San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

DEC 2 1 2016

Mr. David Sawyer
Covanta Mendota LP
PO Box 39
Mariposa, CA 95338

Re: Notice of Preliminary Decision – ATC / Certificate of Conformity
District Facility # C-825
Project # C-1152808

Dear Mr. Sawyer:

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 project is for the modification of a biomass and natural gas-fired circulating fluidized bed boiler to install a sodium bicarbonate injection system, with an optional activated carbon system, for compliance with MACT regulation - Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, at 400 Guillen Parkway in Mendota.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. 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. Errol Villegas, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

for Arnaud Marjollet
Director of Permit Services

Enclosures

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

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

30 MW Biomass Power Plant

Facility Name:	Covanta Mendota LP	Date:	December 2, 2016
Mailing Address:	PO Box 550 Delano, CA 93216	Engineer:	Carlos Garcia
		Lead Engineer:	Jerry Sandhu
Contact Person:	David Sawyer		
Telephone:	(559) 210-2050		
Fax:	n/a		
E-Mail:	dsawyer@covanta.com		
Application #:	C-825-5-19		
Project #:	C-1152808		
Deemed Complete:	December 23, 2015		

I. Proposal

The primary business of Covanta Mendota LP is the production of power utilizing a 30 MW biomass and natural gas-fired circulating fluidized bed boiler. Covanta Mendota LP has submitted an Authority to Construct (ATC) application for the following:

- Applicant is applying to install a sodium bicarbonate injection system, with the option of adding activated carbon that will be fed into the flue gas stream to mainly neutralize HCl to reduce these emissions. This project is being proposed to solely comply with the federal Maximum Achievable Control Technology (MACT) standards of 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories) Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters). The MACT requirements include emission limits for mercury (Hg), CO and PM, along with testing (stack and fuel analysis), and work practices.
- This project is being submitted solely to comply with a federal rule, and per Rule 2201, section 4.2.3 and 4.6.8, this project is exempt from BACT and offsets. Additionally, per the District's Draft Major Modification policy under Case 3, this project is not a Federal Major Modification.

Federal MACT will require control of hydrogen chloride (HCl), mercury (Hg), and carbon monoxide (CO) and have additional emission limits for particulate matter (PM) or total selected metals (TSM), as well as an Energy Assessment, along with various monitoring, testing and recordkeeping requirements. Control of the HCl and Hg emissions will be achieved through sodium bicarbonate injection, and an option to add activated carbon, upstream of the existing

baghouse and the existing boiler limestone injection system. The minimum reagent flow rates will be set during stack testing and continuously monitored.

Covanta stopped operating the biomass boiler on January 14, 2016, and currently, this unit is permitted as a dormant emissions unit (see Appendix B for current PTO).

Covanta Mendota LP received their Title V Permit on November 30, 2001. 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 (see Appendix A for the draft ATC). Covanta Mendota LP must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 1080	Stack Monitoring (12/17/92)
Rule 2080	Conditional Approval (12/17/92)
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) • 40 CFR Part 60, Subpart Db, Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04) • Subpart DDDDD — National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters • Subpart JJJJJJ — National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. *Not applicable —This subpart only applies to area sources of hazardous air pollutants.*
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators and Process Heaters – Phase 2 (8/21/03) – *Not applicable – This rule does not apply to solid fuel fired units per Section 4.1.1.*
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase 3 (10/16/08) *Not applicable – This rule does not apply to solid fuel fired units per Section 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) *Not applicable – This rule does not apply to solid fuel fired units per Section 4.1.1.*
Rule 4351	Boilers, Steam Generators and Process Heaters – Phase 1 (8/21/03) *Not applicable – This rule does not apply to solid fuel fired units per Section 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 400 Guillen Pkwy in Mendota, 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

Covanta Mendota LP operates an electrical generation facility with a 317 MMBtu/hr biomass circulating fluidized bed boiler that produces electrical power. The circulating fluidized bed boiler burns biomass consisting of agricultural waste products, saw mill residues, forest residues, orchard and vineyard prunings, etc., supplemented by natural gas. The resulting heat generates steam which powers a turbine. The turbine spins an electrical generator which produces up to 30 MW of electrical energy for the power grid.

Ammonia is injected into the hot exhaust gases for selective noncatalytic reduction (SNCR) of NOx emissions. The emissions of particulate matter are controlled by a baghouse, which exhausts through a vertical, cylindrical stack.

