

# Authority to Construct Application Review Chain-Driven Charbroiler - Increasing Meat Cooked

**Processing Engineer:** [Engineer's Name]  
**Lead Engineer:** [Lead Engineer]  
**Date:** June 1, 2016

**Facility Name:** [Facility Name]  
**Mailing Address:** [Mailing Address]  
[City, State, Zip]

**Contact Name:** [Contact Name]  
**Phone:** [Phone]

**Project Number:** [Project Number]  
**Permit Number:** [Permit Number]  
**Deemed Complete:** [Completion Date]

## I. PROPOSAL

[Facility Name] is in the fast food restaurant business. The applicant is proposing to modify their existing charbroiler, PTO [Current PTO#] ([Appendix A](#)), by increasing the maximum amount of meat cooked from [Current Meat] lb/day to [Proposed Meat] lb/day.

## II. APPLICABLE RULES

Rule 2201 New and Modified Stationary Source Review Rule  
([August 15, 2019](#))  
Rule 2520 Federally Mandated Operating Permits ([August 15, 2019](#))  
Rule 4101 Visible Emissions (February 17, 2005)  
Rule 4102 Nuisance (December 17, 1992)  
Rule 4201 Particulate Matter Concentration (December 17, 1992)  
Rule 4692 Commercial Charbroiling (March 21, 2002)  
Rule 4801 Sulfur Compounds (December 17, 1992)  
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

## III. PROJECT LOCATION

The project is located at [Street Address] in [City], California. The applicant states that the equipment is **not** located within 1,000 feet of a K-12 school. The District has verified that the equipment **is not** located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is **not** applicable to this project.

#### IV. PROCESS DESCRIPTION

This facility is a food handling and preparation facility that primarily serves the public. A chain-driven charbroiler is a semi-enclosed natural gas-fired cooking device that provides heat to cook food as it moves through the device while resting on the moving, chain-driven grated grill.

#### V. EQUIPMENT LISTING

##### Pre-Project Equipment Description:

PTO# [Current PTO#]: COMMERCIAL CHARBROILER: [BURNER RATING] MMBTU/HR [MANUFACTURER'S NAME] MODEL [NUMBER] NATURAL GAS-FIRED CHAIN-DRIVEN CHARBROILER SERVED BY [MANUFACTUER] MODEL [NUMBER] CATALYTIC OXIDIZER

##### Proposed Modification:

ATC #[Permit Number]: MODIFICATION OF COMMERCIAL CHARBROILER: [BURNER RATING] MMBTU/HR [MANUFACTURER'S NAME] MODEL [NUMBER] NATURAL GAS-FIRED CHAIN-DRIVEN CHARBROILER SERVED BY [MANUFACTUER] MODEL [NUMBER] CATALYTIC OXIDIZER: INCREASE MEAT THROUGHPUT FROM [Current Meat] LB/DAY TO [Proposed Meat] LB/DAY.

##### Post-Project Equipment Description:

PTO #[Permit Number]: COMMERCIAL CHARBROILER: [BURNER RATING] MMBTU/HR [MANUFACTURER'S NAME] MODEL [NUMBER] NATURAL GAS-FIRED CHAIN-DRIVEN CHARBROILER SERVED BY [MANUFACTUER] MODEL [NUMBER] CATALYTIC OXIDIZER

#### VI. EMISSION CONTROL TECHNOLOGY EVALUATION

In this process' exhaust stream, PM<sub>10</sub> and VOCs are mixed with air before entering the flameless reactor vessel. The air mixture is evenly distributed into a bed of inert ceramic material coated with a metal catalyst. This bed provides complete mixing of the PM<sub>10</sub> and VOC with oxygen. The PM<sub>10</sub> and VOC adsorb on the surface of the ceramic bed are oxidize into carbon dioxide and water vapor once the polluted exhaust stream reaches operating temperature of 600-800°F. The scrubbed exhaust stream leaves the ceramic bed flowing out through the stack.

Proper cleaning and maintenance of the catalytic oxidizer is very important for effective oxidation of VOCs and PM<sub>10</sub>. Visible emissions are also indicators of proper oxidation catalyst efficiency. Testing in the South Coast Air basin has shown an overall VOC and PM<sub>10</sub> removal efficiency of 86% and 83%, respectively. To ensure optimal removal efficiencies, visible emissions from the catalyst should be Ringelmann 0 or 0% opacity. Catalyst manufacturers' have recommended cleaning at least once per month with materials that do not damage the catalytic coating, such as a warm water bath.

