

**DEC 18 2015**

Michael Davis  
Dos Palos Cooperative Gin, Inc.  
7870 W Hutchins Rd  
Dos Palos, CA 93620

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Facility Number: N-1233**  
**Project Number: N-1152734**

Dear Mr. Davis:

Enclosed for your review and comment is the District's analysis of Dos Palos Cooperative Gin, Inc.'s application for an Authority to Construct for the installation of a 3<sup>rd</sup> precleaning stage equipped with a propane-fired 8.0 MMBtu/hr heater, the removal of one cyclone, the removal of the motes system, the replacement of the four existing saw type gin stands with roller type gin stands, and reduction of the daily and annual throughput rate, at 7870 W Hutchins Rd in Dos Palos, CA.

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. John Yoshimura of Permit Services at (559) 230-5887.

Sincerely,



Arnaud Marjollet  
Director of Permit Services

AM:JY

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

**Northern Region**  
4800 Enterprise Way  
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**San Joaquin Valley Air Pollution Control District**  
**Authority to Construct Application Review**  
Modification of an Existing Cotton Gin Operation

Facility Name: Dos Palos Cooperative Gin, Inc. Date: December 10, 2015  
Mailing Address: 7870 W. Hutchins Road Engineer: John Yoshimura  
Dos Palos, CA 93620 Lead Engineer: Joven Refuerzo  
Contact Person: Michael Davis  
Telephone: (209) 387-4151  
E-Mail: mdavistopgins@yahoo.com  
Application #(s): N-1233-2-5  
Project #: N-1152734  
Deemed Complete: October 5, 2015

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**I. Proposal**

Dos Palos Cooperative Gin, Inc (Dos Palos Co-Op) has requested an Authority to Construct (ATC) permit to modify their existing cotton gin (permit unit N-1233-2) by installing a 3<sup>rd</sup> pre-cleaning stage equipped with a propane-fired 8.0 MMBtu/hr heater. The proposed pre-cleaning stage will be served by the existing plenum and 1D-3D cyclone collection system. Additionally, the Dos Palos Co-Op has requested to reduce the number of 1D-3D cyclones serving the plenum system from 28 to 27 cyclones and remove the existing motes system.

The facility has also proposed to replace the 4 existing Lummus saw type gin stands with 10 high capacity roller gin stands with lint cleaning; this proposed change will modify the PM<sub>10</sub> emission factor from a 1D-3D Saw gin-type to a 1D-3D Roller gin-type. Finally, the facility has proposed to reduce their daily and annual throughput rate from 300 tons-cotton/day and 31,320 tons-cotton/year to 190 tons-cotton/day and 15,660 tons-cotton/year.

**II. Applicable Rules**

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4204	Cotton Gins (2/17/05)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators and Process Heaters – Phase II (8/21/03)
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase III (3/17/05)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4801	Sulfur Compounds (12/17/92)

CH&SC 41700 Health Risk Assessment  
CH&SC 42301.6 School Notice  
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

### III. Project Location

This facility is located at 7870 W Hutchins Road in Dos Palos, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

### IV. Process Description

The primary business of this facility is cotton ginning. PM<sub>10</sub> emissions from this ginning operation are controlled by the existing plenum system equipped with 1D-3D cyclones.

### V. Equipment Listing

#### Pre-Project Equipment Description:

N-1233-2-4: COTTON GIN #2 WITH FOUR LUMMUS 158 SAW TYPE GIN STANDS, FIVE HOT AIR CLEANERS, EIGHT LINT CLEANERS (FIRST AND SECOND STAGE), TWO 8 MMBTU/HR PROPANE FIRED BURNERS, AN OVERFLOW SYSTEM, AND A TRASH SYSTEM WHICH ARE ALL SERVED BY A PLENUM SYSTEM EQUIPPED WITH TWENTY EIGHT 1D-3D CYCLONE COLLECTORS; AND A MOTES SYSTEM SERVED BY ONE 1D-3D CYCLONE COLLECTOR

#### Proposed Modification:

N-1233-2-5: MODIFICATION OF COTTON GIN #2 WITH FOUR LUMMUS 158 SAW TYPE GIN STANDS, FIVE HOT AIR CLEANERS, EIGHT LINT CLEANERS (FIRST AND SECOND STAGE), TWO 8 MMBTU/HR PROPANE FIRED BURNERS, AN OVERFLOW SYSTEM, AND A TRASH SYSTEM WHICH ARE ALL SERVED BY A PLENUM SYSTEM EQUIPPED WITH TWENTY EIGHT 1D-3D CYCLONE COLLECTORS; AND A MOTES SYSTEM SERVED BY ONE 1D-3D CYCLONE COLLECTOR: REPLACE SAW GINS WITH ROLLER GIN STANDS AND LINT CLEANING, ADD A 3RD STAGE PRECLEANING WITH 8.0 MMBTU/HR PROPANE-FIRED HEATER, REMOVE A CYCLONE FROM THE PLENUM SYSTEM, REMOVE THE MOTES SYSTEM, AND REDUCE THE DAILY AND ANNUAL THROUGHPUT FROM 300 TONS/DAY AND 31,320 TONS/YEAR TO 190 TONS/DAY AND 15,660 TONS/YEAR

#### Post Project Equipment Description:

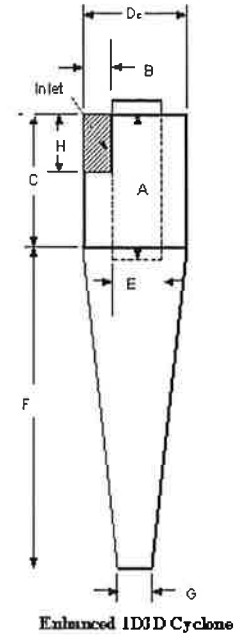
N-1233-2-5: COTTON GIN #2 WITH TEN HIGH CAPACITY ROLLER GIN STANDS WITH LINT CLEANING, FIVE HOT AIR CLEANERS, NINE LINT CLEANERS (FIRST, SECOND, AND THIRD STAGE), THREE 8 MMBTU/HR PROPANE-FIRED BURNERS, AN OVERFLOW SYSTEM, AND A TRASH SYSTEM WHICH ARE ALL SERVED BY A PLENUM SYSTEM EQUIPPED WITH TWENTY SEVEN 1D-3D CYCLONE COLLECTORS

## VI. Emission Control Technology Evaluation

Pursuant to Rule 4204, Section 5.3, Figures 1 and 2, the below calculation and the verification of cyclone inlet dimensions indicates each of the cyclones fall within the ideal inlet velocity limits for 1D-3D enhanced cyclones.

The following conditions ensure compliance:

- The plenum system shall be served by 27 cyclone collectors with eleven 50-inch, ten 48-inch, two 46-inch; and four 42-inch 1D-3D enhanced cyclone collectors, each operating at a cyclone inlet air velocity of  $3,200 \pm 400$  ft/min. [District Rules 2201 and 4204]



Verification of Enhanced 1D-3D Cyclone Collectors or Components									
System Served	Type	Quantity	$D_c$ (inch)	$B [D_c/4]$ (inch)	$C [D_c]$ (inch)	$F [3 D_c]$ (inch)	$G [D_c/3]$ (inch)	$H [D_c/2]$ (inch)	Enhanced?
Plenum System	Enhanced Cyclone	11	50	12.5	50	150	16.67	25	Yes
Plenum System	Enhanced Cyclone	10	48	12	48	144	16	24	Yes
Plenum System	Enhanced Cyclone	2	46	11.5	46	138	15.33	23	Yes
Plenum System	Enhanced Cyclone	4	42	10.5	42	126	14	21	Yes

## VII. General Calculations

### A. Assumptions

- Pre-project daily ginning rate of the saw gin shall not exceed 1,200 bales per day (equivalent to 300 tons of baled cotton per day, corrected to 500-pound bales) (current permit)
- Post project daily ginning rate of the roller gin shall not exceed 759 bales per day (equivalent to 190 tons of baled cotton per day, corrected to 500-pound bales) (applicant proposed)
- Pre-project annual ginning rate of the saw gin shall not exceed 125,280 bales per year (equivalent to 31,320 tons of baled cotton per day, corrected to 500-pound bales) (current permit)
- Post project annual ginning rate of the roller gin shall not exceed 62,640 bales per year (equivalent to 15,660 tons of baled cotton per day, corrected to 500-pound bales) (applicant proposed)
- All combustion devices will be fired on LPG/propane fuel (current permit)
- Pre-project annual fuel consumption: 763,740 gallons/year (current permit)
- The proposed 8.0 MMBtu/hr heater will be limited to 34,079 gallons/year (applicant proposed)

- Post project annual fuel consumption shall not exceed 797,819 gallons/year (applicant proposed)
- Per AP-42, Table 1.5-1, 7/08, the conversion factor for MMBtu to 1,000 gallon of propane is 91.5 MMBtu/1,000 gallon-propane.

## B. Emission Factors

### Pre-Project Emission Factors (EF1)

#### DRYERS:

According to Project N-940482, the current emission factors were based on AP-42 LPG-fired commercial boilers. District policy APR 1110 – Use of Revised Generally Accepted Emission Factors states that emission factors should be revised at the time of permit modification if better emission data has become available. Therefore, as a more reflective estimate of emissions from propane-fired burners, the following emission factors from EPA’s AP-42 combustion of propane will be used.

<b>Emission Factors for Combustion of Propane</b>	
Pollutants	Propane Emission Factor (lb/MMBtu)
NO <sub>x</sub>	0.1
CO	0.02
VOC	0.005
PM <sub>10</sub>	-- *
SO <sub>x</sub>	0.008

\* Since the dryers' combustion is discharge through the cyclones, then its PM<sub>10</sub> emissions will be included with the ginning emissions.

#### GINNING:

According to Project N-940482, the current cotton gin PM<sub>10</sub> emission factor was based on source test data for non-enhanced cyclones conducted in 1992; the facility has since upgraded the cyclones with enhanced cyclones (see projects N-1051425 and N-1071504). Per District policy APR 1110 – Use of Revised Generally Accepted Emission Factors, existing emission factors should be revised at the time of permit modification if better emission data has become available. Therefore, as a more reflective estimate of emissions from a saw gin stand controlled by a 1D-3D enhanced cyclone, the following emission factors from the CCGA Cotton Gin handbook will be used. As a margin of compliance, one standard deviation will be added to the proposed emission factors.

