

New Basis, Inc.  
2626 Kansas Ave.  
Riverside, CA 92507  
ID: 40806

**EQUIPMENT DESCRIPTION**

A/N 485720

MODIFICATION OF AN EXISTING AIR POLLUTION CONTROL SYSTEM BY REMOVING THE FOLLOWING EQUIPMENT (ENVIROCURE SYSTEM):

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. VOLATILE ORGANIC COMPOUND (VOC) CONTROL SYSTEM, ENVIROCURE LLC, MODEL NO. SSFRP2PG2100, CONSISTING OF:
  - A. AIR MAKE-UP SYSTEM, WITH TWO 1,500,000 BTU/HR MAXON NP-LE LOW-NO<sub>x</sub> NATURAL GAS-FIRED BURNERS AND TWO 15 H.P. BLOWERS VENTING ONE SPRAY BOOTH (PERMANENT TOTAL ENCLOSURE).
  - B. TWO CATALYTIC ADSORPTION BEDS, EACH 6'-0" W. X 18'-0" L., WITH 5,200 POUNDS OF HAPTITE ADSORBANT MEDIA OR EQUIVALENT.
  - C. CATALYTIC OXIDIZER, 2'-8" DIA. X 7'-0" H. COMBUSTION CHAMBER, WITH ONE 2,700,000 BTU/HR MAXON In-3 LOW-NO<sub>x</sub> NATURAL GAS-FIRED BURNER AND ONE 15 H.P. CATALYST FAN.

AND REPLACING IT WITH A REGENERATIVE THERMAL OXIDIZER:

1. REGENERATIVE THERMAL OXIDIZER, ADWEST, MODEL NO. RETOX 12.0RTO95, 9'-2" W. X 24'-0" L. X 10'-6" H., 12,000 SCFM CAPACITY, WITH ONE 3,434,000 NATURAL GAS-FIRED MAXON KINEMAX 4G BURNER, ONE 7.5 HP COMBUSTION AIR BLOWER AND TWO CERAMIC BEDS, EACH WITH 13,200 LBS OF CERAMIC MEDIA.
2. SPRAY BOOTH, ENVIROCURE, MODEL NO. SSFRP2PG2100, FLOOR TYPE, 50'-5" W. X 55'-0" L. X 10'-0" H., WITH THREE 3'-0" W. X 36'-0" L. FIRST-STAGE EXHAUST FILTERS, FOUR 3'-0" W. X 1'-6" L. SECOND-STAGE EXHAUST FILTERS AND FOUR 3'-0" W. X 1'-6" L. THIRD-STAGE EXHAUST FILTERS AND TWO 15 HP EXHAUST FANS.
3. EXHAUST SYSTEM WITH ONE PERMANENT TOTAL ENCLOSURE AND ONE 50 HP EXHAUST BLOWER VENTING ONE SPRAY BOOTH.

A/N 485719

Title V Permit Revision

## **BACKGROUND**

New Basis submitted application no. 485720 to modify an existing air pollution control system. The air pollution control system consists of two haptite adsorption beds, a catalytic oxidizer and a spray booth. The system was issued a Permit to Construct under application no. 416450. New Basis is proposing to remove the haptite adsorption beds and catalytic oxidizer and replace them with a regenerative thermal oxidizer (RTO). The new RTO is designed to operate with fewer problems than the haptite adsorption beds and catalytic oxidizer combination and with a better control efficiency. The spray booth remains unchanged with the switch of the new control equipment.

New Basis is a Title V facility. A Title V renewal permit was issued to this facility on March 26, 2006. New Basis has proposed to revise their Title V renewal permit with application no. 485719 by adding a regenerative thermal oxidizer and removing the haptite adsorption beds and a catalytic oxidizer. The permit revision is considered as a "de minimis significant permit revision" to the Title V renewal permit, as described in Regulation XXX evaluation.

## **PROCESS DESCRIPTION**

New Basis manufactures polymer concrete-casted underground enclosures used to contain telephone cables, power cables, TV cables and water/turf/irrigation piping and valves. The enclosures are sized from 3" W. x 4" L. x 6" D. to 36" W. x 48" L. x 48" H.

The enclosures are made from fiberglass resins applied to molds. The resins are applied to the molds using bristle brushes and flow coater guns inside the spray booth. The resins have a styrene monomer content of 35% by weight. Acetone is used for cleaning.

After the enclosures are demolded, they remain within the spray booth to allow for the flashing off of VOC emissions for a period up to 20 minutes. Covers for the enclosures are made separately using cement. The enclosures and covers are not painted. Molds for the enclosures and the lids are made at the facility.

New Basis operates a few resin blenders/mixers and resin storage tanks in addition to the spray booth and control equipment. They operate under a facility VOC cap of 5,133 lb/month. The air pollution control system will operate under its own equipment VOC emission limit of 900 lb/month, an existing condition from the current permit.

**RTO DESIGN ANALYSIS**

New Basis operates a spray booth which is designed as a permanent total enclosure and vents directly and solely to the RTO. The RTO system is designed to control VOC emissions from the spray booth with an overall control efficiency of 95%. The system consists of a combustion chamber and two heat exchange beds filled with ceramic media. Below each media bed is an air plenum that directs flow through the beds.

