

Section I: AQMD BACT Determinations

Application No.: 401090

Equipment Category – Lithographic or Offset Printing, Heatset

| | | |
|---|-----------------|-----------------|
| 1. GENERAL INFORMATION | | DATE: 3/31/2004 |
| A. MANUFACTURER: Goss | | |
| B. TYPE: 4-Color | C. MODEL: C-150 | |
| D. STYLE: | | |
| E. APPLICABLE AQMD RULES: 404, 407, 409, 1130, 1171 | | |
| F. COST: \$ (NA) SOURCE OF COST DATA: | | |
| G. OPERATING SCHEDULE: 24 HRS/DAY 7 DAYS/WK 52 WKS/YR | | |

| | | |
|--|-------------------------------|------------------|
| 2. EQUIPMENT INFORMATION | | APP. NO.: 401090 |
| A. FUNCTION: Prints published materials on coated and uncoated papers. | | |
| B. SIZE/DIMENSION/CAPACITY: Press No. 1. Press size is 35" web width. Drying oven has design exhaust flow rate of 1200 scfm. Oven is equipped with one Maxon Cyclomax low-NOx burner with maximum heat input of 1.5 MMBtu/hr. Expected oven temperature is 325F. | | |
| C. BLOWERS: Oven is equipped with 5 hp combustion air blower, 40 hp recirculation fan and 5 hp exhaust fan. | D. TOTAL FLOW RATE: 1200 scfm | |
| E. MATERIAL STORED/PROCESSED/HANDLED: | | |
| F. THROUGHPUT/PROCESS RATE/USAGE RATE: | | |

| | | |
|--|----------------------------|-------------------|
| 3. COMPANY INFORMATION | | APP. NO.: 401090 |
| A. NAME: Quebecor World Great Western Publishing | | B. SIC CODE: 2752 |
| C. ADDRESS: 6688 Box Springs Blvd. CITY: Riverside STATE: CA ZIP: 92507 | | |
| D. CONTACT PERSON: Georg Decker | E. PHONE NO.: 909-390-4880 | |

| | | |
|---|---------------------------------------|---|
| 4. PERMIT INFORMATION | | APP. NO.: 401090 |
| A. AGENCY: SCAQMD | B. APPLICATION TYPE: new construction | |
| C. AGENCY CONTACT PERSON: Bill Gobrial | D. PHONE NO.: 909-396-2573 | |
| E. PERMIT TO CONSTRUCT/OPERATE INFORMATION: <input type="checkbox"/> CHECK IF NO P/C | P/C NO.: 401090 P/O NO.: | ISSUANCE DATE: 8/1/2002 ISSUANCE DATE: |
| F. START-UP DATE: November 2002 | | |

5. EMISSION INFORMATION

APP. NO.: 401090

A. PERMIT

- A1. PERMIT LIMIT: Facility-wide caps: 7800 lb/mo. VOC and 667 lb/mo. NOx. Compliance with Rules 1130 (compliance by VOC control system) and 1171 (VOC limits in cleanup solvents). VOC in fountain solution not to exceed 8% by volume as applied. Blanket and roller washes composite vapor pressure not to exceed 6 mm Hg at 68F. NOx from ovens not to exceed 30 ppm (dry, corrected to 3% O2). Oven must vent to control equipment--regenerative thermal oxidizer (RTO). RTO conditions (A/N 401088): minimum chamber temperature 1550F, minimum destruction efficiency 99%, minimum overall control (collection and destruction) efficiency 98.5%, 78 ppm NOx (dry, 3% O2), 2000 ppm CO (Rule 407), .0537 gr/dscf PM (Rule 404).
- A2. BACT/LAER DETERMINATION: VOC in fountain solution <8% (vol.), vapor pressures of blanket and roller washes <10 mm Hg at 20C, NOx from ovens not to exceed 30 ppm (dry, 3% O2), afterburner with minimum chamber temperature 1400F, minimum residence time 0.3 sec, minimum VOC destruction efficiency of 99%, minimum overall VOC control efficiency of 98.5% and maximum NOx of 78 ppmvd@3%O2.
- A3. BASIS OF THE BACT DETERMINATION: Part D of AQMD BACT Guidelines. Minimum VOC destruction and overall control efficiencies of 99% and 98.5% and maximum NOx of 78 ppmvd@3%O2 were offered by the applicant and are now achieved in practice.

