

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

1947 Galileo Court, Suite 103; Davis, CA 95618

Emission Evaluation and Statement of Basis Addendum

ENGINEER:	Kyle Rohlfing	ATC #	<u>C-13-34</u>
		SIC Code #	<u>9223</u>
		UTM E	<u>589.4</u> km
		UTM N	<u>4241.6</u> km
FACILITY NAME:	California State Prison - Solano		
LOCATION:	The equipment is located at 2100 Peabody Road (Building 301) in Vacaville. The equipment is not located within 1,000 feet of a K-12 school and is not subject to the requirements of H&S 42301.6		
PROPOSAL:	The applicant is proposing to install a natural gas fired boiler for space heating.		
PROCESS:	Boiler: Space Heating		
FLOW DIAGRAM:	None Required		
EQUIPMENT:	One (1) 1.25 MMBtu/hr natural gas fired Rayback boiler, Model No. MVB H7-1253, Serial No. TBD		
CONTROL EQUIPMENT:	Low NOx Burner		

APPLICATION DATA:

	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
Total Heat Input Rating =	1.25 MMBtu/hr	BR	Applicant
Max. Operational Schedule:			
Daily =	24 hours	Hd	Applicant
1st Quarter =	2,160 hours	H1	Applicant
2nd Quarter =	2,184 hours	H2	Applicant
3rd Quarter =	2,208 hours	H3	Applicant
4th Quarter =	2,208 hours	H4	Applicant
Yearly =	8,760 hours	Hy	Applicant
Total Max Fuel Consumption			
Daily Throughput =	30,000 cubic feet	Td	BR * 10 ⁶ / HH * Hd
1st Quarter Throughput =	2.061 million cubic feet	T1	Applicant
2nd Quarter Throughput =	2.061 million cubic feet	T2	Applicant
3rd Quarter Throughput =	2.061 million cubic feet	T3	Applicant
4th Quarter Throughput =	2.061 million cubic feet	T4	Applicant
Yearly Throughput =	8.244 million cubic feet	Ty	Applicant

ASSUMPTIONS:

	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
CO Molecular Weight =	28.0 lb/mole	MWco	District
NO2 Molecular Weight =	46.0 lb/mole	MWno2	STAPPA/ALAPCO, Pg. 12-30 (5/30/91)
SO2 Molecular Weight =	64.0 lb/mole	MWso2	STAPPA/ALAPCO, Pg. 12-30 (5/30/91)
Higher Heating Value =	23,440 Btu/lb	HV	STAPPA/ALAPCO, Pg. 12-30 (5/30/91)
Fuel Btu Content =	1,000 Btu/scf	HH	District
F-Factor =	8,710 scf/MMBtu	FF	District
Standard Molar Volume =	385 scf/mole	MV	District
Flue Gas to Fuel Ratio =	0.618 moles/lb @ 3% O2	N	STAPPA/ALAPCO, Pg. 12-30 (5/30/91)

EMISSION FACTORS:

	<u>Units</u>	<u>Formula Symbol</u>	<u>Reference</u>
VOC	5.50 lb/MMscf	EFvoc	AP 42 Table 1.4-2; (7/98)
CO	84.00 lb/MMscf	EFco	AP 42 Table 1.4-1; (7/98)
NOx	24.26 lb/MMscf ¹	EFnox	20 PPM@3% O2
SOx	0.60 lb/MMscf	EFsox	AP 42 Table 1.4-2; (7/98) ²
PM10	7.60 lb/MMscf	EFpm	AP 42 Table 1.4-2; (7/98) ³

1) Conversion of the proposed emission factor [NOx, lb/MMScf] = [NOx, ppm @ 3% O2] * MWno2 * N * HH / HV

2) Assumes a 100% conversion of the sulfur in natural gas to SO2.

3) Assumes all particulate matter is less than 10 micrometer aerodynamic diameter.

EMISSION CALCULATIONS:

1. Determine VOC Emissions:

Max Daily VOC Emissions = $T_d * EF_{voc}$ =	0.2 lb/day
1st Quarter VOC Emissions = $T_1 * EF_{voc}$ =	11 lb/quarter
2nd Quarter VOC Emissions = $T_2 * EF_{voc}$ =	11 lb/quarter
3rd Quarter VOC Emissions = $T_3 * EF_{voc}$ =	11 lb/quarter
4th Quarter VOC Emissions = $T_4 * EF_{voc}$ =	11 lb/quarter
Max Yearly VOC Emissions = $(T_y * EF_{voc}) * (1 \text{ ton}/2,000 \text{ lb})$ =	0.02 tons/year

2. Determine CO Emissions:

Max. Daily CO Emissions = $T_d * EF_{co}$ =	2.5 lb/day
1st Quarter CO Emissions = $T_1 * EF_{co}$ =	173 lb/quarter
2nd Quarter CO Emissions = $T_2 * EF_{co}$ =	173 lb/quarter
3rd Quarter CO Emissions = $T_3 * EF_{co}$ =	173 lb/quarter
4th Quarter CO Emissions = $T_4 * EF_{co}$ =	173 lb/quarter
Max. Yearly CO Emissions = $(T_y * EF_{co}) * (1 \text{ ton}/2,000 \text{ lb})$ =	0.35 tons/year

3. Determine NOx Emissions:

Max. Hourly NOx Emissions = $T_d * EF_{nox} / H_d$ =	0.030 lb/hr
Max. Daily NOx Emissions = $T_d * EF_{nox}$ =	0.7 lb/day
1st Quarter NOx Emissions = $T_1 * EF_{nox}$ =	50 lb/quarter
2nd Quarter NOx Emissions = $T_2 * EF_{nox}$ =	50 lb/quarter
3rd Quarter NOx Emissions = $T_3 * EF_{nox}$ =	50 lb/quarter
4th Quarter NOx Emissions = $T_4 * EF_{nox}$ =	50 lb/quarter
Max. Yearly NOx Emissions = $(T_y * EF_{nox}) * (1 \text{ ton}/2,000 \text{ lb})$ =	0.10 tons/year

4. Determine SOx Emissions:

Max. Hourly SOx Emissions = $T_d * EF_{sox} / H_d$ =	0.001 lb/hr
Max. Daily SOx Emissions = $T_d * EF_{sox}$ =	0.0 lb/day
1st Quarter SOx Emissions = $T_1 * EF_{sox}$ =	1 lb/quarter
2nd Quarter SOx Emissions = $T_2 * EF_{sox}$ =	1 lb/quarter
3rd Quarter SOx Emissions = $T_3 * EF_{sox}$ =	1 lb/quarter
4th Quarter SOx Emissions = $T_4 * EF_{sox}$ =	1 lb/quarter
Max. Yearly SOx Emissions = $(T_y * EF_{sox}) * (1 \text{ ton}/2,000 \text{ lb})$ =	0.00 tons/year

5. Determine PM10 Emissions:

Max. Hourly PM10 Emissions = $T_d * EF_{pm} / H_d$ =	0.010 lb/hr
Max. Daily PM10 Emissions = $T_d * EF_{pm}$ =	0.2 lb/day
1st Quarter PM10 Emissions = $T_1 * EF_{pm}$ =	16 lb/quarter
2nd Quarter PM10 Emissions = $T_2 * EF_{pm}$ =	16 lb/quarter
3rd Quarter PM10 Emissions = $T_3 * EF_{pm}$ =	16 lb/quarter
4th Quarter PM10 Emissions = $T_4 * EF_{pm}$ =	16 lb/quarter
Max. Yearly PM10 Emissions = $(T_y * EF_{pm}) * (1 \text{ ton}/2,000 \text{ lb})$ =	0.03 tons/year

6. Determine Sulfur Emissions Concentration:

$$SO_x \% = [SO_x, \text{lb/hr}] * MV / MW_{so2} / BR / FF * 100\% = 0.00004 \%$$

7. Determine Propane Particulate Matter Emissions Concentration:

$$PM \text{ Conc.} = [PM_{10}, \text{lbs/hr}] / BR / FF * (7,000 \text{ grains/lb}) = 0.006 \text{ gr/dscf}$$

RULE & REGULATION COMPLIANCE EVALUATION:

District Rule 2.3-Ringelmann

The version of the rule used in this evaluation is the rule adopted on January 13, 2010, and is part of the California State Implementation Plan (SIP).