**VII. CALCULATIONS**

For NO<sub>x</sub>, SO<sub>x</sub> and CO, the potentials to emit are calculated based on the quantity of natural gas combusted. For PM<sub>10</sub> and VOC, the potentials to emit are calculated based on the quantity of meat cooked.

**A. Assumptions:**

- The charbroiler will be fired on natural gas as fuel (per applicant).
- Worst-case Operating Schedule: 24 hours/day, 365 days/year.
- Maximum Burner Rating: [BURNER RATING] MMBtu/hr.
- Catalytic Oxidizer has a PM<sub>10</sub> control efficiency of 83% (SCAQMD testing).
- Catalytic Oxidizer has a VOC control efficiency of 86% (SCAQMD testing).
- F-Factor: 8,578 dscf/MMBtu @ 60°F (STP) (40 CFR, Part 60, Appendix A).
- Exhaust Flow Rate: [Flow Rate] cfm (per applicant).
- Daily Pre-project Maximum Meat Cooked: [Current Meat] lb/day (per applicant).
- Daily Post-project Maximum Meat Cooked: [Proposed Meat] lb/day (per applicant).

**B. Emission Factors:**

The emission factors for NO<sub>x</sub>, SO<sub>x</sub> and CO are from AP-42 (10/96), Table 1.4-1 and 1.4-2 for natural gas combustion (burners – 0.3 MMBtu/hr or less).

<b>Table 1. Natural Gas Emission Factors</b>	
Pollutant	EF <sub>(Natural Gas)</sub> (lb/MMBtu)
NO <sub>x</sub>	0.0940
SO <sub>x</sub>	0.0029
PM <sub>10</sub>	See Note (1)
CO	0.0210
VOC (non-methane)	See Note (1)

(1) PM<sub>10</sub> and VOC emissions from combustion are included within the emission factors for meat cooking discussed below.

The following uncontrolled emission factors for meat cooked were obtained from the South Coast Air Quality Management District (SCAQMD) and are based on source test results of similar units:

- EF<sub>PM10</sub> = 7.42 lb-PM<sub>10</sub>/10<sup>3</sup> lb-Meat Cooked (Uncontrolled)

- $EF_{VOC} = 2.27 \text{ lb-VOC}/10^3 \text{ lb-Meat Cooked (Uncontrolled)}$

**C. Emissions Calculations:**

**1. Pre-Project Potential to Emit (PE1)**

PM<sub>10</sub> and VOC Emissions from Chain-driven Charbroiler:

Max. Meat Cooked (Daily) = [Current Meat] lb/day

$$\begin{aligned}
 PE_{PM_{10}\text{-Meat Cooked}} &= EF_{PM_{10}} (\text{lb-PM}_{10}/10^3 \text{ lb-Meat Cooked}) \times \text{Max. Meat Cooked (lb/day)} \times (1 - CE) \\
 &= (7.42 \text{ lb-PM}_{10}/10^3 \text{ lb-Meat Cooked}) \times ([\text{Current Meat}] \text{ lb/day}) \times (1 - 0.83) \\
 &= \mathbf{0.0 \text{ lb-PM}_{10}/\text{day}}
 \end{aligned}$$

$$\begin{aligned}
 PE_{VOC\text{-Meat Cooked}} &= EF_{VOC} (\text{lb-VOC}/10^3 \text{ lb-Meat Cooked}) \times \text{Max. Meat Cooked (lb/day)} \times (1 - CE) \\
 &= (2.27 \text{ lb-VOC}/10^3 \text{ lb-Meat Cooked}) \times ([\text{Current Meat}] \text{ lb/day}) \times (1 - 0.86) \\
 &= \mathbf{0.0 \text{ lb-VOC}/\text{day}}
 \end{aligned}$$

Emissions from the Combustion of Natural Gas:

Max. Burner Rating: [BURNER RATING] MMBtu/hr  
 Operating Hours: 24 hr/day

$$PE_{\text{Natural Gas}} (\text{lb/day}) = \text{Max. Natural Gas Usage (MMBtu/hr)} \times \text{Emission Factor (lb/MMBtu)} \times 24 \text{ hr/day}$$

