San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

OCT 2 4 2017

Mr. Bob Bennett
Silgan Containers
4216 Kiernan Ave Suite 101
Modesto, CA 95356

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-1719
Project # N-1161738

Dear Mr. Bennett:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project is for the installation of two additional can side seam stripe lines.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authorities to Construct with Certificates 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 Authorities 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 Marjollet
Director of Permit Services

Enclosures

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

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Addition of Two Side Seam Stripe Lines

Facility Name:	Silgan Containers Corporation	Date:	October 10, 2017
Mailing Address:	567 S Riverside Dr Modesto, CA 95354	Engineer:	James Harader
		Lead Engineer:	Nick Peirce
Contact Person:	Bob Bennett		
Telephone:	(209) 491-7334		
Application #(s):	N-1719-10-0 and '-11-0		
Project #:	N-1161738		
Deemed Complete:	June 24, 2017		

I. Proposal

Silgan Containers Mfg. Corp., herein referred to as "Silgan", has applied for Authority to Construct permits for the addition of two new side seam stripe lines (lines #5 and #6) to their existing can manufacturing facility. The two lines will both be served by an existing shared regenerative thermal oxidizer with a concentrator.

Silgan has received their Title V Permit. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Silgan must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2020	Exemptions (8/18/11)
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 (06/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emission Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (02/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4202	Particulate Matter Emission Rate (12/17/92)
Rule 4301	Fuel Burning Equipment (12/.17/92)
Rule 4604	Can and Coil Coating (9/20/07)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

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

III. Project Location

This facility is located at 567 S Riverside Dr in Modesto, CA. The District has verified that there are no K-12 schools within 1,000 feet of the facility. Therefore, the noticing provisions of CH&SC 42301.6 do not apply.

IV. Process Description

The following process description is applicable to each of the side seam stripe coating lines:

Flat, pre-coated can body blanks are fed into a body maker where they are rounded, the ends are butted, and welded to form a can body. The welding causes the pre-applied coating in the area to be damaged. When the can bodies leave the body maker they enter the inside side stripe application operation hood and travel to the spray head where the weld is covered with an approximately 1-inch side stripe. The purpose of the side stripe is to repair the damaged coating surface in the area of the weld. Following the application of the side seam stripe coating, the cans travel through a curing tunnel to cure the coating.

Silgan currently operates four side seam stripe coating lines. They are proposing to install two additional coating lines. The two additional coating lines will each be equipped with a hood that captures overspray near the coating spray head. The exhaust hoods from each line and the exhaust from the curing tunnels of each line will be routed to the existing shared concentrator/thermal oxidizer for the control of VOC emissions.

The facility operates up to 24 hours per day, 7 days per week, 365 days per year.

V. Equipment Listing

Post-Project Equipment Description	
Permit	**Equipment Listing**
N-1719-10-0	CAN INSIDE/OUTSIDE SIDE SEAM STRIPE COATING LINE #5 CONSISTING OF A SOUDRONIC RESISTANCE CAN WELDING BODYMAKER (OR EQUIVALENT) WITH A CAPTURE HOOD AND A PERMIT-EXEMPT CURING OVEN (LOW-EMITTING UNIT) SERVED BY A SHARED 1.5 MMBTU/HR NATURAL GAS-FIRED TANN MODEL TR1295C REGENERATIVE THERMAL OXIDIZER (SHARED WITH UNITS N-1719-1, '-2, AND '-3, '-8 and '-11) WITH A CONCENTRATOR
N-1719-11-0	CAN INSIDE/OUTSIDE SIDE SEAM STRIPE COATING LINE #6 CONSISTING OF A SOUDRONIC RESISTANCE CAN WELDING BODYMAKER (OR EQUIVALENT) WITH A CAPTURE HOOD AND A PERMIT-EXEMPT CURING OVEN (LOW-EMITTING UNIT) SERVED BY A SHARED 1.5 MMBTU/HR NATURAL GAS-FIRED TANN MODEL TR1295C REGENERATIVE THERMAL OXIDIZER (SHARED WITH UNITS N-1719-1, '-2, AND '-3, '-8 and '-10) WITH A CONCENTRATOR

VI. Emission Control Technology Evaluation

Captured vapors for the two lines will be routed to a shared thermal oxidizer for the reduction of VOC emissions. The overall VOC capture and control efficiency will be a minimum of 82.65% (87% capture and 95% control).

VII. General Calculations

A. Assumptions

- The curing ovens and thermal oxidizer are each fired on PUC-quality natural gas. (applicant).
- The F-Factor for natural gas is 8578 dscf/MMBtu @ 60 degrees Fahrenheit.
- The higher heating value (HHV) for natural gas is 1000 Btu/scf.
- The pre-project and post-project facility-wide potential to emit will be limited to 32,600 lb-VOC/year.
- There will be no change in combustion emissions from the shared thermal oxidizer.
- The facility operates a maximum of 24 hours/day and 365 days/year.
- No PM10 emissions occur from the side seam stripe lines since the coating is not atomized.
- All other assumptions will be stated as they are made.

B. Emission Factors

N-1719-10-0 (Side Seam Stripe Line #5)

From the Use of Liquid Side Seam Stripe Coating

VOC content of liquid side seam stripe coatings for this operation will be limited to 660 grams/liter.

