



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

**EMISSION OFFSET PROGRAM
FEDERAL EQUIVALENCE DEMONSTRATION**

Regulation 2-2-423

2010 Report for Years 2007, 2008 and 2009

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**EMISSION OFFSET PROGRAM
FEDERAL EQUIVALENCE DEMONSTRATION
2010 Report for Years 2007, 2008 and 2009**

Summary

This is the 2010 annual offset equivalence report required by Regulation 2-2-423. This report covers calendar years 2007, 2008 and 2009. The Bay Area Air Quality Management District's (District) emissions offset program¹ is shown by this report to be at least equivalent to federal offset requirements.

Federal offsets are required from new major facilities² and major modifications at major facilities³ for all non-attainment pollutants. As part of the District's New Source Review (NSR) program, emission offsets are required from both major and non-major facilities and modifications.

Background

Federal guidelines require Emission Reduction Credits (ERCs) to be real, permanent, quantifiable, enforceable, and surplus. To be surplus, ERCs are adjusted according to the following:

- A District rule that is required for federal attainment demonstration purposes;
- A District rule that has been approved into the State Implementation Plan (SIP);
- New Source Performance Standard (NSPS); and
- Maximum Achievable Control Technology (MACT) Standard⁴

The U.S. EPA recognizes that under the District program, ERCs generated at time of banking meet these federal guidelines. Since the District program does not adjust ERCs again at the time of use, EPA guidelines allow an alternative demonstration of offset equivalence. Pursuant to Regulation 2-2-423⁵, the District is required to make an annual demonstration that the quantity of offsets provided for all new or modified sources, less adjustments to those offsets for federal purposes, exceed the quantity of offsets required under federal law for new major facilities and major modifications at major facilities.

¹ Regulations 2-2 and 2-4 as adopted on June 15, 1994 and approved by U.S. EPA as part of the State Implementation Program (SIP) on January 26, 1999 (64 FR 3850)

² For the purposes of this demonstration, a major facility is a facility that has the potential to emit 100 tons per year or more of POC or NOx.

³ For the purposes of this demonstration, a major modification of a major facility is a modification at an existing major facility that will increase the facility's emissions by 40 tons per year of POC or NOx (Regulation 2-1-204).

⁴ National Emission Standards for Hazardous Air Pollutants (NESHAPS) require application of technology-based emissions standards referred to as Maximum Achievable Control Technology (MACT). Post-1990 NESHAPS are also referred to as MACT standards. (Regulation 2-2-221)

⁵ See Appendix A

District staff makes an annual demonstration, with a 3-year look back, that the District's emission offsets program exceeds federal offset requirements for non-attainment pollutants from new major facilities and major modifications at major facilities. For the District, the applicable non-attainment pollutants are precursor organic compounds (POC) and oxides of nitrogen (NO_x).

The District requires more facilities to obtain offsets than are required by federal law. Under federal law, offsets are required at a 1.15 to 1.0 ratio for a new major facility or a major modification at an existing major facility. In addition to these federal requirements, District Regulation 2-2-302 requires offsets at a 1.15 to 1.0 ratio for all facilities with a potential to emit (PTE) of 35 tons per year or more of NO_x or POC. The District also requires offsets at a 1.0 to 1.0 ratio for all facilities with a PTE between 10 and 35 tons per year of NO_x or POC. For this latter category, the District provides the POC and NO_x credits from the District Small Facility Banking Account (SFBA).

Equivalence Procedure

District staff uses the following procedure to determine offset equivalence. In the ensuing discussion, the term *major NSR project* is used to collectively refer to a new major facility and a major modification of an existing major facility.