<b>Table 2. Natural Gas Combustion Emissions Summary</b>				
Pollutant	$EF_{(\text{Natural Gas})}$ (lb/MMBtu)	Max Burner Rating (MMBtu/hr)	Hours of Operation (hr/day)	PE (lb/day)
NO <sub>x</sub>	0.0940	[BURNER RATING]	24	0.0
SO <sub>x</sub>	0.0029	[BURNER RATING]	24	0.0
PM <sub>10</sub>	See Note (1)			N/A
CO	0.0210	[BURNER RATING]	24	0.0
VOC (non-methane)	See Note (1)			N/A

(1) PM<sub>10</sub> and VOC emissions from combustion are included within the emission factors for the meat cooked.

Total Emissions from the chain-driven charbroiler:

$$PE_{Total} = PE_{Meat Cooked} + PE_{Combustion}$$

$$Annual PE = PE_{Total} \times 365 \text{ days/year}$$

$$Quarter PE = Annual PE \div 4 \text{ qtr/yr}$$

<b>Table 3. Pre-Project Potential to Emit (PE1) Summary</b>					
<b>Pollutant</b>	<b>PE<sub>Meat Cooked</sub> (lb/day)</b>	<b>PE<sub>Combustion</sub> (lb/day)</b>	<b>PE<sub>Total</sub> (lb/day)</b>	<b>Annual PE (lb/year)</b>	<b>Quarter PE (lb/qtr)</b>
NO <sub>x</sub>	---	0.0	0.0	0	0
SO <sub>x</sub>	---	0.0	0.0	0	0
PM <sub>10</sub>	0.0	---	0.0	0	0
CO	---	0.0	0.0	0	0
VOC	0.0	---	0.0	0	0

**2. Post-project Potential to Emit (PE2)**

PM<sub>10</sub> and VOC Emissions from Chain-driven Charbroiler:

$$\text{Max. Meat Cooked (Daily)} = [\text{Proposed Meat}] \text{ lb/day}$$

$$\begin{aligned} PE_{PM_{10}\text{-Meat Cooked}} &= EF_{PM_{10}} (\text{lb-PM}_{10}/10^3 \text{ lb-Meat Cooked}) \times \text{Max. Meat Cooked (lb/day)} \times (1 - CE) \\ &= (7.42 \text{ lb-PM}_{10}/10^3 \text{ lb-Meat Cooked}) \times ([\text{Proposed Meat}] \text{ lb/day}) \times (1 - 0.83) \\ &= \mathbf{0.0 \text{ lb-PM}_{10}/\text{day}} \end{aligned}$$

$$\begin{aligned} PE_{VOC\text{-Meat Cooked}} &= EF_{VOC} (\text{lb-VOC}/10^3 \text{ lb-Meat Cooked}) \times \text{Max. Meat Cooked (lb/day)} \times (1 - CE) \\ &= (2.27 \text{ lb-VOC}/10^3 \text{ lb-Meat Cooked}) \times ([\text{Proposed Meat}] \text{ lb/day}) \times (1 - 0.86) \\ &= \mathbf{0.0 \text{ lb-VOC}/\text{day}} \end{aligned}$$

Emissions from the Combustion of Natural Gas:

Since post-project emissions for natural gas combustion are the same as the pre-project emissions for natural gas combustion, then **PE2 = PE1** (in lbs/day).

Total Emissions from the chain-driven charbroiler:

$$PE_{Total} = PE_{Meat Cooked} + PE_{Combustion}$$

$$Annual PE = PE_{Total} \times 365 \text{ days/year}$$

$$Quarter PE = Annual PE \div 4 \text{ qtrs/yr}$$

<b>Table 4. Post-Project Potential to Emit (PE2) Summary</b>					
Pollutant	PE <sub>Meat Cooked</sub> (lb/day)	PE <sub>Combustion</sub> (lb/day)	PE <sub>Total</sub> (lb/day)	Annual PE (lb/year)	Quarter PE (lb/qtr)
NO <sub>x</sub>	---	0.0	0.0	0	0
SO <sub>x</sub>	---	0.0	0.0	0	0
PM <sub>10</sub>	0.0	---	0.0	0	0
CO	---	0.0	0.0	0	0
VOC	0.0	---	0.0	0	0

