

NOV 20 2018

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

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-8044
Project Number: N-1183218

Dear Mr. McCullough:

Enclosed for your review and comment is the District's analysis of Pacific Southwest Container, LLC's application for an Authority to Construct for the installation of a non-heatset flexographic printing operation, at 671 Mariposa Road in Modesto, California.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Wai-Man So of Permit Services at (209) 557-6449.

Sincerely,



Arnaud Marjollet
Director of Permit Services

AM:WMS

Enclosures

cc: Tung Le, CARB (w/ enclosure) via email

Samir Sheikh
Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Graphic Arts Printing Operation – Flexographic

Facility Name: Pacific Southwest Container, LLC Revised Date: November 14, 2018
Mailing Address: 4530 Leckron Road Engineer: Wai-Man So
 Modesto, CA 95357 Lead Engineer: James Harader
Contact Person: Mac McCullough
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Application #(s): N-8044-8-0
Project #: N-1183218
Deemed Complete: October 29, 2018

I. Proposal

Pacific Southwest Container LLC (hereinafter PSC) is requesting an Authority to Construct (ATC) for the installation of a Bobst 4-Color model FFG 924 NT Rapidset non-heatset flexographic printer-folder-gluer and a rotary die-cutter system. The draft ATC is included in Appendix A.

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 671 Mariposa Road in Modesto, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

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 unit. Ink is pumped to the anilox roll and transferred to the printing plate, where the image is transferred onto the corrugated sheet. 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 then folded into a flat box and strapped. With the exception of UV ink, this machine is capable of printing most types of ink including both regular ink and metallic ink based on customer requests.

V. Equipment Listing

N-8044-8-0: GRAPHIC ARTS PRINTING OPERATION CONSISTING OF A 4-COLOR BOBST MODEL FFG 924 NT RAPIDSET NON-HEATSET FLEXOGRAPHIC PRINTER WITH FOLDER, GLUER, AND ROTARY DIE-CUTTER

VI. Emission Control Technology Evaluation

VOC will be emitted from the proposed printing operation. The applicant is proposing to use low VOC content ink and coating materials to minimize VOC emissions from the operation. The proposed operation is not served by any additional emission control device.

Particulate matter (PM) will be emitted from the die-cutting, slotting, and scoring operations. The die-cutter will be served by the shared waste paper collection system that is equipped with a cyclone. The cyclone is an integral part of the waste collection system utilized to convey waste to a baler, and therefore, the cyclone on the waste paper collection system is not a control device. The applicant proposes to keep the material processing rates of the shared waste collection system unchanged with the addition of this new unit. As determined under project N-1182450, the waste collection system qualifies as low emitting unit; therefore, the waste collection system is exempt for permitting requirements.

VII. General Calculations

A. Assumptions

- To streamline emission calculations, PM2.5 emissions are assumed to be equal to PM10 emissions. Only if needed to determine if a project is a Federal major modification for PM2.5 will specific PM2.5 emission calculations be performed.
- Other assumption will be stated when each is made.

B. Emission Factors

The VOC emissions from this operation will be determined based on the VOC content of the materials and their respective usages; therefore, a separate emission factor will not be listed on the permit.

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)

Post-project potential emissions are summarized in below table. Detailed calculations are included in **Appendix B** of this document:

PE2		
Pollutant	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	0.0	0
SO _x	0.0	0
PM ₁₀	0.0	0
CO	0.0	0
VOC	19.6	4,900

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.

SSPE1 values are taken from engineering evaluation under project N-1183018.

SSPE1 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
N-8044-1-0	0	0	0	0	0
N-8044-2-0	148	0	8	95	8
N-8044-3-0	0	0	0	0	5,817
N-8044-4-0	860	744	783	9,659	1,436
N-8044-5-0	0	0	0	0	8,076
N-8044-6-0	0	0	37	0	0
N-8044-7-0	0	0	0	0	2,750
ERC	0	0	0	0	0
SSPE1	1,008	744	828	9,754	18,087

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.

SSPE2 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
N-8044-1-0	0	0	0	0	0
N-8044-2-0	148	0	8	95	8
N-8044-3-0	0	0	0	0	5,817
N-8044-4-0	860	744	783	9,659	1,436
N-8044-5-0	0	0	0	0	8,076
N-8044-6-0	0	0	37	0	0
N-8044-7-0	0	0	0	0	2,750
N-8044-8-0 (project)	0	0	0	0	4,900
ERC	0	0	0	0	0
SSPE2	1,008	744	828	9,754	22,987

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)						
	NO_x	SO_x	PM₁₀	PM_{2.5}	CO	VOC
SSPE1	1,008	744	828	828	9,754	18,087
SSPE2	1,008	744	828	828	9,754	22,987
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

As seen in the table above, the facility is not an existing Major Source for any pollutant; however, is becoming a Major Source for VOC emissions 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)						
	NO₂	VOC	SO₂	CO	PM	PM₁₀
Estimated Facility PE before Project Increase	0.5	9.0	0.4	4.9	0.4	0.4
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	No	No	No	No	No	No

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.

