



NOV 14 2013

Mr. John Richardson  
Community Renewable Energy Services, Inc. dba Dinuba Energy  
6929 Avenue 430  
Reedley, CA 93564

**Re: Proposed Authority to Construct/Certificate of Conformity (Minor Mod)  
District Facility # S-285  
Project # S-1131583**

Dear Mr. Richardson:

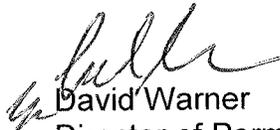
Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This modification will authorize waste paper as a fuel.

After addressing all comments made during the 45-day EPA comment period, the District intends to issue the Authority to Construct with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,



David Warner  
Director of Permit Services

Enclosures

cc: Gerardo C. Rios, EPA (w/enclosure) via email

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

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**San Joaquin Valley Air Pollution Control District**  
**Authority to Construct Application Review**  
Authorize Combustion of Compacted Paper Fuel

Facility Name:	CRES, Inc. dba Dinuba Energy	Date:	November 6, 2013
Mailing Address:	6929 Avenue 430 Reedley, CA 93564	Engineer:	Kris Rickards
Contact Person:	John Richardson	Lead Engineer:	Rich Karrs Richard Wilson (Consultant)
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Application #(s):	S-285-2-11		
Project #:	S-1131583		
Deemed Complete:	May 6, 2013		

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## I. Proposal

CRES Inc. dba Dinuba Energy (Dinuba Energy) operates a travelling grate solid fuel-fired boiler. This boiler primarily burns wood waste from various sources.

Dinuba Energy has proposed combusting "soiled biomass" consisting of shredded and compacted paper that could have a plastic content up to 5% by weight. The fuel is shipped in bails and tagged with a description of the plastic content percentage by weight. The current contamination percentage listed on the permit (limited to metals, plastics, paper, painted wood, particle board treated with preservatives and roofing materials) is 1.0 percent by weight (or 240 lbs/hr at the maximum total fuel combustion rate).

Dinuba Energy has proposed maintaining the existing limit of 1.0 percent contamination by inspecting and monitoring (when combusting the compacted paper fuel) the wood fuel stream to ensure it is free of contamination and metering in the paper fuel at a rate that will result in the final blended fuel stream having a plastic content less than 1.0 percent.

The new fuel will help Dinuba Energy make up expected losses in their existing fuel stream as these fuels become scarce.

Dinuba Energy received their Title V Permit on July 31, 2007. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Dinuba Energy must apply to administratively amend their Title V permit.

## 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 4202	Particulate Matter Emission Rate (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators and Process Heaters – Phase II (8/21/03) Solid fueled boilers are <b>exempt</b> per 4305.4.1.1
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase III (10/16/08) Solid fueled boilers are <b>exempt</b> per 4306.4.1.1
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08) Solid fueled boilers are <b>exempt</b> per 4320.4.1.1
Rule 4351	Boilers, Steam Generators and Process Heaters – Phase I (8/21/03) Solid fueled boilers are <b>exempt</b> per 4351.4.1.2
Rule 4352	Solid Fuel Fired Boilers, Steam Generators, and Process Heaters (12/15/11)
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

The facility is located at 6929 Ave 430 in Reedley, 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 Dinuba facility receives wood fuels from various sources, agriculture, construction, urban waste, and burns this fuel in a nominally rated 11.5 MW traveling grate boiler to produce steam. The produced steam drives a steam turbine, which then powers an electrical generator.

## V. Equipment Listing

### Pre-Project Equipment Description:

S-285-2-10: 11.5 MW WOOD-FUELED COGENERATION FACILITY INCLUDING TRAVELING GRATE BOILER WITH FLUE GAS RECIRCULATION (FGR), AMMONIA INJECTION, STEAM TURBINE/GENERATOR, NATURAL GAS FIRED AUXILIARY BURNER, MULTICLONE DUST COLLECTOR, SINGLE CHAMBER TWO CELL ELECTROSTATIC PRECIPITATOR, AND PM WET SCRUBBER

### Proposed Modification:

S-285-2-11: MODIFICATION OF 11.5 MW **WOOD-FUELED** COGENERATION FACILITY INCLUDING TRAVELING GRATE BOILER WITH FLUE GAS RECIRCULATION (FGR), AMMONIA INJECTION, STEAM TURBINE/GENERATOR, NATURAL GAS FIRED AUXILIARY BURNER, MULTICLONE DUST COLLECTOR, SINGLE CHAMBER TWO CELL ELECTROSTATIC PRECIPITATOR, AND PM WET SCRUBBER: AUTHORIZE COMBUSTION OF COMPACTED PAPER FUEL

### Post Project Equipment Description:

S-285-2-11: 11.5 MW **SOLID FUEL FIRED** COGENERATION FACILITY INCLUDING TRAVELING GRATE BOILER WITH FLUE GAS RECIRCULATION (FGR), AMMONIA INJECTION, STEAM TURBINE/GENERATOR, NATURAL GAS FIRED AUXILIARY BURNER, MULTICLONE DUST COLLECTOR, SINGLE CHAMBER TWO CELL ELECTROSTATIC PRECIPITATOR, AND PM WET SCRUBBER

## VI. Emission Control Technology Evaluation

Emissions from solid fuel-fired boilers include NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC.

The boiler is equipped with flue gas recirculation (FGR) and an ammonia injection system (non-selective catalytic reduction) for the control of NO<sub>x</sub> emissions. A multiclone dust collector, single chamber two cell electrostatic precipitator, and in conjunction with the cyclone and packed bed wet scrubber control particulate matter emissions. The facility also includes continuous emissions monitors for NO<sub>x</sub>, CO, O<sub>2</sub>, CO<sub>2</sub>, volumetric flow rate, and opacity.

## VII. General Calculations

### A. Assumptions

- Unit may operate up to 24 hours/day and 7,884 hours/year unless compliance with annual emission limits is met (worst case will be the annual emission limits)
- All calculations will assume that the combustion characteristics of wood and wood waste are equivalent to biomass
- Emissions from combusting solid (wood and waste paper) fuels are calculated using emission limits on the current PTO
- Natural gas used is exclusively PUC quality natural gas
- Molar Specific Volume of a gas @ 60 °F is 379.5 ft<sup>3</sup>/lb-mole

- EPA F-factor @ 68 °F (dscf/MMBtu) for: natural gas = 8,710 and biomass (wood) = 9,240
- Natural Gas Heating Value: 1,000 Btu/scf (APR 1720)
- Emissions are based on a heat input of 199 MMBtu/hr (50 MMBtu/hr of natural gas and 149 MMBtu/hr of wood fuel)
- Rule 4352 requires NO<sub>x</sub> emissions of 90 ppmv @ 3% O<sub>2</sub> for biomass fuels, effective January 1, 2013
- Natural gas is used solely for startups, shutdowns, and as a supplemental fuel to maintain steady state operation (per applicant)
- Shredded paper fuel is considered a derivative of biomass where Rule 4352 is applicable
- Post project steady state and startup/shutdown emission factors for all criteria pollutants except NO<sub>x</sub> remain unchanged as a result of this project

## B. Emission Factors

The current PTO lists emission factors as follows:

Pre-Project Steady State Emission Factors		
		Source
NO <sub>x</sub>	0.09 lb/MMBtu	Current PTO

The F-factor for the solid fuels are adjusted to 60 °F as follows:

$$\text{Wood/Paper: } \frac{9,240 \text{ dscf}}{\text{MMBtu}} \left( \frac{460+60}{460+68} \right) = \frac{9,100 \text{ dscf}}{\text{MMBtu}}$$

The emissions limit required by Rule 4352 (discussed in the compliance section) is 90 ppmv @ 3% O<sub>2</sub> for biomass (wood) and 65 ppmv @ 3% O<sub>2</sub> for all other fuel combustion. Since Rule 4352 is a solid fuel rule and the boiler is predominantly solid fuel fired on a heat input basis, the emission limits of Rule 4352 do not apply to the gaseous fuel. Emission factors for the wood/paper fuels are calculated as follows:

$$\text{Wood/Paper: } \frac{90 \text{ parts } NO_x}{10^6 \text{ parts}} \left( \frac{9,100 \text{ dscf}}{\text{MMBtu}} \right) \frac{20.9}{20.9-3} \left( \frac{46 \text{ lbs} \cdot NO_2}{\text{lb} \cdot \text{mole}} \right) \frac{\text{lb} \cdot \text{mole}}{379.5 \text{ dscf}} = 0.116 \frac{\text{lb} \cdot NO_x}{\text{MMBtu}}$$

Since the facility is currently in compliance with the permitted limit of 0.09 lb-NO<sub>x</sub>/MMBtu (based on recent annual source tests), which is lower than the calculated value based on 90 ppmv @ 3% O<sub>2</sub> above, burning wood and wood waste with natural gas, continued compliance with this permit limit is expected.

Since emissions from wood combustion are not changing as a result of this project and could result in the maximum permitted emissions currently allowed by the permit, the unit will retain the potential to emit NO<sub>x</sub> at the current heat input based rate of 0.09 lb-NO<sub>x</sub>/MMBtu and hourly and annual mass based rates will remain unchanged.