From Use of Powder Side Seam Stripe Coating

A similar powder coating unit, N-1717-2-3, is operated by Silgan at another plant. The emission factor listed on that permit will be used to estimate emissions from the powder coating operation.

EF_{PM10} = 0.000012 pounds per pound of powder coating applied

From the Curing Oven

The following emission factors will be used for the curing oven.

EF_{NOx}: 0.1 lb/MMBtu (AP-42, Table 1.4-1, 7/1998)
EF_{CO}: 0.084 lb/MMBtu (AP-42, Table 1.4-1, 7/1998)
EF_{VOC}: 0.0055 lb/MMBtu (AP-42, Table 1.4-2, 7/1998)
EF_{SOx}: 0.00285 lb/MMBtu (District Policy APR-1720)
EF_{PM10}: 0.0076 lb/MMBtu (AP-42, Table 1.4-2, 7/1998)

N-1719-11-0 (Side Seam Stripe Line #6)

From the Use of Liquid Side Seam Stripe Coating

VOC content of liquid side seam stripe coatings for this operation will be limited to 660 grams/liter.

From Use of Powder Side Seam Stripe Coating

A similar powder coating unit, N-1717-2-3, is operated by Silgan at another plant. The emission factor listed on that permit will be used to estimate emissions from the powder coating operation.

EF_{PM10} = 0.000012 pounds per pound of powder coating applied

From the Curing Oven

The following emission factors will be used for the curing oven.

EF_{NOx}: 0.1 lb/MMBtu (AP-42, Table 1.4-1, 7/1998)
EF_{CO}: 0.084 lb/MMBtu (AP-42, Table 1.4-1, 7/1998)
EF_{VOC}: 0.0055 lb/MMBtu (AP-42, Table 1.4-2, 7/1998)
EF_{SOx}: 0.00285 lb/MMBtu (District Policy APR-1720)
EF_{PM10}: 0.0076 lb/MMBtu (AP-42, Table 1.4-2, 7/1998)

C. Calculations

1. Pre-Project Potential to Emit (PE1)

The proposed units are new; therefore, PE1 is equal to zero for the proposed units.

2. Post Project Potential to Emit (PE2)

N-1719-10-0 (Side Seam Stripe Line #5)

From the Use of Liquid Side Seam Stripe Coating

Silgan is proposing a post-project VOC limit of 54.0 pounds of VOC/day. Thus,

$PE2_{VOC}$ = 54.0 lb/day
$PE2_{VOC}$ = 54.0 lb/day x 365 days/year = 19,710 lb-VOC/year

From Use of Powder Side Seam Stripe Coating

PM10 emissions will be calculated using the maximum powder coating throughput (presented earlier) and the emission factor for powder coating

PE_{PM10} = 250 pounds material/day x 0.000012 lb-/pound of material
PE_{PM10} = 0.003 lb/day = 0.0 lb/day

PE_{PM10} = 0.0 lb/day x 365 days/year
PE_{PM10} = 0 lb/year

From the Curing Oven

Since this unit will be designated as permit-exempt, only calculations of daily emissions will be performed. The curing oven is rated at 0.8 MMBtu/hr. Potential emissions from the curing oven are calculated below using the emission factors presented earlier in this evaluation, the curing oven heat input rating, and a 24 hr/day operating schedule.

PE_{NOx} = 0.8 MMBtu/hr x 24 hr/day x 0.1 lb/MMBtu = 1.9 lb-NOx/day
PE_{SOx} = 0.8 MMBtu/hr x 24 hr/day x 0.00285 lb/MMBtu = 0.1 lb-SOx/day
PE_{PM10} = 0.8 MMBtu/hr x 24 hr/day x 0.0076 lb/MMBtu = 0.1 lb-PM10/day
PE_{CO} = 0.8 MMBtu/hr x 24 hr/day x 0.084 lb/MMBtu = 1.6 lb-CO/day
PE_{VOC} = 0.8 MMBtu/hr x 24 hr/day x 0.0055 lb/MMBtu = 0.1 lb-VOC/day

N-1719-11-0 (Side Seam Stripe Line #6)

From the Use of Liquid Side Seam Stripe Coating

Silgan is proposing a post-project VOC limit of 54.0 pounds of VOC/day. Thus,

$PE2_{VOC}$ = 54.0 lb/day
$PE2_{VOC}$ = 54.0 lb/day x 365 days/year = 19,710 lb-VOC/year

From Use of Powder Side Seam Stripe Coating

PM10 emissions will be calculated using the maximum powder coating throughput (presented earlier) and the emission factor for powder coating

PE_{PM10} = 250 pounds material/day x 0.000012 lb-/pound of material
PE_{PM10} = 0.003 lb/day = 0.0 lb/day

PE_{PM10} = 0.0 lb/day x 365 days/year
PE_{PM10} = 0 lb/year

From the Curing Oven

Since this unit will be designated as permit-exempt, only calculations of daily emissions will be performed. The curing oven is rated at 0.8 MMBtu/hr. Potential emissions from the curing oven are calculated below using the emission factors presented earlier in this evaluation, the curing oven heat input rating, and a 24 hr/day operating schedule.