Rule Requirement #1:

A person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:

- As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart as published by the United States Bureau of Mines; or
- Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection a. of this condition. [District Rule 2.3]

Streamlining Demonstration: The requirements of the rule can be streamlined by the more descriptive opacity limit of

Rule 3.4 (New Source Review).

Streamlined Permit Condition:

The Permit Holder shall not discharge into the atmosphere from any single source of emissions whatsoever, any air contaminant for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:

- a. As dark or darker in shade than No. 1 on the Ringelmann Chart; or
- b. Greater than 20% opacity. [District Rule 3.4/C-13-34] (ATC Condition 4 /Title V Permit Condition II.A.7)

District Rule 2.5-Nuisance

The rule applies to all emission units at the stationary source. The version of the rule used in this evaluation is the rule adopted on October 1, 1971, and is part of the California SIP. The source is currently in compliance with the requirements of the rule.

It should be noted that this permit condition is Federally enforceable because it derives from District Rule 2.5 (Nuisance) that is currently part of the California SIP. The District is taking steps to remove Rule 2.5 from the SIP. Once the U.S. Environmental Protection Agency (EPA) has taken final action to remove District Rule 2.5 from the SIP, this permit condition will become state-enforceable only.

Rule Requirement #1 (Facility Wide Permit Condition):

The Permit Holder shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause to have a natural tendency to cause injury or damage to business or property. [District Rule 2.5] (Title V Permit Condition III.B.1)

District Rule 2.11 - Particulate Matter

The version of the rule used in this evaluation is the rule adopted on January 13, 2010, and is part of the California State Implementation Plan (SIP).

Rule Requirement #1:

<u>Allowable Rate (gr/dscf)</u>	<u>Emission Rate (gr/dscf)</u>	<u>Compliance</u>
0.1	0.006	Yes

Subsuming Demonstration: The emissions of particulate matter will be limited to the evaluated rates under Rule 3.4, New Source Review. The Rule 3.4 requirement of 0.006 gr/dscf will subsume the Rule 2.11 requirement of 0.1 gr/dscf.

Subsuming Permit Conditions:

The PM10 emissions from the boiler operating under P-21-13 shall not exceed 0.2 lb/day, 16 lb/1st calendar quarter, 16 lb/2nd calendar quarter, 16 lb/3rd calendar quarter, 16 lb/4th calendar quarter, and 0.03 tons/calendar year. [District Rule 3.4/C-13-34] (Title V Permit Condition II.A.1)

District Rule 2.12 Section A - Sulfur Compounds

The version of the rule used in this evaluation is the rule adopted on January 13, 2010, and is part of the California State Implementation Plan (SIP).

Rule Requirement #1:

A person shall not discharge into the atmosphere from any single source of emission whatsoever, any one or more of the following contaminants, in any state or combination thereof, in excess of the following concentrations at the point of discharge:

- a. Sulfur compounds calculated as sulfur dioxide (SO₂) 0.2%, by volume at standard conditions.

<u>Allowable Rate (% SO_x as SO₂)</u>	<u>Emission Rate (% SO_x as SO₂)</u>	<u>Compliance</u>
0.2	0.00004	Yes

Subsuming Demonstration: The above emission rate was calculated using the daily SO_x emission limit for Rule 3.4, New Source Review. The Rule 3.4 requirement of 0.00004% will subsume the Rule 2.11 requirement of 0.2%.

Subsuming Permit Condition:

The SO_x emissions from the boiler operating under P-21-13 shall not exceed negligible lb/day, 1 lb/1st calendar quarter, 1 lb/2nd calendar quarter, 1 lb/3rd calendar quarter, 1 lb/4th calendar quarter, and negligible tons/calendar year. [District Rule 3.4/C-13-34] (Title V Permit Condition II.A.1)

District Rule 2.16 - Fuel Burning or Power Generation

The rule applies to all fuel burning heat or power generating units operating at the stationary source. The version of the rule used in this evaluation is the rule adopted on October 1, 1971, and is part of the California SIP. The source is currently in compliance with the requirements of the rule.

<u>Pollutant</u>	<u>Allowable</u>	<u>Actual</u>	<u>Compliance</u>
SO _x	200 lb/hr	0.001 lb/hr	Yes
NO _x	140 lb/hr	0.030 lb/hr	Yes
PM	40 lb/hr	0.010 lb/hr	Yes

Subsuming Demonstration: The above emission rate were calculated using the daily SOx, Nox and PM10 emission limits for Rule 3.4, New Source Review. The Rule 3.4 requirements will subsume the Rule 2.11 requirements.

Subsuming Permit Conditions:

The SOx emissions from the boiler operating under P-21-13 shall not exceed negligible lb/day, 1 lb/1st calendar quarter, 1 lb/2nd calendar quarter, 1 lb/3rd calendar quarter, 1 lb/4th calendar quarter, and negligible tons/calendar year. [District Rule 3.4/C-13-34] (Title V Permit Condition II.A.1)

The NOx emissions from the boiler operating under P-21-13 shall not exceed 0.7 lb/day, 50 lb/1st calendar quarter, 50 lb/2nd calendar quarter, 50 lb/3rd calendar quarter, 50 lb/4th calendar quarter, and 0.10 tons/calendar year. [District Rule 3.4/C-13-34] (Title V Permit Condition II.A.1)

The PM10 emissions from the boiler operating under P-21-13 shall not exceed 0.2 lb/day, 16 lb/1st calendar quarter, 16 lb/2nd calendar quarter, 16 lb/3rd calendar quarter, 16 lb/4th calendar quarter, and 0.03 tons/calendar year. [District Rule 3.4/C-13-34] (Title V Permit Condition II.A.1)

District Rule 2.17-Circumvention

The rule is applicable to all emission units at the facility. The version of the rule used in this evaluation is the rule adopted on October 1, 1971, and is part of the California SIP. The source is currently in compliance with the requirements of the rule.

Rule Requirement #1 (Facility Wide Permit Condition)

The Permit Holder shall not build, erect, install or use any article, machine, equipment, or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26, Part 3 and Part 4 of the Health and Safety Code of the State of California or District Rules or Regulations. [District Rule 2.17] (Title V Permit Condition III.C.1)

District Rule 2.27-Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

This rule is not applicable, since the total rated heat input of the each of the units is less than 5 MMBtu/hr.

District Rule 3.1 - General Permit Requirements

The source is currently in compliance with the rule. The version of the rule used in this evaluation is the rule adopted on February 23, 1994, and is part of the California SIP. For reference, Page 67068 of the Federal Register, Vol. 69, No. 220 documents that the SIP approved version of Rule 3.1 was "deleted without replacement Rule 3.1, paragraphs 403 and 406." No part of the proposed Title V permit has references to either Section 403 (dealing with Denial of Applications) or Section 406 (dealing with Appeals).

