



# Puget Sound Clean Air Agency

## General Order of Approval

### 5 kg – 12 kg Coffee Roasting Operation

General Order No. CRO-1

General Order Date: X, XX, XXXX

#### TERMS AND CONDITIONS

#### **PUGET SOUND CLEAN AIR AGENCY HEREBY ISSUES A GENERAL ORDER OF APPROVAL TO CONSTRUCT, INSTALL, OR ESTABLISH**

One (1) commercially manufactured 5 kg- 12 kg coffee roaster with cooling tray and roaster exhaust controlled by either thermal or catalytic oxidizer.

#### **THIS ORDER IS ISSUED SUBJECT TO THE FOLLOWING RESTRICTIONS AND CONDITIONS**

1. Approval is hereby granted as provided in Article 6 of Regulation 1 of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the INSTALLATION ADDRESS in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.
2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.
3. All gases from the roaster and associated cooling tray shall be vented through a thermal or catalytic oxidizer at all times.
4. The roaster permitted under this order must limit daily production to 950 lb/day green coffee or less. Compliance with this condition to be demonstrated through production records.
5. The roaster and oxidizer permitted under this order must utilize either natural gas, propane, or electricity for operation.
6. The roaster permitted under this order must utilize a chaff cyclone.
7. The exhaust stack from the thermal or catalytic oxidizer shall be vertical and unobstructed. The oxidizer exhaust stack shall not utilize a rain cap that would in any way obstruct the exhaust. The exhaust stack height must be at least three feet above the building roofline.
8. There shall be no visible emissions from the thermal or catalytic oxidizer exhaust stack.
9. The thermal or catalytic oxidizer shall be operated at a temperature greater than or equal to 1250°F for thermal oxidizers and 600°F-900°F for catalytic oxidizers from at least the time the roast air temperature reaches 270 °F, until the completion of the cooling process or for such additional time as needed to meet Condition 8 (no visible emissions). If the beans produce smoke before the temperature reaches 270°F the oxidizer must reach the minimum operating temperature at a lower bean temperature as needed to meet Condition 8.
10. Residence time in the thermal or catalytic oxidizer must be greater than or equal to 0.5 seconds.
11. The owner or operator shall install and operate gauges to measure the roast air temperature and the oxidizer temperature. Temperature gauge accuracy shall be  $\pm 10^{\circ}\text{F}$ . In the event of a gauge failure or malfunction,



## Puget Sound Clean Air Agency

### General Order of Approval

#### 5 kg – 12 kg Coffee Roasting Operation

General Order No. CRO-1

General Order Date: X, XX, XXXX

the roasting process shall be shut down until corrective action is taken. The date of all gauge failures and corrective actions taken shall be logged.

12. The owner or operator shall annually test or replace the thermocouples serving the oxidizer and the thermocouples serving the roaster. If performed, the test shall consist of either a physical or electronic comparison and shall follow manufacturer specifications. The results of the test readings must be within  $\pm 10^{\circ}\text{F}$ . If the results of the test readings exceed  $\pm 10^{\circ}\text{F}$  of the reference value then the thermocouple must be replaced or adjusted to read within  $\pm 10^{\circ}\text{F}$  of the reference value. The owner or operator shall record the date and results of each test and a record of who performed the test. The owner or operator shall keep a record of the date a thermocouple was replaced and who replaced the thermocouple.
13. The owner or operator shall make the roast air temperature and oxidizer temperature available for instantaneous readout by Puget Sound Clean Air Agency personnel at any time.
14. The owner or operator shall record the Agtron number or an equivalent parameter identifying the darkness of the roast for each batch of coffee roasted. Agtron tiles can be used to determine the Agtron number, but other methods of identifying the darkness of roast are acceptable.
15. Ongoing compliance with Conditions 8 and 9 shall, at a minimum be demonstrated through quarterly observations. At least once every calendar quarter, while roasting a batch of the darkest coffee processed during the previous 30 day period, the owner or operator shall observe the emissions from the oxidizer stack throughout the entire roast cycle. During the observations, the owner or operator shall record:
  - a. The date and time of the beginning and end of the observation;
  - b. The observer's name;
  - c. Presence or absence of visible emissions and time of visible emission observation if applicable;
  - d. Agtron number or equivalent parameter for identifying the darkness of the roast; and
  - e. Records of 30-second interval readings of the roaster air temperature and of the thermal or catalytic oxidizer temperature throughout the entire observation.
16. If observations taken under Condition 15 show that the roaster is out of compliance with Condition 8 or 9, or in the event of any failure such that the owner or operator cannot meet Condition 8 or 9, the roasting process shall be shut down until the problem is fixed. The date of the noncompliance, a description of the noncompliance and actions taken to resolve the noncompliance shall be logged at the time the actions are taken.
17. CO emissions from the oxidizer stack shall not exceed 4.20 lb/ton green bean roasted.
18. NOx emissions from the oxidizer stack shall not exceed 0.2 lb/MMBTU.
19. VOC emissions from the oxidizer stack shall not exceed 0.047 lb/ton green coffee roasted.



## Puget Sound Clean Air Agency

### General Order of Approval

#### 5 kg – 12 kg Coffee Roasting Operation

General Order No. CRO-1

General Order Date: X, XX, XXXX

20. Stack tests to determine compliance shall be conducted if requested by the Agency. If requested by the Agency the owner/operator must perform a stack test to demonstrate ongoing compliance with conditions 17, 18, or 19. The owner/operator must conduct stack testing in accordance with Section 3.07 of PSCAA Regulation I. If a test is required by the Agency, the owner/operator must submit a stack test plan at least 60 days before performing the stack test.
21. All logs or records maintained in compliance with this Order of Approval shall be kept for at least two years and made available to Agency personnel upon request. Electronic data collection of temperature readings is acceptable.

#### APPEAL RIGHTS

Pursuant to Regulation I, Section 3.17 and RCW 43.21B.310, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, an appeal must be filed with the PCHB and a copy served upon Puget Sound Clean Air Agency within 30 days of receiving this Order.

---

Carole Cenci, P.E.  
Senior Engineer

---

John Dawson, P.E.  
Engineering Manager