- Identify any new major NSR project that began operating in the most recent year (2009) of the reporting period. If a major NSR project began operating in a previous year (2007 or 2008), that project has already been addressed in a prior report and does not need to be re-evaluated in this report.
- If there is no major NSR project that began operating in 2009, then there is no new analysis needed to demonstrate equivalence. If there is a new major NSR project, continue with the procedure, as follows.
- For each major NSR project identified in the first step, review the permit application to determine from which banking certificate(s) the emission reduction credits (ERCs) were provided.
- Review original banking application(s) for ERCs that were used to offset the major NSR project. Determine the basis for the original ERCs, and any federally enforceable rules in effect at the time of deposit.
- RACT-adjust the original ERCs for the following types of federally enforceable rules that were in effect at the time of use of the ERCs (when the source started operating, or when the P/O was issued for the major NSR project):
 - District rule that is required for federal attainment demonstration purposes;
 - New or modified District rule that has been adopted into the SIP;
 - New Source Performance Standard (NSPS) rule;
 - Maximum Achievable Control Technology (MACT) rule.

- For each major NSR project, subtract the RACT-adjusted ERCs from the total offsets needed, to determine the offset shortfall for that project. If there is no offset shortfall, then no further analysis is needed.
- If an offset shortfall is identified for a major-NSR project, compile a list of all permit applications for which offsets were required. This includes both major and non-major new source review (NSR) projects.
- Review ERCs and contemporaneous on-site emission reductions⁶ from non-major projects. RACT-adjust these reductions as discussed above.
- Equivalence is achieved when RACT-adjusted offsets from non-major projects meet or exceed the offset shortfall from major-NSR projects.

New Major Facilities and Major Modifications During the Reporting Period

Between 2007 and 2009 one new major facility began operating. This was Gateway Generating Station in Antioch, CA (Plant No. 18143; Application No. 1000). This facility began commissioning in late 2008, and began commercial production on Jan. 4, 2009. The District has not yet issued a Permit to Operate to Gateway because of an administrative problem with extending their federal PSD permit. The facility is currently operating under an Enforcement Agreement with the District, and will be subject to a Consent Decree from EPA. Even though the Permit to Operate has not been issued, this facility operated the majority of 2009. For that reason, the District is including the Gateway project in this 2010 Federal Equivalence Demonstration Report.

Offset Equivalence Demonstration

Table 1 summarizes the NOx and POC offsets that the Gateway Generating Station provided from Banking Certificate 693, as part of Application No. 1000.

Table 1 – Gateway Generating Station NOx & POC Offsets (tons/year)

	<i>Emission Increase</i>	<i>Offset Ratio</i>	<i>Total Offsets</i>
NOx	174.3	1.15:1.0	200.5
POC	46.6	1.15:1.0	53.6

Banking Certificate 693 was for emission reductions that were originally approved under Banking Certificates 106 and 240. Table 2 summarizes the original ERCs, including the hypothetical RACT adjustments. It shows the original basis at the time of credit generation and the projected RACT adjustment at time of credit use. Details of the RACT adjustment analysis for Banking Certificate 693 are provided in Appendix B.

⁶ A contemporaneous on site emission reduction is a verified reduction that has not been banked but would have qualified for banking.

Table 2 – RACT Adjustments to Banking Certificate 693 (Originally B#106 & 240)

Original B#	Original ERCs (ton/yr)	RACT Adjustment ⁽¹⁾	RACT-Adjusted Total	Original ERC Basis	Basis for RACT-Adjustment	Emission Reduction Location	Banking App. No.
NOx							
B# 106	19.6	10.6	9.0	Source test: 67 ppm @ 3% O ₂	Reg. 9-7-301, 40 ppm @ 3% O ₂	Gaylord Container Antioch, CA	2328
B#240	586.6	288.6	298.0	Lime kiln: Source test 233 ppm @ 3% Boiler: Source test 394 ppm @ 3%O ₂ Recovery furnace: 36 ppm at 3%O ₂	Lime kiln: No change to a rule affecting NOx. Kilns are exempt from Reg. 9-7 Boiler: 30 ppm gas, 40 ppm wood Recovery furnace: No change to Reg. 9-7 NOx limit 40 ppm	Gaylord Container Antioch, CA	9651
			307.0				
POC							
B#106	23.5	4.3	19.2	Source test: 64 ppm	No change to Reg. 8-2 POC limit	Gaylord Container Antioch, CA	2328
B#240	117.5	0	117.5	Lime kiln: Source test 25.7 ppm UNOX System: Source test 1.3 lb/day Boiler: Source test 36 ppm Recovery furnace: 64 ppm	Lime kiln: No change to Reg. 8-2, 300 ppm limit UNOX System: No change to Reg. 8-2, 15 lb/day limit Boiler: No change to Reg. 8-2, 300 ppm limit Recovery furnace: No change to Reg. 8-2, 300 ppm limit	Gaylord Container Antioch, CA	9651
			136.7				

