

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE Coating, Printing and Aerospace Operations Team PERMIT APPLICATION EVALUATION	Page	1 of 7
	App. number(s)	479412,-414
	Processed by	Jason Aspell
	Reviewed by	Hamed Mandilawi
	Date	04/22/08

PERMIT TO CONSTRUCT EVALUATION
Flexographic Printing Press (new construction)

Applicant's Name: Weyerhaeuser Company.
Company ID No.: 1962
Mailing Address: 601 E. Ball Rd., Anaheim, CA 92805
Equipment Address: 601 E. Ball Rd., Anaheim, CA 92805

EQUIPMENT DESCRIPTION:

Application 479412:

Equipment	Device ID	Connected To	Source Type/ Monitoring Unit	Emissions	Equipment Specific Conditions
PROCESS 1: PAPER BOX MANUFACTURING					
SYSTEM 3: PRINTING SYSTEM					S2.1, S13.1
PRINTING PRESS, FLEXOGRAPHIC, UNITED, MODEL NO. UNITED 50X115 ROBOTIX, TWO COLOR, SHEET FED, 115 IN. WIDTH, AIR DRIED WITH GLUER Reference A/N 479412	D55			VOC: (9) RULE 1130, 10-8-1999; RULE 1171, 11-7-2003; RULE 1171, 2-1-2008	A63.2, B59.7, B89.4

Application 479414:
 Title V/Reclaim Revision

HISTORY:

The company submitted Application No. 479412 on 3/18/08 for a permit to construct a flexographic printing press. A/N 479414 was also submitted for a Permit Revision application. Because of delinquent fees due for the facility, the applications were not accepted by the District until 4/04/08. The facility is located in an industrial zone, but is adjacent to a residential area to the northwest. The closest school is located 1200 feet to the north of the facility's property line. There have been no complaints placed against this facility in the past three years. The facility was determined to be operating in compliance during its last three inspections. This equipment will be included under the 1500 lb VOC/month limit for Process 1 System 3 (Condition S2.1).

This printing press will be replacing an existing printing press under D40 and will serve as a functionally identical replacement. The inactivation of D40 will be completed when the permit to operate for the new press is issued. D40 operates under an equipment limit of 900 lb VOC/month (30 lb/day) which will be transferred to this new equipment. The company is also requesting the inactivation of Boiler D20, which will take place immediately.

PROCESS DESCRIPTION:

This equipment, referred also as a flexo folder gluer, is used to print color and graphic images onto coated or uncoated corrugated paper sheets.

Corrugated sheets are fed into the equipment at the feeder end. Ink is applied to analog rolls, then transferred onto rotary printing dies. The printing dies then apply ink onto the corrugated sheets. Low-VOC, water-

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based flexographic printing inks are used exclusively. More than 200 different color inks are used and the VOC content will vary slightly, depending on color. The inks are air-dried. The VOC emissions from this equipment are vented directly to the atmosphere from a single, overhead roof vent. There is no stack associated with this process.

Printed sheets are slotted, scored and diecut. Paper scrap from these operations is removed via vacuum ducts into a scrap conveyor system (Cyclone).

A "glue lap" adhesive is then applied as a thin bead onto the corrugated sheet via an applicator roll, just prior to the folding operation. The adhesive is a water based, polyvinyl emulsion, chemically and functionally similar to Elmer's Glue. It is applied at ambient temperature and is air dried. The adhesive contains low levels of VOC and trace amounts of hazardous air pollutants.

Clean-up is generally performed with water only, although very small amounts (spray pump bottles) of water based cleaner (rule 1130 compliant) may be used. Organic solvents are not used on this equipment for clean-up.

The planned operating schedule is 24 hrs/day, 6 days/week and 52 weeks/year. The maximum schedule would be 7 days/week.

