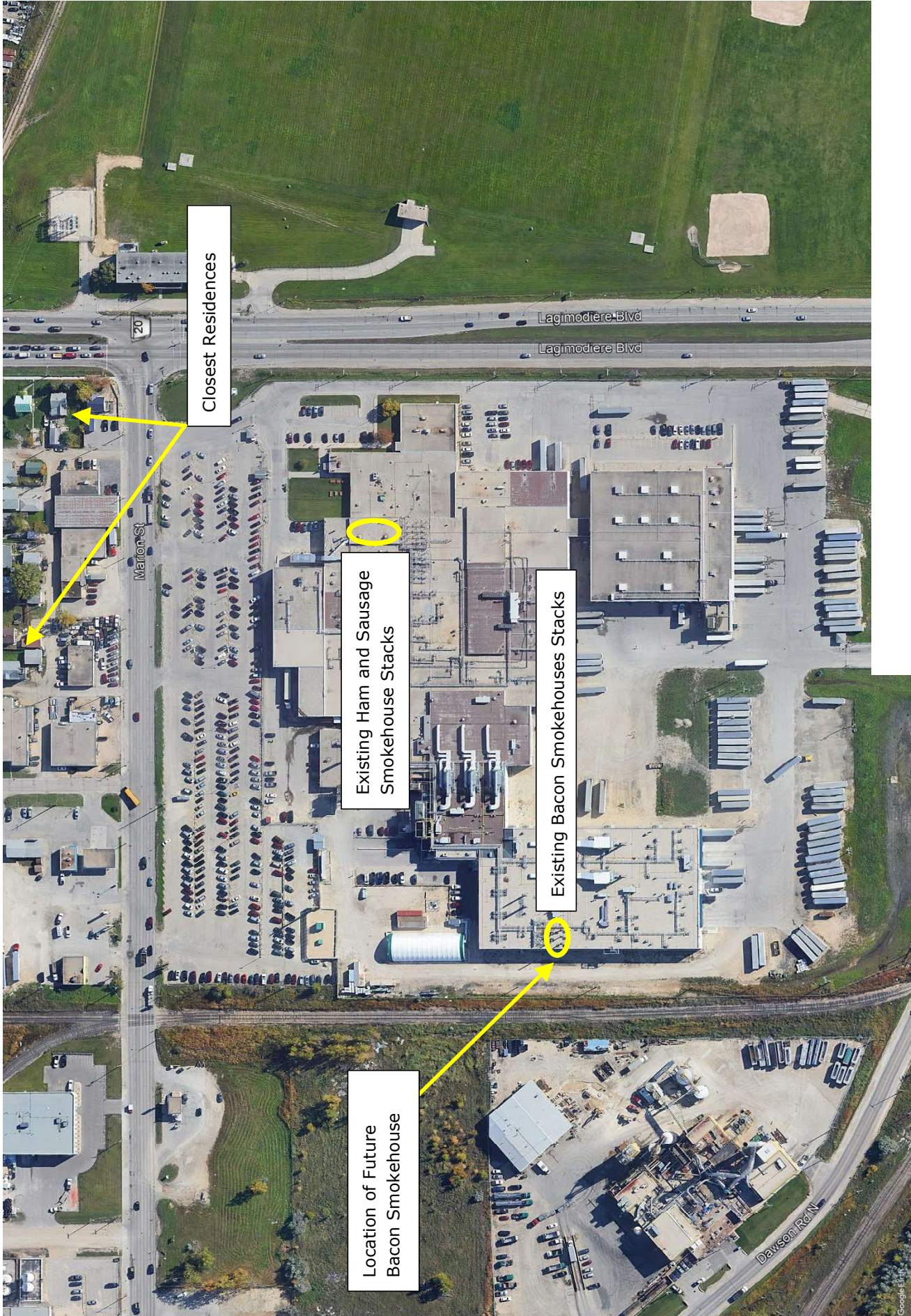
**Total Emissions**

Contaminant	Emission Rate (g/s)	Maximum Concentration <sup>2</sup> (µg/m <sup>3</sup> )	Average Period (hours)	Applicable Limit		% of Limit
				(µg/m <sup>3</sup> )	Reference	
PM2.5	0.192	28.0	24	30	Manitoba AAQC	93%
Acetic Acid	0.298	72	24	2500	Ontario ACB	3%
Formaldehyde	0.0532	19.4	1	60	Manitoba AAQC	32%

