



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

JUL 09 2012

Richard Sanchez
Label Technology Inc.
2050 Wardrobe Ave
Merced, CA 95341

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: N-1113462

Dear Mr. Sanchez:

Enclosed for your review and comment is the District's analysis of Label Technology Inc.'s application for an Authority to Construct for a flexographic printing press, at 2050 Wardrobe Ave in Merced, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. James Harader of Permit Services at (209) 557-6445.

Sincerely,

David Warner
Director of Permit Services

DW:JH/st

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
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San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

JUL 09 2012

Mike Tollstrup, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
PO Box 2815
Sacramento, CA 95812-2815

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: N-1113462

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Label Technology Inc.'s application for an Authority to Construct for a flexographic printing press, at 2050 Wardrobe Ave in Merced, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

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AIR POLLUTION CONTROL DISTRICT



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JUL 09 2012

Gerardo C. Rios (AIR 3)
Chief, Permits Office
Air Division
U.S. E.P.A. - Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: N-1113462

Dear Mr. Rios:

Enclosed for your review and comment is the District's analysis of Label Technology Inc.'s application for an Authority to Construct for a flexographic printing press, at 2050 Wardrobe Ave in Merced, CA.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. James Harader of Permit Services at (209) 557-6445.

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David Warner
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Merced Sun-Star
Merced Sun-Star

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Label Technology Inc. for a flexographic printing press, at 2050 Wardrobe Ave in Merced, CA.

The analysis of the regulatory basis for this proposed action, Project #N-1113462, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 4800 ENTERPRISE WAY, MODESTO, CA 95356-0244.**

San Joaquin Valley Air Pollution Control District

Authority to Construct

Application Review

Installation of New Flexographic Printing Operation

Facility Name:	Label Technology Inc.	Date:	June 25, 2012
Mailing Address:	2050 Wardrobe Ave Merced, CA 95340	Engineer:	James Harader
		Lead Engineer:	Nick Peirce
Contact Person:	Richard Sanchez		
Telephone:	(209) 384-1000		
Application #:	N-3852-20-0		
Project #:	N-1113462		
Complete:	April 5, 2012		

I. Proposal

Label Technology Inc. has submitted an Authority to Construct application for the installation of a new flexographic printing press with a laminating station and an electric drying oven. Label Technology Inc. is not requesting any changes to the existing facility-wide limit of 49,999 lb-VOC/year.

Label Technology Inc. has submitted an application for a TV permit; however, a TV permit has yet to be issued for this facility.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emission Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4607	Graphic Arts and Paper, Film, Foil and Fabric Coatings (12/18/08)
Rule 4661	Organic Solvents (9/20/07)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:
CEQA Guidelines

III. Project Location

This equipment will be located at 2050 Wardrobe Ave in Merced, CA. The District has verified that the equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Label Technology Inc. is a graphic arts facility. The applicant is proposing to install a new printing press. The printing press will be used to apply inks, coatings, and adhesives to low-porosity labels. The adhesive is used to attach a plastic film to the labels. The press is equipped with an electric curing oven; therefore, these materials are considered to be heat-set. Additionally, equipment cleanup solvent is used at for cleanup of this equipment.

The typical operating schedule for this equipment is 24 hours/day, 52 weeks/year.

V. Equipment Listing

N-3852-20-0: GRAPHIC ARTS PRINTING OPERATION CONSISTING OF AN MPS 10-COLOR HEAT-SET FLEXOGRAPHIC PRINTING PRESS EQUIPPED WITH ELECTRIC DRYERS

VI. Emission Control Technology Evaluation

This operation will only emit VOCs. Emissions are controlled by using low-VOC inks, coatings, adhesives, and cleaning materials.

VII. General Calculations

A. Assumptions

1. Only VOCs will be emitted by the flexographic printing operation.
2. The applicant is proposing to use a maximum of 10 gal/day and 1,500 gal/year of inks.
3. The applicant is proposing to use a maximum of 18 gal/day and 2,000 gal/year of coatings.
4. The applicant is proposing to use a maximum of 9 gal/day and 300 gal/year of adhesives.
5. The applicant is proposing to use a maximum of 10 gal/day and 1,500 gal/year of press room cleaner.
6. The applicant is not proposing to modify the existing facility-wide VOC emission limit of 49,999 lb-VOC/year.

B. Emission Factors

The following table shows the material and coating VOC contents for the proposed graphic arts materials, as obtained from the respective manufacturers.

Proposed Materials	Material VOC (lb/gal)	Coating VOC (lb/gal)
INX Technaflex 300 S Pantone 341 C GR-FR Ink	0.055 lb/gal	0.13 lb/gal
INX International Procure KCC5062 Gloss WC Coating	0.11 lb/gal	0.11 lb/gal
Ashland NWC 15615LA Laminating Adhesive	0.22 lb/gal	0.22 lb/gal
Spray Nine Corporation General Pressroom Cleaner	0.033 lb/gal	N/A

C. Calculations

1. Pre-Project Emissions (PE1)

Since this is a newly permitted operation, PE1 = 0.

2. Post Project PE (PE2)

For each graphic arts material, VOC emissions are calculated using the following equation.

$$\text{PE2 VOC} = \text{Material Usage (Gal/day, Gal/year)} \times \text{EF}_{\text{Material}} (\text{lb-VOC/gal})$$

The following table shows the results of the VOC calculations:

Proposed Materials	Material VOC (lb/gal)	Material Usage (gal/day)	Material Usage (gal/year)	PE2 VOC (lb/day)	PE2 VOC (lb/year)
INX Technaflex 300 S Pantone 341 C GR-FR Ink	0.055	10	1,500	0.6	83
INX International Procure KCC5062 Gloss WC Coating	0.11	18	2,000	2.0	220
Ashland NWC 15615LA Laminating Adhesive	0.22	9	300	2.0	66
Spray Nine Corporation General Pressroom Cleaner	0.033	10	1,500	0.3	50
Total				4.9	419

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid ATCs or PTOs at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. Since this project only involves units that emit VOC's, only the SSPE for VOC emissions will be presented.