## C. Calculations

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

Daily pre-project potential to emit is summarized in the table below, based on the hourly and annual emission limits listed in the following existing permit conditions:

- Nitrogen oxide emissions (as NO<sub>2</sub>) shall not exceed 17.87 lb/hr (based on a 24-hr period between 12:00 am midnight to the following midnight) and 70.44 tons/year. [District Rule 2201]
- Sulfur oxide emissions (as SO<sub>2</sub>) shall not exceed 9.90 lbs/hr and 39.1 tons/year. [District Rule 2201]
- PM<sub>10</sub> emissions shall not exceed 0.0144 grains/dscf corrected to 12% CO<sub>2</sub>, 5.76 lbs/hr and 22.71 tons/year. [District Rule 2201]
- Carbon monoxide (CO) emissions shall not exceed 99.3 lbs/hr (based on a 24-hr period between 12:00 am midnight to the following midnight) and 249 tons/year. [District Rule 2201]
- Volatile organic compound emissions shall not exceed 13.30 lbs/hr and 52.4 tons/year. [District Rule 2201]

Daily and annual emissions are summarized in the table below:

<b>Pre-Project Potential to Emit (PE1)</b>		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO <sub>x</sub>	428.9	140,880
SO <sub>x</sub>	237.6	78,200
PM <sub>10</sub>	138.2	45,420
CO	2,383.2	498,000
VOC	319.2	104,800

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

No change in potential emissions is proposed or expected as a result of this project. Therefore, PE1 = PE2:

<b>Post Project Potential to Emit (PE2)</b>		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO <sub>x</sub>	428.9	140,880
SO <sub>x</sub>	237.6	78,200
PM <sub>10</sub>	138.2	45,420
CO	2,383.2	498,000
VOC	319.2	104,800

## 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.

<b>Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)</b>					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
S-285-2-10	140,880	78,200	45,420	498,000	104,800
S-285-3-2	0	0	0	0	0
S-285-4-2	0	0	0	0	0
S-285-7-2	0	0	0	0	0
S-285-9-2	0	0	0	0	0
S-285-10-3	0	0	7,519	0	0
S-285-11-2	0	0	35,077	0	0
Pre-Project SSPE (SSPE1)	140,880	78,200	88,016	498,000	104,800

## 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.

<b>Post Project Stationary Source Potential to Emit [SSPE2] (lb/year)</b>					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
S-285-2-11	140,880	78,200	45,420	498,000	104,800
S-285-3-2	0	0	0	0	0
S-285-4-2	0	0	0	0	0
S-285-7-2	0	0	0	0	0
S-285-9-2	0	0	0	0	0
S-285-10-3	0	0	7,519	0	0
S-285-11-2	0	0	35,077	0	0
Post Project SSPE (SSPE2)	140,880	78,200	88,016	498,000	104,800

## 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

<b>Rule 2201 Major Source Determination (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1	140,880	78,200	88,016	498,000	104,800
SSPE2	140,880	78,200	88,016	498,000	104,800
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	Yes	Yes

As seen in the table above, the facility is an existing Major Source for NO<sub>x</sub>, CO, and VOC.

### Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

The boiler is the only unit at this facility capable of GHG emissions and is limited by permit condition to burning natural gas with an auxiliary burner (less than 10% of the maximum capacity of the boiler) and wood fuels with a boiler rating of 199 MMBtu/hr. ARB GHG emission factors (the biomass emission factor is assumed equivalent for the wood fuels) for these fuels are summarized as follows:

Natural Gas = 52.9199 kg-CO<sub>2</sub>e/MMBtu = 116.67 lb-CO<sub>2</sub>e/MMBtu  
 Biomass (wood) = 95.6700 kg-CO<sub>2</sub>e/MMBtu = 210.92 lb-CO<sub>2</sub>e/MMBtu

As a worst case, it will be assumed that the biomass fuel, with higher associated GHGs, is burned as much as possible, which in this case would mean 100% of the boiler heat input is comprised of biomass.

CO<sub>2</sub>e emissions are then calculated as follows:

$$(199 \text{ MMBtu/hr}) \times (210.92 \text{ lb-CO}_2\text{e/MMBtu}) \times (8,760 \text{ hrs/yr}) = 183,842 \text{ ton-CO}_2\text{e/yr}$$

PSD Major Source Determination (tons/year)							
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>	CO <sub>2</sub> e
Estimated Facility PE before Project Increase	70	52	39	249	- <sup>1</sup>	44	183,842
PSD Major Source Thresholds	100	100	100	100	100	100	100,000
PSD Major Source ? (Y/N)	N	N	N	Y	-	N	Y

1) Not calculated since the source is major for at least one pollutant already.

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

## 6. Baseline Emissions (BE)

The BE calculation (in lbs/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.

**a. BE for NO<sub>x</sub>, CO, and VOC**

Fully Offset Major Source Emissions

Pursuant to District Rule 2201, Section 3.19.3, a Fully Offset Emissions Unit is one for which offsets have previously been provided to the NSR rule in effect at the time of the offset action, and the emissions unit was installed after the County baseline date.

This unit is located in Tulare County and was installed in 1985. The Tulare County baseline date is June 26, 1979. Also, according to the original ATC application review for this unit under the Tulare County Air Pollution Control District (TCAPCD) dated 11/9/84, offsets were required for NO<sub>x</sub>, CO, and VOC emissions, and those offsetting requirements were satisfied. Therefore, the unit is considered a Fully Offset Emissions Unit for NO<sub>x</sub>, CO, and VOC emissions, and the Baseline Emissions (BE) are equal to the Pre-project Potential to Emit (PE1) for those pollutants.

**b. BE for SO<sub>x</sub> and PM<sub>10</sub>**

Non-Major Source Emissions

As shown in Section VII.C.5 above, the facility is not a major source for SO<sub>x</sub> and PM<sub>10</sub> emissions. Therefore, BE = PE1 for SO<sub>x</sub> and PM<sub>10</sub> emissions.

**c. BE Summary**

Baseline Emissions (BE) are equal to the Pre-project Potential to Emit (PE1). The following table summarizes BE for this unit:

<b>Baseline Emissions [BE] (lb/year)</b>					
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>CO</b>	<b>VOC</b>
<b>S-285-2-8</b>	140,880	78,200	45,420	498,000	104,800

**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 SO<sub>x</sub> or PM<sub>10</sub>, this project does not constitute an SB 288 major modification for SO<sub>x</sub> or PM<sub>10</sub>.

As discussed in Section VII.C.5 above, the facility is a Major Source for NO<sub>x</sub> and VOC; however, the project must "result in" a significant increase in emissions in order to trigger a Major Modification. According to the District's database the facility has provided offsets for the emissions unit within this project for NO<sub>x</sub> and VOC; therefore, this unit qualifies as Fully Offset.

The PE2 is used to calculate the NEI and make the SB 288 Major Modification determination in the following table.

SB 288 Major Modification Calculation and Determination					
Pollutant	PE2 (lb/yr)	PE1 (lb/yr)	NEI (lb/yr)	Thresholds (lb/yr)	SB2 88 Major Modification?
NO <sub>x</sub>	140,880	140,880	0	50,000	No
VOC	104,800	104,800	0	50,000	No

As demonstrated in the preceding table, 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 facility is not a Major Source for SO<sub>x</sub> or PM<sub>10</sub>, this project does not constitute a Federal Major Modification for SO<sub>x</sub> or PM<sub>10</sub>. 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).

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

#### Step 1

For existing emissions units, the increase in emissions is calculated as follows.

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Where: PAE = Projected Actual Emissions, and  
BAE = Baseline Actual Emissions

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

Dinuba Energy will supplement their current and expected fuel source with this new paper fuel as needed and has stated that no increase in utilization is planned or expected.

Authorization of the new fuel will not result in an increased emission rate, utilization, fuel combustion, or energy production; therefore, PAE = BAE and the emissions increase is equal to zero for all pollutants.

The project's combined total emission increases compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO <sub>x</sub> *	0	0	No
VOC*	0	0	No
PM <sub>10</sub>	0	30,000	No
PM <sub>2.5</sub>	0	20,000	No
SO <sub>x</sub>	0	80,000	No

\*If there is any emission increases in NO<sub>x</sub> or VOC, this project is a Federal Major Modification and no further analysis is required.

Since none of the Federal Major Modification Thresholds are being surpassed with this project, this project does not constitute a Federal Major Modification and no further analysis is required.

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

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>
- Greenhouse gases (GHG): CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub>

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

In the case the facility is a new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

**I. Project Location Relative to Class 1 Area**

As demonstrated in the “PSD Major Source Determination” Section above, the facility was determined to be an existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

**II. Significance of Project Emission Increase Determination**

**a. Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds**

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

As discussed previously, the boiler is the only unit at this facility capable of GHG emissions (calculated in section VII.C.5).

