San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

FEB 25 2010

Mr. Chris Kaji
Sensient Dehydrated Flavors LLC
PO Box 485
Livingston, CA 95334

Re: Notice of Preliminary Decision - ATC / Certificate of Conformity
Facility # N-1657
Project # N-1094332

Dear Mr. Kaji:

Enclosed for your review and comment is the District's analysis of an application for Authorities to Construct for Sensient Dehydrated Flavors LLC in Livingston, CA. This project is for the addition of two new vegetable dehydrators and for the modification of two existing vegetable dehydrators to limit the existing vegetable dehydrators to a combined annual heat input of 447,442 MMBtu/year.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the Authorities to Construct will be issued to the facility with Certificates of Conformity. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

The public notice will be published approximately three days from the date of this letter. Please submit your written comments within the 30-day public comment period which begins on the date of publication of the public notice.

If you have any questions, please contact Mr. Rupi Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW: JH/cm

Enclosures

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

FEB 25 2010

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St.
San Francisco, CA 94105

Re: Notice of Preliminary Decision - ATC / Certificate of Conformity
Facility # N-1657
Project # N-1094332

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for Sensient Dehydrated Flavors LLC in Livingston, CA, which has been issued a Title V permit. Sensient Dehydrated Flavors LLC is requesting that Certificates of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. This project is for the addition of two new vegetable dehydrators and for the modification of two existing vegetable dehydrators to limit the existing vegetable dehydrators to a combined annual heat input of 447,442 MMBtu/year.

Enclosed is the engineering evaluation of this application and proposed Authorities to Construct # N-1657-2-6, '-3-6, '-33-0, and '-34-0 with Certificates of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Rupi Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW: JH/cm

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

FEB 2 5 2010

Mike Tollstrup, Chief
Project Assessment Branch
Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

Re: **Notice of Preliminary Decision - ATC / Certificate of Conformity**
Facility # N-1657
Project # N-1094332

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of an application for Authorities to Construct for Sensient Dehydrated Flavors LLC in Livingston, CA. This project is for the addition of two new vegetable dehydrators and for the modification of two existing vegetable dehydrators to limit the existing vegetable dehydrators to a combined annual heat input of 447,442 MMBtu/year.

The public notice will be published approximately three days from the date of this letter. Please submit your written comments within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Rupi Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

DW: JH/cm

Enclosures

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Merced Sun Star

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed issuance of Authority To Construct to Sensient Dehydrated Flavors LLC for its vegetable dehydrating operation in Livingston, California. This project is for the addition of two new vegetable dehydrators and for the modification of two existing vegetable dehydrators to limit the existing vegetable dehydrators to a combined annual heat input of 447,442 MMBtu/year.

The analysis of the regulatory basis for these proposed actions, Project #N-1094332, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 4800 ENTERPRISE WAY, MODESTO, CA 95356-0244.**

San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
Modification of Vegetable Dehydrating Operation

Facility Name: Sensient Dehydated Flavors LLC **Date:** February 17, 2010
Mailing Address: PO Box 485
Livingston, CA 95334

Contact Person: Chris Kaji
Telephone: (209) 656-5826

Engineer: James Harader
Lead Engineer: Nick Peirce

Project Number: N-1094332
Permit Numbers: N-1657-2-6, -3-6, -33-0, -34-0

Deemed Complete: December 16, 2009

I. Proposal

Sensient Dehydrated Flavors LLC has applied for Authority to Construct permits to make the following modifications to their existing facility:

1. Install two 3-stage vegetable dehydrators (#8 and #9), each with a maximum heat input of 66 MMBtu/hr (N-1657-33-0, N-1657-34-0). The combined annual heat input for the new dehydrators will be limited to 336,000 MMBtu/year.
2. Install a new common "D" stage dehydrator that is heated with steam from permit unit N-1567-15. The "D" stage dehydrator will serve the two new 3-stage vegetable dehydrators. This steam dehydrator does not include any combustion equipment. Furthermore, there is no product transfer points and the associated conveyors for this equipment are fully enclosed. Therefore, no process or combustion emissions are expected from this unit and a permit is not required.
3. Modify existing permit units N-1657-2 and N-1657-3 to limit the combined annual heat input to 447,422 MMBtu/year.

Sensient Dehydrated Flavors LLC has been issued a Title V Permit. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct.

Sensient Dehydrated Flavors LLC
N1657, 1094332

Sensient Dehydrated Flavors LLC must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC(s) issued with this project.

II. Applicable Rules

Rule 1081 Source Sampling (12/16/93)
Rule 2201 New and Modified Stationary Source Review Rule (9/21/06)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4202 Particulate Matter – Emission Rate (12/17/92)
Rule 4301 Fuel Burning Equipment (12/17/92)
Rule 4309 Dryers, Dehydrators, and Ovens (12/15/05)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
CEQA California Environmental Quality Act

III. Project Location

This facility is located at 9984 W. Walnut Ave in Livingston, CA. The District has verified that this equipment will not be located within 1000' of a k-12 school. Therefore, the public notification requirements of California Health and Safety Code 42301.6 are not applicable to this project.

IV. Process Description

Sensient Dehydrated Flavors LLC is in the business of producing dehydrated vegetables. Raw vegetable slices with moisture contents ranging from 65% to 90% are conveyed into various natural gas-fired, multiple stage dehydrating dryers. The vegetable slices typically remain in the dryers for six to twelve hours. The finished product has a moisture content ranging from 4% to 5% (per application review for project N-980813). Note, each of the dehydrators is equipped with multiple natural gas-fired line burners. The rated heat input for each dehydrator is based upon the total heat input of all of the individual line burners.

This project includes the installation of two new natural gas-fired dehydrators. Washed onion slices will be introduced to the new dehydrators, where moisture will be removed. The dehydrators will operate in parralel and there will be no conveyor drops. From the natural gas-fired dehydrators, the onions will travel, via an enclosed conveyor, to a single steam heated D-Stage drier. From the D-Stage drier, the onion slices will be conveyed, in an enclosed fashion, into enclosed storage units. Additionally, two existing natural gas-fired dehydrators will be modified to limit their combined annual heat input to 447,422 MMBtu/year.

There will be NOx, VOC, CO, SOx, and PM_{10} emissions form the combuston of natural gas in the dehydrators. While product will be transferred into and out of the dehydrators, PM_{10} emissions are expected to be minimal since the raw vegetables introduced into the process have a moisture content of 65% to 90%, there is no conveyor drops and the conveying system is enclosed, and the final product has a moisture content of approximately 4% to 5%.

Operating Schedule:

This facility's can operate up to 24 hr/day, 365 days/year.

V. Equipment Listing

Pre-Project Equipment Descriptions:

N-1657-2-5: 65 MMBTU/HR PROCTOR & SCHWARTZ NATURAL GAS-FIRED FOUR-STAGE DEHYDRATOR (#1)

N-1657-3-5: 65 MMBTU/HR PROCTOR & SCHWARTZ NATURAL GAS-FIRED FOUR-STAGE DEHYDRATOR (#2)

Post-Project Equipment Descriptions:

N-1657-2-5: PROCTOR & SCHWARTZ NATURAL GAS-FIRED FOUR-STAGE VEGETABLE DEHYDRATOR (#1) WITH A 65 MMBTU/HR MAXON NP1 AIRFLO BURNER SYSTEM

N-1657-3-5: PROCTOR & SCHWARTZ NATURAL GAS-FIRED FOUR-STAGE VEGETABLE DEHYDRATOR (#2) WITH A 65 MMBTU/HR MAXON NP1 AIRFLO BURNER SYSTEM

N-1657-33-0: PROCTOR & SCHWARTZ NATURAL GAS-FIRED THREE-STAGE VEGETABLE DEHYDRATOR (#8) WITH A 66 MMBTU/HR MAXON NP1 AIRFLO BURNER SYSTEM

N-1657-34-0: PROCTOR & SCHWARTZ NATURAL GAS-FIRED THREE-STAGE VEGETABLE DEHYDRATOR (#9) WITH A 66 MMBTU/HR MAXON NP1 AIRFLO BURNER SYSTEM

VI. Emission Control Technology Evaluation

There will be NOx, VOC, CO, SOx, and PM_{10} emissions form the combuston of natural gas in the dehydrators.

While product will be transferred into and out of the dehydrators, PM_{10} emissions are expected to be minimal since the raw vegetables introduced into the process have a moisture content of 65% to 90%, there is no conveyor drops and the conveying system is enclosed, and the final product has a moisture content of approximately 4% to 5%.

VII. General Calculations

A. Assumptions

- Each dehydrating operation will operate up to 24 hours/day.
- PM_{10} emissions from the transfer of onion product is minimal.
- The higher heating value (HHV) of natural gas is 1,000 Btu/scf, taken from District Policy APR-1720, dated 12/01.
- The F-factor for natural gas, corrected to 60 °F, is 8,578 dscf/MMBtu.
- Molar Specific Volume of a gas @ 60 °F is 379.5 ft^3/lb-mol.
- All other assumptions will be stated as they are made.

B. Emission Factors

Pre and Post-Project Emission Factors

Existing Permits to Operate N-1657-2-5 and N-1657-3-5 do not list emission limits. Since the applicant is proposing the same burner model for the new dehydrators (N-1657-33 and N-1657-34) as the existing units, the emission factors for all four dehydrators are assumed to be identical. The following table shows the emission factors for all four dehydrators:

Dehydrator Emission Factors		
Pollutant	**Emission Factor (lb/MMBtu)**	**Source**
NOx	0.109	Burner Manufacturer
SOx	0.00285	District Policy APR 1720
PM10	0.0076	AP-42 Table 1.4-2 (7/98)
CO	0.369	Burner Manufacturer
VOC	0.0055	AP-42 Table 1.4-2 (7/98)

C. Calculations

1. Pre-Project Potential to Emit (PE1)

N-1657-2-5, N-1657-3-5

Pre-project emissions from these permit unit are identical and are based upon the maximum rated heat input of 65 MMBtu/hr, an operating schedule of 24 hr/day, 8,760 hr/year, and the dehydrator emission factors presented earlier in this document. The following formulas will be used to calculate emissions:

$PE1_{Daily}$ = 65 MMBtu/hr x 24 hr/day x EF (lb/MMBtu)
$PE1_{Annual}$ = 65 MMBtu/hr x 8,760 hr/year x EF (lb/MMBtu)

Pre-Project Emissions for N-1657-2-5 and N-1657-3-5 (per unit)			
Pollutant	**Emission Factor**	**Daily Emissions (lb/day)**	**Annual Emissions (lb/year)**
NOx	0.109	170.0	62,065
SOx	0.00285	4.4	1,623
PM10	0.0076	11.9	4,327
CO	0.369	575.6	210,109
VOC	0.0055	8.6	3,132

2. Post-Project Potential to Emit (PE2)

N-1657-2-6 and N-1657-3-6

Post-project emissions from these permit unit are identical and are based upon the maximum rated heat input of 65 MMBtu/hr per unit, an operating schedule of 24 hr/day, a combined maximum annual heat input of 447,422 MMBtu/year for the two units, and the dehydrator emission factors presented earlier in this document. The following formulas will be used to calculate emissions:

$PE2_{Daily,\ per\ unit}$ = 65 MMBtu/hr x 24 hr/day x EF (lb/MMBtu)
$PE2_{Annual,\ combined}$ = 447,422 MMBtu/year x EF (lb/MMBtu)

Post-Project Emissions for N-1657-2-6 and N-1657-3-6			
Pollutant	**Emission Factor (lb/MMBtu)**	**Daily Emissions (lb/day, per unit)**	**Annual Emissions (lb/year, combined)**
NOx	0.109	170.0	48,769
SOx	0.00285	4.4	1,275
PM10	0.0076	11.9	3,400
CO	0.369	575.6	165,099
VOC	0.0055	8.6	2,461

N-1657-33-0 and 34-0

Post-project emissions from these permit units are identical. Daily emissions are based upon the maximum rated heat input of 66 MMBtu/hr and an operating schedule of 24 hr/day. Combined annual emissions from the units are based upon a proposed combined heat input limit of 336,000 MMBtu/year for units N-1657-33-0 and N-1657-34-0.