Stationary Source Pre-Project Potential to Emit	
Permit Number	VOC (lb/year)
N-3852-1-4	49,999 (Facility-wide limit)
N-3852-2-4	
N-3852-9-2	
N-3852-13-1	
N-3852-14-1	
N-3852-15-0	
N-3852-16-1	
N-3852-17-0	
N-3852-18-0	
N-3852-19-0	
SSPE1	49,999

4. Post Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Stationary Source Post-Project Potential to Emit	
Permit Number	VOC (lb/year)
N-3852-1-4	49,999 (Facility-wide limit)
N-3852-2-4	
N-3852-9-2	
N-3852-13-1	
N-3852-14-1	
N-3852-15-0	
N-3852-16-1	
N-3852-17-0	
N-3852-18-0	
ATC N-3852-19-0	
ATC N-3852-20-0	
SSPE2	49,999

5. Major Source Determination

Pursuant to District Rule 2201, a Major Source is a stationary source with post project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status, the SSPE2 does not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Major Source Determination					
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Major Source Threshold (lb/yr)	Existing Major Source?	Becoming a Major Source?
VOC	49,999	49,999	20,000	Yes	No

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22

The applicant is proposing to add this unit under the existing facility-wide VOC limit. For units permitted under a Specific Limiting Condition (SLC), the quantity of offsets required is based on the post-project SLC limit and the baseline emissions for the units covered by the SLC (BE_{SLC}). Therefore, BE_{SLC} must be determined for this project.

Pursuant to District Rule 2201, Section 3.7.1.2, for a Major Source, the baseline emissions for a given pollutant is equal to the sum of the pre-project potential to emit for any highly utilized emission unit. For units under an SLC, the baseline emissions (BE_{SLC}) may be set equal to $PE1_{SLC}$ if all the units combined under the SLC have an average combined actual emissions, during the two consecutive years immediately prior to the filing of an application, equal to or greater than 80% of the pre-project SLC. Pursuant to the analysis presented in Appendix II, the units under the SLC are highly utilized. Therefore,

$$BE_{SLC} = PE1_{SLC}$$

7. SB288 Modification

The SB288 Modification Trigger thresholds for each pollutant are taken from District Rule 2201 and shown in the table below.

SB288 Modification Thresholds	
Pollutant	Threshold (Pounds Per Year)
VOC	50,000

Since the total emissions from the facility will continue to be limited to 49,999 lb-VOC/year, it is not possible for a project at this facility to exceed the SB288 Modification threshold of 50,000 lb-VOC/year. Therefore, this project will not trigger an SB288 Modification.

8. Federal Major Modification

The units in this project will emit VOC's and the facility is a major source for VOC emissions. Therefore, this proposal could potentially trigger a Federal Major Modification for VOC emissions. The Federal Major Modification threshold for VOC emissions is 0 lb/year.

The Net Emissions Increase (NEI) for a Federal Major Modification may be calculated as follows for new units:

$$NEI = PE2 - 0$$

PE2 for the new unit is 419 lb-VOC/year; therefore, the net emission increase will be greater than zero and this project triggers a Federal Major Modification.

9. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix V.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

- a) Any new emissions unit with a potential to emit exceeding two pounds per day,
- b) The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c) Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d) Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

The daily emissions from the flexographic printing operation is compared to the BACT trigger threshold in the below table. Only VOC's are emitted by the proposed equipment.

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
VOC	4.9	> 2.0	n/a	Yes

As shown above, BACT for VOC emissions is triggered.

2. BACT Guideline

BACT Guideline 4.7.5, "Flexographic Printing – Heatset inks on low-porosity glossy paper and plastic film" (Q3 2012), is applicable to the proposed flexographic printing operation. For a copy of this guideline, please refer to Appendix III of this evaluation.

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis must be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see Appendix III), BACT has been satisfied with the following:

VOC: Inks with a VOC content equal to or less than 2.4 lb/gal (less water and exempt compounds)

The following conditions will be included on the Authority to Construct permit:

- The VOC content, less water and exempt compounds, of graphic art materials used by this printing press shall not exceed any of the following limits: (1) for inks: 2.4 lb/gal, (2) for coatings: 2.5 lb/gal, (3) for adhesives: 1.25 lb/gal, and (4) for web splicing adhesives: 1.25 lb/gal. [District Rules 2201 and 4607]*
- This press shall be utilized only for printing onto low porosity materials. [District Rule 2201]*

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements are triggered on a pollutant-by-pollutant basis. Unless exempted pursuant to Section 4.6, offset requirements are triggered if the post-project potential to emit (SSPE2) equals or exceeds the offset threshold levels listed in the following table.

Offsets Applicability			
Pollutant	SSPE2 (lb/yr)	Offset Threshold Levels (lb/yr)	Offsets Triggered?
VOC	49,999	20,000	Yes

2. Quantity of Offsets Required

As shown in the previous table, offsets are triggered for VOC emissions. For units operating under an SLC, the quantity of offsets required is calculated using the following equation:

VOC Offsets Required = $(PE2_{SLC} - BE_{SLC} + ICCE) \times DOR$, where

PE2 = SLC for Post Project Potential to Emit

BE = Annual Baseline Emissions

ICCE = Increase in Cargo Carrier Emissions (zero for this unit)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

As stated earlier in this evaluation, BE_{SLC} is equal to $PE1_{SLC}$ since the units under the SLC are highly utilized. Thus, the equation can be reduced to:

VOC Offsets Required = $\sum (PE2_{SLC} - PE1_{SLC}) \times DOR$

The applicant is not requesting a change to the existing facility-wide permit limit, thus $PE2_{SLC}$ is equal to $PE1_{SLC}$ and the quantity of offsets required is zero.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, which is a new facility that is also a Major Source,
- b. Major Modifications,
- c. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- d. Any project which results in the offset thresholds being surpassed, and/or
- e. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Source

As demonstrated previously in this document, this project will not cause this facility to become a new Major Source.

b. Major Modification

As demonstrated previously in this document, this project will trigger a Federal Major Modification. Therefore, a public notice is required.

c. PE > 100 lb/day

The Daily PE for each new emission unit was determined to be less than the 100 lb/day threshold.

d. Offset Threshold

The following table compares the SSPE1 and SSPE2 to the offset thresholds in order to determine if this proposal will result in emissions surpassing the offset threshold.