N-8044-8-0:

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

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."

As shown above, this facility is becoming a major source for VOC. Therefore, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	0	50,000	No
SO _x	0	80,000	No
PM ₁₀	0	30,000	No
VOC	4,900	50,000	No

Since none of the SB 288 Major Modification Thresholds is 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.

This facility is not an existing Major Source for any pollutant, but it is becoming a Major Source for VOC as a result of this project.

For an existing non-major source, a federal Major Modification will be triggered only if the increase of the potential emissions from the project itself exceeds the major source threshold.

As shown above, the SSIPE for VOC of 4,900 pounds per year for this project is not exceeding the major source threshold of 20,000 pounds per year. Therefore, the proposed project does not constitute a Federal Major Modification and no further analysis is required.

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)						
	NO₂	VOC	SO₂	CO	PM	PM₁₀
Total PE from New and Modified Units	0.0	2.5	0.0	0.0	0.0	0.0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	No	No	No	No	No	No

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. Detailed QNEC calculations are included in Appendix G.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

Pursuant to District Rule 2201, Section 4.1, 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 Adjusted Increase in Permitted Emissions (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 seen in Section VII.C.2 above, the applicant is proposing to install a new flexographic printing system with a PE greater than 2 lb/day for VOC. Therefore, BACT is triggered for VOC emissions.

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

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore, BACT is not triggered.

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 not constitute an SB 288 and/or Federal Major Modification for any pollutant. Therefore, BACT is not triggered for any pollutant.

2. BACT Guideline

The facility is proposing to use both high-end and low-end graphic ink materials. The following BACT guidelines apply to the proposed operation.

BACT Guideline 4.7.4 applies to flexographic printing for corrugated boxes with the use of high-end graphic ink materials (see **Appendix C**).

BACT Guideline 4.7.15 applies to flexographic printing for corrugated boxes with the use of low-end graphic ink materials (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.

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

VOC: For high-end graphics – use 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 inks with VOC content not exceeding 0.3 lb/gal (less water & exempt compounds) for low-end graphics, and keeping all solvents and solvent-laden cloths/papers, not in active use, in closed containers.

B. Offsets

1. Offset Applicability

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals 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)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	1,008	744	828	9,754	22,987
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 SSPE2 is greater than the offset thresholds for VOC only. 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 less than the offset threshold levels before implementing the project being evaluated.

$$\text{Offsets Required (lb/year)} = [(\text{SSPE2} - \text{ROT} + \text{ICCE}) \times \text{DOR}]$$

Where,

SSPE2 = Post Project Stationary Source Potential to Emit

ROT = Respective Offset Threshold, for the respective pollutant

ICCE = Increase in Cargo Carrier Emissions

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

PSC does not utilize any dedicated cargo carrier equipment, defined in Section 3.12 of Rule 2201 on site. Therefore, ICCE is equal to zero. The applicant proposes to use emissions reduction credits that were generated from a facility located more than 15 miles to this facility. Therefore, DOR is equal to 1.5 per Section 4.8 of Rule 2201. The amount of VOC ERCs required:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= [(22,987 - 20,000 + 0) \times 1.5] \\ &= 2,987 \times 1.5 \\ &= 4,481 \text{ lb-VOC/year} \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

$$\begin{aligned} \text{Quarterly offsets required (lb/qtr)} &= (4,481 \text{ lb-VOC/year}) \div (4 \text{ quarters/year}) \\ &= 1,120.25 \text{ lb-VOC/qtr} \end{aligned}$$

As shown in the calculation above, the quarterly amount of offsets required for this project, when evenly distributed to each quarter, results in fractional pounds of offsets being required each quarter. Since offsets are required to be withdrawn as whole pounds, the quarterly amounts of offsets need to be adjusted to ensure the quarterly values sum to the total annual amount of offsets required.

To adjust the quarterly amount of offsets required, the fractional amount of offsets required in each quarter will be summed and redistributed to each quarter based on the number of days in each quarter. The redistribution is based on the Quarter 1 having the fewest days and the Quarters 3 and 4 having the most days. The redistribution method is summarized in the following table:

Redistribution of Required Quarterly Offsets (where X is the annual amount of offsets, and $X \div 4 = Y.z$)				
Value of z	Quarter 1	Quarter 2	Quarter 3	Quarter 4
.0	Y	Y	Y	Y
.25	Y	Y	Y	Y+1
.5	Y	Y	Y+1	Y+1
.75	Y	Y+1	Y+1	Y+1

Therefore the appropriate quarterly emissions to be offset are as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total Annual</u>
1,120	1,120	1,120	1,121	4,481

The applicant has stated that the facility plans to use ERC certificate S-5013-1 (or a certificate split from this certificate) to offset the increases in VOC emissions associated with this project. The above certificate has available quarterly VOC credits as follows:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #S-5013-1	480,967	423,190	447,637	452,396

As seen above, the facility has sufficient credits to fully offset the quarterly VOC emissions increases associated with this project.