PE_{NOx} = 0.8 MMBtu/hr x 24 hr/day x 0.1 lb/MMBtu = 1.9 lb-NOx/day
PE_{SOx} = 0.8 MMBtu/hr x 24 hr/day x 0.00285 lb/MMBtu = 0.1 lb-SOx/day
PE_{PM10} = 0.8 MMBtu/hr x 24 hr/day x 0.0076 lb/MMBtu = 0.1 lb-PM10/day
PE_{CO} = 0.8 MMBtu/hr x 24 hr/day x 0.084 lb/MMBtu = 1.6 lb-CO/day
PE_{VOC} = 0.8 MMBtu/hr x 24 hr/day x 0.0055 lb/MMBtu = 0.1 lb-VOC/day

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 below emission data was obtained from the application review for District Project N-1122502.

	SSPE1 (lb/year)				
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
N-1719-1-6	0	0	1	0	Facility-wide SLC 32,600 lb
N-1719-2-4	0	0	1	0	
N-1719-3-4	0	0	1	0	
N-1719-7-2	0	0	0	0	
N-1719-8-0	0	0	1	0	
Shared Thermal Oxidizer	1,314	37	110	1,095	
SSPE1	**1,314**	**37**	**114**	**1,095**	**32,600**

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-1719-1-6	0	0	1	0	Facility-wide SLC 32,600 lb
N-1719-2-4	0	0	1	0	
N-1719-3-4	0	0	1	0	
N-1719-7-2	0	0	0	0	
N-1719-8-0	0	0	1	0	
N-1719-10-0	0	0	0	0	
N-1719-11-0	0	0	0	0	
Shared Thermal Oxidizer	1,314	37	110	1,095	
SSPE2	**1,314**	**37**	**114**	**1,095**	**32,600**

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	PM_{10}	$PM_{2.5}$	CO	VOC
SSPE1	1,314	37	114	114	1,095	32,600
SSPE2	1,314	37	114	114	1,095	32,600
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 an existing Major Source for VOC and will remain a Major Source for VOC.

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)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Estimated Facility PE before Project Increase	0.66	16.3	0.02	0.55	0.06	0.06
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.

As shown in Section VII.C.5 above, the facility is not a Major Source for NOx, SOx, PM10, and CO.

Therefore BE = PE1 for NOx, SOx, PM10 and CO.

BE VOC

Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

This facility is subject to a facility-wide limit (SLC) for VOC emissions. For units covered by an SLC, all units included in the SLC must be clean for VOC emissions in order for the baseline emissions for the SLC to be equal to the pre-project potential to emit for the SLC. At this facility, only the four existing side seam stripe lines emit VOCs. Each of the existing side seam stripe lines is equipped with a capture hood (87% capture) that routes captured VOC's to a shared thermal oxidizer (95% control). This level of control meets the requirements for achieved-in-practice BACT (See Guideline in Appendix B). Since all of the units in the existing SLC are clean for VOC, $BE_{SLC}=PE1_{SLC}$ 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, 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	32,600	50,000	No

Since none of the SB 288 Major Modification Thresholds are 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.

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 Federal Major Modification determination.

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. This facility is only a Major Source of VOC emissions; therefore, the project may only trigger a Federal Major Modification for VOC emissions.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	**Total Emissions Increases (lb/yr)**	**Thresholds (lb/yr)**	**Federal Major Modification?**
VOC*	32,600	0	Yes

*If there is any emission increases in NO_x or VOC, this project is a Federal Major Modification and no further analysis is required.

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-1719-1 through '-10	24,610[1]	32,600 (Facility-wide Limit, Federally Enforceable)	7,990
		Net Emission Change (lb/year):	7,990
		Federal Offset Quantity: (NEC * 1.5)	**11,985**

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: VOC (See 52.21 (b) (23) definition of significant)

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)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Total PE from New and Modified Units	0.0	16.3	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

[1] A two year baseline period of 2012 and 2013 calendar years was determined to be most representative of normal operations at the plant. Production in following years occurred during periods of drought in California, which reduced the demand for three-piece cans. The 2012 and 2013 emission rates were 31,000 lb-VOC and 18,220 lb-VOC respectively. The average 2-year baseline emissions were 24,610 lb-VOC/year

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 E.

VIII. Compliance Determination

Rule 2020 Exemptions

Each coating line includes a curing oven. Each curing oven was determined to have emissions less than 2.0 lb/day for each pollutant. Additionally, the risk management review results indicate that these units do not pose a significant health risk. Therefore, the curing ovens are exempt per Section 6.19 of Rule 2020, low emitting units.

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

Side seam stripe lines #5 and #6 are new and emit PM10 and VOC. The table below demonstrates that BACT is triggered for VOC emissions from each line.

BACT Applicability				
Pollutant	**Daily Emissions (lb/day)**	**BACT Threshold (lb/day)**	**SSPE2 (lb/yr)**	**BACT Triggered?**
PM_{10}	0.0	> 2.0	N/A	No
VOC	54.0	> 2.0	N/A	**Yes**

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

There are no emissions units being relocated; therefore BACT is not triggered for relocating a unit.