Fuel receiving[1]:

Biomass fuel is received at either of the two truck tippers that lift the entire truck and trailer to a 55° angle for unloading.

Truck tipper #1 is equipped with a reclaim hopper and a drag conveyor and it can be loaded by either hydraulically tipping a truck to discharge into the hopper or by using a front end loader which can add biomass fuel to the hopper via an adjacent ramp. The hydraulic system on tipper #1 is powered by two 60 hp electric motors.

Truck tipper #2 is fully open and is equipped with water sprays and uses batch loading to move fuel to the storage yard. The hydraulic system on tipper #2 is powered by two 60 hp electric motors.

Sand silo and the limestone silo:

The sand silo and the limestone silo are used in conjunction with the main boiler. Sand and limestone are fed directly to the dip leg between the recirculating cyclone and the combustor.

[1] The following descriptions were provided from project C1062960.

The two silos are identical and each provides 1,315 yd^3 of storage. Both silos are pneumatically loaded by a 600 cfm fan which is mounted on the delivery truck. Each silo is controlled with a DCE Dalamatic model DLM-V20/10W bin vent filter.

Fly ash silo:

The fly ash collection system and the fly ash silo are used in conjunction with the boiler baghouse. Fly ash is collected below the baghouse in an enclosed screw conveyor which transports the material to a surge bin that feeds an inclined drag conveyor that transports the fly ash to the storage silo. The silos provide 3,947 ft^3 of storage and it is fully enclosed. The fly ash is stored in the silo until it is discharged into a pug-mill with a screw mixer that mixes the fly ash with water before it is loaded into trucks for off-site disposal.

Bottom sand discharge units:

The bottom sand discharge units are used in conjunction with the fluidized bed combustor. Sand is rejected from the boiler through a sand dip leg and conveyor. The pile of sand is then removed with a skip loader, which places it in a storage bin. The sand is then removed from the bin with a front-end loader which moves it to storage in the fuel yard.

V. Equipment Listing

Pre-Project Equipment Description:

C-825-5-18: 30 MW POWER PRODUCTION FACILITY WITH A 317 MMBTU/HR BIOMASS AND NATURAL GAS-FIRED GOTAVERKEN CIRCULATING FLUIDIZED BED BOILER CONTROLLED WITH A MODULAR SIX-COMPARTMENT BAGHOUSE AND THERMAL DE-NOX SYSTEM AND WITH A CYCLONE, A SUPERHEATER, A STEAM DRUM, AN ECONOMIZER, AN AIR HEATER, A SAND SILO AND A LIMESTONE SILO EACH CONTROLLED WITH A DCE DALAMATIC MODEL # DLM-V20/10W BIN VENT FILTER, AN ENCLOSED ASH SILO, AND BOTTOM SAND DISCHARGE UNITS

Proposed Modification:

C-825-5-19: MODIFICATION OF 30 MW POWER PRODUCTION FACILITY WITH A 317 MMBTU/HR BIOMASS AND NATURAL GAS-FIRED GOTAVERKEN CIRCULATING FLUIDIZED BED BOILER CONTROLLED WITH A MODULAR SIX-COMPARTMENT BAGHOUSE AND THERMAL DE-NOX SYSTEM AND WITH A CYCLONE, A SUPERHEATER, A STEAM DRUM, AN ECONOMIZER, AN AIR HEATER, A SAND SILO AND A LIMESTONE SILO EACH CONTROLLED WITH A DCE DALAMATIC MODEL # DLM-V20/10W BIN VENT FILTER, AN ENCLOSED ASH SILO, AND BOTTOM SAND DISCHARGE UNITS: INSTALL SODIUM BICARBONATE REAGENT FEEDER SYSTEM INCLUDING BULK BAG UNLOADER AND VOLUMETRIC FEEDER AND OPTIONAL POWDERED ACTIVATED CARBON INJECTION SYSTEM TO MEET BOILER MACT REQUIREMENTS OF 40 CFR 63 SUBPART DDDDD

Post Project Equipment Description:

