

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <i>ENGINEERING and COMPLIANCE</i>  APPLICATION PROCESSING AND CALCULATIONS	PAGES 8	PAGE 1
	APPL. NOs. 541584-5	DATE 8/21/2012
	PROCESSED BY SMKE	CHECKED BY

Royal Paper Box  
 1105 S. Maple Ave.  
 Montebello, CA 90640-6007  
 ID#: 23487

Mailing Address:  
 P.O. Box 458  
 Montebello, CA 90640-0458

**EQUIPMENT DESCRIPTION:**

A/N 541584 – replacement of P/O F47101, A/N 497740 (D9, D10 & D25) – P/C

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
<b>Process 1: PRINTING &amp; DRYING</b>					
<b>System 12:</b>					
PRINTING PRESS, LITHOGRAPHIC, KBA, MODEL RAPIDA 106, 7 COLOR, 42" WIDE SHEET FED, WITH COATER UNIT  A/N: 541584	D31			VOC: (9) [RULE 1130, 1171]	B27.1 B59.1 B59.3 E193.2 H23.1 K67.2
OVEN, I.R. CURING, 140.8 KW  A/N: 541584	D32			PM (9)[RULE 404]	
OVEN, U.V. CURING, 207 KW  A/N: 541584	D33			PM (9)[RULE 404]	

A/N 541585

Deminimis significant Title V permit revision

**CONDITIONS:**

F2.1: The operator shall limit emissions from the facility as follows:

CONTAMINANT	EMISSIONS LIMIT
VOC	Less than or equal to 429 LBS IN ANY ONE DAY

B27.1: The operator shall not use materials containing any compounds identified in the SCAQMD Rule 1401, as amended 07-dec-1990.

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B59.1: The operator shall not use the following material(s) in this device:

Fountain solutions greater than 5 percent VOC by volume, as applied, including water and exempt compounds.

B59.3: The operator shall not use the following material(s) in this device:

Blanket wash and roller wash materials with composite vapor pressure exceeding 10 mm Hg at 20 degrees C.

E193.2 The operator shall restrict the operation of this equipment as follows:

This equipment shall not be operated simultaneously with the lithographic printing system with Device nos. D9, D10 & D25 under A/N 497740 except when testing and debugging the new press.

H23.1: This equipment is subject to the applicable requirements of the following rules or regulations:

<u>Contaminant</u>	<u>Rule</u>	<u>Rule/Subpart</u>
VOC	District Rule	109

K67.2: The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Usage of inks, varnishes, fountain solution (including water), roller wash, blanket wash and any other materials containing volatile organic compounds (VOC), in gallons per day of each material.

Density of inks, in pounds per gallon and percentage by weight of lithographic oils in inks.

Ink absorption factor as specified by current SCAQMD guidelines.

VOC content of fountain solution, wash materials and any other materials, in pounds per gallon as applied including water and exempt compounds.

The VOC emissions from the UV curable inks and coatings shall be calculated using the appropriate VOC emission factor determined pursuant to the current District approved test method. In case no laboratory tested emission factor is available, then an emission factor of 0.05 pound of VOC per pound of ink/coating shall be used.

These records shall be kept in a manner approved in writing by the Executive Officer.

## **BACKGROUND:**

Royal Paper Box (RPB) submitted application no. 541584 to install a new lithographic printing press with IR and UV curing to replace an existing lithographic printing press with UV/IR (D9, D10 & D25 under A/N 497740). The main reason for the new press is to allow RPB to remain competitive in the printing industry by reducing the amount of set-up time that is required by the older press. The new press allows this “make ready” set-up time to be greatly reduced. When the new press is fully operational, the old press will be removed from the facility (identified as a “trade-in” in the sales contract). RPB currently operates seven sheet-fed lithographic printing

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systems under a facility-wide VOC emission cap of 429 lb/month. The printing system to be replaced (D9, D10 & D25) does not have any individual equipment VOC emission limit. This is a functionally identical replacement with no increase in emissions.

Royal Paper Box is a Title V facility. The second Title V renewal permit was issued to this facility on October 6, 2009. Royal Paper Box has proposed to revise their Title V renewal permit (with application no. 541585) by adding this new press to replace an existing press. 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. This is the third revision since the second TV renewal. Also included with this 3<sup>rd</sup> revision will be the administrative revision to convert P/C to P/O for lithographic printing system D29-30 under A/N 523529 by moving from Section H to D, and removing the replaced printing system D18-20 under A/N 391678; and the de minimis significant revision to replace a power washer by adding D26 under A/N 501390 and removing the replaced washer D17 under A/N 344301. Both these revisions are under separate evaluation.

