MAR 25 2015

Mike Jacobsen
Cascade Specialties
2525 Cooper Avenue
Merced, CA 95348

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-8853
Project Number: N-1150561

Dear Mr. Jacobsen:

Enclosed for your review and comment is the District's analysis of Cascade Specialties's application for an Authority to Construct for permitting an existing vegetable dry roasting operation, at 2525 Cooper Avenue in Merced, California.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Wai-Man So of Permit Services at (209) 557-6449.

Sincerely,

Amaud Marjollet
Director of Permit Services

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email
San Joaquin Valley Air Pollution Control District
Authority to Construct

Vegetable Processing Operation

Facility Name: Cascade Specialties
Mailing Address: 2525 Cooper Avenue, Merced, CA 95348
Contact Person: Mike Jacobsen (Operation Manager)
Telephone: (209) 725 - 9492 ext. 15
Email: mike.jacobsen@whiteoakfrozenfoods.com

Revised Date: March 23, 2015
Engineer: Wai-Man So
Lead Engineer: James Harader

Application #(#s):
Project #: N-8853-3-2, N-1150561
Deemed Complete: March 9, 2015

I. Proposal

The District has previously issued the following two Authorities to Construct (ATC) to Cascade Specialties: N-8853-3-0 to install an 8 MMBtu/hr natural gas-fired dry roaster, and N-8853-3-1 for extending the source testing period. During the equipment commissioning process, the applicant found out the equipment will not be able to comply with the NOx and CO emissions limits listed on the ATCs. Therefore, the applicant proposes to increase the NOx and CO emissions limits to 6.5 ppmvd NOx @ 19% O2 and 215 ppmvd CO @ 19% O2 respectively.

A new ATC N-8853-3-2 will be issued to replace both existing ATCs, see copy of these ATCs N-8853-3-0 and N-8853-3-1 in Appendix II of this document. The following condition will be listed on the new ATC:

• This Authority to Construct cancels and replaces Authorities to Construct N-8853-3-0 and N-8853-3-1. [District Rule 2201]

II. Applicable Rules

District Rule 2201 New and Modified Stationary Source Review Rule (04/21/11)
District Rule 2410 Prevention of Significant Deterioration (effective 11/26/12)
District Rule 2520 Federal Mandated Operating Permits (06/21/01)
District Rule 4001 New Source Performance Standards (04/14/99)
District Rule 4002 National Emission Standards for Hazardous Air Pollutants (05/20/04)
District Rule 4101 Visible Emissions (02/17/05)
District Rule 4102 Nuisance (12/17/92)
District Rule 4201 Particulate Matter Concentration (12/17/92)
District Rule 4309 Dryers, Dehydrators, and Ovens (12/15/2005)
III. Project Location

The facility is located at 2525 Cooper Avenue in Merced, California. The equipment will not be located within 1,000 feet to the outer boundary of any K-12 School. Therefore, the school public notification requirement of California Health and Safety Code (CH&SC) 42301.6 is not required for this project.

IV. Process Description

Cascade Specialties is in the business of producing dehydrated and frozen vegetables. There is no change to any operating procedure in this project. See detail process description in engineering evaluation under District project N-1130379.

V. Equipment Listing

VEGETABLE DRY ROASTING OPERATION CONSISTING OF ONE FEMCO MODEL 313000 NATURAL GAS-FIRED ROASTER WITH A 8 MMBTU/HR (TOTAL) MAXON MODEL LINOFLAME BURNER SYSTEM INCLUDING FOUR SETS OF TOTAL 16-LINEAR FEET MAXON MODEL LBA-96 BURNERS

VI. Emission Control Technology Evaluation

There will be NOX, VOC, CO, SOX, and PM10 emissions form the combustion of natural gas in the roaster. The roaster will be fired exclusively on PUC quality natural gas, which results in cleaner emission than other hydrocarbon fuels. Per manufacturer, the roaster will be equipped with a burner system that can achieve a maximum emissions concentration of 6.5 ppmvd at 19% O2 for NOX and 215 ppmvd at 19% O2 for CO.

VII. Calculations

A. Assumptions

- The maximum operating schedule for the unit is 24 hour/day and 365 day/year.
- The unit is fired solely on PUC-quality natural gas.
- The natural gas heating value is 1,000 Btu/scf (per District Practice).
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F (40 CFR 60, Appendix B).
- Other assumptions will be stated as each is made.
B. Emission Factors

Pre-Project Emission Factors (EF1)

This unit is considered a new emissions unit. EF1 is equal to zero for each criteria pollutant.

Post-Project Emission Factors (EF2)

The unit will be fired solely on natural gas, therefore, SO\textsubscript{x} emissions factor of 0.00285 lb/MMBtu will be referenced to District Policy APR-1720, and PM\textsubscript{10} emissions factor of 0.0076 lb/MBtu will be taken from AP42, Table 1.4-2 (7/98).

NO\textsubscript{x}, CO, and VOC emissions factors are proposed by the applicant as 6.5 ppmvd @ 19% O\textsubscript{2}, 215 ppmvd @ 19% O\textsubscript{2} and 0.0045 lb-VOC/MBtu respectively.