Offset Threshold				
Pollutant	SSPE1 (lb/yr)	SSPE2 (lb/yr)	Offset Threshold (lb/yr)	Public Notice Required?
VOC	49,999	49,999	20,000	No

As detailed in the preceding table, emissions from this facility are already above the offset threshold; thus, the offset threshold will not be surpassed.

e. SSPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. $SSPE = SSPE2 - SSPE1$.

SSPE Public Notice Threshold					
Pollutant	SSPE2 (lb/yr)	SSPE1 (lb/yr)	SSPE (lb/yr)	SSPE Threshold (lb/yr)	Public Notice Required?
VOC	49,999	49,999	0	20,000	No

As detailed in the preceding table, this project does not result in an increase in emissions that surpasses the SSPE threshold.

2. Public Notice Action

As discussed above, public noticing is required for this project since the project triggers a Federal Major Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and EPA, and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emissions Limits

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The following conditions will be included on the Authority to Construct permit:

- *The VOC emissions from this printing press shall not exceed 4.9 pounds in any one day and 419 pounds in any one calendar year. [District Rule 2201]*
- *The facility-wide VOC emissions shall be less than 50,000 pounds during any one calendar year. [District Rule 2201]*

E. Compliance Assurance

1. Source Testing

Emissions are based on graphic arts material usage and VOC information that was obtained directly from the graphic arts material manufacturers. Therefore, source testing is not necessary to verify emissions from this operation.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

The following recordkeeping requirements will be included on the ATC permit:

- *Permittee shall record on a daily basis, the product name, type (e.g. ink, solvent, etc.), amount used in gallons, VOC content (lb/gal), and calculated daily and annual VOC emissions from each ink and solvent used. [District Rules 2201 and 4607]*
- *A record of the facility-wide VOC emissions, on a calendar year basis, shall be maintained. The records shall be updated at least monthly. [District Rule 2201]*
- *All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 2201 and 4607]*

4. Reporting

No reporting is required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

The proposed equipment will only emit VOC's. VOC's are not analyzed as part of an AAQA review; therefore, an AAQA is not required for this project.

G. Compliance Certification

District Rule 2201 requires the owner of a new Major Source or a source undergoing a Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. Label Technology's compliance certification is attached in Appendix VI of this document.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant is proposing to install a flexographic printing operation.

Use of the new press at an existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater environmental impact.

Rule 2520 Federally Mandated Operating Permits

Label Technologies is a Major Source for VOC emissions. They have recently applied for a Title V permit; however, a Title V permit has yet to be issued. This new permit will be incorporated into the TV permit when processing the initial TV permit application; therefore, a modification to an existing TV permit is not required. No further discussion is necessary to demonstrate District Rule 2520 compliance.

Rule 4001 New Source Performance Standards (NSPS)

There are no New Source Performance Standards that are applicable to this type of operation.

Rule 4002 National Emission Standards for Hazardous Air Pollutants

Subpart KK– National Emission Standards for Hazardous Air Pollutants for the Printing and Publishing Industry

§63.820 Applicability

This facility is proposing to establish itself as an area source of HAP emissions by limiting its HAP potential to emit, as described in §63.820(a)(2). Pursuant to §63.820(a)(3), area sources are only subject to the provisions of §63.829(d) and §63.830(b)(1) of this subpart.

§63.829(d) states that the owner or operator must keep records of all required measurements and calculations needed to demonstrate compliance with the HAP emission limit.

§63.8330 requires the facility to submit an initial notification to the District. The Initial TV permit application includes the data required by the notification; therefore, this requirement has been satisfied.

The following conditions will be included on the Authority to Construct permit:

- *Total stationary source emissions shall not exceed 10 tons in any rolling-12 month period of any single hazardous air pollutant (HAP) (as defined in 40 CFR 63.2) and 25 tons in any rolling-12 month period of any combination of HAPs. [District Rule 4002 and 40 CFR 63 Subpart KK]*
- *Permittee shall use District approved emission estimating techniques to determine HAP emissions. Permittee shall maintain monthly records of the rolling 12-month HAP emissions. Monthly records shall include records of all required measurements and calculations necessary to demonstrate compliance, including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used. [District Rule 4002 and 40 CFR 63 Subpart KK]]*

Rule 4101 Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. Therefore, the following condition will be listed on the ATC:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of these operations provided the equipment is well maintained. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources (dated 3/2/01) specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite. The results of the analysis are shown below. Please refer to Appendix IV for further details.

Categories	Flexographic Printing Press (unit 20-0)	Project Totals	Facility Totals
Prioritization Score	0.00	0.00	> 1
Acute Hazard Index	0.00	0.00	0.64
Chronic Hazard Index	N/A*	N/A	0.69
Maximum Individual Cancer Risk (10^{-6})	N/A*	N/A	0.00
T-BACT Required?	No		
Special Permit Conditions?	No		

* The Chronic Hazard Index and Maximum Individual Cancer Risk were not calculated since there are no risk factors associated with any of the Hazardous Air Pollutants (HAPs) under analysis.

Rule 4607 Graphic Arts and Paper, Film, Foil, and Fabric Coatings

This rule is applicable to any graphic arts printing operation, to digital printing operations, and to any paper, film, foil, or fabric coating operation and to the organic solvent cleaning materials and processes associated with such operations. The applicant is proposing to install a graphic arts printing operation; therefore, the proposed operation is subject to District Rule 4607 requirements.

Section 5.1, Table 1 lists the following VOC content limits:

Rule 4607, Section 5.1, Table 1	
VOC Content Limits for Inks, Coatings, and Adhesives	
Material	Grams of VOC per liter (lb/gal), less water and exempt compounds
Flexographic Ink on Porous Substrates	225 (1.88)
All Other Inks	300 (2.5)
Coatings	300 (2.5)
Adhesives	150 (1.25)
Web Splicing Adhesives	150 (1.25)

This facility only prints on non-porous substrates. The following permit condition will be included on the Authority to Construct permit:

- The VOC content, less water and exempt compounds, of graphic art materials used by this printing press shall not exceed any of the following limits: (1) for inks: 2.4 lb/gal, (2) for coatings: 2.5 lb/gal, (3) for adhesives, 1.25 lb/gal, and (4) for web splicing adhesives, 1.25 lb/gal. [District Rules 2201 and 4607]*

Section 5.1 Table 2 lists VOC content limits for fountain solutions; however, fountain solutions will not be used by this press.

