

MAY 22 2017

Mr. Mac McCullough
Pacific Southwest Container LLC
4530 Leckron Road
Modesto, CA 95357

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-3606
Project # N-1170908**

Dear Mr. McCullough:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The proposed project is to relocate flexographic printing press with folder and gluer from Pacific Southwest Container's Stockton facility N-7464 to Pacific Southwest Container's Modesto facility N-3606.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Nick Peirce, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,



Arnaud Marjolle
Director of Permit Services

Enclosures

cc: Tung Le, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin
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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Flexographic Printer/Folder/Gluer

Facility Name:	Pacific Southwest Container LLC	Date:	May 9, 2017
Mailing Address:	4530 Leckron Road Modesto, CA 95357	Engineer:	Jag Kahlon
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Application #(s):	N-3606-35-0		
Project #:	N-1170908		
Deemed Complete:	March 14, 2017		

I. Proposal

Pacific Southwest Container LLC (hereinafter referred as "PSC") is requesting an Authority to Construct (ATC) permit for relocating Bobst midline 924 model A-0498-200 flexographic printing press with folder and gluer operating under permit N-7464-1-1 from PSC's Stockton facility (N-7464) to PSC's Modesto facility (N-3606). The following condition will be included in the permit:

- Upon implementation of this Authority to Construct, Permit to Operate N-7464-1 shall be cancelled. [District Rule 2201]

The draft ATC N-3606-35-0 and the existing Permit to operate (PTO) N-7464-1-1 are included in **Appendix A and Appendix B**, respectively.

PSC received their Title V Permit on May 7, 2014. The proposed project is a Signification Modification to the Title V permit, as this project is a Federal Major Modification under District Rule 2201. The applicant is requesting the ATC permit with a Certificate of Conformity (COC), which is EPA's 45-day review of the project prior to the issuance of the final ATC permit. Since this project is a Federal Major Modification, it will be published in the local newspaper, Modesto Bee, for public review and comments. The public comment period will last 30 days from the date of publication. Both EPA's 45-day notice and 30-day public notice will run concurrently.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (2/18/16)
Rule 2410 Prevention of Significant Deterioration (6/16/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4002 National Emissions 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 4653 Adhesives and Sealants (9/16/10)
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

The facility is located at 4530 Leckron Road, Modesto, CA. The equipment will not be 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

The proposed flexographic printing unit consists of four printers, one folder, one gluer, and one die-cutter. Flat corrugated sheets are fed into the machine. Rubber belts convey the sheets to the print units. Ink is pumped to the anilox roll and transferred to the printing plate, where the image is transferred onto the corrugated sheets. Coating is then applied on top of the printed image. The printed and coated sheets are then conveyed to the die cutting section where the sheets are cut. The cut sheets are then conveyed to a gluer where a thin strip of adhesive is applied and the sheet is folded into a flat box and strapped. Per applicant, except for UV ink, this machine is capable of printing most types of ink including both regular ink and metallic ink, per customer requests.

V. Equipment Listing

N-3606-35-0: GRAPHIC ARTS PRINTING OPERATION CONSISTING OF A 4-COLOR BOBST/MARTIN MODEL MIDLINE 924 (A-0498-200) NON-HEATSET FLEXOGRAPHIC PRINTER WITH FOLDER, GLUER, AND ROTARY DIE-CUTTER

VI. Emission Control Technology Evaluation

The proposed printer and gluer are a source of VOC emissions. To minimize VOC emissions, PSC is proposing to use low VOC containing inks and zero VOC glue. No add-on control equipment is proposed for the equipment; therefore, no further discussion is necessary.

Particulate matter (PM) will be emitted during die-cutting, slotting, and scoring operations. The die-cutter will be served by an existing shared waste paper collection system that equipped with a cyclone. The cyclone is an integral part of the waste collection system utilized to convey waste material to a baler, and therefore, the cyclone on the waste paper collection system is not a control device. As determined under project N-1161362, the waste collection system qualifies as low emitting unit and therefore, exempt for permitting requirement.

VII. General Calculations

A. Assumptions

- VOC is the primary pollutant of concern related to this project.
- Henkel Ultimate Control 33-763A adhesive contains zero VOC (per SDS)
- Other assumptions will be stated, as they are made during the evaluation.

B. Emission Factors (EF)

PSC has proposed to establish mass emission rates in the permit along with VOC content (lb/gal, less water and exempt compounds) as required by Best Available Control Technology (BACT) under Rule 2201 and applicable local, State and Federal rules. Therefore, no separate EFs are being established.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since this is a new emissions unit, PE1 = 0 for all pollutants.

2. Post Project Potential to Emit (PE2)

The applicant has proposed to establish 30.0 lb-VOC/day and 7,800 lb-VOC/year for the operations covered under this permit. Therefore,

$$\begin{aligned} \text{PE2} &= 30.0 \text{ lb-VOC/day} \\ &= 7,800 \text{ lb-VOC/yr} \end{aligned}$$

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

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked

since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

The potential emissions for each permit unit are taken from the application reviews under projects N-1160509 and N-1160858.

SSPE1 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
N-3606-3-7	0	0	0	0	73,403
N-3606-4-6	0	0	183	0	
N-3606-11-9	0	0	0	0	
N-3606-13-7	0	0	0	0	
N-3606-14-7	0	0	0	0	
N-3606-15-7	0	0	0	0	
N-3606-16-7	0	0	0	0	
N-3606-19-5	0	0	0	0	
N-3606-21-5	0	0	0	0	
N-3606-23-6	0	0	0	0	
N-3606-24-5	0	0	0	0	
N-3606-25-3	0	0	0	0	
N-3606-26-6	0	0	0	0	
N-3606-27-4	0	0	0	0	
N-3606-29-1	0	0	0	0	
N-3606-30-1	1,430	509	1,358	6,612	
N-3606-31-2	0	0	0	0	
N-3606-32-1	0	0	0	0	
N-3606-33-0	0	0	0	0	
N-3606-34-0	0	0	0	0	
ERC	0	0	0	0	0
SSPE1	1,430	509	1,541	6,612	73,403

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

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site. The proposed equipment will be a part of the existing facility-wide VOC emissions limit.

SSPE2 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
N-3606-3-7	0	0	0	0	73,403
N-3606-4-6	0	0	183	0	
N-3606-11-9	0	0	0	0	
N-3606-13-7	0	0	0	0	
N-3606-14-7	0	0	0	0	
N-3606-15-7	0	0	0	0	

SSPE2 (lb/year) – Continue...					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
N-3606-16-7	0	0	0	0	
N-3606-19-5	0	0	0	0	
N-3606-21-5	0	0	0	0	
N-3606-23-6	0	0	0	0	
N-3606-24-5	0	0	0	0	
N-3606-25-3	0	0	0	0	
N-3606-26-6	0	0	0	0	
N-3606-27-4	0	0	0	0	
N-3606-29-1	0	0	0	0	
N-3606-30-1	1,430	509	1,358	6,612	
N-3606-31-2	0	0	0	0	
N-3606-32-1	0	0	0	0	
N-3606-33-0	0	0	0	0	
N-3606-34-0	0	0	0	0	
N-3606-35-0	0	0	0	0	
ERC	0	0	0	0	0
SSPE2	1,430	509	1,541	6,612	73,403

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)						
Category	NO _x	SO _x	PM ₁₀	*PM _{2.5}	CO	VOC
SSPE1	1,430	509	1,541	1,541	6,612	73,403
SSPE2	1,430	509	1,541	1,541	6,612	73,403
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	Yes

*Note: PM2.5 assumed to be equal to PM10

This source is an existing Major Source for VOC emissions and will remain a Major Source for VOC. No change in other pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore, the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
Category	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Estimated Facility PE before Project Increase	0.7	36.7	0.3	3.3	0.8	0.8
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 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 District Rule 2201.

Since the current permits include a facility-wide limit for VOC emissions, a clean emission unit analysis for all of the existing units must be performed for VOC emissions.

The following table shows the applicable BACT guideline number, the Achieved-in-Practice BACT requirement and whether or not the unit is a Clean Emission Unit (Achieved-in-Practice BACT was met).