Requirement #1 (Facility Wide Permit Condition) - Authority to Construct

No person shall build, erect, alter, or replace any facility, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants, without first obtaining an authorization to construct from the APCO as specified in Section 401 of District Rule 3.1. [District Rule 3.1, §301.1] (Title V Permit Condition III.D.1)

Requirements #2 & 3 (Facility Wide Permit Conditions) - Permit to Operate

No person shall operate any facility, article, machine, equipment, or other contrivance, for which an authorization to construct is required by District Rules and Regulations without first obtaining a written permit from the APCO. [District Rule 3.1, §302.1] (Title V Permit Condition III.D.2)

No person shall operate any facility, article, machine, equipment, or other contrivance, the use of which may cause the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants, without obtaining a permit from the APCO or the Hearing Board. [District Rule 3.1, §302.2] (Title V Permit Condition III.D.3)

Rule Requirement #4 (Facility Wide Permit Condition) - Transfer of Permits to Operate

The Permits to Operate shall not be transferable, by operation of law or otherwise, from one location to another or from one piece of equipment to another. It shall be the transferee's responsibility to inform the District on assumption of ownership or operating control of any item under a Permit to Operate from the District and for which a Permit to Operate will be required. For any such transfer as hereinabove described, said transferee shall submit an application for authorization in accordance with applicable District Rules. [District Rule 3.1, §304] (Title V Permit Condition III.D.4)

Rule Requirement #5 (Facility Wide Permit Condition) - Renewal of Permits to Operate

All Permits to Operate shall be renewable annually on the individual permit's anniversary date, commencing one year after the date of issuance. The Permit Holder shall pay a fee for the annual permit renewal. If the annual renewal fee is not paid by the specified due date, the District shall assess a penalty of not more than 50% of the fee due. Non-payment of renewal fees is grounds for permit cancellation. [District Rule 3.1, §305 and District Rule 4.1, §303 and §401] (Title V Permit Condition III.D.5)

Rule Requirement #6 (Facility Wide Permit Condition) - Conditional Approval of Permits to Operate

Commencing work or operation under any Permit to Operate shall be deemed acceptance of all of the conditions so specified.

[District Rule 3.1, §402] (Title V Permit Condition III.D.6)

Rule Requirement #7 (Facility Wide Permit Condition) - Permit to Operate Information

The Permit Holder shall submit an annual throughput/production report at the end of each calendar year for each Permit to Operate. This report is due no later than March 31 for the previous year. This report must include actual operating hours and actual amounts of materials processed (for materials that have process limits listed on the PTOs). Each type of material and each type of process must be listed separately. [District Rule 3.1, §405.1] (Title V Permit Condition III.D.9)

Requirement #8 (Facility Wide Permit Condition) - Breakdown, Malfunction, or Upset Notification

The owner or operator of any facility, article, machine, equipment, or other contrivance for which a permit to operate is in effect shall notify the District office whenever a breakdown, malfunction, or operational upset condition exists which would tend to increase emissions of air pollutants or whenever any operating condition contrary to any provision of the permit to operate exists. Such notice shall be given to the District no later than four hours after occurrence during regular workday hours or no later than two hours of the District workday following an occurrence not during regular District workday hours. The notice shall provide the District information as to causes and corrective action being taken, with a schedule for return to required operating conditions. [District Rule 3.1, §405.3] (Title V Permit Condition III.D.10)

Requirement #9 (Facility Wide Permit Condition) - Excess Emission Notification

The Permit Holder shall report all excess emissions to the District within ninety-six (96) hours of the occurrence of excess emissions. [District Rule 3.1, §405.4] (Title V Permit Condition II.D.11)

Rule Requirement #10 (Facility Wide Permit Condition) - Posting of Permits to Operate

The Permit Holder shall firmly affix all Permits to Operate, an approved facsimile, or other approved identification bearing the permit number upon the facility, article, machine, equipment, or other contrivance in such a manner as to be clearly visible and accessible. In the event that the facility, article, machine, equipment, or other contrivance is so constructed or operated that the Permit to Operate cannot be so placed, the Permit to Operate shall be mounted so as to be clearly visible in an accessible place within twenty (25) feet of the facility, article, machine, equipment, or other contrivance, or maintained readily available at all times on the operating premises. [District Rule 3.1, §408] (Title V Permit Condition III.D.12)

District Rule 3.4-New Source Review

PROPOSED EMISSION SUMMARY FOR NEW OR MODIFIED PERMIT

	<u>Daily</u>	<u>Yearly</u>	
VOC	0.2 lb	0.02 tons	Use for annual billing
CO	2.5 lb	0.35 tons	Use for annual billing
NOx	0.7 lb	0.10 tons	Use for annual billing
SOx	0.0 lb	0.00 tons	Use for annual billing
PM10	0.2 lb	0.03 tons	Use for annual billing

	<u>Quarterly</u>			
	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	11	11	11	11
CO (lb)	173	173	173	173
NOx (lb)	50	50	50	50
SOx (lb)	1	1	1	1
PM10 (lb)	16	16	16	16

Previous quarterly potential to emit for modified permit*

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	0	0	0	0
CO (lb)	0	0	0	0
NOx (lb)	0	0	0	0
SOx (lb)	0	0	0	0
PM10 (lb)	0	0	0	0

* This is a new emissions unit, therefore the previous potential to emit (PTE) is zero.

Historic potential emissions for modified permit*

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	0	0	0	0
CO (lb)	0	0	0	0
NOx (lb)	0	0	0	0
SOx (lb)	0	0	0	0
PM10 (lb)	0	0	0	0

* This is a new emissions unit, therefore the historic PTE is zero.

BACT

<u>Pollutant</u>	<u>Trigger (lb/day)</u>	<u>Proposed (lb/day)</u>	<u>Quarterly Increase</u>	<u>BACT</u>
VOC	10	0	Yes	No
CO	250	3	Yes	No
NOx	10	1	Yes	No
SOx	80	0	Yes	No
PM10	80	0	Yes	No

OFFSETS

Quarterly permitted emissions for other permits at the stationary source*

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	19,839	19,946	20,142	20,096
CO (lb)	44,306	44,612	44,918	44,918
NOx (lb)	35,187	35,515	35,781	35,781
SOx (lb)	499	507	510	510
PM10 (lb)	4,621	4,658	4,709	4,700

* See attached quarterly PTE determination

Quarterly permitted emissions for the stationary source including proposed emissions

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	19,851	19,958	20,154	20,108
CO (lb)	44,479	44,785	45,091	45,091
NOx (lb)	35,237	35,565	35,831	35,831
SOx (lb)	501	509	512	512
PM10 (lb)	4,637	4,674	4,725	4,716

Offset triggers

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	7,500	7,500	7,500	7,500
CO (lb)	49,500	49,500	49,500	49,500
NOx (lb)	7,500	7,500	7,500	7,500
SOx (lb)	13,650	13,650	13,650	13,650
PM10 (lb)	13,650	13,650	13,650	13,650

Quantity of offsets required*

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>
VOC (lb)	11	11	11	11
CO (lb)	0	0	0	0
NOx (lb)	50	50	50	50
SOx (lb)	0	0	0	0
PM10 (lb)	0	0	0	0

* ATC C-13-34 triggers VOC and NOx offsets in the above listed quantities. The sum of VOC offsets (including this project) that have been set "equal to zero" under the guidance of Policy 21 are: 29 lb/1st quarter, 29 lb/2nd quarter, 29 lb/3rd quarter, and 29 lb/4th quarter. The sum of NOx offsets (including this project) that have been set "equal to zero" under the guidance of Policy 21 are: 50 lb/1st quarter, 50 lb/2nd quarter, 50 lb/3rd quarter, and 50 lb/4th quarter. (see 5-Year Emission Aggregate worksheet - dated 04/15/2013). Per Policy 21, the source will not be required to provide offsets for ATC C-13-34 because the per-quarter quantities of VOC and NOx offsets that have been set "equal to zero" for the entire facility are below 50 lb/qtr for each pollutant in each quarter.

MAJOR MODIFICATION

Facility Total Potential to Emit*

37.00 TPY VOC
84.14 TPY CO
80.22 TPY NOx
1.11 TPY SOx
9.94 TPY PM10*

Major Source Thresholds

25 TPY VOC
100 TPY CO
25 TPY NOx
100 TPY SOx
100 TPY PM10

* See attached quarterly PTE determination. As of December 14, 2009 the District is required to evaluate emissions of PM2.5 under Appendix S to 40 CFR 51. Under Appendix S, the major source threshold for PM2.5 is 100 tpy, the same as the major source threshold for PM10. Since PM2.5 is a subset of PM10, and this facility is not a major source for PM10, it is not a major source for PM2.5 either.

