GENERATOR CHANGE NOTICE OF CONSTRUCTION APPLICATION

Darigold, Inc. / Pasco, WA

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April 2024

Project 221301.0037

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1. EXECUTIVE SUMMARY

Darigold, Inc. (Darigold) submitted a permit application for a greenfield dairy products production facility in Pasco Washington (the Pasco Facility) in January of 2023 and received an approval order. The facility permit identifier is AQPID No. A0210191. Included in the permit application were three large natural gas fired emergency generators rated at 2,500 kW each. The facility intends to replace the three large generators with two smaller natural gas fired emergency generators rated at 450 kw each. The change in generator number and size will lead to emission decreases for all pollutants. Emission calculations are presented to demonstrate the decrease in emissions. Review of the relevant regulations and best available control technology (BACT) are presented as well.

The application includes the following elements:

- Section 2: Facility and Project description
- Section 3: Emission Calculations
- Section 4: Regulatory NOC Applicability
- Section 5: Best Available Control Technology
- Appendix A: Emission Calculations
- Appendix B: NOC Application Form, Plot Plan, and SEPA DNS

The application demonstrates that the proposed project does not require a NOC application under WAC 173 400-110, since the overall emissions are reduced. However, Darigold is submitting an NOC application to modify their permit to reflect the actual inventory of sources onsite. This application report provides all information required under WAC 173-400-111.

2. FACILITY AND PROJECT DESCRIPTION

Darigold permitted a greenfield dairy products production facility located at 8201 N Railroad Ave, Pasco, WA 99301 (the Pasco Facility). Sources of air emissions include milk drying to produce powdered milk (controlled by baghouses), natural gas combustion in boilers and dryer burners, processing/packaging of powdered milk products controlled by baghouses, and emergency generators fired by natural gas. Only the number and size of the natural gas emergency generators are changing as a result of this permit application. The location of the new generators is the same as the location of the originally permitted generators. A plot plan showing this location is included in Appendix B.

Emission Source Description

Emergency Generators

The Pasco facility proposes to replace the three 2,500 kW natural gas fired generators with two 450 kW natural gas-fired emergency generators. The two 450 kW natural gas generators each have a maximum firing rate of 4.92 MMBtu/hr for a total of 9.84 MMBtu/hr. Annual PTE calculations assume 500 hours per year of operation based on EPA guidance.[1]

[1] U.S. EPA (September 6, 1995) *Calculating Potential to Emit (PTE) for Emergency Generators* from John S. Seitz, Director of the Office of Air Quality Planning and Standards (MD-10).

3. EMISSION CALCULATIONS

This section briefly describes the methodology used to calculate criteria pollutant, hazardous air pollutants (HAPs), and toxics air pollutants (TAP) emissions from sources onsite. Detailed supporting calculations with assumptions are included in Appendix A.

Emergency Generators

Two CAT CG18 spark ignition engine-generator sets will be constructed and will fire natural gas to provide electrical power in times of emergency conditions. The generators are certified to the emission standards in Table 1 to Subpart JJJJ of 40 CFR Part 60 for non-emergency SI Natural Gas engines with HP>500 and manufactured after July 1, 2010. These NO_x, CO, and VOC factors are used to develop potential emissions. Despite the elevated level of certification, Darigold intends to permit the generators for emergency use at this time. The PM, SO_2, GHG and HAP/TAP emission factors were obtained from AP-42 Section 3.2, Natural Gas-Fired Reciprocating Engines. The AP-42 factors use the maximum of either 4-stroke rich or lean burn emission factors. The PM factor is assumed to be equivalent for PM, PM_{10} and $PM_{2.5}$ emissions and is calculated by summing the filterable PM_{10} factor with the condensable PM factor. The project criteria pollutant emissions are calculated as the difference in PTE emissions between the two new generators and the three original generators.

Speciated Emission Factors

Emergency generators use HAP/TAP emission factors from AP-42 Section 3.2, which include many additional factors rated "C" or better. The project emission HAP/TAP PTE is calculated for emergency generators for these pollutants and compared to *De Minimis* thresholds and small quantity emission rates (SQERs)[2]. The details of these calculations are included in Appendix A. With this modification, there are emission decreases for all TAPs, thus there is no modeling required.

Emissions Summary

Table 3-1 below summarizes the criteria pollutant emission increase estimated for new sources at the Pasco facility using the methodologies described in the previous sections. Potential emissions for Washington TAPs and HAPs are provided in Table 3-2 and Table 3-3. Facility-wide HAPs were below HAP major source thresholds as currently permitted and this will continue because HAP emissions are decreasing for all HAPs in this project.

[2] According to 40 CFR 93.153(b)(1) and (b)(2), *de minimis* levels are the minimum threshold for which a conformity determination must be performed, for various criteria pollutants in various areas. The SQER (small quantity emission rate), according to WAC 173-620-020 is the level of emissions below which dispersion modeling is not required to demonstrate compliance with acceptable source impact levels.

Table 3-1. Criteria Pollutants Emissions Summary

Project Emissions	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)	SO_2 (tpy)	NO_X (tpy)	VOC (tpy)	CO (tpy)
Original Generators	0.13	0.13	0.13	4.07E-03	6.00	4.20	12.00
New Generators	0.05	0.05	0.05	1.45E-03	0.83	0.58	1.66
Project Emission Change	**-0.09**	**-0.09**	**-0.09**	**-2.62E-03**	**-5.17**	**-3.62**	**-10.34**
De Minimis Threshold	1.25	0.75	0.5	2.0	2.0	2.0	5.0
Exceeds *De Minimis?*	No	No	No	No	No	No	No

Table 3-2. Washington Toxic Air Pollutant Emissions Summary

Pollutant	Change in Emissions (lb/avg period)	TAP De Minimis (lb/avg period)	Units	Exceeds De Minimis?
1,1,2,2-Tetrachloroethane	-2.26E-01	0.14	lb/year	No
1,2,4-Trimethylbenzene	-6.13E-03	0.22	lb/24-hr	No
Acetaldehyde	-7.46E+01	3	lb/year	No
Acrolein	-2.20E+00	0.0013	lb/24-hr	No
Benzene	-1.41E+01	1	lb/year	No
Chrysene	-6.19E-03	0.45	lb/year	No
Ethyl benzene	-3.54E-01	3.2	lb/year	No
Formaldehyde	-4.71E+02	1.4	lb/year	No
Methyl alcohol (methanol)	-1.07E+00	74	lb/24-hr	No
Dichloromethane	-3.68E-01	490	lb/year	No
n-Hexane	-4.76E-01	2.6	lb/24-hr	No
Naphthalene	-6.64E-01	0.24	lb/year	No
Toluene	-2.39E-01	19	lb/24-hr	No
Vinyl Chloride	-1.33E-01	0.92	lb/year	No
Xylene (mixture), including m-xylene, o-xylene, p-xylene	-8.35E-02	0.82	lb/24-hr	No

Table 3-3. Hazardous Air Pollutant Emissions Summary

Pollutant	Project Change (tpy)
1,1,2,2-Tetrachloroethane	-1.13E-04
2-Methylnaphthalene	-1.48E-04
2,2,4-Trimethylpentane	-1.12E-03
Acenaphthene	-5.58E-06
Acenaphthylene	-2.47E-05
Acetaldehyde	-3.73E-02
Acrolein	-2.29E-02
Benzene	-7.05E-03
Chrysene	-3.09E-06
Ethyl benzene	-1.77E-04
Formaldehyde	-2.36E-01
Fluoranthene	-4.95E-06
Fluorene	-2.53E-05
Methyl alcohol (methanol)	-1.12E-02
Dichloromethane	-1.84E-04
n-Hexane	-4.95E-03
Naphthalene	-3.32E-04
Pyrene	-6.07E-06
Toluene	-2.49E-03
Vinyl Chloride	-6.65E-05
Xylene (mixture), including m-xylene, o-xylene, p-xylene	-8.70E-04
Total HAP	-3.25E-01

4. REGULATORY NOC APPLICABILITY

NOC Permitting

Per WAC 173-400-110, an NOC permit application must be filed, and the permit issued by the Washington Department of Ecology: Eastern Region, for any changes made in the facility. WAC 173-400-110(c)(ii)(C) states that a NOC application is required for "The establishment of a new or modified toxic air pollutant source, as defined in WAC 173-460-020. The proposed generator change does not increase emissions of any kind. However, Darigold would like to modify the permit description to match the equipment to be installed at the facility. Therefore, this NOC application is being submitted to update the existing permit. NOC application forms are included in Appendix B. Additionally, a SEPA Checklist is not required since the project doesn't require an NOC application. However, for completeness, the prior SEPA determination of non-significance (DNS) from the greenfield permitting project is included in Appendix B as well.

Best Available Control Technology (BACT)

Pursuant to WAC 173-400-113(2), the proposed modification will employ BACT for all pollutants not previously emitted or whose emissions would increase as a result of the new source or modification. The replacement of the three large generators and installation of two small generators does not increase emissions of any pollutant. However, since the units have not been constructed yet Darigold is electing to conduct a BACT review for $_5$, NO_X, CO and TAP. Control measures for PM_{10} will also reduce $PM_{2.5}$ in this case.

Prevention of Significant Deterioration (Major New Source Review)

Ecology administers the Prevention of Significant Deterioration (PSD) program for stationary sources. An emission source is subject to the PSD permitting program under WAC 173-400-700 to 173-400-750 if the new installation is either a "major modification" to an existing "major source," or is a new major source unto itself. As determined in the prior permit application, the Darigold greenfield facility is not a PSD major source for any pollutant. This project decreases emissions for all pollutants. Therefore, the proposed project does not require review under Ecology's PSD program.

New Source Performance Standards (NSPS)

NSPS are adopted by reference in WAC 173-400-115. NSPS apply to certain types of equipment that are newly constructed, modified, or reconstructed after a given applicability date. NSPS applicability is reviewed for the proposed emission units.

NSPS Subpart JJJJ: Standards of Performance for Spark Ignition Internal Combustion Engines

Pursuant to 40 CFR §60.4230(a)(4)(i), Subpart JJJJ applies to:

> *"Owners and operators of stationary spark ignition (SI) internal combustion engines (ICE) that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:*

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);"

The proposed natural gas fired emergency generators at the Pasco Facility each have a maximum engine power of 754 bhp and therefore meet the definition of a SI ICE constructed after July 1, 2007. The generators are therefore subject to the provisions of this subpart. Per § 60.4233(e), stationary SI ICE's with a maximum engine power greater than or equal to 75 kW must comply the emission standards in Table 1 of this subpart. Compliance with these emission standards is demonstrated with EPA engine certificate supplied by the manufacturer. Maintaining a copy of the engine certificate on site will demonstrate compliance with the emission standards of this subpart.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

NESHAPs have been established in 40 CFR 61 and 63 to control the emissions of Hazardous Air Pollutants (HAPs). NESHAP regulations codified in 40 CFR 63 establish Maximum Achievable Control Technology (MACT) standards for specific types of equipment at qualifying facilities. MACT regulations typically apply to facilities that are major sources. Under 40 CFR 63, a major source is defined in 40 CFR 63.2 as:

"…any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP…"

The Pasco facility's PTE of HAP is below the 10 tpy and 25 tpy thresholds. Therefore, it is an area source with regard to NESHAP applicability.

NESHAP Subpart ZZZZ: Standards for Stationary Reciprocating Internal Combustion Engines

NESHAP Subpart ZZZZ applies to reciprocating internal combustion engines (RICE) at major or area sources of HAP. Per § 63.6595(a)(7):

"If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source."

The proposed engines at the Pasco Facility meet the definition of a new stationary RICE at an area source of HAP emissions and will be constructed after January 18, 2008, and thus must comply with the requirements in this subpart.

The subpart specifies special exemptions for stationary RICE subject to Regulation under 40 CFR Part 60. Per § 63.6590(c):

"An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of

40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part."

The proposed emergency engines will meet the requirements of 40 CFR Part 60 Subpart JJJJ, therefore no further requirements apply under NESHAP Subpart ZZZZ.