Permit	Description	BACT Guideline	Achieved-in-Practice BACT Requirement	Permit Limit	Clean Emission Unit
N-3306-3-7 N-3306-11-9 N-3306-19-5 N-3306-21-5 N-3306-25-3 N-3306-27-4 N-3306-31-2	Corrugated Box/Board Manufacturing	4.9.12	Adhesive with 0.44 lb VOC/gal or less	VOC = 0.021 lb/gal VOC = 0.021 lb/gal VOC = 0.021 lb/gal VOC = 0.021 lb/gal VOC = 0.021 lb/gal VOC = 0.021 lb/gal VOC = 0.015 lb/gal	Yes Yes Yes Yes Yes Yes Yes
N-3306-4-6	Corrugated Board Manufacturing	4.9.12	Adhesive with 0.44 lb VOC/gal or less	VOC = 0.021 lb/gal	Yes
	And Corrugated Board Laminating	4.11.3	Adhesive with 0.021 lb VOC/gal or less	VOC = 0.021 lb/gal	
N-3306-13-7 N-3306-14-7 N-3306-15-7	Flexographic Printer (low-end graphics)	4.7.15	Ink with 0.3 lb VOC/gal or less	VOC = 0.3 lb/gal	Yes Yes Yes
	And Gluer	4.9.12	Adhesive with 0.44 lb VOC/gal or less	VOC = 0.021 lb/gal	
N-3306-16-7 N-3306-23-6 N-3306-26-6 N-3306-32-1	Offset lithographic printing operations	4.7.2	Inks: <5% by wt. or 30% by weight for high end graphics Fountain Solution: <5% by vol. for coldest offset lithographic and sheet-fed lithographic greater than 11 x 17 inches Or 8% by volume for high end graphics	Inks with < 5% VOC by wt. Fountain solutions with < 5% VOC by vol. for high-end graphics and < 5% by vol. for non-high-end graphics	Yes Yes Yes Yes
N-3306-24-5 N-3306-33-0	Offset lithographic printing operation		4.7.2	Inks: <5% by wt. or 30% by weight for high end graphics Fountain Solution: <5% by vol. for coldest offset lithographic and sheet-fed lithographic greater than 11 x 17 inches Or 8% by volume for high end graphics	Inks with < 5% VOC by wt. < 6% by volume for high-end graphics and <5% by volume for non-high-end graphics

Permit	Description	BACT Guideline	Achieved-in-Practice BACT Requirement	Permit Limit	Clean Emission Unit
N-3306-29-1	N/A. This unit does not emit VOC.				
N-3306-30-1	Boiler	--	Use of natural gas with LPG or propane as back fuel	Requires the use of natural gas	Yes
N-3306-34-0	Folder/Gluer	4.9.6	Adhesive with a VOC content of ≤ 5.7 lb/gal (excluding water and exempt compounds)	VOC content of 2% (or less) by wt., equivalent to 0.18 lb-VOC/gal, less water and exempt compounds	Yes

As shown above, all of the existing units at the facility are clean for VOC emissions.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the SB 288 Major Modification calculation.

Since this facility is a major source for VOC emissions, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
VOC	7,800	50,000	No

Since the SB 288 Major Modification Threshold is not surpassed with this project, this project does not constitute an SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

Step 1

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project.

PE2 = 7,800 lb-VOC/yr

Since there is an increase in VOC emissions, this project constitutes a Federal Major Modification. Federal Offset quantities are calculated below.

Federal Offset Quantities:

The Federal offset quantity is only calculated only for the pollutants for which the project is a Federal Major Modification. The Federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) during the baseline period for each emission unit times the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

VOC		Federal Offset Ratio	1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
N-3606-35-0	0	7,800	7,800
Net Emission Change (lb/year):			7,800
Federal Offset Quantity: (NEC * 1.5)			11,700

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

The equipment associated with this project emits only VOC.

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
Category	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Total PE from New and Modified Units	0.0	3.9	0.0	0.0	0.0	0.0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

10. 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. No changes to the SLC of VOC emissions are proposed. Therefore, QNEC is equal to zero for each quarter.

VIII. Compliance Determination

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. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

- 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 an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*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

As discussed in Section I above, except the relocation unit, there are no new emissions units associated with this project. Therefore, BACT for new units with PE > 2 lb/day purposes is not triggered.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there is an emissions unit being relocated from one stationary source to another and as seen in Section VII.C.2 above, the potential emissions are greater than 2 lb/day for VOC emissions. Therefore, BACT is triggered for VOC. Note that BACT analysis will be conducted on both flexographic printing press and the gluing process.

c. Modification of emissions units – AIPE > 2 lb/day

As discussed in Section I above, there are no modified emissions units associated with this project. Therefore, BACT is not triggered.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does constitute a Federal Major Modification for VOC emissions. Therefore BACT is triggered for VOC for all emissions units in the project for which there is an emission increase.

2. BACT Guideline

Flexographic printing process

BACT Guideline 4.7.4 applies to flexographic printing for corrugated boxes with the use of high-end graphics. (See **Appendix C**)

BACT Guideline 4.7.15 applies to flexographic printing for corrugated boxes with the use of low-end graphics. (See **Appendix C**)

Corrugated board gluing process

BACT Guideline 4.9.12 applies to corrugated board gluer. (See **Appendix C**)

3. Top-Down BACT Analysis

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

Flexographic printing process

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

VOC: For High-end graphics: use of inks with VOC content not exceeding 0.88 lb/gal (less water & exempt compounds) for high-end graphics and use of inks with a VOC content not exceeding 2.5 lb/gal (less water & exempt compounds) for metallic inks;

For Low-end graphics: use of coating with a VOC content not exceeding 0.3 lb/gal (less water & exempt compounds)

Corrugated board gluing process

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

VOC: use of adhesives with a VOC content not exceeding 0.021 lb/gal (less water & exempt compounds)

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
Category	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	1,430	509	1,541	6,612	73,403
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	Yes

2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for VOC and the SSPE2 is greater than the offset thresholds. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

$$\text{Offsets Required (lb/year)} = (\sum[\text{PE2} - \text{BE}] + \text{ICCE}) \times \text{DOR}, \text{ for all new or modified emissions units in the project,}$$

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

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)

Pursuant to District Policy APR 1420, *NSR Calculations for Units with Specific Limiting Conditions (3/12/07)*, the quantity of ERCs for a project will be determined by comparing the post project PE, which is the SLC, to the pre project BE for the SLC.

Additionally, the policy states that if the SLC is for a pollutant exceeding the Major Source threshold and any single unit under the SLC is not a Highly-Utilized, Fully-Offset, or Clean Emissions Units, then the sum of the actual emissions from all units in SLC will be used to determine the pre project BE.

There are no increases in Cargo Carrier emissions as a result of this project. Thus,

Offsets Required = $\Sigma (PE_2 - BE) \times DOR$

For projects with unit in an SLC, the equation becomes:

Offsets Required = $\Sigma (PE_{2SLC} - BE_{SLC}) \times DOR$

As shown in Section VII.C.6 of this document, all permit units at this facility meet the District's determination of achieved-in-practice BACT (and are thus Clean Emission Units). Therefore the pre project BE emissions are equal to the pre project PE emissions ($BE_{SLC} = PE_{1SLC}$).

For this project, PE_{2SLC} is equal to PE_{1SLC} . Thus,

Offsets Required = $(PE_{2SLC} - PE_{1SLC}) \times DOR$
= $(73,403 \text{ lb-VOC/yr} - 73,403 \text{ lb-VOC/yr}) \times DOR$
= 0 lb-VOC/yr

Offsets are not required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,

- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed,
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
- e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.7 and VII.C.8, this project is a Federal Major Modification. Therefore, public noticing for Federal Major Modification purposes is required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Pollutant	Offset Thresholds			Public Notice Required?
	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	
NO _x	1,430	1,430	20,000 lb/year	No
SO _x	509	509	54,750 lb/year	No
PM ₁₀	1,541	1,541	29,200 lb/year	No
CO	6,612	6,612	200,000 lb/year	No
VOC	73,403	73,403	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the

SSIFE = SSPE2 – SSPE1. The SSIFE is compared to the SSIFE Public Notice thresholds in the following table.