$PE2_{Daily,\ per\ unit}$ = 66 MMBtu/hr x 24 hr/day x EF (lb/MMBtu)
$PE2_{Annual,\ combined}$ = 336,000 MMBtu/year x EF (lb/MMBtu)

Post-Project Emissions for N-1657-33-0 and N-1657-34-0			
Pollutant	**Emission Factor**	**Daily Emissions (lb/day, per unit)**	**Annual Emissions (lb/year, combined)**
NOx	0.109	172.7	36,624
SOx	0.00285	4.5	958
PM10	0.0076	12.0	2,554
CO	0.369	584.5	123,984
VOC	0.0055	8.7	1,848

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 ATCs or PTOs at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) 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.

The pre-project stationary source potential emit is shown in the table on the following page.

Pre-Project Stationary Source Potential to Emit (SSPE1)						
Permit Unit	NO_X (lb/yr)	SO_X (lb/yr)	PM_{10} (lb/yr)	CO (lb/yr)	VOC (lb/yr)	Source
N-1657-1-5	37,865	826	2,164	105,054	1,566	Project N1063071
N-1657-2-5	62,065	1,623	4,327	210,109	3,132	See Calculations Section VII.C.1
N-1657-3-5	62,065	1,623	4,327	210,109	3,132	See Calculations Section VII.C.1
N-1657-4-1	0	0	5,840	0	0	Project N1030447
N-1657-5-1	21,024	610	1,598	77,579	1,156	Project N1030447
N-1657-6-4	0	0	0	0	0	Project N1063071
N-1657-7-1	0	0	365	0	0	Project N1030447
N-1657-8-4	0	0	1,314	0	0	Project N1030447
N-1657-9-4	47,742	1,248	3,329	161,622	2,409	See Calculations in Appendix III
N-1657-10-4	33,419	874	2,330	113,135	1,686	See Calculations in Appendix III
N-1657-12-2	50,390	1,099	2,879	139,803	2,084	Project N1030447
N-1657-13-1	0	0	3,431	0	0	Project N1030447
N-1657-14-1	0	0	2,263	0	0	Project N1030447
N-1657-15-6	2,318	367	979	4,765	708	Project N1043378
N-1657-18-2	7,008	203	533	25,860	400	Project N1030447
N-1657-21-1	0	0	292	0	0	Project N1030447
N-1657-22-7	11,038	1,226	3,679	90,754	1,533	Project N1063071
N-1657-24-1	0	0	0	0	0	Project N1030447
N-1657-25-1	0	0	0	0	0	Project N1030447
N-1657-30-1	0	0	80	0	235	Project N1030447
N-1657-31-1	242	13	16	9,657	451	Project N1050455
N-1657-32-1	242	13	16	9,657	451	Project N1050455
SSPE1 Total	**335,418**	**9,725**	**39,762**	**1,158,104**	**18,943**	

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 ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) 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. The post-project stationary source potential to emit is shown on the table on the following page.

Post-Project Stationary Source Potential to Emit (SSPE2)					
Permit Unit	**NO_X (lb/yr)**	**SO_X (lb/yr)**	**PM_{10} (lb/yr)**	**CO (lb/yr)**	**VOC (lb/yr)**
N-1657-1-5	37,865	826	2,164	105,054	1,566
ATC N-1657-2-6	*48,769*	*1,275*	*3,400*	*165,099*	*2,461*
ATC N-1657-3-6					
N-1657-4-1	0	0	5,840	0	0
N-1657-5-1	21,024	610	1,598	77,579	1,156
N-1657-6-4	0	0	0	0	0
N-1657-7-1	0	0	365	0	0
N-1657-8-4	0	0	1,314	0	0
N-1657-9-4	47,742	1,248	3,329	161,622	2,409
N-1657-10-4	33,419	874	2,330	113,135	1,686
N-1657-12-2	50,390	1,099	2,879	139,803	2,084
N-1657-13-1	0	0	3,431	0	0
N-1657-14-1	0	0	2,263	0	0
N-1657-15-6	2,318	367	979	4,765	708
N-1657-18-2	7,008	203	533	25,860	400
N-1657-21-1	0	0	292	0	0
N-1657-22-7	11,038	1,226	3,679	90,754	1,533
N-1657-24-1	0	0	0	0	0
N-1657-25-1	0	0	0	0	0
N-1657-30-1	0	0	80	0	235
N-1657-31-1	242	13	16	9,657	451
N-1657-32-1	242	13	16	9,657	451
ATC N-1657-33-0	*36,624*	*958*	*2,554*	*123,984*	*1,848*
ATC N-1657-34-0					
SSPE2 Total	296,681	8,712	37,062	1,026,969	16,988

5. Major Source Determination

Major Source Determination					
Pollutant	**SSPE1 (lb/yr)**	**SSPE2 (lb/yr)**	**Major Source Threshold (lb/year)**	**Existing Major Source?**	**New Major Source?**
NO_X	335,418	296,681	50,000	Yes	No
SO_X	9,725	8,712	140,000	No	No
PM_{10}	39,762	37,062	140,000	No	No
CO	1,158,104	1,026,969	200,000	Yes	No
VOC	18,943	16,988	50,000	No	No

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 3.22

BE for SOx, PM_{10}, and VOC

Since the facility is a non-major source for SOx, PM_{10}, and VOC emissions, baseline emissions for each unit are equal to the pre-project potential to emit for these pollutants.

BE for NOx Emissions

BE for the new dehydrators is equal to 0.

The facility is a major source for NOx emissions. Therefore, each of the existing dehydrators must be clean, highly utilized, or fully offset in order for BE_{NOx} to equal $PE1_{NOx}$.

To be clean for NOx, each unit must either be equipped with an emissions control technology with a minimum control efficiency of at least 95% or be equipped with an emission control technology that is Achieved-in-Practice BACT as accepted by the APCO during the five years prior to the submission of a complete application.

The existing BACT Guideline for vegetable dehydrators (1.6.13) is included in Appendix IV of this document, and does not list any Achieved-in-Practice emission levels. Therefore, an analysis was performed to determine the Achieved-in-Practice control technology for NOx emissions. This analysis is included in Appendix V, under the title "Clean Unit Determination and Achieved-in-Practice BACT Analysis for NOx". Based on the analysis in Appendix V, the existing dehydrators are clean for NOx emissions. Therefore, $BE_{NOx} = PE1_{NOx}$ for the existing dehydrators.

BE for CO Emissions

BE for the new dehydrators is equal to 0.

The facility is a major source for CO emissions. Therefore, each of the existing dehydrators must be clean, highly utilized, or fully offset in order for BE_{CO} to equal $PE1_{CO}$.

To be clean for CO, each unit must either be equipped with an emissions control technology with a minimum control efficiency of at least 95% or be equipped with an emission control technology that is Achieved-in-Practice BACT as accepted by the APCO during the five years prior to the submission of a complete application.

The existing BACT Guideline for vegetable dehydrators (1.6.13) is included in Appendix IV of this document, and lists an Achieved-in-Practice requirement of "Use of PUC-quality natural gas fuel" for CO emissions. Each of the existing dehydrators is fired on PUC-quality natural gas fuel. Therefore, the existing dehydrators are clean for CO emissions and $BE_{CO} = PE1_{CO}$.

7. Major Modification

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.*"

Major Modifications can only be triggered for NOx, SOx, PM_{10}, and VOC pollutants.

Major Modification Determination for SOx, PM_{10}, and VOC

Since the facility is not and will not become a Major Source for SOx, PM_{10}, and VOC emissions, a Major Modification cannot be triggered for these pollutants.

Major Modification Determination for NOx

A major modification for NOx will be triggered if the Net Emissions Increase (NEI) from the project is equal to or greater than the 50,000 lb-NOx/year threshold, listed in District Rule 2201 Section 3.23.

The NEI is calculated as follows:

NEI = Post-Project Potential to Emit – Pre-Project Actual Emissions

The post-project potential to emit is the sum of the PE2's for the four units in this project. Units N-1657-2 and '-3 have a combined PE2 of 48,769 lb-NOx/year. The new units, N-1657-33 and '-34 have a combined PE2 of 36,624 lb-NOx/year. Thus sum is:

Post Project Potential to Emit = 48,769 lb-NOx/year + 36,624 lb-NOx/year
Post Project Potential to Emit = 85,393 lb-NOx/year

The pre-project actual emissions will be based on the actual emissions from the two modified units, N-1657-2 and '-3. The applicant provided the following historical fuel usages for each of these units (Please refer to Appendix IX to see the applicant's method of deriving these values):

Unit	2007 Fuel Usage (MMscf)	2008 Fuel Usage (MMscf)	Average Annual Fuel Usage (MMscf)
N-1657-2	168.32	156.4	324.72
N-1657-3	168.32	156.4	324.72
Total	336.64	312.8	***324.72***

Pre-Project Actual emissions will be calculated using average annual total fuel usage of 324.72 MMscf. As stated earlier in this evaluation, the NOx emission factor for the existing units is 0.109 lb/MMBtu. Using a natural gas higher heating value of 1000 Btu/scf, the Pre-Project Actual Emissions are calculated below:

Pre-Project Heat Input = 324.72 x 10^6 scf/year x 1000 Btu/scf x 1 MMbtu/10^6 Btu
Pre-Project Heat Input = 324,720 MMBtu/year

Pre-Project Actual Emissions = 324,720 MMBtu/year x 0.109 lb-NOx/MMBtu
Pre-Project Actual Emissions = 35,394 lb-NOx/year

The Net Emissions Increase is then:

NEI = 85,393 lb-NOx/year – 35,394 lb-NOx/year
NEI = 49,999 lb-NOx/year

Since the NEI for NOx is less than 50,000 lb/year, a Major Modification is not triggered for NOx.

As shown above, this project does not trigger a Major Modification for any pollutant.

8. Federal Major Modification

As shown in the previous section, this project does not constitute a Major Modification. Therefore, in accordance with District Rule 2201, Section 3.17, this project does not constitute a Federal Major Modification and no further discussion is required.

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 included in Appendix VIII.

VIII. Compliance

Rule 1081 – Source Sampling

The purpose of this rule is to ensure that any source operation that emits or may emit air contaminants provides adequate and safe facilities for use in sampling to determine compliance. This rule also specifies methods and procedures for source testing, sample collection, and compliance determination. The following conditions will only be listed on the permits for units that are required to be source tested.

- 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]

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

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 2.0 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.

a. New emissions units – PE > 2.0 lb/day

N-1657-33-0 and 34-0

The two new dehydrators are identical. The following table evaluates whether BACT is triggered for each new dehydrator.

BACT Applicability – New Dehydrator				
Pollutant	**Daily Emissions (lb/day)**	**BACT Threshold (lb/day)**	**SSPE2 (lb/yr)**	**BACT Triggered?**
NO_X	172.7	> 2.0	n/a	**Yes**
SO_X	4.5	> 2.0	n/a	**Yes**
PM_{10}	12.0	> 2.0	n/a	**Yes**
CO	584.5	> 2.0 and SSPE2 ≥ 200,000 lb/yr	1,152,790	**Yes**
VOC	8.7	> 2.0	n/a	**Yes**

As shown above, the installation of the new dehydrators triggers BACT for all pollutants.

b. Relocation of emissions units – PE > 2 lb/day

No emissions units are being relocated.

c. Modification of emissions units – Adjusted Increase in Permitted Emissions (AIPE) > 2 lb/day

The Adjusted Increase in Potential to Emit (AIPE) will be calculated for the existing driers.

AIPE = PE2 – HAPE

HAPE = PE1 x (EF2 ÷ EF1), For EF2 > EF1, EF2 ÷ EF1 = 1

HAPE = Historically Adjusted Potential to Emit (lb/day)
PE2 = Post-Project Potential to Emit
PE1 = Pre-Project Potential to Emit
EF2 = Post-Project Emissions Factor
EF1 = Pre-Project Emissions Factor

Existing Dehydrators (per unit)					
Pollutant	PE2 (lb/day)	PE1 (lb/day)	EF2 (lb/MMBtu)	EF1 (lb/MMBtu)	AIPE (lb/day)
NOx	170.0	170.0	0.109	0.109	0.0
SOx	4.4	4.4	0.00285	0.00285	0.0
PM10	11.9	11.9	0.0076	0.0076	0.0
CO	575.6	575.6	0.369	0.369	0.0
VOC	8.6	8.6	0.0055	0.0055	0.0

As shown above, BACT is not triggered for any pollutants for the existing dehydrators.

d. Major Modification

As discussed previously in Section VII.C.7, this project does not trigger a Major Modification.