<b>Pre-Project Emission Factors for Saw Gins Stands</b>			
	Emission Factor	Type	Source
Unloading	0.15 lb-PM <sub>10</sub> /bale	Saw 1D-3D	CCGA Cotton Gin Handbook
#1 Precleaning	0.13 lb-PM <sub>10</sub> /bale	Saw 1D-3D	
#2 Precleaning	0.13 lb-PM <sub>10</sub> /bale	Saw 1D-3D	
Overflow	0.06 lb-PM <sub>10</sub> /bale	Saw 1D-3D	
Gin Stand/Feeder Trash	0.12 lb-PM <sub>10</sub> /bale	Saw 1D-3D	
#1 Lint Cleaner	0.10 lb-PM <sub>10</sub> /bale	Saw 1D-3D	
Lint Trash/Robber	0.08 lb-PM <sub>10</sub> /bale	Saw 1D-3D	
Battery Condenser	0.07 lb-PM <sub>10</sub> /bale	Saw 1D-3D	
Motes	0.11 lb-PM <sub>10</sub> /bale	Saw 1D-3D	
Motes Cleaner Trash	0.04 lb-PM <sub>10</sub> /bale	Saw 1D-3D	
Stockpiler	0.12 lb-PM <sub>10</sub> /bale	Saw 1D-3D	
Total	1.11 lb-PM <sub>10</sub> /bale		

**Post Project Emission Factors (EF2)**

**DRYERS:**

The applicant has not proposed to modify the dryer emission factors. Therefore, EF1 = EF2.

**GINNING:**

The facility has proposed to replace the existing saw gin stands with roller gin stands. District policy APR 1110 – Use of Revised Generally Accepted Emission Factors states that emission factors that reflect best data must be used when available. Therefore, as a more reflective estimate of emissions from a roller gin stand controlled by a 1D-3D cyclone, the following emission factors from the CCGA Cotton Gin handbook will be used. As a margin of compliance, one standard deviation will be added to the proposed emission factors.

<b>Post-Project Emission Factors For Roller Gin Stands</b>			
	Emission Factor	Type	Source
Unloading	0.29 lb-PM <sub>10</sub> /bale	Roller 1D-3D	CCGA Cotton Gin Handbook
#1 Precleaning	0.34 lb-PM <sub>10</sub> /bale	Roller 1D-3D	
#2 Precleaning	0.14 lb-PM <sub>10</sub> /bale	Roller 1D-3D	
#3 Precleaning	0.21 lb-PM <sub>10</sub> /bale	Roller 1D-3D	
Overflow	0.02 lb-PM <sub>10</sub> /bale	Roller 1D-3D	
Gin Stand/Feeder Trash	0.05 lb-PM <sub>10</sub> /bale	Roller 1D-3D	
#1 Lint Cleaner	0.03 lb-PM <sub>10</sub> /bale	Roller 1D-3D	
Lint Trash/Robber	0.03 lb-PM <sub>10</sub> /bale	Roller 1D-3D	
Battery Condenser	0.10 lb-PM <sub>10</sub> /bale	Roller 1D-3D	
Motes	N/A	Roller 1D-3D	
Motes Cleaner Trash	N/A	Roller 1D-3D	
Stockpiler	0.06 lb-PM <sub>10</sub> /bale	Roller 1D-3D	
Total	1.27 lb-PM <sub>10</sub> /bale		

**C. Calculations**

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

**Dryers:**

Daily potential to emit (PE) was determined based on the emission factors for LPG/propane while operating 24 hours per day (worst-case). The annual PE was based on a fuel usage limit of 763,740 gallons/year. Calculations are shown below.

Total maximum burner rating is based on:

<b>Burner Ratings</b>			
Unit	# of Units	Burner Rating (MMBtu/hr)	Total Burner Rating (MMBtu/hr)
Dryer	2	8	16
<b>Total</b>			<b>16</b>

**Daily Potential to Emit:**

Daily PE = (maximum burner rating) MMBtu/hr x (emission factor) lb/MMBtu x 24 hr/day

$$\text{PE NO}_x \text{ (lb/day)} = (16 \text{ MMBtu/hr}) \times (0.1 \text{ lb-NO}_x\text{/MMBtu}) \times (24 \text{ hr/day})$$

$$= \mathbf{38.4 \text{ lb-NO}_x\text{/day}}$$

$$\text{PE SO}_x \text{ (lb/day)} = (16 \text{ MMBtu/hr}) \times (0.008 \text{ lb-SO}_x\text{/MMBtu}) \times (24 \text{ hr/day})$$

$$= \mathbf{3.1 \text{ lb-SO}_x\text{/day}}$$

$$\text{PE CO (lb/day)} = (16 \text{ MMBtu/hr}) \times (0.02 \text{ lb-CO/MMBtu}) \times (24 \text{ hr/day})$$

$$= \mathbf{7.7 \text{ lb-CO/day}}$$

$$\text{PE VOC (lb/day)} = (16 \text{ MMBtu/hr}) \times (0.005 \text{ lb-VOC/MMBtu}) \times (24 \text{ hr/day})$$

$$= \mathbf{1.9 \text{ lb-VOC/day}}$$

**Annual Potential to Emit:**

Annual PE = (emission factor) lb/1,000 gallon x 763,740 gallons/year

$$\text{PE NO}_x \text{ (lb/year)} = (0.1 \text{ lb-NO}_x\text{/MMBtu}) \times (91.5 \text{ MMBtu/1,000 gallon}) \times (763,740 \text{ gallons/year})$$

$$= \mathbf{6,988 \text{ lb-NO}_x\text{/year}}$$

$$\text{PE SO}_x \text{ (lb/year)} = (0.008 \text{ lb-SO}_x\text{/MMBtu}) \times (91.5 \text{ MMBtu/1,000 gallon}) \times (763,740 \text{ gallons/year})$$

$$= \mathbf{559 \text{ lb-SO}_x\text{/year}}$$

$$\text{PE CO (lb/year)} = (0.02 \text{ lb-CO/MMBtu}) \times (91.5 \text{ MMBtu/1,000 gallon}) \times (763,740 \text{ gallons/year})$$

$$= \mathbf{1,389 \text{ lb-CO/year}}$$

$$\text{PE VOC (lb/year)} = (0.005 \text{ lb-VOC/MMBtu}) \times (91.5 \text{ MMBtu/1,000 gallon}) \times (763,740 \text{ gallons/year})$$

$$= \mathbf{349 \text{ lb-VOC/year}}$$

**Ginning:**

For the cotton ginning operation all emissions are PM<sub>10</sub> and are calculated as follows:

Daily PE1 = Permit Unit Total EF1 \* Daily Throughput  
 = 1.11 lb-PM<sub>10</sub>/bale \* 1,200 bale/day  
 = **1,322.0 lb-PM<sub>10</sub>/day**

Annual PE1 = Permit Unit Total EF1 \* Annual Throughput  
 = 1.11 lb-PM<sub>10</sub>/bale \* 125,280 bale/yr  
 = **139,061 lb-PM<sub>10</sub>/yr**

Total Daily PE1 (lb/day)					
Emissions Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Dryers	38.4	3.1	1,322	7.7	1.9
Ginning	0	0		0	0
<b>Total</b>	<b>38.4</b>	<b>3.1</b>	<b>1,322</b>	<b>7.7</b>	<b>1.9</b>

Total Annual PE1 (lb/year)					
Emissions Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Dryers	6,988	559	139,061	1,389	349
Ginning	0	0		0	0
<b>Total</b>	<b>6,988</b>	<b>559</b>	<b>139,061</b>	<b>1,389</b>	<b>349</b>

**2. Post Project Potential to Emit (PE2)**

**Dryers:**

Daily potential to emit (PE) was determined based on the emission factors for LPG/propane while operating 24 hours per day (worst-case). The annual PE was based on a fuel usage limit of 797,819 gallons/year. Calculations are shown below.

Total maximum burner rating is based on:

Burner Ratings			
Unit	# of Units	Burner Rating (MMBtu/hr)	Total Burner Rating (MMBtu/hr)
Dryer	3	8	24
<b>Total</b>			<b>24</b>

Daily Potential to Emit:

Daily PE = (maximum burner rating) MMBtu/hr x (emission factor) lb/MMBtu x 24 hr/day

PE NO<sub>x</sub> (lb/day) = (24 MMBtu/hr) x (0.1 lb-NO<sub>x</sub>/MMBtu) x (24 hr/day)  
 = **57.6 lb-NO<sub>x</sub>/day**

PE SO<sub>x</sub> (lb/day) = (24 MMBtu/hr) x (0.008 lb-SO<sub>x</sub>/MMBtu) x (24 hr/day)  
 = **4.6 lb-SO<sub>x</sub>/day**