<b>PSD Significant Emission Increase Determination: Potential to Emit (tons/year)</b>						
	NO <sub>2</sub>	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>	CO <sub>2e</sub>
Total PE from New and Modified Units	70	39	23	- <sup>1</sup>	23	183,842
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	Y	N	N	-	Y	Y

1) Not calculated since the potential to emit other pollutants is above the PSD significance threshold.

As demonstrated above, because the project has a total potential to emit from all new and modified emission units greater than PSD significant emission increase thresholds, further analysis is required to determine if the project has an emission increase greater than the PSD significant emission increase thresholds, see step below.

**b. Emission Increase for Each Attainment/Unclassified Pollutant with a Significant Emission Increase vs PSD Significant Emission Increase Thresholds**

In this step, the emission increase for each attainment/unclassified pollutant is compared to the PSD significant emission increase thresholds, and if emission increase for each attainment pollutant is below this threshold, no further analysis is needed.

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project.

For existing emissions units, the increase in emissions is calculated as follows:

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Where: PAE = Projected Actual Emissions, and  
BAE = Baseline Actual Emissions

Dinuba Energy will supplement their current and expected dwindling fuel source with this new paper fuel and has stated that no increase in utilization is planned or expected.

Authorization of the new fuel will not result in an increased emission rate, utilization, fuel combustion, or energy production. Therefore, PAE = BAE and the emissions increase is equal to zero for all pollutants.

The project's combined total emission increases are compared to the PSD significant emission increase thresholds in the following table.

<b>PSD Significant Emission Increase Determination: Emission Increase (tons/year)</b>						
	NO <sub>2</sub>	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>	CO <sub>2e</sub>
Emission Increases (only)	0	0	0	0	0	0
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	N	N	N	N	N	N

As shown in the table above, the project emission increase, for all new and modified emission units, does not exceed any of the PSD significant emission increase thresholds. Therefore the project does not result in a PSD major modification due to a significant emission increase and no further discussion 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 D.

## 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

As discussed in Section I above, there are no new emissions units associated with this project. Therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

##### 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

$$\text{AIPE} = \text{PE2} - \text{HAPE}$$

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

$$\text{AIPE} = \text{PE2} - (\text{PE1} * (\text{EF2} / \text{EF1}))$$

In this project there are no changing emission factors; therefore EF1 = EF2.

$$\begin{aligned}\text{AIPE}_{\text{NOx}} &= 428.9 - 428.9 \\ &= 0.0 \text{ lb/day}\end{aligned}$$

$$\begin{aligned}\text{AIPE}_{\text{SOx}} &= 237.6 - 237.6 \\ &= 0.0 \text{ lb/day}\end{aligned}$$

$$\begin{aligned}\text{AIPE}_{\text{PM}_{10}} &= 138.2 - 138.2 \\ &= 0.0 \text{ lb/day}\end{aligned}$$

$$\begin{aligned}\text{AIPE}_{\text{CO}} &= 2,383.2 - 2,383.2 \\ &= 0.0 \text{ lb/day}\end{aligned}$$

$$\begin{aligned}\text{AIPE}_{\text{VOC}} &= 319.2 - 319.2 \\ &= 0.0 \text{ lb/day}\end{aligned}$$

As demonstrated above, the AIPE is not greater than 2.0 lb/day for any emissions; therefore BACT is not triggered.

#### **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 or Federal Major Modification for any pollutant. Therefore BACT is not triggered for any pollutant.

### **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.

**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**

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project. Therefore public noticing is not required for this project for PE > 100 lb/day.

**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>	140,880	140,880	20,000 lb/year	No
SO <sub>x</sub>	78,200	78,200	54,750 lb/year	No
PM <sub>10</sub>	45,420	45,420	29,200 lb/year	No
CO	498,000	498,000	200,000 lb/year	No
VOC	104,800	104,800	20,000 lb/year	No

As detailed above, there were no thresholds 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.

<b>SSIPE Public Notice Thresholds</b>					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	140,880	140,880	0	20,000 lb/year	No
SO <sub>x</sub>	78,200	78,200	0	20,000 lb/year	No
PM <sub>10</sub>	45,420	45,420	0	20,000 lb/year	No
CO	498,000	498,000	0	20,000 lb/year	No
VOC	104,800	104,800	0	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.

## 2. Public Notice Action

As discussed above, this project will not result in emissions, for any pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

## 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:

Since PTO C-799-8 has been cancelled, the following Specific Limiting Condition will be removed:

- ~~Specific Limiting Condition (SLC) limiting the annual emissions from the boiler/generator listed under permit S-285-2 and the transportable IC engine listed under C-799-8, when the engine is operated at facility S-285, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: 70.44 tons NO<sub>x</sub>/year, 39.1 tons SO<sub>x</sub>/year, 22.71 tons PM<sub>10</sub>/year, 249 tons CO/year, or 52.4 tons VOC/year. [District Rule 2201]~~
- ~~For each unit subject to the Specific Limiting Condition (SLC), the permittee shall maintain all necessary records in order to show compliance with the annual SLC limits. [District Rule 2201]~~

The following conditions will be listed on the permit to define the new fuel source and revised and new NO<sub>x</sub> concentration limits:

- Only natural gas, soiled biomass, and wood fuels shall be burned in the boiler. Contamination of the wood fuel, as delivered to the boiler, shall not exceed 1.0% by weight total and limited to the following materials: metals, plastics, paper, painted wood, particle board, wood treated with preservatives, and roofing materials. None of the contaminants allowed by this condition shall contain asbestos. [District Rules 2201 and 4102]

- Facility shall not burn in the combustion system more than 240 lbs/hr nor 1051.2 tons/yr of non-wood and non-soiled biomass material. [District Rule 4102]
- ""Soiled Biomass" shall be defined as shredded and compacted paper with attached tag listing percent content by weight of plastic of each delivered container. [District Rule 2201]
- Nitrogen oxide emissions (as NO<sub>2</sub>) shall not exceed 90 ppmv @ 3% O<sub>2</sub> nor 0.09 lbs/MMBtu based on a 24 hour average, except during periods of startup and shutdown as defined in Rule 4352. [District Rules 2201 and 4352]

## E. Compliance Assurance

### 1. Source Testing

The following condition will ensure the revised and lower 65 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub> limit is met:

- Source testing for NO<sub>x</sub> and CO emissions while combusting fuels other than or in combination with wood fuel shall be conducted by an independent testing laboratory within 60 days of initial startup. [District Rules 2201 and 4352]
- Compliance with wood fuel contamination limits shall be demonstrated by sorting a District selected 5 ton representative sample of wood fuel as requested by the District compliance division. [District Rule 2201]
- Data collected during sorting of 5 ton sample of wood fuel shall be in pounds of material per ton of wood fuel, by category as identified in fuel contamination limit condition, and official test results and field data shall be submitted within 30 days after collection. [District Rule 2201]

### 2. Monitoring

The following condition will ensure fuel delivered to the boiler is maintained at less than 1.0% contaminants:

- Fuel contamination shall be confirmed by sorting and weighing one 55 gallon container of randomly selected soiled biomass quarterly and whenever there is a change in the source of the fuel to demonstrate compliance with percent by weight contaminant limit. Records of the date of testing, weight of paper and of contaminant, and resulting percentage by weight of contaminant shall be maintained. [District Rule 4102]

### 3. Recordkeeping

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

- Operator shall calculate and keep daily records of percent by weight of plastic in boiler fuel stream on days that soiled biomass is combusted. [District Rule 2201]
- Operator shall keep daily records of the source, individual weight, and percentage plastic by weight of each container of soiled biomass combusted. [District Rule 2201]

#### **4. Reporting**

No reporting is required to demonstrate compliance with Rule 2201.

#### **Rule 2410 Prevention of Significant Deterioration (PSD) Applicability Determination**

As discussed in Section VII. C.9, this modification is not considered a significant modification and this rule is not applicable. No further discussion is required.

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

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

In accordance with Rule 2520, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
  - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
  - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

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

#### **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. 40 CFR, Part 60, Subpart Db applies to any steam generating unit with a maximum heat input of greater than 100 MMBtu/hr and has commenced construction, modification, or reconstruction after June 19, 1984.

40 CFR Part 60, Subpart A defines a modification as any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

The combustor is not newly constructed or reconstructed. Since the modification to the combustor unit will not result in the increase of air pollutants the requirements of these sections do not apply to the unit. Therefore, it continues to be subject to 40 CFR, Part 60, Subpart Db applies to any steam generating unit with a maximum heat input of greater than 100 MMBtu/hr and has commenced construction, modification, or reconstruction after June 19, 1984.

Continued compliance with NSPS subpart Db is expected.

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

##### **40 CFR Part 63 Subpart JJJJJJ, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources**

Section 63.11193 states you are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler as defined in §63.11237 that is located at, or is part of, an area source of hazardous air pollutants (HAP), as defined in §63.2, except as specified in §63.11195.

Section 63.2 defines area source as any stationary source of hazardous air pollutants that is not a major source as defined in this part. Section 63.2 defines major source as any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence.

This facility is an area source as it is not a major source of hazardous air pollutants. Therefore, the boiler is subject to this subpart.