State Regulatory Applicability

Washington Toxic Air Pollutants Regulations

In Washington, all new sources emitting TAPs are required to show compliance with the Washington TAP program pursuant to WAC 173-460. Ecology has established a *De Minimis* level, a SQER)and an Acceptable Source Impact Level (ASIL) for each listed TAP.[3] An acceptable source impact analysis must be conducted for each TAP with an emission increase greater than the respective *De Minimis* level.[4] The emissions of all TAP are decreasing as a result of this project. Therefore, an ambient air analysis is not required.

3 De Minimis levels, SQERs, and ASILs are provided for each TAP in WAC 173-460-150.

4 Acceptable source impact analysis is defined in WAC 173-460-020(1); first tier review is outlined in WAC 173-460-080.

5. BEST AVAILABLE CONTROL TECHNOLOGY

Pursuant to WAC 173-400-113, all new and modified sources must employ BACT for "all pollutants not previously emitted or whose emissions would increase as a result of the new source or modification." The emissions from the generator change project are negative and therefore, a BACT review is not required. However, Darigold is electing to voluntarily review BACT for the new generators. The BACT analysis for NO_X, CO, and TAPs for the generators are presented in the subsequent sections.

BACT Methodology

In a memorandum dated December 1, 1987, EPA stated its preference for a "top-down" BACT analysis.[5] After determining if any NSPS or NESHAP is applicable, the first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical source or source category. If it can be shown that this level of control is technically, environmentally, or economically infeasible for the unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections. The five basic steps of a top-down BACT review as identified by the EPA are presented below.[6]

Step 1 – Identify All Control Technologies

Available control technologies are identified for each emission unit in question. The following methods are used to identify potential technologies: (1) reviewing entries in the Reasonably Available Control Technology (RACT)/BACT/Lowest Achievable Emission Rate (LAER) Clearinghouse (RBLC) database, (2) surveying regulatory agencies, (3) drawing from similar experience in assessing emissions control strategies, (4) surveying air pollution control equipment vendors, and/or (5) researching available literature.

Step 2 – Eliminate Technically Infeasible Options

After the identification of control options, an analysis is conducted to eliminate technically infeasible options. A control option is eliminated from consideration if there are process specific conditions that prohibit the implementation of the control technology or if the highest control efficiency of the option would result in an emission level that is higher than any applicable regulatory limits, such as an NSPS or NESHAP.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Once technically infeasible options are removed from consideration, the remaining options are ranked based on their control effectiveness. If there is only one remaining option or if all of the remaining technologies could achieve equivalent control efficiencies, ranking based on control efficiency is not required.

Step 4 – Evaluate Most Effective Controls and Document Results

Beginning with the most efficient control option in the ranking, detailed economic, energy, and environmental impact evaluations are performed. If a control option is determined to be economically feasible without adverse energy or environmental impacts, it is not necessary to evaluate the remaining options with lower control efficiencies.

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[5] U.S. EPA, Office of Air and Radiation. Memorandum from J.C. Potter to the Regional Administrators. Washington, D.C. December 1, 1987.

[6] U.S. EPA. *Draft New Source Review Workshop Manual*, Chapter B. Research Triangle Park, North Carolina. October, 1990.

The economic evaluation centers on the cost effectiveness of the control option. Costs of installing and operating control technologies are estimated and annualized following the methodologies outlined in the EPA's OAQPS Control Cost Manual (CCM) and other industry resources.[7]

Step 5 – Select BACT

In the final step, one pollutant-specific control option and/or limit is proposed as BACT for each emission unit under review based on evaluations from the previous step.

BACT analyses for each emission source are presented in the following sections.

BACT Analysis for Emergency Generators

The proposed emergency generator change at the Pasco facility will result in an emissions decrease for all pollutants. Therefore, BACT is not required for the project. However, the facility is voluntarily electing to review BACT for key generator pollutants (NOx, CO, and TAP).

BACT Analysis for NO_X Emissions

NO_X emissions are generated from the combustion of natural gas within the internal combustion engines. The generators are certified to be in compliance with the non-emergency emissions requirements of NSPS Subpart JJJJ for generators manufactured July 1, 2010 or later. Available control technologies for generators of similar size were reviewed. It was found that good combustion and operating practices are a common control method. It is technically feasible to apply add on controls such as SCR for internal combustion engines, but these controls come at a significant financial cost. Darigold proposes good combustion and operating practices as BACT. Additionally, the generators will be certified to the more stringent non-emergency emissions requirements of NSPS Subpart JJJJ even though the engines are proposed to be permitted as emergency generators.

BACT Analysis for CO Emissions

CO emissions are generated from the combustion of natural gas within the internal combustion engines. The generators are certified to be in compliance with the non-emergency emissions requirements of NSPS Subpart JJJJ for generators manufactured July 1, 2010 or later. Available control technologies for generators of similar size were reviewed. It was found that good combustion and operating practices are a common control method. It is technically feasible to apply add on controls such as an oxidative catalyst for internal combustion engines, but this control come at a significant financial cost. Darigold proposes good combustion and operating practices as BACT. Additionally, the generators will be certified to the more stringent non-emergency emissions requirements of NSPS Subpart JJJJ even though the engines are proposed to be permitted as emergency generators.

tBACT Analysis for Toxic Air Pollutant Emissions

A review of available control technologies was conducted for natural gas internal combustion engines rated >500 BHP. It was found that the only control method for combustion TAPs is good combustion and operating practices. Therefore, Darigold proposes good combustion and operating practices as BACT.

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[7] Office of Air Quality Planning and Standards (OAQPS), *EPA Air Pollution Control Cost Manual*, Sixth Edition, EPA 452-02-001 (http://www.epa.gov/ttn/catc/products.html#cccinfo), Daniel C. Mussatti & William M. Vatavuk, January 2002.

APPENDIX A: EMISSION CALCULATIONS

Equipment Sizing Table

Emission Unit and Sizing/Quantity	Size at Facility	UOM	Notes
Dryers and Processing			
#1 Dryer - Dedicated Process Stack			Tetra Pak - Custom Equipment
BGH1 Air Flow Rate	138,268	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
BGH1 Temperature	181	°F	The temperature can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
BGH1 Air Flow Rate	113,893	scfm	Conversion from acfm to scfm
#1 Dryer - Dedicated Burner Stack			Eclipse Minnox (Honeywell) - ERV-9SM12IU96DA
BRN1 Firing Rate	20.52	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
BRN2 Firing Rate	20.52	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#1 Dryer - Bin Vents			Powder Processing Solutions - RD-58-14-2T-F
PB1 Air Flow Rate	650	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
PB2 Air Flow Rate	650	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
PB3 Air Flow Rate	650	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
SSH1 Air Flow Rate	650	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#1 Dryer - Dust Collector			Donaldson/Torrit - DLMC 1/3/15
DC1 Air Flow Rate	3,200	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#1 Dryer - Packaging Hopper			Powder Processing Solutions - PS21194-015
PHBAGV1 Air Flow Rate	30	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
PHBAG1 Air Flow Rate	988	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#2 Dryer - Dedicated Process Stack			Tetra Pak - Custom Equipment
BGH2 Air Flow Rate	138,268	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
BGH2 Temperature	181	°F	The temperature can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
BGH2 Air Flow Rate	113,893	scfm	Conversion from acfm to scfm
#2 Dryer - Dedicated Burner Stack			Eclipse Minnox (Honeywell) - ERV-9SM12IU96DA
BRN3 Firing Rate	20.52	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
BRN4 Firing Rate	20.52	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#2 Dryer - Bin Vents			Powder Processing Solutions - RD-58-14-2T-F
PB5 Air Flow Rate	650	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
PB6 Air Flow Rate	650	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
PB7 Air Flow Rate	650	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
SSH2 Air Flow Rate	650	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#2 Dryer - Dust Collector			Donaldson/Torrit - DLMC 1/3/15
DC2 Air Flow Rate	3,200	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#2 Dryer - Packaging Hopper			Powder Processing Solutions - PS21194-015
PHBAGV2 Air Flow Rate	30	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
PHBAG2 Air Flow Rate	988	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#1, #2 Dryers - Packaging Hopper			Powder Processing Solutions - PSVR-18-8-3T
PHBULKV1 Air Flow Rate	30	cfm	The air flow rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
PHBULK1 production throughput	8	ton/hr	The production throughput can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.

Equipment Sizing Table

Emission Unit and Sizing/Quantity	Size at Facility	UOM	Notes
Boilers			
#1 Boiler			Cleaver Brooks - BLR: CBEX-700-1500-150ST / BRN:NTXL
BLR1 Firing Rate	62.24	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#2 Boiler			Cleaver Brooks - BLR: CBEX-700-1500-150ST / BRN:NTXL
BLR2 Firing Rate	62.24	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#3 Boiler			Cleaver Brooks - BLR: CBEX-700-1500-150ST / BRN:NTXL
BLR3 Firing Rate	62.24	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#4 Boiler			Cleaver Brooks - BLR: CBEX-700-1500-150ST / BRN:NTXL
BLR4 Firing Rate	62.24	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
Cooling Towers			
#1 Cooling Tower - Utility			Evapco - AT 224-3P18
CTU1 Cooling Water Flow Rate	4,266	gpm	The cooling water flow rate is found in the Max Throughput column in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#2 Cooling Tower - Utility			Evapco - AT 224-3P18
CTU2 Cooling Water Flow Rate	4,266	gpm	The cooling water flow rate is found in the Max Throughput column in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#3 Cooling Tower - Utility			Evapco - AT 224-3P18
CTU3 Cooling Water Flow Rate	4,266	gpm	The cooling water flow rate is found in the Max Throughput column in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#4 Cooling Tower - Utility			Evapco - AT 224-3P18
CTU4 Cooling Water Flow Rate	4,266	gpm	The cooling water flow rate is found in the Max Throughput column in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#5 Cooling Tower - Process			Evapco - AT 19-4J6
CTP1 Cooling Water Flow Rate	1,148	gpm	The cooling water flow rate is found in the Max Throughput column in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#6 Cooling Tower - Process			Evapco - AT 19-4J6
CTP2 Cooling Water Flow Rate	1,148	gpm	The cooling water flow rate is found in the Max Throughput column in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#7 Cooling Tower - Process			Evapco - AT 19-4K12
CTP3 Cooling Water Flow Rate	1,148	gpm	The cooling water flow rate is found in the Max Throughput column in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
Natural Gas Generators			
#1 Emergency Generator			Caterpillar CG18
GEN1 Power Output	450	kW	The power output is obtained from the CAT vendor quote for the two emergency generators
GEN1 Brake Horsepower	754	bhp	The bhp rating is calculated by converting the power output to brake horsepower and corrected using the power factor of 0.8.
GEN1 Heat Input	4.92	MMBtu/hr	The generator heat input is obtained from the generator specification sheet
GEN1 Operating Hours	500	hr/yr	
#2 Emergency Generator			Caterpillar CG18
GEN2 Power Output	450	kW	The power output is obtained from the CAT vendor quote for the two emergency generators
GEN2 Brake Horsepower	754	bhp	The bhp rating is calculated by converting the power output to brake horsepower and corrected using the power factor of 0.8.
GEN2 Heat Input	4.92	MMBtu/hr	The generator heat input is obtained from the generator specification sheet
GEN2 Operating Hours	500	hr/yr	

Equipment Sizing Table

Emission Unit and Sizing/Quantity	Size at Facility	UOM	Notes
Air Handling Units/Heaters			
#1 Makeup Air Unit			Greenheck - TSU-230-H50 / Milk Receiving (enclosed)
MAU30A Firing Rate	3.698	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#2 Makeup Air Unit			Greenheck - TSU-230-H50 / Milk Receiving (enclosed)
MAU30B Firing Rate	3.698	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#3 Makeup Air Unit			Greenheck - DGX-P127-H32-MF3 / Raw CIP
MAU31 Firing Rate	1.183	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#4 Makeup Air Unit			Greenheck - DGX-P127-H32-MF3 / Bulk Chemical
MAU32 Firing Rate	1.331	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#5 Makeup Air Unit			Greenheck - DGX-136-H42 / Boiler Room
MAU34 Firing Rate	2.800	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#6 Infrared Heater			Superior Radiant Products - KMI / Milk Receiving (enclosed)
IH1 Firing Rate	0.095	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#7 Infrared Heater			Superior Radiant Products - KMI / Milk Receiving (enclosed)
IH2 Firing Rate	0.095	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#8 Infrared Heater			Superior Radiant Products - KMI / Milk Receiving (enclosed)
IH3 Firing Rate	0.095	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.
#9 Infrared Heater			Superior Radiant Products - KMI / Milk Receiving (enclosed)
IH4 Firing Rate	0.095	MMBtu/hr	The firing rate can be found in the "Equipment Inventory" tab of EI_SUM_PAS_050422.