PE CO (lb/day) = (24 MMBtu/hr) x (0.02 lb-CO/MMBtu) x (24 hr/day)  
 = **11.5 lb-CO/day**



$$\text{PE VOC (lb/day)} = (24 \text{ MMBtu/hr}) \times (0.005 \text{ lb-VOC/MMBtu}) \times (24 \text{ hr/day})$$

$$= \mathbf{2.9 \text{ lb-VOC/day}}$$

Annual Potential to Emit:

$$\text{Annual PE} = (\text{emission factor}) \text{ lb/1,000 gallon} \times 797,819 \text{ gallons/year}$$

$$\text{PE NO}_x \text{ (lb/year)} = (0.1 \text{ lb-NO}_x\text{/MMBtu}) \times (91.5 \text{ MMBtu/1,000 gallon}) \times (797,819 \text{ gallons/year})$$

$$= \mathbf{7,300 \text{ lb-NO}_x\text{/year}}$$

$$\text{PE SO}_x \text{ (lb/year)} = (0.008 \text{ lb-SO}_x\text{/MMBtu}) \times (91.5 \text{ MMBtu/1,000 gallon}) \times (797,819 \text{ gallons/year})$$

$$= \mathbf{584 \text{ lb-SO}_x\text{/year}}$$

$$\text{PE CO (lb/year)} = (0.02 \text{ lb-CO/MMBtu}) \times (91.5 \text{ MMBtu/1,000 gallon}) \times (797,819 \text{ gallons/year})$$

$$= \mathbf{1,460 \text{ lb-CO/year}}$$

$$\text{PE VOC (lb/year)} = (0.005 \text{ lb-VOC/MMBtu}) \times (91.5 \text{ MMBtu/1,000 gallon}) \times (797,819 \text{ gallons/year})$$

$$= \mathbf{365 \text{ lb-VOC/year}}$$

**Cotton Gin**

For the cotton ginning operation all emissions are PM<sub>10</sub> and are calculated as follows:

$$\text{Daily PE2} = \text{Permit Unit Total EF2} \times \text{Daily Throughput}$$

$$= 1.27 \text{ lb-PM}_{10}\text{/bale} \times 759 \text{ bale/day}$$

$$= \mathbf{963.9 \text{ lb-PM}_{10}\text{/day}}$$

$$\text{Annual PE2} = \text{Permit Unit Total EF2} \times \text{Annual Throughput}$$

$$= 1.27 \text{ lb-PM}_{10}\text{/bale} \times 62,640 \text{ bale/yr}$$

$$= \mathbf{79,553 \text{ lb-PM}_{10}\text{/yr}}$$

<b>Total Daily PE2 (lb/day)</b>					
Emissions Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Dryers	57.6	4.6	963.9	11.5	2.9
Ginning	0	0		0	0
<b>Total</b>	<b>57.6</b>	<b>4.6</b>	<b>963.9</b>	<b>11.5</b>	<b>2.9</b>

<b>Total Annual PE2 (lb/year)</b>					
Emissions Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Dryers	7,300	584	79,553	1,460	365
Ginning	0	0		0	0
<b>Total</b>	<b>7,300</b>	<b>584</b>	<b>79,553</b>	<b>1,460</b>	<b>365</b>

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

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked

since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

SSPE1 (lb/year)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
N-1233-1-4*	7,425	200	71,093	1,013	250
N-1233-2-4	6,988	559	139,061	1,389	349
SSPE1	14,413	759	210,154	2,402	599

\*Referenced from Project N-1032207.

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

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

SSPE2 (lb/year)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
N-1233-1-4	7,425	200	71,093	1,013	250
N-1233-2-5	7,300	584	79,553	1,460	365
SSPE2	14,725	784	150,646	2,473	615

#### 5. Major Source Determination

##### Rule 2201 Major Source Determination:

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

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

Per section 3.24.2 of District Rule 2201, for the purposes of determining Major Source status, ERCs banked at the facility shall be removed from the SSPE. The facility previously banked 119,245 lb-PM<sub>10</sub> (see projects N-930127 and N-950048); SSPE1 (lb-PM<sub>10</sub>/yr) = 210,154 – 119,245 = 90,909 lb-PM<sub>10</sub>/year and SSPE2 (lb-PM<sub>10</sub>/yr) = 150,646 – 119,245 = 31,401 lb-PM<sub>10</sub>/year. Therefore, the facility is not a pre-project Major Source for PM<sub>10</sub> emissions.

<b>Rule 2201 Major Source Determination (lb/year)</b>						
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC
SSPE1	14,413	759	90,909	90,909	2,402	599
SSPE2	14,725	784	31,401	31,401	2,473	615
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Note: PM2.5 assumed to be equal to PM10

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

**Rule 2410 Major Source Determination:**

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

<b>PSD Major Source Determination (tons/year)</b>						
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>
Estimated Facility PE before Project Increase	7.2	0.3	0.4	1.2	45.5	45.5
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is an existing PSD major source for at least one pollutant.

**6. Baseline Emissions (BE)**

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant.

Therefore BE=PE1.

N-1233-2-5:

As calculated in Section VII.C.1 above, PE1 is summarized in the following table:

BE (lb/year)						
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO	VOC
N-1233-2-5	6,988	559	139,061	139,061	1,389	349

**7. SB 288 Major Modification**

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act." Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

**8. Federal Major Modification**

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA. Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the Federal Major Modification determination.

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

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

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

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>

**I. Project Emissions Increase - New Major Source Determination**

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

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

<b>PSD Major Source Determination: Potential to Emit (tons/year)</b>						
	NO2	VOC	SO2	CO	PM	PM10
Total PE from New and Modified Units	3.7	0.2	0.3	7.3	39.8	39.8
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

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

**10. 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 F.

**VIII. Compliance**

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

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

**1. BACT Applicability**

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions\*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

\*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 lb/day**

**Proposed 8.0 MMBtu/hr propane-fired burner**

For BACT purposes, the AP-42 PM<sub>10</sub> emission factor for propane fuel (AP-42 Table 1.5-1) will be used to calculate daily PM<sub>10</sub> emissions from the proposed burner.

Pollutant	BACT				
	EF (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE (lb/day)	BACT Required?
NO <sub>x</sub>	0.1	8	24	19.2	Yes
SO <sub>x</sub>	0.008	8	24	1.5	No
PM <sub>10</sub>	0.0066	8	24	1.3	No
CO	0.02	8	24	3.8	No
VOC	0.005	8	24	1.0	No

As seen in the table above, the applicant is proposing to install a new dryer with a PE greater than 2 lb/day for NO<sub>x</sub> and CO. BACT is triggered for only NO<sub>x</sub> since the PE is greater than 2 lb/day. However BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated in Section VII.C.5 above.

**Proposed 3<sup>rd</sup> Stage Precleaner**

#3 Precleaning EF = 0.21 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 759 bale/day

PE = 0.21 lb-PM<sub>10</sub>/bale x 759 bale/day = 159.4 lb-PM<sub>10</sub>/day

As seen in the calculation above, the applicant is proposing to install a new precleaning stage with a PE greater than 2 lb/day for PM<sub>10</sub>. BACT is triggered for only PM<sub>10</sub> since the PE is greater than 2 lb/day.

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

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

**c. Modification of emissions units – AIPE > 2 lb/day**

AIPE = PE2 – HAPE

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

PE2 = Post-Project Potential to Emit, (lb/day)

HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$\text{AIPE} = \text{PE}_2 - (\text{PE}_1 * (\text{EF}_2 / \text{EF}_1))$$

The applicant has proposed to modify the two existing precleaning stages from saw type gins to roller type gins. This modification will also affect the unloading, overflow, gin stand/feeder trash, #1 lint cleaner, lint trash/robber, battery condenser, motes, motes cleaner trash, and stockpile emission factors. Therefore, the AIPE for all affected equipment will be calculated below.

### **PE1**

Unloading EF = 0.15 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 1,200 bale/day

PE = 0.15 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 180 lb-PM<sub>10</sub>/day

#1 Precleaning EF = 0.13 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 1,200 bale/day

PE = 0.13 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 156 lb-PM<sub>10</sub>/day

#2 Precleaning EF = 0.13 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 1,200 bale/day

PE = 0.13 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 156 lb-PM<sub>10</sub>/day

Overflow EF = 0.06 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 1,200 bale/day

PE = 0.06 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 72 lb-PM<sub>10</sub>/day

Gin Stand/Feeder Trash EF = 0.12 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 1,200 bale/day

PE = 0.12 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 144 lb-PM<sub>10</sub>/day

#1 Lint Cleaner EF = 0.10 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 1,200 bale/day

PE = 0.10 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 120 lb-PM<sub>10</sub>/day

Lint Trash/Robber EF = 0.08 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 1,200 bale/day

PE = 0.08 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 96 lb-PM<sub>10</sub>/day

Battery Condenser EF = 0.07 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 1,200 bale/day

PE = 0.07 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 84 lb-PM<sub>10</sub>/day

Motes EF = 0.11 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 1,200 bale/day

PE = 0.11 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 132 lb-PM<sub>10</sub>/day

Motes Cleaner Trash EF = 0.04 lb-PM<sub>10</sub>/bale

Daily Cotton Bale Throughput = 1,200 bale/day

PE = 0.04 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 48 lb-PM<sub>10</sub>/day

Stockpiler EF = 0.12 lb-PM<sub>10</sub>/bale  
Daily Cotton Bale Throughput = 1,200 bale/day  
PE = 0.12 lb-PM<sub>10</sub>/bale x 1,200 bale/day = 144 lb-PM<sub>10</sub>/day

**PE2**

Unloading EF = 0.29 lb-PM<sub>10</sub>/bale  
Daily Cotton Bale Throughput = 759 bale/day  
PE = 0.29 lb-PM<sub>10</sub>/bale x 759 bale/day = 220.1 lb-PM<sub>10</sub>/day

#1 Precleaning EF = 0.34 lb-PM<sub>10</sub>/bale  
Daily Cotton Bale Throughput = 759 bale/day  
PE = 0.34 lb-PM<sub>10</sub>/bale x 759 bale/day = 258.1 lb-PM<sub>10</sub>/day

#2 Precleaning EF = 0.14 lb-PM<sub>10</sub>/bale  
Daily Cotton Bale Throughput = 759 bale/day  
PE = 0.14 lb-PM<sub>10</sub>/bale x 759 bale/day = 106.3 lb-PM<sub>10</sub>/day

Overflow EF = 0.02 lb-PM<sub>10</sub>/bale  
Daily Cotton Bale Throughput = 759 bale/day  
PE = 0.02 lb-PM<sub>10</sub>/bale x 759 bale/day = 15.2 lb-PM<sub>10</sub>/day

Gin Stand/Feeder Trash EF = 0.05 lb-PM<sub>10</sub>/bale  
Daily Cotton Bale Throughput = 759 bale/day  
PE = 0.05 lb-PM<sub>10</sub>/bale x 759 bale/day = 38.0 lb-PM<sub>10</sub>/day

#1 Lint Cleaner EF = 0.03 lb-PM<sub>10</sub>/bale  
Daily Cotton Bale Throughput = 759 bale/day  
PE = 0.03 lb-PM<sub>10</sub>/bale x 759 bale/day = 22.8 lb-PM<sub>10</sub>/day

Lint Trash/Robber EF = 0.03 lb-PM<sub>10</sub>/bale  
Daily Cotton Bale Throughput = 759 bale/day  
PE = 0.03 lb-PM<sub>10</sub>/bale x 759 bale/day = 22.8 lb-PM<sub>10</sub>/day

Battery Condenser EF = 0.10 lb-PM<sub>10</sub>/bale  
Daily Cotton Bale Throughput = 759 bale/day  
PE = 0.10 lb-PM<sub>10</sub>/bale x 759 bale/day = 75.9 lb-PM<sub>10</sub>/day

Motes EF = N/A. The applicant has proposed to remove the motes system.