As the process air (VOC-laden) flows through the first bed, heat is transferred from the media to the incoming air. The temperature of the air increases rapidly and as the heated air enters the combustion chamber, combustion occurs with the abundant oxygen content of the process gas and the high temperature of the chamber. The temperature of combustion chamber ranges from 1500 to 1700 deg F. In the combustion chamber, hydrocarbons are oxidized to carbon dioxide and water vapor. The process air flows from the first bed to the second media bed where it releases heat back into the media. At controlled intervals, the air flow through the oxidizer is changed by two pneumatic poppet valves to maintain stable media temperature profiles.

The entire system is designed with 95% primary heat recovery. With a sufficient concentration of solvents in the incoming process air, the heat energy from the solvent will be enough so that the destruction of VOC's will be nearly self-sustaining. If additional heat energy is required, it will be provided by the standby natural gas injection system which will inject natural gas into the combustion chamber.

The RTO is equipped with a 3,434,000 Btu/hr natural gas-fired burner. The burner will be used to initially heat the media inside the heat exchange beds. The burner will operate for approximately one hour during the initial bed heating process. The following calculations are based on the design criteria for the RTO system.

**Supplied Data**

Design VOC destruction efficiency = 95%

Heat recovery = 95%

Volume of air contaminants = 12,000 cfm

Process air temp = 90 deg F

Start-up chamber temp = 1700 deg F

Constant chamber temp = 1400 deg F

Incoming VOC emission rate = 60 lb/hr

Density of contaminated gas = 0.076 lbm/ft<sup>3</sup>Specific heat at constant pressure ( $C_p$ ) = 0.2402 Btu/lbm-FSolvent Heating Load ( $Q_{\text{solvent}}$ ) = 18,000 Btu/lb \* 60 lb/hr = 1,080,000 Btu/hr**Supplementary heat requirement ( $Q_{\text{supp}}$ )**

$$Q_{\text{supp}} = Q_{\text{required}} - Q_{\text{solvent}}$$

**APPLICATION PROCESSING AND CALCULATION**

$$Q_{\text{required}} = Q_{\text{air}} + Q_{\text{loss}}$$

$$T_{\text{in}} \Rightarrow T_{\text{comb}} \Rightarrow T_{\text{out}}$$

$$90 \Rightarrow 1700 \Rightarrow T_{\text{out}}$$

$$\frac{T_{\text{comb}} - T_{\text{out}}}{T_{\text{comb}} - T_{\text{in}}} = 95\% \text{ energy efficiency}$$

$$\frac{1700 - T_{\text{out}}}{1700 - 90} = 0.95$$

$$T_{\text{out}} = 170 \text{ deg F}$$

$$Q_{\text{air}} = \text{Flow} * C_p * (T_2 - T_1)$$

$$Q_{\text{air}} = 12,000 \text{ ft}^3/\text{min} * 60 \text{ min/hr} * 0.076 \text{ lbm/ft}^3 * 0.2402 \text{ Btu/lbm-F} * (170 - 90)$$

$$Q_{\text{air}} = 1,051,500 \text{ Btu/hr}$$

$$Q_{\text{loss}} = Q_{\text{air}} * 5\% \text{ loss} = 1,051,500 * 0.05 = 52,575 \text{ Btu/hr}$$

$$Q_{\text{required}} = Q_{\text{air}} + Q_{\text{loss}} = 1,051,500 \text{ Btu/hr} + 52,575 \text{ Btu/hr} = 1,104,075 \text{ Btu/hr}$$

$$Q_{\text{solvent}} = 1,080,000 \text{ Btu/hr}$$

$$Q_{\text{supp}} = Q_{\text{required}} - Q_{\text{solvent}} = 1,104,075 \text{ Btu/hr} - 1,080,000 \text{ Btu/hr} = 24,075 \text{ Btu/hr}$$

**EMISSION ESTIMATES****Natural Gas Combustion**

Criteria pollutant emissions from the combustion of natural gas during start-up are calculated using the following emission factors:

$$\text{NO}_x = 86 \text{ ppmv or } 111 \text{ lb/ mmscf}$$

$$\text{CO} = 35 \text{ lbs/mmscf}$$

$$\text{ROG} = 7 \text{ lbs/mmscf}$$

$$\text{PM} = 7.5 \text{ lb/mmscf}$$

Normal operating schedule of start-up burner: 1 hr/day, 5 day/wk, 50 wk/yr

$$\text{Maximum firing rate during start-up} = 3,434,000 \text{ Btu/hr} \div 1,050 \text{ Btu/ft}^3 = 3,270 \text{ ft}^3/\text{hr}$$

$$\text{Maximum fuel usage of in burner during cold start-up} = 9,000 \text{ ft}^3/\text{day}$$

**Process emissions**

Maximum operating schedule: 23 hrs/day, 5 days/wk, 50 wks/yr

**APPLICATION PROCESSING AND CALCULATION**

NO<sub>x</sub> emissions = 2 ppmv

CO emissions = 10 ppmv

Flow rate = 12,000 SCFM

NO<sub>x</sub> emissions:

$$\begin{aligned}\text{Daily} &= 2 \text{ ppm} * 10^{-6} * 12,000 \text{ SCFM} * 7.27 * 21 \text{ hrs/day} + 0.009 \text{ mmft}^3/\text{day} * 111 \text{ lb/mmft}^3 \\ &= 3.66 + 0.99 \text{ lb/day} \\ &= 4.66 \text{ lb/day}\end{aligned}$$

$$\text{Hourly} = 4.66 \text{ lb/day} \div 24 \text{ hr/day} = 0.194 \text{ lb/hr}$$