C-825-5-19: 30 MW POWER PRODUCTION FACILITY WITH A 317 MMBTU/HR BIOMASS AND NATURAL GAS-FIRED GOTAVERKEN CIRCULATING FLUIDIZED BED BOILER CONTROLLED WITH A MODULAR SIX-COMPARTMENT BAGHOUSE, THERMAL DE-NOX SYSTEM AND WITH A CYCLONE, A SUPERHEATER, A STEAM DRUM, AN ECONOMIZER, AN AIR HEATER, A SAND SILO AND A LIMESTONE SILO EACH CONTROLLED WITH A DCE DALAMATIC MODEL # DLM-V20/10W BIN VENT FILTER, AN ENCLOSED ASH SILO, AND BOTTOM SAND DISCHARGE UNITS, A SODIUM BICARBONATE REAGENT FEEDER SYSTEM INCLUDING BULK BAG UNLOADER AND VOLUMETRIC FEEDER WITH AN OPTIONAL ACTIVATED CARBON INJECTION SYSTEM

VI. Emission Control Technology Evaluation

The facility proposes to install a sodium bicarbonate ($NaHCO_3$) storage, conveying and injection system for the Boiler MACT regulations. These federal MACT regulations (40 CFR Part 63, Subpart DDDDD) will require control of HCl, Hg and CO and have additional emission limits for PM or TSM, CO, HCl and Hg, as well as an Energy Assessment, along with various monitoring and recordkeeping requirements. Subpart DDDDD went into effect in January 2016.

The limestone reacts with the SO2 in the fluidized bed, converting it to a solid that is captured in the baghouse. Control of the HCl and Hg emissions will be achieved through sodium bicarbonate injection into the cooled flue gas entering upstream of the existing baghouse and the existing boiler limestone injection system. The minimum reagent flow rates will be established during the stack testing and continuously monitored. The sodium bicarbonate injection system will consist of a super sack unloader with a variable frequency drive motorized screw feeder. A hoist and trolley will be used to load and unload bulk bags of the reagent. A pneumatic transport system will be used to convey the sodium bicarbonate to the inlet of the fabric filter. The pneumatic transport system will consist of a blower, an eductor and a two inch conveying line. The sodium bicarbonate injection system will be designed to accept an admixture of sodium bicarbonate and powdered activated carbon, if the addition of powdered activated carbon is required to further control Hg emissions[2] and meet the MACT Hg emission limit. If required to meet the MACT DDDDD limits, the powdered activated carbon may be supplied as an admixture or if supplied separately, be fed into the sodium bicarbonate injection system from a separate storage system.

VII. General Calculations

A. Assumptions

- The equipment will be assumed to operate 24 hr/day, 7 day/week, and 365 day/yr. Currently, the circulating fluidized boiler is permitted as a dormant emissions unit.

[2] The facility anticipates that the Hg emissions will be below the MACT DDDDD limit. However, this is based on only one source test for Hg in 2011. The optional activated carbon injection will be added to the boiler if further Hg emissions reductions are needed.

- To streamline emission calculations, PM2.5 emissions are assumed to be equal to PM10 emissions. Only if needed to determine if a project is a Federal major modification for PM2.5 will specific PM2.5 emission calculations be performed.
- No change in any criteria pollutants are proposed or expected as a result of this project.
- For combustion sources, assume all PM is equal to PM10.

B. Emission Factors

The daily and hourly emission factors are taken from current permit conditions. The proposed modification to install a sodium bicarbonate and optional activated carbon injection system is for the control of HCl and Hg emissions. No changes in current permitted emissions are proposed for the following criteria pollutants: NOx, SOx, PM10, CO or VOC.

Emission Factors C-825-5			
	lb/hr	**lb/day**	**Source**
NO_X	27.8	667.2	Permit Condition
SO_X	10.3	247.2	Permit Condition
Filterable PM_{10}	7.62	--	Permit Condition
Total PM_{10}	14.3	340.1	Permit Condition
CO	38.7	928.8	Permit Condition
VOC	9.7	232.8	Permit Condition

C. Calculations

1. Pre-Project Potential to Emit (PE1)

The daily potential to emit for the biomass boiler is taken from the current permit to operate and summarized in the table below.

As an example, NOx yearly emissions are calculated as follows:
PE1 = (667.2 lb-NOx/day) * (365 day/year)
= 243,528 lb-NOx/year

PE1		
	Daily Emissions (lb/day)	**Annual Emissions (lb/year)**
NO_X	667.2	243,528
SO_X	247.2	90,228
PM_{10}	340.1	124,137
CO	928.8	339,012
VOC	232.8	84,972

2. Post Project Potential to Emit (PE2)

The proposed modification to install a sodium bicarbonate and an optional activated carbon injection system will be used to control HCl and Hg emissions. No changes in emissions are proposed for the following criteria pollutants: NOx, SOx, PM10, CO or VOC. Therefore, the daily potential to emit for the biomass boiler is taken from current permit to operate, and summarized in the table below.