Motes Cleaner Trash EF = N/A. The applicant has proposed to remove the motes system.

Stockpiler EF = 0.06 lb-PM<sub>10</sub>/bale  
Daily Cotton Bale Throughput = 759 bale/day  
PE = 0.06 lb-PM<sub>10</sub>/bale x 759 bale/day = 45.5 lb-PM<sub>10</sub>/day



	<b>BACT - AIPE</b>					
	PE2	PE1	EF2	EF1	AIPE	BACT Required?
<b>Unloading</b>	220.1	180	0.29 lb-PM <sub>10</sub> /bale	0.15 lb-PM <sub>10</sub> /bale	40.1	Yes
<b>#1 Precleaning</b>	258.1	156	0.34 lb-PM <sub>10</sub> /bale	0.13 lb-PM <sub>10</sub> /bale	102.1	Yes
<b>#2 Precleaning</b>	106.3	156	0.14 lb-PM <sub>10</sub> /bale	0.13 lb-PM <sub>10</sub> /bale	-49.7	No
<b>Overflow</b>	15.2	72	0.02 lb-PM <sub>10</sub> /bale	0.06 lb-PM <sub>10</sub> /bale	-8.8	No
<b>Gin Stand/Feeder Trash</b>	38.0	144	0.05 lb-PM <sub>10</sub> /bale	0.12 lb-PM <sub>10</sub> /bale	-22.0	No
<b>#1 Lint Cleaner</b>	22.8	120	0.03 lb-PM <sub>10</sub> /bale	0.10 lb-PM <sub>10</sub> /bale	-97.2	No
<b>Lint Trash/Robber</b>	22.8	96	0.03 lb-PM <sub>10</sub> /bale	0.08 lb-PM <sub>10</sub> /bale	-13.2	No
<b>Battery Condenser</b>	75.9	84	0.10 lb-PM <sub>10</sub> /bale	0.07 lb-PM <sub>10</sub> /bale	-8.1	No
<b>Motes</b>	N/A*	132	N/A	0.11 lb-PM <sub>10</sub> /bale	0	No
<b>Motes Cleaner Trash</b>	N/A*	48	N/A	0.04 lb-PM <sub>10</sub> /bale	0	No
<b>Stockpiler</b>	45.5	144	0.06 lb-PM <sub>10</sub> /bale	0.12 lb-PM <sub>10</sub> /bale	-98.5	No

\*The facility has proposed to remove this equipment.

As demonstrated in the table above, the AIPE is only greater than 2.0 lb/day for PM<sub>10</sub> emissions for the Unloading and 1<sup>st</sup> precleaning stage. Therefore, BACT is triggered for the Unloading and 1<sup>st</sup> precleaning stage.

**d. SB 288/Federal Major Modification**

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification for NO<sub>x</sub> emissions. Therefore BACT is not triggered for any pollutant.

**2. BACT Guideline**

Cotton Gin

BACT Guideline 5.3.1, applies to cotton gin operations [Cotton Gin Operation] (See Appendix C). The requirements from BACT Guideline 5.3.1 will apply to the Unloading and 1<sup>st</sup> precleaning stage.

Dryer

BACT Guideline 5.3.2, applies to LPG/propane-fired cotton gin dryers [Cotton Gin – Natural Gas-Fired Dryer = or < 8 MMBtu/hr burner] (See Appendix C). The requirements from BACT Guideline 5.3.2 will apply to the proposed 3<sup>rd</sup> precleaning stage dryer.

### 3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, 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.

Pursuant to the attached Top-Down BACT Analysis (see Appendix D), BACT has been satisfied with the following:

Cotton Gin

PM<sub>10</sub>: Enhanced 1D-3D cyclone collectors, or 1D-3D cyclone collectors with expansion chambers, or rotary drum filter, or equivalent.

Dryer

NO<sub>x</sub>: Natural gas/LPG burner (0.1 lb/MMBtu).

### B. Offsets

#### 1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE2	14,725	784	150,646	2,473	615
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	Yes	No	No

#### 2. Quantity of Offsets Required

Quantity of Offsets Required:

Pursuant to section 4.7.1 of District Rule 2201, for pollutants with a pre-project stationary source potential to emit greater than the offset thresholds, the quantity of offsets required will be the sum of the differences between the post-project stationary source potential to emit and the baseline emissions (BE) of all new and modified units.

Section 3.8.1 of District Rule 2201 defines baseline emissions (BE) as the pre-project potential to emit (PE1) for:

- A. all non-major source pollutants
- B. all "clean emission units" (as defined in §3.12 of District Rule 2201) at an existing major source
- C. all "fully-offset emission units" (as defined in §3.20 of District Rule 2201) at a major source, and
- D. all "highly-utilized emission units" (as defined in §3.22 of District Rule 2201) at a major source

The post-project facility is not a major source for any pollutant, so BE = pre-project PE. Therefore, the quantity of offsets required is merely PE2 – PE1:

Pollutant	PE2 <sub>N-1233-2-5</sub> (lb/yr)	PE1 <sub>N-1233-2-4</sub> (lb/yr)	Offset Quantities Required (lb/yr)
PM <sub>10</sub>	79,553	139,061	0

### C. Public Notification

#### 1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.
- e. Any project which results in a Title V significant permit modification

#### a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.7 and VII.C.8, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

#### b. PE > 100 lb/day

The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds – 3 <sup>rd</sup> Stage Precleaner			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO <sub>x</sub>	0.0	100 lb/day	No
SO <sub>x</sub>	0.0	100 lb/day	No
PM <sub>10</sub>	159.4	100 lb/day	Yes
CO	0.0	100 lb/day	No
VOC	0.0	100 lb/day	No

Therefore, public noticing for PE > 100 lb/day purposes is required.

#### c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	14,413	14,725	20,000 lb/year	No
SO <sub>x</sub>	759	784	54,750 lb/year	No
PM <sub>10</sub>	210,154	150,646	29,200 lb/year	No
CO	2,402	2,473	200,000 lb/year	No
VOC	599	615	20,000 lb/year	No

As detailed above, SSPE1 already exceeded the offset threshold for PM<sub>10</sub>; no, other thresholds were surpassed with this project. Therefore public noticing is not required for offset purposes.

**d. SSIPE > 20,000 lb/year**

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	14,725	14,413	312	20,000 lb/year	No
SO <sub>x</sub>	784	759	25	20,000 lb/year	No
PM <sub>10</sub>	150,646	210,154	-59,508	20,000 lb/year	No
CO	2,473	2,402	71	20,000 lb/year	No
VOC	615	599	16	20,000 lb/year	No

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

**e. Title V Significant Permit Modification**

Since this facility does not have a Title V operating, this change is not a Title V significant Modification, and therefore public noticing is not required.

**2. Public Notice Action**

As discussed above, public noticing is required for this project for PM<sub>10</sub> emissions in excess of 100 lb/day. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

**D. Daily Emission Limits (DELs)**

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in

or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

**Proposed Rule 2201 (DEL) Conditions:**

**LPG/propane Combustion:**

- Only propane shall be used as fuel for the burners serving the drying and cleaning system. [District Rule 2201]
- Emission rates from this unit shall not exceed any of the following limits: NOx - 0.1 lb/MMBtu (equivalent to 14 lb/1,000 gal of gas burned); VOC - 0.005 lb/MMBtu (equivalent to 0.47 lb/1,000 gal of gas burned); CO – 0.02 lb/MMBtu (equivalent to 1.9 lb/1,000 gal of gas burned); or SOx - 0.008 lb/MMBtu (equivalent to 0.45 lb/1,000 gal of gas burned). [District Rule 2201]
- The propane consumption of the dryer burners serving the 1<sup>st</sup> and 2<sup>nd</sup> stage precleaners shall not exceed 763,740 gallons during any one calendar year. [District Rule 2201]
- The propane consumption of the dryer burner serving the 3<sup>rd</sup> stage precleaner shall not exceed 34,079 gallon of propane per calendar year. [District Rule 2201]

The emission rate for PM<sub>10</sub> is included with the ginning process, and is shown below.

**Ginning Process:**

- The daily ginning rate shall not exceed 759 bales (equivalent to 190 tons of baled cotton, corrected to 500 pound bales). [District Rule 2201]
- The annual ginning rate shall not exceed 62,640 bales (equivalent to 15,660 tons of baled cotton, corrected to 500 pound bales). [District Rule 2201]
- PM10 emissions from the cotton ginning operation shall not exceed 5.08 pounds per ton of baled cotton (1.27 pound per bale, corrected to 500 pound bales). [District Rule 2201]

**E. Compliance Assurance**

**1. Source Testing**

Per the District's Cotton Gin Permit Process policy SSP-1505, dated 7/17/97, the following source testing requirements apply to cotton gins:

1. One cyclone from 50% of the modified systems shall be tested, with half numbers of cyclones rounded up (i.e., if seven systems are modified, 4 cyclones are to be tested).
2. If only one or two systems are modified, one cyclone from each system is to be tested.

These testing requirements are summarized below:

# of System Modified	# of Cyclones to be Tested
One	One
2, 3 or 4	Two
5 or 6	Three
7 or 8	Four
Etc.	etc

3. The District reserves the right to specify the systems to be tested. The specific systems to be tested may be listed in the applicable Authority to Construct, or will be specified by the District, in writing, within 5 working days after the submittal of the ginner's source test plan.

This testing policy will be used for determining compliance with permit conditions and for the determination of available ERCs. Those systems not tested will be assumed to be emitting at the rates specified in the District's application review. This testing may be waived by the District provided the proposed modification results in a reduced potential to emit, and no ERCs or production increases are requested.

