

**ENGINEERING EVALUATION
AUTHORITY TO CONSTRUCT**

Facility Name: Better Buzz Coffee Company
Application Number: APCD2024-APP-008345
Equipment Type: 616 lbs/hour coffee roaster
Facility ID: APCD2010-SITE-00380
Equipment Address: 1150 Joshua Way, Vista, CA 92081
Facility Contact: Craig Rood
(760) 936- 7011, craig@betterbuzzcoffee.com

Permit Engineer:

8/28/2024

X Priscilla Castanon

Priscilla Castanon
Signed by: 9633941a-18e2-4f2e-adf1-2707549e5c7c

Senior Engineer Signature:

X

Nicholas Horres

1.0 BACKGROUND

- 1.1 Type of Application – New equipment application.
- 1.2 Permit History – First permit application for this equipment. The site has one other permit for a Diedrich coffee roaster that was issued in 2010.
- 1.3 Facility Description – Coffee roasting facility.
- 1.4 Other Background Information – No hearing board actions, permit denials, legal settlements, no NOV, not a Title V facility.

2.0 PROCESS DESCRIPTION

- 2.1 Equipment Description –
Coffee Roaster Make: US Roaster Corp
Model: US Millennium 70 Kilo, S/N 1493
616 lbs/hour roasting capacity, with 0.40 MMBtu/hour natural gas burner with catalytic afterburner
Afterburner Make: US Roaster Corp
Model: 120-1, S/N 1494, with 0.30 MMBtu/hour natural gas burner.
- 2.2 Process – Coffee beans are roasted in the roasting drum and released into the cooling pan. Pulps generated from the rotating roaster are collected by the cyclone. Smoke and odor from the roasting process are captured and controlled by the afterburner.
- 2.3 Emissions Controls – Afterburner
- 2.4 Attachments – Manufacturer specs sheets.

3.0 EMISSIONS

- 3.1 Emission Estimate Summary –

Potential Emissions:

	Lbs/hour	Lbs/day	Tons/year
NOx	0.12	2.80	0.51
CO	0.02	0.40	0.07
SOx	0.00	0.01	0.00
NMHC	0.02	0.44	0.08
PM 10	0.03	0.77	0.14
VOC	0.01	0.35	0.06

Actual Expected Emissions:

	Lbs/hour	Lbs/day	Tons/year
NOx	0.12	0.93	0.07
CO	0.02	0.13	0.01
SOx	0.00	0.00	0.00
NMHC	0.02	0.15	0.01
PM 10	0.03	0.26	0.02
VOC	0.01	0.12	0.01

Potential Site Emissions:

	Lbs/hour	Lbs/day	Tons/year
NOx	0.33	7.80	1.42
CO	0.05	1.10	0.20
SOx	0.00	0.03	0.01
NMHC	0.03	0.74	0.14
PM 10	0.05	1.25	0.23
VOC	0.02	0.49	0.09

3.2 Emission Estimate Assumptions –

- . Potential emissions are based on 24 hours/day and 365 days/year roasting operation,
- . Actual expected emissions are based on 8 hours/day and 1248 hours per year roasting operation.
- . Site emissions are based on 24 hours/day and 365 days/year roasting operation between existing and new roaster operating simultaneously at the site.
- . Emission factors for Coffee Roasting are from AP-42 Table 9.13.2. Emission factors for natural gas combustion are from District default emission factors for uncontrolled boilers.

3.3 Emission Calculations – See APP008345_Calculations

4.0 APPLICABLE RULES

4.1 Prohibitory Rules

Rule 50: Visible emissions

This Rule prohibits any person from discharging from any sources of emissions for a period of more than three minutes any air contaminant which is darker in shade than that designated as Number 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to a degree greater than does smoke of a shade designated as number 1 on the Ringelmann chart. *The roaster is equipped with an afterburner which is expected to reduce visible emissions significantly. This coffee roaster is expected comply with this rule.*

Rule 51: Nuisance

This Rule prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other materials which causes injury, nuisance or annoyance to the public or which causes damage to business or property.

With an afterburner, nuisance complaints are not expected from this coffee roaster.

Rule 52: Particulate matter

This rule prohibits any source from discharging particulate matter in excess of 0.10 grains per dry standard cubic foot of gas.

Particulate emissions from this coffee roaster are 0.008 grains/dry standard cubic foot of gas.

4.2 20.2 New Source Review

Best Available Control Technology:

Rule 20.2(d)(1)(i) requires any new or modified unit which has any increase in its potential to emit and which has a post-project potential to emit of 10 lbs per day or more of particulate matter (PM), NO_x, VOC, SO_x, or CO to be equipped with Best Available Control Technology (BACT) for each such air contaminant.

Daily emissions from this coffee roaster does not trigger BACT.