PE2		
	Daily Emissions (lb/day)	**Annual Emissions (lb/year)**
NO_X	667.2	243,528
SO_X	247.2	90,228
PM_{10}	340.1	124,137
CO	928.8	339,012
VOC	232.8	84,972

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.

Facility emissions are already above the Offset and Major Source Thresholds for NOx, PM10, CO and VOC emissions; therefore, SSPE calculations are not necessary, but are shown for reference.

SSPE1 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
C-825-1-3*	251	0	24	67	24
C-825-3-9*	0	0	41,683	0	0
C-825-4-9*	0	0	23,652	0	0
C-825-5-18	243,528	90,228	124,137	339,012	84,972
C-825-8-3*	188	20	4	96	6
C-825-9-9**	0	0	0	0	194
C-825-11-4*	0	0	73,357	0	0
SSPE1	**243,967**	**90,248**	**262,857**	**339,175**	**85,196**

* Emissions for these units are taken from project C-1131422
**Emissions for C-825-9-9 are taken from the emission calculations in project C-1140009

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.

The SSPE2 is presented in the following table.

SSPE2 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
C-825-1-3*	251	0	24	67	24
C-825-3-9*	0	0	41,683	0	0
C-825-4-9*	0	0	23,652	0	0
C-825-5-19	243,528	90,228	124,137	339,012	84,972
C-825-8-3*	188	20	4	96	6
C-825-9-9**	0	0	0	0	194
C-825-11-4*	0	0	73,357	0	0
SSPE2	**243,967**	**90,248**	**262,857**	**339,175**	**85,196**

* Emissions for these units are taken from project C-1131422
**Emissions for C-825-9-9 are taken from the emission calculations in project C-1140009

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

This source is an existing Major Source for NOx, PM10, CO and VOC emissions and will remain a Major Source for NOx, PM10, CO and VOC. No change in any criteria pollutants are proposed or expected as a result of this project.

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)(iii)[3]. Therefore the PSD Major Source threshold is 100 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO2	**VOC**	**SO2**	**CO**	**PM**	**PM10**
Estimated Facility PE before Project Increase	121.98	42.60	45.12	169.59	131.43	131.43
PSD Major Source Thresholds	100	100	100	100	100	100
PSD Major Source ? (Y/N)	Y	N	N	Y	Y	Y

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

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,

[3] The biomass boiler fits into the category 40 CFR 52.21 (b)(1)(iii)(a) for fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input. The natural gas-fired utilization for this unit is up to 25% annual Btu input.

- 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.

This project is being proposed to solely comply with the federal Maximum Achievable Control Technology (MACT) standards of 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories) Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters). Pursuant to Rule 2201, Section 4.6.8, this unit is exempt from providing offsets. Therefore, BE calculations do not need to be calculated because offsets are not required.

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 a major source for NOx, PM10, CO and VOC (and not for SOx), the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	**Project PE2 (lb/year)**	**Threshold (lb/year)**	**SB 288 Major Modification Calculation Required?**
NO_x	243,528	50,000	Yes
PM_{10}	124,137	30,000	Yes
VOC	84,972	50,000	Yes

Since the project's PE2 surpasses the SB 288 Major Modification Thresholds for (NOx, PM10 and VOC pollutants), the Net Emissions Increase (NEI) will be compared to the SB 288 Major Modification thresholds in order to determine if this project constitutes an SB 288 Major Modification.

The NEI is the total of emission increases for every permit unit addressed in this project and is calculated as follows:

NEI = PE2 – BAE

Where: PE2 = the sum of all the PE2s for each permit unit in this project
BAE = for units that are fully offset, the BAE = the PE1 for every unit,

otherwise, the BAE is the actual annual emissions averaged over the baseline period for every unit.

The baseline period is the two year period preceding the application (or another time period within the previous 5 or 10 yrs (5 yrs for electric utility steam generating unit) determined by the District to be more representative of normal operation. The applicant has not supplied the historical operating and emissions data for the unit in this project, however, the historical operating emissions will be taken from the facility's emissions inventory data that has been provided to the District. The BAE two year period for the 2013 and 2014 calendar year was chosen as representative of normal operation and is provided in Appendix C.