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

BACT is triggered for VOC emissions from each of the side seam stripe coating lines. BACT Guideline 4.3.14 applies to side seam stripe coating operations for 3-piece metal can manufacturing plants. A copy of the guideline is included in Appendix B of this document.

3. Top-Down BACT Analysis

Pursuant to the Top-Down BACT Analysis, presented in Appendix B of this document, BACT for VOC emissions from each of the side seam stripe coating lines has been satisfied with the following.

Pollutant	BACT Requirement
VOC	VOC Capture and Control system at the side seam stripe coater with a fume hood (71% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal oxidizer (70% overall control efficiency)

The applicant has proposed an overall capture efficiency of 87% for the collection system and 95% VOC reduction efficiency for the thermal oxidizer The corresponding overall control efficiency is:

Overall VOC Control = 87% x 95% = 82.65%

The following conditions will be included on each of the side seam stripe coating line Authority to Construct permits:

- *The VOC contaminated air stream from the side seam stripe coater, from the conveyor between the coater and curing tunnel, and from the curing tunnel shall be vented to the shared thermal oxidizer at all times. [District Rule 2201]*
- *The collection system for fugitive VOC emissions from the side seam stripe coater, the conveyor between the coater and curing tunnel, and the curing tunnel shall have a minimum overall capture efficiency of 87%. [District Rule 2201]*
- *The shared thermal oxidizer shall be maintained at a minimum temperature of 1,400 Degrees F and shall reduce VOC emissions by at least a 95%. [District Rule 2201]*

B. Offsets

1. Offset Applicability

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	1,314	37	114	1,095	32,600
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 greater than the offset threshold levels before implementing the project being evaluated.

For units under an SLC, the quantity of offsets required is:

Offsets Required (lb/year) = $(PE2_{SLC} - BE_{SLC} + ICCE) \times DOR$

For this project:

$PE2_{SLC}$ =32,600 lb-VOC/year
BE_{SLC} = $PE1_{SLC}$ = 32,600 lb-VOC/year
ICCE = 0 (no cargo carriers at this site).

Thus,

Offsets Required = (32,600 lb-VOC/year – 32,600 lb-VOC/year + 0 lb-VOC/year) x 1.5
Offsets Required = 0 lb-VOC/year

Thus, 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.

Offset Thresholds				
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**Offset Threshold**	**Public Notice Required?**
NO_X	1,314	1,314	20,000 lb/year	No
SO_X	37	37	54,750 lb/year	No
PM_{10}	114	114	29,200 lb/year	No
CO	1,095	1,095	200,000 lb/year	No
VOC	32,600	32,600	20,000 lb/year	No

As detailed above, VOC emissions were already above the offset threshold and 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 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	1,314	1,314	0	20,000 lb/year	No
SO_X	37	37	0	20,000 lb/year	No
PM_{10}	114	114	2	20,000 lb/year	No
CO	1,095	1,095	0	20,000 lb/year	No
VOC	32,600	32,600	0	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

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

- *The controlled VOC emissions from this side seam stripe coating line shall not exceed 54.0 pounds in any one day. [District Rule 2201]*
- *The facility-wide VOC emissions shall not exceed 32,600 pound in any rolling 12-month period. [District Rule 2201]*
- *The quantity of powder coating applied shall not exceed 250 pounds in any one day. [District Rule 2201]*
- *PM10 emissions from the side seam stripe applicator shall not exceed 0.000012 pounds per pound of powder coating applied. [District Rule 2201]*
- *Combustion emissions from the shared thermal oxidizer shall not exceed any of the following limits: 0.1 lb-NOx/MMBtu, 0.0076 lb-PM10/MMBtu, or 0.084 lb-CO/MMBtu. [District Rule 2201]*
- *The shared thermal oxidizer shall only be fired on PUC-Quality natural gas. [District Rule 2201]*
- *The VOC contaminated air stream from the side seam stripe coater, from the conveyor between the coater and curing tunnel, and from the curing tunnel shall be vented to the shared thermal oxidizer at all times. [District Rule 2201]*
- *The collection system for fugitive VOC emissions from the side seam stripe coater, the conveyor between the coater and curing tunnel, and the curing tunnel shall have a minimum overall capture efficiency of 87%. [District Rule 2201]*
- *The shared thermal oxidizer shall be maintained at a minimum temperature of 1,400 Degrees F and shall reduce VOC emissions by at least a 95%. [District Rule 2201]*

E. Compliance Assurance

1. Source Testing

Liquid Side Seam Stripe Coating

Pursuant to District Policy APR 1705 (Source Testing Frequency), units equipped with a thermal incinerator for controlling VOC emissions must be tested annually. Initial testing will be required to verify the overall capture efficiency of the VOC collection system and the VOC reduction efficiency of the shared thermal oxidizer. District Rule 4604 requires annual testing of this type of capture system; however, this unit is not subject to that particular section of Rule 4604. Ball Container (N-2253) installed a similar system and the District required capture efficiency testing every five years, which is the standard source testing frequency for determining capture efficiency from this type of equipment. The same five-year capture efficiency testing requirement will be used for Silgan Containers, while annual testing of the thermal oxidizer control efficiency will be reqired.

