

Lane Regional Air Protection Agency
Standard Air Contaminant Discharge Permit (Standard-ACDP)

REVIEW REPORT

Northern Gold Foods (USA), LLC.

29323 Meadowview Road
Junction City, Oregon 97448
Website: <http://www.northerngold.com/>

Permit No. 205823

General Background Information

1. Lane Regional Air Protection Agency (LRAPA) has reviewed the permit application received on January 5, 2018 and supplemental information to the applications received on January 18, August 8, September 27, 2018. The material provided in the application and supplemental information were the basis for the contents within the permit and review report.
2. Northern Gold Foods (USA), LLC. (NGF or facility) is building a new facility located in Junction City, Oregon, that will manufacture granola products. The facility will operate natural gas-fired boilers, ovens, and hot water pressure washers, one natural gas-fired and one diesel-fired emergency generator. The pollutants of concern are nitrogen oxides (NO_x) and carbon monoxide (CO) from the natural gas-fired sources, and particulate matter (PM/PM₁₀/PM_{2.5}) and volatile organic compounds (VOC) from the baking of granola products. The emissions from the mixers and the pressure washer emissions are below the de minimis levels for all criteria pollutants. The emergency generators combined horsepower are well below the 3,000 horsepower threshold and are therefore considered a categorically insignificant activity. The operating schedule for the facility was based on the 8,760 hours per year.

Emission Units Description

3. The facility's emission units (EU) are:

Emission Unit ID	Emission Unit Description	Pollutants Emitted
GR1	Baking of granola product	PM, PM ₁₀ , PM _{2.5} , VOC
OV1, OV2, & OV3	3 – Natural Gas-Fired Ovens	PM, PM ₁₀ , PM _{2.5} , NO _x , CO, VOC
BL1 & BL2	2 – Natural Gas-Fired Boilers	PM, PM ₁₀ , PM _{2.5} , NO _x , CO, VOC
Categorically Insignificant Activity (IEU)	Enclosed mixers, 2 Natural Gas-Fired 0.365 MMBtu/hr Hot Water Pressure Washers, 60 kW natural-gas emergency generator and 107 kW diesel emergency generator	PM, PM ₁₀ , PM _{2.5} , NO _x , CO, VOC

Reasons for Permit Issuance

4. NGF proposed to operate a process listed in Title 37, Table 1, Part B: 8. – Bakeries, commercial over 10 tons of VOC emissions per year and therefore, the facility is required to obtain an air contaminant discharge permit (ACDP). The purpose of this permitting action is to issue a permit to

authorize construction and the operation of the proposed facility. [LRAPA 37 Table 1 – Section 37-8010, Part B]

Fee Basis

- The facility is considered a Standard ACDP because the projected emissions for VOC are greater than Significant Emission Rate (SER) threshold of 40 tons/year. [LRAPA 37-0066(1)(a)]

Enforcement Actions

- There are no enforcement actions that have been issued against this facility.

The Plant Site Emission Limits (PSELs), Baseline Emission Rate (BER) and Significant Emission Rate (SER)

Pollutant	Baseline Emission Rate (BER) (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	Change in PSEL (tons/yr)	Increase from Baseline (tons/yr)	SER (tons/yr)
PM	0	N/A	24	24	24	25
PM ₁₀	0	N/A	14	14	14	15
PM _{2.5}	N/A	N/A	9	9	9	10
CO	0	N/A	99	99	99	100
NO _x	0	N/A	39	39	39	40
VOC	0	N/A	48	48	48	40
SO ₂	0	N/A	de minimis	N/A	0	40
GHG	0	N/A	74,000	74,000	74,000	75,000

- The BER has been set at zero (0) tons per year for all criteria pollutants since this is a new facility and was not in operation during the 1978 baseline year. The BER for GHG has been set at zero (0) tons per year because the facility did not exist during the GHG baseline period (2000-2010).
- The PSEL for SO₂ is not included in the PSELs table on the permit because the facility potential to emit for this criteria pollutant is below the de minimis level. The emissions calculation information can be located on the calculation sheets attached to the review report. [LRAPA 42-0020(3)(a)]
- The facility has the potential to emit over the de minimis levels for PM, PM₁₀, PM_{2.5}, NO_x, and CO, thus the proposed PSELs are included at the Generic PSEL level in accordance with LRAPA Title 42-0040 and defined in LRAPA Title 12-005 and for VOC the PSEL will be set at a source specific level in accordance with LRAPA 42-0041(2).