Section 63.11194(b) states an affected source is an existing source if you commenced construction or reconstruction of the affected source on or before June 4, 2010. The boiler commenced construction prior to June 4, 2010 and therefore, is an existing source.

Section 63.11196 states (a) If you own or operate an existing affected boiler, you must achieve compliance with the applicable provisions in this subpart as specified in paragraphs (a)(1) through (3) of this section.

(1) If the existing affected boiler is subject to a work practice or management practice standard of a tune-up, you must achieve compliance with the work practice or management standard no later than March 21, 2012.

- (2) If the existing affected boiler is subject to emission limits, you must achieve compliance with the emission limits no later than March 21, 2014.
- (3) If the existing affected boiler is subject to the energy assessment requirement, you must achieve compliance with the energy assessment requirement no later than March 21, 2014.

Section 63.11201 states (a) You must comply with each emission limit specified in Table 1 to this subpart that applies to your boiler. (b) You must comply with each work practice standard, emission reduction measure, and management practice specified in Table 2 to this subpart that applies to your boiler. An energy assessment completed on or after January 1, 2008 that meets the requirements in Table 2 to this subpart satisfies the energy assessment portion of this requirement. (c) You must comply with each operating limit specified in Table 3 to this subpart that applies to your boiler. (d) These standards apply at all times.

The boiler is subject to a work practice or management practice standard of a tune-up. Therefore, the following condition will be listed on the draft ATC to ensure compliance:

- The permittee shall conduct a performance tune-up of the boiler in accordance with 40 CFR 63.11223(b), and every two years thereafter. Permittee shall submit a signed statement of the Notification of Compliance Status report that a tune-up of the boiler was completed. [40 CFR 63.11214(b)]

The boiler is an existing wood-fueled boiler and is not subject to emission limits, and therefore is not subject to Table 1 or 3. However, the boiler is subject to an energy assessment requirement. Therefore, the following condition will be listed on the draft ATC to ensure compliance:

- By March 21, 2014, the permittee shall conduct a one-time energy assessment as described in 40 CFR 63, Subpart JJJJJJ, Table 2. Permittee shall submit a signed statement in the Notification of Compliance Status report that the energy assessment was completed, and shall submit the energy assessment report upon request. [40 CFR 63.11214(c)]

Section 63.11205 states (a) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. The following condition will be listed on the draft ATC to ensure compliance with this subpart:

- Electrostatic precipitator shall be equipped with an opacity continuous emissions monitor (CEM), which shall be operated in accordance with the requirements of 40 CFR, Part 51, Appendix P, and Part 60, Appendix B. [District Rule 1080 and 40 CFR 63.11205(a)]

Section 63.11223 states (a) For affected sources subject to the work practice standard or the management practices of a tune-up, you must conduct a biennial performance tune-up according to paragraphs (b) of this section and keep records as required in §63.11225(c) to demonstrate continuous compliance. Each biennial tune-up must be conducted no more than

25 months after the previous tune-up. (b) You must conduct a tune-up of the boiler biennially to demonstrate continuous compliance as specified in paragraphs (b)(1) through (7) of this section. (1) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shut down, but you must inspect each burner at least once every 36 months). (2) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available. (3) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. (4) Optimize total emissions of carbon monoxide. This optimization should be consistent with the manufacturer's specifications, if available. (5) Measure the concentrations in the effluent stream of carbon monoxide in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). (6) Maintain onsite and submit, if requested by the Administrator, biennial report containing the information in paragraphs (b)(6)(i) through (iii) of this section. (i) The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured before and after the tune-up of the boiler. (ii) A description of any corrective actions taken as a part of the tune-up of the boiler. (iii) The type and amount of fuel used over the 12 months prior to the biennial tune-up of the boiler. (7) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within one week of startup.

The following condition will be listed on the draft ATC to ensure compliance:

- The permittee shall conduct a performance tune-up of the boiler in accordance with 40 CFR 63.11223(b), and every two years thereafter. Permittee shall submit a signed statement of the Notification of Compliance Status report that a tune-up of the boiler was completed. [40 CFR 63.11214(b)]

Therefore, compliance with the requirements of the subpart is expected.

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

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity).

The addition of the new fuel source is not expected to result in a violation of the existing visible emissions standards; therefore, continued compliance with this rule is expected.

#### **Rule 4102 Nuisance**

Rule 4102 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.

**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 one. According to the Technical Services Memo for this project (**Appendix F**), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
S-285-2-11	1.57 per million	Yes

**Discussion of T-BACT**

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is required for this project because the HRA indicates that the risk is above the District's thresholds for triggering T-BACT requirements.

T-BACT is satisfied with BACT for VOC (Guideline 1.3.2, for fluidized bubbling bed combustor, biomass-fired), which is VOC emissions less than or equal to 0.02 lb-VOC/MMBtu and fired on natural gas as an auxiliary fuel. With a mass emissions permit limit of 13.30 lb-VOC/hr and a maximum heat input rating of 200 MMBtu/hr, the combustor is permitted to emit VOC at 0.07 lb/MMBtu and it is fired on natural gas as an auxiliary fuel; therefore, the combustor meets BACT for VOC emissions and compliance with the District's Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Appendix F of this report, the emissions increases for this project was determined to be less than significant.

- The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper OK), roof overhang, or any other obstruction. [District Rule 4102]

### 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. The following condition will remain on the permit to ensure compliance:

- PM10 emissions shall not exceed 0.0144 grains/dscf corrected to 12% CO<sub>2</sub>, 5.76 lbs/hr. [District Rule 2201]

### 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 ≤ 0.1 gr/scf.

The following table compares the permitted levels to the levels allowed by this rule:

District Rule 4301 Limits (lb/hr)			
Pollutant	NO <sub>2</sub>	Total PM	SO <sub>2</sub>
S-285-2	17.87	5.76	9.90
Rule Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, continued compliance is expected.

### Rule 4352 Solid Fuel Fired Boilers, Steam Generators, and Process Heaters

The purpose of this rule is to limit emissions of oxides of nitrogen (NO<sub>x</sub>) and carbon monoxide (CO) from solid fuel fired boilers, steam generators and process heaters.

This rule applies to any boiler, steam generator or process heater fired on solid fuel. Heat may be supplied by liquid or gaseous fuels for start-ups, shutdowns, and during other flame stabilization periods, as deemed necessary by the owner/operator.

Although the boiler combusts gaseous fuel other than during startup and shutdown periods, the unit will still combust solid fuel and be subject to this rule.

**Sections 5.1 and 5.2** limit NO<sub>x</sub> and CO emissions to the limits stated in Table 5.1, except during periods of startup and shutdown, based on a block 24 hour average, effective January 1, 2013:

District Rule 4352 Limits (ppmv @ 3% O <sub>2</sub> )		
Pollutant	NO <sub>x</sub>	CO
Biomass (Wood/Paper Fuels)	90	400
All Other Fuel	65	400

The current emission factors listed on the permit for wood fuel and natural gas combustion are 0.09 lb-NO<sub>x</sub>/MMBtu and 400 ppmv. As shown in Section VII.B, this heat based emission factor is not adequate in limiting the combustion of wood fuel to 90 ppmv NO<sub>x</sub> @ 3% O<sub>2</sub>, though based on source testing, this limit has been and is expected to be achievable.

A concentration based limit will be listed for all fuels with wood fuels having a separate limit as allowed by the rule.

The following conditions will be listed on the permit to ensure compliance with the NO<sub>x</sub> limit:

- Nitrogen oxide emissions (as NO<sub>2</sub>) shall not exceed 90 ppmv @ 3% O<sub>2</sub> nor 0.09 lbs/MMBtu based on a 24 hour average, except during periods of startup and shutdown as defined in Rule 4352. [District Rules 2201 and 4352]

Compliance with the CO limit is achieved with the following existing condition:

- Carbon monoxide (CO) emissions shall not exceed 400 ppmv @ 3% O<sub>2</sub>, except during periods of startup and shutdown, as defined in Rule 4352 (~~Amended May 18, 2006~~). [District Rule 4352]

### **Rule 4801 Sulfur Compounds**

Rule 4801 requires that sulfur compound emissions (as SO<sub>2</sub>) shall not exceed 0.2% by volume or 2,000 ppmv. The proposed modifications are not expected to result in any increase in sulfur compound emissions. Therefore, this unit will remain in compliance with the rule.

### **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.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that all project specific emission unit(s) are exempt from Best Available Control Technology (BACT) requirements. Furthermore, the District has

determined that potential emission increases would have a less than significant health impact on sensitive receptors.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Pending a successful EPA review period, issue ATC S-285-2-11 subject to the permit conditions on the attached draft ATC in **Appendix A**.