- *Source testing to demonstrate compliance with the VOC capture efficiency of the VOC collection system serving the side seam stripe coater, conveyor between the coater and curing tunnel, and curing tunnel shall be conducted within 60 days of initial start-up, and at least once every five years thereafter. [District Rule 2201]*

- *The capture efficiency of the VOC collection system shall be determined according to the EPA's document "Guidelines for Determining Capture Efficiency," dated January 9, 1995, and 40 CFR 51, Appendix M, Methods 204-204F (as applicable). An equivalent alternate test method that has been approved by EPA, ARB and the APCO may be used. [District Rules 2201 and 4604]*

- *Source testing to demonstrate compliance with the VOC destruction efficiency of the shared thermal oxidizer shall be conducted within 60 days of initial start-up and on an annual basis thereafter. [District Rule 2201]*

- *Source testing to determine the destruction efficiency of the thermal oxidizer shall be conducted using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25C for measuring total gaseous organic concentrations at the inlet and outlet of the control device. [District Rules 2201 and 4604]*

- *Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081]*

- *The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]*

Powder Side Seam Stripe Coating

Testing is not required to verify the powder coating emissions.

Shared Thermal Oxidizer

Combustion emissions from the shared thermal oxidizer are based on the maximum heat input rating and generally accepted emission factors. Therefore, source testing is not required to verify the combustion emissions from the shared thermal oxidizer.

2. Monitoring

In addition to any monitoring required by District Rule 4604, Can and Coil Coating, monitoring of the shared thermal oxidizer chamber temperature will be required to ensure that the chamber temperature does not fall below the 1400 degrees F. The following conditions will be included on each Authority to Construct permit:

- *The shared thermal oxidizer shall be maintained at a minimum temperature of 1,400 Degrees F and shall reduce VOC emissions by at least a 95%. [District Rule 2201]*

- *The shared thermal oxidizer shall be equipped with a continuous temperature monitoring and recording device. [District Rule 2201]*

3. Recordkeeping

In addition to the recordkeeping requirements of District Rule 4604, the following recordkeeping conditions will be included on each Authority to Construct permit:

- *The permittee shall keep a daily record of the VOC emissions from this side seam stripe application line. [District Rule 2201]*

- *The permittee shall keep a daily record of the quantity of powder coatings applied, in pounds, by this side seam stripe coating line. [District Rule 2201]*

- *The permittee shall keep a record of the total rolling 12-month facility-wide VOC emissions. This record shall be updated on at least a monthly basis. [District Rule 2201]*

- *The permittee shall keep a record of the thermal oxidizer chamber operating temperature readings. [District Rule 2201]*

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

The purpose of conducting an Ambient Air Quality Analysis is to determine whether a new or modified souce will cause or make worse a violation of an air quality standard. The proposed location is in an attainment area for NOx, CO, and SOx. The proposed location is in a non-attainment area for PM_{10} and $PM_{2.5}$.

This project will only result in an increase in volatile organic compound emissions from the facility. Since there is no air quality standard for volatile organic compund emissions, an ambient air quality analysis is not required.

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 facility is a new major source and this project does constitute a Federal Major Modification, therefore this requirement is applicable. Silgan's compliance certification is included in Appendix F.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install two new side seam stripe coating lines.

Since the project will provide side seam stripes to cans that are manufactured at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

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 is a Title V significant modification.

As discussed above, 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. Continued compliance with this rule is expected. The facility shall not implement the changes requested until the final permit is issued.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR 60 Subpart TT does not apply to this equipment because the items coated are not in coil form at the time they are coated. 40 CFR 60 Part WW does not apply because this equipment does not coat beverage cans. No other NSPS standards apply to this operation.

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

The requirements of the Code of Federal Regulations, Chapter 40 (40 CFR), Part 63, Subpart KKKK (National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Cans) are applicable to facilities that use 1,500 gallons per year, or more, of coatings in the source category defined in section 63.3481 (a) of this regulation and that is a Major HAP source (as defined in 40 CFR 63.2 – Definitions). Pursuant to the calculations in Appendix C of this evaluation, this source is not a Major HAP source. Therefore, Subpart KKKK is not applicable.

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.

The following condition will be included on each Authority to Construct 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 Valley)]*

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Air contaminants released into the atmosphere, which cause a public nuisance, are not expected.

The following condition will be included on each 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.

The following table summarizes the results of the risk management review. T-BACT was not triggered and no special conditions are required.

RMR Summary (See Appendix D for complete results)			
Categories	**Side Seam Stripe Lines (Units 10-0 and 11-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	34.1	>1	>1
Acute Hazard Index	0.00	0.00	0.00
Chronic Hazard Index	0.00	0.00	0.00
Maximum Individual Cancer Risk (10^{-6})	1.37E-7	1.37E-7	1.37E-7
T-BACT Required?	No		
Special Permit Conditions?	Yes		

The following special permit condition will be included on each of the Authority to Construct permits:

- *The shared thermal oxidizer exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhand, or other obstruction. [District Rule 4102]*

Rule 4201 Particulate Matter Concentration

This Rule limits the particulate matter concentration to 0.1 grains per cubic foot of gas at dry standard conditions, or less. As long as the equipment is properly maintained and operated it is expected that the particulate matter concentration will be:

Shared Thermal Oxidizer

According to AP-42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter. Since the PM emissions are primarily due to natural gas combustion, all PM emitted is assumed to be PM10. Thus, the particulate concentration in the exhaust of the thermal oxidizer will be calculated as follows:

PM Concentration = 0.0076 lb-PM_{10}/MMBtu × MMBtu/8,578 dscf × 7,000 gr/lb
= 0.006 gr/dscf < 0.1 gr/dscf

Therefore, the particulate matter concentration will not exceed 0.1 grains per cubic foot of gas at dry standard conditions. Compliance with this rule is expected.