Note 1: For B# 106, the RACT adjustment column includes both RACT adjustments and corrections (due to typo's) to the original amount of ERCs issued. NOx = 6.0 TPY RACT + 4.6 TPY correction = 10.6 TPY. POC = 0 TPY RACT + 4.3 TPY correction = 4.3 TPY.

Conclusion

For the reporting period 2007 to 2009 there was only one major NSR project (Gateway App. No. 1000) that began operating. For that project, the RACT-adjusted ERCs for Banking Certificate #693 are sufficient to cover the permitted emission increases. Therefore, the District's offset program continues to be equivalent to federal requirements for the current reporting period.

APPENDIX A

Regulation 2-2-423

2-2-423 Demonstration of Offset Program Equivalence: By March 1 of each year, the District shall submit to EPA a demonstration that offsets provided for all new and modified sources within the District, less adjustments to those offsets for federal purposes occurring between credit generation and use, exceed federal offset requirements for new major sources or major modifications at major stationary sources. Adjustment to emission reductions for federal purposes will be required if any of the following occur between the time the credit is generated and the time the credit is used:

- 423.1 BAAQMD adopts a relevant measure or rule that is required for purposes of federal attainment demonstration requirements.
- 423.2 A relevant rule or measure is approved into the State Implementation Plan applicable in the BAAQMD;
- 423.3 EPA promulgates a relevant final rulemaking for either a New Source Performance Standard or a Maximum Achievable Control Technology Standard.

The demonstration shall include:

- 423.4 Emission increases represented by all authorities to construct new major facilities and major modifications at major facilities issued during the three calendar years preceding the demonstration date;
- 423.5 A list of all emission reductions used to offset those emission increases;
- 423.6 The emission baselines that were used to calculate the emission reduction;
- 423.7 The source type, size and category that had generated the emission reduction credit;
- 423.8 All relevant rules that have been adopted or promulgated since the emission reduction had occurred.
- 423.9 Adjustments to emission reduction for federal purposes for all affected projects.
- 423.10 All of the above for as many non-major projects as are needed to demonstrate equivalence.

If the analysis fails to make the required demonstration, the District shall provide sufficient offsets to make up the difference out of the small facility bank. If the small facility bank does not contain the necessary surplus emission reductions, the District shall obtain the necessary surplus emission reductions.

APPENDIX B

ERC RACT Adjustment for B# 693

See the following ERC RACT Adjustment Reports for the banking certificates identified above in Table 2.

B693 – Gaylord Container (B106 & B240)

ERC RACT Adjustments for B# 693

These ERCs are for reductions that occurred at:

Plant Name: Gaylord Container Corp

City: Antioch

PN: 3257

Original Banking Certificate No(s): 106, 240

Original Banking Application No(s): 2328, 9651

Summary of RACT Adjustments (TPY)

Banking Certificate 106

Pollutant	Original ERCs	Corrected ERCs	RACT Reduction	Revised Total
POC	23.5	19.2	0	19.2
NOx	19.6	15.0	6	9.0

Banking Certificate 240

Pollutant	Original ERCs	RACT Reduction	Revised Total
POC	117.5	0	117.5
NOx	586.6	288.6	298.0

Background for AN 2328 (B106)

This application was for NOx, CO, POC, PM10, and SO2 emission reductions from the 1990 shutdown of the No.3 Recovery Furnace. The No. 3 Recovery Furnace was damaged beyond repair in July 1987 and had been operating since 1960. The source was used to recover and burn black liquor, which is a byproduct of the Kraft process in the production of paper pulp.