**X. Billing Information**

<b>Annual Permit Fees</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Annual Fee</b>
S-285-2-11	3020-08A-E	11.5 MW	\$5,109.00

**Appendices**

- A: Draft ATC
- B: Current PTO
- C: Compliance Certification Form
- D: Quarterly Net Emissions Change
- E: Emissions Profile
- F: RMR Summary

# **APPENDIX A**

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Draft ATC



San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**ISSUANCE DATE: DRAFT**  
**DRAFT**

**PERMIT NO:** S-285-2-11

**LEGAL OWNER OR OPERATOR:** CRES INC DBA DINUBA ENERGY

**MAILING ADDRESS:** 6929 AVENUE 430  
REEDLEY, CA 93654

**LOCATION:** 6929 AVENUE 430  
REEDLEY, CA 93654

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 11.5 MW WOOD-FUELED COGENERATION FACILITY INCLUDING TRAVELING GRATE BOILER WITH FLUE GAS RECIRCULATION (FGR), AMMONIA INJECTION, STEAM TURBINE/GENERATOR, NATURAL GAS FIRED AUXILIARY BURNER, MULTICLONE DUST COLLECTOR, SINGLE CHAMBER TWO CELL ELECTROSTATIC PRECIPITATOR, AND PM WET SCRUBBER: AUTHORIZE COMBUSTION OF COMPACTED PAPER FUEL

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper OK), roof overhang, or any other obstruction. [District Rule 4102]
4. Ammonia injection system shall be operated and maintained in accordance with manufacturers specification. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Multiclone dust collector, electrostatic precipitator, and PM wet scrubber shall be operated and maintained in accordance with manufacturer's specifications whenever combustion is present in the boiler. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Electrostatic precipitator shall be equipped with an automatic rapping system. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 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

**DAVID WARNER, Director of Permit Services**

S-285-2-11 : Nov 6 2013 1:59PM - RICKARDK : Joint Inspection NOT Required

7. Scrubber liquid pH shall be maintained between 3.0 and 8.0 and shall be continuously monitored. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Scrubber, including sprays and nozzles, shall be maintained in optimum working condition. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Scrubber liquid supply (at inlet to scrubber) shall have an operational flow meter. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Combustion system shall be equipped with continuous emissions monitors (CEM) for NO<sub>x</sub>, CO, CO<sub>2</sub>, O<sub>2</sub>, volumetric flowrate, and opacity. [District Rule 2201 and 40 CFR part 64] Federally Enforceable Through Title V Permit
11. Continuous emissions monitors shall be operated in accordance with the requirements of 40 CFR, Part 60, Appendix B, Performance Specifications 1, 2, 3, 4, and CFR Part 60, Appendix F. [District Rules 1080, 4352, and 40 CFR part 64] Federally Enforceable Through Title V Permit
12. Continuous emissions monitor for flue gas volume flow-rate shall meet EPA monitoring performance specifications appearing in 40 CFR, Part 52, Appendix E. [District Rules 4001, 1080, and 40 CFR part 64] Federally Enforceable Through Title V Permit
13. Ammonia shall be injected into boiler at a rate that results in compliance with the NO<sub>x</sub> emissions limit. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Nitrogen oxide emissions (as NO<sub>2</sub>) shall not exceed 90 ppmv @ 3% O<sub>2</sub> nor 0.09 lbs/MMBtu based on a 24 hour average, except during periods of startup and shutdown as defined in Rule 4352. [District Rules 2201 and 4352] Federally Enforceable Through Title V Permit
15. Nitrogen oxide emissions (as NO<sub>2</sub>) shall not exceed 17.87 lb/hr (based on a 24-hr period between 12:00 am midnight to the following midnight) and 70.44 tons/year. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Carbon monoxide (CO) emissions shall not exceed 400 ppmv @ 3% O<sub>2</sub>, except during periods of startup and shutdown, as defined in Rule 4352. [District Rule 4352] Federally Enforceable Through Title V Permit
17. Carbon monoxide (CO) emissions shall not exceed 99.3 lbs/hr (based on a 24-hr period between 12:00 am midnight to the following midnight) and 249 tons/year. [District Rule 2201] Federally Enforceable Through Title V Permit
18. PM<sub>10</sub> emissions shall not exceed 0.0144 grains/dscf corrected to 12% CO<sub>2</sub>, 5.76 lbs/hr and 22.71 tons/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Volatile organic compound emissions shall not exceed 13.30 lbs/hr and 52.4 tons/year. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Sulfur oxide emissions (as SO<sub>2</sub>) shall not exceed 9.90 lbs/hr and 39.1 tons/year. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Carbon monoxide (CO) emissions shall not exceed 249 tons for any consecutive 365 day period. Cumulative emissions from the previous 365 day consecutive period shall be summed daily and reported to the District quarterly. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Combustion system shall not operate for more than 7,884 hours per year unless Dinuba Energy demonstrates compliance with the yearly emissions limits listed above. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Only natural gas, soiled biomass, and wood fuels shall be burned in the boiler. Contamination of the fuel, as delivered to the boiler, shall not exceed 1.0% by weight total and limited to the following materials: metals, plastics, painted wood, particle board, wood treated with preservatives, and roofing materials. None of the contaminants allowed by this condition shall contain asbestos. [District Rule 2201 and 4102] Federally Enforceable Through Title V Permit
24. Facility shall not burn in the combustion system more than 240 lbs/hr nor 1051.2 tons/yr of non-wood and non-soiled biomass material. [District Rule 4102]

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CONDITIONS CONTINUE ON NEXT PAGE

25. "Wood" means any organic material not derived from fossil fuels, such as agricultural crop residue, orchard prunings and removals, stone fruit pits, nut shells, cotton gin trash, cotton stalks, vineyard prunings, cull logs, eucalyptus logs, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste. Wood does not include material containing sewage sludge or industrial, hazardous, radioactive or municipal solid waste. [District Rule 2201 and 4102] Federally Enforceable Through Title V Permit
26. Wood waste includes clean, chipped wood products, plywood, wood products manufacturing wood materials, construction and demolition wood materials, and wood pallets, crates and boxes. [District Rule 2201 and 4102] Federally Enforceable Through Title V Permit
27. "Soiled Biomass" shall be defined as shredded and compacted paper with attached tag listing percent content by weight of plastic of each delivered container. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Compliance with fuel contamination limits shall be demonstrated by sorting a District selected 5 ton representative sample of fuel as requested by the District compliance division. [District Rule 2201] Federally Enforceable Through Title V Permit
29. Data collected during sorting of 5 ton sample of fuel shall be in pounds of material per ton of fuel, by category as identified in fuel contamination limit condition, and official test results and field data shall be submitted within 30 days after collection. [District Rule 2201] Federally Enforceable Through Title V Permit
30. Source testing for NOx and CO emissions while combusting fuels other than or in combination with wood fuel shall be conducted by an independent testing laboratory within 60 days of initial startup. [District Rules 2201 and 4352] Federally Enforceable Through Title V Permit
31. NOx, CO, and PM emissions shall be measured with annual source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District. [District Rule 4352, 1081, and 40 CFR part 64] Federally Enforceable Through Title V Permit
32. Source testing for the following parameters shall be conducted using the stated test methods: NOx - EPA Method 7 or ARB Method 100, CO - EPA Method 10 or ARB Method 100, CO2 - EPA Method 3 or ARB Method 100, O2 - EPA Method 3 or ARB Method 100, SO2 - EPA Method 6 or ARB Method 100, PM10 - EPA Methods 201A & 202, Stack Gas Flow Rate - EPA Method 2, Moisture Content - EPA Method 4, Ammonia - BAAQMD ST1B, & Fuel Heating Value - ASTM Method D2015 or E711. [District Rule 2201 and 4352] Federally Enforceable Through Title V Permit
33. Official test results and field data from compliance testing shall be submitted within 60 days after collection. [District Rule 1081] Federally Enforceable Through Title V Permit
34. Dinuba Energy shall adjust rates of total air flow, overfire air flow, and ammonia injection to simultaneously meet all emissions limits, including visible emissions limit, and keep ammonia slip to a minimum. [District Rule 4102]
35. The auxiliary burner shall be fired exclusively with natural gas. A daily record of fuel gas consumption shall be maintained and submitted to the District quarterly. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Equipment breakdowns of the combustion or CEM systems shall be reported in accordance with District rules 1080 and 1100. [District Rules 1080 and 1100] Federally Enforceable Through Title V Permit
37. Particulate matter concentration (including both filterable and condensable particulates) exiting the PM wet scrubber shall not exceed 0.016 grains/dscf corrected to 12% CO2. [District Rule 2201] Federally Enforceable Through Title V Permit
38. Rapping frequency and duration shall be pre-programmed and identical for each location, and only one rapping location shall be energized at any one time. [District Rule 2201] Federally Enforceable Through Title V Permit
39. Electrostatic precipitator shall be equipped with an opacity continuous emissions monitor (CEM), which shall be operated in accordance with the requirements of 40 CFR, Part 51, Appendix P, and Part 60, Appendix B. [District Rule 1080 and 40 CFR 63.11205(a)] Federally Enforceable Through Title V Permit
40. Opacity readings shall be averaged over a 15 minute period. [District Rule 2201] Federally Enforceable Through Title V Permit
41. Daily opacity reading of 20% or greater shall be reported to the District quarterly. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