[1] All boilers and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

Emission Specifications Table

Emission Unit and Sizing/Quantity	Size at Facility	UOM	Notes
#1 Dryer - Dedicated Process Stack			
CYC1 Grain Loading	0.42	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
CYC2 Grain Loading	0.42	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
BGH1 Grain Loading	0.005	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
#1 Dryer - Dedicated Burner Stack			
Burner Filterable + Condensable PM Emission Factor	0.0075	lb/MMBtu	From AP-42 1.4, filterable + condensable PM. Past emission calculations have treated filterable PM as separate from the grain loadin
Burner NOx Emission Factor	0.0243	lb/MMBtu	Emission factor obtained from "Dryer Burner Emissions Data" Tab of EI_SUM_PAS_050422 using the Dryer Stack Test EFs Meth
Burner VOC Emission Factor	0.0054	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Burner CO Emission Factor	0.0738	lb/MMBtu	Emission factor obtained from "Dryer Burner Emissions Data" Tab of EI_SUM_PAS_050422 using the Dryer Stack Test EFs Meth
Burner SO2 Emission Factor	0.0006	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Burner Benzene Emission Factor	0.0000021	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Burner Formaldehyde Emission Factor	0.000074	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Burner Toluene Emission Factor	0.0000033	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Burner GHG Emission Factor (CO2e)	117.0980	lb/MMBtu	From 40 CFR 98 Subpart C, Tables C-1 and C-2
#1 Dryer - Bin Vents			
PB1 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
PB2 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
PB3 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
SSH1 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
#1 Dryer - Dust Collector			
DC1 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
#1 Dryer - Packaging Hopper			
PHBAGV1 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
PHBAG1 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
#2 Dryer - Dedicated Process Stack			
CYC3 Grain Loading	0.42	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
CYC4 Grain Loading	0.42	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
BGH2 Grain Loading	0.005	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
#2 Dryer - Dedicated Burner Stack			
Burner Filterable+Condensable PM Emission Factor	0.0075	lb/MMBtu	From AP-42 1.4, filterable+condensable PM. Past emission calculations have treated filterable PM as separate from the grain loading
Burner NOx Emission Factor	0.0243	lb/MMBtu	Emission factor obtained from "Dryer Burner Emissions Data" Tab of EI_SUM_PAS_050422 using the Dryer Stack Test EFs Meth
Burner VOC Emission Factor	0.0054	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Burner CO Emission Factor	0.0738	lb/MMBtu	Emission factor obtained from "Dryer Burner Emissions Data" Tab of EI_SUM_PAS_050422 using the Dryer Stack Test EFs Meth
Burner SO2 Emission Factor	0.0006	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Burner Benzene Emission Factor	0.0000021	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Burner Formaldehyde Emission Factor	0.000074	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Burner Toluene Emission Factor	0.0000033	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Burner GHG Emission Factor (CO2e)	117.0980	lb/MMBtu	From 40 CFR 98 Subpart C, Tables C-1 and C-2
#2 Dryer - Bin Vents			
PB5 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
PB6 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
PB7 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
SSH2 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.

Emission Specifications Table

Emission Unit and Sizing/Quantity	Size at Facility	UOM	Notes
#2 Dryer - Dust Collector			
DC2 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
#2 Dryer - Packaging Hopper			
PHBAGV2 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
PHBAG2 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
#1, #2 Dryer - Packaging Hopper			
PHBULKV1 Grain Loading	0.004	gr/dscf	Emission factor obtained from "Equipment Inventory" Tab of EI_SUM_PAS_050422.
PHBULK1 PM emission factor	1.72E-04	lb/ton	Emission factor from AP-42 9.9.1 for grain shipping. AP-42 does not include emission factors for powdered milk handling, therefore grain shipping is used as a best avail
PHBULK1 PM10 emission factor	5.80E-05	lb/ton	emission factors used and conservatively doubled. Baghouse control efficiency of 99.999% applied based on "Equipment Inventory" Tab of EI_S
PHBULK1 PM2.5 emission factor	9.80E-06	lb/ton	
All Boilers			
PM Emission Factor	0.0075	lb/MMBtu	Emission factor obtained from "Boiler Emissions Data" Tab of EI_SUM_PAS_050422 by summing the filterable and condensable PM
NOx Emission Factor	0.0105	lb/MMBtu	Emission factor obtained from "Boiler Emissions Data" Tab of EI_SUM_PAS_050422
VOC Emission Factor	0.0054	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
CO Emission Factor	0.0375	lb/MMBtu	Emission factor obtained from "Boiler Emissions Data" Tab of EI_SUM_PAS_050422
SO2 Emission Factor	0.0006	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Benzene Emission Factor	0.0000021	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Formaldehyde Emission Factor	0.000074	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Toluene Emission Factor	0.0000033	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
GHG Emission Factor (CO2e)	117.0980	lb/MMBtu	From 40 CFR 98 Subpart C, Tables C-1 and C-2
All Cooling Towers			
PM Emission Factor	2.3E-07	lb/gal	PM factor from AP-42 Chapter 13.4 equation for cooling towers. 2,800 ppm TDS and 0.001% drift are used as the equation inpu
PM_{10} Emission Factor	1.6E-07	lb/gal	PM_{10} factor based on PM_{10} to PM fraction, determined from data in Reisman, J. and G. Frisbie "Calculating Realistic PM_{10} Emissions from Cooling Towers," Greyst
$PM_{2.5}$ Emission Factor	5.3E-10	lb/gal	$PM_{2.5}$ factor based on $PM_{2.5}$ to PM fraction, determined from data in Reisman, J. and G. Frisbie "Calculating Realistic PM_{10} Emissions from Cooling Towers," Greyst
Natural Gas Generators			
PM Emission Factor	0.01941	lb/MMBtu	From AP-42 3.2, Natural Gas-Fired Reciprocating Engines. Filterable PM10 + PM Condensible. Maximum of either 4-stroke rich or lean burn e
NOx Emission Factor	1.00	g/HP-hr	Table 1 to Subpart JJJJ of Part 60 for non-emergency SI Natural Gas engines with HP>500 and manufactured after July 1, 201
VOC Emission Factor	0.70	g/HP-hr	Table 1 to Subpart JJJJ of Part 60 for non-emergency SI Natural Gas engines with HP>500 and manufactured after July 1, 201
CO Emission Factor	2.00	g/HP-hr	Table 1 to Subpart JJJJ of Part 60 for non-emergency SI Natural Gas engines with HP>500 and manufactured after July 1, 201
SO2 Emission Factor	0.000588	lb/MMBtu	From AP-42 3.2, Natural Gas-Fired Reciprocating Engines. Maximum of either 4-stroke rich or lean burn emission factors.
Benzene Emission Factor	0.00158	lb/MMBtu	From AP-42 3.2, Natural Gas-Fired Reciprocating Engines. Maximum of either 4-stroke rich or lean burn emission factors.
Formaldehyde Emission Factor	0.0528	lb/MMBtu	From AP-42 3.2, Natural Gas-Fired Reciprocating Engines. Maximum of either 4-stroke rich or lean burn emission factors.
Toluene Emission Factor	0.000558	lb/MMBtu	From AP-42 3.2, Natural Gas-Fired Reciprocating Engines. Maximum of either 4-stroke rich or lean burn emission factors.
GHG Emission Factor (CO2e)	141.3	lb/MMBtu	From AP-42 3.2, Natural Gas-Fired Reciprocating Engines. Maximum of either 4-stroke rich or lean burn emission factors. CO2 and Methane Emission factors included. Ba was used for CO2 and a GWP of 25 for methane was used.
All Roof Heaters			
PM Emission Factor	0.0075	lb/MMBtu	From AP-42 1.4, filterable+condensable PM.
NOx Emission Factor	0.0980	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
VOC Emission Factor	0.0054	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
CO Emission Factor	0.0824	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
SO2 Emission Factor	0.0006	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Benzene Emission Factor	0.0000021	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Formaldehyde Emission Factor	0.000074	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion
Toluene Emission Factor	0.0000033	lb/MMBtu	From AP-42 1.4, Natural Gas Combustion

Emission Specifications Table

Emission Unit and Sizing/Quantity	Size at Facility	UOM	Notes
GHG Emission Factor (CO2e)	117.0980	lb/MMBtu	From 40 CFR 98 Subpart C, Tables C-1 and C-2

WA Permitting Summary

Permit Program	PM	PM_{10}	$PM_{2.5}$	SO_2	NO_X	VOC	CO	Benzene	Formaldehyde	Toluene	Total HAP	GHG	Notes
Facility Potential to Emit (PTE), tpy	57.40	57.04	56.15	0.89	26.63	8.71	73.81	0.0070	0.241	0.006	0.30	176,847.90	
Stack Emissions, tpy	57.40	57.04	56.15	0.89	26.63	8.71	73.81	0.0070	0.24	0.01	0.30	176,847.90	
Fugitive Emissions, tpy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total TAP emissions, lb/day (Daily TAP Only)	--	--	--	--	--	--	--	--	--	0.16	--	--	6
Ecology Eastern Region - NOC Application													
De minimis Value, tpy	1.25	0.75	0.5	2.0	2.0	2.0	5.0	--	--	--	--	--	1
De minimis Value, lb/yr	--	--	--	--	--	--	--	1	1.4	--	--	--	2
SQER (TAP Only), lb/yr	--	--	--	--	--	--	--	21	27	--	--	--	2
De minimis Value, lb/day	--	--	--	--	--	--	--	--	--	19	--	--	2
SQER (TAP Only), lb/day	--	--	--	--	--	--	--	--	--	370	--	--	2
Exceeds de Minimis?	YES	YES	YES	NO	YES	YES	YES	YES	YES	NO	--	--	
Exceeds SQER? (TAP Only)	--	--	--	--	--	--	--	NO	YES	NO	--	--	7
NOC Required? (Most WA Regions - See Note 7)	YES	YES	YES	NO	YES	YES	YES	NO	YES	NO	NO	NO	7
Ecology - Title V Operating Permit Program													
Major Source Threshold, Stack Only, tpy	100	100	100	100	100	100	100	10	10	10	25	--	3
Title V Major Source?	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	
Ecology - PSD Permit Program													
Major Source Threshold, Stack Only, tpy	250	250	250	250	250	250	250	--	--	--	--	100,000	4,5
PSD Major Source?	NO	NO	NO	NO	NO	NO	NO	--	--	--	--	NO	

[1] *de minimis* values for WA NOC permitting found in WAC 173-400-110, Table 110(5)

[2] *de minimis* and SQER values for WA NOC permitting TAP were found in WAC 173-460-150

[3] Title V major source thresholds specified at WAC 173-401-200, definition of "major source."

[4] PSD major source thresholds specified at WAC 173-400-700, definition of "major source." Darigold's facility would not be on the list of sources required to use a 100 tpy threshold.

[5] GHG PSD major source status will appear as "NO" unless PSD major source status for another pollutant is "YES."

[6] Daily TAP emissions are calculated by assuming operation of 8760 hours per year.

[7] In most WA jurisdictions, an NOC is required if TAP emissions exceed de minimis, and this NOC must include BACT for the TAP. In most WA jurisdictions, dispersion modeling is required if after-BACT emissions of the TAP are greater than the SQER. However, some jurisdictions have exceptional rules. NWCAA uses the SQER as the basis for NOC applicability, and no NOC is required for projects with emissions below the SQER. PSCAA has not adopted the de minimis from WAC 173-460-150 into its rules, so any increase of TAP above zero requires an NOC. SWCAA still uses the 1997 TAP rule, and this table does not include a SWCAA TAP comparison.