1. Maximum concentration at any distance reported by SCREEN3 dispersion model.
2. Total is sum of maximum concentrations due to individual sources, though these maxima would not actually occur at the same location.



**APPENDIX B**  
**Figures**



Closest Residences

Existing Ham and Sausage  
Smokehouse Stacks

Existing Bacon Smokehouses Stacks

Location of Future  
Bacon Smokehouse

**APPENDIX C**  
**SCREEN3 Output Files**

04/16/20  
17:41:46

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 13043 \*\*\*

Ham and Sausage

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = 1.000000  
STACK HEIGHT (M) = 11.0000  
STK INSIDE DIAM (M) = 0.4500  
STK EXIT VELOCITY (M/S) = 10.0000  
STK GAS EXIT TEMP (K) = 336.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = 2.0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 8.0000  
MIN HORIZ BLDG DIM (M) = 210.0000  
MAX HORIZ BLDG DIM (M) = 268.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.635 M\*\*4/S\*\*3; MOM. FLUX = 4.415 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
80.	657.4	3	1.0	1.0	320.0	16.62	17.32	16.00	SS
100.	573.6	4	1.0	1.0	320.0	18.78	15.69	13.79	SS
200.	292.0	4	1.0	1.0	320.0	18.78	30.79	27.20	SS
300.	196.2	6	1.0	1.0	10000.0	27.26	31.18	19.93	SS
400.	167.6	6	1.0	1.0	10000.0	27.26	40.85	25.30	SS
500.	135.7	6	1.0	1.0	10000.0	27.26	50.21	30.24	SS
600.	110.3	6	1.0	1.0	10000.0	27.26	59.27	34.82	SS
700.	91.09	6	1.0	1.0	10000.0	27.26	68.06	39.11	SS
800.	76.62	6	1.0	1.0	10000.0	27.26	76.59	43.15	SS
900.	65.52	6	1.0	1.0	10000.0	27.26	84.89	46.97	SS
1000.	56.85	6	1.0	1.0	10000.0	27.26	92.97	50.60	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 80. M:  
 80. 657.4 3 1.0 1.0 320.0 16.62 17.32 16.00 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 0.000	CONC (UG/M**3) = 0.000
CRIT WS @10M (M/S) = 99.99	CRIT WS @10M (M/S) = 99.99
CRIT WS @ HS (M/S) = 99.99	CRIT WS @ HS (M/S) = 99.99
DILUTION WS (M/S) = 99.99	DILUTION WS (M/S) = 99.99
CAVITY HT (M) = 8.00	CAVITY HT (M) = 8.00
CAVITY LENGTH (M) = 50.03	CAVITY LENGTH (M) = 48.60
ALONGWIND DIM (M) = 210.00	ALONGWIND DIM (M) = 268.00

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	657.4	80.	0.

