

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <i>ENGINEERING and COMPLIANCE</i>  <b>APPLICATION PROCESSING AND CALCULATIONS</b>	PAGES 10	PAGE 1
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Royal Paper Box  
1105 S. Maple Ave.  
Montebello, CA 90640  
ID#: 23487

**EQUIPMENT DESCRIPTION:**

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
<b>Process 2: FUEL STORAGE AND DISPENSING</b>					
<b>System 1:</b>					
STORAGE TANK, UNDERGROUND, GASOLINE, CARB ENHANCED VAPOR RECOVERY PHASE I, VR-101- B, METHANOL COMPATIBLE, 10,000 GALS  A/N 494642 (Previous a/n 416586)	D13				D330.1 J109.1 J373.3
FUEL DISPENSING NOZZLE (1), <u>BALANCE TYPE PHASE II</u> <u>CARB ENHANCED VAPOR</u> <u>RECOVERY SYSTEM, HEALY</u> <u>PHASE II EVR SYSTEM</u> <u>INCLUDING VEEDER ROOT</u> <u>SYSTEM (VR201), GASOLINE,</u> <u>BALANCE TYPE PHASE II</u> <u>CONTROL</u>  A/N 494642 (Previous a/n 416586)	D14				D330.1 J110.1 J373.4
<b>Process 1: PRINTING &amp; DRYING</b>					
<b>System 5:</b>					
PRINTING PRESS, LITHOGRAPHIC, MAN ROLAND, MODEL 700, SIX COLOR, SHEET FED  A/N 497740 (Previous a/n 304213)	D9			VOC (RULE 1130, 1171)	B27.1 H23.1 K67.3

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OVEN, I.R., CURING, 114 KW  A/N 497740	D10			PM (RULE 404)	
OVEN, U.V. CURING, 108 KW  A/N 497740	D25			PM (RULE 404)	

A/N 497629: Title V permit revision application

**BACKGROUND:**

Royal Paper Box submitted application no. 494642 to update their gasoline fuel dispensing and storage system (device nos. D13 and D14) with new Healy Phase II Enhanced Vapor Recovery (EVR) components. The new CARB-certified EVR components consists of a new nozzle, clean air separator, coaxial hoses and a vacuum pump. The Phase II vapor recovery system is designed to collect gasoline vapors that would otherwise escape into the atmosphere as vehicles are being refueled and meets CARB Enhanced Vapor Recovery Phase II requirements. This is the only change requested with the application, there will not be an increase in gasoline throughput.

Royal Paper Box also submitted application no. 497740 to permit a new UV oven that will be used in conjunction with a permitted lithographic printing press and infrared oven (device nos. D9 & D10). The new UV oven will be used in addition to the IR oven. Having both types of ovens will allow Royal Paper Box greater printing flexibility. Royal Paper Box is a printing facility. They operate several lithographic printing presses, IR and UV ovens under a facility-wide VOC emission cap of 429 lb/month. The addition of the electric UV oven will not cause an increase in emissions since all VOC emissions are associated with the press.

Royal Paper Box is a Title V facility. A Title V renewal permit was issued to this facility on October 6, 2004. Royal Paper Box has proposed to revise their Title V renewal permit (with application no. 497629) by modifying a fuel dispensing and storage system operating under device nos. D13 and D14 (application no. 494642) and adding a UV oven (device no. D25, application no. 497740). This permit revision is considered as a “de minimis significant permit revision” to the Title V renewal permit, as described in the Regulation XXX evaluation.

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**PROCESS DESCRIPTION:**

As mentioned previously, Royal Paper Box is a commercial lithographic printing facility that produces printed, folded paper boxes and packaging. The new oven will be added to an existing lithographic printing press and IR oven combination. Royal Paper Box operates another similar configuration under device nos. D18, D19 and D20. The facility uses low-VOC inks, fountain solutions and aqueous coatings. Printing operations are normally performed during two 8-hour shifts, five days a week.

The fuel dispensing and storage system is used to fuel company cars with gasoline. The cars are used by a variety of employees on public roads and the in-house fueling system is an added convenience for them. Maximum monthly throughput is 2,500 gals/month, though actual monthly throughput is far less than this amount. The facility has not be issued any NCs or NOV's since Feb 2001.

**EMISSIONS CALCULATIONS:**

A/N 494642:

The hydrocarbon and benzene emissions from storage tank filling and motor vehicle refueling operations are estimated by using appropriate District emission factors summarized in the following table.