For calculation convenience, the emissions factors will be converted to an equivalent lb/MBtu numbers as follow:

\[
\begin{align*}
EF \text{ NO}_x &= \frac{(6.5 \text{ ppmv}) \times (8,578 \text{ dscf/MBtu}) \times (46 \text{ lb-NO}_x/\text{lb-mol}) \times \left[\frac{20.95}{(20.95 - 19)}\right]}{379.5 \text{ dscf/lb-mol} \times 10^6} \\
&= 0.073 \text{ lb/MBtu}
\end{align*}
\]

\[
\begin{align*}
EF \text{ CO} &= \frac{(215 \text{ ppmv}) \times (8,578 \text{ dscf/MBtu}) \times (28 \text{ lb-CO/\text{lb-mol}) \times \left[\frac{20.95}{(20.95 - 19)}\right]}{379.5 \text{ dscf/lb-mol} \times 10^6} \\
&= 1.46 \text{ lb/MBtu}
\end{align*}
\]

For this unit, the post-project emission factors (EF2) are listed in the table below:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Post-Project Emission Factors (EF2)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>0.073 lb-NO\textsubscript{x}/MBtu</td>
<td>6.5 ppmvd NO\textsubscript{x} (@ 19%O\textsubscript{2})</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>0.00285 lb-SO\textsubscript{x}/MBtu</td>
<td>--</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0.0076 lb-PM\textsubscript{10}/MBtu</td>
<td>--</td>
</tr>
<tr>
<td>CO</td>
<td>1.46 lb-CO/MBtu</td>
<td>215 ppmvd CO (@ 19%O\textsubscript{2})</td>
</tr>
<tr>
<td>VOC</td>
<td>0.0045 lb-VOC/MBtu</td>
<td>--</td>
</tr>
</tbody>
</table>

C. Potential to Emit (PE)

1. Daily and Annual PE

Pre-Project Potential to Emit (PE1)

This unit is considered a new emissions unit. PE1 is equal to zero for each criteria pollutant.
Post-Project Potential to Emit (PE2)

The post-project potential emissions are calculated as follows:

\[
\text{Daily PE (lb/day)} = \text{EF (lb/MMBtu)} \times \text{Heat Input (MMBtu/hr)} \times \text{Op. Schedule (hr/day)}
\]

\[
\text{Annual PE (lb/yr)} = \text{Daily PE (lb/day)} \times 365 \text{ (day/yr)}
\]

The daily and annual post-project potential emissions of this unit are listed as follows:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>EF (lb/MMBtu)</th>
<th>Heat Input (MMBtu/hr)</th>
<th>Operating Schedule (hr/day) / (day/yr)</th>
<th>Daily PE2 (lb/day)</th>
<th>Annual PE2 (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>0.073</td>
<td>8</td>
<td>24</td>
<td>365</td>
<td>14.0</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>0.00285</td>
<td>8</td>
<td>24</td>
<td>365</td>
<td>0.5</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0.0076</td>
<td>8</td>
<td>24</td>
<td>365</td>
<td>1.5</td>
</tr>
<tr>
<td>CO</td>
<td>1.46</td>
<td>8</td>
<td>24</td>
<td>365</td>
<td>280.3</td>
</tr>
<tr>
<td>VOC</td>
<td>0.0045</td>
<td>8</td>
<td>24</td>
<td>365</td>
<td>0.9</td>
</tr>
</tbody>
</table>

2. Quarterly Emissions Changes

The Quarterly Emissions Changes (QEC) is calculated for each pollutant, for each unit, as the difference between the quarterly PE2 and the quarterly baseline emissions (BE). The annual emissions are evenly distributed throughout each quarter using the following equation:

\[
\text{QEC (lb/quarter)} = \frac{\text{[Annual PE2 – Annual PE1] (lb/year)}}{4 \text{ (quarter/year)}}
\]

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>1\textsuperscript{st} Quarter (lb/quarter)</th>
<th>2\textsuperscript{nd} Quarter (lb/quarter)</th>
<th>3\textsuperscript{rd} Quarter (lb/quarter)</th>
<th>4\textsuperscript{th} Quarter (lb/quarter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>1,277</td>
<td>1,277</td>
<td>1,278</td>
<td>1,278</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>45</td>
<td>46</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>137</td>
<td>137</td>
<td>137</td>
<td>137</td>
</tr>
<tr>
<td>CO</td>
<td>25,577</td>
<td>25,577</td>
<td>25,578</td>
<td>25,578</td>
</tr>
<tr>
<td>VOC</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>83</td>
</tr>
</tbody>
</table>

3. Adjusted Increase in Permitted Emissions (AIPE)

AIPE is used to determine if Best Available Control Technology (BACT) is required for emission units that are being modified.

This unit is considered a new emissions unit. Therefore, AIPE calculations are not required.
D. Facility Emissions

1. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the 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 (AER) that have occurred at the source, and which have not been used on-site.

There are no valid ERCs at the Stationary Source. SSPE1 values are taken from engineering evaluation under project N-1141830.

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-8853-1-0</td>
<td>694</td>
<td>256</td>
<td>657</td>
<td>3,176</td>
<td>402</td>
</tr>
<tr>
<td>N-8853-2-0</td>
<td>11,133</td>
<td>657</td>
<td>1,789</td>
<td>10,403</td>
<td>1,314</td>
</tr>
<tr>
<td>ATC N-8853-3-0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ATC N-8853-3-1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ERC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SSPE1</td>
<td>11,827</td>
<td>913</td>
<td>2,446</td>
<td>13,579</td>
<td>1,716</td>
</tr>
</tbody>
</table>

2. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-8853-1-0</td>
<td>694</td>
<td>256</td>
<td>657</td>
<td>3,176</td>
<td>402</td>
</tr>
<tr>
<td>N-8853-2-0</td>
<td>11,133</td>
<td>657</td>
<td>1,789</td>
<td>10,403</td>
<td>1,314</td>
</tr>
<tr>
<td>ATCN-8853-3-2</td>
<td>5,110</td>
<td>183</td>
<td>548</td>
<td>102,310</td>
<td>329</td>
</tr>
<tr>
<td>ERC</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SSPE2</td>
<td>16,937</td>
<td>1,096</td>
<td>2,994</td>
<td>115,889</td>
<td>2,045</td>
</tr>
</tbody>
</table>

1 The proposed dry roaster will be considered a new emissions unit, and therefore, emissions from ATCs N-8853-3-0 and N-8853-3-1 are set equal to zero for SSPE calculations purposes.
3. Stationary Source Increase in Permitted Emissions (SSIPE)

SSIPE calculations are used to determine if the project triggers public notice pursuant to District Rule 2201, §5.4.5. If SSIPE results greater than 20,000 lb/yr for any one pollutant then project requires public notification. At this time, it is District Practice to define the SSIPE as the difference of SSPE2 and SSPE1, and calculated by the following equation:

\[
\text{SSIPE (lb/yr)} = \text{SSPE2 (lb/yr)} - \text{SSPE1 (lb/yr)}
\]