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*

04/16/20  
15:32:11

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 13043 \*\*\*

Bacon Stack

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT  
EMISSION RATE (G/S) = 1.000000  
STACK HEIGHT (M) = 18.5000  
STK INSIDE DIAM (M) = 0.4500  
STK EXIT VELOCITY (M/S) = 10.0000  
STK GAS EXIT TEMP (K) = 336.0000  
AMBIENT AIR TEMP (K) = 293.0000  
RECEPTOR HEIGHT (M) = 2.0000  
URBAN/RURAL OPTION = URBAN  
BUILDING HEIGHT (M) = 8.0000  
MIN HORIZ BLDG DIM (M) = 210.0000  
MAX HORIZ BLDG DIM (M) = 268.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.635 M\*\*4/S\*\*3; MOM. FLUX = 4.415 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	0.1898E-09	2	5.0	5.5	1600.0	21.28	3.23	2.47	NO
100.	185.1	3	1.0	1.1	320.0	31.98	21.91	20.37	NO
200.	165.6	4	1.0	1.2	320.0	31.57	31.02	27.45	NO
300.	109.3	4	1.0	1.2	320.0	31.57	45.51	40.40	NO
400.	82.77	6	1.0	1.2	10000.0	38.44	41.25	25.93	NO
500.	78.10	6	1.0	1.2	10000.0	38.44	50.53	30.77	NO
600.	69.62	6	1.0	1.2	10000.0	38.44	59.54	35.29	NO
700.	61.10	6	1.0	1.2	10000.0	38.44	68.30	39.52	NO
800.	53.59	6	1.0	1.2	10000.0	38.44	76.81	43.52	NO
900.	47.25	6	1.0	1.2	10000.0	38.44	85.08	47.31	NO
1000.	41.96	6	1.0	1.2	10000.0	38.44	93.14	50.92	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:  
 111. 189.2 3 1.0 1.1 320.0 31.98 24.41 22.73 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
 \*\*\* REGULATORY (Default) \*\*\*  
 PERFORMING CAVITY CALCULATIONS  
 WITH ORIGINAL SCREEN CAVITY MODEL  
 (BRODE, 1988)  
 \*\*\*\*\*

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 0.000	CONC (UG/M**3) = 0.000
CRIT WS @10M (M/S) = 99.99	CRIT WS @10M (M/S) = 99.99
CRIT WS @ HS (M/S) = 99.99	CRIT WS @ HS (M/S) = 99.99
DILUTION WS (M/S) = 99.99	DILUTION WS (M/S) = 99.99
CAVITY HT (M) = 8.00	CAVITY HT (M) = 8.00
CAVITY LENGTH (M) = 50.03	CAVITY LENGTH (M) = 48.60
ALONGWIND DIM (M) = 210.00	ALONGWIND DIM (M) = 268.00

CAVITY CONC NOT CALCULATED FOR CRIT WS > 20.0 M/S. CONC SET = 0.0

\*\*\*\*\*  
 END OF CAVITY CALCULATIONS  
 \*\*\*\*\*

\*\*\*\*\*  
 \*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
 \*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	189.2	111.	0.

\*\*\*\*\*  
 \*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
 \*\*\*\*\*



June 12, 2020

Shannon Kohler  
Director, Environmental Approvals  
Manitoba Conservation and Climate  
1007 Century Street  
Winnipeg, MB R3H 0W4

RE: **Notice of Alteration for Maple Leaf Foods Inc, 870 Lagimodière Blvd, Winnipeg  
Clean Environment Commission Order Number 240V**

Dear Director Kohler:

Further to a previous alteration granted in 2012 for the construction of our bacon processing facility and another in 2016 for an expansion, please accept this submission in accordance with Section 14 (1)(a) of *The Environment Act*, as a request for alteration to our 870 Lagimodière Boulevard plant which is licensed by Clean Environment Commission Order #240V. This Order was issued to Burns Food Limited on September 6, 1974. Burns Food Limited was subsequently acquired by Maple Leaf Foods in 1996.

We are requesting your authorization to increase cooking capacity of bacon. The alterations required are mainly related to provision of one additional smokehouse and a [REDACTED] to accommodate increased bacon production at the Lagimodière facility. Details on the alteration and associated environmental effects are described below.