The BAE 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/year)**	**BAE (lb/yr)**	**NEI (lb/yr)**	**Thresholds (lb/yr)**	**SB 288 Major Modification?**
NO_x	243,528	161,040	85,488	50,000	Yes
PM_{10}	124,137	124,383	-246	30,000	No
VOC	84,972	203	84,769	50,000	Yes

As demonstrated in the preceding table, this project does constitute a SB 288 Major Modification.

8. Federal Major Modification

District Policy APR 1105 "Implementation of Rule 2201 for SB288 Major Modifications and Federal Modifications" provides guidance on Federal Modifications to existing emission units solely to comply with applicable regulations, such as Subpart DDDDD. The guidance, in Case #3, states the no detailed calculations shall be required if the modification meets the following criteria:

- Modifications to existing emission units are solely for District, State, or Federal rule compliance,
- There are no changes in the capacity of the unit, and
- The modification will not allow the emission unit to operate at a higher utilization rate.

The proposed modification in this project is solely to comply with a Federal rule (Subpart DDDDD). Additionally, there are no changes in capacity, and the project will not allow a higher utilization rate. Therefore, this project is not considered a Federal Major Modification, and no further calculations are necessary.

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

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

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

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 PSD Major Source. Because the project is not located within 10 km (6.2 miles) 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. Project Emission Increase – Significance Determination

a. Evaluation of Calculated Post-project Potential to Emit for New or Modified Emissions Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified units are below the applicable thresholds, no futher PSD analysis is needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO_2	SO_2	CO	PM	PM_{10}
Total PE from New and Modified Units	121.764	45.114	169.506	62.069	62.069
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	Y	Y	Y	Y	Y

As demonstrated in the table above, because the post-project potential to emit from all new and modified emission units is greater than at least one PSD significant emission increase threshold, further analysis is required to determine if the project will result in an increase greater than the PSD significant emission increase thresholds, see step b. below for further analysis.

b. Evaluation of Calculated Emission Increases vs PSD Significant Emission Increase Thresholds

In this step, the emission increase for each subject pollutant is compared to the PSD significant emission increase threshold, and if the emission increase for each subject pollutant is below their threshold, no futher analysis is required.

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

Emission Increase = PAE – BAE - UBC

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

Since this project does not result in an increase in design capacity or potential to emit, and it does not impact the ability of the emission unit to operate at a higher utilization rate, the UBC is the portion of PAE that the emission units could have accommodated during the baseline period.

The project's combined total emission increases are calculated in Appendix D and compared to the PSD significant emission increase thresholds in the following table. As stated previously, no change in current permitted emissions are proposed for this project.

PSD Significant Emission Increase Determination: Emission Increase (tons/year)					
	NO_2	**SO_2**	**CO**	**PM**	**PM_{10}**
Emission Increases (only)	0	0	0	0	0
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	N	N	N	N	N

As shown in the table above, the emission increases from the project, 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 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 E.

VIII. Compliance Determination

District Rule 1080 Stack Monitoring

This rule grants the APCO the authority to request the installation, use, maintenance, and inspection of continuous monitoring equipment. Therefore, the following conditions from the current permit will be placed on the ATC as follows:

- Permittee shall operate a Continuous Emissions Monitoring (CEM) system to monitor and record NOx concentrations and O2 concentrations, as well as the NOx emission rate whenever the boiler is operating. The CEM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The CEM system must also comply with 40 CFR 60 Appendix B, Performance Specifications 2, 3 and 6, and 40 CFR 60 Appendix F, Quality Assurance Procedures. Per Section 5.1.1 of Appendix F, at least once each calendar year, a Relative Accuracy Test Audit (RATA) must be conducted. Per Sections 5.1.2 and 5.1.3 of Appendix F, a Cylinder Gas Audit (CGA) and a Relative Accuracy Audit (RAA) must be conducted once each calendar quarter, except in the quarter where a RATA is performed. [District Rules 1080 and 4352, 5.4; 40 CFR 60.7(c), 40 CFR 60.13, and 40 CFR 60.48b]
- Permittee shall operate a Continuous Opacity Monitoring (COM) system to monitor and record opacity whenever the boiler is operating. The COM system shall be operated, maintained, and calibrated pursuant to the requirements of 40 CFR 60.7(c), 60.13, and 60.48b. The COM system must also satisfy Performance Specification 1 of 40 CFR 60 Appendix B. [District Rule 1080; 40 CFR 60.7(c), 40 CFR 60.13, 40 CFR 60.48b, and 40 CFR 64.3(a) and (d)]
- The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080][4]
- Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080][4]
- A quarterly CEM and COM report shall be submitted to the District which includes the following: hours of operation, the date and time of each exceedance of emissions limits (including startup, shutdown, malfunctions or any other reason), the quantity of excess emissions, any conversion factors used to calculate excess emissions, the nature and cause of each malfunction, any corrective action taken and any preventive measures adopted, hours of CEM (and COM) down time, and the cause of all CEM (and COM)