Dryer Burners EPA Method 19 Calculation of CO and NO_X Emission Factors[1,2,3]

NO_X Guaranteed Concentration	20	ppmdv @ 3% O2
CO Guaranteed Concentration	100	ppmdv @ 3% O2
Pollutant	**Exhaust Gas Emission Factor (lb/MMdscf)**	**Emission Factor (lb/MMBtu)**
NO_X	2.79	2.43E-02
CO	8.47	7.38E-02

[1] Emission factors for NO_X and CO are obtained from engineering data, which are 20 ppm and 100 ppm corrected to 3% oxygen, respectively. The emission factors are converted from ppm to lb/MMscf using EPA Method 19 using the equations below. A conversion fuel factor of 8,710 dscf/MMBtu is used to determine the emission factor in lb/MMBtu.

[2] NO_X EF (lb/MMscf) = NO_X concentration (ppm) × 1.194×10^{-7} (lb/scf)/(ppm-NO_X) × 20.9%/(20.9%-3% × 10^6)

[3] CO EF (lb/MMscf) = CO concentration (ppm) × 1.660×10^{-7} (lb/scf)/(ppm-SO_2) × 28.0101 (g/mol SO_2) / 64.066 (g/mol CO) × 20.9%/(20.9%-3%) × 10^6

Generator Input Summary

Original Generators			
#1 Emergency Generator (GEN1)	9.230	MMBtu/hr	3629 bhp
#2 Emergency Generator (GEN2)	9.230	MMBtu/hr	3629 bhp
#3 Emergency Generator (GEN3)	9.230	MMBtu/hr	3629 bhp
Combined rating	27.690	MMBtu/hr	10887 bhp
New Generators			
#1 Emergency Generator (GEN1)	4.919	MMBtu/hr	754 bhp
#2 Emergency Generator (GEN2)	4.919	MMBtu/hr	754 bhp
Combined rating	9.838	MMBtu/hr	1508.649851 bhp
Hours of Operation:	500	hrs/yr	

Emission Factor Summary	**PM**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_X**	**VOC**	**CO**
lb/MMBtu	0.01941	0.01941	0.01941	0.000588	--	--	--
g/hp-hr	--	--	--	--	1	0.7	2

Criteria Pollutant Summary

Project Status	**PM (tpy)**	**PM_{10} (tpy)**	**$PM_{2.5}$ (tpy)**	**SO_2 (tpy)**	**NO_X (tpy)**	**VOC (tpy)**	**CO (tpy)**
Original Generators	0.13	0.13	0.13	4.07E-03	6.00	4.20	12.00
New Generators	0.05	0.05	0.05	1.45E-03	0.83	0.58	1.66
Project Emission Change	-0.09	-0.09	-0.09	-2.62E-03	-5.17	-3.62	-10.34

HAP/TAP Emission Calculations

Change in generator rating	-17.85	MMBtu/hr
Annual operation per generator	500	hours

Pollutant	HAP?	TAP?	AP-42 Section 3.2 Emission Factors[1]			Potential Emissions			WAC 173-460-150				
			4SLB (lb/MMBtu)	4SRB (lb/MMBtu)	Maximum (lb/MMBtu)	lb/hr	lb/24-hr	lb/yr	Averaging Period	*De Minimis*	PTE below *De Minimis*?	SQER	PTE below SQER?
1,1,2,2-Tetrachloroethane	HAP	TAP	--	2.53E-05	2.53E-05	-4.52E-04	-1.08E-02	-2.26E-01	year	0.14	TRUE	--	TRUE
2-Methylnaphthalene	HAP	--	3.32E-05	--	3.32E-05	-5.93E-04	-1.42E-02	-2.96E-01	--	--	--	--	--
2,2,4-Trimethylpentane	HAP	--	2.50E-04	--	2.50E-04	-4.46E-03	-1.07E-01	-2.23E+00	--	--	--	--	--
Acenaphthene	HAP	--	1.25E-06	--	1.25E-06	-2.23E-05	-5.36E-04	-1.12E-02	--	--	--	--	--
Acenaphthylene	HAP	--	5.53E-06	--	5.53E-06	-9.87E-05	-2.37E-03	-4.94E-02	--	--	--	--	--
Acetaldehyde	HAP	TAP	8.36E-03	2.79E-03	8.36E-03	-1.49E-01	-3.58E+00	-7.46E+01	year	3	TRUE	--	TRUE
Acrolein	HAP	TAP	5.14E-03	2.63E-03	5.14E-03	-9.18E-02	-2.20E+00	-4.59E+01	24-hr	0.0013	TRUE	--	TRUE
Benzene	HAP	TAP	--	--	1.58E-03	-2.82E-02	-6.77E-01	-1.41E+01	year	1	TRUE	--	TRUE
Chrysene	HAP	TAP	6.93E-07	--	6.93E-07	-1.24E-05	-2.97E-04	-6.19E-03	year	0.45	TRUE	--	TRUE
Ethyl benzene	HAP	TAP	3.97E-05	--	3.97E-05	-7.09E-04	-1.70E-02	-3.54E-01	year	3.2	TRUE	--	TRUE
Formaldehyde	HAP	TAP	--	--	5.28E-02	-9.43E-01	-2.26E+01	-4.71E+02	year	1.4	TRUE	--	TRUE
Fluoranthene	HAP	--	1.11E-06	--	1.11E-06	-1.98E-05	-4.76E-04	-9.91E-03	--	--	--	--	--
Fluorene	HAP	--	5.67E-06	--	5.67E-06	-1.01E-04	-2.43E-03	-5.06E-02	--	--	--	--	--
Methyl alcohol (methanol)	HAP	TAP	2.50E-03	--	2.50E-03	-4.46E-02	-1.07E+00	-2.23E+01	24-hr	74	TRUE	--	TRUE
Dichloromethane	HAP	TAP	2.00E-05	4.12E-05	4.12E-05	-7.36E-04	-1.77E-02	-3.68E-01	year	490	TRUE	--	TRUE
n-Hexane	HAP	TAP	1.11E-03	--	1.11E-03	-1.98E-02	-4.76E-01	-9.91E+00	24-hr	2.6	TRUE	--	TRUE
Naphthalene	HAP	TAP	7.44E-05	--	7.44E-05	-1.33E-03	-3.19E-02	-6.64E-01	year	0.24	TRUE	--	TRUE
Pyrene	HAP	--	1.36E-06	--	1.36E-06	-2.43E-05	-5.83E-04	-1.21E-02	--	--	--	--	--
Toluene	HAP	TAP	--	--	5.58E-04	-9.96E-03	-2.39E-01	-4.98E+00	24-hr	19	TRUE	--	TRUE
Vinyl Chloride	HAP	TAP	1.49E-05	--	1.49E-05	-2.66E-04	-6.38E-03	-1.33E-01	year	0.92	TRUE	--	TRUE
Xylene (mixture), including m-xylene, o-xylene, p-xylene	HAP	TAP	1.84E-04	1.95E-04	1.95E-04	-3.48E-03	-8.35E-02	-1.74E+00	24-hr	0.82	TRUE	--	TRUE

PM Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	WAC 173-400-110 *De Minimis* Threshold (tpy)	Exceeds *De Minimis* Threshold?	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH1)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr	0.005	gr/dscf	7.1E-07	4.88	21.38	1.25	Yes	37.25%		
#1 Dryer - Dedicated Burner Stack (BRN1)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	1.25	No	1.17%		8
#1 Dryer - Dedicated Burner Stack (BRN2)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	1.25	No	1.17%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	1.25	No	0.17%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	1.25	No	0.17%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	1.25	No	0.17%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	1.25	No	0.17%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr	0.004	gr/dscf	5.7E-07	0.11	0.48	1.25	No	0.84%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr	0.004	gr/dscf	5.7E-07	1.03E-03	0.00	1.25	No	0.01%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr	0.004	gr/dscf	5.7E-07	0.03	0.15	1.25	No	0.26%		
#2 Dryer - Dedicated Process Stack (BGH2)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr	0.005	gr/dscf	7.1E-07	4.88	21.38	1.25	Yes	37.25%		
#2 Dryer - Dedicated Burner Stack (BRN3)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	1.25	No	1.17%		
#2 Dryer - Dedicated Burner Stack (BRN4)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	1.25	No	1.17%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	1.25	No	0.17%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	1.25	No	0.17%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	1.25	No	0.17%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	1.25	No	0.17%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr	0.004	gr/dscf	5.7E-07	0.11	0.48	1.25	No	0.84%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr	0.004	gr/dscf	5.7E-07	1.03E-03	4.51E-03	1.25	No	0.01%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr	0.004	gr/dscf	5.7E-07	0.03	0.15	1.25	No	0.26%		
#1, #2 Dryers - Packaging Hopper (PHBULKV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr	0.004	gr/dscf	5.7E-07	1.03E-03	4.51E-03	1.25	No	0.01%		
#1, #2 Dryers - Packaging Hopper (PHBULK1)	8	ton/hr	8	ton/hr	8,760	70,080	ton/yr	1.72E-04	lb/ton	1.7E-04	1.38E-03	6.03E-03	1.25	No	0.01%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	1.25	Yes	3.56%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	1.25	Yes	3.56%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	1.25	Yes	3.56%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	1.25	Yes	3.56%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	2.3E-07	lb/gal	2.3E-07	0.06	0.26	1.25	No	0.45%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	2.3E-07	lb/gal	2.3E-07	0.06	0.26	1.25	No	0.45%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	2.3E-07	lb/gal	2.3E-07	0.06	0.26	1.25	No	0.45%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	2.3E-07	lb/gal	2.3E-07	0.06	0.26	1.25	No	0.45%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr	2.3E-07	lb/gal	2.3E-07	0.02	0.07	1.25	No	0.12%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr	2.3E-07	lb/gal	2.3E-07	0.02	0.07	1.25	No	0.12%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr	2.3E-07	lb/gal	2.3E-07	0.02	0.07	1.25	No	0.12%		
#1 Emergency Generator (GEN1)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0194	lb/MMBtu	1.9E-02	0.10	0.02	1.25	No	0.04%		
#2 Emergency Generator (GEN2)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0194	lb/MMBtu	1.9E-02	0.10	0.02	1.25	No	0.04%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.03	0.12	1.25	No	0.21%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.03	0.12	1.25	No	0.21%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	8.87E-03	0.04	1.25	No	0.07%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	9.98E-03	0.04	1.25	No	0.08%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.02	0.09	1.25	No	0.16%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	1.25	No	0.01%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	1.25	No	0.01%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	1.25	No	0.01%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	1.25	No	0.01%		8
																Fugitives (tpy):	
TOTAL EMISSIONS											**13.28**	**57.40**				**-0-**	

[1] Size is a quantity representing a short-term physical maximum throughput for each emission unit.

[2] Units of measure are native to the emission unit type.

[3] To simplify calculations across unit types, all throughputs are converted to hourly values.

[4] Operating hours are assumed to be 8,760 per year, except for the emergency generator.

[5] Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^0 greater than the size.

[6] Emission factors come from a variety of sources, explained and cited in the previous table.