In this project, the facility has proposed to replace the four existing saw type gin stands with ten roller type gin stands. However, the facility has also proposed to reduce the production rates, thereby reducing the potential to emit. Therefore, source testing is not required for this cotton gin as this project does not require ERCs, does not increase the production rates, and results in a reduced potential to emit.

## **2. Monitoring**

No monitoring is required to demonstrate compliance with Rule 2201.

## **3. Recordkeeping**

Daily recordkeeping requirement will be stated in the form of number of bales produced at the ginning operation and combustion factors for the dryers (quantity and weight of bales). The following conditions will be added to the permit to assure compliance with recordkeeping requirements.

- Permittee shall conduct daily visual inspections of the material handling systems for leaks, breaks, or other visible signs of equipment malfunctions. [District Rule 4204]
- Permittee shall maintain a record of the daily inspections, including any equipment malfunctions discovered and corrective action taken to repair the malfunction, and any source test results. [District Rule 4204]
- Permittee shall maintain daily and annual records of number and weight of bales produced, corrected to 500 pound bales. [District Rule 2201]
- Permittee shall maintain an annual record of the amount of propane consumed by the dryer burners serving the 1<sup>st</sup> and 2<sup>nd</sup> stage precleaners, in gallons. [District Rule 2201]
- Permittee shall maintain an annual record of the amount of propane consumed by the dryer burner serving the 3rd stage precleaner, in gallons. [District Rule 2201]
- All records shall be retained on site for five years and made available to the District upon request. [District Rules 1070 and 4204]

## **4. Reporting**

No reporting is required to demonstrate compliance with Rule 2201.

## **F. Ambient Air Quality Analysis (AAQA)**

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The

District's Technical Services Division conducted the required analysis. Refer to Appendix E of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO<sub>x</sub>, CO, and SO<sub>x</sub>. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO<sub>x</sub>, CO, or SO<sub>x</sub>.

The proposed location is in a non-attainment area for the state's PM<sub>10</sub> as well as federal and state PM<sub>2.5</sub> thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM<sub>10</sub> and PM<sub>2.5</sub>.

#### **Rule 2410 Prevention of Significant Deterioration**

As shown in Section VII. C. 9. above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

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

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

#### **Rule 4001 New Source Performance Standards (NSPS)**

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

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

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

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

Section 5.0 prohibits visible emissions for a period of more than three minutes per hour that are darker than 20% or Ringelmann No. 1. Based on past inspections of similar cotton ginning facilities, emissions are not expected to exceed allowable limits when controlled by 1D-3D cyclones. Compliance with this rule is expected. Therefore, the following condition will be included to ensure compliance:

- 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 Nuisance**

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

of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

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

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

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

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

An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (Appendix E), the total facility prioritization score including this project was less than or equal to one. Therefore, no future analysis is required to determine the impact from this project and compliance with the District's Risk Management Policy is expected.

### **Rule 4201 Particulate Matter Concentration**

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

$$\text{PM Conc. (gr/scf)} = \frac{(\text{PM emission rate}) \times (7,000 \text{ gr/lb})}{(\text{Air flow rate}) \times (27 \text{ cyclones}) \times (60 \text{ min/hr}) \times (24 \text{ hr/day})}$$

PM<sub>10</sub> emission rate = 963.9 lb/day. Assuming 100% of PM is PM<sub>10</sub>

Exhaust Gas Flow = 2,800 scfm

Number of Cyclones = 27

$$\text{PM Conc. (gr/scf)} = [(963.9 \text{ lb/day}) \times (7,000 \text{ gr/lb})] \div [(2,800 \text{ ft}^3/\text{min}) \times (27 \text{ cyclones}) \times (60 \text{ min/hr}) \times (24 \text{ hr/day})]$$

$$\text{PM Conc.} = 0.062 \text{ gr/scf}$$

Since 0.062 grain/dscf is less than 0.1 grain/dscf, compliance with this rule is expected. The following condition will ensure continued compliance:

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

### **Rule 4204 Cotton Gins**

Section 5.1 requires that all emission points be controlled by 1D-3D cyclones or rotary drum filters according to the compliance schedule in Section 7.1, as shown in the following table.



<b>Compliance Schedule</b>	
Control Requirement	Compliance Date
Install 1D3D cyclones on all unloading, #1 precleaning, #2 precleaning, and #3 precleaning emission points.	July 1, 2006
Install 1D3D cyclones on all overflow, gin stand/feeder trash, motes, motes cleaner trash, and trash stockpiler emission points.	July 1, 2007
Install 1D3D cyclones on all #1 and #2 lint cleaning, lint trash, robber systems, and battery condenser emission points.	July 1, 2008

This permit unit does not have any non 1D-3D cyclones. Compliance is assured.

Section 5.2 requires the inlet air velocity of a 1D-3D cyclone be maintained between 2,800 and 3,600 feet per minute. Compliance is assured as shown in Section VI of this evaluation.

Section 5.3 requires replacement parts of 1D-3D cyclones to meet the dimensional requirements of Figure 1 or Figure 2 of this rule. As shown in Section VI, the dimensions have been verified with Figure 1 - Enhanced 1D-3D Cyclone, compliance is assured.

Sections 5.4 and 5.5 provide alternative options, which the applicant has not proposed. Therefore, no further discussion is necessary.

Section 5.6 requires an owner using a drive-under or pull-through trash collection system for load-out purposes to utilize a trash loading area that is enclosed by four sides: two solid sides and two flexible wind barriers. Per a June 22, 2005 letter from Mike Davis, this permit unit has a trash collection system that is already in compliance with this requirement. The following condition ensures continued compliance.

- The trash loading area shall be enclosed with four sides that are higher than the trash auger. Two sides shall be solid. The remaining sides shall have flexible wind barriers that extend below the top of the trash trailer sides. [District Rule 4204]

Section 5.7 specifies requirements for trash conveyance systems dumping directly into piles. However, this permit unit does not use trash piling systems and is therefore not subject to this section.

Section 6.1 requires that the owner/operator conduct daily visual inspections of the material handling system for leaks and equipment malfunctions, and maintain records of these inspections and source tests. The following conditions ensure compliance:

- Permittee shall conduct daily visual inspections of the material handling systems for leaks, breaks, or other visible signs of equipment malfunctions. [District Rule 4204]
- Permittee shall maintain a record of the daily inspections of the material handling systems, including any equipment malfunctions discovered and corrective action taken to repair the malfunction, and any source test results. [District Rule 4204]
- All records shall be retained on site for at least five years and made available to the District upon request. [District Rules 1070 and 4204]

Section 6.2 requires source testing of air inlet velocity when installing or modifying control equipment to comply with District Rule 4204 using approved source test methods. As previously mentioned in Section VIII.E.1, the District's Cotton Gin Permit Process policy SSP-

1505 does not require source testing if the applicant can demonstrate the project results in a reduced potential to emit, no ERCs are required, and no production increases are requested. The proposed modifications result in a reduced potential to emit, no production increases, and does not require ERCs; therefore, source testing is not required.

The applicant has not proposed to modify the air inlet velocity. Furthermore, the following conditions have been revised to accurately reflect the number, type, and size of the cyclones in the collection system.

- The plenum system shall be served by 27 cyclone collectors with eleven 50-inch (enhanced cones only), ten 48-inch (one with enhanced body only, one with enhanced cone only, and eight are 1D-3D), two 46-inch (enhanced cones only); and four 42-inch (one enhanced body and cone and three with enhanced body only), each operating at a cyclone inlet air velocity of  $3,200 \pm 400$  ft/min. [District Rules 2201 and 4204]

#### Conditions Removed

The applicant has proposed to remove the motes system; therefore, the following condition has been deleted:

- The motes system shall be served by one 96-inch 1D-3D cyclone collector with enhanced bottom cone, operating at a cyclone inlet air velocity of  $3,200 \pm 400$  ft/min. [District Rules 2201 and 4204]

The following condition on the current PTO is redundant and has been removed; other conditions already list the air inlet velocity for each cyclone.

- All 1D-3D cyclones shall operate at a cyclone inlet air velocity of  $3200 \pm 400$  ft/min. [District Rule 4204]

The following condition listed on the current PTO has been removed because only the cyclones modified through project N-1071504 were included; the remaining unmodified cyclones were not listed. Another condition on the ATC lists the number, type, and size of each cyclone in the collection system.

- The plenum system shall be served by 28 cyclone collectors with five 50-inch, one 48-inch, and two 46-inch enhanced bottom cones; one 48-inch enhanced body; and three 42-inch 1D-3D enhanced cyclone collectors, each operating at a cyclone inlet air velocity of  $3,200 \pm 400$  ft/min. [District Rules 2201 and 4204]

#### **District Rule 4301 Fuel Burning Equipment**

This rule specifies maximum emission rates in lb/hr for SO<sub>2</sub>, NO<sub>2</sub>, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to  $\leq 0.1$  gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1  $\mu$ m in diameter.

District Rule 4301 Limits			
Pollutant	NO <sub>2</sub>	Total PM	SO <sub>2</sub>
ATC #N-1233-2-5 (lb/hr)	2.4	0.2	0.2
Rule Limit (lb/hr)	140	10	200

\* The amount of PM<sub>10</sub> from combustion of propane will be estimated using an emission factor of 0.0066 lb-PM<sub>10</sub>/MMBtu (AP-42 (10/98) Table 1.5-1) and the combined burner ratings of the roller gin (24 MMBtu/hr).

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, continued compliance 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<sub>2</sub>, 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 from the dryers are calculated as follows:

$$\text{Volume SO}_2 = \frac{n RT}{P}$$

With:

N = moles SO<sub>2</sub>

T (Standard Temperature) = 60°F = 520°R

P (Standard Pressure) = 14.7 psi

R (Universal Gas Constant) =  $\frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}}$

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

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

$$\frac{0.008 \text{ lb SO}_2}{\text{MMBtu}} \times \frac{\text{MMBtu}}{8,578 \text{ dscf}} \times \frac{1 \text{ lb} \cdot \text{mol SO}_2}{64 \text{ lb SO}_2} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}} \times \frac{520^\circ\text{R}}{14.7 \text{ psi}} \times 1,000,000 \text{ ppmv} = 5.5 \text{ ppmv}$$

Sulfur Concentration = 5.5 ppmv < 2,000 ppmv (or 0.2%),

Therefore compliance with District Rule 4801 requirements is expected.