BACT is triggered for all pollutants for the new dehydrators (N-1657-33 and '-34)
BACT is not triggered for any pollutant by the modifications to the existing dehydrators (N-1657-2 and N-1657-3).

2. BACT Guideline

BACT Guideline 1.6.13 applies to the new dehydrators. A copy of this guideline is included in Appendix IV.

3. 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 District performed a Top-Down BACT analysis for the new dehydrators. A copy of the analysis is included in Appendix VI. Pursuant to the analysis, BACT for the new dehydrators is the following:

NOx: None
SOx: Use of PUC quality natural gas fuel
PM10: Use of PUC quality natural gas fuel
CO: Use of PUC quality natural gas fuel
VOC: Use of PUC quality natural gas fuel

The following condition will be included on ATC's N-1657-33-0 and '-34-0 to enforce the BACT requirements:

- *This unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4309]*

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant-by-pollutant basis. Unless exempted pursuant to Section 4.6, offsets may be required if the post-project SSPE2 equals or exceeds the following offset threshold levels.

As shown in the table below, this project triggers offsets for NOx, PM_{10}, and CO emissions.

Pollutant	SSPE2 (lb/yr)	Offset Threshold (lb/yr)	Offsets Triggered?
NO_x	296,681	20,000	Yes
SO_x	8,712	54,750	No
PM_{10}	37,062	29,200	Yes
CO	1,026,969	200,000	Yes
VOC	16,988	20,000	No

2. Quantity of Offsets Required

As shown in the previous table, offset requirements are triggered for NOx, PM_{10}, and CO emissions. The following equation will be used to calculate the quantity of offsets required.

Quantity of Offsets Required = [$\sum$(PE2 – BE) + Cargo Carrier Emissions] x Distance Offset Ratio (DOR)

Quantity of NOx Offsets Required

As shown earlier in this evaluation, BE_{NOx} is equal to zero for the new units and is equal to PE1 for the existing units. There is no cargo carrier emissions associated with these units. The quantity of NOx offsets required is calcuated in the following table:

Unit	PE2 (lb/year)	BE_{NOx} = PE1 (lb/year)	Offsets Required PE2 – PE1 (lb/year)
N-1657-2 and '-3 (combined emissions)	48,769	124,130	-75,361
N-1657-33 and '-34 (combined emissions)	36,624	0	36,624
Quantity of NOx Offsets Required			**< 0**

As shown above, the quantity of NOx offsets required is less than zero.

Quantity of PM_{10} Offsets Required

As shown earlier in this evaluation, BE_{PM10} is equal to zero for the new units and is equal to PE1 for the existing units. There is no cargo carrier emissions associated with these units. The quantity of PM_{10} offsets required is calcuated in the following table:

Unit	PE2 (lb/year)	BE_{PM10}= PE1 (lb/year)	Offsets Required PE2 – PE1 (lb/year)
N-1657-2 and '-3 (combined emissions)	3,400	8,654	-5,254
N-1657-33 and '-34 (combined emissions)	2,554	0	2,554
Quantity of PM_{10} Offsets Required			**< 0**

As shown above, the quantity of PM_{10} offsets required is less than zero.

Quantity of CO Offsets Required

As shown earlier in this evaluation, BE_{CO} is equal to zero for the new units and is equal to PE1 for the existing units. There is no cargo carrier emissions associated with these units. The quantity of CO offsets required is calcuated in the following table:

Unit	PE2 (lb/year)	BE_{CO}= PE1 (lb/year)	Offsets Required PE2 – PE1 (lb/year)
N-1657-2 and '-3 (combined emissions)	165,099	420,218	-255,119
N-1657-33 and '-34 (combined emissions)	123,984	0	123,984
Quantity of CO Offsets Required			**< 0**

As shown above, the quantity of CO offsets required is less than zero.

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, which is a new facility that is also a Major Source,
b. Major Modifications,
c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
d. Any project which results in the offset thresholds being surpassed, and/or
e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Source

A New Major Source is a new facility, which is also a major source. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

b. Major Modification

As demonstrated previously in Section VII.C.7, this project does not trigger a Major Modification; therefore, public noticing for Major Modification purposes is not required.

c. PE > 100 lb/day

The new dehydrator units have NOx and CO PE's greater than 100 lb/day. Therefore, public noticing for new emissions unit with a Potential to Emit greater than 100 lb/day for any one pollutant is required.

d. Offset Threshold

The following table compares the SSPE1 with the SSPE2 to the offset thresholds in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	**SSPE1 (lb/yr)**	**SSPE2 (lb/yr)**	**Offset Threshold (lb/yr)**	**Public Notice Required?**
NO_X	335,418	296,681	20,000	No
SO_X	9,725	8,712	54,750	No
PM_{10}	39,762	37,062	29,200	No
CO	1,158,104	1,026,969	200,000	No
VOC	18,943	16,988	20,000	No

While the SSPE2 for NOx, PM_{10} and CO are greater than the offset threshold, SSPE1 for these pollutants is also greater than the offset threshold. Therefore, the offset threshold will not be surpassed and a public notice is not required for SSPE2 surpassing the offset thresholds.

e. SSIPE > 20,000 lb/year

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. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

SSIPE Public Notice Threshold					
Pollutant	**SSPE2 (lb/yr)**	**SSPE1 (lb/yr)**	**SSIPE (lb/yr)**	**SSIPE Threshold (lb/yr)**	**Public Notice Required?**
NO_X	296,681	335,418	<0	20,000	No
SO_X	8,712	9,725	<0	20,000	No
PM_{10}	37,062	39,762	<0	20,000	No
CO	1,026,969	1,158,104	<0	20,000	No
VOC	16,988	18,943	<0	20,000	No

As detailed in the preceding table, this project does not result in emissions surpassing the SSIPE thresholds. Therefore, public noticing is not required for exceeding the SSIPE thresholds.

2. Public Notice Action

Public notice is required since the new units have a PE > 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.

D. Daily Emissions Limits

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, 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. The following DEL's will be placed on the permits:

N-1657-2-6 and N-1657-3-6:

- *This unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4309]*

- *Emissions from the dehydrator exhaust shall not exceed any of the following limits: 0.109 lb-NOx/MMBtu (equivalent to 9.8 ppmvd NOx @ 19% O_2)[1], 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMbtu, 0.369 lb-CO/MMbtu (equivalent to 54.3 ppmvd CO @ 19% O_2[2]), or 0.0055 lb-VOC/MMBtu. [District Rule 2201]*

Additionally, the following annual limit will be placed on these ATC's:

- *The combined annual heat input for units N-1657-2 and N-1657-3 shall not exceed 447,422 MMBtu during any one rolling 12 month period. [District Rule 2201]*

N-1657-33-0 and N-1657-34-0:

- *This unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4309]*

- *Emissions from the dehydrator exhaust shall not exceed any of the following limits: 0.109 lb-NOx/MMBtu (equivalent to 9.8 ppmvd NOx @ 19% O_2), 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMbtu, 0.369 lb-CO/MMbtu (equivalent to 54.3 ppmvd CO @ 19% O_2), or 0.0055 lb-VOC/MMBtu. [District Rule 2201]*

Additionally, the following annual limit will be placed on these ATC's:

- *The combined annual heat input for units N-1657-33 and N-1657-34 shall not exceed 336,000 MMBtu during any one rolling 12 month period. [District Rule 2201]*

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[1] $$ppmvdNOx = \frac{0.109\frac{lb-NOx}{MMBtu}\times 379.5\frac{dscf}{lb-mol}\times 10^6}{8578\frac{dscf}{MMBtu}\times 46\frac{lb-NOx}{lb-mol}\times\left(\frac{20.95}{1.95}\right)} = 9.8 ppmvd\ @\ 19\%\ O_2$$

[2] $$ppmvdCO = \frac{0.369\frac{lb-CO}{MMBtu}\times 379.5\frac{dscf}{lb-mol}\times 10^6}{8578\frac{dscf}{MMBtu}\times 28\frac{lb-CO}{lb-mol}\times\left(\frac{20.95}{1.95}\right)} = 54.3 ppmvd\ @\ 19\%\ O_2$$

E. Compliance Assurance

1. Source Testing

Neither District Policy APR 1705 "Source Testing Frequency" nor District Rule 4309 list source testing requirements for vegetable dehydrators. The District typically requires source testing of NOx and CO of combustion units to verify the proposed emission limits.

The proposed NOx emissions limit is 0.109 lb/MMBtu. Since the only available source test for a dehydrator with Maxon NP1 burners confirmed a NOx emissions rate of 0.129 lb/MMBtu, the District will require an initial source test for NOx emissions. Since each of the dehydrators have nearly identical burner configurations, only one of the four units will be required to be tested. Additionally, the facility will be required to source test CO emissions.

The following conditions will be listed only on the ATC for unit N-1657-33-0:

- Source testing to measure NOx and CO emissions from this unit shall be conducted within 60 days of startup. [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]

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

2. Monitoring

No monitoring is required to ensure compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification, and daily emission limit requirements of Rule 2201. The following conditions will be placed on the ATC's:

N-1657-2-6 and N-1657-3-6:

- *Permittee shall keep a record of the rolling 12-month combined heat input for units N-1657-2 and N-1657-3. This record shall be updated on a monthly basis. [District Rule 2201]*

- *Permittee shall maintain records which demonstrate the dehydrator is fired exclusively on PUC quality natural gas. [District Rule 4309]*

- *All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4309]*

Additionally, in order to ensure accurate heat input records are available, natural gas fuel meters must be installed. The following condition will be included on each ATC:

- *A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be utilized and maintained. [District Rules 2201]*

N-1657-33-0 and N-1657-34-0:

- *Permittee shall keep a record of the rolling 12-month combined heat input for units N-1657-33 and N-1657-34. This record shall be updated on a monthly basis. [District Rule 2201]*

- *Permittee shall maintain records which demonstrate the dehydrator is fired exclusively on PUC quality natural gas. [District Rule 4309]*

- *All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4309]*

Additionally, in order to ensure accurate heat input records are available, natural gas fuel meters must be installed. The following condition will be included on each ATC:

- *A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized and maintained. [District Rules 2201]*

4. Reporting

No reporting is required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) 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 Technical Services Division of the SJVAPCD conducted the required analysis. Puruant to the Ambient Air Quality Analysis Results Summary in Appendix VII of this document, this project will not cause or make worse a violation of an air quality standard.

Rule 2520 – Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule:

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:

    a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
    b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and

5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment modification, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the the Title V administrative amendment/minor modification application.

Rule 4101 - Visible Emissions

Rule 4101 states 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 as dark as, or darker than, Ringelmann 1 or 20% opacity.

As long as the equipment is properly maintained and operated, compliance with visible emissions limits is expected under normal operating conditions. The following condition will be placed on the permit.

- *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]*

Rule 4102 - Public Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance.

- *{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)

The District's Risk Management Policy requires an evaluation of the risk associated with increases in hazardous air pollutants. Pursuant to the definition of Section V.A. of this policy, a hazardous pollutant is "...a substance included in lists prepared by the California Air Resources Board pursuant to Section 44321 of the California Health and Safety Code that have OEHHA approved health risk values and all pollutants listed in section 112(b) of the Federal Clean Air Act..." The proposed project results in an increase of potentially hazardous air pollutants; therefore, an evaluation of the associated health risk is required. As shown in the following table, the prioritization score was less than 1.0 for the proposed project. Therefore, a full risk management review is not necessary and the project is approvable. T-BACT is not triggered and no special conditions are required.