[7] Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

[8] All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

PM_{10} Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	WAC 173-400-110 *De Minimis* Threshold (tpy)	Exceeds *De Minimis* Threshold?	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH1)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr	0.005	gr/dscf	7.1E-07	4.88	21.38	0.75	Yes	37.48%		
#1 Dryer - Dedicated Burner Stack (BRN1)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	0.75	No	1.17%		8
#1 Dryer - Dedicated Burner Stack (BRN2)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	0.75	No	1.17%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.75	No	0.17%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.75	No	0.17%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.75	No	0.17%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.75	No	0.17%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr	0.004	gr/dscf	5.7E-07	0.11	0.48	0.75	No	0.84%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr	0.004	gr/dscf	5.7E-07	1.03E-03	0.00	0.75	No	0.01%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr	0.004	gr/dscf	5.7E-07	0.03	0.15	0.75	No	0.26%		
#2 Dryer - Dedicated Process Stack (BGH2)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr	0.005	gr/dscf	7.1E-07	4.88	21.38	0.75	Yes	37.48%		
#2 Dryer - Dedicated Burner Stack (BRN3)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	0.75	No	1.17%		
#2 Dryer - Dedicated Burner Stack (BRN4)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	0.75	No	1.17%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.75	No	0.17%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.75	No	0.17%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.75	No	0.17%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.75	No	0.17%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr	0.004	gr/dscf	5.7E-07	0.11	0.48	0.75	No	0.84%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr	0.004	gr/dscf	5.7E-07	1.03E-03	4.51E-03	0.75	No	0.01%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr	0.004	gr/dscf	5.7E-07	0.03	0.15	0.75	No	0.26%		
#1, #2 Dryers - Packaging Hopper (PHBULKV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr	0.004	gr/dscf	5.7E-07	1.03E-03	4.51E-03	0.75	No	0.01%		
#1, #2 Dryers - Packaging Hopper (PHBULK1)	8	ton/hr	8	ton/hr	8,760	70,080	ton/yr	5.80E-05	lb/ton	5.8E-05	4.64E-04	2.03E-03	0.75	No	0.00%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	0.75	Yes	3.58%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	0.75	Yes	3.58%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	0.75	Yes	3.58%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	0.75	Yes	3.58%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	1.6E-07	lb/gal	1.6E-07	0.04	0.18	0.75	No	0.32%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	1.6E-07	lb/gal	1.6E-07	0.04	0.18	0.75	No	0.32%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	1.6E-07	lb/gal	1.6E-07	0.04	0.18	0.75	No	0.32%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	1.6E-07	lb/gal	1.6E-07	0.04	0.18	0.75	No	0.32%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr	1.6E-07	lb/gal	1.6E-07	1.13E-02	0.05	0.75	No	0.09%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr	1.6E-07	lb/gal	1.6E-07	1.13E-02	0.05	0.75	No	0.09%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr	1.6E-07	lb/gal	1.6E-07	1.13E-02	0.05	0.75	No	0.09%		
#1 Emergency Generator (GEN1)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0194	lb/MMBtu	1.9E-02	0.10	0.02	0.75	No	0.04%		
#2 Emergency Generator (GEN2)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0194	lb/MMBtu	1.9E-02	0.10	0.02	0.75	No	0.04%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.03	0.12	0.75	No	0.21%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.03	0.12	0.75	No	0.21%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	8.87E-03	0.04	0.75	No	0.07%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	9.98E-03	0.04	0.75	No	0.08%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.02	0.09	0.75	No	0.16%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	0.75	No	0.01%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	0.75	No	0.01%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	0.75	No	0.01%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	0.75	No	0.01%		8
																Fugitives (tpy):	
TOTAL EMISSIONS											**13.20**	**57.04**				**-0-**	

1 Size is a quantity representing a short-term physical maximum throughput for each emission unit.

2 Units of measure are native to the emission unit type.

3 To simplify calculations across unit types, all throughputs are converted to hourly values.

4 Operating hours are assumed to be 8,760 per year, except for the emergency generator.

5 Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^6 greater than the size.

6 Emission factors come from a variety of sources, explained and cited in the previous table.

7 Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

8 All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

$PM_{2.5}$ Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	WAC 173-400-110 *De Minimis* Threshold (tpy)	Exceeds *De Minimis* Threshold?	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH1)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr	0.005	gr/dscf	7.1E-07	4.88	21.38	0.50	Yes	38.08%		
#1 Dryer - Dedicated Burner Stack (BRN1)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	0.50	Yes	1.19%		8
#1 Dryer - Dedicated Burner Stack (BRN2)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	0.50	Yes	1.19%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.50	No	0.17%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.50	No	0.17%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.50	No	0.17%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.50	No	0.17%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr	0.004	gr/dscf	5.7E-07	0.11	0.48	0.50	No	0.86%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr	0.004	gr/dscf	5.7E-07	1.03E-03	0.00	0.50	No	0.01%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr	0.004	gr/dscf	5.7E-07	0.03	0.15	0.50	No	0.26%		
#2 Dryer - Dedicated Process Stack (BGH2)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr	0.005	gr/dscf	7.1E-07	4.88	21.38	0.50	Yes	38.08%		
#2 Dryer - Dedicated Burner Stack (BRN3)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	0.50	Yes	1.19%		
#2 Dryer - Dedicated Burner Stack (BRN4)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.15	0.67	0.50	Yes	1.19%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.50	No	0.17%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.50	No	0.17%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.50	No	0.17%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr	0.004	gr/dscf	5.7E-07	0.02	0.10	0.50	No	0.17%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr	0.004	gr/dscf	5.7E-07	0.11	0.48	0.50	No	0.86%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr	0.004	gr/dscf	5.7E-07	1.03E-03	4.51E-03	0.50	No	0.01%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr	0.004	gr/dscf	5.7E-07	0.03	0.15	0.50	No	0.26%		
#1, #2 Dryers - Packaging Hopper (PHBULKV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr	0.004	gr/dscf	5.7E-07	1.03E-03	4.51E-03	0.50	No	0.01%		
#1, #2 Dryers - Packaging Hopper (PHBULK1)	8	ton/hr	8	ton/hr	8,760	70,080	ton/yr	9.80E-06	lb/ton	9.8E-06	7.84E-05	3.43E-04	0.50	No	0.00%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	0.50	Yes	3.64%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	0.50	Yes	3.64%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	0.50	Yes	3.64%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.47	2.04	0.50	Yes	3.64%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	5.3E-10	lb/gal	5.3E-10	1.35E-04	0.00	0.50	No	0.00%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	5.3E-10	lb/gal	5.3E-10	1.35E-04	0.00	0.50	No	0.00%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	5.3E-10	lb/gal	5.3E-10	1.35E-04	0.00	0.50	No	0.00%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr	5.3E-10	lb/gal	5.3E-10	1.35E-04	0.00	0.50	No	0.00%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr	5.3E-10	lb/gal	5.3E-10	3.64E-05	0.00	0.50	No	0.00%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr	5.3E-10	lb/gal	5.3E-10	3.64E-05	0.00	0.50	No	0.00%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr	5.3E-10	lb/gal	5.3E-10	3.64E-05	0.00	0.50	No	0.00%		
#1 Emergency Generator (GEN1)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0194	lb/MMBtu	1.9E-02	0.10	0.02	0.50	No	0.04%		
#2 Emergency Generator (GEN2)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0194	lb/MMBtu	1.9E-02	0.10	0.02	0.50	No	0.04%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.03	0.12	0.50	No	0.22%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.03	0.12	0.50	No	0.22%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	8.87E-03	0.04	0.50	No	0.07%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	9.98E-03	0.04	0.50	No	0.08%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	0.02	0.09	0.50	No	0.16%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	0.50	No	0.01%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	0.50	No	0.01%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	0.50	No	0.01%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0075	lb/MMBtu	7.5E-03	7.13E-04	0.00	0.50	No	0.01%		8
																Fugitives (tpy):	
TOTAL EMISSIONS											**13.00**	**56.15**				**-0-**	

1 Size is a quantity representing a short-term physical maximum throughput for each emission unit.

2 Units of measure are native to the emission unit type.

3 To simplify calculations across unit types, all throughputs are converted to hourly values.

4 Operating hours are assumed to be 8,760 per year, except for the emergency generator.

5 Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^6 greater than the size.

6 Emission factors come from a variety of sources, explained and cited in the previous table.

7 Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

8 All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

NO_x Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	WAC 173-400-110 *De Minimis* Threshold (tpy)	Exceeds *De Minimis* Threshold?	WAC 173-460-150 *De Minimis* Threshold (lb/hr)	Exceeds *De Minimis* Threshold?	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH1)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Dedicated Burner Stack (BRN1)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0243	lb/MMBtu	2.4E-02	0.50	2.18	2.00	Yes	0.46	Yes	8.20%		8
#1 Dryer - Dedicated Burner Stack (BRN2)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0243	lb/MMBtu	2.4E-02	0.50	2.18	2.00	Yes	0.46	Yes	8.20%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Dedicated Process Stack (BGH2)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Dedicated Burner Stack (BRN3)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0243	lb/MMBtu	2.4E-02	0.50	2.18	2.00	Yes	0.46	Yes	8.20%		
#2 Dryer - Dedicated Burner Stack (BRN4)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0243	lb/MMBtu	2.4E-02	0.50	2.18	2.00	Yes	0.46	Yes	8.20%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULKV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULK1)	8	scfm	480	scfh	8,760	4	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0105	lb/MMBtu	1.1E-02	0.65	2.86	2.00	Yes	0.46	Yes	10.75%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0105	lb/MMBtu	1.1E-02	0.65	2.86	2.00	Yes	0.46	Yes	10.75%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0105	lb/MMBtu	1.1E-02	0.65	2.86	2.00	Yes	0.46	Yes	10.75%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0105	lb/MMBtu	1.1E-02	0.65	2.86	2.00	Yes	0.46	Yes	10.75%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Emergency Generator (GEN1)	754	bhp	754	bhp	500	500	hours/yr	1.00	g/HP-hr	2.2E-03	1.66	0.42	2.00	No	0.46	Yes	1.56%		
#2 Emergency Generator (GEN2)	754	bhp	754	bhp	500	500	hours/yr	1.00	g/HP-hr	2.2E-03	1.66	0.42	2.00	No	0.46	Yes	1.56%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0980	lb/MMBtu	9.8E-02	0.36	1.59	2.00	No	0.46	No	5.96%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0980	lb/MMBtu	9.8E-02	0.36	1.59	2.00	No	0.46	No	5.96%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	0.0980	lb/MMBtu	9.8E-02	0.12	0.51	2.00	No	0.46	No	1.91%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	0.0980	lb/MMBtu	9.8E-02	0.13	0.57	2.00	No	0.46	No	2.15%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	0.0980	lb/MMBtu	9.8E-02	0.27	1.20	2.00	No	0.46	No	4.51%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0980	lb/MMBtu	9.8E-02	9.31E-03	0.04	2.00	No	0.46	No	0.15%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0980	lb/MMBtu	9.8E-02	9.31E-03	0.04	2.00	No	0.46	No	0.15%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0980	lb/MMBtu	9.8E-02	9.31E-03	0.04	2.00	No	0.46	No	0.15%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0980	lb/MMBtu	9.8E-02	9.31E-03	0.04	2.00	No	0.46	No	0.15%		8
															WAC 173-460-150 *De Minimis* Threshold (lb/yr)	Exceeds *De Minimis* Threshold?		Fugitives (tpy):	
TOTAL EMISSIONS											**9.22**	**26.63**			**0.46**	**Yes**		**-0-**	

[1] Size is a quantity representing a short-term physical maximum throughput for each emission unit.

[2] Units of measure are native to the emission unit type.

[3] To simplify calculations across unit types, all throughputs are converted to hourly values.

[4] Operating hours are assumed to be 8,760 per year, except for the emergency generator.

[5] Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^6 greater than the size.

[6] Emission factors come from a variety of sources, explained and cited in the previous table.

[7] Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

[8] All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

VOC Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	WAC 173-400-110 *De Minimis* Threshold (tpy)	Exceeds *De Minimis* Threshold?	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH1)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1 Dryer - Dedicated Burner Stack (BRN1)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.11	0.48	2.00	No	5.56%		8
#1 Dryer - Dedicated Burner Stack (BRN2)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.11	0.48	2.00	No	5.56%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#2 Dryer - Dedicated Process Stack (BGH2)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#2 Dryer - Dedicated Burner Stack (BRN3)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.11	0.48	2.00	No	5.56%		
#2 Dryer - Dedicated Burner Stack (BRN4)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.11	0.48	2.00	No	5.56%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULKV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULK1)	8	scfm	480	scfh	8,760	4	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.34	1.47	2.00	No	16.88%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.34	1.47	2.00	No	16.88%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.34	1.47	2.00	No	16.88%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.34	1.47	2.00	No	16.88%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.00%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.00%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.00%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.00%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.00%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.00%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.00%		
#1 Emergency Generator (GEN1)	754	bhp	754	bhp	500	500	hours/yr	0.70	g/HP-hr	1.5E-03	1.16	0.29	2.00	No	3.34%		
#2 Emergency Generator (GEN2)	754	bhp	754	bhp	500	500	hours/yr	0.70	g/HP-hr	1.5E-03	1.16	0.29	2.00	No	3.34%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.02	0.09	2.00	No	1.00%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.02	0.09	2.00	No	1.00%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	6.38E-03	0.03	2.00	No	0.32%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	7.18E-03	0.03	2.00	No	0.36%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	0.02	0.07	2.00	No	0.76%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	5.12E-04	0.00	2.00	No	0.03%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	5.12E-04	0.00	2.00	No	0.03%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	5.12E-04	0.00	2.00	No	0.03%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0054	lb/MMBtu	5.4E-03	5.12E-04	0.00	2.00	No	0.03%		8
																Fugitives (tpy):	
TOTAL EMISSIONS											**4.18**	**8.71**				**-0-**	

1 Size is a quantity representing a short-term physical maximum throughput for each emission unit.

2 Units of measure are native to the emission unit type.

3 To simplify calculations across unit types, all throughputs are converted to hourly values.

4 Operating hours are assumed to be 8,760 per year, except for the emergency generator.

5 Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^6 greater than the size.