### 3. Pre-Project Stationary Source Potential To Emit (SSPE1)

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

<b>Table 5. Pre-Project SSPE1 Summary</b>						
Permits	Description	NO <sub>x</sub> (lb/yr)	SO <sub>x</sub> (lb/yr)	PM <sub>10</sub> (lb/yr)	CO (lb/yr)	VOC (lb/yr)
[Current PTO#]	Charbroiler	0	0	0	0	0
<b>Total SSPE1</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### 4. Post-Project Stationary Source Potential To Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

<b>Table 6. Post-Project SSPE2 Summary</b>					
Permits	NO <sub>x</sub> (lb/yr)	SO <sub>x</sub> (lb/yr)	PM <sub>10</sub> (lb/yr)	CO (lb/yr)	VOC (lb/yr)
[Permit Number]	0	0	0	0	0
<b>Total SSPE2</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**5. Major Source Determination**

Pursuant to Section 3.25 of District Rule 2201, a major source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.25.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

<b>Table 7. Major Source Determination</b>					
	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)
Pre-Project SSPE (SSPE1)	0	0	0	0	0
Post Project SSPE (SSPE2)	0	0	0	0	0
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As seen in the table above, the facility is not an existing Major Source and also is not becoming a Major Source as a result of this project.

**6. Baseline Emissions (BE)**

BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.23

Since this is not a Major Source, BE = PE1 for all criteria pollutants.

**7. SB 288 Major Modification**

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

As discussed in Section VII.C.5 above, this facility is not a major source for any of the pollutants addressed in this project; therefore, the project does not constitute a SB 288 Major Modification.

**8. Federal Major Modification**

District Rule 2201, Section 3.18 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM<sub>10</sub> (140,000 lb/year), it is not a major source for PM<sub>2.5</sub> (200,000 lb/year).

**9. Quarterly Net Emissions Change (QNEC)**

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are shown in the table below:

<b>Table 8. Quarterly Net Emissions Change (QNEC) Summary</b>						
Permit		NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
[Facility Number]-1	Qtr PE2 (lb/qtr)	0	0	0	0	0
	Qtr PE1(lb/qtr)	0	0	0	0	0
	Qtr ΔPE (lb/qtr)	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**VIII. Compliance**

**Rule 2201 New and Modified Stationary Source Review Rule**

**A. Best Available Control Technology (BACT)**

**1. BACT Applicability**

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following\*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.



\*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

For a modified emissions unit, the AIPE is equal to the potential to emit (PE2) of the modified unit minus the historical adjusted potential to emit (HAPE):

$$\text{AIPE} = \text{PE2 (modified unit)} - \text{HAPE (unit modified)}$$

$$\text{HAPE} = \text{PE1 (EF}_2\text{/EF}_1\text{)}$$

$$\text{AIPE} = \text{PE2} - (\text{PE1 (EF}_2\text{/EF}_1\text{)}) \text{ (Rule 2201 Section 4.3)}$$

where:

PE2 = Potential to emit after modification  
 PE1 = Potential to emit prior to modification  
 $(\text{EF}_2\text{/EF}_1)$  = Emission Factor<sub>After</sub>/Emission Factor<sub>Before</sub>

<b>Table 9. AIPE Summary</b>				
Pollutant	PE2 (lb/day)	PE1 (lb/day)	(EF <sub>2</sub> /EF <sub>1</sub> )	AIPE (lb/day)
NO <sub>x</sub>	0.0	0.0	1.0	0.0
SO <sub>x</sub>	0.0	0.0	1.0	0.0
PM <sub>10</sub>	0.0	0.0	1.0	0.0
CO	0.0	0.0	1.0	0.0
VOC	0.0	0.0	1.0	0.0

As demonstrated above, the AIPE is less than 2.0 lb/day for this emission unit for all criteria pollutants; therefore, BACT is not triggered.

**B. OFFSETS**

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 or Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

<b>Table 10. Offset Determination</b>					
	NO <sub>x</sub> (lb/year)	SO <sub>x</sub> (lb/year)	PM <sub>10</sub> (lb/year)	CO (lb/year)	VOC (lb/year)
Post Project SSPE (SSPE2)	0	0	0	0	0

Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

As seen above, the SSPE2 is not greater than the offset thresholds for any of the pollutants; therefore offset calculations are not necessary and offsets will not be required for this project.