EMISSION CALCULATIONS:

The equipment will be operating under a VOC emission limit of 900 lbs/month and bubbled under a 1500 lb VOC/month with 12 other printing presses. The average emissions from this unit will be:

$$R1 = R2 = 900 \text{ lb VOC/month} \div 30 \text{ day/mo} \div 24 \text{ hr/day} = 1.25 \text{ lb VOC/hr}$$

Since there is an existing system VOC limit, all of the emissions are allocated to other existing equipment. This press will have 0 lb VOC/day entered under NSR. The inks are air dried so there will be no emissions from the combustion of natural gas for a heater.

RULES/REGULATION EVALUATION:

RULE 212, PUBLIC NOTIFICATION

This equipment will be a functionally identical replacement of another press and will not trigger public notice requirements. The following is for informational purposes only:

PARAGRAPH 212(c)(1):

This paragraph requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. According to the Google Maps, there is no school within the 1,000 feet of the permit unit. Therefore, a public notice will not be required by this paragraph.

PARAGRAPH 212(c)(2):

This equipment will be a functionally identical replacement of another press and will not trigger public notice requirements. This section requires a public notice for all new or modified facilities, which have on-site emission increases exceeding any of the daily maximums as specified in subdivision (g). The emission from the facility will remain at the current level since the operation of this equipment will be included under an existing VOC bubble. Therefore, this project will not be subject to the public notice requirements under this section.

PARAGRAPH 212(c)(3):

This equipment will be a functionally identical replacement of another press and will not trigger public notice requirements. In addition, this equipment will result in a MICR of less than one in a million and a HIA and HIC less than one (see Rule 1401 evaluation section). Therefore, a public notice will not be required under this section.

PARAGRAPH 212(g)

The source to be constructed will be a functionally identical replacement for an existing permitted press under D40, and will not trigger public notice requirements. This equipment will assume the same emission limit of 900 lb VOC/month as D40. Since this equipment will operate at the emission level, it will remain under the thresholds listed in this section and will not require a public notice.

Pollutant	Printing Presses (lb/day)	Max. 212(g) Daily Emission Increase (lb/day)
CO	0	220
NOx	0	40
PM10	0	30
ROG	30	30
SOx	0	60

RULE 401, VISIBLE EMISSIONS

No visible emissions are expected from this equipment.

RULE 402, NUISANCE

With the proper operation of the equipment, no nuisance problems are expected at this facility. The facility is located within an industrial zone, which is adjacent to a residential area. The company has been operating functionally identical equipment and has not had any complaints placed against it within the past three years. Compliance with this rule is expected.

RULE 1130, GRAPHIC ARTS

The company will be using flexographic inks that have VOC contents of 10 g VOC/L to 134 g VOC/L. This rule requires flexographic inks applied to porous substrates to have a VOC content less than 225 g VOC/L. The company will also use an adhesive. The glue used the form the corrugated portion of the boxes will contain 0.013 lb VOC/gal, which will be less than the applicable limit of 150 g VOC/L. Compliance with this rule is expected.

RULE 1171, SOLVENT CLEANING OPERATIONS

The facility will typically use water to clean this equipment, but might occasionally utilize a water based cleaner that contains less than 25 g VOC/L, which will meet the limits of this rule. Compliance with this rule is expected.

REGULATION XIII

RULE 1303(a), BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

The facility will be required to meet the Best Available Control Technology requirements for this equipment. The flexographic inks are required to have no more than 1.5 lb VOC/gal, and the facility will need to comply with Rule 1130 and 1171. The inks to be used will meet this limit, and the facility is expected to comply with these rules. Compliance with this rule is expected.

RULE 1303(b)(1), MODELING

There are presently no modeling requirements for VOC emissions. No emissions of any other criteria pollutant are expected from this equipment. Compliance with this rule is expected.

RULE 1303(b)(2), EMISSION OFFSETS

The operation of this equipment will be bubbled under an existing VOC limit. Therefore emissions from the entire facility will remain at the current level and the facility will not be required to offset any emissions.