[4] Condition 31 from the current PTO is outdated. Therefore, PTO condition #31 was updated and replaced with these two conditions.

down time. [District Rules 1080 and 4352, 5.4; 40 CFR 60.49b(h) and 40 CFR 64.3(d)(i)]
- Quarterly reports shall be submitted to the District within 30 days after the end of each calendar quarter. [District Rules 1080 and 4352, 5.4]

District Rule 1081 – Source Sampling

The purpose of this rule is to ensure that there are adequate and safe facilities for use in sampling to determine compliance. This rule also specifies methods and procedures for source testing, sample collection, and compliance determination.

- Source test reports shall be submitted to the District within 60 days after completion of source testing. [District Rules 1070 and 1081, 7.3]
- Permittee shall perform annual source tests for PM10, CO, SOx as SO2, VOC, and NOx as NO2. The District must be notified 30 days prior to any compliance source testing. A pretest plan outlining source test methods, approved contractor, test date, and operating parameters must be submitted to the District for approval at least 15 days prior to source sampling. [District Rules 1081, 7.1, 2201, and 4352, 6.2]

Rule 2080 Conditional Approval

While the equipment is dormant, the established source testing will not be required. Whenever the operator designates the equipment as active, the established source testing requirements will resume.

Nothing in this evaluation shall be construed to shield a unit that has operated out of compliance with any District, state or federal requirements. A unit designated as a DEU is subject to enforcement action for any and all violations.

The following existing PTO conditions will be placed on the ATC for this project to ensure compliance.

- {edited 4561} While dormant, a blank flange will be installed on the natural gas line and the flange will be locked; no fuel deliveries will be allowed by contract; the fuel yard will be maintained as empty. [District Rule 2080]
- {4562} Permittee shall submit written notification to the District upon designating the unit as dormant or active. [District Rule 2080]
- {modified 4560} While dormant, normal source testing and the requirements of conditions 67 and 68 shall not be required. [District Rule 2080]
- {modified 4563} Upon recommencing operation of this unit, normal source testing and the requirements of conditions 67 and 68 shall resume. The requirements of conditions 67 and 68 shall be completed within 180 days of recommencing operation of this unit. [District Rule 2080]
- {4564} Any source testing required by this permit shall be performed within 60 days of recommencing operation of this unit, regardless of whether the unit remains active or is again designated as dormant. [District Rule 2080]

- {4565} Records of all dates and times that this unit is designated as dormant or active, and copies of all corresponding notices to the District, shall be maintained, retained for a period of at least five years, and made available for District inspection upon request. [District Rule 1070]

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.

As demonstrated in VII.C.7 of this evaluation, this project is a SB288 Major Modification for NOx, VOC, and PM10. Therefore, based on the above-listed criteria BACT is triggered for these three pollutants.

However, this project is being proposed to solely comply with 40 CFR Part 63 Subpart DDDDD, and Rule 2201, section 4.2.3 states that BACT shall not be required for the following:

4.2.3 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from Best Available Control Technology for all air pollutants, provided all of the following conditions are met:

4.2.3.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;

4.2.3.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.2.3.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.2.3.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NO_x, or 25 tons per year of VOC, or 15 tons per year of SO_x, or 15 tons per year of PM10, or 50 tons per year of CO.

4.2.3.5 The project shall not constitute a Federal Major Modification.

Since each of the above-listed criteria are met, although BACT is triggered, BACT is not required for any pollutant.