42. Dinuba Energy shall maintain records of the occurrence and duration of any start-up, shutdown or malfunction in the operation of opacity CEM. [District Rule 2201] Federally Enforceable Through Title V Permit
43. Dinuba Energy shall maintain records of the results of performance testing, evaluations, calibrations, checks, adjustments and maintenance of CEMs. [District Rule 2201, 1080, and 40 CFR part 64] Federally Enforceable Through Title V Permit
44. Annual audits of continuous emissions monitors shall be conducted pursuant to the requirements of Rule 1080 and in accordance with EPA guidelines, by an independent testing laboratory. The audits shall be District witnessed and the results submitted to the District within 30 days of completion of the audit. [District Rule 1080 and 40 CFR part 64] Federally Enforceable Through Title V Permit
45. All quarterly reports shall be submitted to the District within 30 days of the end of each calendar quarter. Exceedance of any permit emissions limitation, including opacity, shall be noted on the quarterly report. [District Rule 1080 and 40 CFR part 64] Federally Enforceable Through Title V Permit
46. All records shall be retained on site for a period of at least 5 years and made readily available to the District upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
47. The permittee shall sample wood fuel for metals and asbestos analysis quarterly and whenever directed by the District inspector. [District Rule 4102]
48. Fuel contamination shall be confirmed by sorting and weighing one 55 gallon container of randomly selected soiled biomass quarterly and whenever there is a change in the source of the fuel to demonstrate compliance with percent by weight contaminant limit. Records of the date of testing, weight of paper and of contaminant, and resulting percentage by weight of contaminant shall be maintained. [District Rule 4102]
49. The permittee shall submit a written sampling plan to the District's Compliance Division at least 20 calendar days prior to sampling for metals analysis or asbestos. This plan shall include the date, name of lab, lab's certification # for conducting tests, copy of chain of custody form to be utilized for tracking samples, and method of sampling. [District Rule 4102]
50. Permittee shall submit a written sampling plan to the District's Compliance Division at least 20 calendar days prior to sampling blended fuel for percent by weight contaminant content. This plan shall include the date and method of sampling. [District Rule 4102]
51. The plastics, metals, and asbestos samples shall be collected in accordance with a written plan for representative samples approved by the District. [District Rule 2201 and 4102] Federally Enforceable Through Title V Permit
52. The permittee shall have the samples analyzed for metals by ASTM Method E885, or equivalent method approved by the District, using an independent testing laboratory certified to conduct the analysis. The metals to be quantified include Arsenic, Copper, Lead, Manganese, Nickel, Zinc, and Total Chromium. [District Rule 4102]
53. The results of the metals and asbestos analysis shall be reported in ppm (by weight). [District Rule 1081] Federally Enforceable Through Title V Permit
54. The results of metal and asbestos sampling analysis and evidence of chain of custody and results of plastic sampling analysis shall be submitted to the District Compliance Division within 30 days after collection. [District Rule 1081] Federally Enforceable Through Title V Permit
55. Emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081 (Amended December 16, 1993), of 3 thirty-minute test runs for NOx and CO. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
56. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing [District Rule 1081] Federally Enforceable Through Title V Permit
57. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation  $E=3.59 \times P^{0.62}$ ; P is less than or equal to 30 tons per hour or  $E=17.31 \times P^{0.16}$ ; P is greater than 30 tons per hour. [District Rule 4202] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

58. Particulate matter emissions shall not exceed 0.10 lb/MMBtu. [40 CFR 60.43b(c)(1)] Federally Enforceable Through Title V Permit
59. Owner or operator shall not cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. [40 CFR 60.43b(f)] Federally Enforceable Through Title V Permit
60. The particulate matter, and opacity standards shall apply at all times, except during periods of startup, shutdown or malfunction. [40 CFR 60.43b(g), 60.46b(a)] Federally Enforceable Through Title V Permit
61. The facility's annual capacity factor for natural gas shall be less than or equal to 10 percent (0.10). [40 CFR 60.44b(d)] Federally Enforceable Through Title V Permit
62. The owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system, [40 CFR 60.48b(a)] Federally Enforceable Through Title V Permit
63. The continuous monitoring systems shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments. [40 CFR 60.48b(c)] Federally Enforceable Through Title V Permit
64. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems. The span value for a continuous monitoring system for measuring opacity shall be between 60 and 80 percent. [40 CFR 60.48b(e)] Federally Enforceable Through Title V Permit
65. The permittee shall record and maintain records of the amount of wood, natural gas, and soiled biomass combusted each day, and calculate the annual capacity factor individually for wood and natural gas on a 12-month rolling average with a capacity factor calculated at the end of each month. [40 CFR 60.49b (d)] Federally Enforceable Through Title V Permit
66. Operator shall calculate and keep daily records of percent by weight of plastic in boiler fuel stream on days that soiled biomass is combusted. [District Rule 2201] Federally Enforceable Through Title V Permit
67. Operator shall keep daily records of the source, individual weight, and percentage plastic by weight of each container of soiled biomass combusted. [District Rule 2201] Federally Enforceable Through Title V Permit
68. The owner or operator shall submit excess emission reports of all 6-minute periods during which the average opacity exceeds the opacity standards under 40 CFR 60.43b(f) during the reporting period. [40 CFR 60.49b(h)] Federally Enforceable Through Title V Permit
69. At the time of each annual source test for PM, the permittee shall establish the acceptable range of primary and secondary current and voltage readings for the electrostatic precipitator. Minimum readings for each parameter shall be established at 15% below the average value measured during the PM source test. Maximum readings for each parameter shall be established at 15% above the average value measured during the PM source test. [40 CFR part 64] Federally Enforceable Through Title V Permit
70. During each day of operation, the permittee shall record electrostatic precipitator voltage and current readings and compare the readings with the acceptable range of current and voltage levels established during the most recent annual PM source test. Upon detecting any excursion from the acceptable range of current or voltage readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR part 64] Federally Enforceable Through Title V Permit
71. Devices used to measure primary and secondary voltage and current shall be maintained in accordance with the manufacturer's specifications. [40 CFR part 64] Federally Enforceable Through Title V Permit
72. Scrubber Quench Temperature shall monitored on the Scrubber Control Panel in the control room. Any excursion of scrubber quench temperature above 160 °F shall be recorded and immediate manual implementation of the scrubber deluge system shall be performed at 160°F and an automatic shutdown of the induced draft fan/boiler shall be triggered at 161°F. [District Rule 40 CFR part 64] Federally Enforceable Through Title V Permit
73. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

74. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR part 64] Federally Enforceable Through Title V Permit
75. If the District or EPA determine that a Quality improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR part 64] Federally Enforceable Through Title V Permit
76. The permittee shall conduct a performance tune-up of the boiler in accordance with 40 CFR 63.11223(b), and every two years thereafter. Permittee shall submit a signed statement of the Notification of Compliance Status report that a tune-up of the boiler was completed. [40 CFR 63.11214(b)] Federally Enforceable Through Title V Permit
77. By March 21, 2014, the permittee shall conduct a one-time energy assessment as described in 40 CFR 63, Subpart JJJJJ, Table 2. Permittee shall submit a signed statement in the Notification of Compliance Status report that the energy assessment was completed, and shall submit the energy assessment report upon request. [40 CFR 63.11214(c)] Federally Enforceable Through Title V Permit

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# **APPENDIX B**

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Current PTO



# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-285-2-10

EXPIRATION DATE: 05/31/2017

## EQUIPMENT DESCRIPTION:

11.5 MW WOOD-FUELED COGENERATION FACILITY INCLUDING TRAVELING GRATE BOILER WITH FLUE GAS RECIRCULATION (FGR), AMMONIA INJECTION, STEAM TURBINE/GENERATOR, NATURAL GAS FIRED AUXILIARY BURNER, MULTICLONE DUST COLLECTOR, SINGLE CHAMBER TWO CELL ELECTROSTATIC PRECIPITATOR, AND PM WET SCRUBBER

## PERMIT UNIT REQUIREMENTS

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1. Ammonia injection system shall be operated and maintained in accordance with manufacturers specification. [District NSR Rule] Federally Enforceable Through Title V Permit
2. Multiclone dust collector, electrostatic precipitator, and PM wet scrubber shall be operated and maintained in accordance with manufacturer's specifications whenever combustion is present in the boiler. [District NSR Rule] Federally Enforceable Through Title V Permit
3. Electrostatic precipitator shall be equipped with an automatic rapping system. [District NSR Rule] Federally Enforceable Through Title V Permit
4. Scrubber liquid pH shall be maintained between 3.0 and 7.0 and shall be continuously monitored. [District NSR Rule] Federally Enforceable Through Title V Permit
5. Scrubber, including sprays and nozzles, shall be maintained in optimum working condition. [District NSR Rule] Federally Enforceable Through Title V Permit
6. Scrubber liquid supply (at inlet to scrubber) shall have an operational flow meter. [District NSR Rule] Federally Enforceable Through Title V Permit
7. Combustion system shall be equipped with continuous emissions monitors (CEM) for NOx, CO, CO2, O2, volumetric flowrate, and opacity. [District NSR Rule and 40 CFR part 64] Federally Enforceable Through Title V Permit
8. Continuous emissions monitors shall be operated in accordance with the requirements of 40 CFR, Part 60, Appendix B, Performance Specifications 1, 2, 3, 4, and CFR Part 60, Appendix F. [District Rules 1080, 4352, and 40 CFR part 64] Federally Enforceable Through Title V Permit
9. Continuous emissions monitor for flue gas volume flow-rate shall meet EPA monitoring performance specifications appearing in 40 CFR, Part 52, Appendix E. [District Rules 4001, 1080, and 40 CFR part 64] Federally Enforceable Through Title V Permit
10. Ammonia shall be injected into boiler at a rate that results in compliance with the NOx emissions limit. [District NSR Rule] Federally Enforceable Through Title V Permit
11. Nitrogen oxide emissions (as NO2) shall not exceed 0.09 lbs/MMBtu based on a 24 hour average, except during periods of startup and shutdown as defined in Rule 4352. [District NSR Rule and 4352] Federally Enforceable Through Title V Permit
12. Nitrogen oxide emissions (as NO2) shall not exceed 17.87 lb/hr (based on a 24-hr period between 12:00 am midnight to the following midnight) and 70.44 tons/year. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE  
These terms and conditions are part of the Facility-wide Permit to Operate.