CO emissions:

$$\begin{aligned}\text{Daily} &= 10 \text{ ppm} * 10^{-6} \text{ ft}^3 * 12,000 \text{ SCFM} * 4.43 * 21 \text{ hrs/day} + 0.009 \text{ mmft}^3/\text{day} * 35 \\ &\quad \text{lb/mmft}^3 \\ &= 11.16 + 0.315 \text{ lb/day} \\ &= 11.47 \text{ lbs/day}\end{aligned}$$

$$\text{Hourly} = 11.47 \text{ lbs/day} \div 24 \text{ hr/day} = 0.48 \text{ lb/hr}$$

ROG emissions:

$$\begin{aligned}\text{From NG} &= 0.009 \text{ mmft}^3/\text{day} * 7 \text{ lb/mmft}^3 \\ &= 0.063 \text{ lb/day}\end{aligned}$$

$$\text{Hourly} = 0.021 \text{ lb/hr}$$

From coating operation

Uncontrolled VOC emissions = 60 lbs/hr

Controlled hourly VOC emissions = 60 lbs/hr \* (1-0.95) = 3 lb/hr

Controlled daily VOC emissions = 3 lb/hr \* 9 hrs/day = 27 lb/day

$$\text{Total VOC emissions} = 0.063 + 27 = 27.063 \text{ lb/day}$$

PM10 emissions:

$$\begin{aligned}\text{From NG} &= 0.009 \text{ mmft}^3/\text{day} * 7.5 \text{ lb/mmft}^3 \\ &= 0.0675 \text{ lb/day}\end{aligned}$$

$$\text{Hourly} = 0.022 \text{ lb/hr}$$

From coating operation

Coating Operation

PM10 emissions from applying the fiberglass resin are estimated as follows:

Expected daily resin usage = 5,000 - 6,666 lbs/day

**APPLICATION PROCESSING AND CALCULATION**

Spray booth & control eq. filter efficiency = 95%

Percent solids by weight in the resin = 67

Transfer efficiency = 99% (Resin is poured into molds, not sprayed)

Fallout = 25% (Resin is poured into molds, not sprayed)

PM10 = 50% PM

Daily uncontrolled PM10 emissions =  $6,666 * 0.67 * 0.01 * 0.25 * 0.5 = 5.6$  lbs/day

Daily controlled PM10 emissions =  $5.6 * 0.05 = 0.3$  lb/day

Hourly controlled PM10 emissions =  $0.3 / 8$  hrs/day = 0.038 lb/hr

Total PM10 emissions =  $0.022 + 0.038 = 0.06$  lb/day

Emission reduction due to the removal of the existing air make-up unit and catalytic oxidizer:

From PC evaluation A/N 416450

Total NOx = 0.4 lb/hr, 1.6 lb/day

Total CO = 0.19 lb/hr, 0.76 lb/day

Total ROG = 0.04 lb/hr, 0.152 lb/day

Total PM10 = 0.04 lb/hr, 0.163 lb/day

**RISK ASSESSMENT:**

Toxic air contaminant emissions are generated from the resin that is used in the spray booth and from the combustion of natural gas in the RTO. A health risk analysis was performed using the Rule 1401 Risk Assessment computer program. The assessment was based on a residential receptor distance of 608 meters and an off-site worker receptor distance of 77 meters. The calculated cancer risk for the residential receptor is  $1.91 \times 10^{-9}$  and  $2.85 \times 10^{-8}$  for the off-site worker receptor. The acute and chronic hazard risks are very small, well below the threshold limit of 1. The proposed project will not cause a cancer of health hazard risk and compliance has been achieved. See attached modeling sheets in application no. 485720.

**RULE ANALYSIS**

RULE 212 (c)(1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1,000 feet from the outer boundary of a school. The facility is not located within 1,000 feet of the outer boundary of a school.

RULE 212 (c)(2): This section requires a public notice for all new or modified facilities that have on-site emission increases exceeding any of the daily maximums as specified by Rule 212(g). The proposed project will result in an emission increase for the entire facility. A Rule

**APPLICATION PROCESSING AND CALCULATION**

212(c) (2) notice will not be triggered since the emission increase is not above the daily maximum specified in Rule 212(g).

RULE 212(c)(3): This section requires a public notice for all new or modified permit units with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in a cancer risk equal or greater than one in a million. There will not be a cancer risk equal or greater than one in a million.

RULE 212(g): This section requires a public notice for all new or modified sources that result in emission increases exceeding any of the daily maximums as specified by Rule 212(g).

The emission increase due to the modification of this equipment will not be in excess of the daily maximum as specified in Rule 212(g) and the following summarizes the emission increase:

	Maximum Daily Emissions					
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>2</sub>	CO	Pb
Emission increase	0	3	0	0	11	0
MAX Limit (lb/day)	<b>30</b>	<b>40</b>	<b>30</b>	<b>60</b>	<b>220</b>	<b>3</b>
Compliance Status	Yes	Yes	Yes	Yes	Yes	Yes

RULES 401 & 402: Three odor complaints have been filed against this facility since November 2004, the last in September 2006. The new RTO is expected to operate at a greater efficiency than the previous air pollution control system and better control odors. Odor or visible emission complaints are not expected.