Section 5.2 allows the use of 2 gallons/calendar day and 120 gallons/calendar year of specialty flexographic inks that have VOC contents greater than required in Table 1 of the Rule. The applicant has not proposed the use of any specialty flexographic inks.

Sections 5.3, 5.4, and 5.5 apply to coldest web offset lithographic fountain solutions, screen printing, and paper, film, foil, or fabric coating operations. This facility does not include these types of printing/coating units; therefore, these sections are not applicable.

Section 5.6 lists requirements for approved VOC emission control systems that may be used in lieu of complying with Section 5.1 VOC emission limits. The applicant is not proposing this option; therefore, Section 5.6 requirements are not applicable.

Section 5.7 lists the following approved coating application equipment:

1. Flow coater,
2. Roll coater,
3. Dip coater,
4. Foam coater,
5. Die coater,
6. Hand application methods, or
7. High-volume, low pressure (HVLP) spray for air dried coatings.

This facility does not use HVLP spray equipment. The following condition will be included on the ATC permit:

- *Only flow coater, roll coater, dip coater, foam coater, die coater, hand application methods shall be used to apply coatings. Application equipment shall be operated in accordance with the manufacturer's specifications. [District Rule 4607]*

Section 5.8.1, Table 7 lists the following VOC content limits for solvent cleaning. The limits applicable to this facility are shown in the following table:

Rule 4607, Section 5.8.1, Table 7	
VOC Content Limits for Solvent Cleaning	
Type of Solvent Cleaning Operation	VOC Content Limit Grams of VOC/liter of material (lb/gal)
Product Cleaning During Manufacturing Process; or Surface Preparation for Coating, Ink, or Adhesive Application	25 (0.21)
Repair and Maintenance Cleaning	25 (0.21)
Cleaning of Coating or Adhesive Application Equipment	25 (0.21)
Cleaning of Ink Application Equipment	
Flexographic Printing	25 (0.21)

The following condition will be included on the ATC permits:

- *The VOC content of solvents used for this operation shall not exceed any of the following limits: (1) For product cleaning during manufacturing process, or surface preparation for coating, ink or adhesive application: 25 grams VOC/liter of material; (2) For repair and maintenance cleaning: 25 grams VOC/liter of material; (3) For cleaning of coating or adhesive application equipment: 25 grams VOC/liter of material; and (4) For cleaning of flexographic ink application equipment: 25 grams VOC/liter of material. [District Rule 4607]*

Section 5.8.2 through 5.8.5 lists solvent cleaning requirements that apply when using solvents with a VOC content greater than 25 grams VOC/liter of material.

The following conditions will be included on the ATC permits:

- *Cleaning operations that use solvents with a VOC content greater than 25 grams/liter of material, if allowed by the permit, shall be performed by one or more of the following methods: (1) Wipe cleaning; (2) Application of solvent from hand-held spray bottles from which solvents are dispensed without propellant-induced force; (3) Non-atomized solvent flow method in which the cleaning solvent is collected in a container or solvent collection system which is closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside*

the container; or (4) Solvent flushing method in which the cleaning solvent is discharged into a container that is closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container. The discharged solvent from the equipment shall be collected into containers without atomizing into the open air. The solvent may be flushed through the system by air or hydraulic pressure, or by pumping. [District Rule 4607]

- *For cleaning operations that use solvents with a VOC content greater than 25 grams/liter of material, if allowed by this permit, the solvent shall not be atomized into the open air. This provision shall not apply to printing operations where the roller or blanket wash is applied and shall not apply to the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and shall not apply to the cleaning with spray bottles or containers. [District Rule 4607]*

Section 5.9 states that an operator must dispose of fresh or spent solvents, waste solvent cleaning materials, coatings, adhesives, catalysts, thinners, and ink in non-absorbent and non-leaking containers. The containers must remain closed at all times, except when depositing or removing the contents of the containers or when the container is empty.

- *Permittee shall store or dispose of fresh or spent solvents, waste solvent cleaning materials, coatings, adhesives, catalysts, thinners, and inks in closed, non-absorbent, non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty. [District Rule 4607]*

Sections 6.1 and 6.2 require that records be maintained for the graphic art materials used at the facility. The following conditions will be included on the permits:

- *Permittee shall maintain a current file documenting coatings, inks, adhesives, fountain solutions, wash primers, and solvents in use and in storage. The file shall include a material safety data sheet or product data sheet showing the material name, manufacturer's name, VOC content as applied, specific mixing instructions, and density. [District Rule 4607]*
- *Permittee shall record on a daily basis, the product name, type (e.g. ink, solvent, etc.), amount used in gallons, VOC content (lb/gal), and calculated daily and annual VOC emissions from each ink and solvent used. [District Rules 2201 and 4607]*
- *A record of the facility-wide VOC emissions, on a calendar year basis, shall be maintained. The records shall be updated at least monthly. [District Rule 2201]*
- *All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 2201 and 4607]*

Compliance with District Rule 4607 requirements is expected.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a k-12 school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

Since there is no fuel burning equipment included in this proposal, this project will not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is

exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Issue Authority to Construct N-3852-20-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix I.