Last five year emission aggregate*

0.81 TPY VOC
3.06 TPY CO
13.57 TPY NOx
0.01 TPY SOx

Major Modification Thresholds

25 TPY VOC
100 TPY CO
25 TPY NOx
40 TPY SOx

* See attached 5 year determination

Result: The proposed modification is not a major modification

PUBLIC NOTICE

"Increase in historic potential to emit"

11 lb VOC/quarter
173 lb CO/quarter
50 lb NOx/quarter
1 lb SOx/quarter
16 lb PM10/quarter

Exemption level for notification

7,500 lb VOC/quarter
49,500 lb CO/quarter
7,500 lb NOx/quarter
13,650 lb SOx/quarter
13,650 lb PM10/quarter

Result: Public notice is not required

1. Requirement:

The VOC emissions from the boiler operating under P-21-13 shall not exceed 0.2 lb/day, 11 lb/1st calendar quarter, 11 lb/2nd calendar quarter, 11 lb/3rd calendar quarter, 11 lb/4th calendar quarter, and 0.02 tons/calendar year. [District Rule 3.4/C-13-34] (Title V Condition II.A.1)

2. Requirement:

The CO emissions from the boiler operating under P-21-13 shall not exceed 2.5 lb/day, 173 lb/1st calendar quarter, 173 lb/2nd calendar quarter, 173 lb/3rd calendar quarter, 173 lb/4th calendar quarter, and 0.35 tons/calendar year. [District Rule 3.4/C-13-34] (Title V Condition II.A.1)

3. Requirement:

The NOx emissions from the boiler operating under P-21-13 shall not exceed 0.7 lb/day, 50 lb/1st calendar quarter, 50 lb/2nd calendar quarter, 50 lb/3rd calendar quarter, 50 lb/4th calendar quarter, and 0.10 tons/calendar year. [District Rule 3.4/C-13-34] (Title V Condition II.A.1)

4. Requirement:

The SOx emissions from the boiler operating under P-21-13 shall not exceed negligible lb/day, 1 lb/1st calendar quarter, 1 lb/2nd calendar quarter, 1 lb/3rd calendar quarter, 1 lb/4th calendar quarter, and negligible tons/calendar year. [District Rule 3.4/C-13-34] (Title V Condition II.A.1)

5. Requirement:

The PM10 emissions from the boiler operating under P-21-13 shall not exceed 0.2 lb/day, 16 lb/1st calendar quarter, 16 lb/2nd calendar quarter, 16 lb/3rd calendar quarter, 16 lb/4th calendar quarter, and 0.03 tons/calendar year. [District Rule 3.4/C-13-34] (Title V Condition II.A.1)

6. Requirement:

The Permit Holder shall not discharge into the atmosphere from any single source of emissions whatsoever, any air contaminant for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:

- a. As dark or darker than No. 1 on the Ringelmann Chart; or
- b. Greater than 20% opacity. [District Rule 3.4/C-13-34] (ATC Condition 4/Title V Permit Condition II.A.7)

7. Requirement:

The Permit Holder shall not release into the atmosphere from any single source operation, particulate matter in excess of 0.1 grains per cubic foot of exhaust. [District Rule 3.4/C-13-34] (ATC Condition 5/Title V Permit Condition II.A.8)

8. Requirement:

The Permit Holder shall only fire the boiler on Public Utility Commission (PUC) grade pipeline natural gas. [District Rule 3.4/C-13-34] (ATC Condition 6/Title V Permit Condition II.B.85)

9. Requirement:

The NOx emission concentration shall not exceed 20 parts per million by volume (ppmv) corrected to 3% O₂. [District Rule 3.4/C-13-34] (ATC Condition 7/Title V Permit Condition II.A.9)

10. Requirement:

The Permit Holder shall monitor and record the cumulative quarterly and annual natural gas fuel usage (in cubic feet). The records shall be updated quarterly and made available to the District upon request. [District Rule 3.4/C-13-34] (ATC Condition 8/Title V Permit Condition II.C.4)

District Rule 3.8-Federal Operating Permits

This rule implements the requirements of Title V of the Federal Clean Air Act (CAA) as amended in 1990 for permits to operate. Title V provides for the establishment of operating permit programs for sources which emit regulated air pollutants, including

attainment and non attainment pollutants at or above the major source levels. As requested by the source, ATC C-13-34 will be processed under the Enhanced New Source Review provisions of District Rule 3.4, Section 404 (see application). This emission evaluation will serve as the Statement of Basis documenting the proposed modifications to the federal operating permit.

Rule Requirement #1 - Significant Permit Modification

The District has determined that the proposed installation of a new emissions unit constitutes a significant modification to the Title V permit.

Rule Requirement #2 - Notification and Review of Proposed Decision

A significant permit modification requires that the District provide written notice, proposed permit, and District Analysis to the U.S. EPA, California Air Resources Board, all interested parties and agencies, and the source. The proposed permit will have a 30 day public review period and a concurrent 45 day regulatory review period. [District Rule 3.8, §409.1]

Rule Requirement #3 (Facility Wide Permit Condition) - Right of Entry

The permit shall require that the source allow the entry of the District, ARB, or U.S. EPA officials for the purpose of inspection and sampling, including:

- a. Inspection of the stationary source, including equipment, work practices, operations, and emissions-related activity;
- b. Inspection and duplication of records required by the permit to operate; and
- c. Source sampling or other monitoring activities. [District Rule 3.8, §302.10] (Title V Condition IV.A.1)

Rule Requirements #4 through #9 (Facility Wide Permit Conditions) - Compliance with Permit Conditions

The Permit Holder shall comply with all Title V permit conditions. [District Rule 3.8, §302.11(a)] (Title V Condition IV.B.1)

The permit does not convey property rights or exclusive privilege of any sort. [District Rule 3.8, §302.11(b)] (Title V Condition IV.B.2)

Non-compliance with any permit condition is grounds for permit termination, revocation and reissuance, modification, enforcement action, or denial of permit renewal. [District Rule 3.8, §302.11(c)] (Title V Condition IV.B.3)

The Permit Holder shall not use the "need to halt or reduce a permitted activity in order to maintain compliance" as a defense for non-compliance with any permit condition. [District Rule 3.8, §302.11(d)] (Title V Condition IV.B.4)

A pending permit action or notification of anticipated non-compliance does not stay any permit condition. [District Rule 3.8, §302.11(e)] (Title V Condition IV.B.5)

Within a reasonable time period, the Permit Holder shall furnish any information requested by the APCO, in writing, for the purpose of determining:

- a. Compliance with the permit; or
- b. Whether or not cause exists for a permit or enforcement action. [District Rule 3.8, §302.11(f)] (Title V Condition IV.B.6)

Rule Requirements #10 (Facility Wide Permit Conditions) - Emergency Provisions

Within two (2) weeks of an emergency event, the owner or operator shall submit to the District a properly signed contemporaneous log or other relevant evidence demonstrating that:

- a. An emergency occurred;
- b. The Permit Holder can identify the cause(s) of the emergency;
- c. The facility was being properly operated at the time of the emergency;
- d. All steps were taken to minimize the emissions resulting from the emergency;
- e. Within two (2) working days of the emergency event, the Permit Holder provided the District with a description of the emergency and any mitigating or corrective actions taken; and
- f. In any enforcement proceeding, the Permit Holder has the burden of proof for establishing that an emergency occurred. [District Rule 3.8, §302.12] (Title V Condition IV.C.1)

Rule Requirement #11 (Facility Wide Permit Condition) - Severability

If any provision, clause, sentence, paragraph, section or part of these conditions for any reason is judged to be unconstitutional or invalid, such judgment shall not affect or invalidate the remainder of these conditions. [District Rule 3.8, §302.13] (Title V Condition IV.D.1)

Rule Requirements #12 through #14 (Facility Wide Permit Conditions) - Compliance Certification

The compliance certification shall identify the basis for each permit term or condition (e.g., specify the emissions limitation, standard, or work practice) and a means of monitoring compliance with the term or condition consistent with Sections 302.5, 302.6, and 302.7 of Rule 3.8. [District Rule 3.8, §302.14(b)] (Title V Condition IV.E.2)