## A. PUBLIC NOTIFICATION

### 1. Applicability

- **Major Source/Major Modification?**

- a. **New Major Source**

A new major source is a new facility that is also a major source. This is not a new facility; therefore, public notification is not required for new major source purposes.

- b. **Major Modification**

Based upon the determination in Section VII.C.5 above, this facility is not an existing Major Source; therefore Major Modification is not triggered for this project and public notification for Major Modification purposes does not apply.

- **PE > 100 lb/day?**

This is not a new emissions unit; therefore, public notification for PE > 100 lb/day does not apply.

- **Offset Threshold Exceeded?**

As mentioned in Section B of this rule, this project's emissions unit does not exceed the offset thresholds; therefore, this project will not be required to provide offsets nor public notice.

- **SSIPE > 20,000 lb/yr?**

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e.  $SSIPE = SSPE2 - SSPE1$ . The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively.

<b>Table 11. SSIPE – Public Notice</b>					
<b>Pollutants</b>	<b>SSPE2 (lb/year)</b>	<b>SSPE1 (lb/year)</b>	<b>SSIPE</b>	<b>SSIPE Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>	0	0	0	20,000	No
SO <sub>x</sub>	0	0	0	20,000	No
PM <sub>10</sub>	0	0	0	20,000	No
CO	0	0	0	20,000	No
VOC	0	0	0	20,000	No

As demonstrated above, the SSIPEs for all criteria pollutants were less than 20,000 lb/year; therefore public noticing is not required for SSIPE purposes.

## 2. Public Notice

As shown above, Public notification thresholds are not exceeded; therefore public noticing is not required prior to Authority to Construct issuance.

## D. DAILY EMISSION LIMITS

Section 5.7.2 requires a daily emissions limitation to be included on the Permit to Operate (PTO). For this project, the DEL is stated in the form of emission factors, maximum burner capacity, and maximum daily process rate of pounds of meat per day.

- *{1929} Emissions from this unit shall not exceed either of the following limits: 0.32 lb-VOC per 1,000 lb-meat cooked\* or 1.26 lb-PM10 per 1,000 lb-meat cooked\*. [District Rule 2201]*

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\* 0.32 lb-VOC/1,000 lb-meat cooked = (2.27 lb-VOC/1,000 lb-meat cooked) × (1-0.86) and  
 1.26 lb-PM10/1,000 lb-meat cooked = (7.42 lb-PM10/1,000 lb-meat cooked) × (1-0.83)

- *{1951} Emissions from this unit shall not exceed any of the following limits: NO<sub>x</sub> - 0.094 lb/MMBtu, CO - 0.021 lb/MMBtu, or SO<sub>x</sub> - 0.0029 lb/MMBtu. [District Rule 2201]*
- *The amount of meat cooked shall not exceed [Proposed Meat] pounds per day. [District Rules 2201]*

## **E. COMPLIANCE ASSURANCE**

- **Source Testing**

Pursuant to District Policy APR 1705, source testing is not required.

- **Monitoring**

There is no monitoring required for this emission device.

- **Recordkeeping**

Daily records will be maintained of the amount of meat cooked, and of the operating temperature the catalyst bed. Monthly records will be maintained of the amount of meat purchased. Also, records will be maintained of the date of installation or changing of any catalyst, and date and time of cleaning and maintenance performed on catalyst. These records will be retained on the restaurant premises for a period of at least five years and made available to the District upon request.

- **Reporting**

No reporting is required for charbroiler.

### **Rule 2520 - Federally Mandated Operating Permits**

Since this facility's potential emissions do not exceed any major source thresholds of District Rule 2201, this facility is not a major source, and District Rule 2520 does not apply.

### **Rule 4101 - Visible Emissions**

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour, which are as dark as or darker than Ringelmann 1 (20% opacity). According to manufacturers' data, visible emissions in excess of Ringelmann 0 or 0% opacity are not expected, and inspections will be performed annually to confirm this. Therefore, compliance is expected.

A permit condition will be listed on the permit as follows:

- {1955} No visible emissions shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour. [District Rules 2201 and 4101]

**Rule 4102 - Nuisance**

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of this operation, provided the equipment is well maintained.