SSIFE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIFE (lb/year)	SSIFE Public Notice Threshold	Public Notice Required?
NO _x	1,430	1,430	0	20,000 lb/year	No
SO _x	509	509	0	20,000 lb/year	No
PM ₁₀	1,541	1,541	0	20,000 lb/year	No
CO	6,612	6,612	0	20,000 lb/year	No
VOC	73,403	73,403	0	20,000 lb/year	No

As demonstrated above, the SSIFE for each pollutant is less than 20,000 lb/year; therefore public noticing for SSIFE purposes is not required.

e. Title V Significant Permit Modification

As shown in the Discussion of Rule 2520 below, this project constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

2. Public Notice Action

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

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Proposed Rule 2201 (DEL) Conditions:

- VOC emissions from this permit unit shall not exceed any of the following limits: 30 lb/day and 7,800 lb/year (12-month rolling total). [District Rule 2201]
- VOC content of the materials shall not exceed the following: (a) For standard graphics printing, use inks with a VOC content of less than or equal to 0.3 lb/gal (less water and exempt compounds); (b). For high end graphics printing, use inks with a VOC content of

less than or equal to 0.88 lb/gal (less water and exempt compounds); (c) For high end graphics printing with metallic inks, use inks with a VOC content of less than or equal to 2.5 lb/gal (less water and exempt compounds); (d) Adhesive with a VOC content of less than or equal to 0.021 lb/gal (less water and exempt compounds); (e) Fountain solutions – 8.0% by volume. The use of specialty inks shall not exceed 2 gallons in a calendar day and 120 gallons in a calendar year. [District Rules 2201, 4607 and 4653]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition(s) are listed on the permit to operate:

- Permittee shall maintain records of the daily VOC emissions from this permit unit. Daily VOC emissions may be calculated from the monthly materials (inks, coatings, solvents, fountain solutions, wash primers, adhesives, etc.) usage records and the number of days per calendar month this unit was operated. [District Rule 2201]
- On a monthly basis, the permittee shall calculate and record the monthly VOC emissions in pounds from this permit unit. [District Rule 2201]
- On a monthly basis, the permittee shall calculate and record the annual VOC emissions in pounds by summing the VOC emissions from the previous 12 months. [District Rule 2201]
- All records shall be maintained for a period of at least five years and shall be made available to the District, ARB and EPA upon request.[District Rules 2201 and 4607]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. Since this

project only results in VOC emissions and there is no ambient air quality standard for VOC emissions, an ambient air quality analysis is not required for this project.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Federal 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. As discussed in Section VIII above, this project does constitute a Federal Major Modification, therefore this requirement is applicable. PSC's compliance certification is included in **Appendix F**.

H. Alternate Siting Analysis

The current project occurs at PSC's existing facility. 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 impact. Therefore, the use of the existing site will result in the least possible impact from the project.

Compliance is expected with this rule.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment." Since this project triggers a Federal Major Modification, the project does not qualify as a minor permit modification or administrative amendment; therefore, this project is a Significant Modification to the Title V permit. A public notice will be performed prior to issuing the Authority to Construct permit.

The facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. The facility shall not implement the changes requested until the final permit is issued.

Rule 4001 New Source Performance Standards (NSPS)

New Source Performance Standards – 40 CFR Part 60, Subpart QQ – Standards of Performance for the Graphic Arts Industry: Publication Rotogravure printing

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60.

Pursuant to §60.430(c), this subpart applies to each rotogravure printing press that commences construction, modification, or reconstruction after October 28, 1980.

The proposed unit is flexographic printing press, not a rotogravure press; and therefore, this subpart does not apply and no further discussion is required.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

National Emission Standards for Hazardous Air Pollutants – 40 CFR Part 63, Subpart KK – National Emission Standards for the Printing and Publishing Industry

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63.

Pursuant to §63.820(a)(1), this subpart applies to each new and existing facility that is a “major source” of hazardous air pollutants (HAP), as defined in 40 CFR 63.2, at which publication rotogravure, product and packing rotogravure, or wide-web flexographic printing presses are operated.

40 CFR 63.2 defines “major source” as any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, unless the Administrator establishes a lesser quantity, or in the case of radionuclides, different criteria from those specified in this sentence.

Per worksheets in Appendix G of this document, this facility is not a “major source” of HAP emissions. Therefore, the proposed unit is not subject to the requirements of this subpart.

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 included in the permit:

- {4383} No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by

District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin County)]

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of this operation provided the equipment is well maintained. Therefore, compliance with this rule is expected. Therefore, the following condition will be listed on the Authority to Construct permit:

- {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* 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.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (**Appendix E**), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project. The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
N-3606-36-0	N/A ¹	No

¹The Maximum Individual Cancer Risk and Acute Hazard Index were not calculated since there is no risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than

1 and a cancer risk greater than 20 in a million). As outlined by the HRA Summary in **Appendix E** of this report, the emissions increases for this project was determined to be less than significant.

Compliance is expected with this rule.

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

The purpose of this rule is to limit VOC emissions from graphic arts printing operations, digital printing operations, and paper, film, foil or fabric costing operations. The rule also specifies the administrative requirements for recording and measuring the emissions, and a compliance schedule.

Section 5.1, requires that an operator of any graphic arts printing operations shall not use graphic arts materials in excess of the VOC content limits, as applied in Table 1 and Table 2 of this section.

Table 1. VOC Content Limits for Inks, Coating, & Adhesives	
Material	Grams of VOC per liter (lb/gal), less water & less exempt compounds
Flexographic Inks	225 (1.88)
Coatings	300 (2.5)
Adhesives	150 (1.25)

Table 2. VOC Content Limits for Fountain Solution	
Material	Percent VOC by volume
All Other Presses	8.0

Section 5.2, required that an operator of flexographic printing operation shall not use a specialty ink in excess of the VOC content limit in Table 3, and shall not use more than 2 gallons of specialty inks in a calendar day and 120 gallons or specialty inks in a calendar year.

Table 3. VOC Content Limits for Flexographic Specialty Inks	
Material	Grams of VOC per liter (lb/gal), less water & less exempt compounds
Metallic Inks	460 (3.8)
Mate Finish Ink	535 (4.5)
Metallic Ink and Matte Finish Ink on Flexible Packing Printing	383 (3.2)

Per SDSs, the VOC contents of the proposed inks and coatings are in the ranges of 0.18 lb/gal to 0.83 lb/gal. Per applicant, no fountain solution will be used for the proposed flexographic printing press.

Per SDS, the VOC contents of the proposed adhesive, Ultimate Control 33-763A contains zero VOC.

As shown above, the proposed inks, coatings, and adhesive are compliant materials. The following condition will be included in the permit:

- VOC content of the materials shall not exceed the following: (a) For standard graphics printing, use inks with a VOC content of less than or equal to 0.3 lb/gal (less water and exempt compounds); (b). For high end graphics printing, use inks with a VOC content of less than or equal to 0.88 lb/gal (less water and exempt compounds); (c) For high end graphics printing with metallic inks, use inks with a VOC content of less than or equal to 2.5 lb/gal (less water and exempt compounds); (d) Adhesive with a VOC content of less than or equal to 0.021 lb/gal (less water and exempt compounds); (e) Fountain solutions – 8.0% by volume. The use of specialty inks shall not exceed 2 gallons in a calendar day and 120 gallons in a calendar year. [District Rules 2201 and 4607]

Section 5.7 states no operator shall apply coatings unless coatings are applied with equipment operated according to manufacturer's specifications, and only by the use of one of the following types of coating application equipment:

- Flow coater
- Roll coater
- Dip coater
- Foam coater
- Die coater
- Hand application methods, or
- High-Volume, low-pressure (HVLP) spray for air dried coatings
- Other coating application methods which are demonstrated to the APCO to be capable of achieving at least 65% transfer efficiency

The coatings will be applied by roll coater, and therefore compliance with the requirement of this rule. The following condition will be listed on the permit to ensure compliance:

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

Section 5.8, requires that an operator shall not use organic solvents for cleaning operations that exceed the VOC content limits specified in Table 7 of this Section.