The compliance certification shall include a statement of the compliance status, whether compliance was continuous or intermittent, and method(s) used to determine compliance for the current time period and over the entire reporting period. [District Rule 3.8, §302.14(c)] (Title V Condition IV.E.3)

The compliance certification shall include any additional inspection, monitoring, or entry requirement that may be promulgated pursuant to Sections 114(a) and 504(b) of the Federal CAA. [District Rule 3.8, §302.14(d)] (Title V Condition IV.E.4)

Rule Requirement #15 (Facility Wide Permit Condition) - Permit Life

The Title V permit shall expire five (5) years from the date of issuance. Title V permit expiration terminates the stationary source's right to operate unless a timely and complete Title V permit application for renewal has been submitted. [District Rule 3.8, §302.15] (Title V Condition IV.F.1)

Rule Requirement #16 (Facility Wide Permit Condition) - Payment of Fees

An owner or operator shall pay the appropriate Title V permit fees on schedule. If fees are not paid on schedule, the permit is forfeited. Operation without a permit subjects the source to potential enforcement action by the District and the U.S. EPA pursuant to Section 502(a) of the CAA. [District Rule 3.8, §302.16] (Title V Condition IV.G.1)

Rule Requirement #17 (Facility Wide Permit Condition) - Permit Revision Exemption

No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in the permit. [District Rule 3.8, §302.22] (Title V Condition IV.H.1)

Rule Requirements #18 through #20 (Facility Wide Permit Conditions) - Application Requirements

An owner or operator shall submit a standard District application for renewal of the Title V permit, no earlier than eighteen 18 months and no later than six months before the expiration date of the current permit to operate. [District Rule 3.8, §402.2] (Title V Condition IV.I.1)

An owner or operator shall submit a standard District application for each emissions unit affected by a proposed permit revision that qualifies as a significant Title V permit modification. The application shall be submitted after obtaining any required preconstruction permits. Upon request by the APCO, the owner or operator shall submit copies of the latest preconstruction permit for each affected emissions unit. The emissions unit(s) shall not commence operation until the APCO approves the permit revision. [District Rule 3.8, §402.3] (Title V Condition IV.I.2)

An owner or operator shall submit a standard District application for each emissions unit affected by the proposed permit revision that qualifies as a minor permit modification. The application shall be submitted after obtaining any required preconstruction permits. The emissions unit(s) shall not commence operation until the APCO approves the permit revision. In the application, the owner or operator shall include the following:

- a. A description of the proposed permit revision, any change in emissions, and additional applicable federal requirements that will apply;
- b. Proposed permit terms and conditions; and
- c. A certification by a responsible official that the permit revision meets criteria for use of minor permit modification procedures and a request that such procedures be used. [District Rule 3.8, §402.4] (Title V Condition IV.I.3)

Rule Requirement #21 (Facility Wide Permit Condition) - Permit Reopening for Cause

Circumstances that are cause for reopening and revision of a permit include, but are not limited to, the following:

- a. The need to correct a material mistake or inaccurate statement;
- b. The need to revise or revoke a permit to operate to assure compliance with applicable federal requirements;
- c. The need to incorporate any new, revised, or additional applicable federal requirements, if the remaining authorized life of the permit is three (3) years or greater, no later than 18 months after the promulgation of such requirement (where less than three (3) years remain in the authorized life of the permit, the APCO shall incorporate the requirements into the permit to operate upon renewal); or
- d. Additional requirements promulgated pursuant to Title IV as they become applicable to any acid rain unit governed by the permit. [District Rule 3.8, §413.1] (Title V Condition IV.J.1)

Rule Requirement #22 (Facility Wide Permit Condition) - Monitoring, Testing and Analysis

The affected equipment is not subject to additional periodic monitoring or testing requirements. Therefore, no additional monitoring, testing, and analysis conditions are required.

Permit Condition

No permit condition is required.

Rule Requirements #23 and #24 (Facility Wide Permit Condition) - Recordkeeping

The Permit Holder shall record maintenance of all monitoring and support information required by any applicable federal requirement, including:

- a. Date, place, and time of sampling;
- b. Operating conditions at the time of sampling;
- c. Date, place, and method of analysis; and
- d. Results of the analysis. [District Rule 3.8, §302.6(a)] (Title V Condition IV.K.1)

The Permit Holder shall retain records of all required monitoring data and support information for a period of at least five (5) years

from the date of sample collection, measurement, report, or application. [District Rule 3.8, §302.6(b)] (Title V Condition IV.K.2)

Rule Requirements #25 through #27 (Facility Wide Permit Condition) - Reporting Requirements

Any deviation from permit requirements, including that attributable to upset conditions (as defined in the permit), shall be promptly reported to the APCO. For the purpose of this condition prompt means as soon as reasonably possible, but no later than 10 days after detection.[District Rule 3.8, §302.7(a)] (Title V Condition IV.L.1)

All reports of deviation from permit requirements shall include the probable cause of the deviation and any preventive or corrective action taken. [District Rule 3.8, §302.7(c)] (Title V Condition IV.L.3)

Each monitoring report shall be accompanied by a written statement from the responsible official that certifies the truth, accuracy, and completeness of the report. [District Rule 3.8, §302.7(e)] (Title V Condition IV.L.4)

Rule Requirement #28 (Facility Wide Permit Condition) - Reporting Requirements

Section 302.14 requires that every twelve (12) months the Responsible Official submit an accurate and complete compliance certification to the U.S. EPA and the District.

Subsuming Demonstration: The requirements of the rule have been subsumed with the requirements of Rule 3.4 which establish explicit certification periods and submittal deadlines.

Subsuming Permit Condition:

The responsible official shall submit a compliance certification to the U.S. EPA and the APCO every twelve (12) months unless required more frequently by an applicable requirement. The twelve (12) month period shall be January 1 through December 31, and shall be submitted by January 31 following the reporting period, unless otherwise approved in writing by the District. All compliance reports and other documents required to be submitted to the District by the responsible official shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. [District Rule 3.4, §409 and District Rule 3.8, §302.14(a)] (Title V Condition IV.E.1)

Rule Requirement #29 (Facility Wide Permit Condition) - Reporting Requirements

The SIP approved rule requires that every six (6) months the Responsible Official submit an accurate and complete semi-annual monitoring report to the U.S. EPA and the District.

Subsuming Demonstration: The requirements of the rule have been streamlined with the requirements of Rule 3.4 which establish explicit monitoring periods and submittal deadlines.

Subsuming Permit Condition:

A semi-annual monitoring report shall be submitted at least every six (6) consecutive months and shall identify any deviation from permit requirements, including that previously reported to the APCO pursuant to Section 302.7(a) of District Rule 3.8. The six (6) month periods shall be January 1 through June 30 and July 1 through December 31. The reports shall be submitted by July 30 and January 30 following each reporting period, respectively, unless otherwise approved in writing by the District. [District Rule 3.4, §409 and District Rule 3.8, §302.7(b)] (Title V Condition IV.L.2)

District Rule 3.20-Ozone Transport Mitigation

This emissions unit does emit VOCs or NOx, and therefore, per section 110.3, this application is not exempt from this rule.

Annual permitted emissions for the stationary source including proposed emissions

VOC (lb)	74,002	lbs
NOx (lb)	160,443	lbs

Annual permitted emissions for equipment which is exempt from Rule 3.4*

VOC (lb)	1,837	lbs
NOx (lb)	35,524	lbs

* From PTOs P-27-95, P-28-95, P-29-95, P-30-95, P-31-95, P-131-95, P-132-95, P-203-95, P-7-98(a), P-64-04, P-19-08, P-51-10, P-45-11, and P-5-12 for emergency engines

Post-project Stationary Source Potential to Emit (SSPE)

VOC (lb)	72,165	lbs
NOx (lb)	124,919	lbs

Because the post-project SSPE is greater than 10 tons (20,000) lbs per year for VOC or NOx, per section 301.1, calculations shall be performed to determine the quantity of mitigation required, if any.