### **ALTERATION**

The proposed alteration involves an expansion to the bacon production area and the installation of new equipment and processes. The elements of the expansion are:

- Construction of a 73,000 square foot expansion of the bacon production area. The expansion is to the east and west of the current bacon production area. This expansion will house increased capacity to receive, inject, smoke and stabilize pork bellies consistent with existing operations.
- One new bacon smokehouse and blast chiller will be installed in the expansion to match the existing three bacon smokehouses and blast chillers.
- [REDACTED]

**Raise the Good in Food**

Maple Leaf Foods Inc., 6985 Financial Drive, Mississauga (Ontario), Canada L5N 0A1 Tel.: 905 285-5000 Fax: 905 285-6000





## **OPERATION**

Raw material (bellies) will be received consistent with current operations. Tumbling, injecting and hanging of bellies on tree racks will continue consistent with current operations. The new smokehouse will be used to [REDACTED]. Chilling capacity will be expanded by the installation of one new blast cell, which quickly chill the product with cold air after the cooking cycle. This will match the existing process.

[REDACTED]

## **CURRENT LICENCE RENEWAL**

The Lagimodière facility has applied for an updated licence from Manitoba Conservation and Climate. To date, this licence application is still being processed. As with previous applications, we suggest incorporating this alteration into the new licence.

## **ENVIRONMENTAL EFFECTS**

### *Wastewater*

As the alteration does increase the footprint of the building there will be new areas for sanitation. Also, the alteration adds a new process that will produce fats, oils, and grease (FOG). This will cause an overall increase in wastewater load and an incremental increase in flow. To mitigate this impact, a new wastewater pre-treatment plant is to be built. This new pre-treatment plant will expand the current treatment capacity by adding a second rotary screen to remove coarse solids, a second DAF to remove suspended solids and FOG. Chemical treatment and pH neutralization will be added to the DAF system to enhance the treatment. The new pre-treatment plant will provide better quality wastewater that will be discharged to the City of Winnipeg municipal sewer system, under an overstrength discharge agreement. Therefore, there will be a net positive impact to wastewater as a result of this alteration.

### *Stormwater*

The alteration increases the footprint of the building; the construction plan involves updating the site's stormwater management plan. The plan has been approved by the City of Winnipeg. As such, there will be no net effect on stormwater.

## **Raise the Good in Food**

Maple Leaf Foods Inc., 6985 Financial Drive, Mississauga (Ontario), Canada L5N 0A1 Tel.: 905 285-5000 Fax: 905 285-6000



### *Air emissions*

As the alteration involves the addition of a smokehouse, Maple Leaf Foods retained a qualified consultant to model the emissions from the plant post-alteration. As in the 2012 and 2016 Notice of Alteration applications, emissions projections were calculated using USEPA emissions factors for batch smokehouses, identifying projected emissions for total particulate matter (PM) and volatile organic carbon (VOC). The modeling was performed as per the draft *Guidelines for Air Dispersion Modelling in Manitoba* (2006). The model selected was the USEPA's SCREEN3 model, which projects the worst case pollutant concentrations (1-hour average) at discrete distances and predicts the distance at which the maximum concentration will occur.

Total annual emissions were calculated based on an end state production level of 24 million kg/year of ham (and sausage) and 45.3 million kg/year of bacon.

As shown in the modeling report, the slight increase in overall plant emissions remains below the applicable guidelines.

In our opinion, the increase to air emissions will be very small and will have no significant effects.

### *Odour*

As demonstrated in the modeling exercise, the increase in emissions from the additional smokehouse is very minor and any increase in odour from its operation will be minimal. The plant has received zero odour complaints since the bacon process was introduced in 2012 (nor in the prior 5 years).

████████████████████ will produce a small amount of odour of cooking bacon. All exhaust from the ████████████████████ will be pulled through a Quickdraft exhaust system. The Quickdraft uses a demister to scrub all oil and grease from the exhausted air. The system also maintains at least 6000CFM air flow per oven, which will provide dilution for the exhaust which will help reduce the effect of the odour when released to the air.

We do not anticipate any odour issues as a result of this alteration.

### *Noise*

From a noise perspective, with the exception of trucking operations associated with receipt of raw materials and dry goods and shipping of products, all operations are conducted indoors. The plant is located in an industrial area, immediately adjacent to major roadways (Lagimodière Boulevard and Marion Street). No noise complaints have been received at the plant and none are expected as a result of this alteration.