RMR Summary (see Appendix VII for the full RMR Summary)				
Categories	66 MMBtu/hr NG-Fired Burner (Unit 33-0)	66 MMBtu/hr NG-Fired Burner (Unit 34-0)	Project Totals	Facility Totals
Prioritization Score	0.01	0.01	<1.0	<1.0
Acute Hazard Index	N/A[1]	N/A[1]	0.9	6.80
Chronic Hazard Index	N/A[1]	N/A[1]	0.12	1.02
Maximum Individual Cancer Risk (10^{-6})	N/A[1]	N/A[1]	1.8	1.9
T-BACT Required?	**No**	**No**		
Special Permit Conditions?	**No**	**No**		

1 Prioritization for this unit was less than 1.0; no further analysis is required.

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.

The following analysis is applies to each of the units:

F-Factor for Natural Gas: 8,578 dscf/MMBtu at 60 °F
Maximum PM_{10} Emission Factor: 0.0076 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust: 100%

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

$$GL = 0.006\ grain/dscf < 0.1\ grain/dscf$$

As shown above, compliance with the District Rule 4201 requirements is expected.

Rule 4202 – Particulate Matter- Emission Rate

The purpose of this rule is to limit particulate matter emissions by establishing allowable emission rates, based on the process rate for each source operation. Gaseous fuels, such as natural gas, are not considered to be part of the process weight, per District Rule 4202 Section 3.1. Since all of the PM emissions from each dehydrator are from natural gas fuel combustion and natural gas is not considered to be part of the process weight, District Rule 4202 requirements are not applicable to the dehydrators.

Rule 4301 Fuel Burning Equipment

Rule 4301 Section 3.1 defines Fuel Burning Equipment as any furnace, boiler, apparatus, stack, etc. used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. Each dehydrator is a direct-fired unit and is therefore not subject to this rule.

Rule 4309 Dryers, Dehydrators, and Ovens

The purpose of this rule is to limit emissions of oxides of nitrogen (NOx) and carbon monoxide (CO) from dryers, dehydrators, and ovens. This rule applies to any dryer, dehydrator, or oven that is fired on gaseous fuel, liquid fuel, or is fired on gaseous and liquid fuel sequentially, and the total rated heat input for the unit is 5.0 million British thermal units per hour (5.0 MMBtu/hr) or greater. Dehydrators are defined in District Rule 4309 Secton 3.9 as "any device that drives free water from products like fruits, vegetables, and nuts, at an accelerated rate without damage to the product". Each of the four units in this project is used to drive water from vegetables without damaging the product. Therefore, each unit meets the definition of a dehydrator in Rule 4309 and is subject to District Rule 4309 requirements.

Section 5.0, Requirements

Section 5.0 states that all ppmv limits specified in this section are referenced at dry stack gas conditions and adjusted using an oxygen correction factor of 19% by volume.

Section 5.1 states that dehydrators must:

1. be operated and maintained according to manufacturer's specifications or APCO-approved alternative procedures.
2. maintain operation and maintenance records and manufacturer's specifications, or APCO approved alternative procedures, in accordance with Section 6.1.3.
3. be in compliance with the provisions of Section 4.3 during periods of PUC quality natural gas curtailment.

The applicant has not proposed the use of a curtailment fuel. The applicant is proposing to operate and maintain the dehydrators according to manufacturer's specifications, and to keep records in accordance with Section 6.1.3 of this Rule.

Section 5.2 lists emission limits; however, dehydrators are not subject to these emission limits.

Section 5.3 states that the applicable emission limits in Section 5.2 shall not apply during start-up or shutdown provided an operator complies with the requirements specified below; however, the emission limits in Section 5.2 are already not applicable to dehydrators. Therefore, Section 5.3 is not relevant to this project.

Section 5.4, Monitoring Requirements

Section 5.4.1 does not apply to dehydrators. Section 5.4.2 requires the operator of a dehydrator to maintain records that demonstrate that the dehydrator is fired exclusively on PUC natural gas, except during natural gas curtailment, and keep reocords that demonstrate that the dehydrator is properly operated and maintained according to manufacturer's specifications.

The following conditions will be included on each Authority to Construct permit:

- *Permittee shall maintain records which demonstrate the dehydrator is fired exclusively on PUC quality natural gas. [District Rule 4309]*

Section 5.5, Compliance Determination

Section 5.5 includes requirements that apply to source testing and alternate monitoring. These requirements are not applicable to dehydrators.

Section 6.1, Recordkeeping

Section 6.1.1 states the recordkeeping requirements of a unit that uses CEMS to monitor emissions. Since the applicant has not proposed a CEMS to monitor emissions, the requirements of this section do not apply.

Section 6.1.2 states that operators using an alternate emissions monitoring system to maintain records of the total hours of operation, type and quantity of fuel used, measurements of each surrogate parameter, and the range of values for each surrogate parameter. Dehydrators are not required to use an alternate emissions monitoring system; thus, these recordkeeping requirements are not applicable.

Section 6.1.3 applies to dehydrators and requires the following:

1. Operator must keep records that show the dehydrator is fired exclusively on PUC quality natural gas, except during PUC quality natural gas curtailment.
2. Operator must keep operation and maintenance records that demonstrate operation of the dehydrator within the limits of the manufacturer's specification and maintenance according to manufacturer's recommendation or APCO-approved alternative procedures.
3. Operation records must be maintained on a daily basis when the dehydrator is operated on that day.
4. Operator must keep maintenance records that verify that maintenance was performed in accordance with manufacturer's specifications or APCO-alternative procedures.
5. A copy of the manufacturer's operation specifications and maintenance instruction manual or APCO-approved alternative procedures must be maintained on-site during normal business hours.

6. If the manufacturer's operation specifications or maintenance instruction manuals are not available, the operator must submit alternative operation or maintenace procedures for approval by the APCO and US EPA by July 1, 2006.

The following conditions will be included on each Authority to Construct permit:

- *Permittee shall maintain records which demonstrate the dehydrator is fired exclusively on PUC quality natural gas. [District Rule 4309]*

- *A copy of the manufacturer's operation specifications and maintenance instruction manual or APCO-approved alternative procedures shall be maintained on-site during normal business hours. [District Rule 4309]*

- *Permittee shall maintain daily operation and maintenance records that demonstrate the dehydrator is operated within the limits of the manufacturer's specification, and maintenance is performed according to the manufacturer's recommendation or APCO-approved alternative procedures. [District Rule 4309]*

Section 6.1.4 states that the operator of a unit subject to Section 5.2 and performing start-up or shutdown of that unit shall keep records of the duration of each start-up and each shutdown. The dehydrators are not subject to Section 5.2; therefore, these requirements are not applicable.

Section 6.1.5 states the recordkeeping requirements applicable to an operator of any unit operated under the exemption of Section 4.3. Since the applicant has not applied for the exemption in Section 4.3, the requirements in this section do not apply to this project.

Section 6.1.6 states the records and manufacturer's specifications required by Sections 6.1.1 through 6.1.5 shall meet all of the following requirements.

- The records shall be maintained for five calendar years,
- The records shall be made available on-site during normal business hours, and
- The records shall be submitted to the APCO upon request.

The following condition will be added to each ATC:

- *All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4309]*

Section 6.2, Test Methods

Section 6.2 lists the test methods required by the rule; however, Rule 4309 does not require dehydrators to be tested.

Section 6.3, Compliance Demonstration

Section 6.3.1 states that for the purposes of compliance, the operators of a dehydrator must demonstrate that the unit meets the requirements of Section 5.4.2. No other requirements of Section 6.3.2 through 6.3.9 are applicable. The applicant is proposing to meet the requirements of Section 5.4.2.

Summary

Compliance with District Rule 4309 requirements is expected.

Rule 4801 – Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2, on a dry basis averaged over 15 consecutive minutes.

Using the ideal gas equation and the emission factors presented in Section VII, the sulfur compound emissions are calculated as follows:

$$\text{Volume } SO_2 = \frac{n\,RT}{P}$$

With:

N = moles SO_2
T (Standard Temperature) = 60°F = 520°R
P (Standard Pressure) = 14.7 psi
R (Universal Gas Constant) = $\frac{10.73\,psi \cdot ft^3}{lb \cdot mol \cdot {}^\circ R}$

EPA F-Factor for Natural Gas: 8,710 dscf/MMBtu at 68 °F, equivalent to

$$Corrected\ F-factor = \left(\frac{8{,}710 dscf}{MMBtu}\right) \times \left(\frac{60^\circ F + 459.6}{68^\circ F + 459.6}\right) = 8{,}578 \frac{dscf}{MMBtu}\ \ at\ 60^\circ F$$

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

$$SulfurConcentration = 1.97 \frac{parts}{million} < 2{,}000 \text{ ppmv (or 0.2\%)}$$

Therefore, compliance with District Rule 4801 requirements is expected.

California Health & Safety Code 42301.6 (School Notice)

The proposed unit will not be located within 1000' of a K-12 school. Therefore, the school noticing requirements of the California Health and Safety Code do not apply.

California Environmental Quality ACT

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 activity will occur at an existing facility and the project does not involve expansion of the existing use. 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 § 15031 (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 permits N-1657-2-6, '-3-6, '-33-0, and '-34-0 subject to the permit conditions on the attached draft Authorities to Construct in Appendix I.

X. Billing

Billing Schedule			
Permit Number	**Fee Schedule**	**Fee Description**	**Fee Amount**
N-1657-2-6	3020-02-H	65 MMBtu/hr	$1030
N-1657-3-6	3020-02-H	65 MMBtu/hr	$1030
N-1675-33-0	3020-02-H	66 MMBtu/hr	$1030
N-1657-34-0	3020-02-H	66 MMBtu/hr	$1030

Appendices

I: Draft Authority to Construct Permits
II: Permits to Operate N-1657-2-5 and N-1657-3-5
III: SSPE Calculations for units N-1657-9-4 and '-10-4
IV: BACT Guideline 1.6.13
V: Clean Unit Determination and Achieved-in-Practice BACT Analysis for NOx
VI: Top-Down BACT Analysis for N-1657-33 and N-1657-34
VII: Health Risk Assessment and Ambient Air Quality Analysis Results
VIII: Quarterly Net Emission Change Calculations
IX: Historical Fuel Usage for Units N-1657-2 and N-1657-3

Appendix I

Draft Authority to Construct Permits

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1657-2-6 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: SENSIENT DEHYDRATED FLAVORS COMPANY
MAILING ADDRESS: ATTN: CHRIS KAJI, EHS ENGINEER
PO BOX 485
LIVINGSTON, CA 95334

LOCATION: 9984 WEST WALNUT AVENUE
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
MODIFICATION OF A PROCTOR & SCHWARTZ NATURAL GAS-FIRED FOUR-STAGE VEGETABLE DEHYDRATOR (#1) WITH A 65 MMBTU/HR MAXON NPI AIRLFO BURNER SYSTEM TO LIMIT THE COMBINED ANNUAL HEAT INPUT FOR PERMIT UNITS N-1657-2 AND N-1657-3 TO 447,422 MMBTU/YEAR

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This Authority to Construct shall be implemented concurrently with Authority to Construct N-1657-3-6. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801 and Merced County Rule 407] Federally Enforceable Through Title V Permit
6. 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] Federally Enforceable Through Title V Permit

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 other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director/APCO

DRAFT

DAVID WARNER, Director of Permit Services
N-1657-2-6 : Feb 22 2010 10:48AM – HARADERJ : Joint Inspection NOT Required