Performance Standards and Emission Limits

- The facility is subject to the visible emissions standards in LRAPA 32-010(3), and the combustion particulate grain-loading standards in LRAPA 32-015(2)(c) and LRAPA 32-030(2).

11. The facility is subject to the PSEL rules in LRAPA 42-0040 and 42-0041(2). To assure compliance with the PSELs, detailed records of granola bar production and natural gas usage are required to be maintained to demonstrate that emissions of all pollutants are below the established limits.

Hazardous Air Pollutants (HAPs)

12. There are no NESHAP/MACT standards that are applicable to this facility at this time. The facility has not quantified their HAPs due to the source type, but the HAPs are expected to be negligible.

New Source Performance Standards (NSPSs)

13. There are no NSPSs standards that are applicable to this facility at this time. The facility's boilers are not applicable to 40 CFR 60 Subpart Dc because the boilers are below the 10 MMBtu/hr threshold to be applicable.

Typically Achievable Control Technology (TACT)

14. LRAPA Title 32-008(2) requires the new emission units at the facility to meet TACT if the emission unit has emissions of criteria pollutants equal to or greater than one (1) ton per year. The new emission units are not subject to Major NSR in Title 38, a Type A State NSR action under LRAPA Title 38, and applicable Standard of Performance for New Stationary Sources in Title 46, or any other standard applicable under LRAPA Title 32, Title 33, or Title 39 for the regulated pollutants emitted, and the facility is required to have a permit. The natural gas combustion emission units at the facility are subject to visible emissions and grain loading standards in LRAPA Title 32 and are, therefore, not required to meet TACT for particulate matter. Though the baking of granola does emit more than ten (10) tons of VOC annually, LRAPA has determined that the production throughput limitations stated in the permit adequately represent TACT, as demonstrated in the calculations sheets attached to this review report.

New Source Review (NSR) and Prevention of Significant Deterioration (PSD)

15. This facility is not subject to PSD for the affected criteria pollutants. The PSELs for the criteria pollutants are below the Significant Emission Rates (SERs) established in LRAPA Title 12. The facility is not subject to LRAPA's Prevention of Significant Deterioration or New Source Review (PSD for NSR) requirements for PM, PM₁₀, PM_{2.5}, SO_x, NO_x, and CO. [LRAPA 42-0040]
16. This facility is considered a Type B State Permit, because it is a new facility that will emit a regulated pollutant (VOC) that is equal to or greater than the SER but is not located in a Sustainment Area. It is required to demonstrate that the emissions of VOC from the facility which is a precursor for ozone are less than the Significant Impact Levels (SIL) for a Class II area. To demonstrate whether the facility's VOC emissions cause or contribute an exceedance of the Ozone SIL and the National Ambient Air Quality Standard (NAAQS) the Modeled Emission Rates for Precursor (MERPs) calculation was utilized (please see Calculations Section of this Review Report). The calculation demonstrated that the VOC emissions, as a precursor of ozone is significantly less than the SIL and will not cause or contribute to the NAAQS and therefore, the facility is not subject to NSR for VOC per LRAPA 38-0530(4). [42-0041(4) and 38-0010(2)(b)(A)]

Continuous Compliance

17. A record of the following data must to be maintained for a period of at least five (5) years at the plant site and must be available for inspection by authorized representative of LRAPA. [LRAPA 34-016].

Monitoring or Recordkeeping Parameter	Minimum Recording Frequency
Granola throughput (tons)	Monthly
Oven operation (hours)	Monthly
Natural gas usage (MMscf or MMBtu)	Monthly
Emissions calculations as detailed in the permit	Monthly

Reporting

18. By February 15th of each year, the facility is required to submit an annual report to include the information required by Condition 17. [LRAPA 34-016(2)]
19. The facility is required to submit an annual GHG report, as applicable, in accordance with OAR 340 division 215.

Public Notice

The draft permit was on public notice from January 14, 2019 to February 17, 2019. No written comments were submitted during the 35-day comment period.