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

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

### California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental

documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

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

### **Greenhouse Gas (GHG) Significance Determination**

District is a Lead Agency & GHG emissions increases are from the combustion of fossil fuel other than jet fuels

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

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

The California Air Resources Board (ARB) adopted a Cap-and-Trade regulation as part one of the strategies identified for AB 32. This Cap-and-Trade regulation is a statewide plan, supported by a CEQA compliant environmental review document, aimed at reducing or mitigating GHG emissions from targeted industries. Facilities subject to the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. Any growth in emissions must be accounted for under that cap such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions.

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

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

**PERMIT NO:** N-1233-2-5

**LEGAL OWNER OR OPERATOR:** DOS PALOS COOPERATIVE GIN, INC  
**MAILING ADDRESS:** 7870 W HUTCHINS RD  
DOS PALOS, CA 93620

**LOCATION:** 7870 W HUTCHINS RD  
DOS PALOS, CA 93620

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF COTTON GIN #2 WITH FOUR LUMMUS 158 SAW TYPE GIN STANDS, FIVE HOT AIR CLEANERS, EIGHT LINT CLEANERS (FIRST AND SECOND STAGE), TWO 8 MMBTU/HR PROPANE-FIRED BURNERS, AN OVERFLOW SYSTEM, AND A TRASH SYSTEM WHICH ARE ALL SERVED BY A PLENUM SYSTEM EQUIPPED WITH TWENTY EIGHT 1D-3D CYCLONE COLLECTORS; AND A MOTES SYSTEM SERVED BY ONE 1D-3D CYCLONE COLLECTOR: REPLACE SAW GINS WITH ROLLER GIN STANDS AND LINT CLEANING, ADD A 3RD STAGE PRECLEANING WITH 8.0 MMBTU/HR PROPANE-FIRED HEATER, REMOVE A CYCLONE FROM THE PLENUM SYSTEM, REMOVE THE MOTES SYSTEM, AND REDUCE THE DAILY AND ANNUAL THROUGHPUT FROM 300 TONS/DAY AND 31,320 TONS/YEAR TO 190 TONS/DAY AND 15,660 TONS/YEAR

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1935} Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
5. {1934} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
6. Only propane shall be used as fuel for the burners serving the drying and cleaning system. [District Rule 2201]
7. The propane consumption of the dryer burners serving the 1st and 2nd stage precleaners shall not exceed 763,740 gallons during any one calendar year. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-1233-2-5 Dec 10 2015 2:00PM - YOSHIMUJ : Joint Inspection NOT Required

8. The propane consumption of the dryer burner serving the 3rd stage precleaner shall not exceed 34,079 gallons during any one calendar year. [District Rule 2201]
9. The dryer burner serving the 3rd stage precleaner shall be equipped with a non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of propane combusted in the unit. [District Rule 2201]
10. The daily ginning rate shall not exceed 759 bales (equivalent to 190 tons of baled cotton, corrected to 500 pound bales). [District Rule 2201]
11. The annual ginning rate shall not exceed 62,640 bales (equivalent to 15,660 tons of baled cotton, corrected to 500 pound bales). [District Rule 2201]
12. PM10 emissions from the cotton ginning operation shall not exceed 5.08 pounds per ton of baled cotton (1.27 pound per bale, corrected to 500 pound bales). [District Rule 2201]
13. Emission rates from this unit shall not exceed any of the following limits: NO<sub>x</sub> - 0.1 lb/MMBtu; VOC - 0.005 lb/MMBtu; CO - 0.02 lb/MMBtu; or SO<sub>x</sub> - 0.008 lb/MMBtu. [District Rule 2201]
14. The plenum system shall be served by 27 cyclone collectors with eleven 50-inch (enhanced cones only), ten 48-inch (one with enhanced body only, one with enhanced cone only, and eight are 1D-3D), two 46-inch (enhanced cones only); and four 42-inch (one enhanced body and cone and three with enhanced body only), each operating at a cyclone inlet air velocity of 3,200 ± 400 ft/min. [District Rules 2201 and 4204]
15. The trash loading area shall be enclosed with four sides that are higher than the trash auger. Two sides shall be solid. The remaining sides shall have flexible wind barriers that extend below the top of the trash trailer sides. [District Rule 4204]
16. Permittee shall conduct daily visual inspections of the material handling systems for leaks, breaks, or other visible signs of equipment malfunctions. [District Rule 4204]
17. Permittee shall maintain a record of the daily inspections, including any equipment malfunctions discovered and corrective action taken to repair the malfunction, and any source test results. [District Rule 4204]
18. Permittee shall maintain daily and annual records of number and weight of bales produced, corrected to 500 pound bales. [District Rule 2201]
19. Permittee shall maintain annual records of the amount of propane consumed by the dryer burners serving the 1st and 2nd stage precleaners, in gallons. [District Rule 2201]
20. Permittee shall maintain annual records of the amount of propane consumed by the dryer burner serving the 3rd stage precleaner, in gallons. [District Rule 2201]
21. All records shall be retained on site for five years and made available to the District upon request [District Rules 1070 and 4204]

DRAFT

The GHG emissions increases associated with this project result from the combustion of fossil fuel(s), other than jet fuel, delivered from suppliers subject to the Cap-and-Trade regulation. Therefore, as discussed above, consistent with District Policies APR 2005 and APR 2025, the District concludes that the GHG emissions increases associated with this project would have a less than significant individual and cumulative impact on global climate change.

### District CEQA Findings

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

### IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC N-1233-2-5 subject to the permit conditions on the attached draft ATC in Appendix A.

### X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-1233-2-5	3020-02-H	24.0 MMBtu/hr propane-fired burner	\$1,080.00

### Appendixes

- A: Draft ATC
- B: Current PTO
- C: BACT Guideline
- D: BACT Analysis
- E: HRA/AAQA Summary
- F: Quarterly Net Emissions Change
- G: Emissions Profile

**APPENDIX A**  
**Draft ATC**



San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT

PERMIT NO: N-1233-2-5

LEGAL OWNER OR OPERATOR: DOS PALOS COOPERATIVE GIN, INC  
MAILING ADDRESS: 7870 W HUTCHINS RD  
DOS PALOS, CA 93620

LOCATION: 7870 W HUTCHINS RD  
DOS PALOS, CA 93620

**EQUIPMENT DESCRIPTION:**

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**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1935} Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
5. {1934} All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
6. Only propane shall be used as fuel for the burners serving the drying and cleaning system. [District Rule 2201]
7. The propane consumption of the dryer burners serving the 1st and 2nd stage precleaners shall not exceed 763,740 gallons during any one calendar year. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

N-1233-2-5 Dec 16 2015 10:58AM -- YOSHIMUJ - Joint Inspection NOT Required

8. The propane consumption of the dryer burner serving the 3rd stage precleaner shall not exceed 34,079 gallons during any one calendar year. [District Rule 2201]
9. The dryer burner serving the 3rd stage precleaner shall be equipped with a non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of propane combusted in the unit. [District Rule 2201]
10. The daily ginning rate shall not exceed 759 bales (equivalent to 190 tons of baled cotton, corrected to 500 pound bales). [District Rule 2201]
11. The annual ginning rate shall not exceed 62,640 bales (equivalent to 15,660 tons of baled cotton, corrected to 500 pound bales). [District Rule 2201]
12. PM10 emissions from the cotton ginning operation shall not exceed 5.08 pounds per ton of baled cotton (1.27 pound per bale, corrected to 500 pound bales). [District Rule 2201]
13. Emission rates from this unit shall not exceed any of the following limits: NO<sub>x</sub> - 0.1 lb/MMBtu; VOC - 0.005 lb/MMBtu; CO - 0.02 lb/MMBtu; or SO<sub>x</sub> - 0.008 lb/MMBtu. [District Rule 2201]
14. The plenum system shall be served by 27 cyclone collectors with eleven 50-inch (enhanced cones only), ten 48-inch (one with enhanced body only, one with enhanced cone only, and eight are 1D-3D), two 46-inch (enhanced cones only); and four 42-inch (one enhanced body and cone and three with enhanced body only), each operating at a cyclone inlet air velocity of 3,200 ± 400 ft/min. [District Rules 2201 and 4204]
15. The trash loading area shall be enclosed with four sides that are higher than the trash auger. Two sides shall be solid. The remaining sides shall have flexible wind barriers that extend below the top of the trash trailer sides. [District Rule 4204]
16. Permittee shall conduct daily visual inspections of the material handling systems for leaks, breaks, or other visible signs of equipment malfunctions. [District Rule 4204]
17. Permittee shall maintain a record of the daily inspections, including any equipment malfunctions discovered and corrective action taken to repair the malfunction, and any source test results. [District Rule 4204]
18. Permittee shall maintain daily and annual records of number and weight of bales produced, corrected to 500 pound bales. [District Rule 2201]
19. Permittee shall maintain annual records of the amount of propane consumed by the dryer burners serving the 1st and 2nd stage precleaners, in gallons. [District Rule 2201]
20. Permittee shall maintain annual records of the amount of propane consumed by the dryer burner serving the 3rd stage precleaner, in gallons. [District Rule 2201]
21. All records shall be retained on site for five years and made available to the District upon request [District Rules 1070 and 4204]

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**APPENDIX B**  
**Current PTO**

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-1233-2-4

**EXPIRATION DATE:** 09/30/2016

**EQUIPMENT DESCRIPTION:**

COTTON GIN #2 WITH FOUR LUMMUS 158 SAW TYPE GIN STANDS, FIVE HOT AIR CLEANERS, EIGHT LINT CLEANERS (FIRST AND SECOND STAGE), TWO 8 MMBTU/HR PROPANE FIRED BURNERS, AN OVERFLOW SYSTEM, AND A TRASH SYSTEM WHICH ARE ALL SERVED BY A PLENUM SYSTEM EQUIPPED WITH TWENTY EIGHT 1D-3D CYCLONE COLLECTORS; AND A MOTES SYSTEM SERVED BY ONE 1D-3D CYCLONE COLLECTOR