<table>
<thead>
<tr>
<th>Pollutants (lb/yr)</th>
<th>NO\textsubscript{X}</th>
<th>SO\textsubscript{X}</th>
<th>PM\textsubscript{10}</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE2</td>
<td>16,937</td>
<td>1,096</td>
<td>2,994</td>
<td>115,889</td>
<td>2,045</td>
</tr>
<tr>
<td>SSPE1</td>
<td>11,827</td>
<td>913</td>
<td>2,446</td>
<td>13,579</td>
<td>1,716</td>
</tr>
<tr>
<td>SSIPE</td>
<td>5,110</td>
<td>183</td>
<td>548</td>
<td>102,310</td>
<td>329</td>
</tr>
</tbody>
</table>

As shown above, SSIPE is greater than 20,000 lb/year for CO.

4. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- emissions from non-road IC engines (i.e. IC engines at a particular site at this facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

There are no ERCs, non-road IC engines, or fugitive emissions associated with this facility.

<table>
<thead>
<tr>
<th>Rule 2201 Major Source Determination (lb/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{X}</td>
</tr>
<tr>
<td>SSPE1</td>
</tr>
<tr>
<td>SSPE2</td>
</tr>
<tr>
<td>Major Source Threshold</td>
</tr>
<tr>
<td>Major Source</td>
</tr>
</tbody>
</table>

Note: PM\textsubscript{2.5} assumed to be equal to PM\textsubscript{10}.

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.
Cascade Specialties  
N-8853-3-2; N-1150561

Rule 2410 Major Source Determination:

The facility or equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21(b)(1)(iii). Therefore, the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

<table>
<thead>
<tr>
<th>PSD Major Source Determination (tons/year)</th>
<th>NO2</th>
<th>VOC</th>
<th>SO2</th>
<th>CO</th>
<th>PM</th>
<th>PM10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Facility PE before Project Increase</td>
<td>5.9</td>
<td>0.9</td>
<td>0.5</td>
<td>6.8</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>PSD Major Source Thresholds</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Existing PSD Major Source ? (Y/N)</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

As shown above, the facility is not an existing PSD Major Source for any regulated NSR pollutant expected to be emitted at this facility.

5. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 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 District Rule 2201

As shown in Section VII.D.4 above, the facility is not a Major Source for any pollutant. Therefore BE=PE1.

6. 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."

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.
7. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "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$_{10}$ (140,000 lb/year), it is not a major source for PM$_{2.5}$ (200,000 lb/year).

8. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b)(23) definition of significant).

- NO$_2$ (as a primary pollutant)
- SO$_2$ (as a primary pollutant)
- CO
- PM
- PM$_{10}$

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

<table>
<thead>
<tr>
<th>PSD Major Source Determination: Potential to Emit (tons/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO$_2$</td>
</tr>
<tr>
<td>Total PE from the new and modified units</td>
</tr>
<tr>
<td>PSD Major Source Thresholds</td>
</tr>
<tr>
<td>New PSD Major Source? (Y/N)</td>
</tr>
</tbody>
</table>

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.
VIII. COMPLIANCE

District Rule 2201 New and Modified Stationary Source Review Rule

1. Best Available Control Technology (BACT)

A. 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.

The dry roaster is considered a new unit. As determined in Sections VII.D.6 and VII.D.7 of this document, this project does not result in an SB 288 Major Modification or Federal Major Modification. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

The daily emissions from the roaster are compared to the BACT threshold levels in the following tables:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Daily Emissions (lb/day)</th>
<th>BACT Threshold (lb/day)</th>
<th>SSPE2 (lb/yr)</th>
<th>BACT Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>14.0</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>SOX</td>
<td>0.5</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>1.5</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>280.3</td>
<td>&gt; 2.0 and</td>
<td>115,889</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SSPE2 ≥ 200,000 lb/yr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td>0.9</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>No</td>
</tr>
</tbody>
</table>

As shown above, BACT will be triggered for NOX emissions for this unit.

B. BACT Guideline

BACT Guideline 1.6.1, which appears in Appendix III of this document, covers vegetable roasting operation.
C. Top Down BACT Analysis

Per District Policy APR 1305, Section IX, "A top-down BACT analysis shall be performed as a part of the Application Review for each application subject to the BACT requirements pursuant to the District's NSR Rule for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

The "Top-Down BACT Analysis" for NO\textsubscript{X} emissions is performed in Appendix III of this document. According to this analysis, BACT is satisfied with:

\textbf{NO\textsubscript{X}:} Use of natural gas fuel and operating the burner within manufacturer's specification to minimize NO\textsubscript{X} emissions

The proposed dry roaster meets the above requirements. Therefore, BACT is satisfied for NO\textsubscript{X} emissions.

2. Offsets

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE\textsubscript{2} equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE\textsubscript{2} is compared to the offset thresholds in the following table.

<table>
<thead>
<tr>
<th>Offset Determination (lb/year)</th>
<th>(\text{NO}_x)</th>
<th>(\text{SO}_x)</th>
<th>(\text{PM}_{10})</th>
<th>(\text{CO})</th>
<th>(\text{VOC})</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE\textsubscript{2}</td>
<td>16,937</td>
<td>1,096</td>
<td>2,994</td>
<td>115,889</td>
<td>2,045</td>
</tr>
<tr>
<td>Offset Threshold</td>
<td>20,000</td>
<td>54,750</td>
<td>29,200</td>
<td>200,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Offset Triggered?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

As seen above, the SSPE\textsubscript{2} is not greater than the offset thresholds for all the pollutants; therefore offset calculations are not necessary and offsets will not be required for this project.