B. Offsets

Rule 2201, section 4.6.8 states that offsets shall not be required for the following:

4.6.8 For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from offset requirements for all air pollutants provided all of the following conditions are met:

4.6.8.1 There shall be no increase in the physical or operational design of the existing facility, except for those changes to the design needed for the installation or modification of the emission control technique itself;

4.6.8.2 There shall be no increase in the permitted rating or permitted operating schedule of the permitted unit;

4.6.8.3 There shall be no increase in emissions from the stationary source that will cause or contribute to any violation of a National Ambient Air Quality Standard, Prevention of Significant Deterioration increment, or Air Quality Related Value in Class I areas; and

4.6.8.4 The project shall not result in an increase in permitted emissions or potential to emit of more than 25 tons per year of NOx, or 25 tons per year of VOC, or 15 tons per year of SOx, or 15 tons per year of PM-10, or 50 tons per year of CO.

Since each of the above-listed criteria are met, Offsets are not required 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,
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
e. Any project which results in a Title V significant permit modification

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

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project is an SB 288 or Federal Major Modification. Therefore, public noticing for SB 288 or Federal Major Modification purposes is 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_X	243,967	243,967	20,000 lb/year	No
SO_X	90,248	90,248	54,750 lb/year	No
PM_{10}	262,857	262,857	29,200 lb/year	No
CO	339,175	339,175	200,000 lb/year	No
VOC	85,196	85,196	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.

SSIPE Public Notice Thresholds					
Pollutant	**SSPE2 (lb/year)**	**SSPE1 (lb/year)**	**SSIPE (lb/year)**	**SSIPE Public Notice Threshold**	**Public Notice Required?**
NO_x	243,967	243,967	0	20,000 lb/year	No
SO_x	90,248	90,248	0	20,000 lb/year	No
PM_{10}	262,857	262,857	0	20,000 lb/year	No
CO	339,175	339,175	0	20,000 lb/year	No
VOC	85,196	85,196	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.

e. Title V Significant Permit Modification

As shown in the Discussion of Rule 2520 below, this project does constitute a Title V significant modification (SB288). Therefore, public noticing for Title V significant modifications (SB288) is required for this project.

2. Public Notice Action

As discussed above, public noticing is required for this project because it is considered a SB288 Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

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

For this fluidized biomass boiler, the DELs are stated in the form of emission factors, types of fuel used, the maximum boiler MMBtu/hr rating, and the maximum operational time of 24 hours per day.

Proposed Rule 2201 (DEL) Conditions:

- Boiler fuels shall be limited to the following: saw mill residues (bark, sawdust, chips and shavings); forest residues; orchard and vineyard prunings including chipped whole tree wastes and materials listed in Appendix A to the Title V Permit, "Emission Factors for Open Burning of Agricultural Residues" (August 2000, Gaffney, P., California Air Resources Board Planning and Technical Support Division); clean unpainted urban wood waste; unpainted paper waste; nut shells; stone fruit pits; onion and garlic skins; and natural gas. [District Rule 2201]
- Natural gas shall be used only for startup and combustion stabilization (fuel not to exceed 25% annual BTU heat input). [District Rule 2201]
- The permittee shall project and use the proper mix of fuels to ensure that all emissions are offset as required with credits from the use of creditable fuels. [District Rule 2201]
- The permittee shall curtail operation proportionately and notify the District whenever, due to changes in the quantity or quality of wastes supplied, the emissions exceed the offsets. [District Rule 2201]
- All stack emissions shall be completely offset with creditable biomass on an annual basis. Emission offsets shall be calculated using the formula EC = (1/DF) x Sum (A(i) x EF(i)), where: EC = Emission Credit (lb/yr), DF = Distance Factor, A(i) = Amount from each source (ton/yr), and EF(i) = Emission Factor for each source. [District Rule 2201]
- Distance Factor (DF) shall be 1.2 for sources within a 15 mile radius and 2.0 for sources outside the 15 mile radius. [District Rule 2201 and 40 CFR 60.43b(c)]
- Open-burning emission factors used to determine the quantity of offsets available from the diversion of biomass from open-burning are listed in Appendix A, "Emission Factors for Open Burning of Agricultural Residues" (August 2000, Gaffney, P., California Air Resources Board Planning and Technical Support Division). A copy of Appendix A shall be retained on site and made available for District inspection upon request. [District Rules 2201 and 2520, 9.4.2]
- Particulate matter (PM-10) emissions, except for periods of startup and shutdown as defined in District Rule 4352, shall not exceed any of the following: 0.010 gr/dscf @ 12% CO2 of filterable particulate, 7.62 lb/hr of filterable particulate, or 14.3 lb/hr of filterable and condensable particulate. [District Rule 2201]
- Baghouse shall be operated whenever the biomass combustor is operating. [District Rule 2201 and 40 CFR 64.3(a)]
- Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

District Rule 4352 requires PM10, CO, SOx as SO2, VOC, and NOx as NO2 emission testing not less than once every 12 months among other requirements. The District Source Test Policy (APR 1705) requires annual testing for all pollutants controlled by catalysts. The control equipment will include a NSCR system and ammonia slip as an indicator of how well the NSCR system is performing. Additionally, the unit has a CEMS to measure NOx and O2, as well as a COMS to measure opacity.