RULE 404:

Continued compliance of the new unit with the PM concentration limit of this rule is expected as shown below:

$$\text{Total PM emissions} = 0.585 \text{ lbs/hr}$$

$$\text{Total exhaust gas flowrate after modif.} = 12,000 \text{ scfm}$$

$$\text{gr PM/scf} = (0.585 \text{ lbs/hr})(7,000 \text{ gr/lb})(\text{hr}/60 \text{ min})(\text{min}/12,000 \text{ scf}) = 0.0057 \text{ gr PM/scf}$$

From Table 404(a) of R404, the interpolated particulates emission concentration limit at 12,000 scfm is equal to 0.075 gr/scf. Therefore, the expected PM emission concentration of 0.0057 gr PM/scf as calculated is within this max limit.

**APPLICATION PROCESSING AND CALCULATION**

RULE 407: Operation of the RTO will not result in the release of CO emissions exceeding 2,000 ppm. Although compliance is expected, a source test will determine actual CO concentrations.

RULE 409: PM emissions from the proposed RTO is expected to be less than 0.1 gr/scf. Compliance is expected.

RULE 1162: New Basis uses VOC compliant resins and compliant transfer efficiency equipment. Compliance with this rule is achieved.

Rule 1171: New Basis uses acetone for cleaning purposes. Acetone is an exempt compound and complies with Rule 1171.

**RULE 1303:**

(a): The RTO system is air pollution control equipment for the basic equipment that it serves. This system is expected to operate with an overall control efficiency of 95% (95% destruction efficiency and 100% capture efficiency by PTE). A source test will be performed to determine efficiencies.

The NO<sub>x</sub> emissions from the start-up burner is less than one pound per day, a fuel usage limit of 9,000 ft<sup>3</sup>/day will be imposed on the start-up burner. The limit is based on the manufacturer's guaranteed NO<sub>x</sub> concentration of 86 ppm corrected to 3%. A nonresettable fuel usage meter will be installed in the gas line to the start-up burner.

(b)(1): NO<sub>x</sub>, CO and PM<sub>10</sub> emissions generated during start up are used for modeling purposes.

$$\text{NO}_x \text{ hourly emissions} = 3,270 \text{ ft}^3/\text{hr} * 111 \text{ lb/1} \times 10^6 \text{ ft}^3 = 0.36 \text{ lb/hr}$$

$$\text{CO hourly emissions} = 3,270 \text{ ft}^3/\text{hr} * 35 \text{ lb/1} \times 10^6 \text{ ft}^3 = 0.11 \text{ lb/hr}$$

$$\text{PM}_{10} \text{ hourly emissions} = 3,270 \text{ ft}^3/\text{hr} * 7.5 \text{ lb/1} \times 10^6 \text{ ft}^3 = 0.03 \text{ lb/hr}$$

Pollutant	Estimated Emissions (lb/hr)	Modeling Threshold Emission Limit (lb/hr)
NO <sub>x</sub>	<b>0.36</b>	0.31
CO	0.11	17.1
PM <sub>10</sub>	0.03	1.9

Since hourly NO<sub>x</sub> emissions exceed the threshold limit, further analysis was required. A Screen3 modeling analysis was performed to determine the NO<sub>x</sub> concentration (µg/m<sup>3</sup>) for the closest sensitive receptor located 77 meters from the stack (residence). The screen 3 result indicates an hourly NO<sub>x</sub> concentration of 4.602 µg/m<sup>3</sup> and an annual concentration of 0.368 µg/m<sup>3</sup> (4.602 µg/m<sup>3</sup> x 0.08). See a/n 487520 for the Screen3 printouts. Per Rule 1303 Table A-2, the maximum allowable hourly increase is 20 µg/m<sup>3</sup> and the maximum allowable annual increase is 1 µg/m<sup>3</sup>. Since the expected concentration are less than the allowable limits, compliance with Rule 1303(b)(1) is achieved.

(b)(2): NO<sub>x</sub> and CO Emissions from the RTO are exempt from offset requirements pursuant to Rule 1304(d), facility emissions less than 4 tons and 29 tons per year respectively. There are no other permitted combustion sources at this facility. VOC emissions from the use materials in the spray booth will not cause an increase above the existing facility VOC cap, offsets are not required.

(b)(4)/(b)(5): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

RULE 1401: Compliance is expected, see RISK ASSESSMENT section of this report.

### **REGULATION XXX:**

This facility is not in the RECLAIM program. The proposed project is considered as a “de minimis significant permit revision” to the Title V permit for this facility.

Rule 3000(b)(6) defines a “de minimis significant permit revision” as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAPs) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

<b>Air Contaminant</b>	<b>Daily Maximum (lb/day)</b>
HAP	30
VOC	30
NO <sub>x</sub>	40
PM <sub>10</sub>	30
SO <sub>x</sub>	60
CO	220

To determine if a project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the second permit revision to the Title V renewal permit issued to this facility on March 26, 2006. Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a “de minimis significant permit revision”. The following table summarizes the cumulative emission increases resulting from all permit revisions since the renewal Title V permit was issued:

<b>Revision</b>	<b>HAP</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>SO<sub>x</sub></b>	<b>CO</b>
Previous Permit Revision Total	0	0	0	0	0	0
2 <sup>nd</sup> Permit Revision: Add regenerative thermal oxidizer &	0	0	3	0	0	11

## Engineering and Compliance

Appl. no. Below

Processed by Todd Iwata

Checked by

## APPLICATION PROCESSING AND CALCULATION

Date: 10/28/08

remove a catalytic oxidizer						
Net Emission Total	0	0	3	0	0	11
Maximum Daily	30	30	40	30	60	220

**RECOMMENDATION:**

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “de minimis significant permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not raise any objections within the review period, a revised Title V permit will be issued to this facility.