## **Raise the Good in Food**



### *Traffic*

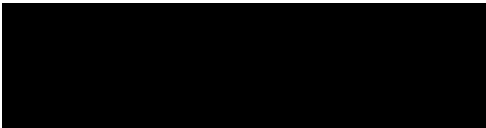
Effects related to additional traffic into the Lagimodière plant include minor additional truck traffic for raw materials and dry goods receiving and finished product shipping. Minimal change in traffic patterns is expected. There will be a small increase in truck traffic during construction activities, but this effect will be temporary. Traffic effects related to the proposed alteration are expected to be insignificant, or in the case of traffic related to construction activities, temporary and minor.

Overall, in our view, the environmental effect of the alteration is expected to be very minor.

### **PROJECT TIMELINE**

This project has begun early phase work on the foundation of the building expansion. Main construction is scheduled to commence in July 2020. The expected commissioning of this scheduled to go forward in August 2021. As such, your early review and approval of this Notice of Alteration by July 1<sup>st</sup> would be greatly appreciated.

Director Kohler, I appreciate the effort that you and your staff will make in processing this request for alteration. Should you or your staff have any questions, please do not hesitate to contact me on my cell at 204-229-9594.

  
Joël Grant, M.Sc.  
National Manager of Environmental Affairs  
Maple Leaf Foods Inc.

cc. Jennifer Winsor, Manitoba Conservation and Climate  
Siobhan Burland-Ross, Manitoba Conservation and Climate

**Raise the Good in Food**

Maple Leaf Foods Inc., 6985 Financial Drive, Mississauga (Ontario), Canada L5N 0A1 Tel.: 905 285-5000 Fax: 905 285-6000

# Notice of Alteration Form



Client File No. : 267.00	Environment Act Licence No. : 240V
Legal name of the Licencee: Maple Leaf Foods Inc.	
Name of the development: Maple Leaf Foods - Lagimodiere Plant	
Category and Type of development per Classes of Development Regulation: Manufacturing <SELECT>	
Licencee Contact Person: Joel Grant Mailing address of the Licencee: 870 Lagimodiere Blvd. City: Winnipeg Province: MB Postal Code: R2J 0T9 Phone Number: (204) 229-9594 Fax: Email: Joel.Grant@mapleleaf.com	
Name of proponent contact person for purposes of the environmental assessment (e.g. consultant):	
Phone:	Mailing address:
Fax:	
Email address:	
Short Description of Alteration ( <i>max 90 characters</i> ): Expansion of Bacon processing facility and addition of [REDACTED]	
Alteration fee attached: Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/>	
If No, please explain: Cheque request has been made and will be sent from corporate office.	
Date: 2020-06-12	Signature: [REDACTED] Printed name: Joel Grant
<p>A complete Notice of Alteration (<b>NoA</b>) consists of the following components:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Cover letter</li> <li><input type="checkbox"/> Notice of Alteration Form</li> <li><input type="checkbox"/> 2 hard copies and 1 electronic copy of the NoA detailed report (see "<a href="#">Information Bulletin - Alteration to Developments with Environment Act Licences</a>")</li> <li><input type="checkbox"/> \$500 Application fee, if applicable (Cheque, payable to the Minister of Finance)</li> </ul>	
<p><b>Submit the complete NoA to:</b></p> <p>Director Environmental Approvals Branch Manitoba Sustainable Development 1007 Century Street Winnipeg, Manitoba R3H 0W4</p> <p><b>For more information:</b></p> <p>Phone: (204) 945-8321 Fax: (204) 945-5229 <a href="http://www.gov.mb.ca/sd/eal">http://www.gov.mb.ca/sd/eal</a></p>	
<p><b>Note: Per Section 14(3) of the Environment Act, Major Notices of Alteration must be filed through submission of an <a href="#">Environment Act Proposal Form</a> (see "<a href="#">Information Bulletin – Environment Act Proposal Report Guidelines</a>")</b></p>	