3. Public Notification

District Rule 2201, § 5.4, requires a public notification for the affected pollutants from the following types of projects:

a. New Major Source, Federal Major Modification, and SB 288 Major Modification

This facility is not becoming a new major source, and the proposed project will trigger neither Federal Major Modification nor SB 288 Major Modification. Therefore, public noticing for these purposes is not required.
b. New emission unit with \( PE > 100 \text{ lb/day} \) for any one pollutant

The \( PE \) for the new unit is compared to the daily \( PE \) Public Notice Thresholds in the following table:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>( PE2 ) (lb/day)</th>
<th>Public Notice Threshold (lb/day)</th>
<th>Public Notice Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO(_x)</td>
<td>14.0</td>
<td>100</td>
<td>No</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>0.5</td>
<td>100</td>
<td>No</td>
</tr>
<tr>
<td>PM(_{10})</td>
<td>1.5</td>
<td>100</td>
<td>Yes</td>
</tr>
<tr>
<td>CO</td>
<td>280.3</td>
<td>100</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>0.9</td>
<td>100</td>
<td>No</td>
</tr>
</tbody>
</table>

The potential emission from the new unit is greater than 100 lb/day for CO. Therefore, public noticing for this purpose is required.

c. Modifications with SSPE\(_1\) below an Offset threshold and SSPE\(_2\) above an Offset threshold on a pollutant-by-pollutant basis

The proposed project does not result in SSPE from below offset threshold level to above offset threshold level for any one pollutant. Therefore, public noticing for this purpose is not required.

d. New stationary sources with SSPE\(_2\) exceeding Offset thresholds

There is no new stationary source with SSPE\(_2\) exceeding offset thresholds as a result of this project. Therefore, public noticing for this purpose is not required.

e. Any permitting action with an SSIP\(_E\) exceeding 20,000 lb/yr for any one pollutant

The proposed project does not result in SSIP\(_E\) exceeding 20,000 lb/yr for any one pollutant. Therefore, public noticing for this purpose is not required.

As discussed above, public noticing is required for this project for CO emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.
4. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit’s maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- Emissions from the roaster shall not exceed any of the following limits: 6.5 ppmvd NO$\textsubscript{x}$ @ 19% O$\textsubscript{2}$ or 0.073 lb-NO$\textsubscript{x}$/MMBtu (referenced as NO$2$), 0.00285 lb-SO$\textsubscript{x}$/MMBtu, 0.0076 lb-PM10/MMBtu, 215 ppmvd CO @ 19% O$\textsubscript{2}$ or 1.46 lb-CO/MMBtu, 0.0045 lb-VOC/MMBtu. [District Rules 2201]

- The unit shall only be fired on PUC-quality natural gas, and the burner system shall be operated within manufacturer's specification to minimize NO$\textsubscript{x}$ emissions. [District Rule 2201]

5. Compliance Assurance

Source Testing, Monitoring, Recordkeeping, and Reporting

Source Testing

District Policy ARP 1705, "Source Testing Frequency" does not specify source testing requirements for vegetable roaster. However, the District typically requires initial source testing of NO$\textsubscript{x}$ and CO of combustion units to verify the proposed emission limits. Therefore, only initial source testing will be required and the following conditions will be listed on the ATC to ensure compliance:

- Source testing to measure NO$\textsubscript{x}$ and CO emissions from this unit shall be conducted within 60 days of the issuance of this Authority to Construct. [District Rule 2201]

- For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 2201]

- NO$\textsubscript{x}$ emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100. [District Rule 2201]

- CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 2201]

- Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 2201]
- All test results for NO\textsubscript{X} shall be reported in either lb/MBtu or ppmvd @ 19% O\textsubscript{2} (or no correction if measured above 19% O\textsubscript{2}), corrected to dry stack conditions. [District Rule 2201]

**Monitoring**
No monitoring is required to demonstrate compliance with Rule 2201.

**Recordkeeping**
Recordkeeping is required to demonstrate compliance with the offset, public notification, and daily emission limit requirements of Rule 2201. The following condition will be listed on the permit to ensure compliance:

- All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]

**Reporting**
No reporting is required to demonstrate compliance with Rule 2201.

6. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District’s Technical Services Division conducted the required analysis. Refer to Appendix IV of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO\textsubscript{X}, CO, and SO\textsubscript{X}. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO\textsubscript{X}, CO, or SO\textsubscript{X}.

The proposed location is in a non-attainment area for the state’s PM\textsubscript{10} as well as federal and state PM\textsubscript{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM\textsubscript{10} and PM\textsubscript{2.5}.

Compliance with the requirements of this rule is expected.

**District Rule 2410 Prevention of Significant Deterioration**

As shown in Section VII.D.8 of this document, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

**District Rule 2520 Federally Mandated Operating Permits**

Since this facility’s potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.
District Rule 4001 New Sources Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to vegetable dry roaster.

District Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to vegetable dry roasting operations.

District Rule 4101 Visible Emissions

District Rule 4101, Section 5.0, indicates that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour, which is dark or darker than Ringlemann 1 or equivalent to 20% opacity. The following condition will be listed on the permit to ensure compliance:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringlemann 1 or 20% opacity. [District Rule 4101]

District Rule 4102 Nuisance

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

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

California Health & Safety Code 41700 (Risk Management Review)

District Policy APR 1905-1 (March 2, 2001) - Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

An RMR is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (Appendix IV), the
total facility prioritization score including this project was less than or equal to one. Therefore, no future analysis is required.

Compliance with the requirements of this rule is expected.

**District Rule 4201 Particulate Matter Concentration**

The purpose of this rule is to protect the ambient air quality by establishing a particulate matter emission standard. This rule applies to any source operation, which emits or may emit dust, fumes, or total suspended particulate matter. This rule states that a person shall not release or discharge into the atmosphere from any single source operation, dust, fumes, or total suspended particulate matter emissions in excess of 0.1 grain/dscf, as determined by the test methods in section 4.0.

\[
\text{GL} = \left(\frac{0.0076 \text{ lb-PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb-PM}}\right) \left(\frac{8,578 \text{ ft}^3}{\text{MMBtu}}\right)
\]

\[
\text{GL} = 0.006 \text{ grain/dscf} < 0.1 \text{ grain/dscf}
\]

As shown above, compliance with the District Rule 4201 requirements is expected, and the following conditions will be listed on the permit to ensure compliance:

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

**District Rule 4309 Dryers, Dehydrators, and Ovens**

Pursuant to Section 4.1.3, unit used for roasting is exempt from this Rule. Therefore, the proposed dry roaster is not subject to the requirements of this rule.