**CONDITIONS:**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.  
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.  
[RULE 204]
3. THE SPRAY BOOTH SHALL NOT BE OPERATED UNLESS ALL EXHAUST AIR PASSES THROUGH A THREE STAGE EXHAUST FILTERS AS SPECIFIED IN THE EQUIPMENT DESCRIPTION.  
[RULE 1303(a)(1)-BACT]
4. A GAUGE SHALL BE INSTALLED TO INDICATE, IN INCHES OF WATER, THE STATIC PRESSURE DIFFERENTIAL ACROSS EACH STAGE OF EXHAUST FILTERS. IN OPERATION, THE PRESSURE DIFFERENTIAL SHALL NOT EXCEED 1.0 INCH OF WATER ACROSS EACH SINGLE STAGE OF EXHAUST FILTERS.  
[RULE 1303(a)(1)-BACT]
5. MATERIALS USED IN THIS EQUIPMENT SHALL NOT CONTAIN ANY TOXIC AIR CONTAMINANTS IDENTIFIED IN RULE 1401, TABLE 1, EXCEPT STYRENE, WITH AN EFFECTIVE DATE OF MARCH 7, 2008 OR EARLIER.  
[RULE 1401]
6. THE TOTAL AMOUNT OF VOC EMISSIONS DISCHARGED TO THE ATMOSPHERE FROM THIS EQUIPMENT SHALL NOT EXCEED 900 POUNDS IN ANY ONE CALENDAR MONTH.  
[RULE 1303(b)(2)-OFFSET]
7. THE SPRAY BOOTH SHALL BE OPERATED AS A PERMANENT TOTAL ENCLOSURE. THE PERMANENT TOTAL ENCLOSURE SHALL MEET ALL THE CRITERIA SPECIFIED IN US EPA METHOD 204 DURING OPERATION OF THIS EQUIPMENT.  
[RULE 1303(a)(1)-BACT]
8. THE OPERATOR SHALL OPERATE AND MAINTAIN THE REGENERATIVE THERMAL OXIDIZER ACCORDING TO THE FOLLOWING REQUIREMENTS:

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THE COMBUSTION CHAMBER TEMPERATURE SHALL BE MAINTAINED AT A MINIMUM OF 1,500 DEGREES FAHRENHEIT WHENEVER THE EQUIPMENT IT SERVES IS IN OPERATION.

THE OPERATOR SHALL OPERATE AND MAINTAIN A TEMPERATURE MEASURING AND RECORDING SYSTEM TO CONTINUOUSLY MEASURE AND RECORD THE COMBUSTION CHAMBER TEMPERATURE PURSUANT TO THE OPERATION AND MAINTENANCE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.7. SUCH A SYSTEM SHALL HAVE AN ACCURACY OF WITHIN 1% OF THE TEMPERATURE BEING MONITORED AND SHALL BE INSPECTED, MAINTAINED, AND CALIBRATED ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE TEMPERATURE INDICATING AND RECORDING SYSTEM SHALL BE IN OPERATION WHENEVER THE EQUIPMENT IT SERVES IS IN OPERATION.

FOR THE PURPOSE OF THIS CONDITION, A DEVIATION SHALL BE DEFINED AS WHEN A COMBUSTION CHAMBER TEMPERATURE OF LESS THAN 1,500 DEGREES FAHRENHEIT OCCURS DURING NORMAL OPERATION OF THE EQUIPMENT IT SERVES. THE OPERATOR SHALL REVIEW THE RECORDS OF THE COMBUSTION CHAMBER TEMPERATURE ON A DAILY BASIS TO DETERMINE IF A DEVIATION OCCURS OR SHALL INSTALL AN ALARM SYSTEM TO ALERT THE OPERATOR WHEN A DEVIATION OCCURS.

WHENEVER A DEVIATION OCCURS, THE OPERATOR SHALL INSPECT THIS EQUIPMENT TO IDENTIFY THE CAUSE OF SUCH A DEVIATION, TAKE IMMEDIATE CORRECTIVE ACTION TO MAINTAIN THE COMBUSTION CHAMBER TEMPERATURE AT OR ABOVE 1,500 DEGREES FAHRENHEIT, AND KEEP RECORDS OF THE DURATION AND CAUSE (INCLUDING UNKNOWN CAUSE, IF APPLICABLE) OF THE DEVIATION AND THE CORRECTIVE ACTION TAKEN.

ALL DEVIATIONS SHALL BE REPORTED TO THE AQMD PURSUANT TO THE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.9 AND CONDITION NOS. 22 AND 23 IN SECTION K OF THIS PERMIT. THE REPORT SHALL INCLUDE THE TOTAL OPERATING TIME OF THIS EQUIPMENT AND THE TOTAL ACCUMULATED DURATION OF ALL DEVIATIONS FOR EACH SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT.