## PERMIT UNIT REQUIREMENTS

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
6. The daily ginning rate shall not exceed 300 tons of baled cotton (1,200 bales, corrected to 500 pound bales). [District Rule 2201]
7. The annual ginning rate shall not exceed 31,320 tons of baled cotton (125,280 bales, corrected to 500 pound bales). [District Rule 2201]
8. PM10 emissions from the cotton ginning operation shall not exceed 2.2 pounds per ton of baled cotton (0.55 pound per bale, corrected to 500 pound bales). [District Rule 2201]
9. The propane consumption of the drier burners shall not exceed 763,740 gallons during any one calendar year. [District Rule 2201]
10. Nitrogen oxide (NOx) emissions shall not exceed 14 lb/1,000 gal of gas burned. [District Rule 2201]
11. Carbon monoxide (CO) emissions shall not exceed 1.9 lb/1,000 gal of gas burned. [District Rule 2201]
12. Volatile organic compound (VOC) emissions shall not exceed 0.47 lb/1,000 gal of gas burned. [District Rule 2201]
13. Sulfur oxide (SOx) emissions shall not exceed 0.45 lb/1,000 gal of gas burned. [District Rule 2201]
14. The plenum system shall be served by 28 cyclone collectors with five 50-inch, one 48-inch, and two 46-inch enhanced bottom cones; one 48-inch enhanced body; and three 42-inch 1D-3D enhanced cyclone collectors, each operating at a cyclone inlet air velocity of 3,200 ñ 400 ft/min. [District Rules 2201 and 4204]
15. The motes system shall be served by one 96-inch 1D-3D cyclone collector with enhanced bottom cone, operating at a cyclone inlet air velocity of 3,200 ñ 400 ft/min. [District Rules 2201 and 4204]
16. All 1D-3D cyclones shall operate at a cyclone inlet air velocity of 3200 ñ 400 ft/min. [District Rule 4204]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

17. The trash loading area shall be enclosed with four sides that are higher than the trash auger. Two sides shall be solid. The remaining sides shall have flexible wind barriers that extend below the top of the trash trailer sides. [District Rule 4204]
18. The permittee shall conduct daily visual inspections of the material handling systems for leaks, breaks, or other visible signs of equipment malfunctions. [District Rule 4204]
19. The permittee shall maintain a record of the daily inspections, including any equipment malfunctions discovered and corrective action taken to repair the malfunction, and any source test results. [District Rule 4204]
20. The permittee shall maintain daily and annual records of number and weight of bales produced, corrected to 500 pound bales. [District Rule 2201]
21. The permittee shall maintain an annual record of the amount of propane burned, in gallons. [District Rule 2201]
22. All records shall be retained on site for five years and made available to the District upon request [District Rules 1070 and 4204]

These terms and conditions are part of the Facility-wide Permit to Operate.

**APPENDIX C**  
**BACT Guideline**

**Best Available Control Technology (BACT ) Guideline 5.3.1  
Last Update: 6/25/2007**

**Cotton Gin Operation**

<b>Pollutant</b>	<b>Achieved in Practice or in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Enhanced 1D-3D cyclone collectors, or 1D-3D cyclone collectors with expansion chambers, or rotary drum filter, or equivalent		n/a

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

**This is a Summary Page for this Class of Source. For background information, see Permit Specific BACT Determinations on [Details Page](#).**

**Best Available Control Technology (BACT ) Guideline 5.3.2  
Last Update: 6/30/2000**

**Cotton Gin - Natural Gas-Fired Dryer, = or < 8 MMBtu/hr Burner**

<b>Pollutant</b>	<b>Achieved in Practice or in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	Natural gas/LPG burner (0.1 lb/MMBtu)	<ol style="list-style-type: none"> <li>1. Natural gas/LPG with ultra Low-NOx Burner (0.011 lb/MMBtu)</li> <li>2. Natural gas/LPG with Low-NOx Burner (0.024 lb/MMBtu)</li> </ol>	
PM10	1D/3D cyclone		

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

**This is a Summary Page for this Class of Source. For background information, see Permit Specific BACT Determinations on [Details Page](#).**



**APPENDIX D**  
**BACT Analysis**

# Top-Down BACT Determination for PM<sub>10</sub> Emissions (Dehydrator)

## Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 5.3.1, 4<sup>th</sup> quarter 2015, identifies achieved in practice and technologically feasible BACT for Cotton Gin Operation as follows:

- Enhanced 1D-3D cyclone collectors, or 1D-3D cyclone collectors with expansion chambers, or rotary drum filter, or equivalent - Achieved in Practice

## Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options.

## Step 3 – Rank Remaining Control Technologies by Control Efficiency

1. Enhanced 1D-3D cyclone collectors, or 1D-3D cyclone collectors with expansion chambers, or rotary drum filter, or equivalent - Achieved in Practice

## Step 4 – Cost Effectiveness Analysis

The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

## Step 5 - Select BACT

BACT for PM<sub>10</sub> is the use of an enhanced 1D-3D cyclone collector, or 1D-3D cyclone collectors with expansion chambers, or rotary drum filter, or equivalent. The applicant has verified the cyclone collectors are enhanced 1D-3D. Therefore, BACT will be satisfied.

# Top-Down BACT Determination for NO<sub>x</sub> Emissions (Dehydrator)

## Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 5.3.2, 4<sup>th</sup> quarter 2015, identifies achieved in practice and technologically feasible BACT for cotton gin dryers ( $\leq 8$  MMBtu/hr) as follows:

- Natural gas/LPG burner (0.1 lb/MMBtu) - Achieved in Practice
- Natural gas/LPG with ultra Low-NO<sub>x</sub> Burner (0.011 lb/MMBtu) - Technologically Feasible
- Natural gas/LPG with Low-NO<sub>x</sub> Burner (0.024 lb/MMBtu)- Technologically Feasible

## Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options.

## Step 3 – Rank Remaining Control Technologies by Control Efficiency

1. 0.012 lb/MMBtu, natural gas-fired with low NO<sub>x</sub> burner - Technologically Feasible
2. 0.024 lb/MMBtu, natural gas-fired with low NO<sub>x</sub> burner - Technologically Feasible
3. 0.06 lb/MMBtu, natural gas-fired with low NO<sub>x</sub> burner - Achieved in Practice

## Step 4 – Cost Effectiveness Analysis

Per costs provided by Sky Wirth of Heat Transfer Systems, a standard 5.0 MMBtu/hr burner with NO<sub>x</sub> emissions of 0.06 lb-NO<sub>x</sub>/MMBtu was quoted at \$3,951. The facility has proposed to install an 8.0 MMBtu/hr burner; therefore, as a conservative estimate, the cost of two standard 5.0 MMBtu/hr burners will be used to determine the cost effectiveness.

### Natural Gas/LPG-Fired with Low NO<sub>x</sub> Burner and NO<sub>x</sub> Emissions of 0.024 lb-NO<sub>x</sub>/MMBtu.

Per costs provided by Sky Wirth of Heat Transfer Systems, the capital cost of a burner with NO<sub>x</sub> emissions of 0.024 lb-NO<sub>x</sub>/MMBtu is \$11,925 for a 5.0 MMBtu/hr unit. These burners also required modifications to the duct for mounting externally and supporting the burners, additional gas piping cost to get gas to the burner on the opposite side of the duct, a larger control panel to house the addition items needed by the second burner and the fact that these burners use integral combustion air blowers, step-down transformer, starters, lights and pushbuttons, 2nd flame safeguard. These changes would add another \$5,950.00 per 5.0 MMBtu/hr burners. The added equipment would also add at least one additional day to the installation time and result in at least \$2,000 per 5.0 MMBtu/hr burners. In addition, the 0.024 lb-NO<sub>x</sub>/MMBtu burners will require the installation of a 5 hp electric blower for each burner.

## Annualized costs

### Capital Cost:

Burner Cost: \$11,925 per 5.0 MMBtu/hr burner  
Additional Equipment: \$5,950 per 5.0 MMBtu/hr burner  
Additional Installation Time: \$2,000 per 5.0 MMBtu/hr burner

$$\begin{aligned}\text{Additional \$ for 20 ppm burner} &= [(\$23,850 - \$7,902)] + (\$5,950) + (\$2,000) \\ &= \$23,898\end{aligned}$$

Annualized capital cost = \$23,898 x (A/P, i%, n)  
where i = 10% and n = 10 years

$$\text{Annualized capital cost} = \$23,898 \times 0.1627 = \mathbf{\$3,888}$$

### Electricity Cost:

As stated above, a 5.0 MMBtu/hr NO<sub>x</sub> burner will require the use of a 5 hp blower. The additional annual electricity cost to power this blower is calculated below.

$$1 \text{ KW} = 1.34 \text{ hp}$$

$$\text{Current Cost of Electricity}^1 = \$0.23909/\text{kW-hr}$$

Convert hp to kW:

$$\begin{aligned}\text{Power Usage (kW)} &= (5 \text{ hp}) \div (1.34 \text{ hp/kW}) \\ &= 3.7 \text{ kW}\end{aligned}$$

$$\begin{aligned}\text{Annual Power Usage (kW-hr/yr)} &= (3.7 \text{ kW}) \times (386 \text{ hr/year}) \\ &= 1,428 \text{ kW-hr/year}\end{aligned}$$

$$\begin{aligned}\text{Annual Electricity Cost} &= (1,428 \text{ kW-hr/year}) \times (\$0.23909/\text{kW-hr}) \\ &= \mathbf{\$341/\text{year}}\end{aligned}$$

### Cost Effectiveness Calculation

The cotton gin heater is subject to District Rule 4204; however, the rule does not contain a NO<sub>x</sub> emissions limit. Therefore, the District standard emissions will be taken from EPA's AP-42 emission factors from the combustion of LPG/propane, which contains the emission factors for cotton gin heaters commonly found in the District.

$$\begin{aligned}\text{District Standard Emissions} &= 0.1 \text{ lb/MMBtu} \times 8.0 \text{ MMBtu/hr} \\ &= 0.8 \text{ lb-NO}_x/\text{hr}\end{aligned}$$

The proposed NO<sub>x</sub> emission limit (0.024 lb-NO<sub>x</sub>/MMBtu) is calculated as follows:

$$\begin{aligned}\text{Emissions (0.024 lb-NO}_x/\text{MMBtu)} &= 0.024 \text{ lb/MMBtu (20 ppmv @ 3\% O}_2) \times 8.0 \\ &\quad \text{MMBtu/hr} \\ &= 0.192 \text{ lb-NO}_x/\text{hr}\end{aligned}$$

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<sup>1</sup> Rates from PG&E for large agricultural operations. Rates effective May 1, 2013 to present.