**District Rule 4801 Sulfur Compounds**

Rule 4801 requires that sulfur compound emissions (as SO\(_2\)) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

\[
\text{Volume SO}_2 = (n \times R \times T) + P
\]

\[
n = \text{moles SO}_2
\]

\[
T \text{ (standard temperature)} = 60 ^\circ F \text{ or } 520 ^\circ R
\]

\[
R \text{ (universal gas constant)} = (10.73 \text{ psi}\cdot\text{ft}^3)/(\text{lb.mol.}^\circ\text{R})
\]

EPA F-Factor for Natural Gas: 8,710 dscf/MMBtu at 68 \(^\circ\)F, equivalent to
\[
\text{Corrected } F - \text{ factor} = \left( \frac{8,710 \text{ dscf}}{\text{MMBtu}} \right) \times \left( \frac{60^\circ F + 459.6}{68^\circ F + 459.6} \right) = 8,578 \frac{\text{dscf}}{\text{MMBtu}} \text{ at } 60^\circ F
\]

\[
0.00285 \frac{\text{lb}}{\text{MMBtu}} \times \frac{\text{MMBtu}}{8,578 \text{ dscf}} \times \frac{1\text{ lb mol}}{64\text{ lb}} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{1\text{ lb mol} \cdot \text{R}} \times \frac{520^\circ \text{R}}{1,000,000 \cdot \text{parts}} \times \frac{14.7 \text{ psi}}{1 \text{ million}} \times \frac{1 \text{ million}}{\text{parts}} = 1.97 \frac{\text{parts}}{\text{million}}
\]

Sulfur Concentration = 1.97 ppmv < 2,000 ppmv (or 0.2%)

Therefore, compliance with the requirements of this Rule is expected.

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

As discussed in Section III of this document. The public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

**California Environmental Quality ACT (CEQA)**

**District CEQA Findings**

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 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; and
- 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.

**Greenhouse Gas (GHG) Significance Determination**

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

On December 17, 2009, the District’s Governing Board adopted a policy, APR 2005, *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*, for addressing GHG emission impacts when the District is Lead Agency under CEQA and approved the District’s guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. Under this policy, the District’s determination of significance of project-specific GHG emissions is founded on
the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change. Consistent with District Policy 2005, projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for GHG emission.

The California Air Resources Board (ARB) adopted a Cap-and-Trade regulation as part of the strategies identified for AB32. This Cap-and-Trade regulation is a statewide plan, supported by a CEQA compliant environmental review document, aimed at reducing or mitigating GHG emissions from targeted industries. Facilities subject to the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. Any growth in emissions must be accounted for under that cap such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions.

Under District policy APR 2025, CEQA Determinations of Significance for Projects Subject to ARB’s GHG Cap-and-Trade Regulation, the District finds that the Cap-and-Trade is a regulation plan approved by ARB, consistent with AB32 emission reduction targets, and supported by a CEQA compliant environmental review document. As such, consistent with District Policy 2005, projects complying project complying with Cap-and-Trade requirements are determined to have a less than significant individual and cumulative impact for GHG emissions.

Industries covered by Cap-and-Trade are identified in the regulation under section 95811, Covered Entities:

1. **Group 1: Large industrial facilities**

   These types of facilities are subject to Cap and Trade, and the specific companies covered are listed at [http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm](http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm), Section 95811 (a), under the “Publically Available Market Information” section (list maintained by the California Air Resources Board).

2. **Group 2: Electricity generation facilities located in California, or electricity importers**

   These types of facilities are subject to Cap and Trade (section 95811, b).


   These entities are subject to Cap and Trade compliance obligations which must cover all fuels (except jet fuels) identified in section 95811 (c) through (f) of the Cap-and-Trade
regulation delivered to end users in California, less the fuel delivered to covered entities (group 1 above).

This facility is subject to the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the GHG emissions increases associated with this project would have a less than significant individual and cumulative impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. RECOMMENDATION

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct (ATC) permit N-8853-3-2 subject to the permit conditions listed on the attached draft ATC in Appendix I.

X. BILLING INFORMATION

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Fee Schedule</th>
<th>Fee Description</th>
<th>Annual Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-8853-3-2</td>
<td>3020-02-G</td>
<td>8 MMBtu/hr</td>
<td>$815</td>
</tr>
<tr>
<td></td>
<td>(5.0 or Greater but Less Than 15.0 MMBtu/hr)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

APPENDICES

Appendix I: Draft Authority to Construct (ATC)
Appendix II: Existing Authority to Construct (ATC) N-8853-3-0
Appendix III: BACT Guideline and Top-Down BACT Analysis
Appendix IV: Ambient Air Quality Analysis (AAQA) Summary
APPENDIX I

Draft Authority to Construct (ATC)
AUTHORITY TO CONSTRUCT

PERMIT NO: N-8853-3-2

LEGAL OWNER OR OPERATOR: CASCADE SPECIALTIES
MAILING ADDRESS: DBA WHITE OAK FROZEN FOODS
2525 COOPER AVE
MERCED, CA 95348

LOCATION: DBA WHITE OAK FROZEN FOODS
2525 COOPER AVE
MERCED, CA 95348

EQUIPMENT DESCRIPTION:
MODIFICATION OF VEGETABLE DRY ROASTING OPERATION CONSISTING OF ONE FEMCO MODEL 313000 NATURAL GAS-FIRED ROASTER WITH A 8 MMBTU/HR (TOTAL) MAXON MODEL LINOFLAME BURNER SYSTEM INCLUDING FOUR SETS OF TOTAL 16-LINEAR FEET MAXON MODEL LBA-96 BURNERS: (INCREASE NOX LIMIT FROM 4.2 PPMVD @ 19% O2 TO 6.5 PPMVD @ 19% O2 AND CO LIMIT FROM 6.5 PPMVD @ 19% O2 TO 215 PPMVD @ 19% O2)

CONDITIONS

1. This Authority to Construct cancels and replaces Authorities to Construct N-8853-3-0 and N-8853-3-1. [District Rule 2201]
2. (98) No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. (14) Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. (15) No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
6. The unit shall only be fired on PUC-quality natural gas, and the burner system shall be operated within manufacturer's specification to minimize NOx emissions. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all governmental agencies which may pertain to the above equipment.