THE OPERATOR SHALL SUBMIT AN APPLICATION WITH A QUALITY IMPROVEMENT PLAN (QIP) IN ACCORDANCE WITH 40 CFR PART 64.8 TO THE AQMD IF AN ACCUMULATION OF DEVIATIONS EXCEEDS 5 PERCENT DURATION OF THIS EQUIPMENT'S TOTAL OPERATING TIME FOR ANY SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT. THE REQUIRED QIP SHALL BE SUBMITTED TO THE AQMD WITHIN 90 CALENDAR DAYS AFTER THE DUE DATE FOR THE SEMI-ANNUAL MONITORING REPORT.

THE OPERATOR SHALL INSPECT AND MAINTAIN ALL COMPONENTS OF THIS EQUIPMENT ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE OPERATOR SHALL KEEP ADEQUATE RECORDS IN A FORMAT THAT IS ACCEPTABLE TO THE AQMD TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS SPECIFIED IN THIS CONDITION AND 40 CFR PART 64.9 FOR A MINIMUM OF FIVE YEARS.

[RULE 1303(a)(1)-BACT, 1303(b)(2)-OFFSET, 40CFR Part 64]

9. ALL ACCESS DOORS TO THE PERMANENT TOTAL ENCLOSURES SHALL BE KEPT CLOSED DURING NORMAL OPERATIONS.  
[RULE 1303(a)(1)-BACT]
10. THIS EQUIPMENT SHALL BE MAINTAINED AND OPERATED AT A MINIMUM DESTRUCTION EFFICIENCY OF 95% AND AN OVERALL VOC CONTROL EFFICIENCY (COLLECTION AND DESTRUCTION) OF 95% WHEN THE BASIC EQUIPMENT IT SERVES IS IN OPERATION  
[RULE 1303(a)(1)-BACT]
11. THE START-UP BURNER SHALL NOT USE MORE THAN 9,000 CUBIC FEET OF NATURAL GAS IN ANY ONE DAY.  
[RULE 1303(a)(1)-BACT]
12. A NON-RESETTABLE TOTALIZING FUEL METER SHALL BE INSTALLED AND MAINTAINED TO VERIFY COMPLIANCE WITH CONDITION NO. 11.  
[RULE 1303(a)(1)-BACT]
13. THE OPERATOR SHALL COMPLY WITH RULE 109 (RECORDKEEPING FOR VOLATILE ORGANIC COMPOUND EMISSIONS).  
[RULE 109, 1303(b)(2)-OFFSET]
14. IN ADDITION TO THE RECORD KEEPING REQUIREMENT OF RULE 109, THE OPERATOR SHALL KEEP ADEQUATE RECORDS FOR THIS EQUIPMENT TO VERIFY CALENDAR MONTHLY VOC EMISSIONS IN POUNDS AND THE VOC CONTENT OF EACH MATERIAL AS APPLIED (INCLUDING WATER AND EXEMPT COMPOUNDS). THESE RECORDS SHALL BE PREPARED IN A FORMAT WHICH IS ACCEPTABLE TO THE DISTRICT.  
[RULE 109, 1303(b)(2)-OFFSET]
15. WITHIN 14 CALENDAR DAYS AFTER THE END OF EACH MONTH, THE OPERATOR SHALL TOTAL AND RECORD VOC EMISSIONS FOR THE MONTH FOR THIS EQUIPMENT. THE RECORD SHALL INCLUDE ANY PROCEDURES USED TO ACCOUNT FOR CONTROL DEVICE EFFICIENCIES AND/OR WASTE DISPOSAL. IT SHALL BE SIGNED AND CERTIFIED FOR ACCURACY BY THE HIGHEST RANKING INDIVIDUAL RESPONSIBLE FOR COMPLIANCE WITH THE DISTRICT RULES.  
[RULE 109, 1303(b)(2)-OFFSET]
16. ALL RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED AT THE FACILITY FOR FIVE YEARS AND SHALL BE MADE AVAILABLE TO ANY DISTRICT REPRESENTATIVE UPON REQUEST.  
[RULE 109, 1303(b)(2)-OFFSET]

17. VOC EMISSIONS FROM THE USE OF RESIN (NON-ATOMIZED APPLICATION) SHALL BE CALCULATED USING EITHER THE FOLLOWING EMISSION FACTORS OR OTHER EMISSION FACTORS APPROVED IN WRITING BY THE EXECUTIVE OFFICER:

A. FOR STYRENE CONTENTS BETWEEN 33% AND 50%, USE THE FOLLOWING EMISSION FACTORS (AT DIFFERENT STYRENE CONTENTS):

71(AT 33%), 74(AT 34%), 77(AT 35%), 80(AT 36%), 83(AT 37%), 86(AT 38%), 89(AT 39%), 93(AT 40%), 96(AT 41%), 99(AT 42%), 102(AT 43%), 105(AT 44%), 108(AT 45%), 111(AT 46%), 115(AT 47%), 118(AT 48%), 121(AT 49%), 124(AT 50%)

B. FOR STYRENE CONTENTS <33%, USE THE FOLLOWING FORMULA:  
EMISSION FACTOR = 0.107 x (%STYRENE) x 2000

C. FOR STYRENE CONTENTS >50%, USE THE FOLLOWING FORMULA:  
EMISSION FACTOR = [(0.157 x % STYRENE) - 0.0165] x 2000

D. THESE FACTORS SHOULD BE USED ONLY FOR MECHANICAL NON-ATOMIZED APPLICATION OF RESINS. MECHANICAL NON-ATOMIZED APPLICATION USES A MECHANICAL FLUID DELIVERY SYSTEM TO APPLY RESIN TO THE GLASS REINFORCEMENT WITHOUT ATOMIZING THE RESIN FLUID STREAM. NON-ATOMIZED APPLICATION EQUIPMENT INCLUDES FLOW COATERS, FLOW CHOPPERS, AND PRESSURE-FED ROLLERS. FLOW COATER GUNS AND FLOW CHOPPER GUNS ARE NOT CONSIDERED TO BE "SPRAY GUNS" DUE TO THE ABSENCE OF ATOMIZATION.