Rule 4202 Particulate Matter – Emission Rate

This rule limits the hourly particulate matter emissions from each Source Operation using one of the following equations.

$E_{max} = 3.59\ P^{0.62}$, where ≤ P < 30 tons/hr Equation 1
$E_{max} = 17.31\ P^{0.16}$, where P > 30 tons/hr Equation 2

E_{max} = Maximum allowable emissions in lb/hr
P = Process weight in tons/hr

Pursuant to the applicant, each side seam stripe line has a throughput of 4.06 tons/hr and a powder coating usage rate of 250 lb/day. The following analysis applies to each side seam stripe application line.

Throughput:8,126 lb/hr (4.06 tons/hr) – per applicant

Actual PM Rate: (250 lb powder/24 hr)(0.000012 lb PM/lb powder) = 0.00013 lb/hr

$E_{max} = 3.59(4.06)^{0.62} = 8.6$ lb/hr

The actual PM10 emissions are expected to be less than the Rule 4202 limit, therefore, compliance is expected.

Rule 4301 Fuel Burning Equipment

Pursuant to Section 3.1 of this rule, this rule applies only to units that produce heat or power via indirect heat transfer. The shared thermal oxidizer is a direct-fired unit. Thus, this rule does not apply.

Rule 4604 Can and Coil Coating Operations

The purpose of this rule is to limit volatile organic compound emissions from can and coil coating operations. The units at Silgan are subject to the requirements of this rule.

Section 5.1 lists VOC emission limits for can coating operations. This facility only manufactures three-piece cans. Pursuant to Table 2 of Rule 4604, side seam coatings must have a VOC content, less water and exempt compounds, of 660 g/l, or less. The following condition will be included on each Authority to Construct permit:

- *The VOC content of coatings used in the three-piece can side seam spray application operation shall not exceed 660 grams per liter, as applied, excluding water and exempt compounds. [District Rule 4604]*

Section 5.2 allows coatings with VOC contents exceeding the limits in Section 5.1 if the coating operation is equipped with a VOC control system with an overall capture and control efficiency of 90%, and meeting the requirements of Section 5.2.3 through 5.2.9. The proposed VOC control system does not achieve this level of control. Therefore, the Section 5.2 provisions of this rule are not applicable.

Section 5.4.1 lists the following VOC content limits for organic cleaning solvents:

Type of Solvent Cleaning Operation	VOC Content Limit Grams-VOC/Liter of material (lb/gal)
Product Cleaning During Manufacturing Process or Surface Preparation for Coating Application	25 (0.21)
Repair and Maintenance Cleaning	25 (0.21)
Cleaning of Coating Application Equipment, except sheet coater for three-piece cans)	25 (0.21)

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

- *Solvents used for product cleaning, surface preparation or repair and maintenance cleaning, and cleaning of coating application equipment shall have a VOC content not exceeding 25 grams/liter. [District Rule 4604]*

Section 5.4.2 applies to the cleaning of coating application equipment outside of the control of a VOC emission control device, provided the coating application equipment is not used for sheet coating of three-piece cans. Section 5.4.2.2 states that all solvent cleaning operations must be carried out with cleaning materials with a VOC content not exceeding 25 g/L. Furthermore, this section states that the requirements of Sections 5.4.4 through 5.4.7 do not apply on and after September 21, 2008. The above permit condition limits all solvents to 25 g/L.

Section 5.4.3 applies to solvent cleaning operations for coating application equipment that is used for sheet coating of three-piece cans. This facility does not have a sheet coater. Therefore, the requirements of this section are not applicable.

As stated earlier, Sections 5.4.4 through 5.4.7 are not applicable.

Section 5.5 states that the operator must store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc, coatings, adhesives, catalysts, and thinners in closed, non-absorbent and non-leaking containers. The containers must remain closed at all times except when depositing or removing the contents of the containers or when the container is empty. The following condition will be included on each Authority to Construct permit:

- *The permittee shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc; coatings; adhesives; catalysts; and thinners in closed, non-absorbent and 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 4604]*

Section 5.6.2 states that only the following application methods may be used:

1. Electrostatic Application
2. Flow Coater
3. Roll Coater
4. Dip Coater
5. Hand Application Methods
6. HVLP Spray

The following condition will be included on each Authority to Construct permit:

- *Coatings shall be applied using one of the following methods: electrostatic, flow, roll, dip, hand application, HVLP spray, or any other coating method that demonstrates, to the satisfaction of the APCO and the EPA, a coating transfer efficiency of at least 65% as measured using a test method pursuant to Section 6.7.4 of Rule 4604 (9/20/07). All application equipment shall be operated in accordance with the manufacturer's recommendations. [District Rule 4604]*