Therefore, the reduction in NO<sub>x</sub> emissions is the following:

$$(0.8 \text{ lb/hr} - 0.192 \text{ lb/hr}) \times 386 \text{ hr/year} \times 1 \text{ ton}/2000 \text{ lb} = \mathbf{0.12 \text{ tons-NO}_x/\text{year}}$$

$$\begin{aligned} \text{Cost effectiveness} &= (\$3,888/\text{year} + \$341/\text{year}) \div (0.12 \text{ tons-NO}_x/\text{year}) \\ &= \mathbf{\$36,039/\text{ton}} \end{aligned}$$

This is greater than the District NO<sub>x</sub> cost effectiveness threshold of \$24,500/ton. Therefore, this option is not cost effective.

### Natural Gas-Fired with Low NO<sub>x</sub> Burner and NO<sub>x</sub> Emissions of 0.012 lb-NO<sub>x</sub>/MMBtu.

Per costs provided by Sky Wirth of Heat Transfer Systems, the capital cost of a burner with NO<sub>x</sub> emissions of 0.012 lb-NO<sub>x</sub>/MMBtu is \$21,402 for a 5.0 MMBtu/hr unit. These burners also required modifications to the duct for mounting externally and supporting the burners, additional gas piping cost to get gas to the burner on the opposite side of the duct, a larger control panel to house the addition items needed by the second burner and the fact that these burners use integral combustion air blowers, step-down transformer, starters, lights and pushbuttons, 2nd flame safeguard. These changes would add another \$5,950.00 per 5.0 MMBtu/hr burners. The added equipment would also add at least one additional day to the installation time and result in at least \$2,000 per 5.0 MMBtu/hr burners. In addition, the 0.012 lb-NO<sub>x</sub>/MMBtu burners will require the installation of a 15 hp electric blower for each burner.

#### **Annualized costs**

##### Capital Cost:

Burner Cost:	\$21,402 per 5.0 MMBtu/hr burner
Additional Equipment:	\$5,950 per 5.0 MMBtu/hr burners
Additional Installation Time:	\$2,000 per 5.0 MMBtu/hr burners

$$\begin{aligned} \text{Additional \$ for 20 ppm Dehydrator} &= [(\$42,804 - \$7,902)] + (\$5,950) + (\$2,000) \\ &= \mathbf{\$42,852} \end{aligned}$$

Annualized capital cost = \$42,852 x (A/P, i%, n)  
where i = 10% and n = 10 years

$$\text{Annualized capital cost} = \$42,852 \times 0.1627 = \mathbf{\$6,972}$$

##### Electricity Cost:

A 5.0 MMBtu/hr NO<sub>x</sub> burner will require the use of a 15 hp blower. The additional annual electricity cost to power this blower is calculated below.

$$1 \text{ KW} = 1.34 \text{ hp}$$

$$\text{Current Cost of Electricity}^2 = \$0.23909/\text{kW-hr}$$

Convert hp to kW:

<sup>2</sup> Rates from PG&E for large agricultural operations. Rates effective May 1, 2013 to present.

$$\begin{aligned}\text{Power Usage (kW)} &= (15 \text{ hp}) \div (1.34 \text{ hp/kW}) \\ &= 11.19 \text{ kW}\end{aligned}$$

$$\begin{aligned}\text{Annual Power Usage (kW-hr/year)} &= (11.19 \text{ kW}) \times (386 \text{ hr/year}) \\ &= 1,428 \text{ kW-hr/year}\end{aligned}$$

$$\begin{aligned}\text{Annual Electricity Cost} &= (1,428 \text{ kW-hr/year}) \times (\$0.23909/\text{kW-hr}) \\ &= \mathbf{\$341/\text{year}}\end{aligned}$$

#### Cost Effectiveness Calculation

The cotton gin heater is subject to District Rule 4204; however, the rule does not contain a NO<sub>x</sub> emissions limit. Therefore, the District standard emissions will be taken from EPA's AP-42 emission factors from the combustion of LPG/propane, which contains the emission factors for cotton gin heaters commonly found in the District.

$$\begin{aligned}\text{District Standard Emissions} &= 0.1 \text{ lb/MMBtu} \times 8.0 \text{ MMBtu/hr} \\ &= 0.8 \text{ lb-NO}_x/\text{hr}\end{aligned}$$

The proposed NO<sub>x</sub> emission limit (0.012 lb-NO<sub>x</sub>/MMBtu) is calculated as follows:

$$\begin{aligned}\text{Emissions (0.024 lb-NO}_x/\text{MMBtu)} &= 0.012 \text{ lb/MMBtu (10 ppmv @ 3\% O}_2) \times 8.0 \\ &\quad \text{MMBtu/hr} \\ &= 0.096 \text{ lb-NO}_x/\text{hr}\end{aligned}$$

Therefore, the reduction in NO<sub>x</sub> emissions is the following:

$$(0.8 \text{ lb/hr} - 0.096 \text{ lb/hr}) \times 386 \text{ hr/year} \times 1 \text{ ton}/2000 \text{ lb} = \mathbf{0.14 \text{ tons-NO}_x/\text{year}}$$

$$\begin{aligned}\text{Cost effectiveness} &= (\$6,972/\text{year} + \$341/\text{year}) \div (0.14 \text{ tons-NO}_x/\text{year}) \\ &= \mathbf{\$53,823/\text{ton}}\end{aligned}$$

This is greater than the District NO<sub>x</sub> cost effectiveness threshold of \$24,500/ton. Therefore, this option is not cost effective.

#### **Step 5 - Select BACT**

Burners with NO<sub>x</sub> emissions of 0.0024 lb/MMBtu and 0.0012 lb/MMBtu are not cost effective, therefore the next highest level of control, natural gas burners with NO<sub>x</sub> emission rates of 0.06 lb/MMBtu is selected as BACT for NO<sub>x</sub> emissions.

**APPENDIX E**  
**HRA/AAQA Summary**

# San Joaquin Valley Air Pollution Control District Risk Management Review

To: John Yoshimura – Permit Services  
 From: Kyle Melching – Technical Services  
 Date: November 12, 2015  
 Facility Name: Dos Palos Cooperative Gin, Inc.  
 Location: 7870 W. Hutchins Rd., Dos Palos  
 Application #(s): N-1233-2-5  
 Project #: N-1152734

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## A. RMR SUMMARY

RMR Summary			
Categories	8.0 MMBtu LPG Heater (Unit 2-5)	Project Totals	Facility Totals
Prioritization Score	0.01*	0.01	<1
Acute Hazard Index	N/A	N/A	N/A
Chronic Hazard Index	N/A	N/A	N/A
Maximum Individual Cancer Risk	N/A	N/A	N/A
T-BACT Required?	No		
Special Permit Conditions?	No		

\*The project passed on prioritization with a score less than 1; therefore, no further analysis was required.

### I. Project Description

Technical Services received a request on November 2, 2015, to perform a Risk Management Review and Ambient Air Quality Analysis for the installation of a 8.0 MMBtu/hr LPG gas-fired heater for a cotton gin operation. The facility is also proposing to install a pre-cleaner for the ginning process; however, the emissions will not count towards the facility score or AAQA since there are no new emission points or increase in emissions. Therefore, only emissions from the heater will be reviewed for this project.

### II. Analysis

Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District emission factors for Natural Gas Fired external combustion and the District's approved conversion factors from Natural Gas to LPG. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's



database. The prioritization score for the project and facility is less than 1.0 (see RMR Summary Table); therefore, no further evaluation is required.

The following parameters were used for the review:

Analysis Parameters (Unit 2-5)			
Source Type	Point	Nearest Receptor (m)	442
Length of Side (m)	6.1	Closest Receptor Type	Business/ Residence
Length of Side (m)	1.07	Project Location	Rural
Release Height (m)	6.42	LPG Usage (1000gal/hr)	0.085
		LPG Usage (1000gal/yr)	746

Technical Services performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>; as well as a RMR. The emission rates used for criteria pollutant modeling were 0.16 lb/hr and 71 lb/yr CO, 0.8 lb/hr and 312 lb/yr NO<sub>x</sub>, 0.06 lb/hr and 25 lb/yr SO<sub>x</sub>, and 0.05 lb/hr and 21 lb/yr PM<sub>10</sub>.

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 <sub>x</sub>	Pass <sup>1</sup>	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>
PM <sub>2.5</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The project was compared to the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures. <sup>2</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

### III. Conclusions

The prioritization score for this project is not above 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.

### IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary

**APPENDIX F**  
**Quarterly Net Emissions Change (QNEC)**

## Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.

PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$$\begin{aligned} \text{PE2}_{\text{quarterly}} &= \text{PE2}_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 79,553 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 19,888.25 \text{ lb PM}_{10}/\text{qtr} \end{aligned}$$

$$\begin{aligned} \text{PE1}_{\text{quarterly}} &= \text{PE1}_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 139,061 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 34,765.25 \text{ lb PM}_{10}/\text{qtr} \end{aligned}$$

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	1,825.0	1,747.0	78.0
SO <sub>x</sub>	146.0	139.75	6.25
PM <sub>10</sub>	19,888.25	34,765.25	-14,877
CO	365.0	347.25	17.75
VOC	91.25	87.25	4.0

**APPENDIX G**  
**Emissions Profile**

Permit #: N-1233-2-5	<b>Last Updated</b>
Facility: DOS PALOS COOPERATIVE GIN, INC	11/18/2015 YOSHIMUJ

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	7300.0	584.0	79553.0	1460.0	365.0
Daily Emis. Limit (lb/Day)	57.6	4.6	963.9	11.5	2.9
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	78.0	6.0	-14877.0	17.0	4.0
Q2:	78.0	6.0	-14877.0	18.0	4.0
Q3:	78.0	6.0	-14877.0	18.0	4.0
Q4:	78.0	8.0	-14877.0	18.0	4.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					