Proposed Rule 2201 (offset) Conditions:

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 1,120 lb, 2nd quarter - 1,120 lb, 3rd quarter - 1,120 lb, and fourth quarter - 1,121 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 for the ERC specified below. [District Rule 2201]
- {GC# 1983} ERC Certificate Number S-5013-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

3. ERC Withdrawal Calculations

The applicant must identify the ERC Certificate(s) to be used to offset the increase of VOC emissions for the project. As indicated in previous section, the applicant is proposing to use ERC certificate #S-5013-1 (or a certificate split from this certificate) to mitigate the increases of VOC emissions associated with this project. See **Appendix H** for detailed ERC Withdrawal Calculations.

C. Public Notification

1. Applicability

Pursuant to District Rule 2201, Section 5.4, 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 does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not 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

Pursuant to District Rule 2201, Section 4.5.3, offset requirements shall be triggered on a pollutant-by-pollutant basis, unless exempted pursuant to Section 4.6, offsets shall be required if the post-project Stationary Source Potential to Emit (SSPE2) equals or exceeds specific threshold levels.

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	1,008	1,008	20,000 lb/year	No
SO _x	744	744	54,750 lb/year	No
PM ₁₀	828	828	29,200 lb/year	No
CO	9,754	9,754	200,000 lb/year	No
VOC	18,087	22,987	20,000 lb/year	Yes

As detailed above, offset threshold was surpassed for VOC with this project; therefore public noticing is 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 SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	1,008	1,008	0	20,000 lb/year	No
SO _x	744	744	0	20,000 lb/year	No
PM ₁₀	828	828	0	20,000 lb/year	No
CO	9,754	9,754	0	20,000 lb/year	No
VOC	22,987	18,087	4,900	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore, public noticing for SSIPE purposes is not required.

e. Title V Significant Permit Modification

Since this facility does not have a Title V operating permit, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for offset threshold of VOC being surpassed. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily 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 19.6 pounds in any one day. [District Rule 2201]
- VOC emissions from this permit unit shall not exceed 4,900 pounds on a rolling 12-month basis. [District Rule 2201]
- VOC content of the materials shall not exceed the following: (a) For Low-End 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) For coatings, use coatings with a VOC content of less than or equal to 2.5 lb/gal (less water and exempt compounds); (e) Use of adhesive with no VOC content; and (f) Use of fountain solutions (if applicable) with up to 8.0% VOC 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]
- High-End Graphics print jobs are print jobs that require any of the following: a glossy finish, multiple colors, highly refined graphic image, or very high letter-quality printing. [District Rule 2201]
- Low-End Graphics print jobs are print jobs that do not qualify as High-End Graphic print jobs. [District Rule 2201]

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 permittee is required to keep the daily and cumulative annual VOC emissions due to the inks and coating usages. In addition, as required by District Rule 4607, *Graphic Arts*, this printing press is subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rule 4607, will be discussed in Section VIII, *District Rule 4607*, of this document.

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14 of District Rule 2201 requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an ambient air quality standard (AAQS).

This project involves only VOCs for which AAQS does not exist; therefore, an AAQA is not required.

Compliance with the requirements of this rule is expected.

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

As discussed above, this facility is becoming a major source. Pursuant to Rule 2520, the facility will have up to 12 months from the date of the commencing operation of the equipment authorized under this project to either submit a Title V Application or comply with District Rule

2530 *Federally Enforceable Potential to Emit*. The following condition will be listed on the permit to ensure compliance:

- Permittee shall submit an application to comply with District Rule 2520 – Federal Mandated Operating Permits within twelve months of commencing operation of this permit unit, or comply with District Rule 2530 – Federally Enforceable Potential to Emit. [District Rule 2520]

Rule 4001 New Source Performance Standards (NSPS)

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.

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

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, a flexographic printing press, is 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)

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.

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

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.

A major source of hazardous air pollutants (HAP) emissions is 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, any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year.

As shown in HAP emissions calculations in Appendix F of this document, the facility emissions are below the major source HAP threshold levels as stated above. Therefore, this facility is not a major source of HAP emissions, and the above listed subpart does not apply. No further discussion is necessary.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). The following condition will be included in the permit to ensure compliance with the requirements of this rule:

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

Rule 4102 Nuisance

Rule 4102 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.

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-8044-8-0	N/A ¹	No

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

¹ Maximum individual cancer risk was 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.