The NOx emission was based on source tests of the new No. 4 Recovery Furnace, as the new furnace's emission factor was determined to be RACT at that time. The POC emission was based on an older source test of the No. 3 Recovery Furnace.

There was an error in entering the offset amounts in the banking certificate:

Pollutant	TPY Recommended in Permit Evaluation	TPY Entered in Banking Certificate	Difference
NOx	15.0	19.6	-4.6
CO	23.5	0.3	23.2
Particulates	22.6	15.0	7.6
POC	19.2	23.5	-4.3
SO2	0.3	22.6	-22.3

The table above for B106 includes a correction to the amount of ERCs that should have been issued under B106.

Background for AN 9651 (B240)

This application was for NOx, CO, POC, PM10, and SO2 emission reductions from the 1991 shutdown of the Kraft Pulp Mill. The mill was originally constructed in 1949. The mill debarked, reduced to chips, and then cooked logs in a solution of sodium hydroxide and sodium sulfide to separate cellulose fiber from the lignin and other organic materials in wood. The spent cooking liquor containing the dissolved cellulose fibers of the wood is called black liquor, which is sent to a recovery furnace as described above for B106.

BAAQMD Data Bank Information (B106)

Banking Application

Application: 2328
 Plant #: 3257 << POC= 1.9 ,NOx= .0tons/yr>>
 Plant name: Gaylord Container Corporation
 Closed: 08/01/96
 Location: 1779 Wilbur Avenue, Antioch, CA 94509
 UTM coordinates: 608.04(Lon) 4207.9(Lat)
 Banking #: 106
 Project title: Banking
 Plant Contact: James Winter, Process Engineer
 Mailing address: P O Box 10, Antioch, CA 94509
 Telephone: (510) 779-3375
 Engineer: Craig S Ullery [394]
 Folder : 3rd Floor microfiche
 Received: 12/30/88 . . Completeness review due by: 01/28/89
 Final disposition: Waived A/C 03/12/90
 Emission increase: none

Source List

Source #	Description
6	No. 3 Recovery Furnace

Banking Certificate(s)

Banking Certificate: 406
 Application no: 14151
 Final Disposition: Certificate Issued 10/07/94
 Reduction Location: Gaylord Container Corporation [Antioch]
 Certificate owner: Gaylord Container Corporation [plant 3257]
 Transfer from #: 106
 Original cert.#: 106

tons per year	PM	POC	NOX	SO2	CO	NPOC	PM10
Requested	15.000	.000	.000	.000	.000	.000	.000
Approved	.000	13.500	19.600	22.600	.300	.000	15.000
Applic: 1708							
To B#: 693	.000	13.500	19.600	22.600	.300	.000	15.000

Balance	.000	.000	.000	.000	.000	.000	.000
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Banking Certificate: 106

Application no: 2328
 Final Disposition: Certificate Issued 03/12/90
 Reduction Location: Gaylord Container Corporation [Antioch]
 Certificate owner: Gaylord Container Corporation [plant 3257]

tons per year	PM	POC	NOX	S02	CO	NPOC	PM10
Requested	81.000	42.000	63.200	45.000	1298.000	42.000	.000
Approved	15.000	23.500	19.600	22.600	.300	.000	.000
Applic:14151							
To B#: 407	.000	10.000	.000	.000	.000	.000	.000
Applic:14151							
To B#: 406	15.000	13.500	19.600	22.600	.300	.000	.000
Balance	.000	.000	.000	.000	.000	.000	.000

RACT Analysis (B106)

General Paper & Pulp Rule Applicability

BAAQMD Reg. 12-1 MISCELLANEOUS Standards Of Performance - Kraft Pulp Mills

Date of rule at time of deposit: July 16, 1980
Date of rule in SIP at time of use: not on SIP list
 There are no requirements for POC or NOx emissions.

NSPS Subpart BB Kraft Pulp Mills

There are no requirements for POC or NOx emissions.