Emission Factors and Control Efficiencies

The following table summarizes the uncontrolled ROG emission factors in pounds per 1,000 gallons of gasoline throughput, benzene content of gasoline, and control efficiencies:

Process	Uncontrolled ROG Emissions (lb/1000 gal)	Benzene Content (wt. %)	Control Efficiency
Loading	8.4	0.3, Vapor	95
Breathing	0.1	0.3, Vapor	75
Refueling*	8.3	0.3, Vapor	96
Spillage	0.42	1.0, Liquid	0

*\*Assumes a more realistic 96% control efficiency for Phase II recovery system.*

Calculations

The following equations are used for calculating ROG and Benzene emissions from gasoline (GA). The emission factors have been modified from the CAPCOA ones to fit District specific assumptions:

ROG, uncontrolled = EF (Lbs-ROG/1,000 Gal) x Throughput (1,000 Gals/Month)

ROG, controlled = ROG, uncontrolled x Control Efficiency

Benzene, uncontrolled = ROG, uncontrolled x Benzene Content in GA

Benzene, controlled = ROG, controlled x Benzene Content in GA

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No change in throughput, remains at = 2500 gals/month

#### Emissions Breakdown

Process	ROG, R1 (lb/mon)	ROG, R2 (lb/mon)	Benzene, R1 (lb/mon)	Benzene, R2 (lb/mon)
Loading	21	1.05	0.06	0
Breathing	0.25	0.06	0	0
Refueling	20.75	0.83	0.06	0
Spillage	1.05	1.05	0.01	0.01
Total ROG	43.1	3.0	0.13	0.01

#### Summary of Emissions

	ROG, R1	ROG, R2	Benzene, R1	Benzene, R2
Monthly	43.1	3	0.14	0.02
Daily	1.4	0.1	0	0
Hourly	0.06	0	0	0

A/N 497740:

VOC emissions are expected from the use of inks, blanket washes, fountain solutions and coatings. The modification of adding the UV oven is not expected to result in an actual increase of VOC emissions at the facility. For NSR purposes all VOC emissions are from the printing press.

#### **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. The closest school located to the facility is 0.3 miles away (Vail High School, 1230 S. Vail Ave., Montebello).

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). There will not be an emission increase with the proposed project.

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 an increase in toxic emissions with the proposed project and there will not be a cancer risk equal or greater than one in a million.

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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). There will not be an emission increase with the proposed project.

	Maximum Daily Emissions					
	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>CO</b>	<b>Pb</b>
Emission increase	0	0	0	0	0	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: AQMD database has no records of visible emissions or nuisance complaints against this facility. Compliance with these requirements is expected with the proper operation of the equipment.

RULE 461: The storage tank is equipped with CARB-certified EVR Phase I vapor controls and are equipped with submerged fill tubes. The EVR Phase II dispensing nozzle is CARB-certified. The system will operate in compliance with the rule.

RULE 1170: The storage tank under device no. D13 is methanol compatible and is designated as such in the permit wording. Compliance is achieved.

**REG. XIII**

1303(a): Not applicable, there is not an emission increase.

1303(b)(1): Not applicable, modeling is not required for ROG emissions.

1303(b)(2): Emission offsets are not required since there is not an emission increase.

1303(b)(4): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

RULE 1401: There will not be an increase in toxic air contaminants with either application. Compliance is expected.

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**REGULATION XXX:**

The proposed project is considered as a “de minimis significant permit revision” to the Title V permit issued to 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 (HAP) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Air Contaminant	Daily Maximum (lb/day)
HAP	30
VOC	30
NO <sub>x</sub>	40
PM10	30
SO <sub>x</sub>	60
CO	220

Rule 3003(j) specifies that a proposed permit for a Title V permit revision shall be submitted to EPA for review. To determine if a project qualifies for a “de minimis significant permit revision”, emission increases 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 1<sup>st</sup> permit revision to the Title V renewal permit issued to this facility on October 6, 2004. The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal permit was issued:

Revision	HAP	VOC	NO <sub>x</sub>	PM10	SO <sub>x</sub>	CO
Previous Total	0	0	0	0	0	0
1 <sup>st</sup> Permit Revision, modify Device nos. D13 and D14, add device no. D25	0	0	0	0	0	0
Total	0	0	2	0	0	0
Maximum Daily	30	30	40	30	60	220

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” for non-RECLAIM pollutants or HAPs.

**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

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exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to the EPA for a 45-day review pursuant to Rule 3003(j). If the EPA does not raise any objections within the review period, a revised Title V permit will be issued to this facility.