BE/CMW
2/19/2019

Emissions Factors and Calculations:

BAKING			
		Emission Factor (lbs/ton)	Maximum Annual Emission tons/yr
Baking Emissions	PM - Baking	0.2	4.79
	PM ₁₀ - Baking	0.2	4.79
	PM _{2.5} - Baking	0.2	4.79
	VOC - Baking⁽¹⁾	2.00	47.90

1. EMEP/EEA air pollutant emission inventory guidebook — 2009 Chapter 2.D.2 Food and drink Page 16 Table 3-18 Cakes, Biscuits and Breakfast Cereals (NMVOC EF: 1 kg/Mg = 2 lb/ton) <https://www.eea.europa.eu/publications/emep-eea-emission-inventory-guidebook-2009/part-b-sectoral-guidance-chapters/2-industrial-processes/2-d-other-production-industry/2-d-2-food-and-drink.pdf/view>

Natural Gas Steam Boilers (BL1 & BL2)					
Pollutant	Emission Factors		Conversion Factor (tons/lb)	Annual Emissions per Boiler (tons)	Annual Emissions x 2
	Factors ²	Units			
PM/PM10/PM2.5	0.00745	lb/MMBtu	0.0005	0.13	0.26
SO2	0.00588	lb/MMBtu	0.0005	0.10	0.20
NOx	0.0304	lb/MMBtu	0.0005	0.52	1.05
CO	0.0739	lb/MMBtu	0.0005	1.27	2.55
VOC	0.00539	lb/MMBtu	0.0005	0.09	0.19

1. Boiler emissions are based on 8,760 hours per year
 2. Gaseous emission factors were obtained by Manufacturer's Engineering specifications for the boilers model provide in Supplemental information on 9/27/18

Natural Gas Ovens (OV1 & OV2)					
Pollutant	Emission Factors		Conversion Factor (tons/lb)	Annual Emissions per Oven (tons)	Annual Emissions for Both Ovens (tons)
	Factors	Units			
PM/PM10/PM2.5	2.5	lb/10 ⁶ ft ³	0.0005	0.01	0.02
SO2	1.7	lb/10 ⁶ ft ³	0.0005	0.01	0.02
NOx	0.023	lb/hr	0.0005	0.10	0.20
CO	0.017	lb/hr	0.0005	0.07	0.15
VOC	5.5	lb/10 ⁶ ft ³	0.0005	0.03	0.05
1. Oven emissions are based on 8,760 hours per year					
2. Gaseous emission factors for PM/PM10/PM2.5, SO2, and VOC were obtained from EPA AP-42 and DEQ Emission Factors					
3. Gaseous emission factors for NOx and CO were obtained from Manufacturer's Engineering Specifications					

Natural Gas Oven (OV3)				
Pollutant	Emission Factors		Conversion Factor (tons/lb)	Annual Emissions (tons)
	Factors	Units		
PM/PM10/PM2.5	2.5	lb/10 ⁶ ft ³	0.0005	0.03
SO2	1.7	lb/10 ⁶ ft ³	0.0005	0.02
NOx	100	lb/10 ⁶ ft ⁴	0.0005	1.03
CO	84	lb/10 ⁶ ft ⁵	0.0005	0.86
VOC	5.5	lb/10 ⁶ ft ³	0.0005	0.06
1. Oven emissions are based on 8,760 hours per year				
2. Gaseous emission factors were obtained from EPA AP-42 and DEQ Emission Factors				

EPA Modeled Emission Rate Precursor Calculation			
Documentation Basis: EPA Memorandum, " <i>Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program</i> ", 2018, April 17, and EPA Memorandum, "Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM2.5 under the PSD Permitting Program", 2016, December 2.			
Where:	Lowest MERP is 1053 and associated O ₃ from VOC at 1000 tpy = 0.95 ppb		
	Significant Impact Level (SIL) must be below 1 ppb		
	VOC from Northern Gold Foods = 48 tpy		
Where: O ₃ = (48/1000 * 0.95) = ppb			
O ₃	0.047	ppb	
SIL for O₃ is 0.047 ppb which is less than the 1 ppb SIL			

Greenhouse Gas Calculations for Northern Gold Foods		
Per Application and Supplemental Info		
Fuel Type	Usage	Fuel Units
Natural gas	109	Million cubic Feet (MMscf)
Anthropogenic combustion emissions	5,869	Metric tonsCO ₂ e/year (mtCO ₂ e/yr)
Biogenic combustion emissions	0	Metric tonsCO ₂ e/year (mtCO ₂ e/yr)
Total combustion emissions	5,869	Metric tonsCO ₂ e/year (mtCO ₂ e/yr)
Conversion to short tons		
Anthropogenic combustion emissions	6,470	tons/year
Biogenic combustion emissions	0	tons/year
Total combustion emissions	6,470	tons/year