Pre -project Stationary Source Potential to Emit (SSPE)

VOC (lb)	72,120	lbs
NOx (lb)	124,719	lbs

Quantity of offsets required by Rule 3.4

VOC (lb)	45	lbs
NOx (lb)	200	lbs

Quantity of Mitigation required by Rule 3.20

VOC (lb)	0	lbs
NOx (lb)	0	lbs

District Risk Management Plan and Risk Assessment Guidelines

Because the application results in an increase of hazardous air pollutant (HAP) emissions, a screening risk assessment (prioritization) will be performed. The RMPRAG requires that any new or modified emission unit satisfy Toxic-Best Available Control Technology (T-BACT), if its individual cancer risk is calculated to be between 1 and 10 in a million, or if its calculated hazardous index (acute or chronic) is greater than 1. The RMPRAG also considers any application or project having a total cancer risk above 10 in a million, unapproveable.

Pollutants	Emission Factor* lb/MMScf	Yearly Emissions		Screening Level (lb/year)	Less Than Screening
		(lb/year)	(g/s)		
Arsenic	2.0E-04	0.0004	5.93E-09	0.024	Yes
Benz[a]anthracene	1.8E-06	0.0000	5.34E-11	0.04	Yes
Benzene	2.1E-03	0.0043	6.23E-08	6.70	Yes
Benzo[a]pyrene	1.2E-06	0.0000	3.56E-11	0.04	Yes
Benzo[b]fluoranthene	1.8E-06	0.0000	5.34E-11	0.04	Yes
Benzo[k]fluoranthene	1.8E-06	0.0000	5.34E-11	0.04	Yes
Dibenz[a,h]anthracene	1.2E-06	0.0000	3.56E-11	0.04	Yes
Beryllium	1.2E-05	0.0000	3.56E-10	0.015	Yes
Cadmium	1.1E-03	0.0023	3.26E-08	0.046	Yes
Copper	8.5E-04	0.0018	2.52E-08	463.0	Yes
Dichlorobenzene	1.2E-03	0.0025	3.56E-08	68.0	Yes
Formaldehyde	7.5E-02	0.1546	2.22E-06	33.0	Yes
Lead	5.0E-04	0.0010	1.48E-08	29.00	Yes
Manganese	3.8E-04	0.0008	1.13E-08	77.0	Yes
Mercury	2.6E-04	0.0005	7.71E-09	57.9	Yes
n-Hexane	1.8E+00	3.7098	5.34E-05	83,000	Yes
Naphthalene	6.1E-04	0.0013	1.81E-08	270.0	Yes
Nickel	2.1E-03	0.0043	6.23E-08	0.73	Yes
Selenium	2.4E-05	0.0000	7.11E-10	96.5	Yes
Toluene	3.4E-03	0.0070	1.01E-07	38,600	Yes
Zinc	2.9E-02	0.0598	8.60E-07	6,760	Yes

* AP-42, Section 1.4 (7/98)

Since the emissions from the above HAPs are below the screening levels, no further toxic review is required of them.

COMMENTS: The application does not trigger BACT, T-BACT, offsets, or mitigation credits.

RECOMMENDATIONS: Perform the public and regulatory notice.

Engineer: 

Date: 7/23/13

Reviewed by: 

Date: 7/24/2013

generic.xls 12/14/2004 pah

New Source Review

Quarterly Potential To Emit Determination

NSR Version 8/13/97

Evaluation to be used on existing permits to obtain their quarterly PTE.

Engineer/Evaluator: Kyle Rohlfing

SIC Code # 9223

Facility Name: California Medical Facility, California State Prison - Solano, and Prison Industry Authority

Date of Initial Quarterly PTE Determination: 09/18/1998

Location: 1600 California Drive and 2100 Peabody Road; Vacaville, CA

Date of Previous Quarterly PTE Determination: 02/06/2012

Date of Current Quarterly PTE Determination: 04/11/2013

CURRENT APPLICATIONS:

ATC's
C-13-34

PTO's

Current Permits:	VOC Emissions				CO Emissions				NOx Emissions				SOx Emissions				PM10 Emissions											
	QTR 1 (lbs)	QTR 2 (lbs)	QTR 3 (lbs)	Annual (TPY)	QTR 1 (lbs)	QTR 2 (lbs)	QTR 3 (lbs)	Annual (TPY)	QTR 1 (lbs)	QTR 2 (lbs)	QTR 3 (lbs)	Annual (TPY)	QTR 1 (lbs)	QTR 2 (lbs)	QTR 3 (lbs)	Annual (TPY)	QTR 1 (lbs)	QTR 2 (lbs)	QTR 3 (lbs)	Annual (TPY)								
Prison Industry Authority																												
Coating: Metal Parts	577	588	618	1,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197	199	206	206				
Coating: Metal Parts	1,067	1,053	1,108	1,062	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	296	294	305	296				
Combustion Emission Cap	22	23	23	0.05	344	348	351	351	409	414	418	418	2	2	3	3	31	31	32	32	5	5	5	5				
Enclosed Steel Shot Blasting	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0				
Letterpress and Silkscreen Printing	130	130	130	0.24	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0				
Institutional Laundry	34	34	34	0.06	135	135	135	135	643	643	643	643	4	4	4	4	77	77	77	77	306	306	306	306				
Coating: Automotive	2,153	2,153	2,153	5.23	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	210	213	215	215				
Coating: Automotive	1,619	1,637	1,655	2.17	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1,122	1,126	1,146	1,137				
PIA Pre-Project SSPE (lb/year)	5,602	5,618	5,721	5,675	479	483	486	486	1,052	1,057	1,061	1,061	6	6	6	6	30	30	30	30	1,122	1,126	1,146	1,137				
PIA Post-Project SSPE (lb/year)	5,602	5,618	5,721	5,675	479	483	486	486	1,052	1,057	1,061	1,061	6	6	6	6	30	30	30	30	1,122	1,126	1,146	1,137				
No Emergency Equipment																												
PIA Pre-Project PIA Total PTE	5,602	5,618	5,721	5,675	479	483	486	486	1,052	1,057	1,061	1,061	6	6	6	6	30	30	30	30	1,122	1,126	1,146	1,137				
PIA Post-Project PIA Total PTE	5,602	5,618	5,721	5,675	479	483	486	486	1,052	1,057	1,061	1,061	6	6	6	6	30	30	30	30	1,122	1,126	1,146	1,137				
PIA Policy 25 Post-Project PIA Total PTE	5,602	5,618	5,721	5,675	479	483	486	486	1,052	1,057	1,061	1,061	6	6	6	6	30	30	30	30	1,122	1,126	1,146	1,137				
California State Prison - Solano																												
Coating: Wood Products	1,040	1,040	1,040	1,040	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0	0	0	0	0
Woodworking	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	185	187	189	189				
Coating: Metal Parts	819	819	819	819	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	185	187	189	189				
Boiler: Space Heating	11	11	11	0.02	173	173	173	173	50	50	50	50	1	1	1	1	1	1	1	1	16	16	16	16				
CSP Pre-Project SSPE (lb/year)	1,859	1,859	1,859	1,960	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	397	401	405	405				
CSP Post-Project SSPE (lb/year)	1,870	1,870	1,870	2,005	173	173	173	682	50	50	50	200	1	1	1	5	412	416	420	420	1,122	1,126	1,146	1,137				
Emergency IC Engine (960 BHP)	103	103	103	0.05	847	847	847	847	5,854	5,854	5,854	5,854	2	2	2	2	2	2	2	2	348	348	348	348				
Emergency IC Engine (940 BHP)	409	409	409	0.20	938	938	938	938	4,315	4,315	4,315	4,315	2	2	2	2	2	2	2	2	308	308	308	308				
Emergency IC Engine (960 BHP)	103	103	103	0.05	847	847	847	847	5,854	5,854	5,854	5,854	2	2	2	2	2	2	2	2	348	348	348	348				
Emergency IC Engine (940 BHP)	409	409	409	0.20	938	938	938	938	4,315	4,315	4,315	4,315	2	2	2	2	2	2	2	2	308	308	308	308				
Emergency IC Engine (750 BHP)	356	356	356	0.18	816	816	816	816	3,752	3,752	3,752	3,752	2	2	2	2	2	2	2	2	268	268	268	268				
Emergency IC Engine (415 BHP)	19	19	19	0.01	83	83	83	83	805	805	805	805	34	34	34	34	34	34	34	34	13	13	13	13				
Emergency IC Engine (165 BHP)	83	83	83	0.04	65	65	65	65	271	271	271	271	0	0	0	0	0	0	0	0	16	16	16	16				
CSP Pre-Project PIA Total PTE	3,342	3,342	3,342	3,342	4,534	4,534	4,534	4,534	25,166	25,166	25,166	25,166	45.44	45.44	45.44	45.44	45.44	45.44	45.44	45.44	2,006	2,010	2,015	2,015				
CSP Post-Project PIA Total PTE	3,353	3,353	3,353	3,353	4,707	4,707	4,707	4,707	25,216	25,216	25,216	25,216	46.68	46.68	46.68	46.68	46.68	46.68	46.68	46.68	2,022	2,026	2,030	2,030				
CSP Policy 25 Post-Project PIA Total PTE	1,870	1,870	1,870	1,870	173	173	173	173	50	50	50	50	50	50	50	50	50	50	50	50	412	416	420	420				
California Medical Facility																												
Coating: Metal Parts & Wood Products	4,069	4,069	4,069	4,069	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0	0	0	0	0
Non-Retail GDF	55	55	55	0.11	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0	0	0	0	0
Woodworking	6,671	6,644	6,717	6,717	20,802	21,033	21,265	21,265	20,505	20,733	20,961	20,961	310	314	317	317	310	314	317	317	605	605	605	605				
IC Engine Co-Generation	532	538	544	544	7,510	7,510	7,510	7,510	4,306	4,336	4,336	4,336	58	59	59	59	58	59	59	59	172	174	176	176				
Boiler (44.8 MMBtu/hr)	532	538	544	544	7,510	7,510	7,510	7,510	4,306	4,336	4,336	4,336	58	59	59	59	58	59	59	59	172	174	176	176				
Boiler (44.8 MMBtu/hr)	532	538	544	544	7,510	7,510	7,510	7,510	4,306	4,336	4,336	4,336	58	59	59	59	58	59	59	59	172	174	176	176				
Boiler (39.5 MMBtu/hr)	469	474	480	480	5,669	5,722	5,776	5,776	3,797	3,823	3,849	3,849	51	52	52	52	51	52	52	52	648	656	663	663				