Table 7. VOC Content Limits for Solvent Cleaning	
Type of Solvent Cleaning Operation	VOC content, less water & exempts compounds (lb/gal)
Surface Preparation for coating, ink, or adhesive application	0.21
Cleaning of coating or adhesive application equipment	0.21
Cleaning of ink application equipment	0.83
– Flexographic printing	0.21
– Specialty Flexographic Printing	0.83

The applicant has not proposed to use any surface preparation and equipment cleaning solvent. The following conditions will be included in the permit:

- Permittee shall utilize organic solvents for cleaning operations that complied with the VOC content limit specified in Table 7 of District Rule 4607. [District Rule 4607]
- For a permittee using any solvent containing more than 25 g/L of VOC for organic solvent cleaning, cleaning activities shall be by one of the following methods: wipe cleaning; application of solvent using nonpropellant-induced, hand-held spray bottles; non-atomized solvent flow method, or solvent flushing method. [District Rule 4607]
- For a permittee using any solvent containing more than 25 g/L of VOC for organic solvent cleaning, solvent shall not be atomized into the open air unless it is vented to a VOC control device. This provision shall not apply to operations where roller or blanket wash is applied automatically and the cleaning of the nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with nonpropellant-induced, hand-held spray bottles. [District Rule 4607]
- For a permittee using any solvent containing more than 25 g/L of VOC for organic solvent cleaning, the permittee shall not use VOC-containing material to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose component part(s) being cleaned during washing, rinsing, draining procedures and it must be used according to manufacturer's recommendations and must be closed when not in use. [District Rule 4607]

Section 5.9 requires that an operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials, coatings, adhesives, catalysts, and ink in closed, non-absorbent and non-leaking containers. The container shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty. The following condition will be included in the permit:

- Permittee shall store and dispose of fresh or spent solvents and waste solvent cleaning materials such as cloth, paper, etc. in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing material or when it is empty. [District Rule 4607]

Section 5.10 requires that an operator shall properly use and properly operates all graphic arts printing technologies as directed and/or specified by the manufacturer of the printer or graphic arts materials. The following condition will be included in the permit:

- All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. The permittee shall properly use and properly operate all graphic arts printing technologies as directed and/or specified by the manufacturer of the printer or graphic arts material. [District Rules 2201 and 4607]

Section 6.1 requires the operator subject to the requirement of this rule to keep all applicable records on-site for a minimum of five years, and make records available to the APCO, ARB, and EPA upon request.

Section 6.1.1 requires an operator to maintain a current file documenting coatings, inks, adhesives, fountain solutions, wash primers, and solvents in use and in storage. The file shall include a safety data sheet (SDS) or product data sheet showing the material name, manufacturer's name, VOC content as applied, specific mixing instructions, and density.

Section 6.1.2 specifies recordkeeping requirements for facility utilize only compliant materials. Sections 6.1.2.1, 6.1.2.2, and 6.1.2.3 requires the monthly records of the following: 1) the type and amount of all inks, 2) the type and amount of each coating, adhesive, wash primer, and solvent (including cleaning solvent) used; and 3) the type, amount, and percent VOC by volume of fountain solution used.

Section 6.1.4 specifies recordkeeping requirements for the flexographic specialty inks. If flexographic specialty inks are used pursuant to Section 5.2, the permittee shall record, on a daily basis, the type and amount of each specialty ink used.

The following conditions will be included in the permit:

- Permittee shall maintain a current file of coatings, inks, adhesives, fountain solutions, wash primers, and solvents in use and in storage. The file shall include safety data sheet (SDS) or product data sheet showing the material name, manufacturer's name, VOC content as applied, mixing instruction, density, and composite vapor pressure. [District Rule 4607]
- Monthly records shall be maintained and contain the following information: (a) The name, type, quantity and VOC content (in lb/gal, less water and exempt compounds) of all inks, fountain solutions, wash primers, coatings, adhesives, solvents, and cleaning materials used or stored at the facility; (b) The combined total amount of VOC's emitted from the use of all VOC containing material (in pounds); (c) The dates of operation of this permit unit. A daily record of the type and amount of flexographic specialty inks used shall be maintained. [District Rules 2201 and 4607]
- All records shall be maintained for a period of at least five years and shall be made available to the District, ARB and EPA upon request. [District Rules 2201 and 4607]

Compliance is expected with this rule.

Rule 4653 Adhesives and Sealants

The purpose of this rule is to reduce emission of volatile organic compounds (VOCs) from the application of adhesive products, sealant products, and associated solvent cleaning operations.

Section 4.1.2 states the use of adhesive products or sealant products containing less than 20 grams VOC per liter is exempt from the requirements of this rule.

Section 4.1.8 states adhesive products which are subject to the VOC limit requirements of Rule 4607 (Graphic Arts), are exempt from the requirements of this rule.

The applicant proposed to use only one adhesive, Ultimate Control 33-763A, which contains zero VOC, for the gluer in the graphic art printing operation. Therefore, the proposed gluing operation is exempt from the requirements of this rule and no further discussion will be required.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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 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.

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 § 15301 (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)).

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC N-3606-35-0 subject to the permit conditions on the attached draft ATC in **Appendix A**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-3606-35-0	3020-01-G	942.4 hp, electric motors	\$893.00

Appendixes

- A: Draft ATC
- B: Current PTO(s) N-7464-1-1
- C: BACT Guidelines
- D: BACT Analysis
- E: HRA Summary
- F: Compliance Certification
- G: Facility HAP Emissions

Appendix A
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-3606-35-0

LEGAL OWNER OR OPERATOR: PACIFIC SOUTHWEST CONTAINER
MAILING ADDRESS: ATTN: SR VICE PRESIDENT OF QUALITY & ENVIRONMENTAL MNGT
4530 LECKRON RD
MODESTO, CA 95357

LOCATION: 4530 LECKRON RD
MODESTO, CA 95357

EQUIPMENT DESCRIPTION:
GRAPHIC ARTS PRINTING OPERATION CONSISTING OF A 4-COLOR BOBST/MARTIN MODEL MIDLINE 924 (A-0498-200) NON-HEATSET FLEXOGRAPHIC PRINTER WITH FOLDER, GLUER, AND ROTARY DIE-CUTTER

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Upon implementation of this Authority to Construct, Permit to Operate N-7464-1 shall be cancelled. [District Rule 2201] Federally Enforceable Through Title V Permit
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {4383} No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)] Federally Enforceable Through Title V Permit

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

Arnaud Marjolle, Director of Permit Services

N-3606-35-0 May 9 2017 10:45AM - KAHLOJ : Joint Inspection NOT Required

6. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. The permittee shall properly use and properly operate all graphic arts printing technologies as directed and/or specified by the manufacturer of the printer or graphic arts material. [District Rules 2201 and 4607] Federally Enforceable Through Title V Permit
7. VOC emissions from this permit unit shall not exceed any of the following limits: 30 lb/day and 7,800 lb/year (12-month rolling total). [District Rule 2201] Federally Enforceable Through Title V Permit
8. Facility-wide VOC emissions shall not exceed 73,403 lb/year on a rolling 12-month basis. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Only flow coater, roll coater, dip coater, foam coater, die coater, hand application methods shall be used to apply coatings. HVLP spray equipment may be used for air dried coatings only. Application equipment shall be operated in accordance with the manufacturer's specifications. [District Rule 4607] Federally Enforceable Through Title V Permit
10. VOC content of the materials shall not exceed the following: (a) For standard graphics printing, use inks with a VOC content of less than or equal to 0.3 lb/gal (less water and exempt compounds); (b) For high end graphics printing, use inks with a VOC content of less than or equal to 0.88 lb/gal (less water and exempt compounds); (c) For high end graphics printing with metallic inks, use inks with a VOC content of less than or equal to 2.5 lb/gal (less water and exempt compounds); (d) Adhesive with a VOC content of less than or equal to 0.021 lb/gal (less water and exempt compounds); (e) Fountain solutions - 8.0% by volume. The use of specialty inks shall not exceed 2 gallons in a calendar day and 120 gallons in a calendar year. [District Rules 2201, 4607 and 4653] Federally Enforceable Through Title V Permit
11. Permittee shall utilize organic solvents for cleaning operations that complied with the VOC content limit specified in Table 7 of District Rule 4607. [District Rule 4607] Federally Enforceable Through Title V Permit
12. For a permittee using any solvent containing more than 25 g/L of VOC for organic solvent cleaning, cleaning activities shall be by one of the following methods: wipe cleaning; application of solvent using nonpropellant-induced, hand-held spray bottles; non-atomized solvent flow method, or solvent flushing method. [District Rule 4607] Federally Enforceable Through Title V Permit
13. For a permittee using any solvent containing more than 25 g/L of VOC for organic solvent cleaning, solvent shall not be atomized into the open air unless it is vented to a VOC control device. This provision shall not apply to operations where roller or blanket wash is applied automatically and the cleaning of the nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with nonpropellant-induced, hand-held spray bottles. [District Rule 4607] Federally Enforceable Through Title V Permit
14. For a permittee using any solvent containing more than 25 g/L of VOC for organic solvent cleaning, the permittee shall not use VOC-containing material to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose component part(s) being cleaned during washing, rinsing, draining procedures and it must be used according to manufacturer's recommendations and must be closed when not in use. [District Rule 4607] Federally Enforceable Through Title V Permit
15. 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] Federally Enforceable Through Title V Permit
16. Permittee shall maintain a current file of coatings, inks, adhesives, fountain solutions, wash primers, and solvents in use and in storage. The file shall include safety data sheet (SDS) or product data sheet showing the material name, manufacturer's name, VOC content as applied, mixing instruction, density, and composite vapor pressure. [District Rule 4607] Federally Enforceable Through Title V Permit
17. Monthly records shall be maintained and contain the following information: (a) The name, type, quantity and VOC content (in lb/gal, less water and exempt compounds) of all inks, fountain solutions, wash primers, coatings, adhesives, solvents, and cleaning materials used or stored at the facility; (b) The combined total amount of VOC's emitted from the use of all VOC containing material (in pounds); (c) The dates of operation of this permit unit. A daily record of the type and amount of flexographic specialty inks used shall be maintained. [District Rules 2201 and 4607] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