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.

The following condition will be included in the permit to ensure compliance with the requirements of this rule:

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

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. The applicant proposed to install a flexographic printing press, and the following limits applied:

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)

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 0.15 lb/gal to 0.34 lb/gal. Per applicant, no fountain solution will be used for the proposed flexographic printing press. Per product data sheet, the VOC contents of the proposed adhesive, Aquence CG 9060 GUV contains zero VOC.

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

- VOC content of the materials shall not exceed the following: (a) For Low-End 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) For coatings, use coatings with a VOC content of less than or equal to 2.5 lb/gal (less water and exempt compounds); (e) Use of adhesive with no VOC content; and (f) Use of fountain solutions (if applicable) with up to 8.0% VOC 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]

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 (HVLV) 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 included in 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. HVLV 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.

The applicant proposed to install a flexographic printing press, and the following limit applied:

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 is not proposing to use any surface preparation and equipment cleaning solvent. The following conditions will be included in the permit to ensure compliance:

- Permittée 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 to ensure compliance:

- 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 Rules 2201 and 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 to ensure compliance:

- 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 to ensure compliance:

- 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 with the requirements of this rule is expected.

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 (equivalent to 0.167 pounds per gallon) 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 proposes to use only one adhesive, Aquence CG 9060 GUV, which contains zero VOC, for the gluer in the graphic art printing operation. Therefore, the proposed gluer will be exempted from the requirements of this rule and no further discussion will be required.

The following condition will be included in the permit to ensure compliance:

- VOC content of the materials shall not exceed the following: (a) For Low-End 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) For coatings, use coatings with a VOC content of less than or equal to 2.5 lb/gal (less water and exempt compounds); (e) Use of adhesive with no VOC content; and (f) Use of fountain solutions (if applicable) with up to 8.0% VOC 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]

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.

Greenhouse Gas (GHG) Significance Determination

District is a Responsible Agency

It is determined that another agency has prepared an environmental review document for the project. The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating greenhouse gas emissions. The District has determined that the applicant is responsible for implementing greenhouse gas mitigation measures, if any, imposed by the Lead Agency.

District CEQA Findings

The County of Stanislaus (County) is the public agency having principal responsibility for approving the Project. As such, the County served as the Lead Agency for the Project. The County determined the project to be exempt from CEQA according to CEQA Guidelines §15301. Consistent with CEQA Guidelines §15062, a Notice of Exemption was prepared and adopted by the County.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381).

The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's thresholds of significance for criteria pollutants. Thus, the District concludes that through a combination of project

design elements and permit conditions, project specific stationary source emissions will be reduced to less than significant levels. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

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-8044-8-0 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-8044-8-0	3020-01-F	Total 1,089.6 motor horsepower	\$936.00

Appendixes

- A: Draft ATC
- B: Post-Project Potential Emissions Calculations
- C: BACT Guidelines
- D: BACT Analyses
- E: HRA Summary
- F: HAP Emissions Calculations
- G: Quarterly Net Emissions Change
- H: ERC Withdrawal Calculations

APPENDIX A
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-8044-8-0

LEGAL OWNER OR OPERATOR: PACIFIC SOUTHWEST CONTAINER, LLC
MAILING ADDRESS: 4530 LECKRON RD
MODESTO, CA 95357

LOCATION: 671 MARIPOSA ROAD
MODESTO, CA

EQUIPMENT DESCRIPTION:

GRAPHIC ARTS PRINTING OPERATION CONSISTING OF A 4-COLOR BOBST MODEL FFG 924 NT RAPIDSET NON-HEATSET FLEXOGRAPHIC PRINTER WITH FOLDER, GLUER, AND ROTARY DIE-CUTTER

CONDITIONS

1. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 1,120 lb, 2nd quarter - 1,120 lb, 3rd quarter - 1,120 lb, and 4th quarter - 1,121 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 for the ERC specified below. [District Rule 2201]
2. ERC Certificate Number S-5013-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201]
3. Permittee shall submit an application to comply with District Rule 2520 - Federal Mandated Operating Permits within twelve months of commencing operation of this permit unit, or comply with District Rule 2530 - Federally Enforceable Potential to Emit. [District Rule 2520]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

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.