Boiler (12.6 MMBtu/hr)	P-12-00		150	151	153	153	153	0.30	2,336	2,354	2,371	2,371	3,85	1,221	1,230	1,238	1,238	1,93	16	17	17	17	17	0.03	207	209	211	211	0.42	
	CMF Pre-Project SSPE (lb/year)	CMF Post-Project SSPE (lb/year)	12,378	12,469	12,562	12,562	48,060	43,827	44,129	44,432	44,432	44,432	159,560	34,135	34,458	34,720	34,720	120,840	493	493	501	504	504	1,920	3,102	3,132	3,132	3,159	12,440	
Emergency IC Engine (429 BHP)	P-131-95	9	9	9	9	0.00	18	18	18	18	18	0.01	89	100	100	100	0.05	2	2	2	2	2	2	0.00	9	9	9	9	9	0.00
Emergency IC Engine (469 BHP)	P-132-95	18	18	18	18	0.01	40	40	40	40	40	0.02	189	193	193	193	0.10	3	3	3	3	3	3	0.00	9	9	9	9	9	0.01
Emergency IC Engine (375 BHP)	P-203-95	15	15	15	15	0.01	36	36	36	36	36	0.02	165	165	165	165	0.08	5	5	5	5	5	5	0.00	10	10	10	10	10	0.01
Emergency IC Engine (2847 BHP)	P-7-98(a)	163	163	163	163	0.08	439	439	439	439	439	0.22	6,854	6,854	6,854	6,854	3.43	230	230	230	230	230	0.12	129	129	129	129	129	0.06	
Emergency IC Engine (1102 BHP)	P-19-08	58	58	58	58	0.03	30	30	30	30	30	0.13	262	262	262	262	0.13	0	0	0	0	0	0.00	5	5	5	5	5	0.02	
Emergency IC Engine (1207 BHP)	P-45-11	56	56	56	56	0.03	302	302	302	302	302	0.15	2,201	2,201	2,201	2,201	1.10	3	3	3	3	3	0.00	52	52	52	52	52	0.03	
Emergency IC Engine (480 BHP)	P-5-12	34	34	34	34	0.02	519	519	519	519	519	0.26	582	582	582	582	0.29	1	1	1	1	1	1	0.00	25	25	25	25	25	0.01
CMF Pre-Project PIA Total PTE		12,698	12,789	12,882	12,882	24.19	44,692	44,994	45,297	45,297	45,297	80.34	43,906	44,232	44,496	44,496	65.31	736	744	747	747	747	1.08	3,316	3,346	3,346	3,373	3,373	6.35	
CMF Post-Project PIA Total PTE		12,378	12,469	12,562	12,562	24.21	45,211	45,513	45,816	45,816	45,816	80.60	44,488	44,814	45,078	45,078	65.60	737	745	748	748	748	1.08	3,341	3,371	3,371	3,398	3,398	6.36	
CMF Policy 25 Post-Project PIA Total PTE		12,378	12,469	12,562	12,562	24.03	43,527	44,129	44,432	44,432	44,432	79.79	34,135	34,458	34,720	34,720	60.42	493	501	504	504	504	0.96	3,102	3,132	3,132	3,159	3,159	6.22	

Current Permits:	VOC Emissions				CO Emissions				NOx Emissions				SOx Emissions				PM10 Emissions								
	QTR 1	QTR 2	QTR 3	QTR 4	Annual (TPY)	QTR 1	QTR 2	QTR 3	QTR 4	Annual (TPY)	QTR 1	QTR 2	QTR 3	QTR 4	Annual (TPY)	QTR 1	QTR 2	QTR 3	QTR 4	Annual (TPY)	QTR 1	QTR 2	QTR 3	QTR 4	Annual (TPY)
FACILITY Pre-Project SSPE (lb/year)	19,839	19,946	20,142	20,096	72,120	44,306	44,612	44,918	44,918	161,434	35,187	35,515	35,781	35,781	124,719	499	507	510	510	1,950	4,621	4,668	4,709	4,700	17,915
FACILITY Post-Project SSPE (lb/year)	19,851	19,958	20,154	20,108	72,165	44,479	44,785	45,091	45,091	162,126	35,237	35,565	35,831	35,831	124,919	501	509	512	512	1,955	4,637	4,674	4,725	4,716	17,977
Emergency Equipment Post-Project PTE (lb/year)	1,837	1,837	1,837	1,837	7,388	5,918	5,918	5,918	5,918	23,672	35,519	35,522	35,524	35,524	141,075	290	290	290	290	1,166	1,849	1,849	1,849	1,849	7,388
FACILITY Pre-Project Total PTE	21,642	21,749	21,945	21,889	79,508	49,705	50,011	50,317	50,317	185,106	70,124	70,455	70,723	70,723	266,794	788	796	799	799	2,116	6,445	6,482	6,533	6,524	19,899
FACILITY Post-Project Total PTE	21,667	21,794	21,990	21,944	79,544	50,396	50,703	51,009	51,009	184,144	70,756	71,087	71,355	71,355	267,043	790	798	802	802	2,116	6,465	6,502	6,553	6,544	19,924
FACILITY Policy 25 Post-Project Total PTE	19,851	19,939	20,154	20,108	72,165	44,479	44,785	45,091	45,091	162,126	35,237	35,565	35,831	35,831	124,919	501	509	512	512	1,955	4,637	4,674	4,725	4,716	17,977