13. Carbon monoxide (CO) emissions shall not exceed 400 ppmv @ 3% O<sub>2</sub>, except during periods of startup and shutdown, as defined in Rule 4352 (Amended May 18, 2006). [District Rule 4352] Federally Enforceable Through Title V Permit
14. Carbon monoxide (CO) emissions shall not exceed 99.3 lbs/hr (based on a 24-hr period between 12:00 am midnight to the following midnight) and 249 tons/year. [District NSR Rule] Federally Enforceable Through Title V Permit
15. PM<sub>10</sub> emissions shall not exceed 0.0144 grains/dscf corrected to 12% CO<sub>2</sub>, 5.76 lbs/hr and 22.71 tons/year. [District NSR Rule] Federally Enforceable Through Title V Permit
16. Volatile organic compound emissions shall not exceed 13.30 lbs/hr and 52.4 tons/year. [District NSR Rule] Federally Enforceable Through Title V Permit
17. Sulfur oxide emissions (as SO<sub>2</sub>) shall not exceed 9.90 lbs/hr and 39.1 tons/year. [District NSR Rule] Federally Enforceable Through Title V Permit
18. Specific Limiting Condition (SLC) limiting the annual emissions from the boiler/generator listed under permit S-285-2 and the transportable IC engine listed under C-799-8, when the engine is operated at facility S-285, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: 70.44 tons-NO<sub>x</sub>/year, 39.1 tons-SO<sub>x</sub>/year, 22.71 tons-PM<sub>10</sub>/year, 249 tons-CO/year, or 52.4 tons-VOC/year. [District NSR Rule] Federally Enforceable Through Title V Permit
19. Carbon monoxide (CO) emissions shall not exceed 249 tons for any consecutive 365 day period. Cumulative emissions from the previous 365 day consecutive period shall be summed daily and reported to the District quarterly. [District NSR Rule] Federally Enforceable Through Title V Permit
20. Combustion system shall not operate for more than 7884 hours per year unless Dinuba Energy demonstrates compliance with the yearly emissions limits listed above. [District NSR Rule] Federally Enforceable Through Title V Permit
21. Only natural gas and wood fuels shall be burned in the boiler. Contamination of the wood fuel, as delivered to the boiler, shall not exceed 1.0% by weight total and limited to the following materials: metals, plastics, paper, painted wood, particle board, wood treated with preservatives, and roofing materials. None of the contaminants allowed by this condition shall contain asbestos. [District NSR Rule and 4102] Federally Enforceable Through Title V Permit
22. Facility shall not burn in the combustion system more than 240 lbs/hr nor 1051.2 tons/yr of non-wood material. [District Rule 4102]
23. "Wood" means any organic material not derived from fossil fuels, such as agricultural crop residue, orchard prunings and removals, stone fruit pits, nut shells, cotton gin trash, cotton stalks, vineyard prunings, cull logs, eucalyptus logs, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste. Wood does not include material containing sewage sludge or industrial, hazardous, radioactive or municipal solid waste. [District NSR Rule and 4102] Federally Enforceable Through Title V Permit
24. Wood waste includes clean, chipped wood products, plywood, wood products manufacturing wood materials, construction and demolition wood materials, and wood pallets, crates and boxes. [District NSR Rule and 4102] Federally Enforceable Through Title V Permit
25. Compliance with wood fuel contamination limits shall be demonstrated by sorting a District selected 5 ton representative sample of wood fuel as requested by the District compliance division. [District Rule 4102]
26. Data collected during sorting of 5 ton sample of wood fuel shall be in pounds of material per ton of wood fuel, by category as identified in fuel contamination limit condition, and official test results and field data shall be submitted within 30 days after collection. [District Rule 4102]
27. Source testing for PM<sub>10</sub> emissions shall be conducted by an independent testing laboratory within 60 days of initial startup. [District NSR Rule]
28. NO<sub>x</sub>, CO, and PM emissions shall be measured with annual source testing conducted by independent testing laboratory and shall be witnessed or authorized by the District. [District Rule 4352, 1081, and 40 CFR part 64] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

29. Source testing for the following parameters shall be conducted using the stated test methods: NOx - EPA Method 7 or ARB Method 100, CO - EPA Method 10 or ARB Method 100, CO2 - EPA Method 3 or ARB Method 100, O2 - EPA Method 3 or ARB Method 100, SO2 - EPA Method 6 or ARB Method 100, PM10 - EPA Methods 201A & 202, Stack Gas Flow Rate - EPA Method 2, Moisture Content - EPA Method 4, Ammonia - BAAQMD ST1B, & Fuel Heating Value - ASTM Method D2015 or E711. [District NSR Rule and 4352] Federally Enforceable Through Title V Permit
30. Official test results and field data from compliance testing shall be submitted within 60 days after collection. [District Rule 1081] Federally Enforceable Through Title V Permit
31. Dinuba Energy shall adjust rates of total air flow, overfire air flow, and ammonia injection to simultaneously meet all emissions limits, including visible emissions limit, and keep ammonia slip to a minimum. [District Rule 4102]
32. The auxiliary burner shall be fired exclusively with natural gas. A daily record of fuel gas consumption shall be maintained and submitted to the District quarterly. [District NSR Rule] Federally Enforceable Through Title V Permit
33. Equipment breakdowns of the combustion or CEM systems shall be reported in accordance with District rules 1080 and 1100. [District Rules 1080 and 1100] Federally Enforceable Through Title V Permit
34. Particulate matter concentration (including both filterable and condensable particulates) exiting the PM wet scrubber shall not exceed 0.016 grains/dscf corrected to 12% CO2. [District NSR Rule] Federally Enforceable Through Title V Permit
35. Rapping frequency and duration shall be pre-programmed and identical for each location, and only one rapping location shall be energized at any one time. [District NSR Rule] Federally Enforceable Through Title V Permit
36. Electrostatic precipitator shall be equipped with an opacity continuous emissions monitor (CEM), which shall be operated in accordance with the requirements of 40 CFR, Part 51, Appendix P, and Part 60, Appendix B. [District Rule 1080] Federally Enforceable Through Title V Permit
37. Opacity readings shall be averaged over a 15 minute period. [District NSR Rule] Federally Enforceable Through Title V Permit
38. Daily opacity reading of 20% or greater shall be reported to the District quarterly. [District NSR Rule] Federally Enforceable Through Title V Permit
39. Dinuba Energy shall maintain records of the occurrence and duration of any start-up, shutdown or malfunction in the operation of opacity CEM. [District NSR Rule] Federally Enforceable Through Title V Permit
40. Dinuba Energy shall maintain records of the results of performance testing, evaluations, calibrations, checks, adjustments and maintenance of CEMs. [District NSR Rule, 1080, and 40 CFR part 64] Federally Enforceable Through Title V Permit
41. Annual audits of continuous emissions monitors shall be conducted pursuant to the requirements of Rule 1080 and in accordance with EPA guidelines, by an independent testing laboratory. The audits shall be District witnessed and the results submitted to the District within 30 days of completion of the audit. [District Rule 1080, and 40 CFR part 64] Federally Enforceable Through Title V Permit
42. All quarterly reports shall be submitted to the District within 30 days of the end of each calendar quarter. Exceedance of any permit emissions limitation, including opacity, shall be noted on the quarterly report. [District Rule 1080, and 40 CFR part 64] Federally Enforceable Through Title V Permit
43. All records shall be retained on site for a period of at least 5 years and made readily available to the District upon request. [District NSR Rule] Federally Enforceable Through Title V Permit
44. The permittee shall sample biomass fuel for metals and asbestos analysis quarterly and whenever directed by the District inspector. [District Rule 4102]
45. The permittee shall submit a written sampling plan to the District's Compliance Division at least 20 calendar days prior to sampling for metals analysis or asbestos. This plan shall include the date, name of lab, lab's certification # for conducting tests, copy of chain of custody form to be utilized for tracking samples, and method of sampling. [District Rule 4102]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