Therefore, source testing for PM10, CO, SOx as SO2, VOC, and NOx as NO2 will be required at least once every 12 months. Conditions for source test requirements for Rule 2201 compliance are listed under the discussion for Rule 4352.

2. Monitoring

Monitoring is required to demonstrate ongoing compliance with the DEL requirements. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- The baghouse shall be equipped with a pressure differential gauge to indicate the pressure drop across the bags. The gauge shall be maintained in good working condition at all times and shall be located in an easily accessible location. [District Rule 2201 and 40 CFR 64.3(a)]
- Pressure drop across the baghouse shall be maintained between 4 and 9 inches water column. [District Rule 2201 and 40 CFR 64.3(b)]
- Replacement bags numbering at least 10% of the total number of bags shall be maintained on the premises. [District Rule 2201]
- The baghouse shall be equipped with multiple compartments having fire detection systems. [District Rule 2201]
- The dust collection system shall be thoroughly inspected quarterly for tears, scuffs, abrasions, holes or any evidence of particulate matter leaks and shall be repaired as needed. [District Rules 1070, 2201, and 2520, 9.3.2]
- Permittee shall ensure that the flow of injected sorbent (limestone, sodium bicarbonate) or carbon is not interrupted by operating an opacity meter, triboelectric monitoring system, or other system (approved by the District in writing) that alerts the permittee that an absence of flow of sorbent or carbon is present. [District Rule 2201]

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. Recordkeeping conditions for Rule 2201 compliance are listed under the discussion for Rule 4352, in addition to the following condition listed on the ATC:

- Verification of all emission related data is the responsibility of the Permittee. Such verification shall be provided to the District upon request. [District Rule 2201 and 40 CFR 60.43b(c)]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

40 CFR Part 60 Subpart Section 60.49b paragraph (h) requires that the owner submit quarterly excess emission reports for any calendar quarter during which there are excess emissions. It also requires quarterly reports stating that there have been no excess emissions during periods when there have been no excess emissions. Such reporting, listed under Rule 4001 discussion, will be required and will satisfy the reporting requirements for Rule 2201. No additional reporting is required.

F. Ambient Air Quality Analysis (AAQA)

An AAQA is conducted by the Technical Services group, for any project which has an increase in emissions and triggers public notification requirements. However, there is no increase in emissions proposed for any pollutant. Therefore, an AAQA is not required.

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating 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 modification. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment application.

The following condition will be added on the ATC to ensure compliance with this rule:

- {1829} The facility shall submit an application to modify the Title V permit in accordance with the timeframes and procedures of District Rule 2520. [District Rule 2520]

The following existing PTO conditions will be placed on the ATC for this project to ensure compliance.

- For pollutants whose emission rates are not monitored by a CEMS (i.e. SOx, CO, PM10, and VOC), compliance with the hourly and daily emission limits shall be determined by using emission factors derived from the most recent source test. Compliance with the hourly emission rates shall be deemed compliance with the daily emission rates. [District Rule 2520, 9.1]

- Records of dust collector maintenance, inspection, and repair shall be maintained for five years and provided to the District upon request. The record shall include identification of the equipment, date of inspection, corrective action taken and identification of the individual performing the inspection. [District Rule 2520, 9.4.1, 9.4.2]
- Daily records of creditable biomass received shall be used to determine annual offset compliance. [District Rule 2520, 9.4.1]

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. The subparts of 40 CFR Part 60 that apply are from subpart A (General Provisions) and Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units) and apply to the fluidized bed boiler operation. These requirements were previously incorporated into the permit for this unit.

40 CFR Part 60, Subpart A, Section 14, defines the meaning of modification to which the the standards are applicable. §60.14, paragraph (e)(5) states that the following will not be considered as a modification: *"the addition or use of any system or device whose primary funtion is the reduction of air pollutants, except when an emission control system is removed or replaced by a system which the Administrator determines to be less environmentally beneficial".*