NESHAP Subpart S Pulp and Paper Industry

There are no requirements for POC or NOx emissions.

POC Baseline

The emission was based on the October 1 and 4, 1971 source tests performed by the District. The source test results gave a POC emission rate of 64 ppmv or 8.22 pounds per hour. Adjusting for the source test process rate of 64.5 tons per hour with the average flow rate, the POC credits were calculated to be 19.2 tons per year.

POC Rule Applicability

BAAQMD Reg. 8-2 Miscellaneous Operations

Date of rule at time of deposit: March 17, 1982
Date of rule in SIP at time of use: June 15, 1994
 The emission standard in Section 8-2-301 did not change. This section limits organic emissions to either 15 lb/day or 300 ppm total carbon as C₁.

POC RACT Reduction

The calculated POC offsets for the No. 3 Recovery Furnace was based on a source test of 64 ppmv, which complied with the 300 ppm Regulation 8-2 limit. A POC RACT adjustment is not needed for B106 since this rule has not changed since the emission reductions were originally banked.

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NOx Baseline

No firing rates were available so the throughput of 300,700 tons per year (34.33 tons per hour) of black liquor was used. The emission factor is based from the 8/29/1989 source test performed on the new No. 4 Recovery Furnace. The results of the test gave a NOx emission rate of 67 ppmv @ 3% oxygen or 4.98 pounds per hour for an input flow rate of 125 gpm and the solids flow rate. The black liquor assumptions used in the source test calculations were 68% solids and a specific gravity of 12.5 pounds per gallon. Laboratory results from Gaylord show that the black liquor has a moisture content of 36.32%.

NOx credits = 15.0 tons per year

NOx Rule Applicability

BAAQMD Reg. 9-7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

*Date of rule at time of deposit: rule did not exist
Date of rule in SIP at time of use: 9/15/1993 (adopted into SIP on 12/15/1997)
Difference between the 2 versions of the rule -- N/A*

NOx RACT Reduction

Since there was no NOx standard at the time of deposit, the concentration at the time of deposit is compared to the Regulation 9-7-301 standard of 40 ppmv, dry at 3% oxygen for non-gaseous fuel.

$$\left(\frac{40 \text{ ppmv}}{67 \text{ ppmv}}\right) * (15.0 \text{ tpy}) = 9.0 \text{ tpy}$$

A NOx RACT adjustment of 15.0 – 9.0 = 6.0 tpy should be made to the banking certificate.

BAAQMD Data Bank Information (B240)

Banking Application

Date: 13Jul09
Application: 9651
Plant #: 3257 << POC= 1.9 ,NOx= .0tons/yr>>
Plant name: Gaylord Container Corporation
Closed: 08/01/96
Location: 1779 Wilbur Avenue, Antioch, CA 94509
UTM coordinates: 608.04(Lon) 4207.9(Lat)
Banking #: 240
Project title: Banking: shutdown of S# 10,11,28-32,35,49

Plant Contact: James Winter, Process Engineer
 Mailing address: P O Box 10, Antioch, CA 94509
 Telephone: (510) 779-3375
 Engineer: Weyman Lee [587]
 Received: 08/26/92 . . Completeness review due by: 09/24/92
 Final disposition: Grant/Issue 07/15/93
 Emission increase: none

Source List

Source #	Description
10	#1 Lime Kiln
11	#2 Lime Kiln
28	North UNOX reactor
29	South UNOX reactor
30	North UNOX Clarifier
31	South UNOX Clarifier
32	UNOX Surge Basin
35	Wood Waste Boiler #1
49	#4 Recovery Furnace

Banking Certificate(s)