RULE 1401, NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

According to the Material Safety Data Sheets (MSDS) that were submitted with this application, Weyerhaeuser will be conducting operations with this equipment that result in the emission of toxic air contaminants identified in Table 1 of Rule 1401, with an effective date of March 7, 2008 or earlier. This new press is a functionally identical replacement and there will be no increase in emissions or health risk since the materials used will be the same. Therefore under 1401(g)(1)(C), this equipment is exempt from further evaluation under this rule. A permit condition will be included prohibiting the use of toxic compounds listed in Rule 1401, with an effective date of March 7, 2008, except for acetaldehyde, ammonia, vinyl acetate, isopropyl alcohol and formaldehyde.

For future informational purposes only, a Health Risk Assessment was performed for the equipment despite the exemption. The equipment qualifies as a volume source. The building housing the equipment has a building height of 20 feet and an area of 161,200 ft². The inks will contain an average of 0.25% by wt. of ammonia and the PP Mottling agent contains 50% by weight of IPA. The adhesive will contain 0.04% of acetaldehyde, 0.01% formaldehyde and 0.08% of vinyl acetate. The company stated in their application package that no more than 2000 lbs of adhesive and 12000 lbs of ink will be used per month. These values will actually be much less since the material usage will be further limited by the 900 lb VOC/month limit. This results in the following emissions of toxic compounds from these materials:

Adhesive

$$2000 \text{ lb}/\text{mo.} \div 30 \text{ day}/\text{mo} \div 24 \text{ hr}/\text{day} = 2.78 \text{ lb}/\text{hr}$$

Acetaldehyde

$$2.78 \text{ lb}/\text{hr} \times 0.0004 \text{ lb Acet.}/\text{lb Adh.} = 0.001 \text{ lb acet.}/\text{hr}$$

Formaldehyde

$$2.78 \text{ lb}/\text{hr} \times 0.0001 \text{ lb Form.}/\text{lb Adh.} = 0.00028 \text{ lb form.}/\text{hr}$$

Vinyl Acetate

$$2.78 \text{ lb}/\text{hr} \times 0.0008 \text{ lb VA}/\text{lb Adh.} = 0.0022 \text{ lb VA}/\text{hr}$$

Ink

$$1200 \text{ lb}/\text{mo.} \div 30 \text{ day}/\text{mo} \div 24 \text{ hr}/\text{day} = 1.67 \text{ lb}/\text{hr}$$

Ammonia

$$1.67 \text{ lb}/\text{hr} \times 0.0025 \text{ lb NH}_3/\text{lb ink} = 0.0042 \text{ lb NH}_3/\text{hr}$$

For IPA emissions, a worst-case scenario of 900 lb/month (entire VOC limit) will be assumed, although actual emissions will be much less. A Tier II health risk assessment was performed based on the maximum emissions calculated. The results of the HRA show that the equipment will result in a MICR of less than one in a million for both residential and commercial receptors and acute and chronic Hazard Indices each less than 1.0 for each Target Organ. Compliance with this rule is expected.

REGULATION XX-RECLAIM

Weyerhaeuser is a NOx cycle 1 RECLAIM facility. The proposed press will not produce any combustion contaminants thus will not affect their RECLAIM allocation.

REGULATION XXX:

This facility is in the RECLAIM program. The proposed project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or hazardous air pollutants (HAPs), and a “minor permit revision” for RECLAIM pollutants to the RECLAIM/Title V permit for this facility.

Non-RECLAIM Pollutants or HAPs

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 HAPs 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 (lbs/day)
HAP	30
VOC	30
NOx*	40
PM ₁₀	30
SOx*	60
CO	220

* Not applicable if this is a RECLAIM pollutant

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 6th permit revision to the Title V renewal permit issued to this facility on November 12, 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	NOx*	PM10	SOx	CO
Previous Permit Revision Total Cumulative to date. Title V permit renewed Nov. 12, 2006	0	0	0	0	0	0
5th Permit Revision; addition of a Flexographic Printing Press (device no. D54),	0	0	0	0	0	0
6th Permit Revision; addition of a Flexographic Printing Press (device no. D55),	0	0	0	0	0	0
Cumulative Total	0	0	0	0	0	0
Maximum Daily	30	30	40*	30	60	220

* RECLAIM pollutant, not subject to emission accumulation requirements

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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.