Seyad Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services
Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475
7. Emissions from the roaster shall not exceed any of the following limits: 6.5 ppmvd NOx @ 19% O2 or 0.073 lb-NOx/MMBtu (referenced as NO2), 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 215 ppmvd CO @ 19% O2 or 1.46 lb-CO/MMBtu, 0.0045 lb-VOC/MMBtu. [District Rule 2201]

8. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]

9. Source testing to measure NOx and CO emissions from this unit shall be conducted within 60 days of the issuance of this Authority to Construct. [District Rule 2201]

10. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 2201]

11. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100. [District Rule 2201]

12. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 2201]

13. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 2201]

14. All test results for NOx shall be reported in either lb/MMBtu or ppmvd @ 19% O2 (or no correction if measured above 19% O2), corrected to dry stack conditions. [District Rule 2201]

15. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

16. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]
APPENDIX II

Existing Authorities to Construct (ATC)
N-8853-3-0 & N-8853-3-1
AUTHORITY TO CONSTRUCT

PERMIT NO: N-8853-3-0  
LEGAL OWNER OR OPERATOR: CASCADE SPECIALTIES  
MAILING ADDRESS: DBA WHITE OAK FROZEN FOODS
2525 COOPER AVE
MERCED, CA 95348

LOCATION: DBA WHITE OAK FROZEN FOODS
2525 COOPER AVE
MERCED, CA 95348

EQUIPMENT DESCRIPTION:
VEGETABLE DRY ROASTING OPERATION CONSISTING OF ONE FEMCO MODEL 313000 NATURAL GAS-FIRED
ROASTER WITH A 8 MMBTU/HR (TOTAL) MAXON MODEL LINOFLAME BURNER SYSTEM INCLUDING FOUR SETS
OF TOTAL 16-LINEAR FEET MAXON MODEL LBA-98 BURNERS

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three
   minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize
   emissions of air contaminants into the atmosphere. [District Rule 2201]
5. The unit shall only be fired on PUC-quality natural gas, and the burner system shall be operated within manufacturer's
   specification to minimize NOx emissions. [District Rule 2201]
6. Emissions from the roaster shall not exceed any of the following limits: 4.2 ppmvd NOx @ 19% O2 or 0.047 lb-
   NOx/MMBtu (referenced as NO2), 0.00285 lb-S0x/MMBtu, 0.0076 lb-PM10/MMBtu, 6.5 ppmvd CO @ 19% O2 or
   0.044 lb-CO/MMBtu, 0.0045 lb-VOC/MMBtu. [District Rule 2201]
7. Source testing shall be conducted using the methods and procedures approved by the District. The District must be
   notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at
   least 15 days prior to testing. [District Rule 1081]

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO
OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This IS NOT A PERMIT TO OPERATE.
Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the
approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all
Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this
Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with
all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadeqian, Executive Director / APCO

DAVID WARNER, Director of Permit Services
Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95358-8718 • (209) 557-6400 • Fax (209) 557-8475
8. Source testing to measure NOx and CO emissions from this unit shall be conducted within 60 days of startup. [District Rule 2201]

9. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 2201]

10. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100. [District Rule 2201]

11. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 2201]

12. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 2201]

13. All test results for NOx shall be reported in either lb/MMBtu or ppmvd @ 19% O2 (or no correction if measured above 19% O2), corrected to dry stack conditions. [District Rule 2201]

14. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

15. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]
AUTHORITY TO CONSTRUCT

PERMIT NO: N-8853-3-1

LEGAL OWNER OR OPERATOR: CASCADE SPECIALTIES
MAILING ADDRESS: DBA WHITE OAK FROZEN FOODS
2525 COOPER AVE
MERCESD, CA 95348

LOCATION: DBA WHITE OAK FROZEN FOODS
2525 COOPER AVE
MERCESD, CA 95348

EQUIPMENT DESCRIPTION:
VEGETABLE DRY ROASTING OPERATION CONSISTING OF ONE FEMCO MODEL 313000 NATURAL GAS-FIRED ROASTER WITH A 8 MMBTU/HR (TOTAL) MAXON MODEL LINOFLAME BURNER SYSTEM INCLUDING FOUR SETS OF TOTAL 16-LINEAR FEET MAXON MODEL LBA-96 BURNERS (EXTEND SOURCE TESTING PERIOD TO 180 DAYS)

CONDITIONS

1. This Authority to Construct cancels and replaces Authority to Construct N-8853-3-0. [District Rule 2201]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
6. The unit shall only be fired on PUC-quality natural gas, and the burner system shall be operated within manufacturer's specification to minimize NOx emissions. [District Rule 2201]
7. Emissions from the roaster shall not exceed any of the following limits: 4.2 ppmvd NOx @ 19% O2 or 0.047 lb-NOx/MMBtu (referenced as NO2), 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 6.5 ppmvd CO @ 19% O2 or 0.044 lb-CO/MMBtu, 0.0045 lb-VOC/MMBtu. [District Rule 2201]