7. Visible emissions shall be observed once per calendar quarter during operation. Any indication of potential visible emissions in excess of the limits of Rule 4101 shall be corrected within 24 hours. If visible emissions cannot be corrected within 24 hours, a visible emissions test using EPA Method 9 shall be conducted. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
8. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
9. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in this unit shall be installed, utilized, and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The unit shall only be fired on PUC-Quality natural gas. [District Rules 2201 and 4309] Federally Enforceable Through Title V Permit
11. Emissions from the dehydrator shall not exceed any of the following limits: 0.109 lb-NOx/MMBtu (equivalent to 9.8 ppmvd NOx @ 19% O2), 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 0.369 lb-CO/MMBtu (equivalent to 54.3 ppmvd @ 19% O2), or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The combined heat input for units N-1657-2 and N-1657-3 shall not exceed 447,422 MMBtu during any one rolling 12 month period. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The dehydrator shall be operated and maintained in proper operating condition as recommended by the dehydrator's manufacturer or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
14. A copy of the manufacturer's operation specifications and maintenance instruction manual or APCO-approved alternative procedures shall be maintained on-site during normal business hours. [District Rule 4309] Federally Enforceable Through Title V Permit
15. Permittee shall keep a record of the rolling 12-month combined heat input for units N-1657-2 and N-1657-3. This record shall be updated on a monthly basis. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Permittee shall maintain daily operation and maintenance records that demonstrate the dehydrator is operated within the limits of the manufacturer's specification, and maintenance is performed according to the manufacturer's recommendation or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
17. Permittee shall maintain records which demonstrate the unit is fired exclusively on PUC quality natural gas. [District Rule 4309] Federally Enforceable Through Title V Permit
18. Records of inspections and repair shall be maintained. The records shall include identification of the equipment, date of inspection, corrective action taken, and identification of the individual performing the inspection. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
19. This unit is not used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. Therefore, the requirements of District Rule 4301 (Amended December 17, 1992) do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
20. Operator shall maintain copies of all fuel invoices and supplier certifications. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
21. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4309] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1657-3-6 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: SENSIENT DEHYDRATED FLAVORS COMPANY
MAILING ADDRESS: ATTN: CHRIS KAJI, EHS ENGINEER
PO BOX 485
LIVINGSTON, CA 95334

LOCATION: 9984 WEST WALNUT AVENUE
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
MODIFICATION OF A PROCTOR & SCHWARTZ NATURAL GAS-FIRED FOUR-STAGE VEGETABLE DEHYDRATOR (#2) WITH A 65 MMBTU/HR MAXON NPI AIRLFO BURNER SYSTEM TO LIMIT THE COMBINED ANNUAL HEAT INPUT FOR PERMIT UNITS N-1657-2 AND N-1657-3 TO 447,422 MMBTU/YEAR

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
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3. This Authority to Construct shall be implemented concurrently with Authority to Construct N-1657-2-6. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801 and Merced County Rule 407] Federally Enforceable Through Title V Permit
6. 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] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N-1657-3-6 : Feb 22 2010 10:48AM -- HARADERJ : Joint Inspection NOT Required

7. Visible emissions shall be observed once per calendar quarter during operation. Any indication of potential visible emissions in excess of the limits of Rule 4101 shall be corrected within 24 hours. If visible emissions cannot be corrected within 24 hours, a visible emissions test using EPA Method 9 shall be conducted. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
8. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
9. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in this unit shall be installed, utilized, and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The unit shall only be fired on PUC-Quality natural gas. [District Rules 2201 and 4309] Federally Enforceable Through Title V Permit
11. Emissions from the dehydrator shall not exceed any of the following limits: 0.109 lb-NOx/MMBtu (equivalent to 9.8 ppmvd NOx @ 19% O2), 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 0.369 lb-CO/MMBtu (equivalent to 54.3 ppmvd @ 19% O2), or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The combined heat input for units N-1657-2 and N-1657-3 shall not exceed 447,422 MMBtu during any one rolling 12 month period. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The dehydrator shall be operated and maintained in proper operating condition as recommended by the dehydrator's manufacturer or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
14. A copy of the manufacturer's operation specifications and maintenance instruction manual or APCO-approved alternative procedures shall be maintained on-site during normal business hours. [District Rule 4309] Federally Enforceable Through Title V Permit
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21. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4309] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1657-33-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: SENSIENT DEHYDRATED FLAVORS COMPANY
MAILING ADDRESS: ATTN: CHRIS KAJI, EHS ENGINEER
PO BOX 485
LIVINGSTON, CA 95334

LOCATION: 9984 WEST WALNUT AVENUE
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
PROCTOR & SCHWARTZ NATURAL GAS-FIRED THREE-STAGE VEGETABLE DEHYDRATOR (#8) WITH A 66 MMBTU/HR MAXON NPI AIRLFO BURNER SYSTEM

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authorities to Construct N-1657-2-6 and N-1657-3-6 shall be implemented prior to or concurrent with the implementation of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This Authority to Construct shall be implemented concurrently with Authority to Construct N-1657-34-0. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
6. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801 and Merced County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N-1657-33-0: Feb 22 2010 10:48AM – HARADERJ : Joint Inspection NOT Required

7. 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] Federally Enforceable Through Title V Permit
8. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
9. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in this unit shall be installed, utilized, and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The unit shall only be fired on PUC-Quality natural gas. [District Rules 2201 and 4309] Federally Enforceable Through Title V Permit
11. Emissions from the dehydrator shall not exceed any of the following limits: 0.109 lb-NOx/MMBtu (equivalent to 9.8 ppmvd NOx @ 19% O2), 0.00285 lb-SOx/MMBtu, 0.0076 lb-PM10/MMBtu, 0.369 lb-CO/MMBtu (equivalent to 54.3 ppmvd @ 19% O2), or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The combined heat input for units N-1657-33 and N-1657-34 shall not exceed 336,000 MMBtu during any one rolling 12 month period. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Source testing to measure NOx and CO emissions from this unit shall be conducted within 60 days of startup. [District Rule 2201] Federally Enforceable Through Title V Permit
14. 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] Federally Enforceable Through Title V Permit
15. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If tow of the three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rule 2201] Federally Enforceable Through Title V Permit
16. NOx emission for source test purposes shall be determined using EPA Method 7E or ARB Method 100. [District Rule 2201] Federally Enforceable Through Title V Permit
17. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rule 2201] Federally Enforceable Through Title V Permit
19. All test results for NOx shall be reported in either lb/MMBtu or ppmv @ 19% O2 (or no correction if measured above 19% O2), corrected to dry stack conditions. [District Rule 2201] Federally Enforceable Through Title V Permit
20. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
21. The dehydrator shall be operated and maintained in proper operating condition as recommended by the dehydrator's manufacturer or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
22. A copy of the manufacturer's operation specifications and maintenance instruction manual or APCO-approved alternative procedures shall be maintained on-site during normal business hours. [District Rule 4309] Federally Enforceable Through Title V Permit
23. Permittee shall keep a record of the rolling 12-month combined heat input for units N-1657-33 and N-1657-34. This record shall be updated on a monthly basis. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Permittee shall maintain daily operation and maintenance records that demonstrate the dehydrator is operated within the limits of the manufacturer's specification, and maintenance is performed according to the manufacturer's recommendation or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
25. Permittee shall maintain records which demonstrate the unit is fired exclusively on PUC quality natural gas. [District Rule 4309] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

26. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4309] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1657-34-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: SENSIENT DEHYDRATED FLAVORS COMPANY
MAILING ADDRESS: ATTN: CHRIS KAJI, EHS ENGINEER
PO BOX 485
LIVINGSTON, CA 95334

LOCATION: 9984 WEST WALNUT AVENUE
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
PROCTOR & SCHWARTZ NATURAL GAS-FIRED THREE-STAGE VEGETABLE DEHYDRATOR (#9) WITH A 66 MMBTU/HR MAXON NPI AIRLFO BURNER SYSTEM

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authorities to Construct N-1657-2-6 and N-1657-3-6 shall be implemented prior to or concurrent with the implementation of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This Authority to Construct shall be implemented concurrently with Authority to Construct N-1657-33-0. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
6. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801 and Merced County Rule 407] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N-1657-34-0: Feb 22 2010 10:48AM – HARADERJ : Joint Inspection NOT Required

7. 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] Federally Enforceable Through Title V Permit
8. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
9. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in this unit shall be installed, utilized, and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
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12. The combined heat input for units N-1657-33 and N-1657-34 shall not exceed 336,000 MMBtu during any one 12 month rolling period. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The dehydrator shall be operated and maintained in proper operating condition as recommended by the dehydrator's manufacturer or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
14. A copy of the manufacturer's operation specifications and maintenance instruction manual or APCO-approved alternative procedures shall be maintained on-site during normal business hours. [District Rule 4309] Federally Enforceable Through Title V Permit
15. Permittee shall keep a record of the rolling 12-month combined heat input for units N-1657-33 and N-1657-34. This record shall be updated on a monthly basis. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Permittee shall maintain daily operation and maintenance records that demonstrate the dehydrator is operated within the limits of the manufacturer's specification, and maintenance is performed according to the manufacturer's recommendation or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
17. Permittee shall maintain records which demonstrate the unit is fired exclusively on PUC quality natural gas. [District Rule 4309] Federally Enforceable Through Title V Permit
18. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4309] Federally Enforceable Through Title V Permit

Sensient Dehydrated Flavors LLC
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Appendix II

Permits to Operate N-1657-2-5 and '-3-5

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: N-1657-2-5 **EXPIRATION DATE:** 09/30/2007

EQUIPMENT DESCRIPTION:
65 MMBTU/HR PROCTOR & SCHWARTZ NATURAL GAS-FIRED FOUR-STAGE DEHYDRATOR (#1)

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. The unit shall only be fired on PUC regulated natural gas. [District Rules 2201 and 4309] Federally Enforceable Through Title V Permit
3. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801 and Merced County Rule 407] Federally Enforceable Through Title V Permit
4. Visible emissions shall be observed once per calendar quarter during operation. Any indication of potential visible emissions in excess of the limits of Rule 4101 shall be corrected within 24 hours. If visible emissions cannot be corrected within 24 hours, a visible emissions test using EPA Method 9 shall be conducted. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
5. This unit is not used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. Therefore, the requirements of District Rule 4301 (Amended December 17, 1992) do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
6. The dehydrator shall be operated and maintained in proper operating condition as recommended by the dehydrator's manufacturer or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
7. A copy of the manufacturer's operation specifications and maintenance instruction manual or APCO-approved alternative procedures shall be maintained on-site during normal business hours. [District Rule 4309] Federally Enforceable Through Title V Permit
8. Permittee shall maintain records which demonstrate the unit is fired exclusively on PUC quality natural gas. [District Rule 4309] Federally Enforceable Through Title V Permit
9. Permittee shall maintain daily operation and maintenance records that demonstrate the dehydrator is operated within the limits of the manufacturer's specification, and maintenance is performed according to the manufacturer's recommendation or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
10. Records of inspections and repair shall be maintained. The records shall include identification of the equipment, date of inspection, corrective action taken, and identification of the individual performing the inspection. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
11. Operator shall maintain copies of all fuel invoices and supplier certifications. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
12. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 4309] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: N-1657-3-5 **EXPIRATION DATE:** 09/30/2007

EQUIPMENT DESCRIPTION:
65 MMBTU/HR PROCTOR & SCHWARTZ NATURAL GAS-FIRED FOUR-STAGE DEHYDRATOR (#2)

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
2. The unit shall only be fired on PUC regulated natural gas. [District Rules 2201 and 4309] Federally Enforceable Through Title V Permit
3. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801 and Merced County Rule 407] Federally Enforceable Through Title V Permit
4. Visible emissions shall be observed once per calendar quarter during operation. Any indication of potential visible emissions in excess of the limits of Rule 4101 shall be corrected within 24 hours. If visible emissions cannot be corrected within 24 hours, a visible emissions test using EPA Method 9 shall be conducted. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
5. This unit is not used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. Therefore, the requirements of District Rule 4301 (Amended December 17, 1992) do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
6. The dehydrator shall be operated and maintained in proper operating condition as recommended by the dehydrator's manufacturer or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
7. A copy of the manufacturer's operation specifications and maintenance instruction manual or APCO-approved alternative procedures shall be maintained on-site during normal business hours. [District Rule 4309] Federally Enforceable Through Title V Permit
8. Permittee shall maintain records which demonstrate the unit is fired exclusively on PUC quality natural gas. [District Rule 4309] Federally Enforceable Through Title V Permit
9. Permittee shall maintain daily operation and maintenance records that demonstrate the dehydrator is operated within the limits of the manufacturer's specification, and maintenance is performed according to the manufacturer's recommendation or APCO-approved alternative procedures. [District Rule 4309] Federally Enforceable Through Title V Permit
10. Records of inspections and repair shall be maintained. The records shall include identification of the equipment, date of inspection, corrective action taken, and identification of the individual performing the inspection. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
11. Operator shall maintain copies of all fuel invoices and supplier certifications. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
12. All records shall be maintained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and 4309] Federally Enforceable Through Title V Permit

Sensient Dehydrated Flavors LLC
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Appendix III