A permit condition will be listed on the permit as follows:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

**California Health & Safety Code 41700 (Health Risk Assessment)**

Pursuant to District's Risk Management Policy APR 1905 (3/2/01), any sources with increases in toxic air emissions, the health risks resulting from such projects must be evaluated. Since the food grade material (cooked meat) has been tested and certified by FDA or their agents to be safe or acceptable for human consumption with no or minimal risk; therefore, the increase in cooked meat is not subject to a health risk assessment (HRA). However, the charbroiler is fired on natural gas, and the combustion of natural gas does emit hazardous air pollutants (HAPs) into the atmosphere. Since this project does not proposed an increase in the quantity of natural gas combusted, there is no increase in HAPs, and a HRA is not required.

**Rule 4201 - Particulate Matter Concentration**

Section 3.0 requires emissions of dust, fumes, or particulate matter not to exceed 0.1 grain per cubic foot of gas at dry standard conditions. The PM emission concentration will be calculated based on the following parameters:

PM<sub>10</sub>-to-PM Ratio: 50% PM<sub>10</sub>/PM (Rule 2201, Section 4.11.2)

Exhaust Flow Rate = [Flow Rate] cfm

Typical Operating Schedule (worst-case) = 1,440 min/day

$$\begin{aligned} \text{PM Concentration} &= \frac{(\text{PM}_{10} \text{ Emission Rate}) \times (7,000 \text{ gr/lb})}{(\text{Air Flow Rate}) \times (1,440 \text{ min/day}) \times (0.50 \text{ PM}_{10}/\text{PM})} \\ &= \frac{(0.0 \text{ lb-PM}_{10}/\text{day}) \times (7,000 \text{ gr/lb})}{([\text{Flow Rate}] \text{ cfm}) \times (1,440 \text{ min/day}) \times (0.50 \text{ PM}_{10}/\text{PM})} \end{aligned}$$

Concentration = !Zero Divide **gr/scf**

The calculated emissions are well below the allowable emissions level. It can be assumed that under dry conditions emissions will not exceed the allowable 0.1 gr/dscf. Therefore, compliance with this rule is expected.

The following condition will be placed on the permit to ensure compliance with rule:

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

#### **Rule 4692 - Commercial Charbroiling**

The purpose of this rule is to limit VOC and PM-10 emissions from commercial chain-driven charbroilers.

Section 5.3 states, Catalytic oxidizers or other control devices shall be maintained in good working order to minimize visible emissions to the atmosphere and operated, cleaned, and maintained in accordance with the manufacturer's specifications in a maintenance manual or other written materials supplied by the manufacturer or distributor of the catalyst or other control device, or chain-driven charbroiler.

The following conditions insure compliance with this section:

- {1927} *The catalytic oxidizer shall be installed and maintained in good operating condition, in accordance with manufacturer's specifications. [District Rule 4692]*
- {1954} *The catalytic oxidizer shall be cleaned, with materials that do not damage the catalytic coating, at least once per month, when the charbroiler is not operating. Such cleaning shall be performed in accordance with instructions in a maintenance manual, bulletin, or memo prepared by the manufacturer or distributor of the catalyst or catalytic oxidizer. A copy of the cleaning instructions must be maintained on site. [District Rule 2201]*

Section 6.1 states, Owners and operators of chain-driven charbroilers equipped with control equipment shall maintain records of the date of installation or changing of any catalyst or, if applicable, other approved control device; and the date and time of cleaning and maintenance performed for the catalyst or, if applicable, other approved control device. Records of such actions shall be retain for a period of not less than five years, and made available to a District representative upon request.

The following condition insures compliance with this section:

- *{1953} Daily records shall be maintained of the amount of meat cooked. Monthly records shall be maintained of the amount of meat purchased. Also, records shall be maintained of the date of installation or changing of any catalyst, and date and time of cleaning or replacement of, and maintenance performed on, the catalyst. These records shall be retained on the restaurant premises for a period of at least five years and made available to the District upon request. [District Rules 2201 and 4692]*

Therefore, compliance with the rule is expected.

### **Rule 4801 - Sulfur Compounds**

Section 3.1 prohibits emissions of sulfur compounds as SO<sub>2</sub> in excess of 0.2% by volume (2,000 ppmv).