Air Quality Impact Analysis

Rule 20.2 (d)(2)(i) requires any new or modified unit which results in emissions increase equal to or greater than the amounts listed below to perform an Air Quality Impact Analysis:

Particulate Matter (PM): 100 lbs/day, 15 tpy

NO_x: 25 lbs/hour, 250 lbs/day, 40 tpy

SO_x: 25 lbs/hour, 250 lbs/day, 40 tpy

CO: 100 lbs/hour, 550 lbs/day, 100 tpy

Lead and lead compounds: 3.2 lbs/day, 0.6 tpy

This coffee roaster does not trigger AQIA.

It is to be of note, that if the site were to operate both roasters simultaneously, the emissions will not exceed any of the above emission thresholds.

Prevention of Significant Deterioration (PSD)

Rule 20.2 (d)(3) states that the District shall not issue an Authority to Construct or modified Permit to Operate for any project which will have a significant impact on a Class I Area or will have after issuance of a Permit, an aggregate potential to emit one or more air contaminants in amounts equal to or greater than 250 tons/year of PM₁₀, NO_x, VOC, SO_x, CO.

The emissions from this coffee roaster do not trigger PSD requirements.

Public Notice and Comment

Rule 20.2 (d)(4) requires a public notice and comment period for any applications which require an AQIA under Sections d(2) or d(3).

This coffee roaster does not trigger the Public notice and Comments requirements.

4.3 Toxic New Source Review- Rule 1200

Rule 1200 applies to any new, relocated or modified emission unit which results in any increase in emissions of one or more toxic air contaminant(s), and for which an Authority to Construct or Permit to Operate is required. This rule requires health risks be reviewed to ensure the risks are below one in one million for cancer (with T-BACT installed), and that the health hazard index is less than one from chronic non-cancer and acute toxic air contaminants.

The majority of toxic emissions from this coffee roaster are from the natural gas combustion of the roaster and afterburner burners. The use of natural gas as fuel for the coffee roaster and use of an afterburner qualify this equipment as T-BACT, which allows for cancer risk to be 10 in one million or less. The toxic emissions from this coffee roaster were evaluated through the de minimis screening and passed, with 0.0 in 1 for acute risk and 0.1 in one million for cancer risk.

Therefore, a refined HRA was not required.

4.4 AB3205-

AB3205 requires a public notice prior to issuing an Authority to Construct for equipment emitting hazardous air contaminants at a facility within 1000 feet of a school.

This coffee roaster is located within 1,000 ft of two schools. Therefore, an AB3205 public notice is required. This section will remain open until the comment period has closed.

4.5 NESHAPS AND ATCMs- This coffee roaster is not subject to NESHAPS and ATCMs requirements.

5.0 RECOMMENDATION

The proposed coffee roaster is expected to comply with all the applicable rules and regulations. An Authority to Construct is recommended.

6.0 RECOMMENDED CONDITIONS

Standard conditions of APCD2023-CON-002056 with a new condition to indicate the afterburner operating temperature are recommended.

Condition #	Description	Rule Reference
1. C1600	Visible emissions from this equipment shall not exceed 20% opacity (#1 Ringelmann) for more than a total of 3 minutes in any 60 consecutive minutes. (Rule 50)	Rule 50
2. C7256	The emission control equipment including the cyclone and afterburner shall be in operation whenever the coffee roaster is operated.	Rule 1200 Rule 20.2
3. New	Within 3 minutes of the start of a roasting cycle, the afterburner exhaust temperature as indicated on the temperature control panel shall be 950 degrees Fahrenheit or more until the end of the roasting cycle.	Rule 1200 Rule 20.2
4. C46640	The afterburner shall be equipped with an operational temperature gauge that displays the temperature of the exhaust. Records of afterburner exhaust temperature readings during each batch shall be maintained onsite for a minimum of 3 years and be readily available for District inspection upon request.	Rule 1200 Rule 20.2
5. C21726	Roaster fan, chaff collector, and all exhaust ductwork shall be cleaned as frequently as required to 1) minimize build-up on the walls of the exhaust ductwork, and 2) minimize any odors permeating from the roaster to the surrounding area that may cause a public nuisance.	Rule 50 Rule 51 Rule 52
6. C7257	There shall be no leakage of gases from the coffee roaster exhaust prior to treatment in the emission control system. At the start of each day the control equipment and gas transport ducts shall be inspected for leaks and upon discovery, all gas leaks shall be sealed prior to any coffee roasting.	Rule 1200 Rule 20.2
7. C22729	At no time shall the subject equipment cause or contribute to a public nuisance as specified in District Rule 51.	Rule 51
8. CHW001	Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.	District Standard
9. CHW002	This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies.	District Standard
10. CHW003	The permittee shall, upon determination of applicability and written notification by the District, comply with all applicable requirements of the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.)	District Standard