B. CONTROL TECHNOLOGY

- B1. MANUFACTURER/SUPPLIER: Advantage Energy Group
- B2. TYPE: Regenerative Thermal Oxidizer (RTO) Model Premier 30.0
- B3. DESCRIPTION: VOC-laden air enters through bed of hot ceramic material where it is preheated and passes to a combustion chamber for burnout of VOC. The hot combustion gas exits through a second bed of ceramic material, which it heats. When the inlet bed is cooled below some minimum temperature, the flow path is reversed by valve actions so that the inlet bed becomes the outlet bed and visa versa. This RTO has a "puff capture" system, which prevents VOC-laden air from being pushed out in the exhaust immediately after flow path reversal. The VOC-laden air trapped in the outlet bed is diverted into a holding chamber, from which it is injected into the combustion chamber. This RTO is designed for maximum heat input of 8.6 MMBtu/hr for heatup; however, once heated to its operating temperature, the RTO is expected to operate without any supplemental fuel requirement in this case.
- B4. CONTROL EQUIPMENT PERMIT APPLICATION DATA: P/C NO.: 401088 ISSUANCE DATE: 8/1/2002
P/O NO.: ISSUANCE DATE:
- B5. WASTE AIR FLOW TO CONTROL EQUIPMENT: FLOW RATE: 17,000 dscfm
ACTUAL CONTAMINANT LOADING: 836 lb/hr THC BLOWER HP: 200
- B6. WARRANTY: This equipment is normally offered with a one-year, parts & labor warranty. In this case there was also a performance guarantee of 99% destruction efficiency or 25 ppm hydrocarbon as methane, 5 ppm NOx (dry, 3% O2) if inlet NOx is zero.
- B7. PRIMARY POLLUTANTS: VOC, NOx, CO, PM
- B8. SECONDARY POLLUTANTS: NOx, CO
- B9. SPACE REQUIREMENT: 63' L x 24' W x 12' H, plus 4' D x 47' H stack

5. EMISSION INFORMATION

APP. NO.: 401090

B10. LIMITATIONS: B11. UNUSED

B12. OPERATING HISTORY: Presses and oxidizer have been used almost continuously since startup.

B13. UNUSED B14. UNUSED

C. CONTROL EQUIPMENT COSTSC1. CAPITAL COST: CHECK IF INSTALLATION COST IS INCLUDED IN CAPITAL COST

EQUIPMENT: \$ INSTALLATION: \$ (NA) SOURCE OF COST DATA:

C2. ANNUAL OPERATING COST: \$ (NA) SOURCE OF COST DATA:

D. DEMONSTRATION OF COMPLIANCE

D1. STAFF PERFORMING FIELD EVALUATION:

ENGINEER'S NAME: INSPECTOR'S NAME: DATE:

D2. COMPLIANCE DEMONSTRATION:

D3. VARIANCE: NO. OF VARIANCES: None DATES:
CAUSES:D4. VIOLATION: NO. OF VIOLATIONS: None DATES:
CAUSES:

D5. MAINTENANCE REQUIREMENTS: D6. UNUSED

D7. SOURCE TEST/PERFORMANCE DATA RESULTS AND ANALYSIS:

DATE OF SOURCE TEST: 12/10/2003 CAPTURE EFFICIENCY: 99.5
DESTRUCTION EFFICIENCY: 99.9 OVERALL EFFICIENCY: 99.4
SOURCE TEST/PERFORMANCE DATA:

| | Inlet | Outlet |
|----------------------------|--------|--------|
| Temperature, F | 288 | 355 |
| Flow Rate, dscfm | 17,200 | 17,000 |
| O2, % (vol., dry) | 19.0 | 18.1 |
| CO2, % (vol., dry) | 1.4 | 2.0 |
| CO, ppmvd | 259 | <2 |
| NOx, ppmvd@3%O2 | --- | 30 |
| CH4, ppmvd | 42 | <2 |
| VOC, ppmvd | 794 | 1 |
| VOC Destruction Efficiency | | 99.9 |

OPERATING CONDITIONS: Normal--7 presses operating. Oxidizer chamber temperature ranged from 1579F to 1647F. Oxidizer burner was off, and no natural gas was being injected.

TEST METHODS: AQMD Methods 1.1, 2.1, 25.1, 25.3, 100.1. Sampling was one hour, simultaneous inlet and outlet. Collection efficiency was presumed to be 99.5% based on oven pressure being determined to be negative using smoke test (AQMD 1997 guidance). Test was approved by AQMD's Monitoring & Source Test Engineering group.

6. COMMENTS

APP. NO.: 401090

Eleven applications were submitted for 9 new presses and 2 new RTOs. RTO No.1 (A/N 401088) serves press No.s 1 through 7. RTO No. 2 serves press No.s 8 and 9. Presses 1 through 7 include 2 model C-150 (4-color, 35" with oven rated at 1.6 MMBtu/hr input), 1 model C-500 (8-color, 40", 6.4 MMBtu/hr), 3 model C-700 (4-color, 66", 6.4 MMBtu/hr) and 1 C-700c (4-color, 72", 6.0 MMBtu/hr).

The 98.5% overall control efficiency condition on the RTO was requested by the applicant to make it easier to meet the facility VOC cap. This condition was technically supported by a manufacturer guarantee of 99% destruction efficiency and a presumptive 99.5% collection efficiency for an oven having negative internal pressure (based on an AQMD directive dated June 10, 1997).

The 78 ppm NOx limit on the RTO was requested by the applicant in order to keep total facility NOx emissions below 4 tpy thus avoiding a NOx offset requirement. Actual tested NOx was only 30 ppm and was probably mostly due to the oven burners.

The 6mm vapor pressure limit on blanket and roller washes was offered by the applicant.