Samir Sheikh, Executive Director / A/C CO

Amsud Marjollat, Director of Permit Services

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]
7. VOC emissions from this permit unit shall not exceed 19.6 pounds in any one day. [District Rule 2201]
8. VOC emissions from this permit unit shall not exceed 4,900 pounds on a rolling 12-month basis. [District Rule 2201]
9. VOC content of the materials shall not exceed the following: (a) For Low-End 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) For coatings, use coatings with a VOC content of less than or equal to 2.5 lb/gal (less water and exempt compounds); (e) Use of adhesive with no VOC content; and (f) Use of fountain solutions (if applicable) with up to 8.0% VOC 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]
10. High-End Graphics print jobs are print jobs that require any of the following: a glossy finish, multiple colors, highly refined graphic image, or very high letter-quality printing. [District Rule 2201]
11. Low-End Graphics print jobs are print jobs that do not qualify as High-End Graphic print jobs. [District Rule 2201]
12. 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]
13. 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]
14. 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]
15. 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]
16. 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]
17. 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 Rules 2201 and 4607]
18. 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]
19. 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]

20. Records of the daily VOC emissions from this unit shall be kept. 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]
21. Records of the VOC emissions from this unit, on a rolling 12-month basis, shall be kept. The record shall be updated at least monthly. [District Rule 2201]
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]

10/10/2011 11:11 AM

APPENDIX B
Post-Project Potential Emissions Calculations

Potential to Emit
N-8044-8-0

Coating	¹ Coating VOC lb/gal	¹ VOC % by wt. lb-VOC/lb-product	¹ Ammonium hydroxide Content % by wt.	¹ Density lb/gal	² Material VOC lb-VOC/gal	³ Max Use rate gal/day	³ Max Use rate gal/yr	⁴ VOC			⁵ NH ₃		
								PE lb/hr	PE lb/day	PE lb/yr	PE lb/day	PE lb/hr	PE lb/day
Tristar Display Dense Black 1016229	0.18	0.86	2.747	8.99	0.077	84.16	21,040	0.295	6.5	1,620	0.459	10.1	2,525
INXSPERSE 23 BLUE 15-3 1187702	0	0	0	9.714	0	84.16	21,040	0	0	0	0	0	0
PSC F40594 GCMI 75 Red 1485674	0.16	0.74	2	9.174	0.068	84.16	21,040	0.259	5.7	1,431	0.341	7.5	1,876
INXSPERSE 23 GREEN 7 1011639	0	0	0	10.2582	0	84.16	21,040	0	0	0	0	0	0
PSC NpH NON SKID OVERPRINT COATING-NW2 1565849	0.34	1.5	0	8.8404	0.133	37.39	9,350	0.227	5	1,244	0	0	0
Tristar Extender Varnish 1398204	0.15	0.86	0	8.34	0.072	33.6	8,400	0.109	2.4	605	0	0	0
Aquene CG 9060 GUV Adhesive 228062	0	0	0	9.5076	0	20.8	5,200	0	0	0	0	0	0
Total:							0.89	19.6	4,900	0.800	17.6	4,401	

Notes:

- Information taken from safety data sheets
- Material VOC = VOC % by wt. x Density (lb/gal)/100
- Max usage proposed by the applicant
- PE (lb/hr) = PE (lb/day) ÷ 24 (hr/day) of operation;
PE (lb/day, lb/yr) = Material VOC (lb-VOC/gal) x Max Use rate (gal/day, gal/yr)
- PE (lb/hr) = PE (lb/day) ÷ 24 (hr/day) of operation;
PE (lb/day, lb/yr) = Max Use rate (gal-ink/day, gal-ink/yr) x Ammonium hydroxide content (lb-NH₄OH/100 lb-ink) x Density (lb-ink/gal-ink) x 17.03 (lb-NH₃/mol of NH₃) x 1 (mol of NH₃/mol NH₄OH) x (mol of NH₄OH/35.04 lb-NH₄OH)

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**

APPENDIX D
BACT Analyses

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 emission from the proposed operation is 4,900 lb-VOC per year (equivalent to 2.45 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-folder-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. The dimension of the proposed unit is 98.4 feet (L) x 27.6 feet (W) x 11.5 feet (H). To accommodate the proposed unit, the size of the PTE would be at least 105 feet (L) x 31 feet (W) x 15 feet (H), equivalent to 48,825 cu ft. 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 in 2018 dollar would be \$230,180².

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 8,138 cfm³. The cost of the RTO is estimated to be \$318,649⁴. 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	548,829 (318,649 + 230,180)
Sales tax, Modesto, 7.625%A	41,848
Freight, 0.05A	27,441
Purchased equipment cost, B	\$618,119
Direct installation costs	
Foundations & supports, 0.08B	49,449

² Using 3% inflation over the past five years, the cost of the PTE in 2018 dollars is estimated to be \$230,180 [(105 ft x 31 ft x \$61/ft²) x (1+0.03)⁵]

³ The minimum exhaust airflow rate for the PTE is 8,138 cfm (10 RACs/hr x 48,825 ft³ ÷ 60 min/h). Therefore, RTO is presumed to be designed to handle at least 8,138 cfm.

⁴ 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 8,138 cfm is \$259,091 (2011 dollar). Using 3% inflation over the past seven years, the cost of an RTO in 2018 dollars is estimated to be \$318,649 [259,091 x (1+0.03)⁷]. Note that this cost does not include any taxes, freight or installation expenses.