6 Emission factors come from a variety of sources, explained and cited in the previous table.

7 Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

8 All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

CO Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	WAC 173-400-110 *De Minimis* Threshold (tpy)	Exceeds *De Minimis* Threshold?	WAC 173-460-150 *De Minimis* Threshold (lb/hr)	Exceeds *De Minimis* Threshold?	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH1)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1 Dryer - Dedicated Burner Stack (BRN1)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0738	lb/MMBtu	7.4E-02	1.51	6.63	5.00	Yes	1.10	Yes	8.99%		8
#1 Dryer - Dedicated Burner Stack (BRN2)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0738	lb/MMBtu	7.4E-02	1.51	6.63	5.00	Yes	1.10	Yes	8.99%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#2 Dryer - Dedicated Process Stack (BGH2)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#2 Dryer - Dedicated Burner Stack (BRN3)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0738	lb/MMBtu	7.4E-02	1.51	6.63	5.00	Yes	1.10	Yes	8.99%		
#2 Dryer - Dedicated Burner Stack (BRN4)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0738	lb/MMBtu	7.4E-02	1.51	6.63	5.00	Yes	1.10	Yes	8.99%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULKV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULK1)	8	scfm	480	scfh	8,760	4	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0375	lb/MMBtu	3.8E-02	2.33	10.22	5.00	Yes	1.10	Yes	13.85%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0375	lb/MMBtu	3.8E-02	2.33	10.22	5.00	Yes	1.10	Yes	13.85%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0375	lb/MMBtu	3.8E-02	2.33	10.22	5.00	Yes	1.10	Yes	13.85%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0375	lb/MMBtu	3.8E-02	2.33	10.22	5.00	Yes	1.10	Yes	13.85%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	5.00	No	1.10	No	0.00%		
#1 Emergency Generator (GEN1)	754	bhp	754	bhp	500	500	hours/yr	2.00	g/HP-hr	4.4E-03	3.33	0.83	5.00	No	1.10	Yes	1.13%		
#2 Emergency Generator (GEN2)	754	bhp	754	bhp	500	500	hours/yr	2.00	g/HP-hr	4.4E-03	3.33	0.83	5.00	No	1.10	Yes	1.13%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0824	lb/MMBtu	8.2E-02	0.30	1.33	5.00	No	1.10	No	1.81%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0824	lb/MMBtu	8.2E-02	0.30	1.33	5.00	No	1.10	No	1.81%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	0.0824	lb/MMBtu	8.2E-02	0.10	0.43	5.00	No	1.10	No	0.58%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	0.0824	lb/MMBtu	8.2E-02	0.11	0.48	5.00	No	1.10	No	0.65%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	0.0824	lb/MMBtu	8.2E-02	0.23	1.01	5.00	No	1.10	No	1.37%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0824	lb/MMBtu	8.2E-02	7.82E-03	0.03	5.00	No	1.10	No	0.05%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0824	lb/MMBtu	8.2E-02	7.82E-03	0.03	5.00	No	1.10	No	0.05%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0824	lb/MMBtu	8.2E-02	7.82E-03	0.03	5.00	No	1.10	No	0.05%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0824	lb/MMBtu	8.2E-02	7.82E-03	0.03	5.00	No	1.10	No	0.05%		8
															WAC 173-460-150 *De Minimis* Threshold (lb/yr)	Exceeds *De Minimis* Threshold?		Fugitives (tpy):	
TOTAL EMISSIONS											**23.12**	**73.81**			**1.10**	**Yes**		**-0-**	

[1] Size is a quantity representing a short-term physical maximum throughput for each emission unit.

[2] Units of measure are native to the emission unit type.

[3] To simplify calculations across unit types, all throughputs are converted to hourly values.

[4] Operating hours are assumed to be 8,760 per year, except for the emergency generator.

[5] Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^6 greater than the size.

[6] Emission factors come from a variety of sources, explained and cited in the previous table.

[7] Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

[8] All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

SO_2 Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	WAC 173-400-110 *De Minimis* Threshold (tpy)	Exceeds *De Minimis* Threshold	WAC 173-460-150 *De Minimis* Threshold (lb/hr)	Exceeds *De Minimis* Threshold	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH1)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Dedicated Burner Stack (BRN1)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	1.21E-02	0.05	2.00	No	0.46	No	5.95%		8
#1 Dryer - Dedicated Burner Stack (BRN2)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	1.21E-02	0.05	2.00	No	0.46	No	5.95%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Dedicated Process Stack (BGH2)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Dedicated Burner Stack (BRN3)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	1.21E-02	0.05	2.00	No	0.46	No	5.95%		
#2 Dryer - Dedicated Burner Stack (BRN4)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	1.21E-02	0.05	2.00	No	0.46	No	5.95%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULKV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULK1)	8	scfm	480	scfh	8,760	4	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	0.04	0.16	2.00	No	0.46	No	18.06%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	0.04	0.16	2.00	No	0.46	No	18.06%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	0.04	0.16	2.00	No	0.46	No	18.06%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	0.04	0.16	2.00	No	0.46	No	18.06%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	2.00	No	0.46	No	0.00%		
#1 Emergency Generator (GEN1)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	2.89E-03	0.00	2.00	No	0.46	No	0.08%		
#2 Emergency Generator (GEN2)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	2.89E-03	0.00	2.00	No	0.46	No	0.08%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	2.18E-03	0.01	2.00	No	0.46	No	1.07%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	2.18E-03	0.01	2.00	No	0.46	No	1.07%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	6.96E-04	0.00	2.00	No	0.46	No	0.34%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	7.83E-04	0.00	2.00	No	0.46	No	0.39%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	1.65E-03	0.01	2.00	No	0.46	No	0.81%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	5.59E-05	0.00	2.00	No	0.46	No	0.03%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	5.59E-05	0.00	2.00	No	0.46	No	0.03%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	5.59E-05	0.00	2.00	No	0.46	No	0.03%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0006	lb/MMBtu	5.9E-04	5.59E-05	0.00	2.00	No	0.46	No	0.03%		8
															WAC 173-460-150 *De Minimis* Threshold (lb/yr)	Exceeds *De Minimis* Threshold?		Fugitives (tpy):	
TOTAL EMISSIONS											**0.21**	**0.89**			**0.46**	**No**		**-0-**	

[1] Size is a quantity representing a short-term physical maximum throughput for each emission unit.

[2] Units of measure are native to the emission unit type.

[3] To simplify calculations across unit types, all throughputs are converted to hourly values.

[4] Operating hours are assumed to be 8,760 per year, except for the emergency generator.

[5] Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^6 greater than the size.

[6] Emission factors come from a variety of sources, explained and cited in the previous table.

[7] Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

[8] All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

Benzene Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH1)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Dedicated Burner Stack (BRN1)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	4.22E-05	0.00	2.65%		8
#1 Dryer - Dedicated Burner Stack (BRN2)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	4.22E-05	0.00	2.65%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dedicated Process Stack (BGH2)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dedicated Burner Stack (BRN3)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	4.22E-05	0.00	2.65%		
#2 Dryer - Dedicated Burner Stack (BRN4)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	4.22E-05	0.00	2.65%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULKV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULK1)	8	scfm	480	scfh	8,760	4	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	1.28E-04	0.00	8.03%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	1.28E-04	0.00	8.03%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	1.28E-04	0.00	8.03%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	1.28E-04	0.00	8.03%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#1 Emergency Generator (GEN1)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0016	lb/MMBtu	1.6E-03	7.77E-03	0.00	27.80%		
#2 Emergency Generator (GEN2)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0016	lb/MMBtu	1.6E-03	7.77E-03	0.00	27.80%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	7.61E-06	0.00	0.48%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	7.61E-06	0.00	0.48%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	2.44E-06	0.00	0.15%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	2.74E-06	0.00	0.17%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	5.76E-06	0.00	0.36%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	1.96E-07	0.00	0.01%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	1.96E-07	0.00	0.01%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	1.96E-07	0.00	0.01%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000021	lb/MMBtu	2.1E-06	1.96E-07	0.00	0.01%		8
														Fugitives (tpy):	
TOTAL EMISSIONS											**0.02**	**6.99E-03**		**-0-**	

1 Size is a quantity representing a short-term physical maximum throughput for each emission unit.

2 Units of measure are native to the emission unit type.

3 To simplify calculations across unit types, all throughputs are converted to hourly values.

4 Operating hours are assumed to be 8,760 per year, except for the emergency generator.

5 Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^6 greater than the size.

6 Emission factors come from a variety of sources, explained and cited in the previous table.

7 Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

8 All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

Toluene Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH1)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Dedicated Burner Stack (BRN1)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	6.84E-05	0.00	4.68%		8
#1 Dryer - Dedicated Burner Stack (BRN2)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	6.84E-05	0.00	4.68%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dedicated Process Stack (BGH2)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dedicated Burner Stack (BRN3)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	6.84E-05	0.00	4.68%		
#2 Dryer - Dedicated Burner Stack (BRN4)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	6.84E-05	0.00	4.68%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULKV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULK1)	8	scfm	480	scfh	8,760	4	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	2.07E-04	0.00	14.21%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	2.07E-04	0.00	14.21%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	2.07E-04	0.00	14.21%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	2.07E-04	0.00	14.21%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#1 Emergency Generator (GEN1)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0006	lb/MMBtu	5.6E-04	2.74E-03	0.00	10.73%		
#2 Emergency Generator (GEN2)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0006	lb/MMBtu	5.6E-04	2.74E-03	0.00	10.73%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	1.23E-05	0.00	0.84%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	1.23E-05	0.00	0.84%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	3.94E-06	0.00	0.27%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	4.44E-06	0.00	0.30%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	9.33E-06	0.00	0.64%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	3.17E-07	0.00	0.02%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	3.17E-07	0.00	0.02%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	3.17E-07	0.00	0.02%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000033	lb/MMBtu	3.3E-06	3.17E-07	0.00	0.02%		8
														Fugitives (tpy):	
TOTAL EMISSIONS											**6.64E-03**	**6.40E-03**		**-0-**	

1 Size is a quantity representing a short-term physical maximum throughput for each emission unit.

2 Units of measure are native to the emission unit type.

3 To simplify calculations across unit types, all throughputs are converted to hourly values.

4 Operating hours are assumed to be 8,760 per year, except for the emergency generator.

5 Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^6 greater than the size.