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
N-3852-20-0	3020-03-C	371 kVA ¹	\$197

Appendixes

- I. Draft Authority to Construct Permit
- II. Highly Utilized Determination
- III. BACT Guideline 4.7.5 and Top-Down BACT Analysis
- IV. Risk Management Review
- V. Quarterly Net Emission Change
- VI. Compliance Certification Statement

¹ The electric power supply machine and exhaust fan draw 40 kVA and 139 kVA respectively. The hot air drying system and the electric power supply coolmaster are 480 volt systems and are expected to draw 200 amps. Thus,

Hot Air Drying System = $0.48 \text{ kV} \times 200 \text{ A} = 96 \text{ kVA}$
Electric Power Supply Coolmaster = $0.48 \text{ kV} \times 200 \text{ A} = 96 \text{ kVA}$

Thus, the total power is equal to:

Total Power = $40 \text{ kVA} + 139 \text{ kVA} + 96 \text{ kVA} + 96 \text{ kVA} = 371 \text{ kVA}$

Appendix I

Draft Authority to Construct Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-3852-20-0

LEGAL OWNER OR OPERATOR: LABEL TECHNOLOGY, INC.
MAILING ADDRESS: 2050 WARDROBE AVE
MERCED, CA 95340

LOCATION: 2050 WARDROBE AVE
MERCED, CA 95340

EQUIPMENT DESCRIPTION:

GRAPHIC ARTS PRINTING OPERATION CONSISTING OF AN MPS 10-COLOR HEAT-SET FLEXOGRAPHIC PRINTING PRESS EQUIPPED WITH ELECTRIC DRYERS

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. The VOC content, less water and exempt compounds, of graphic art materials used by this printing press shall not exceed any of the following limits: (1) for inks: 2.4 lb/gal, (2) for coatings: 2.5 lb/gal, (3) for adhesives: 1.25 lb/gal, and (4) for web splicing adhesives: 1.25 lb/gal. [District Rules 2201 and 4607]
4. This press shall be utilized only for printing onto low porosity materials. [District Rule 2201]
5. The VOC emissions from this printing press shall not exceed 4.9 pounds in any one day and 419 pounds in any one calendar year. [District Rule 2201]
6. The facility-wide VOC emissions shall be less than 50,000 pounds during any one calendar year. [District Rule 2201]
7. Only flow coater, roll coater, dip coater, foam coater, die coater, hand application methods shall be used to apply coatings. Application equipment shall be operated in accordance with the manufacturer's specifications. [District Rule 4607]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

N-3852-20-0 : Jun 20 2012 10:47AM - HAFADERJ : Joint Inspection NOT Required

Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475

8. The VOC content of solvents used for this operation shall not exceed any of the following limits: (1) For product cleaning during manufacturing process, or surface preparation for coating, ink or adhesive application: 25 grams VOC/liter of material; (2) For repair and maintenance cleaning: 25 grams VOC/liter of material; (3) For cleaning of coating or adhesive application equipment: 25 grams VOC/liter of material; and (4) For cleaning of flexographic ink application equipment: 25 grams VOC/liter of material. [District Rule 4607]
9. Cleaning operations that use solvents with a VOC content greater than 25 grams/liter of material, if allowed by the permit, shall be performed by one or more of the following methods: (1) Wipe cleaning; (2) Application of solvent from hand-held spray bottles from which solvents are dispensed without propellant-induced force; (3) Non-atomized solvent flow method in which the cleaning solvent is collected in a container or solvent collection system which is closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container; or (4) Solvent flushing method in which the cleaning solvent is discharged into a container that is closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container. The discharged solvent from the equipment shall be collected into containers without atomizing into the open air. The solvent may be flushed through the system by air or hydraulic pressure, or by pumping. [District Rule 4607]
10. For cleaning operations that use solvents with a VOC content greater than 25 grams/liter of material, if allowed by this permit, the solvent shall not be atomized into the open air. This provision shall not apply to printing operations where the roller or blanket wash is applied and shall not apply to the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and shall not apply to the cleaning with spray bottles or containers. [District Rule 4607]
11. Permittee shall store or dispose of fresh or spent solvents, waste solvent cleaning materials, coatings, adhesives, catalysts, thinners, and inks in closed, non-absorbent, non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty. [District Rule 4607]
12. Permittee shall maintain a current file documenting coatings, inks, adhesives, fountain solutions, wash primers, and solvents in use and in storage. The file shall include a material safety data sheet or product data sheet showing the material name, manufacturer's name, VOC content as applied, specific mixing instructions, and density. [District Rule 4607]
13. Permittee shall record on a daily basis, the product name, type (e.g. ink, solvent, etc.), amount used in gallons, VOC content (lb/gal), and calculated daily and annual VOC emissions from each ink and solvent used. [District Rules 2201 and 4607]
14. A record of the facility-wide VOC emissions, on a calendar year basis, shall be maintained. The records shall be updated at least monthly. [District Rule 2201]
15. All records shall be retained for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 1070, 2201 and 4607]
16. Total stationary source emissions shall not exceed 10 tons in any rolling-12 month period of any single hazardous air pollutant (HAP) (as defined in 40 CFR 63.2) and 25 tons in any rolling-12 month period of any combination of HAPs. [District Rule 4002 and 40 CFR 63 Subpart KK]
17. Permittee shall use District approved emission estimating techniques to determine HAP emissions. Permittee shall maintain monthly records of the rolling 12-month HAP emissions. Monthly records shall include records of all required measurements and calculations necessary to demonstrate compliance, including the mass of all HAP containing materials used and the mass fraction of HAP present in each HAP containing material used. [District Rule 4002 and 40 CFR 63 Subpart KK]

DRAFT

Appendix II

Highly Utilized Determination

Highly Utilized Determination

The following calculations will determine whether the emission units under the facility wide Specific Limiting Condition (SLC) for VOC emissions are Highly-Utilized Emissions Units as defined in section 3.22 of Rule 2201. According to District Rule 2201, Section 3.7.1.2., units under an SLC are Highly-Utilized Emissions Units if all emission units under the SLC have an average combined annual Actual Emissions (AE) during the two consecutive years immediately prior to filing of an application for an Authority to Construct (ATC) that is equal to or greater than 80% of the pre-project SLC limit. The AE are emissions having actually occurred and are calculated from actual ink, coating, solvent, and adhesive usage records utilizing established emission factors (EF).

For this project the two consecutive years immediately prior to the filing of the application for an ATC permit is from October 1, 2009 to September 30, 2011 (Quarter 4 2010 through Quarter 3 2011) will be referenced as the baseline period for this project. The quarterly baseline period VOC emissions from each permit unit under the facility-wide SLC of 49,999 lb-VOC/year were provided by the applicant and are listed in the tables below. All of the data required to include unit N-3852-17 is not available, therefore, it will not be included in this analysis.