18. Permittee shall maintain records of the daily VOC emissions in pounds from this permit unit. Daily VOC emissions may be calculated from the monthly materials (inks, coatings, solvents, fountain solutions, wash primers, adhesives, etc.) usage records and the number of days per calendar month this unit was operated. [District Rule 2201] Federally Enforceable Through Title V Permit
19. On a monthly basis, the permittee shall calculate and record the monthly VOC emissions in pounds from this permit unit. [District Rule 2201] Federally Enforceable Through Title V Permit
20. On a monthly basis, the permittee shall calculate and record the annual VOC emissions in pounds by summing the VOC emissions from the previous 12 months. [District Rule 2201] Federally Enforceable Through Title V Permit
21. On a monthly basis, the permittee shall calculate and record the facility-wide VOC emissions in pounds for the rolling 12-month period. The facility-wide VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from every permitted unit at this facility. [District Rule 2201] Federally Enforceable Through Title V Permit
22. All records shall be maintained for a period of at least five years and shall be made available to the District, ARB and EPA upon request. [District Rules 2201 and 4607] Federally Enforceable Through Title V Permit

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Appendix B
Current PTO(s) N-7464-1-1

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-7464-1-1

EXPIRATION DATE: 08/31/2017

EQUIPMENT DESCRIPTION:

GRAPHIC ARTS PRINTING OPERATION CONSISTING OF A BOBET/MARTIN, MODEL 924, NON-HEATSET FLEXOGRAPHIC PRINTING PRESS

PERMIT UNIT REQUIREMENTS

1. 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]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The VOC content, less water and exempt compounds, of inks used by this printing operation shall not exceed 0.88 lb/gal. [District Rules 2201 and 4607]
4. The VOC emissions from this operation shall not exceed 27.4 pounds in any one day. [District Rule 2201]
5. The VOC emissions from this operation shall not exceed 8,983 pounds in any rolling 12-month period. [District Rule 2201]
6. Solvents shall not be atomized into the open air. This requirement shall not apply to printing operations where the roller or blanket wash is applied automatically and the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and the cleaning of spray bottles. [District Rule 4607]
7. The permittee shall store or disposed of fresh or spent solvents, waste solvent cleaning materials, coatings, adhesives, catalyst, thinners, and ink in closed non-absorbent containers. [District Rule 4607]
8. The permittee shall maintain a current file of coatings, inks, adhesives, fountain solutions, wash primers, and solvents in use and in storage. The file shall include material safety data sheets or product data sheets showing the material name, manufacturer's name, VOC content as applied, mixing instructions, and density. [District Rule 4607]
9. The permittee shall maintain records, on a monthly basis, of the type and quantity of all inks used according to one of the following methods: 1) Group the quantity of all inks used and identify the maximum VOC content and use the minimum density of 1,010 grams/liter (8.44 lb/gallon); or 2) Report process inks and pantone inks separately and use the specific VOC content and density for each process ink, and the highest VOC content and minimum density of 1,010 grams/liter (8.44 lb/gal) for pantone inks; or 3) Report process inks and pantone inks separately and use the maximum VOC content and minimum density value for both process and pantone inks, or use the density of 1,010 grams/liter (8.44 lb/gal) for pantone inks; or 4) Itemize each ink and pantone ink and use the specific VOC content and density value for each. [District Rule 4607]
10. The permittee shall maintain records, on a monthly basis, of the type and quantity of each ink, coating adhesive, wash primer, and solvent (including cleaning solvents) used. [District Rule 4607]
11. Permittee shall maintain records of the daily VOC emissions from this printing operation. [District Rule 2201]
12. Permittee shall maintain records of the rolling 12-month VOC emissions from this printing operation. At a minimum, these records shall be updated on a monthly basis. [District Rule 2201]
13. 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 2201 and 4607]

These terms and conditions are part of the Facility-wide Permit to Operate.

Appendix C
BACT Guidelines

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 4.7.4*

Last Update: 09/22/2006

Flexographic Printing - Corrugated Boxes, High End Graphics

Pollutant	Achieved In Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Use of inks with a VOC content not exceeding 1.1 lb/gal (less water & exempt compounds) for high-end graphics and use of inks with a VOC content not exceeding 2.5 lb/gal (less water & exempt compounds) for metallic inks	1) capture of VOCs and thermal or catalytic oxidation. 2) capture of VOCs and carbon absorption 3) capture of VOCs and regenerative thermal oxidizer 4) use of inks with VOC content not exceeding 0.88 lb/gal (less water and exempt compounds) for high-end graphics printing	

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**

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 4.7.15*

Last Update: 09/22/2006

Flexographic Printing - Corrugated Boxes, Low-end Graphics

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	use of coating with a VOC content (less water and exempt compounds) as indicated, or lower: 0.3 lb/gal and evaporative minimization methods, which include keeping all solvents and solvent-laden cloths/papers, not in active use, in closed containers.	1) capture of VOCs and thermal or catalytic oxidation 2) capture of VOCs and carbon absorption 3) capture of VOCs and regenerative thermal oxidizer	

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**

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 4.9.12*

Last Update: 09/22/2006

Corrugated Box Gluer

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	use of adhesives with a VOC content (less water and exempt compounds) not exceeding 0.044 lb/gal	1) capture of VOCs and thermal or catalytic oxidation 2) capture of VOCs and carbon absorption 3) capture of VOCs and regenerative thermal oxidizer 4) use of adhesives with a VOC content (less water and exempt compounds) not exceeding 0.021 lb/gal	

Replaces BACT 4.7.3

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**

Appendix D
BACT Analysis

Top-Down BACT Analysis for VOC emissions

The following VOC emission control technologies are listed in BACT guideline 4.7.4, flexographic printing corrugated boxes with high-end graphics:

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

- Use of inks with VOC content not exceeding 1.1 lb/gal (less water and exempt compounds) for high-end graphics and use of inks with VOC content not exceeding 2.5 lb/gal (less water and exempt compounds) for metallic inks

Technologically Feasible:

- VOC capture and thermal/catalytic incineration
- VOC capture and carbon absorption
- VOC capture and regenerative thermal oxidizer
- Use of inks with VOC content not exceeding 0.88 lb/gal (less water and exempt compounds) for high-end graphics printing

Alternate Basic Equipment:

None of any alternate basic equipment is identified in this option.

Step 2 - Eliminate technologically infeasible options

There is no technologically infeasible option.

Step 3 - Rank remaining options by control effectiveness

1. VOC capture and incineration (98% overall capture and control)
2. VOC capture and regenerative thermal oxidizer (98% overall capture and control)
3. VOC capture and carbon absorption (95% overall capture and control)
4. Use of inks with VOC content not exceeding 0.88 lb/gal (less water and exempt compounds) for high-end graphics printing

Step 4 - Cost Effectiveness Analysis

A cost-effective analysis will now be performed for each control technology, since none of the control technologies has been eliminated.

Uncontrolled VOC emission from the operation:

The uncontrolled VOC emission from the proposed operation is 7,800 lb-VOC per year (equivalent to 3.9 ton-VOC per year).

For the 1st & 2nd most effective control option, with VOC capture and incineration (98% overall capture & control)

Equipment Cost

The entire flexographic printer & gluer unit must be enclosed to capture 100% of the VOC emissions, and a permanent total enclosure (PTE) would be required to be built around the unit to ensure 100% capture. Per applicant, the size of the PTE would be at least 200 feet (L) x 40 feet (W) x 15 feet (H), equivalent to 120,000 cubic feet. The unit cost of \$61/ft² (supplied by Dellabarca Design & Build Inc. on February 28, 2013 under project N-1130130) would be used to estimate the cost of the PTE. The estimated cost of the PTE would be \$533,251¹.

Per EPA's Office of Air Quality Planning and Standards (OAQPS) document EPA/452/B-02-001, Section 2, Chapter 3, page 12, to ensure worker comfort and provide healthful working conditions, the recommended amount of ventilation in terms of room air changes per hour (RACs/hr) for a PTE is at least 10 to 15 RACs/hr, and therefore; 10 RACs/hr will be used to determine the minimum exhaust airflow rate for the PTE.