THE ABOVE EMISSION FACTORS ARE IN POUNDS OF VOC EMITTED PER TON OF RESIN PROCESSED. THE ABOVE STYRENE CONTENTS ARE STYRENE MONOMER CONTENTS IN RESIN AS SUPPLIED, PLUS ANY EXTRA STYRENE MONOMER ADDED BY THE MOLDER, BUT BEFORE THE ADDITION OF OTHER ADDITIVES SUCH AS POWDERS, FILLERS, GLASS, ETC.

THE VALUE FOR STYRENE CONTENT IN PERCENT BY WEIGHT (%STYRENE) IN THE FORMULAS IN (B) AND (C) ABOVE SHOULD BE INPUT AS A FRACTION. FOR EXAMPLE, USE THE INPUT VALUE 0.30 FOR A RESIN WITH 30% STYRENE CONTENT BY WEIGHT.

18. THE OWNER OR OPERATOR OF THIS EQUIPMENT SHALL CONDUCT SOURCE TESTS UNDER THE FOLLOWING CONDITIONS TO DEMONSTRATE COMPLIANCE WITH THE PERMIT CONDITIONS:
- A. THE SOURCE TESTS SHALL BE CONDUCTED NO LATER THAN 180 DAYS AFTER THE INITIAL START-UP OF THIS EQUIPMENT UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT.
- B. A SOURCE TEST PROTOCOL SHALL BE SUBMITTED TO THE DISTRICT NO LATER THAN 60 DAYS AFTER THE INITIAL START-UP OF THIS EQUIPMENT UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT. THE TEST PROTOCOL SHALL BE APPROVED IN WRITING BY THE DISTRICT BEFORE THE TEST COMMENCES. THE TEST PROTOCOL SHALL INCLUDE THE COMPLETED DISTRICT FORMS ST-1 AND ST-2 SPECIFYING THE PROPOSED OPERATING CONDITIONS OF THE EQUIPMENT DURING THE TEST, THE IDENTITY OF THE TESTING LABORATORY, A STATEMENT FROM THE TESTING LABORATORY CERTIFYING IT MEETS THE CRITERIA IN DISTRICT RULE 304(k), AND A DESCRIPTION OF THE SAMPLING AND ANALYTICAL PROCEDURES TO BE USED.

- C. THE SOURCE TESTS SHALL CONSIST OF, BUT MAY NOT BE LIMITED TO, TESTING AT THE INLET AND THE EXHAUST OF THE OXIDIZER FOR:
- (1) NOX IN PPMV AND LBS/HR (EXHAUST ONLY)
  - (2) NOX PPMV AND LBS/HR FROM THE START-UP BURNER DURING START UP (EXHAUST ONLY)
  - (3) CO IN PPMV, AND LBS/HR (EXHAUST ONLY)
  - (4) VOLATILE ORGANIC COMPOUND (VOC) IN PPMV AND LBS/HR
  - (5) VOC DESTRUCTION EFFICIENCY
  - (6) VOC COLLECTION EFFICIENCY
  - (7) USAGE OF ALL VOC-CONTAINING MATERIALS DURING THE TEST
  - (8) OXYGEN CONTENT
  - (9) MOISTURE CONTENT
  - (10) FLOW RATE
  - (11) TEMPERATURE
  - (12) NATURAL GAS USAGE DURING START-UP
- D. THE TEST SHALL DETERMINE IF THE SPRAY BOOTH ENCLOSURE IS A PERMANENT TOTAL ENCLOSURE PURSUANT TO METHOD 204.
- E. THE SOURCE TEST SHALL BE CONDUCTED WHILE THE OXIDIZER IS OPERATING AT A TEMPERATURE OF NOT LESS THAN THE MINIMUM OPERATING TEMPERATURE SPECIFIED IN THIS PERMIT. IF THE OPERATING TEMPERATURE DURING THE SOURCE TEST IS GREATER THAN THE MINIMUM OPERATING TEMPERATURE SPECIFIED IN THIS PERMIT, THE MINIMUM OPERATING TEMPERATURE MAY BE INCREASED AT THE TIME A PERMIT TO OPERATE IS ISSUED TO REFLECT THE OPERATING TEMPERATURE DURING THE SOURCE TEST.
- F. A WRITTEN NOTICE OF THE SOURCE TESTS SHALL BE SUBMITTED TO THE AT LEAST 14 DAYS PRIOR TO THE SOURCE TESTING DATE SO THAT AN OBSERVER FROM THE DISTRICT MAY BE PRESENT.
- G. TWO COMPLETE COPIES OF THE SOURCE TEST REPORTS SHALL BE SUBMITTED TO THE DISTRICT WITHIN 45 DAYS AFTER THE SOURCE TESTING DATE UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT. THE SOURCE TEST REPORT SHALL INCLUDE, BUT MAY NOT BE LIMITED TO, ALL TESTING DATA REQUIRED BY THIS CONDITION.
- H. A TESTING LABORATORY CERTIFIED BY THE CALIFORNIA AIR RESOURCES BOARD IN THE REQUIRED TEST METHODS FOR CRITERIA POLLUTANTS TO BE MEASURED, AND IN COMPLIANCE WITH DISTRICT RULE 304 (NO CONFLICT OF INTEREST) SHALL CONDUCT THE TEST.
- I. SAMPLING FACILITIES SHALL COMPLY WITH THE DISTRICT GUIDELINES FOR CONSTRUCTION OF SAMPLING AND TESTING FACILITIES, PURSUANT TO RULE 217.
- [RULE 1303(a)(1)-BACT]