46. The metals and asbestos samples shall be collected in accordance with a written plan for representative samples approved by the District. [District NSR Rule and 4102] Federally Enforceable Through Title V Permit
47. The permittee shall have the samples analyzed for metals by ASTM Method E885, or equivalent method approved by the District, using an independent testing laboratory certified to conduct the analysis. The metals to be quantified include Arsenic, Copper, Lead, Manganese, Nickel, Zinc, and Total Chromium. [District Rule 4102]
48. The results of the metals and asbestos analysis shall be reported in ppm (by weight). [District Rule 1081] Federally Enforceable Through Title V Permit
49. The results of metal and asbestos sampling analysis and evidence of chain of custody shall be submitted to the District Compliance Division within 30 days after collection. [District Rule 1081] Federally Enforceable Through Title V Permit
50. Emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081 (Amended December 16, 1993), of 3 thirty-minute test runs for NOx and CO. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
51. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing [District Rule 1081] Federally Enforceable Through Title V Permit
52. Particulate matter emissions shall not exceed the hourly rate as calculated in District Rule 4202 using the equation  $E=3.59 \times P^{0.62}$ ; P is less than or equal to 30 tons per hour, or  $E=17.31 \times P^{0.16}$ ; P is greater than 30 tons per hour. [District Rule 4202] Federally Enforceable Through Title V Permit
53. Particulate matter emissions shall not exceed 0.10 lb/MMBtu. [40 CFR 60.43b(c)(1)] Federally Enforceable Through Title V Permit
54. Owner or operator shall not cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. [40 CFR 60.43b(f)] Federally Enforceable Through Title V Permit
55. The particulate matter, and opacity standards shall apply at all times, except during periods of startup, shutdown or malfunction. [40 CFR 60.43b(g), 60.46b(a)] Federally Enforceable Through Title V Permit
56. The facility's annual capacity factor for natural gas shall be less than or equal to 10 percent (0.10). [40 CFR 60.44b(d)] Federally Enforceable Through Title V Permit
57. The owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system, [40 CFR 60.48b(a)] Federally Enforceable Through Title V Permit
58. The continuous monitoring systems shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments. [40 CFR 60.48b(c)] Federally Enforceable Through Title V Permit
59. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems. The span value for a continuous monitoring system for measuring opacity shall be between 60 and 80 percent. [40 CFR 60.48b(e)] Federally Enforceable Through Title V Permit
60. The permittee shall record and maintain records of the amount of wood and natural gas fuel combusted each day, and calculate the annual capacity factor individually for wood and natural gas on a 12-month rolling average with a capacity factor calculated at the end of each month. [40 CFR 60.49b (d)] Federally Enforceable Through Title V Permit
61. The owner or operator shall submit excess emission reports of all 6-minute periods during which the average opacity exceeds the opacity standards under 40 CFR 60.43b(f) during the reporting period. [40 CFR 60.49b(h)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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62. At the time of each annual source test for PM, the permittee shall establish the acceptable range of primary and secondary current and voltage readings for the electrostatic precipitator. Minimum readings for each parameter shall be established at 15% below the average value measured during the PM source test. Maximum readings for each parameter shall be established at 15% above the average value measured during the PM source test. [40 CFR part 64] Federally Enforceable Through Title V Permit
63. During each day of operation, the permittee shall record electrostatic precipitator voltage and current readings and compare the readings with the acceptable range of current and voltage levels established during the most recent annual PM source test. Upon detecting any excursion from the acceptable range of current or voltage readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR part 64] Federally Enforceable Through Title V Permit
64. Devices used to measure primary and secondary voltage and current shall be maintained in accordance with the manufacturer's specifications. [40 CFR part 64] Federally Enforceable Through Title V Permit
65. Scrubber Quench Temperature shall be monitored on the Scrubber Control Panel in the control room. Any excursion of scrubber quench temperature above 160 °F shall be recorded and immediate manual implementation of the scrubber deluge system shall be performed at 160°F and an automatic shutdown of the induced draft fan/boiler shall be triggered at 161°F. [District Rule 40 CFR part 64] Federally Enforceable Through Title V Permit
66. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR part 64.7. [40 CFR part 64] Federally Enforceable Through Title V Permit
67. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR part 64.9. [40 CFR part 64] Federally Enforceable Through Title V Permit
68. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR part 64] Federally Enforceable Through Title V Permit
69. For each unit subject to the Specific Limiting Condition (SLC), the permittee shall maintain all necessary records in order to show compliance with the annual SLC limits. [District NSR Rule] Federally Enforceable Through Title V Permit

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



# **APPENDIX C**

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Compliance Certification Form



RECEIVED  
APR 15 2013  
SJVAPCD  
Southern Region

## San Joaquin Valley Unified Air Pollution Control District

### TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

#### I. TYPE OF PERMIT ACTION (Check appropriate box)

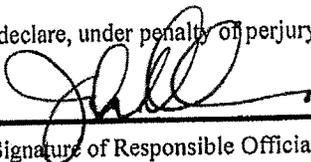
- SIGNIFICANT PERMIT MODIFICATION  
 MINOR PERMIT MODIFICATION
- ADMINISTRATIVE AMENDMENT

COMPANY NAME: Dinuba Energy	FACILITY ID: S-285
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: CRES, INC. DBA DINUBA ENERGY	
3. Agent to the Owner: John Richardson	

#### II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

 , V.P.  
\_\_\_\_\_  
Signature of Responsible Official

4-11-13  
\_\_\_\_\_  
Date

JOHN RICHARDSON  
\_\_\_\_\_  
Name of Responsible Official (please print)

VICE PRESIDENT  
\_\_\_\_\_  
Title of Responsible Official (please print)



# **APPENDIX D**

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## Quarterly Net Emissions Change

## 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:

$$PE2_{\text{quarterly}} = PE2_{\text{annual}} \div 4 \text{ quarters/year}$$
$$PE1_{\text{quarterly}} = PE1_{\text{annual}} \div 4 \text{ quarters/year}$$

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	35,220	35,220	0
SO <sub>x</sub>	19,550	19,550	0
PM <sub>10</sub>	11,355	11,355	0
CO	124,500	124,500	0
VOC	26,200	26,200	0

# **APPENDIX E**

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## Emissions Profile



Permit #: S-285-2-11	<b>Last Updated</b>
Facility: CRES INC DBA DINUBA ENERGY	06/06/2013 RICKARDK

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	140880.0	78200.0	45420.0	498000.0	104800.0
Daily Emis. Limit (lb/Day)	428.9	237.6	138.2	2383.2	319.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	0.0
Q2:	0.0	0.0	0.0	0.0	0.0
Q3:	0.0	0.0	0.0	0.0	0.0
Q4:	0.0	0.0	0.0	0.0	0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					



# **APPENDIX F**

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RMR Summary



# San Joaquin Valley Air Pollution Control District Risk Management Review

To: Kris Rickards – Permit Services  
 From: Suzanne Medina– Technical Services  
 Date: July 22, 2013  
 Facility Name: Dinuba Energy  
 Location: 6929 Avenue 430, Reedley, CA  
 Application #(s): S-285-2-11  
 Project #: S-1131583

## A. RMR SUMMARY

RMR Summary			
Categories	Cogen (Increase Paper only) (Unit 2-11)	Project Totals	Facility Totals
Prioritization Score	N/A <sup>1</sup>	N/A	>1
Acute Hazard Index	0.001	0.001	0.004
Chronic Hazard Index	0.011	0.011	0.015
Maximum Individual Cancer Risk (10 <sup>-6</sup> )	1.57E-6	1.57E-6	2.03E-6
T-BACT Required?	Yes		
Special Permit Conditions?	No		

1 Prioritization for this unit was not conducted since the facility had previous score >1.

### Proposed Permit Conditions

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

#### Unit # 2-11

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

#### I. Project Description

Technical Services received an original request on July 22, 2013, to perform a Risk Management Review to authorize paper to be combusted without the 1% limitation currently on permit. The engineer provided paper fuel combustion rates provided below.

## II. Analysis

Toxic emissions from the project were calculated using biomass emission factors for paper and the processing engineer provided the process rates. Since the facility is only requesting to remove the 1% paper limitation and increase the paper fuel consumption, only analysis for paper fuel emissions was performed. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed 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.

Technical Services performed a prioritization using the District's HEARTs database. Since the total facility prioritization score was greater than one, a refined health risk assessment was required. Emissions calculated using paper biomass emission factors were input into the HEARTs database. The dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 2-11			
Source Type	Point	Location Type	Rural
Stack Height (m)	25.9	Closest Receptor (m)	200
Stack Diameter. (m)	2.5	Type of Receptor	Residential
Stack Exit Velocity (m/s)	15.5	Max Hours per Year	8760
Stack Exit Temp. (°K)	422	Fuel Type	Paper
Tons/Hr Paper	6.29		

## III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk associated with the project is greater than 1.0 in a million, but less than 10 in a million. **In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for this proposed unit.

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

### Attachments:

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Facility Summary