6 Emission factors come from a variety of sources, explained and cited in the previous table.

7 Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

8 All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

Formaldehyde Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Dedicated Burner Stack (BRN1	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	1.51E-03	0.01	2.75%		8
#1 Dryer - Dedicated Burner Stack (BRN2	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	1.51E-03	0.01	2.75%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dedicated Process Stack (BGH	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dedicated Burner Stack (BRN3	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	1.51E-03	0.01	2.75%		
#2 Dryer - Dedicated Burner Stack (BRN4	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	1.51E-03	0.01	2.75%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBU	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBU	8	scfm	480	scfh	8,760	4	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	4.58E-03	0.02	8.33%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	4.58E-03	0.02	8.33%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	4.58E-03	0.02	8.33%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	4.58E-03	0.02	8.33%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#1 Emergency Generator (GEN1)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0528	lb/MMBtu	5.3E-02	0.26	0.06	26.98%		
#2 Emergency Generator (GEN2)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	0.0528	lb/MMBtu	5.3E-02	0.26	0.06	26.98%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	2.72E-04	0.00	0.49%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	2.72E-04	0.00	0.49%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	8.70E-05	0.00	0.16%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	9.79E-05	0.00	0.18%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	2.06E-04	0.00	0.37%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	6.99E-06	0.00	0.01%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	6.99E-06	0.00	0.01%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	6.99E-06	0.00	0.01%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	0.0000735	lb/MMBtu	7.4E-05	6.99E-06	0.00	0.01%		8
														Fugitives (tpy):	
TOTAL EMISSIONS											**0.54**	**0.24**		**-0-**	

1 Size is a quantity representing a short-term physical maximum throughput for each emission unit.

2 Units of measure are native to the emission unit type.

3 To simplify calculations across unit types, all throughputs are converted to hourly values.

4 Operating hours are assumed to be 8,760 per year, except for the emergency generator.

5 Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^6 greater than the size.

6 Emission factors come from a variety of sources, explained and cited in the previous table.

7 Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

8 All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

GHG Emission Estimate

Emission Unit	Size [1]	UOM [2]	Hourly Rate [3]	UOM (/hr)	Operating Hours [4]	Annual Rate [5]	UOM [5] (MM / yr)	Emission Factor [6]	UOM [6]	Emission Factor [7] (lb/UOM)	Emissions (lb/hr)	Emissions (tpy)	% of Profile	Fugitive? (Y/N)	Notes
#1 Dryer - Dedicated Process Stack (BGH1)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Dedicated Burner Stack (BRN1)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	2,402.85	10524.48	5.95%		8
#1 Dryer - Dedicated Burner Stack (BRN2)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	2,402.85	10524.48	5.95%		8
#1 Dryer - Bin Vents (PB1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (PB2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (PB3)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Bin Vents (SSH1)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Dust Collector (DC1)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Packaging Hopper (PHBAGV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Dryer - Packaging Hopper (PHBAG1)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dedicated Process Stack (BGH2)	113,893	scfm	6,833,589	scfh	8,760	59,862	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dedicated Burner Stack (BRN3)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	2,402.85	10524.48	5.95%		
#2 Dryer - Dedicated Burner Stack (BRN4)	21	MMBtu/hr	21	MMBtu/hr	8,760	0.180	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	2,402.85	10524.48	5.95%		
#2 Dryer - Bin Vents (PB5)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (PB6)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (PB7)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Bin Vents (SSH2)	650	scfm	39,000	scfh	8,760	342	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Dust Collector (DC2)	3,200	scfm	192,000	scfh	8,760	1,682	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Packaging Hopper (PHBAGV2)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#2 Dryer - Packaging Hopper (PHBAG2)	988	scfm	59,280	scfh	8,760	519	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULKV1)	30	scfm	1,800	scfh	8,760	16	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1, #2 Dryers - Packaging Hopper (PHBULK1)	8	scfm	480	scfh	8,760	4	MMscf/yr		gr/dscf	0.0E+00	-0-	0.00	0.00%		
#1 Boiler (BLR1)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	7,288.18	31922.21	18.05%		8
#2 Boiler (BLR2)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	7,288.18	31922.21	18.05%		8
#3 Boiler (BLR3)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	7,288.18	31922.21	18.05%		8
#4 Boiler (BLR4)	62	MMBtu/hr	62	MMBtu/hr	8,760	0.545	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	7,288.18	31922.21	18.05%		8
#1 Cooling Tower - Utility (CTU1)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#2 Cooling Tower - Utility (CTU2)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#3 Cooling Tower - Utility (CTU3)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#4 Cooling Tower - Utility (CTU4)	4,266	gpm	255,960	gph	8,760	2,242	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#5 Cooling Tower - Process (CTP1)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#6 Cooling Tower - Process (CTP2)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#7 Cooling Tower - Process (CTP3)	1,148	gpm	68,880	gph	8,760	603	MMgal/yr		lb/gal	0.0E+00	-0-	0.00	0.00%		
#1 Emergency Generator (GEN1)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	141.2500	lb/MMBtu	1.4E+02	694.81	173.70	0.10%		
#2 Emergency Generator (GEN2)	4.919	MMBtu/hr	4.919	MMBtu/hr	500	0.002	Trillion Btu/yr	141.2500	lb/MMBtu	1.4E+02	694.81	173.70	0.10%		
#1 Makeup Air Unit (MAU30A)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	433.03	1896.66	1.07%		8
#2 Makeup Air Unit (MAU30B)	3.7	MMBtu/hr	3.7	MMBtu/hr	8,760	0.032	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	433.03	1896.66	1.07%		8
#3 Makeup Air Unit (MAU31)	1.2	MMBtu/hr	1.2	MMBtu/hr	8,760	0.010	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	138.53	606.75	0.34%		8
#4 Makeup Air Unit (MAU32)	1.3	MMBtu/hr	1.3	MMBtu/hr	8,760	0.012	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	155.86	682.66	0.39%		8
#5 Makeup Air Unit (MAU34)	2.8	MMBtu/hr	2.8	MMBtu/hr	8,760	0.025	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	327.87	1436.09	0.81%		8
#6 Infrared Heater (IH1)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	11.12	48.72	0.03%		8
#7 Infrared Heater (IH2)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	11.12	48.72	0.03%		8
#8 Infrared Heater (IH3)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	11.12	48.72	0.03%		8
#9 Infrared Heater (IH4)	0.1	MMBtu/hr	0.1	MMBtu/hr	8,760	0.001	Trillion Btu/yr	117.0979504	lb/MMBtu	1.2E+02	11.12	48.72	0.03%		8
TOTAL EMISSIONS											**41,686.54**	**176,847.90**		Fugitives (tpy): **-0-**	

1 Size is a quantity representing a short-term physical maximum throughput for each emission unit.

2 Units of measure are native to the emission unit type.

3 To simplify calculations across unit types, all throughputs are converted to hourly values.

4 Operating hours are assumed to be 8,760 per year, except for the emergency generator.

5 Annual emission rate is calculated by multiplying the size by the operating hours. To provide cleaner numbers, each annual emission rate is presented in units 10^6 greater than the size.

6 Emission factors come from a variety of sources, explained and cited in the previous table.

7 Emission factors are standardized to units of lb of emissions per unit of measure for unit size.

8 All boilers, heaters, and burners are sized in terms of heat input (fuel) to the boiler, millions of British thermal units (MMBtu) per hour (MMBtu/hr), higher heating value (HHV) basis.

Additional TAPs Emissions from Emergency Generators

Total of maximum NG firing capacity, two generators	9.84	MMBtu/hr
Annual operation per generator	500	hours

Pollutant	HAP?	TAP?	AP-42 Section 3.2 Emission Factors[1]			Potential Emissions			WAC 173-460-150				
			4SLB (lb/MMBtu)	4SRB (lb/MMBtu)	Maximum (lb/MMBtu)	lb/hr	lb/24-hr	lb/yr	Averaging Period	*De Minimis*	PTE below *De Minimis*?	SQER	PTE below SQER?
1,1,2,2-Tetrachloroethane	HAP	TAP	--	2.53E-05	2.53E-05	2.49E-04	5.97E-03	1.24E-01	year	0.14	TRUE	--	TRUE
1,2,4-Trimethylbenzene	--	TAP	1.43E-05	--	1.43E-05	1.41E-04	3.38E-03	7.03E-02	24-hr	0.22	TRUE	--	TRUE
2-Methylnaphthalene	HAP	--	3.32E-05	--	3.32E-05	3.27E-04	7.84E-03	1.63E-01	--	--	--	--	--
2,2,4-Trimethylpentane	HAP	--	2.50E-04	--	2.50E-04	2.46E-03	5.90E-02	1.23E+00	--	--	--	--	--
Acenaphthene	HAP	--	1.25E-06	--	1.25E-06	1.23E-05	2.95E-04	6.15E-03	--	--	--	--	--
Acenaphthylene	HAP	--	5.53E-06	--	5.53E-06	5.44E-05	1.31E-03	2.72E-02	--	--	--	--	--
Acetaldehyde	HAP	TAP	8.36E-03	2.79E-03	8.36E-03	8.22E-02	1.97E+00	4.11E+01	year	3	FALSE	60	**TRUE**
Acrolein	HAP	TAP	5.14E-03	2.63E-03	5.14E-03	5.06E-02	1.21E+00	2.53E+01	24-hr	0.0013	FALSE	0.026	**FALSE**
Butyr/Isobutyraldehyde	--	--	1.01E-04	--	1.01E-04	9.94E-04	2.38E-02	4.97E-01	--	--	--	--	--
Chrysene	HAP	TAP	6.93E-07	--	6.93E-07	6.82E-06	1.64E-04	3.41E-03	year	0.45	TRUE	--	TRUE
Cyclopentane	--	--	2.27E-04	--	2.27E-04	2.23E-03	5.36E-02	1.12E+00	--	--	--	--	--
Ethane	--	--	1.05E-01	7.04E-02	1.05E-01	1.03E+00	2.48E+01	5.16E+02	--	--	--	--	--
Ethyl benzene	HAP	TAP	3.97E-05	--	3.97E-05	3.91E-04	9.37E-03	1.95E-01	year	3.2	TRUE	--	TRUE
Fluoranthene	HAP	--	1.11E-06	--	1.11E-06	1.09E-05	2.62E-04	5.46E-03	--	--	--	--	--
Fluorene	HAP	--	5.67E-06	--	5.67E-06	5.58E-05	1.34E-03	2.79E-02	--	--	--	--	--
Methyl alchohol (methanol)	HAP	TAP	2.50E-03	--	2.50E-03	2.46E-02	5.90E-01	1.23E+01	--	--	--	--	--
Methylcyclohexane	--	--	1.23E-03	--	1.23E-03	1.21E-02	2.90E-01	6.05E+00	--	--	--	--	--
Dichloromethane	HAP	TAP	2.00E-05	4.12E-05	4.12E-05	4.05E-04	9.73E-03	2.03E-01	year	490	TRUE	--	TRUE
n-Hexane	HAP	TAP	1.11E-03	--	1.11E-03	1.09E-02	2.62E-01	5.46E+00	24-hr	2.6	TRUE	--	TRUE
n-Nonane	--	--	1.10E-04	--	1.10E-04	1.08E-03	2.60E-02	5.41E-01	--	--	--	--	--
n-Octane	--	--	3.51E-04	--	3.51E-04	3.45E-03	8.29E-02	1.73E+00	--	--	--	--	--
n-Pentane	--	--	2.60E-03	--	2.60E-03	2.56E-02	6.14E-01	1.28E+01	--	--	--	--	--
Naphthalene	HAP	TAP	7.44E-05	--	7.44E-05	7.32E-04	1.76E-02	3.66E-01	year	0.24	FALSE	4.8	TRUE
Propane	--	--	4.19E-02	--	4.19E-02	4.12E-01	9.89E+00	2.06E+02	--	--	--	--	--
Pyrene	HAP	--	1.36E-06	--	1.36E-06	1.34E-05	3.21E-04	6.69E-03	--	--	--	--	--
Vinyl Chloride	HAP	TAP	1.49E-05	--	1.49E-05	1.47E-04	3.52E-03	7.33E-02	year	0.92	TRUE	--	TRUE
Xylene (mixture), including m-xylene, o-xylene, p-xylene	HAP	TAP	1.84E-04	1.95E-04	1.95E-04	1.92E-03	4.60E-02	9.59E-01	24-hr	0.82	TRUE	--	TRUE

[1] Includes only emission factors rated "C" or better

Clean in Place (CIP) Emissions Estimates

Parameter	Value	Unit
Liquid flow rate per dryer	660	gal/min
Emission factor for total liquid drift	1.7	lb/10 gal
Calculated emission rate of total liquid drift[1]	67.32	lb/hr
Liquid concentration of NaOH	2%	wt %
Liquid concentration of HNO_3	1%	wt %
Calculated per-dryer emission rate of NaOH[2]	1.35	lb/hr
Calculated per-dryer emission rate of HNO_3[2]	0.67	lb/hr
Number of dryers	2	dryers
Total emission rate of NaOH	2.69	lb/hr
Total emission rate of HNO_3	1.35	lb/hr

1 In lieu of representative emission factors for the CIP process a comparison to cooling towers is conservatively used to calculated potential emissions. Emission factor for total liquid drift from AP-42 Table 13.4-1

2 Emission rates of NaOH and HNO3 calculated by multiplying component concentrations by liquid drift emission rates

APPENDIX B: NOC APPLICATION FORM, PLOT PLAN, AND SEPA DNS

Notice of Construction Application

A notice of construction permit is required before installing a new source of air pollution or modifying an existing source of air pollution. This application applies to facilities in Ecology's jurisdiction. Submit this application for review of your project. For general information about completing the application, refer to Ecology Forms ECY 070-410a-g, "Instructions for Ecology's Notice of Construction Application."