Facility Quarterly Potential to Emit

	Yearly			
	Quarter #1	Quarter #2	Quarter #3	Quarter #4
VOC	19,851	19,958	20,154	20,108
CO	44,479	44,785	45,091	45,091
NOx	35,237	35,565	35,831	35,831
SOx	501	509	512	512
PM10	4,637	4,674	4,725	4,716
				Yearly
				72,165
				124,919

OFFSET THRESHOLDS

	(lb/yr)			
	QTR 1	QTR 2	QTR 3	QTR 4
VOC	7,500	7,500	7,500	7,500
CO	49,500	49,500	49,500	49,500
NOx	7,500	7,500	7,500	7,500
SOx	13,650	13,650	13,650	13,650
PM10	13,650	13,650	13,650	13,650

Post-project Stationary Source Potential to Emit (SSPE)

VOC: 72,165
 NOx: 124,919

SSPE Comparison to Rule 3.20 Triggers

Annual: Above
 Above

COMMENTS: This quarterly PTE evaluation was updated for the California State Prison - Solano ATC application C-13-34 (Boiler: Space Heating).

Engineer: *Jyle Whiting*

Reviewed by: *Erin G. DeWain*

Date: *7/23/13*

Date: *7/24/2013*

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT
1947 Galileo Ct., Suite #103, Davis, Ca 95616

**New Source Review
Last Five Year Activity**

Evaluator: Kyle Rohlfing

SIC Code # 9223

Facility Name: CMF, CSP, and PIA

Date of Initial Determination: 03/21/2003

Date of Previous Determination: 02/06/2012

Date of Current Determination: 04/15/2013

Location: 1600 California Drive and 2100 Peabody Road; Vacaville, CA

Facility	Process	Issued Permits	Date PTO Issued	ATC	Date ATC Issued	Five (5) Year Emission Aggregate				
						VOC (tpy)	CO (tpy)	NOx (tpy)	SOx (tpy)	PM10 (tpy)
CSP	Coating: Automotive	P-53-88	-	-	-	2.88	0.00	0.00	0.00	0.06
PIA	Metal Grinding	P-48-97	11/05/1997	C-97-47	06/05/1997	0.00	0.00	0.00	0.00	0.06
CMF	Non-Retail GDF	P-42-90(a)	12/22/1997	C-97-112	11/17/1997	0.05	0.00	0.00	0.00	0.00
PIA	Institutional Laundry	P-55-97	12/22/1997	A-54-97	12/22/1997	0.06	0.23	1.11	0.01	0.13
PIA	Coating: Metal Parts	P-41-88(a)	10/06/1999	C-99-80	07/28/1999	0.68	0.34	1.60	0.01	1.05
CMF	Boiler (44.8 MMBtu/hr) ^a	P-9-00	05/26/2000	C-99-102	01/26/2000	0.00	0.00	0.00	0.00	0.00
CMF	Boiler (44.8 MMBtu/hr) ^a	P-10-00	05/26/2000	C-99-103	01/26/2000	0.00	0.00	0.00	0.00	0.00
CMF	Boiler (39.5 MMBtu/hr) ^a	P-11-00	05/26/2000	C-99-104	01/26/2000	0.00	0.00	0.00	0.00	0.00
CMF	Boiler (12.6 MMBtu/hr) ^b	P-12-00	05/26/2000	C-99-105	01/26/2000	0.00	0.00	0.00	0.00	0.00
CMF	IC Engine Co-Generation	P-130-95(a)	03/27/2003	C-03-46	03/25/2003	0.00	10.33	0.00	0.00	0.04
CMF	Emergency IC Engine	P-7-98(a)	04/24/2003	C-03-21	03/07/2003	0.01	0.06	2.68	0.11	0.01
CSP	Emergency IC Engine	P-64-04	09/28/2004	C-02-360	05/20/2003	0.01	0.04	0.40	0.02	0.01
PIA	Coating: Metal Parts ^c	P-41-88(a1)	11/12/2004	C-02-142	09/29/2003	0.00	0.36	0.00	0.00	0.00
PIA	Coating: Metal Parts ^c	P-22-04	03/26/2004	C-03-75	09/29/2003	-	-	-	-	-
CMF	Non-Retail GDF	P-42-90(a1)	09/09/2005	C-05-35	06/08/2005	0.02	0.00	0.00	0.00	0.00
PIA	Metal Grinding ^d	P-48-97(a)	-	C-05-93	CANCELED	-	-	-	-	-
PIA	Letterpress and Silkscreen	P-77-92(a)	-	C-06-64	05/21/2007	0.00	0.00	0.00	0.00	0.00
CMF	Emergency IC Engine	P-70-07	-	C-07-124	11/02/2007	0.03	0.13	1.09	0.00	0.02
PIA	Mcoating: Metal Parts	-	-	C-07-176	08/05/2008	0.00	0.00	0.00	0.00	0.00
CSP	Emergency IC Engine	-	-	C-08-258	01/07/2010	0.03	0.14	0.00	0.01	0.00
CMF	Non-Retail GDF	P-42-90(a2)	01/07/2010	C-09-53	03/24/2009	0.00	0.00	0.00	0.00	0.00
CMF	Non-Retail GDF	P-42-90(a3)	06/03/2010	C-09-159	02/01/2010	0.04	0.00	0.00	0.00	0.00
PIA	Coating: Automotive	P-53-88(a)	12/20/2010	C-10-30	10/29/2010	0.00	0.00	0.00	0.00	0.22
PIA	Letterpress and Silkscreen	P-77-92(a1)	10/05/2011	C-10-123	07/08/2011	0.00	0.00	0.00	0.00	0.00
CSP	Emergency IC Engine	P-27-95(a)	10/05/2011	C-11-13	07/26/2011	0.05	0.42	2.93	0.00	0.17
CSP	Emergency IC Engine	P-28-95(a)	10/05/2011	C-11-14	07/26/2011	0.20	0.47	2.16	0.00	0.15
CSP	Emergency IC Engine	P-29-95(a)	10/05/2011	C-11-15	07/26/2011	0.05	0.42	2.93	0.00	0.17
CSP	Emergency IC Engine	P-30-95(a)	10/05/2011	C-11-16	07/26/2011	0.20	0.47	2.16	0.00	0.15
CSP	Emergency IC Engine	P-31-95(a)	10/05/2011	C-11-17	07/26/2011	0.18	0.41	1.88	0.00	0.13
CMF	Emergency IC Engine	P-45-11	-	C-11-33	09/20/2011	0.03	0.15	1.10	0.00	0.03
CMF	Emergency IC Engine	P-5-12	-	C-12-14	06/08/2012	0.02	0.26	0.29	0.00	0.01
CSP	Boiler: Space Heating	P-21-13	-	C-13-34	PENDING	0.03	0.46	0.13	0.00	0.04
TOTAL						0.81	3.06	13.57	0.01	1.09

^a. Split of P-8-72(a) into C-99-102, C-99-103, and C-99-104 with no emission aggregate.

^b. PTO P-89-89 replaced with equipment authorized by C-99-105 with no emission aggregate.

^c. Split of P-41-88(a) into C-02-142 and C-03-75. Because C-02-142 and C-03-75 are part of a cap, the emission aggregate represented under C-02-142.

^d. ATC C-05-93 and PTO P-48-97 canceled on 3/8/2006; operation deemed exempt from air quality permitting.

COMMENTS:

These permits are sorted by the ATC issuance dates. According to Rule 3.4 Section 221, a major modification is calculated based on all creditable increases and decreases from the source over the period of five consecutive years before the application, including the calendar year of the most recent application. Since ATC applications C-13-34 was received on April 4, 2013, the applicable 5-year period ranges from Apr 2009 to Apr 2013.

Engineer:

Kyle Rohlfing

Date: 7/23/13

Reviewed by:

Ernest DeMuniz

Date: 7/24/2013