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. THIS IS NOT A PERMIT TO OPERATE. APPROVAL OR DENIAL OF A PERMIT TO OPERATE WILL BE MADE AFTER AN INSPECTION TO VERIFY THAT THE EQUIPMENT HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS, SPECIFICATIONS AND CONDITIONS OF THIS AUTHORITY TO CONSTRUCT, AND TO DETERMINE IF THE EQUIPMENT CAN BE OPERATED IN COMPLIANCE WITH ALL RULES AND REGULATIONS OF THE SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT. UNLESS CONSTRUCTION HAS COMMENCED PURSUANT TO RULE 2050, THIS AUTHORITY TO CONSTRUCT SHALL EXPIRE AND APPLICATION SHALL BE CANCELLED TWO YEARS FROM THE DATE OF ISSUANCE. THE APPLICANT IS RESPONSIBLE FOR COMPLYING WITH ALL LAWS, ORDINANCES AND REGULATIONS OF ALL OTHER GOVERNMENTAL AGENCIES WHICH MAY PERTAIN TO THE ABOVE EQUIPMENT.
8. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]

9. Source testing to measure NOx and CO emissions from this unit shall be conducted within 180 days of startup. [District Rule 2201]

10. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 2201]

11. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100. [District Rule 2201]

12. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 2201]

13. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 2201]

14. All test results for NOx shall be reported in either lb/MMBtu or ppmvd @ 19% O2 (or no correction if measured above 19% O2), corrected to dry stack conditions. [District Rule 2201]

15. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

16. All records shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070 and 2201]
APPENDIX III

BACT Guideline and Top-Down BACT Analysis
San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 1.6.1*
Last Update: 2/5/2005

Vegetable Roasting Operation

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Achieved in Practice or contained in the SIP</th>
<th>Technologically Feasible</th>
<th>Alternate Basic Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>Use of natural gas fuel and operating the burner within manufacturer's specification to minimize NOx emissions</td>
<td>1) 9 ppmvd @ 3% O2 or less utilizing an SCR or LTO system.</td>
<td>2) Use of a low NOx burner system operating at a NOx emissions concentration of &lt; or = 30 ppmv @ 3% O2</td>
</tr>
</tbody>
</table>

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

*This is a Summary Page for this Class of Source
Top-Down BACT Analysis for NO\textsubscript{X} emissions

BACT Guideline 1.6.1 applies to vegetable roasting operation. Therefore, in accordance with the District’s BACT policy, information from that guideline will be utilized without further analysis.

Step 1 - Identify all control technologies

BACT guideline 1.6.1 identifies the following control technologies for NO\textsubscript{X}:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Achieved in Practice or contained in SIP</th>
<th>Technologically Feasible</th>
<th>Alternate Basic Equipment</th>
</tr>
</thead>
</table>
| NO\textsubscript{X} | Use of natural gas fuel and operating the burner with manufacturer's specification to minimize NO\textsubscript{X} emissions | • 9 ppmvd @ 3\% O\textsubscript{2} or less utilizing an SCR or LTO system  
• Use of a low NO\textsubscript{X} burner system operating at a NO\textsubscript{X} emissions concentration of ≤ 30 ppmv @ 3\% O\textsubscript{2} | |

Step 2 - Eliminate technologically infeasible options

The applicant has reported that onions will be a large part of the process stream and that low-NO\textsubscript{X} burner systems have historically caused onions to turn pink during the process. Onions that have turned pink are considered discolored and or low quality. The District has previously investigated this claim and has made the finding that low-NO\textsubscript{X} burner system does in fact cause pinking of onions (Project N-1094332). Therefore, control options with utilized low-NO\textsubscript{X} burner are being removed from consideration at this time.

Step 3 - Rank remaining options by control effectiveness

1. 9 ppmvd @ 3\% O\textsubscript{2} or less utilizing an SCR system
2. Use of a natural gas fuel and operating the burner with manufacturer's specification to minimize NO\textsubscript{X} emissions

Step 4 - Cost Effectiveness Analysis

A cost-effective analysis will be performed for each technologically feasible option that is not considered achieved in practice and is not eliminated in the step 3 above.

For the 1\textsuperscript{st} most effective control option with utilize an SCR system:

The facility was granted ATCs for the installation of a dehydrator (N-8853-2) and a roaster (N-8853-3) under a previous project N-1130379.
Under project N-1130379, Kenneth Carlton of McNulty Mechanical, Inc. provided a cost of a SCR system for both dehydrator and roaster is $969,822. The quoted price includes the capital and installation costs, but do not include sales tax, freight expenses, operational and maintenance costs, etc.

Therefore, the capital and installation cost of a SCR system serving only the roaster could be conservatively estimated and calculated as follows:

**Roaster Emission Reduction**

As shown in section VII.C.1 of this document, the NOx emissions factor of the proposed roaster is 0.073 lb/MMBtu. The NOx reduction with the use of a SCR system (9 ppmvd @ 3% O2) is calculated as follows:

The emission factor of 9 ppmvd @ 3% O2 is corrected to 19% O2 as follow:

\[
\text{EF @ } 19\% \text{ O}_2 = 9 \text{ ppmvd} \times \frac{(20.95 - 19)}{(20.95 - 3)} = 0.98 \text{ ppmvd} @ 19\% \text{ O}_2.
\]

This emissions factor is converted to an equivalent lb/MMBtu number as follow:

\[
\text{EF NOx} = \frac{(0.98 \text{ ppmv}) \times (8,578 \text{ dscf/MMBtu}) \times (46 \text{ lb-NOx/lb-mol}) \times \frac{(20.95)}{(20.95 - 19)}}{\frac{379.5 \text{ dscf/lb-mol} \times 10^6}}
\]

\[
\text{EF NOx} = 0.011 \text{ lb/MMBtu}
\]

Reduction = (0.073 - 0.011) lb-NOx/MMBtu \times 192 MMBtu/day \times 365 day/year

\[
= 4,345 \text{ lb-NOx/year}
\]

**Dehydrator Emission Reduction**

As calculated in engineering evaluation under project N-1130379, the NOx reductions with the use of SCR system on the dehydrator alone is 2,062 lb-NOx/year.