Section 6.2.1 requires the operator to keep a coating materials list. The following condition will be included on each Authority to Construct permit:

- *The permittee shall maintain and have available during inspections, a current list of the coatings in use. The list shall include the coating data necessary to evaluate compliance including the following information as applicable: 1) Specific manufacturer's name of coatings, catalysts, and thinners used; 2) Mix ratio of components used; 3) VOC content of each coating, as applied in g/l or lb/gal; 4) VOC content of each catalyst and thinner in g/l or lb/gal. [District Rule 4604]*

Sections 6.2.2 and 6.2.3 require the operator to keep daily coating usage records. The following condition will be included on each Authority to Construct permit:

- *Coating usage records shall be maintained on a daily basis and shall include the following information: 1) Specific coating used and the mix ratio of components added to the coating material prior to application; 2) Volume of coatings applied (gallons); 3) Specific solvents, catalysts, and thinners used; 4) Volume of each solvent, catalyst, and thinner (gallons) used. [District Rule 4604]*

Section 6.3.1 requires the operator to keep a cleaning solvent materials list. The following condition will be included on each Authority to Construct permit:

- *The permittee shall maintain and have available during inspections, a current list of cleaning solvents in use that provides all data necessary to evaluate compliance including the following information as applicable: 1) The name of the cleaning solvent and its manufacturer's name; 2) VOC content of the solvent in g/l or lb/gal. [District Rule 4604]*

Section 6.3.2 requires the operator to keep a cleaning solvent usage list. The following condition will be included on each Authority to Construct permit:

- *Cleaning solvent usage records shall be maintained on a daily basis and shall include the following solvent information: 1) Name of cleaning solvent used; 2) When the solvent is a mixture of different materials that are blended by the operator, the mix ratio of the batch; 3) Volume of each cleaning solvent used (gallons); 4) The type of cleaning activity for each solvent. [District Rule 4604]*

Sections 6.2.5 and 6.3.5 require that all records be maintained and available for at least five years. The following condition will be included on each Authority to Construct permit:

- *All records shall be maintained on site for a period of at least five years and shall be made available for District inspection upon request. [District Rules 2201 and 4604]*

Sections 6.4 and 6.5 list VOC emission control system recordkeeping requirements and control system operation and maintenance plan requirements, for operations that are subject to Section 5.2. While the applicant is proposing an emission control system, the emission control system is not a control system as described in Section 5.2 and Section 5.2 requirements are not applicable to these operations. Therefore, the requirements of Section 6.4 and 6.5 do not apply.

Section 6.7 lists test method requirements. While District Rule 4604 does not require testing of this operation, testing was required for compliance with District Rule 2201. Therefore, the test methods listed in District Rule 4604 will be required when performing testing for Rule 2201. The following conditions will be included on the Authority to Construct permit:

- *The capture efficiency of the VOC collection device serving this unit shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Methods 204-204F, as applicable, or any other method approved by EPA, ARB, and the District. [District Rules 2201 and 4604]*

- *The control efficiency of the shared thermal oxidizer shall be determined using EPA Method 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at inlet and outlet of the thermal oxidizer. EPA Method 18 or ARB Method 422 shall be used to determine the emissions of exempt compounds. [District Rules 2201 and 4604]*

Rule 4801 – Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2, on a dry basis averaged over 15 consecutive minutes.

The thermal oxidizer is fired on natural gas fuel. Using the ideal gas equation and the emission factors for natural gas, the sulfur compound emissions are calculated as follows:

Volume $SO_2 = \frac{n\,RT}{P}$

With:

N = moles SO_2
T (Standard Temperature) = 60°F = 520°R
P (Standard Pressure) = 14.7 psi
R (Universal Gas Constant) = $\frac{10.73 psi \cdot ft^3}{lb \cdot mol \cdot {}^\circ R}$

EPA F-Factor for Natural Gas: 8,710 dscf/MMBtu at 68 °F, equivalent to

$$Corrected\ F-factor = \left(\frac{8{,}710 dscf}{MMBtu}\right) \times \left(\frac{60^\circ F + 459.6}{68^\circ F + 459.6}\right) = 8{,}578 \frac{dscf}{MMBtu}\ \ at\ 60^\circ F$$

$$\frac{0.00285\,lb - SOx}{MMBtu} \times \frac{MMBtu}{8{,}578\,dscf} \times \frac{1\,lb \cdot mol}{64\,lb} \times \frac{10.73\ psi \cdot ft^3}{lb \cdot mol \cdot {}^\circ R} \times \frac{520^\circ R}{14.7 psi} \times \frac{1{,}000{,}000 \cdot parts}{million} = 1.97 \frac{parts}{million}$$

$$SulfurConcentration = 1.97 \frac{parts}{million}$$ < 2,000 ppmv (or 0.2%)

Therefore, compliance with District Rule 4801 requirements is expected.