Banking Certificate: 384

Application no: 12835
 Final Disposition: Certificate Issued 09/28/94
 Reduction Location: Gaylord Container Corporation [Antioch]
 Certificate owner: Gaylord Container Corporation [plant 2180]
 Transfer from #: 375
 Original cert.#: 240

tons per year	PM	POC	NOX	S02	CO	NPOC	PM10
Requested	.000	.000	.000	.000	.000	.000	.000
Approved	.000	112.380	417.960	179.300	450.300	.000	182.300
Applic: 1708							
To B#: 693	.000	112.380	417.960	179.300	450.300	.000	182.300
Balance	.000	.000	.000	.000	.000	.000	.000

list banking NUMBER, (or enter ? for other options) >> 240

Banking Certificate: 240

Application no: 9651
 Final Disposition: Certificate Issued 07/15/93
 Reduction Location: Gaylord Container Corporation [Antioch]
 Certificate owner: Gaylord Container Corporation [plant 3257]

tons per year	PM	POC	NOX	S02	CO	NPOC	PM10
Requested	811.200	202.000	544.300	31.400	1965.000	.000	.000
Approved	.000	117.500	586.600	179.300	450.300	.000	182.300
Applic:11964 To B#: 319	.000	117.500	442.500	179.300	450.300	.000	182.300
Applic:11964 To B#: 320	.000	.000	144.100	.000	.000	.000	.000
Balance	.000	.000	.000	.000	.000	.000	.000

RACT Analysis (B240)

General Paper & Pulp Rule Applicability

BAAQMD Reg. 12-1 MISCELLANEOUS Standards Of Performance - Kraft Pulp Mills

Date of rule at time of deposit: July 16, 1980

Date of rule in SIP at time of use: not on SIP list

There are no requirements for POC or NOx emissions.

NSPS Subpart BB Kraft Pulp Mills

There are no requirements for POC or NOx emissions.

NESHAP Subpart S Pulp and Paper Industry

There are no requirements for POC or NOx emissions.

NESHAP Subpart AAAAA Lime Manufacturing

There are no requirements for POC or NOx emissions.

POC Baseline

S-10 and S-11 Lime Kilns:

The emission was based on a November 6, 1986 source test. The source test results gave a POC emission rate of 25.7 ppmv @ 3% oxygen. Using the averaged fuel flow rates for the banking period, the POC credits were calculated to be 2.29 tons per year.

S-28, 29, 30, 31, 32 UNOX system:

The emission was based on a 1978 source tests on the UNOX system. The emissions for all five sources were calculated to be 1.27 lb/day or 0.23 tons per year.

S-35 Boiler:

The emission of 35.9 tons per year was based on a August, 1976 source test. The source test gave a POC emission rate of 36 ppmv @ 7% O2 or 46 ppmv @ 3% O2

S-49 No. 4 Recovery Furnace:

When S-49 was permitted along with a dissolving tank and two boilers, their POC emission was offset by the shutdown of the plant's No. 1 and No. 2 recovery furnaces. 79.1 tons per year of the

POC offset from the shutdown of the No. 1 and No. 2 recovery furnaces were used to offset S-49's POC emission.

POC Rule Applicability

BAAQMD Reg. 8-2 Miscellaneous Operations

Date of rule at time of deposit: March 17, 1982

Date of rule in SIP at time of use: June 15, 1994

The emission standard in Section 8-2-301 did not change. This section limits organic emissions to either 15 lb/day or 300 ppm total carbon as C₁.

POC RACT Reduction

S-10 and S-11 Lime Kilns:

With POC source test result of 25.7 ppmv, these sources met the 300 ppm organic emission limit of Regulation 8-2.

S-28, 29, 30, 31, 32 UNOX system:

The offsets for these sources calculated a combined emission of 1.27 lb/day. These sources met the 15 lb/day organic emission limit of Regulation 8-2.

S-35 Boiler:

With a POC source test result of 36 ppmv, this source met the 300 ppm organic emission limit of Regulation 8-2.

S-49 No. 4 Recovery Furnace:

The plant originally had three recovery furnaces, No. 1, No. 2, and No. 3. From the RACT analysis for B106 above, No. 3 furnace was source tested to have a POC emission of 64 ppm (8.22 pounds per hour). The POC emission from the No. 1 and No. 2 furnaces is expected to be similar to that of the No. 3 furnace. Thus, each furnace met the 300 ppm organic emission limit of Regulation 8-2.