RECLAIM Pollutants

Rule 3000(b)(12)(A)(v) defines a “minor permit revision” as any Title V permit revision that does not result in an emission increase of RECLAIM pollutants over the facility starting Allocation plus nontradeable Allocations, or higher Allocation amount which has previously undergone a significant permit revision process.

Since the proposed project is expected to result in no increase in NOx emissions from this permit revision, this proposed project is considered as a “minor permit revision” for RECLAIM pollutants.

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” for non-RECLAIM pollutants or hazardous air pollutants (HAPs), and a “minor permit revision” for RECLAIM pollutants, 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 have any objections within the review period, a revised Title V/RECLAIM permit will be issued to this facility.

PERMIT CONDITIONS:

The equipment will be subject to the permit conditions listed below:

SYSTEM CONDITIONS

S2.1

THE OPERATOR SHALL LIMIT EMISSIONS FROM THIS SYSTEM AS FOLLOWS

CONTAMINANT	EMISSIONS LIMIT
VOC	LESS THAN OR EQUAL TO 1500 LBS IN ANY ONE MONTH

To ensure compliance with the monthly Volatile Organic Compound(VOC) emission limit(s) of this condition, the operator shall comply with the following recordkeeping requirements:

- (1) The operator shall comply with Rule 109 (Recordkeeping for Volatile Organic Compound Emissions).
- (2) Within 14 calendar days after the end of each month, the operator shall total and record VOC emissions for the month from all equipment and operations covered by the monthly emission limit(s). 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 District rules.
- (3) The operator shall maintain a single list which includes only the name and address of each person from whom the facility acquired VOC-containing material regulated by the District that was used or stored at the facility during the preceding 12 months.
- (4) The operator shall retain all purchase invoices for all VOC-containing material used or stored at the facility, and all waste manifests for all waste VOC-containing material removed from the facility, for five years.

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S13.1

ALL DEVICES UNDER THIS SYSTEM ARE SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

CONTAMINANT	RULE	RULE/SUBPART
VOC	DISTRICT RULE	109

EQUIPMENT CONDITIONS

A63.2

THE OPERATOR SHALL LIMIT EMISSIONS FROM THIS EQUIPMENT AS FOLLOWS:

CONTAMINANT	EMISSIONS LIMIT	
ROG	LESS THAN OR EQUAL TO 900 LBS IN ANY ONE MONTH	

To ensure compliance with the monthly Volatile Organic Compound (VOC) emission limit(s) of this condition, the operator shall comply with the following recordkeeping requirements:

- (1) The operator shall comply with Rule 109 (Recordkeeping for Volatile Organic Compound Emissions).
- (2) Within 14 calendar days after the end of each month, the operator shall total and record VOC emissions for the month from all equipment and operations covered by the monthly emission limit(s). 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 District rules.
- (3) The operator shall maintain a single list which includes only the name and address of each person from whom the facility acquired VOC-containing material regulated by the District that was used or stored at the facility during the preceding 12 months.
- (4) The operator shall retain all purchase invoices for all VOC-containing material used or stored at the facility, and all waste manifests for all waste VOC-containing material removed from the facility, for five years.

B59.7

THE OPERATOR SHALL NOT USE THE FOLLOWING MATERIAL(S) IN THIS DEVICE :

Materials containing any of the compounds identified in the SCAQMD Rule 1401, except acetaldehyde, ammonia, vinyl acetate, isopropyl alcohol and formaldehyde, as amended on March 7, 2008 or earlier

B89.4

THE OPERATOR SHALL NOT USE INKS WITH VOC CONTENT GREATER THAN 1.5 POUNDS PER GALLON, LESS WATER AND EXEMPT COMPOUNDS.