SSPE Calculations for Units N-1657-9-4 and '-10-4

Sensient Dehydrated Flavors LLC
N1657, 1094332

SSPE Calculations

The permits for units N-1657-9-4 and 10-4 do not list emission limits. Since each of these dehydrators utilize Maxon NP-1 burners, the following emission factors will be used to calculate emissions from these units:

Dehydrator Emission Factors		
Pollutant	**Emission Factor (lb/MMBtu)**	**Source**
NOx	0.109	Burner Manufacturer
SOx	0.00285	District Policy APR 1720
PM10	0.0076	AP-42 Table 1.4-2 (7/98)
CO	0.369	Burner Manufacturer
VOC	0.0055	AP-42 Table 1.4-2 (7/98)

N-1657-9-4: 50 MMBtu/hr Dehydrator

PE2 = Heat Input (MMBtu/year) x 8,760 hr/year x Emissions Factor (lb/MMBtu)

Emissions for N-1657-9-4			
Pollutant	**Emission Factor (lb/MMBtu)**	**Heat Input (MMBtu/hr)**	**Annual Emissions (lb/year)**
NOx	0.109	50	47,742
SOx	0.00285	50	1248
PM10	0.0076	50	3,329
CO	0.369	50	161,622
VOC	0.0055	50	2,409

N-1657-10-4: 35 MMBtu/hr Dehydrator

PE2 = Heat Input (MMBtu/year) x 8,760 hr/year x Emissions Factor (lb/MMBtu)

Emissions for N-1657-10-4			
Pollutant	**Emission Factor (lb/MMBtu)**	**Heat Input (MMBtu/hr)**	**Annual Emissions (lb/year)**
NOx	0.109	35	33,419
SOx	0.00285	35	874
PM10	0.0076	35	2,330
CO	0.369	35	113,135
VOC	0.0055	35	1,686

Sensient Dehydrated Flavors LLC
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Appendix IV

BACT Guideline 1.6.13

Best Available Control Technology (BACT) Guideline 1.6.13
Last Update: 6/26/1998

Dehydrator - Vegetable, Continuous Process

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
NOx		1. Low-NOx Burner with SCR (<0.036 lb/MMBtu) 2. Low NOx Burner (0.036 lb/MMBtu) 3. Natural Gas Fired Burner (<0.06lb/MMBtu)	
PM10		PUC-quality natural gas fuel and vents ducted to a cyclone (>90% control efficiency) on product transfer points.	baghouse
VOC		Use of PUC-quality natural gas fuel	

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 s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is requried 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 - Permit Specific BACT Determinations on Details Page.

Sensient Dehydrated Flavors LLC
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Appendix V

Clean Unit Determination and Achieved-in-Practice BACT Analysis for NOx

Sensient Dehydrated Flavors LLC
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Clean Unit Determination and Achieved-in-Practice BACT Analysis for NOx

To be clean for NOx, each unit must either be equipped with an emissions control technology with a minimum control efficiency of at least 95% or be equipped with an emission control technology that is Achieved-in-Practice BACT as accepted by the APCO during the five years prior to the submission of a complete application.

The existing BACT Guideline for vegetable dehydrators (1.6.13) is included in Appendix IV of this document, and does not list any achieved in practice emission levels. In order to complete the Clean Unit determination for NOx, an achieved in practice BACT analysis must be performed. The following analysis will determine the achieved in practice BACT level for NOx:

Achieved in Practice Top-Down BACT Analysis for NOx:

Step 1 - Identify all control technologies

Sensient Dehydrated Flavors (N-1657), Olam West Coast Inc. (C-7748) and Gilroy Foods dba Con Agra (N-1787) each currently operate vegetable dehydrating operations. De Francesco & Sons (C-412) previously operated a vegetable dehydrating operation. For these facilities, the NOx controls for each vegetable dehydrating line is shown in the table below.

Facility	Permit Unit	NOx Controls/Burner Type
Sensient Dehydrated Flavors (N-1657)	N-1657-1-5	Maxon NP-I Burners, Natural Gas Fuel Limited to 0.133 lb-NOx/ton
Sensient Dehydrated Flavors (N-1657)	N-1657-2-5	Maxon NP-I Burners, Natural Gas Fuel Permit does not list a NOx limit
Sensient Dehydrated Flavors (N-1657)	N-1657-3-5	Maxon NP-I Burners, Natural Gas Fuel Permit does not list a NOx limit
Sensient Dehydrated Flavors (N-1657)	N-1657-9-4	Maxon NP-I Burners, Natural Gas Fuel Permit does not list a NOx limit
Sensient Dehydrated Flavors (N-1657)	N-1657-10-4	Maxon NP-I Burners, Natural Gas Fuel Permit does not list a NOx limit
Sensient Dehydrated Flavors (N-1657)	N-1657-22-7	Eclipse Minnox Burner System, Natural Gas Fuel Limited to 0.036 lb-NOx/MMBtu Only used to dry garlic
De Francesco & Sons, Inc. (C-412) Shutdown in July 2006	C-412-7-4	Maxon NP-I Burners, Natural Gas Fuel Limited to 0.06 lb-NOx/MMBtu
De Francesco & Sons, Inc. (C-412) Shutdown in July 2006	C-412-8-4	Maxon NP-I Burners, Natural Gas Fuel Limited to 0.06 lb-NOx/MMBtu
De Francesco & Sons, Inc. (C-412) Shutdown in July 2006	C-412-12-2	Maxon NP-I Burners, Natural Gas Fuel Limited to 2.59 lb-NOx/ton (based on 0.06 lb-NOx/MMBtu)
Olam West Coast Inc. (C-7748)	C-7748-10-0	Maxon NP-I Burners, Natural Gas Fuel Limited to 0.06 lb-NOx/MMBtu
Olam West Coast Inc. (C-7748)	C-7748-11-0	Maxon NP-I and NP-LE Burners, Natural Gas Fuel Limited to 0.06 lb-NOx/MMBtu

Olam West Coast Inc. (C-7748)	C-7748-12-0	Maxon NP-I Burners, Natural Gas Fuel Limited to 0.06 lb-NOx/MMBtu
Gilroy Foods dba Con Agra (N-1787	N-1787-6-3	Maxon NP-I Burners, Natural Gas Fuel Permit does not list a NOx limit
Gilroy Foods dba Con Agra (N-1787	N-1787-7-3	American Zephyr Burners, Natural Gas Fuel Permit does not list a NOx limit
Gilroy Foods dba Con Agra (N-1787	N-1787-8-4	Eclipse Burners, Natural Gas Fuel Permit does not list a NOx limit
Gilroy Foods dba Con Agra (N-1787	N-1787-9-3	Eclipse Burners, Natural Gas Fuel Permit does not list a NOx limit
Gilroy Foods dba Con Agra (N-1787)	N-1787-10-3	Maxon Ovenpak Burners, Natural Gas Fuel Permit lists a 94.1 lb-NOx/day limit (0.14 lb/MMBtu, calculated using heat input rating)

With the exception of unit N-1657-22 operated at Sensient Dehydrated Flavors, all of the dehydrators listed in the previous table utilize conventional burners. The following NOx control levels have been identified:

1. **0.129 lb-NOx/MMBtu**

   This NOx control option is based upon the emission limits for dehydrators N-1657-1-5 and N-1787-10-3. Additionally, in 1998 De Francesco & Sons Inc. performed an emissions source test to determine the emissions from dehydrator C-412-12. This dehydrator is equipped with NP-I burners. Each stage of the six-stage dehydrator was tested. The following table outlines the District's analysis of the source test results:

Dehydrator Stage	Flowrate (CFM)	Measured Emissions (lb/MMBtu)
Stage #1	44,910	0.0591
Stage #2	39,384	0.0843
Stage #3	36,652	0.1209
Stage #4	30,969	0.2706
Stage #5	35,739	0.1533
Stage #6	24,678	0.125
Flow Rated Average Emissions		**0.129**

As shown in the above table, the flow rated average emission rate for the dehydrator was approximately 0.129 lb-NOx/MMBtu.

2. ***0.109 lb-NOx/MMBtu***

   For Sensient Dehydrated Flavor Inc's currently proposed project, Maxon Corp. states that emissions from the NPI burners should be below 90 ppm NOx @ 3% O_2 (0.109 lb/MMBtu). This level of control will be included as a BACT control option.

3. **0.06 lb-NOx/MMBtu (Conventional Natural Gas-Fired Burners)**

   This NOx control option is based upon the permit limits for units N-412-7, N-412-8, N-412-12, C-7748-10, C-7748-11, and C-7748-12. The 0.06 lb/MMBtu emissions limit is based upon a District memo that includes the following:

   > *Based on the most conservative emission factors (EF) available from source tests and manufacturer's data for natural gas-fired burners used in agricultural product dehydration operations, the following EF can be used for the calculation of expected emissions:*
   >
   > *NOx: 0.06 lb/MMBtu*

   The existing BACT Guideline for dehydrators lists this control option as technologically feasible.

4. **0.036 lb-NOx/MMBtu (Low-NOx Burners)**

   This NOx control option is based upon the NOx permit limit for unit N-1657-22. Low-NOx burners are required to achieve this emissions rate. The existing BACT Guideline for dehydrators lists this control option as technologically feasible.

5. **Selective Catalytic Reduction**

   The existing BACT Guideline for dehydrators lists this control option as technologically feasible.

Step 2 - Eliminate Technologically Infeasible Options

Option 3: 0.06 lb-NOx/MMBtu (Conventional Natural Gas-Fired Burners)

As stated earlier, the 0.06 lb-NOx/MMBtu control level was based upon a District Memo that estimated that the most conservative NOx emissions factor is 0.06 lb/MMBtu for a conventional burner fired on natural gas fuel. This limit was assigned to several dehydrator operations that utilize Maxon NPI burners; however, the previously mentioned source test conducted at De Francesco & Sons Inc. verifies that emissions can be much greater than 0.06 lb-NOx/MMBtu for Maxon NPI

burners. Additionally, Maxon Corp. provided a specifications sheet that includes the following table with emission estimates for their "NP" Airflo burners.

NP-I and NP-II Burner Typical NOx Emissions, Natural Gas-fired[1], Fresh Process Air[2]				
V_p[3]	340 MMBtu/-hr-foot	500 MMBtu/-hr-foot	680 MMBtu/-hr-foot	850 MMBtu/-hr-foot
2000 fpm	0.116 lb/MMBtu	0.136 lb/MMBtu	0.160 lb/MMbtu	0.145 lb/MMBtu
3000 fpm	0.099 lb/MMBtu	0.102 lb/MMBtu[4]	0.113 lb/MMBtu	0.179 lb/MMBtu
4000 fpm	0.067 lb/MMBtu	0.084 lb/MMBtu	0.090 lb/MMBtu	0.090 lb/MMBtu

(1) Natural gas with 1053 Btu/ft^3 HHV, sg = 0.6
(2) Fresh Process Air at 60° F and 21% O_2, temperature increase < 450°F
(3) VP is the Air Stream Velocity across the burner in feet per minute, shown in the first column of the table.
(4) Optimal Operation Area

As shown in the above table, emissions vary depending on the MMBtu/hr capacity for each foot of burner and depending on the air stream velocity across the burner (V_p in feet/minute). None of the possible burner configurations are expected to meet a 0.06 lb-NOx/MMBtu emissions rate. Maxon Corp. estimates that their current NP1 burners can meet an emissions limit of 90 ppm NOx @ 3% O_2 (0.109 lb-NOx/MMBtu) when properly tuned. Additionally, conventional natural gas-fired Eclipse burners were reviewed; however, none of these burners is expected to be able to meet a 0.06 lb-NOx/MMBtu limit.

The 0.06 lb-NOx/MMBtu emissions level was originally based on the use of conventional natural gas-fired burners. Since both source testing and manufacturer's emission estimates show that this level of control cannot be achieved solely using conventional burners, this control option will be eliminated from consideration.

Option 4: 0.036 lb-NOx/MMBtu (Low-NOx Burners)

NOx emissions of 0.036 lb/MMBtu are expected if low-NOx burners are utilized. De Franceso and Sons, Inc. previously installed an onion dehydrator with low-Nox burners. Immediately, De Francesco and Sons, Inc. noticed that there was a larger percentage of color degradation, such as pinking, occuring on the dehydrator that utilized the low-NOx burners. One of the problems identified with this dehydrator was the burners were not providing uniform heat in the product zones. The burner manufacturer was informed and the burner boxes were extended to cover the entire length of each zone;however, during the following season the pinking problem was unaffected by the modifications made to the burner boxes.