Handling & erection, 0.14B	86,537
Electrical, 0.04B	24,725
Piping, 0.02B	12,362
Insulation for duct work, 0.01B	6,181
Painting, 0.01B	6,181
Direct installation costs	<u>\$185,436</u>
Site preparation	--
Total Direct	<u>\$803,554</u>
Indirect Costs (installation)	
Engineering, 0.1B	61,812
Construction & field expenses, 0.05B	30,906
Contractor fees, 0.1B	61,812
Start-up, 0.02B	12,362
⁵ Performance test, 0.01B	--
Contingencies, 0.03B	35,266
Total Indirect Costs	<u>\$185,436</u>
Total Capital Investment (TCI)	<u>\$988,990</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,

$$\text{Annualized Capital Investment} = \$988,990 \times 0.163 = \mathbf{\$161,205/\text{year}}$$

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 8,138 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, 330,000 min/yr (60 min/hr x 22 hr/day x 5 day/week x 50 week/yr)

VOC: Total amount of VOC 4,900 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.

⁵ A performance test price is not included because it would have been required even if a company voluntarily proposes to install an RTO.

Natural gas cost: \$6.64 /MMBtu (average) for both 2017 and 2018 per U.S. Energy Information Administration⁽⁶⁾.

Fuel Cost = **\$22,766/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 = 8,138 cfm

$$\text{Power}_{\text{fan}} = 6 \text{ kW}$$

MID's electric rate schedule GS-3 (General Service industrial) for off-peak are \$0.0526/kWH⁷. Thus,

$$\begin{aligned} \text{Electric cost} &= (\$0.0526/\text{kWH})(6 \text{ kW})(22 \text{ hr/day})(5 \text{ days/week})(50 \text{ week/yr}) \\ &= \mathbf{\$1,836/\text{year}} \end{aligned}$$

Total Cost:

$$\begin{aligned} \text{Total Cost} &= \$161,205/\text{yr} + \$22,766/\text{yr} + \$1,836/\text{yr} \\ &= \mathbf{\$185,807/\text{yr}} \end{aligned}$$

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

$$\begin{aligned} \text{Controlled VOC emissions} &= 4,900 \text{ lb-VOC/year} \times 1 \text{ tons-VOC}/2,000 \text{ lb-VOC} \times 0.98 \\ &= \mathbf{2.4 \text{ ton-VOC/year}} \end{aligned}$$

Cost of VOC reduction is calculated as follow:

$$\begin{aligned} \text{Cost of VOC reduction} &= \$185,807/\text{year} \div 2.4 \text{ ton-VOC/year} \\ &= \mathbf{\$77,420/\text{ton-VOC}} \end{aligned}$$

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.

⁶ <https://www.eia.gov/dnav/ng/hist/n2035ca3m.htm>
⁷ http://www.mid.org/tariffs/Rates/GS-3_INDUSTRIAL.pdf

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.

Annual Operating Costs:

Assuming the carbon would be able to capture 20% of its weight in VOC, the annual carbon requirement would be 33,230 pounds (6,646/0.2).

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 = 24,500 lb-carbon/year x \$2.03/lb-carbon = **\$49,735/year**

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

Controlled VOC emissions = 4,900 lb-VOC/yr x 1 tons-VOC/2,000 lb-VOC x 0.95
= 2.33 ton-VOC/yr

Cost of VOC reduction is calculated as follow:

Cost of VOC reduction = \$49,735/year ÷ 2.33 ton-VOC/year
= \$21,346/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 utilizing inks containing VOC content of 0.88 lb-VOC/gal (less water & exempt compounds) or less for high-end graphic printing.

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)

Step 4 - Cost Effectiveness Analysis

As indicates in previous BACT analysis for flexographic printing corrugated boxes with high-end graphics, none of the above listed technologically feasible control technologies is cost effective; and therefore, these control technologies have been removed from consideration at this time.

Step 5 - Select BACT

BACT requirement of VOC emissions are satisfied by utilizing inks containing VOC content of 0.3 lb-VOC/gal (less water & exempt compounds) or less, and evaporative minimization methods include keeping all solvents and solvent-laden clothes/papers, not in active use in closed containers for low-end graphic printing.

APPENDIX E
HRA Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Wai-Man So – Permit Services
 From: Georgia Stewart – Technical Services
 Date: November 2, 2018
 Facility Name: Pacific Southwest Container
 Location: 671 Mariposa Rd, Modesto
 Application #(s): N-8044-8-0
 Project #: N-1183218

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 8-0 (Flexographic Printer)	0.378	0.003	0.003	N/A ¹	No	No
Project Totals	0.378	0.003	0.003	N/A ¹		
Facility Totals	>1	0.11	0.02	3.34E-07		

¹Maximum Individual Cancer Risk was 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 # 8-0

No special requirements are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on October 29, 2018, to perform an Ambient Air Quality Analysis and a Risk Management Review for a proposed installation of a graphic arts printing operation consisting of a 4-color Bobst model FFG 924 NT Rapidset non-heatset flexographic printer-folder-gluer and a rotary die-cut system. The entire warehouse will have four (4) centrifugal upblast fan locations; each location equipped with two ThermoTek model BDU36TH centrifugal upblast exhaust fans.