Annual Actual Emissions from Permit N-3852-1-4:

VOC Emissions from the Rotopress Model #2002 8-Color Flexographic Printing Press					
Year	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)	Total Annual (lb/yr)
2009	---	---	---	1,616	---
2010	1,138	845	1,081	1,348	---
2011	2,035	1,610	1,625	---	---
Average	1,587	1,228	1,353	1,482	5,650

Annual Actual Emissions from Permit N-3852-2-4:

VOC Emissions from the Rotopress Model #4002 4-Color Flexographic Printing Press					
Year	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)	Total Annual (lb/yr)
2009	---	---	---	1,212	---
2010	853	634	811	1,011	---
2011	1,527	805	812	---	---
Average	1,190	720	812	1,112	3,834

Annual Actual Emissions from Permit N-3852-9-2:

VOC Emissions from the Rotopress 8-Color Flexographic Printing Press					
Year	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)	Total Annual (lb/yr)
2009	---	---	---	1,616	---
2010	1,138	845	1,081	1,348	---
2011	2,035	1,610	1,625	---	---
Average	1,587	1,228	1,353	1,482	5,650

Annual Actual Emissions from Permit N-3852-13-1:

VOC Emissions from the Mark Andy Model #4150 9-Color Flexographic Printing Press					
Year	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)	Total Annual (lb/yr)
2009	---	---	---	1,818	---
2010	1,280	951	1,216	1,516	---
2011	2,118	1,811	1,827	---	---
Average	1,699	1,381	1,522	1,667	6,269

Annual Actual Emissions from Permit N-3852-14-1:

VOC Emissions from the Rotopress Model #3516 9-Color Flexographic Printing Press					
Year	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)	Total Annual (lb/yr)
2009	---	---	---	1,260	---
2010	1,161	951	1,148	1,211	---
2011	1,260	1,811	1,827	---	---
Average	1,211	1,381	1,488	1,236	5,316

Annual Actual Emissions from Permit N-3852-15-0:

VOC Emissions from the PCMC "Evolution" 9-Color Flexographic Printing Press & Die-Cutter					
Year	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)	Total Annual (lb/yr)
2009	---	---	---	1,674	---
2010	1,280	951	1,216	1,460	---
2011	1,701	1,811	1,827	---	---
Average	1,491	1,381	1,522	1,567	5,961

Annual Actual Emissions from Permit N-3852-16-1:

VOC Emissions from the Mark Andy Model #LP3430-17 10-Color Flexographic Printing Press & Die-Cutter					
Year	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)	Total Annual (lb/yr)
2009	---	---	---	1,422	---
2010	1,422	1,056	1,351	1,559	---
2011	1,701	2,012	2,030	---	---
Average	1,562	1,534	1,691	1,491	6,278

Annual Actual Emissions from Permit N-3852-18-0:

VOC Emissions from the Mark Andy Model XP5000-20 10-Color Flexographic Label & Tag Printing Press and Die-Cutting press with 10-7.5 kW dryers					
Year	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)	Total Annual (lb/yr)
2009	---	---	---	2,020	---
2010	1,422	1,056	1,351	1,685	---
2011	2,260	2,012	2,030	---	---
Average	1,841	1,534	1,691	1,853	6,919

AE_{SLC} Calculations:

The AE_{SLC} for VOC emissions will be based on the sum of the VOC emissions from the tables shown above. Therefore:

$$\begin{aligned}
 \Sigma AE_{SLC/VOC} &= 5,650 \text{ lb-VOC/yr} + 3,834 \text{ lb-VOC/yr} + 5,650 \text{ lb-VOC/yr} + 6,269 \text{ lb-VOC/yr} \\
 &\quad + 5,316 \text{ lb-VOC/yr} + 5,961 \text{ lb-VOC/yr} + 6,278 \text{ lb-VOC/yr} \\
 &\quad + 6,919 \text{ lb-VOC/yr} \\
 &= \mathbf{45,877 \text{ lb-VOC/yr}}
 \end{aligned}$$

Determination of Highly-Utilized Emission Units for VOC Emissions:

The average combined Annual Actual Emissions is equal to the above calculated $\Sigma AE_{SLC/VOC}$. Therefore:

Pollutant	Average Combined Annual Actual Emissions (lb/yr)	Pre-Project Annual SLC Limit (lb/yr)
VOC	45,877	49,999

$$\text{Utilization Rate} = (45,877 \text{ lb/yr}) / (49,999 \text{ lb/yr}) \times 100\% = 91.8\%$$

The average combined annual actual VOC emission rate during the baseline period was greater than 80% of the pre-project potential to emit. Therefore, all emission units under the facility wide SLC are Highly-Utilized Emission Units for VOC (Ref. District Rule 2201, Sections 3.7.1.2 & 3.21).

Appendix III

BACT Guideline 4.7.5 and Top-Down BACT Analysis

Per » B A C T » Bact Guideline.asp?category Level1=4&category Level2=7&category Level3=5&last Update=2 » 25 :

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Best Available Control Technology (BACT) Guideline 4.7.5
Last Update: 2/25/1998

Flexographic printing - Heatset inks on low-porosity glossy paper and plastic film

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	1. Inks with a VOC content of = or < 2.5 lb/gal (less water and exempt compounds)	1. VOC capture and control with incineration 2. VOC capture and control with carbon adsorption 3. Inks with a VOC content of = or < 2.4lb/gal (less water and exempt compounds)	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

This is a Summary Page for this Class of Source. For background information, see Permit Specific BACT Determinations on Details Page.

Top-Down BACT Analysis

BACT Guidelines 4.7.5 is applicable to the proposed flexographic printing operation. A top-down BACT analysis will be used to evaluate the control options listed in this guideline.

VOC Emissions:

Step 1 - Identify All Possible Control Technologies

1. Use of inks with a VOC content less than 2.5 lb/gal (less water and exempt compounds), (Achieved in Practice)
2. Use of inks with a VOC content less than 2.4 lb/gal (less water and exempt compounds), (Technologically Feasible)
3. VOC Capture and Control with incineration (98% overall control efficiency), (Technologically Feasible)
4. VOC Capture and Control with carbon adsorption (95% overall control efficiency), (Technologically Feasible)

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. VOC Capture and Control with incineration (98% overall control efficiency), (Technologically Feasible)
2. VOC Capture and Control with carbon adsorption (95% overall control efficiency), (Technologically Feasible)
3. Use of inks with a VOC content less than 2.4 lb/gal (less water and exempt compounds), (Technologically Feasible)
4. Use of inks with a VOC content less than 2.5 lb/gal (less water and exempt compounds), (Achieved in Practice)

Step 4 - Cost Effective Analysis

A cost effective analysis is required for technologically feasible control options that are not Achieved-in-Practice.