In 1995, De Francesco & Sons brought a Rosemont Series 500 portable combustion analyzer to tune and analyze the burner system. The burners were retuned with the analyzer and the process was slowed down to ensure that the pinking problem was not due to insufficient drying of the product. Although these changes did show some reduction in the pinking problem, the visual quality of the dried onions was still not up to industry standards.

At the end of the 1996 season, De Francesco & Sons abandoned the use of the low-NOx burners, citing continuous product quality issues, and replaced the low-NOx burners with Maxon NPI Airflo burners. The quality of the product was noticeably better following the replacement of the burners. In the 1996 season, while using the low-NOx burners, there was a 52 percent downgrade of onion products down grade due to product color. In the 1997 season, following the replacement of the burners with NPI burners, there was only a 20 percent downgrade of onion products due to product color. Therefore, the use of low-NOx burners siginficantly affect the final product quality of the dehydrated vegetables.

Additionally, Sensient Dehydrated Flavors currently operates a multi-stage dehydrator (N-1657-22) and has experienced the same product discoloration issues with that unit. Currently, the facility primarily dehydrates garlic with this unit to minimize the adverse impacts on onion product quality.

Due to the product discoloration issues, the use of low-NOx burners will be considered to be infeasible at this time. This is consistent with the determination made for dehydrators when they were evaluated in the District's Rule 4309 rulemaking process. Pursuant to the Final District Rule 4309 Staff Report:

> *Stakeholders with vegetable dehydrators have commented that the installation of low-NOx burners has a negative effect on product quality. Running dehydrator at much slower speeds has been the only way, in their experience, to overcome the poor product quality when using a low-NOx burner. To address the concerns of these stakeholders, dehydrators would be required to exclusively fire on PUC quality natural gas, except during PUC quality natural gas curtailment.*
>
> *Emissions are minimized when units are operated and maintained according to manufacturer's specification. Therefore, the operators of dehydrators would be required to demonstrate that the units are operated and maintained according to manufacturer's specifications, in addition to firing exclusively on PUC quality natural gas.*

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Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Control Technology	Achieved in Practice
1. Selective Catalytic Reduction	No
2. 0.109 lb-NOx/MMBtu	Yes[3]
3. 0.129 lb-NOx/MMBtu	Yes

Clean Unit Determination

As shown in the analysis above, the achieved in practice NOx emissions level is 0.109 lb/MMBtu. Maxon has stated that the existing dehydrators (N-1657-2 and N-1657-3) meet 0.109 lb/MMBtu. Since the existing dehydrators meet the achieved in practice NOx emissions level, the existing dehydrators will be considered to be clean emission units for NOx.

[3] Based on Maxon's emissions estimates for the NP-1 burners installed and operated in N-1657-2 and N-1657-3.

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Appendix VI

Top-Down BACT Analysis

Sensient Dehydrated Flavors LLC
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Top Down BACT Analysis for Dehydrators N-1657-33 and N-1657-34

I. BACT Analysis for NOx:

BACT Guideline 1.6.13 applies to vegetable dehydrators.

a. Step 1 - Identify All Possible Control Technologies

BACT guideline 1.6.13 identifies the following control technologies for NOx:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NOx		• Low-Nox burner with SCR (< 0.036 lb/MMBtu) • Low-NOx burner (0.036 lb/MMBtu) • Natural gas-fired burner (< 0.06 lb/MMBtu)	

b. Step 2 - Eliminate Technologically Infeasible Options

0.06 lb-NOx/MMBtu limit.

The 0.06 lb-NOx/MMBtu emissions level was originally based on the use of conventional natural gas-fired burners. Since both source testing and manufacturer's emission estimates show that this level of control cannot be achieved solely using conventional burners (See discussion in Appendix V), this control option will be eliminated from consideration.

0.036 lb-NOx/MMBtu (Low-NOx Burners)

NOx emissions of 0.036 lb/MMBtu are expected if low-NOx burners are utilized. De Franceso and Sons, Inc. previously installed an onion dehydrator with low-NOx burners. Immediately, De Francesco and Sons, Inc. noticed that there was a larger percentage of color degradation, such as pinking, occuring on the dehydrator that utilized the low-NOx burners. One of the problems identified with this dehydrator was the burners were not providing uniform heat in the product zones. The burner manufacturer was informed and the burner boxes were extended to cover the entire length of each zone;however, during the following season the pinking problem unaffected by the modifications made to the burner boxes.

In 1995, De Francesco & Sons brought a Rosemont Series 500 portable combustion analyzer to tune and analyze the burner system. The burners were retuned with the analyzer and the process was slowed down to ensure that the pinking problem was not due to insufficient drying of the product. Although these changes did show some reduction in the pinking problem, the visual quality of the dried onions was still not up to industry standards.

At the end of the 1996 season, De Francesco & Sons abandoned the use of the low-NOx burners, citing continuous product quality issues, and replaced the low-NOx burners with Maxon NPI Airflo burners. The quality of the product was noticeably better following the replacement of the burners. In the 1996 season, while using the low-NOx burners, there was a 52 percent downgrade of onion products down grade due to product color. In the 1997 season, following the replacement of the burners with NP-I burners, there was only a 20 percent downgrade of onion products due to product color. Therefore, the use of low-NOx burners significantly affects the final product quality of the dehydrated vegetables.

Additionally, Sensient Dehydrated Flavors currently operates a multi-stage dehydrator (N-1657-22) and has experienced the same product discoloration issues with that unit. Currently, the facility primarily dehydrates garlic with this unit to minimize the adverse impacts on onion product quality.

Due to the product discoloration issues, the use of low-NOx burners will be considered to be infeasible at this time. This is consistent with the determination made for dehydrators when they were evaluated in the District's Rule 4309 rulemaking process. Pursuant to the Final District Rule 4309 Staff Report:

Stakeholders with vegetable dehydrators have commented that the installation of low-NOx burners has a negative effect on product quality. Running dehydrator at much slower speeds has been the only way, In their experience, to overcome the poor product quality when using a low-NOx burner. To address the concerns of these stakeholders, dehydrators would be required to exclusively fire on PUC quality natural gas, except during PUC quality natural gas curtailment.

Emissions are minimized when units are operated and maintained according to manufacturer's specification. Therefore, the operators of dehydrators would be required to demonstrate that the units are operated and maintained according to manufacturer's specifications, in addition to firing exclusively on PUC quality natural gas.

< 0.036 lb-NOx/MMBtu (Low-NOx Burners with SCR)

Since the use of Low-NOx burners is infeasible, both Low-NOx burners and SCR cannot be utilised. The use of Low-NOx burners will be removed from consideration and only the use of SCR will be considered feasible and evaluated.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Selective Catalytic Reduction (Technologically Feasible)

d. Step 4 - Cost Effectiveness Analysis

Per District policy APR 1305, Best Available Control Technology (BACT) Policy, Section IX.D.1, a cost effective analysis is not required for Achieved in Practice control options. Selective Catalytic Reduction is considered to be Technologically Feasible; therefore, a cost analysis must be prepared.

Selective Catalytic Reduction Cost Analysis

The following analysis applies to each of the new dehydrators.

Each of the new dehydrators is rated at a maximum heat input of 66 MMBtu/hr and an airflow rate of 99,500 SCFM. The combined maximum annual heat input for the new dehydrators is 336,000 MMBtu.

Pursuant to the US EPA Air Pollution Control Technology Fact Sheet for Selective Catalytic Reduction (EPA-452/F-03-032), the optimum temperature for SCR varies from 480 °F to 800 °F. The ability of an SCR system to control NOx drops off rapidly at temperatures lower than 480 °F. The expected exhaust temperature for the dehydrator is 110 °F to 180 °F, pursuant to the application submitted by the applicant. Therefore, the exhaust would need to be heated prior to entering an SCR catalyst. To be conservative, a minimum temperature increase of 300 °F will be assumed (180 °F to 480 °F).

Quantity of Heat Required to Achieve a 300 °F Exhaust Temperature Increase

The quanity of heat required to achieve the 300 °F increase in exhaust temperature will be estimated using the following equation from page 3-10 of "Industrial Ventilation: A Manual of Recommended Practice", 17th edition:

$$SensibleHeat\left(\frac{Btu}{hr}\right) = 1.08 \times TemperatureRise \times CFM$$

The Sensible Heat is the heat load required to increase the temperature of the exhaust stream of air without factoring in phase changes of material in the exhaust, such as the latent heat required to convert exhaust moisture into steam. The Sensible Heat is expected to be the minimum quantity of heat required to increase the exhaust stream temperature for this type of operation.

The combined exhaust flow rate for the two new dehydrators is 199,000 CFM. Based on this flowrate and a 300 degree temperature increase, the Sensible Heat required is:

Sensible Heat (Btu/hr) = 1.08 x 300 °F x 199,000 CFM
Sensible Heat = 64,476,000 Btu/hr

To calculate the annual quantity of heat required to increase the exhaust temperature, the number of operating hours must be estimated. The two dehydrators are limited to an annual heat input of 336,000 MMBtu/year and the combined heat input rating of the dehydrators is 132 MMBtu/hr. Therefore, the minimum number of hours operated is:

Hours Operated = 336,000 MMBtu/year ÷ 132 MMBtu/hr
Hours Operated = 2,545 hours/year

Using 2,545 hours/year, the annual quantity of heat required to increase the exhaust temperature by 300 °F is:

Annual Heat Input = 64,476,000 Btu/hr x 2,545 hours/year
Annual Heat Input = 1.64×10^{11} Btu/year

Two methods of heating the exhaust were identified. The first method is to install natural gas duct burners in the exhaust, while the second is to install electric heaters in the exhaust. The fuel/electricity cost of each of these methods will be determined below:

Annual Fuel Cost to Heat Exhaust Using Natural Gas Duct Burners

As stated earlier, 1.64×10^{11} Btu/year of heat is required to increase the exhaust temperature for the SCR system. Using a natural gas higher heating value of 1000 Btu/scf fuel, this translates into an annual natural gas fuel usage of 1.64×10^{8} scf/year. Pursuant to US Energy Information Administration statistics, the lowest monthly natural gas price during the previous 12 months of data is $4.80 per 1000 scf of natural gas for May 2009[4]. Using this data, the annual fuel cost to heat the exhaust prior to the SCR system is:

Natural Gas Cost = 1.64×10^{8} scf/year x $4.80/1000 scf
Natural Gas Cost = $787,200/year

[4] http://tonto.eia.doe.gov/dnav/ng/hist/n3035ca3m.htm

Annual Electricity Cost to Heat Exhaust Using Electric Heaters

As stated earlier, 1.64×10^{11} Btu/year of heat is required to increase the exhaust temperature for the SCR system. A conversion factor of 3,412 Btu/kWh will be used to convert this into an annual electrical energy requirement. The electric heaters are very conservatively assumed to be 100% efficient, to estimate the lowest possible annual electricity usage rate.

Annual kWh = 1.64×10^{11} Btu/year x 1 kWh/3,412 Btu
Annual kWh = 4.81×10^{7} kWh/year

Pursuant to published Pacific Gas and Electric (PG&E) electricity rates, the lowest commercial rate for electricity for commercial/general rate schedules (A-1, A-6, A-10, A-10 TOU, and E-19) is $0.07996/kWh (Winter Primary Electricity, Rate Schedule E-19, Effective January 1, 2010 to present). Based on this electricity rate, the annual cost to operate electric heaters is:

Electricity Cost = 4.81×10^{7} kWh/year x $0.07796/kWh
Electricty Cost = $3,749,876/year

Industry Standard Emissions Rate

The industry standard emissions rate is assumed to be 0.129 lb/ton, based on the use of Maxon NPI burners (based on Source Test results mentioned in Appendix V.