II. Analysis

Toxic emissions for this proposed unit were calculated and provided by the processing engineer for ammonia and after reviewing the SDS sheets, it was determined that there are no TACs in the inks, varnishes, and adhesives. Therefore, all toxic emissions from the ammonia were 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 2016 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 2013-2017 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 8-0 Flexographic Printer			
Source Type	Point	Closest Receptor (m)	150
Location Type	Urban	Type of Receptor	Business
VOC (lb/hr)	2.95	VOC (lb/yr)	4,900
NH ₃ (lb/hr)	0.8	NH ₃ (lb/yr)	4,401
Centrifugal Exhaust Fans	1	2	3
Release Height (m)	11.58	11.58	11.58
Stack Diameter (m)	0.91	0.91	0.91
Stack Exit Velocity (m/s)	5.39	5.39	5.39
Stack Exit Temp. (° K)	310.78	310.78	310.78
Emission Rate (%)	25	25	25

The project triggers NSR Public notice; however, the proposed operation emits only VOCs. Therefore, an AAQA is not required.

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the project has no risk factor. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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

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
HAP Emissions Calculations

Summary of HAP Emissions
(N-8044)

Pollutant	N-8044-2-0	N-8044-3-0	N-8044-4-0	N-8044-5-0	N-8044-8-0	Total (lb/yr)	HAP	HAP (lb/yr)
Benzene	0.294354		1.5140784			1.8	Y	1.81
Formaldehyde	2.127239		3.2108904			5.9	Y	5.94
PAHs	0.088322					0.1	Y	0.09
Naphthalene	0.031126		0.0783144			0.1	Y	0.11
Acetaldehyde	1.237614		0.0692488			2.0	Y	2.05
Acrolein	0.053562		0.7048296			0.8	Y	0.76
1,3-Butadiene	0.343492					0.3	Y	0.34
Chlorobenzene	0.000316					0.0	Y	0.00
Propylene	0.73786		138.35544			139.1	Y	139.09
Hexene	0.042502		1.2008208			1.2	Y	1.24
Toluene	0.04167		6.917772			7.0	Y	6.96
Xylene	0.066992		5.1426456			5.2	Y	5.21
Ethyl Benzene	0.017222		1.8012312			1.8	Y	1.82
Hydrogen Chloride	0.066992					0.1	Y	0.07
Arsenic	0.002528					0.0	Y	0.00
Cadmium	0.00237					0.0	Y	0.00
Total Chromium	0.000948					0.0	Y	0.00
Hexavalent Chromium	0.000158					0.0	Y	0.00
Copper	0.008478					0.0	Y	0.01
Lead	0.013114					0.0	Y	0.01
Manganeses	0.004898					0.0	Y	0.00
Mercury	0.00316					0.0	Y	0.00
Nickel	0.006162					0.0	Y	0.01
Selenium	0.003476					0.0	Y	0.00
Zinc	0.035392					0.0	Y	0.04
Ammonia		3960		6277	4400	14637.0	N	0.00
Dipropylene glycol monomethyl ether		7.6			1400	1407.6	Y	1407.60
							Total:	1673

HAP Emissions
(N-8044-2-0)

HAP	Emission Factor (lb/gal) ⁽¹⁾	Maximum Hourly Emissions (lb/hr) ⁽²⁾	Maximum Annual Emissions (lb/yr) ⁽³⁾
Benzene	1.86E-04	2.94E-03	0.3
Formaldehyde	1.73E-03	2.73E-02	2.7
PAHs	5.59E-05	8.83E-04	0.1
Naphthalene	0.0000197	3.11E-04	0.0
Acetaldehyde	7.83E-04	1.24E-02	1.2
Acrolein	3.39E-05	5.36E-04	0.1
1,3-Butadiene	2.17E-04	3.43E-03	0.3
Chlorobenzene	2.00E-07	3.16E-06	0.0
Propylene	4.67E-04	7.38E-03	0.7
Hexane	0.0000269	4.25E-04	0.0
Toluene	2.65E-05	4.19E-04	0.0
Xylene	4.24E-05	6.70E-04	0.1
Ethyl Benzene	1.09E-05	1.72E-04	0.0
Hydrogen Chloride	4.24E-05	6.70E-04	0.1
Arsenic	1.60E-06	2.53E-05	0.0
Cadmium	1.50E-06	2.37E-05	0.0
Total Chromium	6.00E-07	9.48E-06	0.0
Hexavalent Chromium	1.00E-07	1.58E-06	0.0
Copper	4.10E-06	6.48E-05	0.0
Lead	8.30E-06	1.31E-04	0.0
Manganses	0.0000031	4.90E-05	0.0
Mercury	0.000002	3.16E-05	0.0
Nickel	0.0000039	6.16E-05	0.0
Selenium	0.0000022	3.48E-05	0.0
Zinc	0.0000224	3.54E-04	0.0
Total			5.8