From Table 1 of this evaluation, SO<sub>x</sub> emissions when firing on natural gas (PUC quality) are calculated based on an emission factor of 0.00285 lb-SO<sub>x</sub>/MMBtu.

$$\begin{aligned}\text{lb-SO}_x/\text{exhaust vol.} &= (\text{lb-SO}_x/\text{MMBtu}) \div (\text{F factor}) \\ &= (0.0029 \text{ lb-SO}_x/\text{MMBtu}) \div (8,578 \text{ dscf/MMBtu}) \\ &= 3.38 \times 10^{-7} \text{ lb-SO}_x/\text{dscf}\end{aligned}$$

$$\text{Volume SO}_x/\text{exhaust vol.} = nRT/P,$$

$$\begin{aligned}\text{Where } n &= \text{moles SO}_x = (3.38 \times 10^{-7} \text{ lb-SO}_x/\text{dscf}) \div (64 \text{ lb-SO}_2/\text{lb-mol}) \\ &= 5.0 \times 10^{-9} \text{ lb-mol/dscf}\end{aligned}$$

$$R = \text{Universal gas constant} = 10.73 \text{ psi-ft}^3/\text{lb-mol-}^\circ\text{R}$$

$$T = 60^\circ\text{F standard temperature} = 520^\circ \text{ Rankine, and}$$

$$P = \text{Standard atmospheric pressure} = 14.7 \text{ psi}$$

$$\begin{aligned}\text{Volume SO}_2/\text{exhaust vol.} &= (5.0 \times 10^{-9})\text{lb-mol/dscf} \times (10.73)\text{psi-ft}^3/\text{lb-mol-}^\circ\text{R} \\ &\quad \times (520^\circ\text{R}) \div (14.7 \text{ psi}) \\ &= 2.0 \times 10^{-6} \text{ dscf/dscf exhaust} \\ &= 2.0 \text{ ppmv} \ll 2,000 \text{ ppmv}\end{aligned}$$

Since 2.0 ppmv is  $\leq$  2000 ppmv, this charbroiler is expected to comply with Rule 4801.

### **California Health & Safety Code 42301.6 (School Notice)**

Reference project location and its proximity to a school and state whether or not school notice is required for this project.

Example (a): *(For a Non-School Notice project - > 1,000 feet.)*

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

***Example (b): (For a Non-School Notice project – no increase in emissions)***

The District has verified that this site is located within 1,000 feet of a school. However, pursuant to California Health and Safety Code 42301.6, since this project will not result in an increase in emissions, a school notice is not required.

***Example (c): (For a School Notice project.)***

The District has verified that this site is located within 1,000 feet of the following school:

School Name: [Name]  
Address: [Address]

Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is required.

Prior to the issuance of the ATC for this equipment, notices will be provided to the parents/guardians of all students of the affected school, and will be sent to all residents within 1,000 ft of the site.

***[If there is no school w/in ¼ mile of the emissions increase, include the following discussion, otherwise delete]:***

The District has verified that there are no additional schools within ¼ mile of the emission source.

***[If there is a school w/in ¼ mile of the emissions increase, include the following discussion, otherwise delete]:***

Since a school notice has been triggered (due to the above-listed school within 1,000 of the emission source), notices will also be provided to the parents/guardians of all students from all school sites within ¼ mile of the emission source. The following schools(s) are within ¼ mile of the emission source:

School Name: [Name]  
Address: [Address]  
(add additional schools if necessary)

***(Note: Refer to FYI - 71 for guidance on how to process a School Notice project.)***

## **California Environmental Quality Act (CEQA)**

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001.



The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project qualifies for ministerial approval under the District's Guideline for Expedited Application Review (GEAR). Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

#### Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit are based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

As described above, the project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement or a Letter of Credit will not be required for this project in the absence of expressed public concern.

#### **IX. RECOMMENDATION**

Issue ATC #[Permit Number] with the conditions listed on the attached draft Authority to Construct.

**X. BILLING**

The billing for this operation is based on the burner rating in MMBtu/hr.

PERMIT NUMBER	FEE SCHEDULE	FEE DESCRIPTION	ANNUAL FEE
[Permit Number]	3020-02-A	0.0 MMBTU/HR	\$83

**Appendices**

- Appendix A - Current PTO
- Appendix B – Draft ATC
- Appendix C – Emissions Profile

## Appendix A: Current PTO

## Appendix B: Draft Authority to Construct

## Appendix C: Emissions Profile