Cost Effective Threshold:

The District's BACT Policy establishes annual cost thresholds for imposed control based upon the amount of pollutants abated by the controls. If the cost of control is at or below the threshold, the control is considered cost effective. If the cost exceeds the threshold, it is not cost effective and the control is not required. The District's cost effective threshold for VOC is \$17,500/ton.

Industry Standard Emissions (ISE):

Industry standard emissions will be calculated using Rule 4607 emission limits for the printing operation. The cleanup solvent will not be included, since a control system does not typically operate during the cleanup of printing equipment.

Proposed Materials	Rule 4607 VOC Content (lb/gal)	Material Usage (gal/year)	Industry Standard VOC (lb/year)
INX Technaflex 300 S Pantone 341 C GR-FR Ink	2.5	1,500	3,750
INX International Procure KCC5062 Gloss WC Coating	2.5	2,000	5,000
Ashland NWC 15615LA Laminating Adhesive	1.25	300	375
Total			9,125

Control Option 1: VOC Capture and Control with Incineration

98% total control efficiency using a VOC capture and control system with thermal/catalytic incineration and 100% VOC capture.

(A). Emission Reductions from Industry Standard:

Based on the above determined industry standard emissions and assuming a VOC capture efficiency of 100% and incinerator destruction efficiency of 98%, the amount of VOC emissions reduced is calculated below.

$$\begin{aligned}\text{VOC Emission Reductions} &= \text{Annual ISE}_{\text{VOC}} \times 1 \text{ tons}/2,000 \text{ lb} \times \text{Overall Control Eff.} \\ &= 9,125 \text{ lb/year} \times 1 \text{ tons}/2,000 \text{ lb} \times 0.98 \\ &= \mathbf{4.47 \text{ tons/year}}\end{aligned}$$

(B). Design Parameters:

- Per the applicant, the printing press exhaust flow rate is 1,100 CFM.
- Per the applicant, the printing press will operate up to 6240 hr/year (equivalent to 24 hr/day, 5 days/week, 52 weeks/year).

(C). Annual Natural Gas Cost:

The cost of natural gas for this operation is calculated based on an operating schedule of 6,240 hours/year. A heat exchanger efficiency of 50% is assumed.

$$\text{Natural Gas Usage} = \text{Flow Rate} \times \text{Cp}_{\text{Air}} \times \Delta T \times \text{HEF}$$

Where: Flow Rate = Air flow through the incinerator (1,100 cfm)
Cp_{Air} = specific heat of air is 0.194 Btu/scf - °F
ΔT = increase in the temperature of the contaminated air stream required for catalytic oxidation to occur (It will be assumed that the air stream would increase in temperature from 77°F to 600°F for catalytic incineration.)
HEF = heat exchanger factor (0.5, assumed)

$$\begin{aligned}\text{Natural Gas Usage} &= 1,100 \text{ cfm} \times 0.194 \text{ Btu/scf} \times (600^\circ\text{F} - 77^\circ\text{F}) \times 0.5 \\ &\quad \times 6,240 \text{ hr/year} \times 60 \text{ min/hr} \times \text{MMBtu}/10^6 \text{ Btu} \\ &= 20,893 \text{ MMBtu/year}\end{aligned}$$

The fuel usage will be reduced by the heating value of the influent VOC stream. The heating value of the VOC's being controlled is not known, so the heating value of benzyl alcohol (14,900 Btu/lb) will be utilized in the calculation.

$$\begin{aligned}\text{Btu Content} &= \text{Uncontrolled VOC Emissions lb/year} \times \text{HV Btu/lb} \\ &= 9,125 \text{ lb-VOC/yr} \times 14,900 \text{ Btu/lb} \times \text{MMBtu}/10^6 \text{ Btu} \\ &= 136 \text{ MMBtu/yr}\end{aligned}$$

$$\begin{aligned}\text{Adjusted Natural Gas Usage} &= 20,893 \text{ MMBtu/year} - 136 \text{ MMBtu/yr} \\ &= 20,757 \text{ MMBtu/yr}\end{aligned}$$

$$\begin{aligned}\text{Natural Gas Cost} &= 20,757 \text{ MMBtu/year} \times \$6.80/\text{MMBtu}^{(2)} \\ &= \mathbf{\$141,148/\text{year}}\end{aligned}$$

(D). Cost Effectiveness of a Catalytic Incinerator with 100% Capture:

$$\begin{aligned}\text{Cost Effectiveness} &= \text{Natural Gas Cost (\$/year)} \div \text{Emission Reduction (ton-VOC/year)} \\ &= \$141,148/\text{year} \div 4.47 \text{ tons-VOC/year} \\ &= \mathbf{\$31,576/\text{ton-VOC}}\end{aligned}$$

The cost to operate a catalytic incinerator with 100% capture is \$31,576/ton, which is greater than the District's VOC cost-effectiveness threshold of \$17,500/ton. Furthermore, the cost to operate a thermal oxidizer would be greater since more fuel would be required to achieve a higher chamber temperature. Therefore, this VOC control option is **not cost effective** and is being removed from consideration for this project.

² The natural gas price used is based on the average of the California industrial natural gas price over the previous 12 months of available data (April 2011 through March 2012) as published by the U.S. Energy Information Administration in their monthly natural gas reports. See <http://tonto.eia.doe.gov/dnav/ng/hist/n3035ca3m.htm>

Control Option 2: VOC Capture and Control with Carbon Adsorption

95% total control using a VOC capture and control system with carbon adsorption and 100% capture.