Notes:

1. These emission factors are obtained from Ventura County APCD, "AB2588 Combustion Emission Factors (5/17/01)" diesel fired internal combustion equipment, available at <http://www.vcapcd.org/pubs/Engineering/AirToxics/combem.pdf>

2. Hourly emissions = EF (lb/gal) x 15.8 (gal/hr) *

3. Annual emissions = al/hr) x 100 (hr/yr) **

* The fuel consumption rate was taken from the original application under project N-1181474.

** The annual operating hour of 100 hr/yr was taken from ATC N-8044-2-0

HAP Emissions
(N-8044-3-0)

Pollutant	Emission Factor	Maximum Hourly Emissions (lb/hr)⁽²⁾	Maximum Annual Emissions (lb/yr)⁽³⁾
Ammonia	--	5.00E-01	3960.0
Dipropylene glycol monomethyl ether	--	1.36E-03	7.6
Total			3967.6

Notes:
2,3 - Hourly and annual emissions are taken from the "Prioritization Sheet" under project N-1182053.

HAP Emissions
(N-8044-4-0)

Pollutant	¹ Emission Factor (lb/MMscf)	Maximum Hourly Emissions (lb/hr) ⁽²⁾	Maximum Annual Emissions (lb/yr) ⁽³⁾
Acetaldehyde	3.10E-03	9.24E-05	0.81
Acrolein	2.70E-03	8.05E-05	0.70
Benzene	5.80E-03	1.73E-04	1.51
Ethyl Benzene	6.90E-03	2.06E-04	1.80
Formaldehyde	1.23E-02	3.67E-04	3.21
Hexane	4.60E-03	1.37E-04	1.20
Naphthalene	3.00E-04	8.94E-06	0.08
PAHs	1.00E-04	2.98E-06	0.03
Propylene	5.30E-01	1.58E-02	138.36
Toluene	2.65E-02	7.90E-04	6.92
Xylene	1.97E-02	5.87E-04	5.14
Total;		159.8	
¹ The emission factors are from the table, "Natural Gas Fired External Combustion"			
² Maximum Hourly Emissions (lb/hr) = EF (lb/MMscf) x 29.8 MMBtu/hr x scf/1,000 Btu			
³ Maximum Annual Emissions (lb/yr) = EF (lb/MMscf) x 29.8 MMBtu/yr x 8,760 hr/yr x scf/1,000 Btu			

HAP Emissions
(N-8044-5-0)

Pollutant	Emission Factor	Maximum Hourly Emissions (lb/hr)⁽²⁾	Maximum Annual Emissions (lb/yr)⁽³⁾
Ammonia	--	8.00E-01	6277.0
Dipropylene glycol monomethyl ether	--	--	--
Total			6277.0

Notes:
2,3 - Hourly and annual emissions are taken from the "Prioritization Sheet" under project N-1182477.

HAP Emissions
(N-8044-8-0)

Pollutant	Emission Factor	Maximum Hourly Emissions (lb/hr)⁽²⁾	Maximum Annual Emissions (lb/yr)⁽³⁾
Ammonia	--	8.00E-01	4400.0
Dipropylene glycol monomethyl ether	--	2.62E-01	1400.0
Total			5800.0

Notes.
2,3 - Hourly and annual emissions are taken from the "Prioritization Sheet" under project N-1183218.

APPENDIX G
Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.

PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.1 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$$\begin{aligned} PE2_{\text{quarterly}} &= PE2_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 4,900 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 1,225 \text{ lb VOC/qtr} \end{aligned}$$

$$\begin{aligned} PE1_{\text{quarterly}} &= PE1_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 0 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 0 \text{ lb VOC/qtr} \end{aligned}$$

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	1,225	0	1,225

APPENDIX H
ERC Withdrawal Calculations

VOC	1 st Quarter (lb)	2 nd Quarter (lb)	3 rd Quarter (lb)	4 th Quarter (lb)
ERC S-5013-1	480,967	423,190	447,637	452,396
Offsets Required (Includes distance offset ratio)	1.120	1.120	1.120	1.121
Amount Remaining	479,847	422,070	446,517	452,275
Credits reissued under ERC S-YYYY-1	479,847	422,070	446,517	452,275