Ecology offers up to two hours of free pre-application assistance. We encourage you to schedule a pre-application meeting with the contact person specified for the location of your proposal, below. If you use up your two hours of free pre-application assistance, we will continue to assist you after you submit Part 1 of the application and the application fee. You may schedule a meeting with us at any point in the process.

Upon completion of the application, please enclose a check for the initial fee and mail to:

Department of Ecology
Cashiering Unit
PO Box 47611
Olympia, WA 98504-7611

For Fiscal Office Use Only: 0299-3030404-B00-216--001--000404

Check the box for the location of your proposal. For assistance, call the appropriate office listed below:

Check box	Ecology Permitting Office	Contact
☐	**Chelan, Douglas, Kittitas, Klickitat, or Okanogan County** Ecology Central Regional Office (509) 575-2490	Lynnette Haller (509) 457-7126 lynnette.haller@ecy.wa.gov
☑	**Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla, or Whitman County** Ecology Eastern Regional Office (509) 329-3400	Karin Baldwin (509) 329-3452 karin.baldwin@ecy.wa.gov
☐	**San Juan County** Ecology Northwest Regional Office (206) 594-0000	David Adler (425) 649-7267 david.adler@ecy.wa.gov
☐	**For actions taken at Kraft and Sulfite Paper Mills and Aluminum Smelters Only** Ecology Industrial Section (360) 407-6900	James DeMay (360) 407-6868 james.demay@ecy.wa.gov
☐	**For actions taken on the US Department of Energy Hanford Reservation Only** Ecology Nuclear Waste Program (509) 372-7950	Lilyann Murphy (509) 372-7951 lilyann.murphy@ecy.wa.gov

Check the box below for the fee that applies to your application.

New project or equipment:

- ☐ **$1,904: Basic project** initial fee covers up to 16 hours of review.
- ☐ **$12,614: Complex project** initial fee covers up to 106 hours of review.

Change to an existing permit or equipment:

- ☑ **$357: Administrative or simple change** initial fee covers up to 3 hours of review. Ecology may determine your change is complex during the completeness review of your application. If you project is complex, you must pay the additional xxx before we will continue working on your application
- ☐ **$1,190: Complex** change initial fee covers up to 10 hours of review
- ☐ **$350flat fee**: Replace or alter control technology equipment under WAC 173-400-114. Ecology will contact you if we determine your change belongs in another fee category. You must pay the fee associated with that category before we will continue working on your application.

Read each statement below, then check the box next to it to acknowledge that you agree.

- ☑ The initial fee you submitted may not cover the cost of processing your application. Ecology will track the number of hours spent on your project. If the number of hours Ecology spends exceeds the hours included in your initial fee, Ecology will bill you $119 per hour for the extra time.
- ☑ You must include all information requested by this application. Ecology may not process your application if it does not include all the information requested.
- ☑ Submittal of this application allows Ecology staff to visit and inspect your facility.

Part 1: General Information

I. Project, Facility, and Company Information

1. Project Name: Darigold Pasco Generators Change NOC Application
2. Facility Name: Darigold Pasco
3. Facility Street Address:
   8201 N Railroad Ave, Pasco, WA 99301
4. Facility Legal Description: Dairy Products Production Facility
5. Company Legal Name (if different from Facility Name):
   Darigold, Inc.
6. Company Mailing Address (street, city, state, zip)

   5601 6th Ave S #300 Seattle, WA 98108

II. Contact Information and Certification

1. Facility Contact Name (who will be onsite): Doug Pettinger, Senior Director
2. Facility Contact Mailing Address (if different than Company Mailing Address:
   Same as Company Mailing Address

3. Facility Contact Phone Number: 206-552-6995
4. Facility Contact E-mail: doug.pettinger@darigold.com
5. Billing Contact Name (who should receive billing information):
   Anthony Ashby
6. Billing Contact Mailing Address (if different Company Mailing Address):

   400 Alexander Rd. Sunnyside, WA 98944

7. Billing contact Phone Number: 208-805-6198
8. Billing Contact E-mail: anthony.ashby@darigold.com
9. Consultant Name (optional – if 3rd party hired to complete application elements):
   John Goetze
10. Consultant Organization/Company: Trinity Consultants
11. Consultant Mailing Address (street, city, state, zip): 405 S 8th St. Ste. 331, Boise, ID 8372
12. Consultant Phone Number: 503-680-0253
13. Consultant E-mail: jgoetze@trinityconsultants.com
14. Responsible Official Name and Title (who is responsible for project policy or decision making):
    Simone Frazier
15. Responsible Official Phone: 206-216-4283
16. Responsible Official E-mail: simone.frazier@darigold.com
17. Responsible Official Certification and Signature:

    I certify that the information on this application is accurate and complete.

Signature: Simone Frazier Date: 3-18-24

Part 2: Technical Information

The Technical Information may be sent with this application form to the Cashiering Unit, or may be sent directly to the Ecology regional office with jurisdiction along with a copy of this application form.

For all sections, check the box next to each item as you complete it.

III. Project Description

- [x] Written narrative describing your proposed project.
- [x] Projected construction start and completion dates.
- [x] Operating schedule and production rates.
- [x] List of all major process equipment and manufacturer and maximum rated capacity.
- [x] Process flow diagram with all emission points identified.
- [x] Plan view site map.
- [x] Manufacturer specification sheets for major process equipment components
- [x] Manufacturer specification sheets for pollution control equipment.
- [x] Fuel specifications, including type, consumption (per hour and per year) and percent sulfur.

IV. State Environmental Policy Act (SEPA) Compliance

Check the appropriate box below.

- [x] SEPA review is complete. Include a copy of the final SEPA checklist and SEPA determination (e.g., DNS, MDNS, and EIS) with your application.
- [ ] SEPA review has not been conducted:
  - [ ] If review will be conducted by another agency, list the agency. You must provide a copy of the final SEPA checklist and SEPA determination before Ecology will issue your permit. Agency reviewing SEPA: _____
  - [ ] If the review will be conducted by Ecology, fill out a SEPA checklist and submit it with your application. You can find a SEPA checklist online at https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-document-templates

V. Emissions Estimations of Criteria Pollutants

Does your project generate criteria air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please proved the following information regarding your criteria emissions in the application.

- [x] The names of the criteria air pollutants emitted (i.e., NO_x, SO_2, CO, $PM_{2.5}$, PM_{10}, TSP, VOC, and Pb)
- [x] Potential emissions of criteria air pollutants in tons per hour, tons per day, and tons per year (include calculations)
- [x] If there will be any fugitive criteria pollutant emissions, clearly identify the pollutant and quantity

VI. Emissions Estimations of Toxic Air Pollutants

Does your project generate toxic air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please provide the following information regarding your toxic air pollutant emissions in your application.

- [x] The names of the toxic air pollutants emitted (specified in WAC 173-460-150[1])
- [x] Potential emissions of toxic air pollutants in pounds per hour, pounds per day, and pounds per year (include calculations)
- [x] If there will be any fugitive toxic air pollutant emissions, clearly identify the pollutant and quantity

VII. Emission Standard Compliance

- [x] Provide a list of all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, and emission standards adopted under Chapter 70A.15 RCW.

Does your project comply with all applicable standards identified? [x] **Yes** [ ] **No**

VIII. Best Available Control Technology

- [x] Provide a complete evaluation of Best Available Control Technology (BACT) for your proposal.

IX. Ambient Air Impacts Analyses

Please provide the following:

- [ ] Ambient air impacts analyses for Criteria Air Pollutants (including fugitive emissions)
- [ ] Ambient air impacts analyses for Toxic Air Pollutants (including fugitive emissions)
- [ ] Discharge point data for each point included in air impacts analyses (include only if modeling is required)
  - [ ] Exhaust height
  - [ ] Exhaust inside dimensions (ex. diameter or length and width)
  - [ ] Exhaust gas velocity or volumetric flow rate
  - [ ] Exhaust gas exit temperature
  - [ ] The volumetric flow rate
  - [ ] Description of the discharges (i.e., vertically or horizontally) and whether there are any obstructions (ex., raincap)
  - [ ] Identification of the emission unit(s) discharging from the point
  - [ ] The distance from the stack to the nearest property line
  - [ ] Emission unit building height, width, and length
  - [ ] Height of tallest building on-site or in the vicinity and the nearest distance of that building to the exhaust
  - [ ] Whether the facility is in an urban or rural location

Does your project cause or contribute to a violation of any ambient air quality standard or acceptable source impact level? [ ] **Yes** [x] **No**

To request ADA accommodation, call Ecology at (360) 407-6800, 711 (relay service), or (877) 833-6341 (TTY)

[1] http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150

To find out if there are more records for this project, contact our Public Records Office.
Complete and submit a records request, visit: https://ecology.wa.gov/footer-pages/public-records-requests

City of Pasco
Community Development Department
PO Box 293, 525 N 3rd Ave, Pasco, WA 99301
P: 509.545.3441 / F: 509.545.3499

DETERMINATION OF NON-SIGNIFICANCE
(Optional DNS Process)

Issuance Date: January 27, 2022

Project Name: Darigold

Project Number: SEPA2021-086

Proponent: Port of Pasco
1110 Osprey Pointe Boulevard, Ste 201
Pasco, WA 99301

Applicant: Darigold Inc.
5601 6th Avenue, Ste 300
Seattle, WA 98108

Description of Proposal: Construction of a raw milk input dairy processing plant which will produce butter, milk powders and fluid condensed skim milk.

Location of Proposal: Parcel #124-680-039 in Franklin County, WA. The project site is currently undergoing the process of annexation into the City of Pasco, and coordination with Franklin County is ongoing.

Comment to Applicant:

1. Checklist item (A)(7) "Background": This location is currently beyond the Pasco Fire Department Service area recognized by the Washington Survey and Rating Bureau.
2. Checklist item (B)(15)(a) "Public Services": The city would need to add a fire station within 5 miles to include this area within the Washington Survey and Rating Bureau Service area boundaries.
3. Checklist item (B)(15)(b) "Public Services": The addition of a production facility on vacant land will increase the frequency of services being provided to this site.

Lead Agency: City of Pasco

The City of Pasco, acting as lead agency for this proposal, has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request. This DNS is issued after using the optional DNS

City of Pasco
Community Development Department
PO Box 293, 525 N 3rd Ave, Pasco, WA 99301
P: 509.545.3441 / F: 509.545.3499

process in WAC 197-11-355. There is no further comment period on the DNS. Appeals must be filed within 10 days of this determination.

Responsible Official: _____
Rick White, Community & Economic Development Director

Address: PO Box 293, Pasco, WA 99301-0293

Phone: (509) 545-3441

Appeals: You may appeal this determination of non-significance by submitting an appeal to the address below no later than **February 6, 2022** (10 days from issuance). The appeal must be in written form, contain a concise statement of the matter being appealed and the basic rationale for the appeal. A fee is required per the City's Fee Resolution. Please note that failure to file a timely and complete appeal shall constitute a waiver of all rights to an administrative appeal under City code. All comments or appeals are to be directed to the City of Pasco Planning Department, PO Box 293, Pasco, WA, 99301, Attn: Rick White.