The minimum exhaust airflow rate of the PTE would be 20,000 cfm². The cost of the RTO is estimated to be \$510,513³. This price does not include sales tax, freight expenses, operational and maintenance costs, site preparation, etc. Please note that the capital cost of a catalytic incinerator is expected to be greater, due to the added cost of the catalyst material.

The direct and indirect costs, shown in the following table, are taken from EPA's Office of Air Quality Planning and Standards (OAQPS) document EPA/452/B-02-001, Section 3.2, Chapter 2, page 42; OAQPS numbers are based on 2000 dollar value. These number are not adjusted for inflation over the past 16-year period. The numbers are presumed be reasonably conservative for the cost-effectiveness analysis.

Cost Item	Cost, \$
Direct Costs	
Purchased equipment costs	
RTO & PTE cost, A	1,043,764
Sales tax, Modesto, 7.625%A	79,587
Freight, 0.05A	52,188
Purchased equipment cost, B	<u>\$1,175,539</u>
Direct installation costs	
Foundations & supports, 0.08B	94,043
Handling & erection, 0.14B	164,575
Electrical, 0.04B	47,022
Piping, 0.02B	23,511

¹ Using 3% inflation over the past three years, the cost of the PTE in 2016 dollars is estimated to be \$533,251 [(200 ft x 40 ft x \$61/ft²) x (1+0.03)³]

² The minimum exhaust airflow rate for the PTE is 20,000 cfm (10 RACs/hr x 120,000 ft³ + 60 min/h). Therefore, RTO is presumed to be designed to handle at least 20,000 cfm.

³ In 2011, Rick Cooley of Oxidation Technology provided a cost quote for RTOs at various flow rates. Based on this information, the cost of an RTO handling 20,000 cfm is \$400,000 (2011 dollar). Using 3% inflation over the past five years, the cost of an RTO in 2016 dollars is estimated to be \$510,513 [400,000 x (1+0.03)⁵]. Note that this cost does not include any taxes, freight or installation expenses.

Insulation for duct work, 0.01B	11,755
Painting, 0.01B	11,755
Direct installation costs	<u>\$352,662</u>
Site preparation	--
Total Direct	<u>\$1,528,201</u>
Indirect Costs (installation)	
Engineering, 0.1B	117,554
Construction & field expenses, 0.05B	58,777
Contractor fees, 0.1B	117,554
Start-up, 0.02B	23,511
⁴ Performance test, 0.01B	--
Contingencies, 0.03B	<u>35,266</u>
Total Indirect Costs	<u>\$352,662</u>
Total Capital Investment (TCI)	<u>\$1,880,863</u>

The total capital investment is annualized over 10 years assuming 10% interest. The following formula is used to determine the annualized cost:

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

$$\text{Amortization Factor} = \left[\frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = 0.163 \text{ per District policy, amortizing over 10 years at 10\%}$$

Therefore,

$$\text{Annualized Capital Investment} = \$1,880,863 \times 0.163 = \mathbf{\$306,581/\text{year}}$$

Fuel Cost

$$\text{Fuel Cost} = \{[Q \times C_{p\text{Air}} \times \Delta T \times (1-\text{HR}) \times O] - (\text{VOC} \times \text{HC})\} \times (\text{Natural gas cost})$$

Where,

Q: Airflow rate 20,000 CFM

C_{pAir}: Specific heat of air (0.0194 Btu/scf - °F)

ΔT: Change in temperature required 1,342°F (1500°F - 158°F)

HR: Heat recovery (0.95)

O: Operational time, 525,600 min/yr (60 min/hr x 8,760 hr/yr)

VOC: Total amount of VOC 7,800 lb/yr

HC: Heat content of the VOCs in the contaminated air stream. The heat content of MEK, which is 13,729 Btu/lb, will be assumed.

Natural gas cost: \$6.365 /MMBtu (average) for both 2015 and 2016 per U.S. Energy Information Administration⁽⁵⁾.

⁴ A performance test price is not included because it would have been required even if a company voluntarily proposes to install an RTO.

⁵ <https://www.eia.gov/dnav/ng/hist/n3035ca3m.htm>

Fuel Cost = **\$86,416/year**

Electricity Cost:

$$\text{Power}_{\text{fan}} = \frac{(1.17 \times 10^{-4}) \times Q \times \Delta P}{\epsilon}$$

Where,

ΔP : Pressure drop across system = 4 in. H₂O

ϵ : Efficiency for fan and motor = 0.6

Q: Exhaust flow rate = 20,000 cfm

$$\text{Power}_{\text{fan}} = 16 \text{ kW}$$

MID's electric rate schedule GS-3 (General Service industrial) for off-peak are \$0.0526/kWH⁶.

Thus,

$$\begin{aligned} \text{Electric cost} &= (\$0.0526/\text{kWH})(16 \text{ kW})(24 \text{ hr/day})(365 \text{ days/yr}) \\ &= \mathbf{\$7,188/\text{year}} \end{aligned}$$

$$\begin{aligned} \text{Total Cost} &= \$306,581/\text{yr} + \$86,416/\text{yr} + \$7,188/\text{yr} \\ &= \mathbf{\$400,185/\text{yr}} \end{aligned}$$

For VOC capture and incineration with overall VOC control efficiency 98%, the amount of VOC emissions controlled is calculated as follow:

$$\begin{aligned} \text{Controlled VOC emissions} &= 7,800 \text{ lb-VOC/year} \times 1 \text{ tons-VOC}/2,000 \text{ lb-VOC} \times 0.98 \\ &= \mathbf{3.8 \text{ ton-VOC/year}} \end{aligned}$$

Cost of VOC reduction is calculated as follow:

$$\begin{aligned} \text{Cost of VOC reduction} &= \$400,185/\text{year} \div 3.8 \text{ ton-VOC/year} \\ &= \mathbf{\$105,312/\text{ton-VOC}} \end{aligned}$$

Since the calculated cost of VOC reduction exceeds the VOC cost effective threshold of \$17,500/ton. Therefore, this control technology of utilize a RTO is deemed not cost effective and will be removed from consideration at this time. Please also note that the equipment cost of a regular thermal oxidizer is comparable to that of the RTO. However, the RTO fuel cost are found to be 45% less with an assumed heat recovery rate of 95% as opposed to the 70% heat recovery of a thermal oxidizer. Therefore, cost analysis for RTO is considered to be representative of thermal oxidizer technology.

For the 3rd effective control option, with VOC capture and carbon adsorption (95% overall capture & control).

The carbon bed replacement cost normally exceeds the cost effectiveness threshold by itself, so the capital cost is not being included in this analysis.

⁶ http://www.mid.org/tariffs/Rates/GS-3_INDUSTRIAL.pdf

Annual Operating Costs:

Assuming the carbon would be able to capture 20% of its weight in VOC, the annual carbon requirement would be 39,000 pounds (7,800/0.2).

According to phone conversation between the process engineer and Nicole Passarella of Calgon on Nov 8, 2016, under project N-1162967, the cost is \$2.03/lb-carbon. Therefore, the cost of carbon for this project is calculated to:

The cost of carbon = 39,000 lb-carbon/year x \$2.03/lb-carbon = **\$79,170/year**

For carbon adsorption system with overall VOC control efficiency 95%, the amount of VOC emissions controlled is calculated as follow:

Controlled VOC emissions = 7,800 lb-VOC/yr x 1 tons-VOC/2,000 lb-VOC x 0.95
= 3.71 ton-VOC/yr

Cost of VOC reduction is calculated as follow:

Cost of VOC reduction = \$79,170/year ÷ 3.71 ton-VOC/year
= \$21,340/ton-VOC

As demonstrated above, the cost of disposing or replacing the carbon for the carbon adsorption system alone would exceed the VOC cost effectiveness threshold of \$17,500/ton. Therefore, this control technology of utilize a carbon adsorption system is deemed not cost effective and will be removed from consideration at this time.

For the 4th effective control option, use of inks with a VOC content not exceeding 0.88 lb/gal (less water & exempt compounds) for high-end graphics printing

The applicant is proposing the use of this control option, therefore, a cost effectiveness analysis for this control option is not required.

For the 5th effective control option, use of inks with a VOC content not exceeding 1.1 lb/gal (less water & exempt compounds) for high-end graphics and use of inks with a VOC content not exceeding 2.5 lb/gal (less water & exempted compounds for metallic inks

The applicant is proposing the use of a more effective VOC control measure. Therefore, a cost effectiveness analysis for this control option is not required.