**APPLICATION PROCESSING AND CALCULATION**

19. THE OWNER OR OPERATOR OF THIS EQUIPMENT SHALL SUBMIT THE RESULTS OF ALL PRELIMINARY TESTS THAT ARE CONDUCTED ON THIS EQUIPMENT FOR INFORMATIONAL PURPOSES TO THE WITHIN 45 DAYS AFTER THE TESTING DATE UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT.  
[RULE 1303(a)(1)-BACT]

**Periodic Monitoring:**

20. THE OPERATOR SHALL DETERMINE AND RECORD THE PRESSURE DROP ACROSS ALL FILTER MEDIA ONCE EVERY WEEK.  
[RULE 3004 (a)(4)]
21. THE OPERATOR SHALL PERFORM A WEEKLY INSPECTION OF THE EQUIPMENT AND FILTER MEDIA FOR LEAKS, BROKEN OR TORN FILTER MEDIA AND IMPROPERLY INSTALLED FILTER MEDIA. THE OPERATOR SHALL KEEP RECORDS, IN A MANNER APPROVED BY THE DISTRICT, FOR THE FOLLOWING PARAMETER(S) OR ITEM(S):
- A. THE NAME OF THE PERSON PERFORMING THE INSPECTION AND/OR MAINTENANCE OF THE FILTER MEDIA;
  - B. THE DATE, TIME AND RESULTS OF THE INSPECTION; AND
  - C. THE DATE, TIME AND DESCRIPTION OF ANY MAINTENANCE OR REPAIRS RESULTING FROM THE INSPECTION.
- [RULE 3004 (a)(4)]
22. THE OPERATOR SHALL CONDUCT SOURCE TEST(S) IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
- A. THE TEST SHALL BE CONDUCTED AT LEAST ONCE DURING THE LIFE OF THE PERMIT.
  - B. THE TEST SHALL BE CONDUCTED NO LATER THAN MARCH 26, 2010 UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT.
  - C. THE TEST SHALL BE CONDUCTED TO DETERMINE THE VOC EMISSIONS USING AN APPROVED DISTRICT METHOD TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE PERMIT CONDITION(S), RULES AND REGULATIONS.
  - D. THE SOURCE TEST SHALL BE CONDUCTED WHILE THE OXIDIZER IS OPERATING AT A TEMPERATURE OF NOT LESS THAN THE MINIMUM OPERATING TEMPERATURE SPECIFIED IN THIS PERMIT. IF THE OPERATING TEMPERATURE DURING THE SOURCE TEST IS GREATER THAN THE MINIMUM OPERATING TEMPERATURE SPECIFIED IN THIS PERMIT, THE MINIMUM OPERATING TEMPERATURE SPECIFIED IN THIS PERMIT MAY BE INCREASED TO REFLECT THE OPERATING TEMPERATURE DURING THE SOURCE TEST.
  - E. THE OPERATOR SHALL COMPLY WITH ADMINISTRATIVE CONDITIONS NOS. 8, 9, AND 10 OF SECTION E OF THIS FACILITY PERMIT.
  - F. THE OPERATOR SHALL SUBMIT TWO COMPLETE COPIES OF THE SOURCE TEST REPORT SPECIFIED IN CONDITION NO. 9 OF SECTION E OF THIS FACILITY PERMIT TO THE DISTRICT ENGINEERING AND COMPLIANCE DIVISION. THE ENGINEERING COPY OF THE REPORT SHALL BE SENT TO: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, COATING, PRINTING AND AEROSPACE OPERATIONS, ATTN: AIR QAULITY AND COMPLIANCE SUPERVISOR, 21865 COPLEY DRIVE, DIAMOND BAR, CA 91765. THE COMPLIANCE COPY OF THE REPORT SHALL BE SENT TO: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, P.O. BOX 4941, DIAMOND BAR, CA 91765
- [RULE 3004(a)(4)]

**Emissions And Requirements:**

**APPLICATION PROCESSING AND CALCULATION**

23. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

VOC: RULE 109

VOC: RULE 1162, SEE APPENDIX B FOR EMISSION LIMITS

VOC: RULE 1171, SEE APPENDIX B FOR EMISSION LIMITS

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS

PM: RULE 481

PM: 0.1 GR/SCF, RULE 409

CO: 2000 PPMV, RULE 407

HAP: 40 CFR63 SUBPART WWWW, SEE SECTION J FOR REQUIREMENTS