**CONDITIONS:**

D330.1 THE OPERATOR SHALL HAVE A PERSON THAT HAS BEEN TRAINED IN ACCORDANCE WITH RULE 461(D)(5) CONDUCT A SEMI-ANNUAL INSPECTION OF THE GASOLINE TRANSFER AND DISPENSING EQUIPMENT. THE FIRST INSPECTION SHALL BE IN ACCORDANCE WITH RULE 461, ATTACHMENT B, THE SECOND INSPECTION SHALL BE IN ACCORDANCE WITH RULE 461, ATTACHMENT C, AND THE SUBSEQUENT INSPECTIONS SHALL ALTERNATE PROTOCOLS. THE OPERATOR SHALL KEEP RECORDS OF THE INSPECTION AND THE REPAIRS IN ACCORDANCE TO RULE 461 AND SECTION K OF THIS PERMIT.

J109.1 THE OPERATOR SHALL USE, EXCEPT FOR DIESEL TRANSFER, THE PHASE I VAPOR RECOVERY SYSTEM IN FULL OPERATION WHENEVER THIS EQUIPMENT IS IN USE. THIS SYSTEM SHALL BE INSTALLED, OPERATED AND MAINTAINED TO MEET ALL CARB CERTIFICATION REQUIREMENTS.

J110.1 THE OPERATOR SHALL USE, EXCEPT FOR DIESEL TRANSFER, THE PHASE II VAPOR RECOVERY SYSTEM IN FULL OPERATION WHENEVER \_GASOLINE\_ FROM THIS EQUIPMENT IS DISPENSED TO MOTOR VEHICLES AS DEFINED IN RULE 461. THIS SYSTEM SHALL BE INSTALLED, OPERATED AND MAINTAINED TO MEET ALL CARB CERTIFICATION REQUIREMENTS.

J373.3 THE OPERATOR SHALL COMPLY WITH THE FOLLOWING GASOLINE TRANSFER AND DISPENSING REQUIREMENTS:

All Phase I and II vapor recovery equipment at this facility shall be installed, operated and maintained to meet all California Air Resources Board certification requirements.

New equipment installations and subsequent service and repairs for any certified component for which this permit was issued, shall only be performed by a current and certified person who has successfully completed the manufacturer's training course and appropriate International Code Council (ICC) certification. Completion of any AQMD training course does not constitute as a substitute for this requirement. Proof of successful completion of any manufacturer training course shall be with the manufacturer.

At least seventy-two (72) hours prior to back-filling any underground storage tank or piping, the AQMD shall be notified by e-mail at [r461backfill@aqmd.gov](mailto:r461backfill@aqmd.gov) or by facsimile at telephone number (909) 396-3606. Such notification shall include the name of the owner or operator, the name of the contractors, the location of the facility, and the scheduled start and completion dates of the back-filling procedure. The back-filling procedure shall not commence until inspected by a District representative.

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Depending on the system configuration, a leak rate test of drop tube/drain valve assembly shall be conducted to quantify the pressure integrity of both the drop tube and drain valve seal or a leak rate test of drop tube overflow prevention device and drain valve shall be conducted to quantify the pressure integrity of the drop tube overflow prevention device and the pressure integrity of the spill container drain valve. Either test shall be conducted as a performance test and as a reverification test.

The leak rate test shall be conducted in accordance with test procedure Method TP-201.1C (October 8, 2003) or TP-201.1D (October 8, 2003), respectively. Results shall be submitted to the AQMD, Office of Engineering and Compliance, within seventy-two (72) hours of test.

A leak rate and cracking pressure test of pressure/vacuum relief vent valves shall be conducted within ten days (10) after the start of operation of the Phil-Tite Phase I EVR equipment and at least once every three (3) years thereafter to determine the pressure and vacuum at which the pressure/vacuum vent valve actuates, and to determine the volumetric leak rate at a given pressure. The test shall be conducted in accordance with the test procedure Method TP-201.1E (October 8, 2003).

The results of the leak rate and cracking pressure test shall be submitted to the AQMD, Office of Engineering and Compliance, within seventy-two (72) hours of test. This test result shall be kept on site for three (3) years and made available to District representatives upon request.

A static torque test of rotatable Phase I adaptors shall be conducted to quantify the amount of static torque required to start the rotation of the rotatable Phase I adaptors. The test shall be conducted in accordance with the test procedure method outlined in TP-201.1B (October 8, 2003) as a performance test and as a reverification test. Results shall be submitted to the AQMD, Office of Engineering and Compliance, within seventy-two (72) hours of test.

A static pressure leak decay test shall be conducted to demonstrate that the storage tanks, the remote and/or nozzle vapor recovery check valves, associated vapor return piping and fittings are free from vapor leaks. The test shall be conducted in accordance with CARB test procedure Method TP-201.3 (March 17, 1999) as a performance test and as a reverification test. Results shall be submitted to the AQMD, Office of Engineering and Compliance, within seventy-two (72) hours of test.