The facility was issued an N/C on 7/1/2011 to provide VOC records and MSDS, and latest reverification tests for EVR gasoline equipment for 2011. They were found in compliance and this N/C is closed as of 8/18/2011. There were no NOV issued or complaints received in the last two years.

**PROCESS DESCRIPTION:**

Royal Paper Box is a commercial lithographic printing facility that produces printed, folded paper boxes. VOC is emitted from the inks, coatings, fountain solution and washes used in the printing process.

Royal Paper Box will use low-VOC inks and fountain solutions, aqueous coatings, UV inks and coatings, and low VOC/vapor pressure washes. Printing operations are normally performed during two 8-hour shifts. Normal operating schedule for this equipment will be 12 hours/day, 6 days/week, 50 weeks/year. Maximum operating schedule will be 24 hrs/day, 7 days/week, 52 weeks/year.

**EMISSIONS CALCULATIONS:**

VOC is emitted from the materials used in the press. There are no combustions emissions from the IR/UV ovens since they are electric. There will not be an increase in emissions from the facility since this is a functionally identical replacement and RPB will continue to operate under their existing facility VOC cap of 429 lb/day.

Following is a summary of NSR entries for VOC 30-day average. The emissions in NSR reflect the facility VOC cap of 429 lb/day.

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Litho Press A/N	NSR VOC 30-day ave (lb/day)
191671	0
261409	244
304212	0
391678 (repl by 523529)	65
391680	0
497740 (to be repl by this appl)	0
513306	120
<b>TOTAL</b>	<b>429</b>

VOC emissions are calculated below based on the average and maximum usages with the IR oven submitted with the application. The emissions when using UV curable materials are considerably less.

KBA Rapida 106								
A/N 541584	maximum	normal				ink/varnish	fountain	wash
hr/dy	24	12				10%	100%	100%
dy/wk	7	6						
wk/yr	52	50				0%		
	VOC	ave	max			ave VOC	max VOC	
	(lb/gal)	(gal/dy)	(gal/dy)			(lb/dy)	(lb/dy)	
ink	0.3	2.8	22	(200 lb)		0.08	0.66	
w/b varnish	0.43	35	125			15.05	53.75	
-	0	0	0			0.00	0.00	
fs-conc	3	0.375	3.5			1.13	10.50	
water	0	8	75			0.00	0.00	
washes	0.8	4	20			3.20	16.00	
-	0	0	0			0.00	0.00	
	NSR--->>>	max	max	30-day		AEIS--->>>	ave	ave
		(lb/hr)	(lb/dy)	(lb/dy)			(lb/hr)	(lb/yr)
ROG (R1)		3.37	80.91	NA			1.62	NA
ROG (R2)		3.37	80.91	80.91			1.62	5837.70

## TOXICS

This evaluation is for Rule 212 (c)(3) - see attached spreadsheets for toxic emission calculations and screening risk assessment. Emissions were calculated from maximum usages given by applicant using worst case toxic contents and at increased usages at facility VOC cap of 429

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lb/day. There are no carcinogenic compounds present based on MSDS submitted (most MSDS were submitted with A/N 523529). HIA and HIC are below 1, even if this press was operated at the facility VOC cap.

**RULE ANALYSIS:**

***RULE 212(c)(1)***      *This section requires a public notice for all new and modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school.*

Since there are no schools within 1,000 feet of the facility, a public notice will not be required by this section.

***RULE 212(c)(2) & (g)***      *These sections require a public notice for all new and modified facilities and equipment which have emission increases exceeding any of the daily maximums specified in subdivision (g).*

There will be no emission increase from the equipment or facility since this is a functionally identical replacement and they will operate this press under the existing facility VOC cap. A permit condition will be added to ensure the new press will not be operated simultaneously with the press to be replaced. Public notice will not be required by this section.

***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 resulted in MICR greater than  $1E^{-6}$  per permit unit or greater than  $10E^{-6}$  per facility.*

There are no carcinogenic compounds present in the materials to be used in this equipment, however there are some acute and chronic TAC present in the graphic arts materials. A screening risk assessment was conducted and shows the HIA and HIC are both below 1. Therefore, public notice is not required.

***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.

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**RULE 1130:** Compliant inks, coatings and fountain solution will be used as summarized below.