**Total Emission Reduction from both the roaster and the dehydrator**

The total reduction = (4,345 + 2,602) lb-NOx/year = 6,947 lb-NOx/year

**SCR Cost for the roaster alone:**

Cost = $(969,822) \times [4,345 \text{ lb-NOx/year} + 6,947 \text{ lb-NOx/year}]

= $606,575

Annualized Capital Investment = Total Capital Cost \times \text{Amortization Factor}

Amortization Factor = \left[ \frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = 0.163 \text{ per District policy, amortizing over 10 years at 10%}

Therefore,

Annualized Capital Investment = $606,575 \times 0.163 = $98,872
The NO\textsubscript{X} reduction for the roaster alone is 4,345 lb-NO\textsubscript{X}/year (equivalent to 2.17 ton-NO\textsubscript{X}/year).

Cost of NO\textsubscript{X} reduction is calculated as follow:

\[
\text{Cost of NO}_\text{X} \text{ reduction} = \frac{\$98,872/\text{year}}{2.17 \text{ ton-NO}_\text{X}/\text{year}} = \$45,563/\text{ton-NO}_\text{X}
\]

The cost of NO\textsubscript{X} reduction is more than the threshold limit of $24,500/ton. Therefore, the SCR system is not cost-effective and will not be required.

For the 2\textsuperscript{nd} most effective control option with utilize a natural gas-fired burner and operating the burner within manufacturer’s specification to minimize NO\textsubscript{X} emissions

Pursuant to District BACT Policy APR 1305 IX.D.3 (11/99), a cost-effective analysis is not required because the above control option is the only remaining option, and the applicant is proposing to use a natural gas fired burner system with 0.073 lb-NO\textsubscript{X}/MMBtu for the dry roaster. Therefore, a cost effectiveness analysis is not required.

Step 5 - Select BACT

The most cost effectiveness not eliminated in steps 2 and 4 above is use of natural gas fuel and operating the burner within manufacturer’s specification to minimize NO\textsubscript{X} emissions. The applicant has proposed to use a natural gas-fired burner system with 0.073 lb-NO\textsubscript{X}/MMBtu for the roaster. Therefore, BACT for NO\textsubscript{X} emissions is satisfied.
APPENDIX IV

Ambient Air Quality Analysis (AAQA) Summary
San Joaquin Valley Air Pollution Control District
Risk Management Review

To: Wai-Man So, AQE — Permit Services
From: Trevor Joy, AQS — Technical Services
Date: March 17, 2015
Facility Name: Cascade Specialties
Location: 2525 Cooper Ave Merced
Application #(s): N-8853-3-2
Project #: 1150561

A. AAQA SUMMARY

Criteria Pollutant Modeling Results*

<table>
<thead>
<tr>
<th>Steam Generator</th>
<th>1 Hour</th>
<th>3 Hours</th>
<th>8 Hours</th>
<th>24 Hours</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>Pass</td>
<td>X</td>
<td>Pass</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NO₂</td>
<td>Pass¹</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Pass</td>
</tr>
<tr>
<td>SO₂</td>
<td>Pass²</td>
<td>Pass</td>
<td>X</td>
<td>Pass</td>
<td>Pass³</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Pass⁴</td>
<td>Pass⁵</td>
</tr>
<tr>
<td>PM₂.₅</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Pass⁶</td>
<td>Pass⁷</td>
</tr>
</tbody>
</table>

*Results were taken from the attached PSD spreadsheet.
¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures. The criteria pollutant 1-hour value passed using TIER I NO₂ NAAQS modeling.
²The project was compared to the 1-hour SO₂ National Ambient Air Quality Standard that became effective on August 23, 2010 using the District's approved procedures.
³The maximum predicted concentration for emissions of these criteria pollutants from the proposed unit are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit #3

{1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] N
B. RMR REPORT

I. Project Description

Technical Services received a request on March 9, 2015, to perform an Ambient Air Quality Analysis (AAQA) for NG roaster. No RMR is required since a RMR has already been performed for this unit and the only modification is to re-evaluate the criteria pollutant emissions and perform and AAQA.

II. Analysis

For the AAQA, AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Merced 2009 through 2013 to determine maximum dispersion factors at the facility boundaries and fence line grid.

The following parameters were used for the review:

<table>
<thead>
<tr>
<th>Analysis Parameter</th>
<th>Unit 3-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stack Height (m)</td>
<td>10.7</td>
</tr>
<tr>
<td>Stack Gas Exit Temp (K)</td>
<td>478</td>
</tr>
<tr>
<td>Stack Diameter (m)</td>
<td>0.81</td>
</tr>
<tr>
<td>Gas Exit Velocity (acfm)</td>
<td>901</td>
</tr>
</tbody>
</table>

The emission rates used for criteria pollutant modeling were

<table>
<thead>
<tr>
<th></th>
<th>NOx</th>
<th>Sox</th>
<th>CO</th>
<th>PM10</th>
<th>PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lbs/day</td>
<td>14</td>
<td>0.5</td>
<td>260</td>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Lbs/yr</td>
<td>5110</td>
<td>183</td>
<td>102,310</td>
<td>548</td>
<td>548</td>
</tr>
</tbody>
</table>

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

<table>
<thead>
<tr>
<th>Steam Generator</th>
<th>1 Hour</th>
<th>3 Hours</th>
<th>8 Hours</th>
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<td>Pass</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>NOx</td>
<td>Pass*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Pass</td>
</tr>
<tr>
<td>SOx</td>
<td>Pass*</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
<td>Pass</td>
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<tr>
<td>PM10</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Pass*</td>
<td>Pass</td>
</tr>
<tr>
<td>PM2.5</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Pass*</td>
<td>Pass</td>
</tr>
</tbody>
</table>

*Results were taken from the attached PSD spreadsheet.

1. The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District’s approved procedures. The criteria pollutant 1-hour value passed using TIER I NO2 NAAQS modeling.

2. The project was compared to the 1-hour SO2 National Ambient Air Quality Standard that became effective on August 23, 2010 using the District’s approved procedures.

3. The maximum predicted concentration for emissions of these criteria pollutants from the proposed unit are below EPA’s level of significance as found in 40 CFR Part 51.165 (b)(2).
III. Conclusion

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

Attachments:
A. AAQA request from the project engineer
B. AAQA spreadsheet