Reduction in Industry Standard Emissions using SCR

Sensient requested that the dehydrators be limited to a combined annual heat input of 336,000 MMBtu/year. Pursuant to the EPA Fact Sheet for SCR, an SCR system can achieve percent NOx reductions ranging from 70% to 90%. The maximum estimate NOx emission reductions that can be achieved utilizing SCR to control NOx from the dehydrators is:

Emission Reductions = 336,000 MMBtu/year x 0.129 lb/MMBtu x 0.9
Emission Reductions = 39,010 lb-NOx/year (19.5 tons-NOx/year)

Cost Effectiveness of SCR Option

Natural Gas heaters are estimated to have a lower annual cost of operation (fuel cost) than electric heaters. Therfore, the natural gas fuel cost will be used to determine the minimum cost/ton of NOx emissions reduced.

The cost/ton of NOx emissions reduced is calculated below:

Cost/ton = ($787,200/year ÷ 19.5 tons-NOx reduced/year)
Cost/ton = $40,369/ton of NOx reduced

Since $40,369 per ton of NOx reduced is greater than the NOx cost effective threshold of $23,500 per ton of NOx emissions reduced, SCR is not a cost effective control option for this proposal.

It should be noted that this cost/ton value was established only using the cost of natural gas fuel to increase the exhaust temperature to an acceptable temperature for the SCR system. Further costs, such as the capital and operating cost of the SCR system and duct burners were not accounted for and would make the cost much higher. Additionally, the use of duct burners would create additional NOx emissions that factored into this analysis, reducing the overall quantity of NOx emissions reduced and increasing the cost/ton of NOx reduced.

e. Step 5 - Select BACT

There are no remaining BACT options for NOx emissions. Therefore, compliance with BACT for NOx is expected.

II. BACT Analysis for VOC:

BACT Guideline 1.6.13 applies to vegetable dehydrators.

a. Step 1 - Identify All Possible Control Technologies

BACT guideline 1.6.13 identifies the following control technologies for VOC:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC		Use of PUC-quality Natural Gas Fuel	

b. Step 2 - Eliminate Technologically Infeasible Options

There are no infeasible options.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Natural Gas with LPG Backup or Propane Fired

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the most stringent control technology listed in Step 3; therefore, a cost effective analysis is not required.

e. Step 5 - Select BACT

BACT for VOC is the use of PUC-quality natural gas fuel. The applicant has proposed to solely fire each of the new dehydrators on PUC-quality natural gas. Thus, BACT requirements for VOC are satisfied.

III. BACT Analysis for CO:

BACT Guideline 1.6.13 applies to vegetable dehydrators.

a. Step 1 - Identify All Possible Control Technologies

BACT guideline 1.6.13 identifies the following control technologies for CO:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
CO	Use of PUC-quality Natural Gas Fuel		

b. Step 2 - Eliminate Technologically Infeasible Options

There are no infeasible options.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Natural Gas with LPG Backup or Propane Fired

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the most stringent control technology listed in Step 3; therefore, a cost effective analysis is not required.

e. Step 5 - Select BACT

BACT for CO is the use of PUC-quality natural gas fuel. The applicant has proposed to solely fire each of the new dehydrators on PUC-quality natural gas. Thus, BACT requirements for CO are satisfied.

IV. BACT Analysis for PM_{10}:

BACT Guideline 1.6.13 applies to vegetable dehydrators.

a. Step 1 - Identify All Possible Control Technologies

BACT guideline 1.6.13 identifies the following control technologies for PM_{10}:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
PM_{10}		PUC-Quality natural gas and vents on product transfer points ducted to a cyclone (>90% control efficiency)	Baghouse

The use of a cyclone or baghouse is feasible for controlling process emissions; however, these control options were not intended to be options for controlling PM_{10} emissions from the combustion of fuel. Since the proposed dehydrating operations only trigger BACT for PM_{10} that results from the combustion of fuel, the only option that will be considered is the use of PUC-Quality Natural Gas.

b. Step 2 - Eliminate Technologically Infeasible Options

There are no infeasible options.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. PUC-Quality Natural Gas

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the most stringent control technology listed in Step 3; therefore, a cost effective analysis is not required.

e. Step 5 - Select BACT

BACT for PM_{10} is the use of PUC-quality natural gas fuel. The applicant has proposed to solely fire each of the new dehydrators on PUC-quality natural gas. Thus, BACT requirements for PM_{10} are satisfied.

V. BACT Analysis for SOx:

BACT Guideline 1.6.13 applies to vegetable dehydrators.

a. Step 1 - Identify All Possible Control Technologies

BACT guideline 1.6.13 identifies the following control technologies for SO_x:

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
SO_x	Use of PUC-quality Natural Gas Fuel		

b. Step 2 - Eliminate Technologically Infeasible Options

There are no infeasible options.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Natural Gas with LPG Backup or Propane Fired

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the most stringent control technology listed in Step 3; therefore, a cost effective analysis is not required.

e. Step 5 - Select BACT

BACT for SOx is the use of PUC-quality natural gas fuel. The applicant has proposed to solely fire each of the new dehydrators on PUC-quality natural gas. Thus, BACT requirements for SOx are satisfied.

Sensient Dehydrated Flavors LLC
N1657, 1094332

Appendix VII

Health Risk Assessment and Ambient Air Quality Analysis Results

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	James Harader, AQE – Permit Services
From:	Joe Aguayo, AQS – Technical Services
Date:	January 27, 2010
Facility Name:	Sensient Dehydrated Flavors
Location:	9984 W. Walnut Avenue Livingston, CA
Application #(s):	N-1657-33-0 and 34-0
Project #:	N-1094332

A. RMR SUMMARY

RMR Summary				
Categories	**66 MMBtu/hr NG-Fired Burner (Unit 33-0)**	**66 MMBtu/hr NG-Fired Burner (Unit 34-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	0.01	0.01	<1.0	<1.0
Acute Hazard Index	N/A[1]	N/A[1]	0.9	6.80
Chronic Hazard Index	N/A[1]	N/A[1]	0.12	1.02
Maximum Individual Cancer Risk (10^{-6})	N/A[1]	N/A[1]	1.8	1.9
T-BACT Required?	**No**	**No**		
Special Permit Conditions?	**No**	**No**		

1 Prioritization for this unit was less than 1.0; no further analysis is required.

Proposed Permit Conditions

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

Unit # 33-0 and 34-0

No special conditions are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on January 21, 2010, to perform an Ambient Air Quality Analysis and a Risk Management Review for two (2) Proctor & Schwartz natural gas-fired three-stage vegetable dehydrator (#8) with a 66 MMbtu/hr Maxon NP1 Airlfo burner system.

II. Analysis

Toxic emissions for this proposed unit were calculated using Ventura County's emission factors for external combustion sources. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905, March 2, 2001), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEARTs database. The prioritization score for this proposed unit was less than 1.0 (see RMR Summary Table). Therefore, no further analysis was necessary.

The following parameters were used for the review:

Analysis Parameters Unit 33-0 and 34-0			
Throughput (MMBtu/hr)	132	**Max Hours per Year**	8760
Closest Receptor (m)	304.8		

Technical Services performed modeling for criteria pollutants CO, NOx, SOx and PM_{10}; as well as a RMR. The emission rates used for criteria pollutant modeling were 24.35 lb/hr CO, 7.20 lb/hr NOx, 0.19 lb/hr SOx, and 0.50 lb/hr PM_{10}. The engineer supplied the maximum fuel rate for the IC engine used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	Pass	X	X	X	Pass
SO_x	Pass	Pass	X	Pass	Pass
PM_{10}	X	X	X	Pass[1]	Pass[1]

*Results were taken from the attached PSD spreadsheet.
[1]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

The prioritization score is less than 1.0. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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. RMR request from the project engineer
B. Additional information from the applicant/project engineer
C. Toxic emissions summary
D. Prioritization score

Sensient Dehydrated Flavors LLC
N1657, 1094332

Appendix VIII

Quarterly Net Emissions Change Calculations

Sensient Dehydrated Flavors LLC
N1657, 1094332

The QNEC is equal to:

QNEC = (PE2 – BE) ÷ 4

As stated earlier in this evaluation, BE is equal to PE1 for each unit. Therefore, QNEC is:

QNEC = (PE2 – PE1) ÷ 4

N-1657-2-6 and '-3-6:

These units are identical and are limited to a combined post-project heat input. The post-project emissions will be split evenly among the units for the purposed of calculating the QNEC. The following table applies to each unit.

Pollutant	PE2 (lb/year)	PE1 (lb/yr)	QNEC (lb/qtr)
NO_x	24,385	62,065	-9420.00
SOx	638	1,623	-246.25
PM_{10}	1,700	4,327	-656.75
CO	82,550	210,109	-31889.75
VOC	1,231	3,132	-475.25

N-1657-33-0 and '-34-0:

These units are identical and are limited to a combined post-project heat input. The post-project emissions will be split evenly among the units for the purposed of calculating the QNEC. The following table applies to each unit.

Pollutant	PE2 (lb/year)	PE1 (lb/yr)	QNEC (lb/qtr)
NO_x	18,312	0	4578.00
SOx	479	0	119.75
PM_{10}	1,277	0	319.25
CO	61,992	0	15498.00
VOC	924	0	231.00

Sensient Dehydrated Flavors LLC
N1657, 1094332

Appendix IX

Historical Fuel Usage for Units N-1657-2 and N-1657-3

TRADE SECRET-CONFIDENTIAL BUSINESS INFORMATION

Emailed on 2/16/10

SENSIENT

Sensient Technologies Corporation
P.O. Box 279
Cressey, CA 95312
Phone 209-656-5826
Chris.Kaji@sensient-tech.com

February 15, 2010

Rupi Gil
San Joaquin Valley Unified Air Pollution Control District
Northern Regional Office
4230 Kiernan Avenue, Suite 130
Modesto, CA 95356

RE: Sensient Dehydrated Flavors LLC
Livingston, CA
Facility ID N-1657
Authority to Construct Application:
- NG usage Dehydrators #1 (N1657-2) & #2 (N1657-3)

Dear Mr. Gil:

This confirms our discussion on 2/12/10, concerning Sensient Dehydrated Flavors LLC (SDF)'s method for calculating annual fuel consumption for permitted units N1657-2 and N1657-3.

As I explained when we spoke, fuel usage for these units is calculated by a mass balance approach, under which the total volumetric fuel consumption for permit units 1, 2, 3, 9, 10, 12, 15, 18, and 22 is accounted for under a common fuel meter. Of these nine units, five units (permit units 1,12,15,18, and 22) each has an independent meter, leaving permit units 2, 3, 9, and 10 to account for the difference between the common fuel meter recorded usage and the usage of the individually metered units. Apportionment of this difference among the remaining four units, including units N1657-2 and 1657-3, is based on process knowledge of product and throughput for each unit.

Please feel free to contact me at 209-656-5826 with any additional comments.

Sincerely,

Chris Kaji
Sr. Corp. EHS Engineer

Enc.

Therms

Dryer No.	Permit No.	Estimated NTG Usage	%
1	N-1657-2	1,563,580.47	36.46%
2	N-1657-3	1,563,580.47	36.46%
3	N-1657-9	714,461.07	16.66%
4	N-1657-10	391,967.24	9.14%
6	N-1657-1	1,326,371.76	Actual
7	N-1657-22	1,053,773.82	Actual
#4 Bin Curing	N-1657-18	19,093.86	Actual
Boiler	N-1657-15	321,733	Actual
Bulk Curing	N-1657-12	54,892.57	1.28%

100 SCF / therm

Total Gas (Main Feed)	7,009,454.34
Actuals/Meter	2,720,972.52
Mass Balance (Net)	4,288,481.82

Air Emission Inventory
2007Seaosn

therms

Dryer No.	Permit No.	Estimated NTG Usage	%
1	N-1657-2	1,683,222.41	36.46%
2	N-1657-3	1,683,222.41	36.46%
3	N-1657-9	769,130.15	16.66%
4	N-1657-10	421,959.76	9.14%
6	N-1657-1	1,516,007.34	Actual
7	N-1657-22	1,122,139.28	Actual
#4 Bin Curing	N-1657-18	36,997.56	Actual
Boiler	N-1657-15	354,196	Actual
Bulk Curing	N-1657-12	59,092.83	1.28%

100scf/therm

PRINT DATE: 2/11/2010