<i>Material</i>	<i>Rule 1130 VOC Limit lb/gal –w-es</i>	<i>Actual VOC Content</i>
Litho Ink (conventional & UV)	2.5 lb/gal	0.05 - 0.3 lb/gal
Coatings (UV & w/b)	2.5 lb/gal	0.043 -0.43 lb/gal
Fountain Solution	0.83 lb/gal*	0.14 lb/gal*

\*VOC of material, as applied, including water and es.

<b>Material Fountain Solution (FS)</b>	<b>VOC Content (lb/gal)</b>	<b>Usage</b>	<b>Total VOC Lb</b>
F/S concentrate	3.0	6 oz	0.1406
Water	0.00	1 gal	0.000
<b>TOTAL</b>		<b>1.047 gal</b>	<b>0.134 lb/gal</b>

Assume density of VOC in concentrate is 7 lb/gal, VOC vol = 0.1406 lb/7 lb/gal = 0.02 gal VOC

Vol % = 0.02 gal/1.047 gal = 2% << 8% by volume

**RULE 1171:** Compliant solvents will be used for clean-up of this equipment.

<i>Material</i>	<i>Rule 1171 VOC Limit</i>	<i>Actual VOC Content</i>
Blanket & Roller Wash, UV Ink clean-up	0.83 lb/gal	0.48- .80 lb/gal

**REG. XIII**

**1303(a):** BACT is met by use of low VOC fountain solutions (< 5% VOC by volume), low VOC and vapor pressure washes (< 100 g/l VOC and ≤ 10 mm Hg VP), and UV inks and coatings. Permit conditions will be imposed to limit fountain solution to 5% VOC by volume and VP of blanket and roller washes to ≤ 10 mm Hg.

**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 from the facility as a result of this application. This is a functionally identical replacement and exempt from offsets under Rule 1304(a) – there is no increase in rating or PTE. The facility will continue to operate under the existing facility VOC cap of 429 lb/day.

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

***RULE 1401: New Source Review of Toxic air Contaminants***

This is a functionally identical replacement with no increase in emissions, therefore exempt from this rule under 1401(g)(1)(C). The previous permit of the press to be replaced was subject to Rule 1401 as amended December 7, 1990. There are no carcinogenic compounds, only acute and chronic TACs (ethylene glycol butyl ether, ethylene glycol, isopropanol, styrene, acrylic acid and ammonia). The screening risk assessment was done for Rule 212(c)(1) purposes and shows the HIA and HIC are both below 1. See attached toxic evaluation. The permit condition will be carried forward from the replaced press restricting use of TACs with an effective date of 12-7-1990 or earlier with the exception.

**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 3<sup>rd</sup> permit revision to the Title V renewal permit issued to this facility on October 6, 2009. Also included in this revision is the addition of a new power washer D26 under A/N 501390 which replaces an existing washer D17 under 344301 which will be removed; and moving the lithographic printing system D28-30 under A/N 523529 from Section H to Section D and removing the replaced printing system D18-20 under A/N 391678 from Section D (separate evaluations). The following table summarizes the cumulative emission increases resulting from all permit revisions since the Title V renewal permit was issued:

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	<b>Revision</b>	<b>HAP</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>	<b>PM10</b>	<b>SO<sub>x</sub></b>	<b>CO</b>
1 <sup>st</sup>	Add Device no. D27 (UV curing oven) – A/N 513306	0	0	0	0	0	0
2 <sup>nd</sup>	Add Device nos. D28-D30 for a new lithographic printing press with IR and UV ovens (to replace D18-D20 – which will be removed when P/O issued) – A/N 523529	0	0	0	0	0	0
3 <sup>rd</sup>	Add Device nos. D31-D33 for a new lithographic printing press with IR and UV ovens (to replace D9, D10 & D25 – which will be removed when P/O issued) – A/N 541584	0	0	0	0	0	0
	Admin rev. Convert P/C for D28-D30 for a new lithographic printing press with IR and UV ovens to P/O for litho press (move from Section H to Section D). Remove replaced press D18-20. -A/N 523529	0	0	0	0	0	0
	Add pressure washer D26 for a new pressure washer, and remove replaced pressure washer D17 -A/N 501390	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Cumulative Emission Total	0	0	0	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 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 (Sections D and H) will be issued to this facility with a Permit to Construct for this equipment (D31-33), and Permits to Operate for the press (D28-30) under A/N 523529 and the high pressure washer (D26) under A/N 501390.