(A). Emission Reduction:

Based on the above determined industry standard emissions and assuming a VOC capture efficiency of 100% and carbon adsorption system control efficiency of 95%, the amount of VOC emissions reduced is calculated below.

$$\begin{aligned}\text{VOC Emission Reductions} &= \text{Annual ISE}_{\text{VOC}} \times 1 \text{ tons}/2,000 \text{ lb} \times \text{Overall Control Eff.} \\ &= 9,125 \text{ lb/year} \times 1 \text{ tons}/2,000 \text{ lb} \times 0.95 \\ &= \mathbf{4.33 \text{ tons/year}}\end{aligned}$$

(B). Annual Carbon Replacement Costs:

Carbon adsorption occurs when air containing VOCs is blown through a carbon unit and the VOCs are adsorbed onto the surface of the cracks in the activated carbon particles. Two main areas of cost are the cost of the carbon adsorption unit itself and the annual operating cost of the unit. The primary annual operating cost is the replacement of the spent activated carbon. It will be shown that the annual cost to replace the spent activated carbon alone will be adequate to cause this technology to be not cost effective per District BACT policy. This estimate does not include the capital cost of purchasing the carbon adsorption unit or any additional operational and maintenance costs.

Since carbon can adsorb 20% of its weight in VOCs, and the control efficiency of carbon adsorption is 95%, the total amount of carbon required per year can be determined as follows:

$$\begin{aligned}\text{Carbon Required} &= 9,125 \text{ lb-VOC/year} \times 0.95 \times 1 \text{ lb-Carbon}/0.2 \text{ lb-VOC} \\ &= 43,344 \text{ lb-Carbon/year}\end{aligned}$$

Per Kurt Keefer of EAS Corp. (916-967-9007, April 2011) under project N-1100320, the cost of carbon replacement for ranges from \$2.00/lb to \$10.00/lb, depending on the type and quantity of carbon purchased. For the purposes of this analysis and to be conservative, it is assumed that the price of carbon is \$2.00/lb. The annual cost of spent carbon replacement will be:

$$\begin{aligned}\text{Annual Carbon Replacement Cost} &= 43,344 \text{ lb-Carbon/year} \times \$2/\text{lb-Carbon} \\ &= \$86,688/\text{year}\end{aligned}$$

(C). Cost Effectiveness of a Carbon Adsorption System:

$$\begin{aligned}\text{Cost Effectiveness} &= \text{Annual Carbon Replacement Cost (\$/year)} \\ &\div \text{Emission Reduction (ton-VOC/year)} \\ &= \$86,688/\text{year} \div 4.33 \text{ ton-VOC/year} \\ &= \mathbf{\$20,020/\text{ton-VOC}}\end{aligned}$$

The cost to operate a carbon adsorption system is \$20,020/ton, which is greater than the District's VOC cost-effectiveness threshold of \$17,500/ton. Therefore, this VOC control option is **not cost effective** and is being removed from consideration for this project.

Control Option 3: Use of inks with a VOC content less than 2.4 lb/gal (less water and exempt compounds)

The applicant is proposing to comply with this option, thus a cost analysis is not required.

Step 5 - Select BACT

As stated in Step 4, incineration and carbon adsorption are not cost effective control options and are not required. The applicant is proposing the highest ranked option of the two remaining options. Thus, the applicant's proposal satisfies BACT requirements for VOC emissions.

Appendix IV

Risk Management Review Results

San Joaquin Valley Air Pollution Control District

Risk Management Review

To: Mark Schonhoff – Permit Services
From: Cheryl Lawler – Technical Services
Date: April 30, 2012
Facility Name: Label Technology
Location: 2050 Wardrobe Avenue, Merced
Application #(s): N-3852-20-0
Project #: N-1113462

A. RMR SUMMARY

RMR Summary			
Categories	Flexographic Printing Press (Unit 20-0)	Project Totals	Facility Totals
Prioritization Score	0.00	0.00	>1
Acute Hazard Index	0.00	0.00	0.64
Chronic Hazard Index	N/A*	N/A*	0.69
Maximum Individual Cancer Risk	N/A*	N/A*	0.00
T-BACT Required?	No		
Special Permit Conditions?	No		

*The Chronic Hazard Index and Maximum Individual Cancer Risk were not calculated since there are no risk factors associated with any of the Hazardous Air Pollutants (HAPs) under analysis.

I. Project Description

Technical Services received a request on April 5, 2012, to perform a Risk Management Review for the installation of a flexographic printing press with a laminating station.

II. Analysis

Toxic emissions were calculated after reviewing MSDS sheets for the proposed inks to determine the speciation of Hazardous Air Pollutants (HAPs). In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was less than 1.0 (see RMR Summary Table); however, the facility's combined prioritization scores totaled to greater than one. Therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Merced to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

Analysis Parameters			
Source Type	Point	Closest Receptor (m)	251
Stack Height (m)	6.1	Type of Receptor	Business
Stack Diameter (m)	0.46	Location Type	Urban
Stack Gas Temperature (K)	450	Stack Gas Velocity (m/sec)	3.16*

*The stack is fitted with a rain cap, and was designated as such in AERMOD's Source Pathway Module during the refined modeling process per District policy.

III. Conclusions

The Acute Index is below 1.0; and there is no Chronic Index or Cancer Risk associated with any of the HAPs under review. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

Appendix V

QNEC Calculations

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The units at this facility are covered by an SLC for VOC emissions, which is not changing. Therefore, the QNEC for this proposal will be set equal to zero.

Appendix VI

Compliance Certification Statement

**RECEIVED****NOV 14 2011****SJVAPCD
NORTHERN REGION**

November 11, 2011

James Harader
Senior Air Quality Engineer
San Joaquin Valley Air Pollution Control District

**Compliance Certification for Flexographic Printing Plate Manufacturing Operation
Project N-1111861**

Dear Mr. Harader

As required under District Rules 4102, 4101 & 2201, 1070 and Table 6 Rule 4607, Label Technology Inc. hereby submits this letter of certification regarding statewide compliance for the all permits obtain by Label Technology Inc.

Based on all the information obtained and to the best of my knowledge and belief, the major stationary sources, as defined in this facility are in compliance, or on a schedule for compliance with all emission limitations and standards under the Clean Air Act.

For further assistance feel free to contact me,

Sincerely

A handwritten signature in cursive script, appearing to read "Richard Sanchez".

Richard Sanchez
Ink Manager
Label Technology, Inc
2050 Wardrobe Ave
Merced, CA 95340
209-384-1000