Step 5 - Select BACT

BACT requirement of VOC emissions are satisfied by utilize inks with the highest VOC content of 0.88 lb-VOC/gal (less water & exempt compounds). Therefore, BACT requirement is satisfied.

Top-Down BACT Analysis for VOC emissions

The following VOC emission control technologies are listed in BACT guideline 4.7.15, flexographic printing corrugated boxes with low-end graphics:

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

- Use of coating with a VOC content (less water and exempt compounds) as indicated, or lower: 0.3 lb/gal and evaporative minimization methods, which include keeping all solvents and solvent-laden clothes/papers, not in active use, in closed containers.

Technologically Feasible:

- VOC capture and thermal/catalytic oxidation
- VOC capture and carbon absorption
- VOC capture and regenerative thermal oxidizer

Alternate Basic Equipment:

None of any alternate basic equipment is identified in this option.

Step 2 - Eliminate technologically infeasible options

There is no technologically infeasible option.

Step 3 - Rank remaining options by control effectiveness

1. VOC capture and incineration (98% overall capture and control)
2. VOC capture and regenerative thermal oxidizer (98% overall capture and control)
3. VOC capture and carbon absorption (95% overall capture and control)
4. Use of coating with a VOC content (less water and exempt compounds) as indicated, or lower: 0.3 lb/gal and evaporative minimization methods, which include keeping all solvents and solvent-laden clothes/papers, not in active use, in closed containers

Step 4 - Cost Effectiveness Analysis

For the first three effective control options listed above

As indicates in previous BACT analysis for flexographic printing corrugated boxes with high-end graphics, the first three technologically feasible control technologies listed above are each not cost effective; and therefore, these control technologies have been removed from consideration at this time.

For the 4th effective control option, used of coating with a VOC content (less water and exempt compounds) as indicated, or lower: 0.3 lb/gal

The applicant is proposing to use this control option; therefore, a cost effectiveness analysis for this control option is not required.

Step 5 - Select BACT

BACT requirement of VOC emissions are satisfied by utilize inks/coatings with the highest VOC content of 0.3 lb-VOC/gal (less water & exempt compounds). Therefore, BACT requirement is satisfied.

Top-Down BACT Analysis for VOC emissions

The following VOC emission control technologies are listed in BACT guideline 4.9.12, corrugated box gluer:

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

- Use of adhesives with a VOC content (less water and exempt compounds) no exceeding 0.044 lb/gal.

Technologically Feasible:

- VOC capture and thermal/catalytic oxidation
- VOC capture and carbon absorption
- VOC capture and regenerative thermal oxidizer
- Use of adhesives with a VOC content (less water and exempt compounds) not exceeding 0.021 lb/gal

Alternate Basic Equipment:

None of any alternate basic equipment is identified in this option.

Step 2 - Eliminate technologically infeasible options

There is no technologically infeasible option.

Step 3 - Rank remaining options by control effectiveness

1. VOC capture and incineration (98% overall capture and control)
2. VOC capture and regenerative thermal oxidizer (98% overall capture and control)
3. VOC capture and carbon absorption (95% overall capture and control)
4. Use of adhesives with a VOC content (less water and exempt compounds) not exceeding 0.021 lb/gal

Step 4 - Cost Effectiveness Analysis

For the first three effective control options listed above

As indicates in previous BACT analysis for flexographic printing corrugated boxes with high-end graphics, the first three technologically feasible control technologies listed above are each not cost effective; and therefore, these control technologies have been removed from consideration at this time.

For the 4th effective control option, use of adhesives with a VOC content (less water and exempt compounds) not exceeding 0.021 lb/gal

The applicant is proposing the use of this control option, therefore, a cost effectiveness analysis for this control option is not required.

For the 5th effective control option, use of adhesives with a VOC content (less water and exempt compounds) not exceeding 0.044 lb/gal

The applicant is proposing the use of a more effective VOC control measure. Therefore, a cost effectiveness analysis for this control option is not required.

Step 5 - Select BACT

BACT requirement of VOC emissions are satisfied by utilize adhesives with the highest VOC content of 0.021 lb-VOC/gal (less water & exempt compounds). Therefore, BACT requirement is satisfied.

Appendix E
HRA Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Jag Kahlon – Permit Services
 From: Anji Amachree – Technical Services
 Date: April 4, 2017
 Facility Name: Pacific Southwest Container, LLC
 Location: 4530 Leckron Road, Modesto, CA 95357
 Application #(s): N-3606-35-0
 Project #: N-1170908

A. RMR SUMMARY

RMR Summary						
Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required?	Special Permit Requirements?
Unit 35-0 (Printing Press)	0.46	N/A ¹	0.02	N/A ¹	No	No
Project Totals	0.46	N/A ¹	0.02	N/A ¹		
Facility Totals	>1	0.00	0.17	2.48E-06		

¹The Maximum Individual Cancer Risk and Acute Hazard Index were not calculated since there is no risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 35-0

1. The VOC emissions from this unit shall not exceed 34 pounds per day.
2. The VOC emissions from this unit shall not exceed 7800 pounds per year.

B. RMR REPORT

I. Project Description

Technical Services received a request on April 4th, 2017 to perform a Risk Management Review for a proposed installation of a Bobst midline 924 model A-0498-200 flexographic printing press with folder gluer, a unit that will be moved from facility N-7464-1-0 to this facility. Although an ambient air quality analysis (AAQA) is required, the only emissions from this project are VOC emissions, which currently do not have a standard with which to evaluate against. Therefore, an AAQA was not performed for this project.

II. Analysis

Toxic emissions for this proposed unit were provided by the engineer, and input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2010-2014 from Modesto to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used in the modeling runs:

Analysis Parameters Unit 35-0				
Source Type	Volume	Location Type		Urban
lb VOC (hr)	1.43	Closest Receptor (m)		82
lb VOC yr)	7800	Type of Receptor		Business
Building Openings	1	Pollutant Type		VOC
Initial Lateral Dimension (m)	2.05	N/A	N/A	N/A
Initial Vertical Dimension (m)	4.96	N/A	N/A	N/A

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit requirements listed on page 1 of this report must be included for this proposed unit.

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.

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary

Appendix F
Compliance Certification

April 27, 2017

Mr. Nick Peirce
San Joaquin Valley Air Pollution Control District
4800 Enterprise Way
Modesto CA 95356-8718

Subject: Compliance Statement for Pacific Southwest Container LLC

Dear Mr. Peirce:

In accordance with Rule 2201, Section 4.15, "Additional Requirements for New Major Sources and Federal Major Modifications," Pacific Southwest Container L.L.C. is pleased to provide this compliance statement regarding its Flexo-Folder-Gluer project #1170908.

All major stationary sources in California owned or operated by Pacific Southwest Container L.L.C., or by any entity controlling, controlled by, or under common control with Pacific Southwest Container L.L.C., and which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards. These sources include one or more of the following facilities:

Facility #1: Pacific Southwest Container L.L.C.- 4530 Leckron Road- Modesto, CA 95357

Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Please contact me if you have any questions regarding this certification.

Sincerely,



"Mac" McCullough

Senior Vice President Quality Engineering & Environmental Mgmt.
Pacific Southwest Container, L.L.C.