A POC RACT adjustment is not needed for B240 since these sources met the requirement of Regulation 8-2 and this rule has not changed since the emission reductions were originally banked.

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NOx Baseline

S-10 and S-11 Lime Kilns:

The emission was based on a November 6, 1986 source test. The source test results gave a NOx emission rate of 233 ppmv @ 3% oxygen. Using the averaged fuel flow rates for the banking period, the NOx credits were calculated to be 55.6 tons per year.

S-28, 29, 30, 31, 32 UNOX system:

There were no NOx emission calculated for these sources.

S-35 Boiler:

The emission of 393 tons per year was calculated in AN 27440 to be the amount needed from the shutdown of No. 1 and No.2 Power Boilers. An October 16, 1978 source test showed NOx emission of 394 ppm @ 3% oxygen in AN 27148.

S-49 No. 4 Recovery Furnace:

When S-49 was permitted along with a dissolving tank and two boilers, their NOx emission was offset by the shutdown of the plant's No. 1 and No. 2 recovery furnaces in AN 27440. 138 tons per year of the NOx offset from the shutdown of the No. 1 and No. 2 recovery furnaces were used to offset S-49's NOx emission.

NOx Rule Applicability

BAAQMD Reg. 9-7: Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters

Date of rule at time of deposit: rule did not exist

Date of rule in SIP at time of use: 9/15/1993 (adopted into SIP on 12/15/1997)

Difference between the 2 versions of the rule – A new NOx limit of 40 ppmv at 3% oxygen for non-gaseous fuels was adopted in Regulation 9-7.

Regulation 9-7 applies to the S-35 Boiler and S-49 Recovery Furnace.

NOx RACT Reduction

S-10 and S-11 Lime Kilns:

Since there have not been any NOx RACT standards set for lime kilns in the District, NSPS, or NESHAPS regulations, the 55.6 tons per year offsets does not need to be RACT adjusted. Kilns are exempt from Regulation 9-7 per section 9-7-110.6.

S-28, 29, 30, 31, 32 UNOX system:

There was no NOx emission calculated for these sources.

S-35 Boiler:

The offset emission of 393 tons per year was based on burning 1,740,000 MMBTU/yr of wood and 2,900,000 MMBTU/yr of natural gas during the banking period. The SIP Regulation 9-7 has a 30 ppmv limit for gas fired boilers and 40 ppmv for non-gas fired boilers. Using the ppmv to lb/mmbtu conversion from the District's Handbook Chapter 2.1, the RACT adjusted emissions would be:

Natural gas: $(0.039 \text{ lb/mmbtu}) (2,900,000 \text{ mmbtu/yr}) / 2000 = 56.55 \text{ tons per year}$

Wood: $(0.055 \text{ lb/mmbtu}) (1,740,000 \text{ mmbtu/yr}) / 2000 = 47.85 \text{ tons per year}$

Total: $56.55 + 47.85 = 104.4 \text{ tons per year RACT adjusted Offsets}$

RACT adjustment: $393.0 - 104.4 = 288.6 \text{ tons per year}$

S-49 No. 4 Recovery Furnace:

According to AN 9651, S-49 NOx offsets when permitted were calculated in AN 27440 to be 138 tons per year at 36 ppmv, 3% oxygen. Two later sources tests (District test in 8/29/89 and Ecoserve test of unknown date) showed the actual emissions to be 217 and 171 tons per year. AN 9651 provided back the original 138 tons per year offsets when the furnace shut down. Since the 138 tons per year was calculated at 36 ppmv, it met the Regulation 9-7 limit of 40 ppmv. Also the amount credited was less than the actual emission measured in the two source tests. A RACT adjustment is not necessary for this source.

Only S-35's offset need to be RACT adjusted from 393 tons per year to 104.4 tons per year.

By: Fred Tanaka

Eric Chan

Title: Senior Air Quality Engineer

Air Quality Engineer

Date: July 15, 2009