The AQMD shall be notified by e-mail at [r461testing@aqmd.gov](mailto:r461testing@aqmd.gov) or by facsimile at telephone number (909) 396-3606 at least seventy-two (72) hours prior to any of the above mentioned testing requirements. Such notification shall include the name of the owner or operator, the name of the contractor, the location of the facility, and the scheduled start and completion dates of the tests to be performed.

The testing for the above mentioned tests shall be conducted in accordance with the most recent Rule 461 amendment or CARB executive order requirements, whichever is more stringent. All records and test results that are required to be maintained by Rule 461 shall be kept on site for four years and made available to District representatives upon request.

**J373.4 THE OPERATOR SHALL COMPLY WITH THE FOLLOWING GASOLINE TRANSFER AND DISPENSING REQUIREMENTS:**

All Phase I and II vapor recovery equipment at this facility shall be installed, operated and

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maintained to meet all California Air Resources Board certification requirements.

Except for diesel transfers, Phase II vapor recovery systems shall be in full operation whenever fuel is being transferred into motor vehicles, as defined in Rule 461.

The District at its discretion may wish to witness the installation and/or performance testing of the Healy Phase II EVR system not including ISD. At least seventy-two (72) hours prior to the installation and performance testing, the applicant shall notify the AQMD at telephone number (866) 770-9140.

New equipment installations and subsequent service and repairs for any certified component for which this permit was issued, shall only be performed by a current and certified person who has successfully completed the manufacturer's training course and appropriate International Code Council (ICC) certification. Completion of any AQMD training course does not constitute as a substitute for this requirement. Proof of successful completion of any manufacturer training course shall be with the manufacturer.

The Phase II vapor recovery system shall be installed, operated, and maintained such that the maximum allowable pressure through the riser and underground piping does not exceed the dynamic back pressure described by the California Air Resources Board Executive Order by which the system was certified: Nitrogen flowrate of 60 CFH with a Dynamic Back Pressure of 0.5 inches of water.

Dynamic back pressure tests shall be conducted to determine the Phase II system vapor recovery back pressures. The performance tests shall be conducted in accordance with CARB test procedure TP-201.4, Methodology 4 and 6 (July 3, 2002). This test shall be a one-time test and the results kept permanently on site. Results shall be submitted to the AQMD, Office of Engineering and Compliance, within seventy-two (72) hours of tests.

A static pressure performance test for the Healy Clean Air Separator using both the vacuum decay procedure and the positive pressure procedure shall be conducted to quantify the vapor tightness of the Healy Clean Air separator tank pressure system. These tests shall be conducted in accordance with Exhibit 4 of CARB Executive Order VR-201-i as a performance test and as a reverification test. Results shall be submitted to the AQMD, Office of Engineering and Compliance, within seventy-two (72) hour.

A Vapor to Liquid volume ratio test shall be conducted to quantify the vapor to liquid (V/L) volumetric ratio of the Healy Clean Air separator system. The test shall be conducted in accordance with Exhibit 5 of CARB Executive Order VR-201-i as a performance test and as a reverification test. Results shall be submitted to the AQMD, Office of Engineering and Compliance, within seventy-two (72) hours of test.

A nozzle bag test shall be conducted on the Healy Phase II EVR nozzles to verify the integrity of the vapor valve. The test shall be conducted on any newly installed or replaced Healy Phase II EVR nozzle and in accordance with Exhibit 7 of CARB Executive Order VR-201-i. Results shall be submitted to the AQMD, Office of Engineering and Compliance, within seventy-two (72) hours of test.

A static pressure leak decay test TP-201.3, shall be conducted in accordance with Exhibit 8 of CARB Executive Order VR-201-i. Verification of completing each step as outlined shall be documented by submitting a copy of Exhibit 8 to the AQMD, Office of Engineering and

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Compliance, within seventy-two (72) hours of test.

Unless AQMD Rule 461 requires a more frequent testing or inspection schedule, the owner/operator shall be responsible to perform the scheduled weekly, quarterly, and annual inspections as outlined in the arb approved installation, operation, and maintenance manual for the Healy Phase II EVR systems, as well as all the required vapor recovery system tests as per the current and appropriate CARB Executive Order.

The AQMD shall be notified by e-mail at [r461testing@aqmd.gov](mailto:r461testing@aqmd.gov) or by facsimile at telephone number (909) 396-3606 at least seventy-two (72) hours prior to any of the above mentioned testing requirements. Such notification shall include the name of the owner or operator, the name of the contractor, the location of the facility, and the scheduled start and completion dates of the tests to be performed.

The testing for the above mentioned tests shall be conducted in accordance with the most recent Rule 461 amendment or CARB Executive Order requirements, whichever is more stringent. All records and test results that are required to be maintained by Rule 461 shall be kept on site for four years and made available to District representatives upon request.