Appendix G
Facility HAP Emissions

Summary of HAPs Facility N-3606

Substances	N-3606-26_LithoPrintingPress	N-3606-29_StaroliReceivingOpe	N-3606-30_20.4MMBWNGBoiler	N-3606-31_Corru#stidBoardMf	N-3606-32_LithoPrintingPress	N-3606-35_FlexoPrintFoldGlue	Total, all permit units, page 1 & 2, (lb/yr)	HAP (Y/N)?	HAP: Total of all permit units, page 1 & 2, (lb/yr)
Acetaldehyde	2.56	--	0.55	--	--	--	6276.81	Y	6276.81
Acrolein	--	--	0.48	--	--	--	0.48	Y	0.48
Acrylic acid	--	--	--	--	26.29	--	26.29	Y	26.29
Ammonia	--	--	--	--	--	--	3980	N	--
Benzene	--	--	1.04	--	--	--	1.04	Y	1.04
Diethanolamine	--	--	--	--	--	79.5	79.5	Y	79.5
Diethylene glycol butyl ether	--	--	--	--	3975.5	--	3975.5	Y	3975.5
Diethylene glycol monoethyl ether	--	--	--	--	68	199	267	Y	267
Diethylene glycol monoethyl ether	--	--	--	--	--	--	0.00832	Y	0.00832
Epichlorohydrin	6.14	--	1.23	--	--	--	1047.37	Y	1047.37
Ethyl benzene	4.16	--	--	--	3979.6	--	4119.76	Y	4119.76
Ethylene glycol	3120	--	--	--	--	--	12272.86	N	--
Ethylene glycol monobutyl ether	--	--	--	--	5685	--	5685	Y	5685
Ethylene glycol monoethyl ether	--	--	2.2	--	--	--	749.2	Y	749.2
Formaldehyde	--	--	--	--	--	--	165	Y	165
Glycol ethers (and their acetates)	--	--	0.82	--	--	--	0.82	Y	0.82
Hexane	--	--	--	--	--	--	3153	N	--
Isopropyl alcohol	512	--	--	--	--	--	5.336	Y	5.336
Manganese	0.441	--	--	--	--	--	0.079	Y	0.079
Methanol	--	--	--	--	--	--	0.05	Y	0.05
Naphthalene	--	--	0.05	--	--	--	21.65	N	--
n-Butyl alcohol	--	--	0.02	--	--	--	0.02	Y	0.02
PAH's	--	--	94.71	--	--	--	94.71	N	--
Propylene	--	--	4.74	--	7.73	--	8.46	Y	8.46
Styrene	--	--	--	--	--	--	7.64832	Y	7.64832
Toluene	--	--	--	--	--	--	6749	Y	6749
Vinyl acetate	--	--	--	--	--	--	7495	Y	7495
Xylene (mixed)	385	--	--	--	--	--	3.52	Y	3.52
Xylenes	--	--	3.52	--	--	--	3.52	Y	3.52
TOTAL HAPs:							36662.89		36662.89

N-3606-3, 19, 21, 25, 27_Glue

Brief info:

These permit units use adhesive 56-5489 (information from project N-1130130)

Product Name Adhesive 56-5489

¹VOOC content (by wt.) 0.15

¹Sp.gravity 1.08

Substances	¹ % by wt.	² Emissions (lb/yr)
Acetaldehyde	0.04	2920
Vinyl Acetate	0.04	2920
Formaldehyde	0.007	511

¹ Information taken from safety data sheets

² Emissions = % by wt (substance)/% by wt (VOC) x 30 lb-VOC/day (total for all units) x 365 days/yr

N-3606-4_Laminator

Brief Info:

Single facer uses Starch adhesive See below
 Laminator section uses Henkel's adhesive 33-672B, which does not contain any HAPs.
 Information taken from project N-1130130

Starch adhesive Composition:

Ingredient	Lbs	Wt. Ratio (%, by weight)	VOC % by wt (in ingredient)	VOC % by wt (in formula)	VOC (in formula (lbs))	Density of ingredient (lb/gal)	VOC (pounds)
Water	1940	71.84%	0		0	8.245	
Paint Starch	648	24.07%	0		0	8.4	
Solvent starch	5.5	0.20%	0		0	8.6	0.00017002
Velocity SP	28	1.04%	0.0012	0.0001244	0.076	9.7	0.000391722
Ultraguard H2O	40	1.48%	0.0021	0.0003111	0.084	5.97	
Borax	18.5	0.70%	0		0	N/A	
Sodium Hydroxide	28.5	1.09%	0		0		
Total	2720.5	100.00%			0.1176		0.000408724

Product Name

Velocity SP29-962A

VOC content (by wt.)

0.0012

Sp.gravity

1.03

No HAPs are reported in the SDS.

Product Name

Ultraguard 29-9734

VOC content (by wt.)

0.0021

Sp.gravity

1.16

No HAPs are reported in the SDS.

N-3606-11_Automatan

Brief info:

This permit unit uses adhesive 51-6367.

Information taken from project N-1130130

Product Name 51-6367HUV
¹VOC content (by wt.) 0.14
¹Sp.gravity 1.1

Substances	¹ % by wt.	² Emissions (lb/yr)
Acetaldehyde	0.04	3129
Vinyl Acetate	0.04	3129
Formaldehyde	0.003	235

¹ Information taken from safety data sheets

² Emissions = % by wt (substance)/% by wt (VOC) x 30 lb-VOC/day x 365 days/yr

N-3606-13_FlexoFolderGluer

Flexographic printer:

Substance	¹ Emissions (lb/yr)
Isopropyl alcohol	327
Acetaldehyde	4.9
Ethylene glycol monobutyl ether	9.45

¹Emissions are taken from the risk management review analysis under project N-1011143

Gluer:

The gluer uses Henkel's Adhesive 33-763A, which contain no HAPs or VOCs.

N-3606-14_FlexoFolderGluer

Flexographic printer:

Substance	¹ Emissions (lb/yr)
Isopropyl alcohol	327
Acetaldehyde	4.9
Ethylene glycol monobutyl ether	9.45

¹Emissions are taken from the risk management review analysis under project N-1011143

Gluer:

The gluer uses Henkel's Adhesive 33-763A, which contain no HAPs or VOCs.

N-3606-15_FlexoFolderGluer

Flexographic printer:

Substance	¹ Emissions (lb/yr)
Isopropyl alcohol	327
Acetaldehyde	4.9
Ethylene glycol monobutyl ether	9.45

¹Emissions are taken from the risk management review analysis under project N-1011143

Gluer:

The gluer uses Henkel's Adhesive 33-763A, which contain no HAPs or VOCs.

N-3606-16_LithoPrintingPress

Substance	¹ Emissions (lb/yr)
Ethylene glycol monobutyl ether	8,860

¹Emissions are taken from the risk management review analysis under project N1011143

Substances	¹ Emissions (lb/yr)
Xylene (mixed)	3410
Ethyl benzene	683
Epichlorohydrin	0.00832
Toluene	0.00832
Ethylene glycol monobutyl ether	10
Manganese	4

¹Emissions are taken from the risk management review analysis under project N1040738

Substances	¹ Emissions (lb/yr)
Glycol ethers (and their acetates)	165
Xylene (mixed)	3,700
Ethylene glycol	136
Formaldehyde	1
Methanol	0.079
Isopropyl alcohol	1660
Acetaldehyde	210
Ethyl benzene	357
Styrene	0.73
Vinyl acetate	700
Toluene	2.9
Ethylene glycol monobutyl ether	255
Manganese	0.895
Ammonia	3,980

¹Emissions are taken from the risk management review analysis under project N1052762

N-3606-26_LithoPrintingPress

Substances	¹ Emissions (lb/yr)
Xylene (mixed)	385
Isopropyl alcohol	512
Acetaldehyde	2.56
Ethyl benzene	6.14
Ethylene glycol	4.16
Ethylene glycol monobutyl ether	3120
Manganese	0.441

¹Emissions are taken from the risk management review analysis under project N1062831

N-3606-29_ StarchReceivingOper

No HAPs were identified in risk management review analysis under project N-1130130

N-3606-30_20.4MMBtuNGBoiler

Substance	¹ EF (lb/MMscf)	² Emissions (lb/yr)
Acetaldehyde	0.0031	0.55
Acrolein	0.0027	0.48
Benzene	0.0058	1.04
Ethyl Benzene	0.0069	1.23
Formaldehyde	0.0123	2.2
Hexane	0.0046	0.82
Naphthalene	0.0003	0.05
PAH's	0.0001	0.02
Propylene	0.53	94.71
Toluene	0.0265	4.74
Xylenes	0.0197	3.52

¹The emission factors are from the table, "Natural Gas Fired External Combustion Equipment" in the May 2001 update of VCAPCD AB 2588 Combustion Emission Factors. PAHs emission factor adjusted from table values to subtract Naphthalene portion.

²Emissions = EF (lb/MMscf) x 0.0204 MMscf/hr x 8,760 hr/yr

N-3606-31_CorrugatedBoardMfr

No HAPs were identified in risk management review analysis under project N-1130130

N-3606-32_LithoPrintingPress

Substance	Emissions (lb/yr)
n-Butyl alcohol	22
Acrylic acid	26
Styrene	8
Ethylene glycol	3980
Ethylene glycol monoethyl ether	5685
diethylene glycol monoethyl ether	68
diethylene glycol butyl ether	3976

¹Emissions are taken from the risk management review under projects N-1141679 and N-1152765

N-3606-35_FlexoPrintFoldGlue

Substance	¹Emissions (lb/yr)
Diethanolamine	80
diethylene glycol monoethyl ether	199

¹Emissions are taken from the risk management review under projects N-1170908