TIER 2 SCREENING RISK ASSESSMENT

A/N: 479412
Fac: Weyerhaeuser

Application deemed complete date: 04/04/08

2. Tier 2 Data

MET Factor	0.56
4 hr	0.95
6 or 7 hrs	0.81

Dispersion Factors

5	3A & 3B For Chronic X/Q
7	For Acute X/Q

Dilution Factors (ug/m3)/(tons/yr)

Receptor	X/Q	X/Qmax
Residential	3.38838	94.722
Commercial	4.6026	118.44

Adjustment and Intake Factors

	Afann	DBR	EVF
Residential	1	302	0.96
Worker	1	149	0.38

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TIER 2 RESULTS

5. MICR

MICR = CP (mg/(kg-day))⁻¹ * Q (ton/yr) * (X/Q) * Afann * Met * DBR * EVF * 1.E-6 * MI

Compound	Residential	Commercial
Acetaldehyde	2.40E-08	6.37E-09
Formaldehyde	1.41E-08	3.75E-09
Vinyl acetate		
Ammonia		
Isopropyl alcohol		
Total	3.82E-08	1.01E-08

Pass

Pass

No Cancer Burden, MICR<1.E=-6

5a. Cancer Burden		no
X/Q for one-in-a-million:		
Distance (meter)		no data
Area (km2):		
Population:		
Cancer Burden:		

6. Hazard Index

HIA = [Q(lb/hr) * (X/Q)max] * AF / Acute REL

HIC = [Q(ton/yr) * (X/Q) * MET * MP] / Chronic REL

Target Organs	Acute	Chronic
Alimentary system (liver) - AL		
Bones and teeth - BN		
Cardiovascular system - CV		
Developmental - DEV		3.35E-03
Endocrine system - END		
Eye	7.75E-02	1.05E-03
Hematopoietic system - HEM		
Immune system - IMM	3.53E-04	
Kidney - KID		3.35E-03
Nervous system - NS		
Reproductive system - REP		
Respiratory system - RES	7.75E-02	2.66E-03
Skin		

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6a. Hazard Index Acute

HIA = [Q(lb/hr) * (X/Q)max] *AF/ Acute REL

HIA - Residential										
Compound	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Acetaldehyde										
Formaldehyde				2.82E-04		2.82E-04			2.82E-04	
Vinyl acetate										
Ammonia				1.24E-04					1.24E-04	
Isopropyl alcohol				6.16E-02					6.16E-02	
Total				6.20E-02		2.82E-04			6.20E-02	

HIA - Commercial										
Compound	AL	CV	DEV	EYE	HEM	IMM	NS	REP	RESP	SKIN
Acetaldehyde										
Formaldehyde				3.53E-04		3.53E-04			3.53E-04	
Vinyl acetate										
Ammonia				1.55E-04					1.55E-04	
Isopropyl alcohol				7.70E-02					7.70E-02	
Total				7.75E-02		3.53E-04			7.75E-02	

6b. Hazard Index Chronic

$$HIC = [Q(\text{ton/yr}) * (X/Q) * MET * MP] / \text{Chronic REL}$$

Compound	HIC - Residential												
	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Acetaldehyde												9.21E-04	
Formaldehyde						7.74E-04						7.74E-04	
Vinyl acetate												9.12E-05	
Ammonia												1.74E-04	
Isopropyl alcohol				2.46E-03					2.46E-03				
Total				2.46E-03		7.74E-04			2.46E-03			1.96E-03	

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HIC - Commercial													
Compound	AL	BN	CV	DEV	END	EYE	HEM	IMM	KID	NS	REP	RESP	SKIN
Acetaldehyde												1.25E-03	
Formaldehyde						1.05E-03						1.05E-03	
Vinyl acetate												1.24E-04	
Ammonia												2.36E-04	
Isopropyl alcohol				3.35E-03					3.35E-03				
Total				3.35E-03		1.05E-03			3.35E-03			2.66E-03	