California Health & Safety Code 42301.6 (School Notice)

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

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 project will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the project will not have a significant effect on the environment. The District finds that the project 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 ATCs N-1719-10-0 and '-11-0 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-1719-10-0	3020-02-B	0.25 MMBtu/hr*	$129
N-1719-11-0	3020-02-B	0.25 MMBtu/hr*	$129

*The shared thermal oxidizer has a rating of 1.5 MMBtu/hr and serves 6 units. Averaged over the units, the rating is 0.25 MMBtu/hr. The use of this fee schedule results in a higher annual fee than the use of the electricity rating; therefore, this fee schedule is applicable to these units.

Appendixes

A: Draft Authority to Construct Permits
B: BACT Guideline 4.3.14 and Top-Down BACT Analysis
C: HAP Emission Calculations
D: Risk Management Review Results
E: Quarterly Net Emission Change Calculations
F: Compliance Certification

APPENDIX A
Draft Authority to Construct Permits

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1719-10-0

ISSUANCE DATE: DRAFT

DRAFT

LEGAL OWNER OR OPERATOR: SILGAN CONTAINERS MFR. CORP.
MAILING ADDRESS: 567 S RIVERSIDE DRIVE
MODESTO, CA 95354

LOCATION: 567 S RIVERSIDE DR
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
CAN INSIDE/OUTSIDE SIDE SEAM STRIPE COATING LINE #5 CONSISTING OF A SOUDRONIC RESISTANCE CAN WELDING BODYMAKER (OR EQUIVALENT) WITH A CAPTURE HOOD AND A PERMIT-EXEMPT CURING OVEN (LOW-EMITTING UNIT) SERVED BY A SHARED 1.5 MMBTU/HR NATURAL GAS-FIRED TANN MODEL TR1295C REGENERATIVE THERMAL OXIDIZER (SHARED WITH UNITS N-1719-1, '-2, AND '-3, '-8 AND '-11)

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. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. {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
5. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-1719-10-0 Oct 10 2017 8:13AM -- HARADERJ Joint Inspection NOT Required

6. The VOC contaminated air stream from the side seam stripe coater, from the conveyor between the coater and curing tunnel, and from the curing tunnel shall be vented to the shared thermal oxidizer at all times. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The collection system for fugitive VOC emissions from the side seam stripe coater, the conveyor between the coater and curing tunnel, and the curing tunnel shall have a minimum overall capture efficiency of 87%. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The shared thermal oxidizer shall be maintained at a minimum temperature of 1,400 Degrees F and shall reduce VOC emissions by at least a 95%. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The shared thermal oxidizer shall be equipped with a continuous temperature monitoring and recording device. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The controlled VOC emissions from this side seam stripe coating line shall not exceed 54.0 pounds in any one day. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The facility-wide VOC emissions shall not exceed 32,600 pound in any rolling 12-month period. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The quantity of powder coating applied shall not exceed 250 pounds in any one day. [District Rule 2201] Federally Enforceable Through Title V Permit
13. PM10 emissions from the side seam stripe applicator shall not exceed 0.000012 pounds per pound of powder coating applied. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The shared thermal oxidizer shall only be fired on PUC-Quality natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Combustion emissions from the shared thermal oxidizer shall not exceed any of the following limits: 0.1 lb-NOx/MMBtu, 0.0076 lb-PM10/MMBtu, or 0.084 lb-CO/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The VOC content of coatings used in the three-piece can side seam spray application operation shall not exceed 660 grams per liter, as applied, excluding water and exempt compounds. [District Rule 4604] Federally Enforceable Through Title V Permit
17. Solvents used for product cleaning, surface preparation or repair and maintenance cleaning, and cleaning of coating application equipment shall have a VOC content not exceeding 25 grams/liter. [District Rule 4604] Federally Enforceable Through Title V Permit
18. The permittee shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc; coatings; adhesives; catalysts; and thinners in closed, non-absorbent and 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 4604] Federally Enforceable Through Title V Permit
19. Coatings shall be applied using one of the following methods: electrostatic, flow, roll, dip, hand application, HVLP spray, or any other coating method that demonstrates, to the satisfaction of the APCO and the EPA, a coating transfer efficiency of at least 65% as measured using a test method pursuant to Section 6.7.4 of Rule 4604 (9/20/07). All application equipment shall be operated in accordance with the manufacturer's recommendations. [District Rule 4604] Federally Enforceable Through Title V Permit
20. Source testing to demonstrate compliance with the VOC capture efficiency of the VOC collection system serving the side seam stripe coater, conveyor between the coater and curing tunnel, and curing tunnel shall be conducted within 60 days of initial start-up, and at least once every five years thereafter. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Source testing to demonstrate compliance with the VOC destruction efficiency of the shared thermal oxidizer shall be conducted within 60 days of initial start-up and on an annual basis thereafter. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

22. The capture efficiency of the VOC collection system shall be determined according to the EPA's document "Guidelines for Determining Capture Efficiency," dated January 9, 1995, and 40 CFR 51, Appendix M, Methods 204-204F (as applicable). An equivalent alternate test method that has been approved by EPA, ARB and the APCO may be used. [District Rules 2201 and 4604] Federally Enforceable Through Title V Permit

23. Source testing to determine the destruction efficiency of the thermal oxidizer shall be conducted using EPA Methods 2, 2A, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25C for measuring total gaseous organic concentrations at the inlet and outlet of the control device. [District Rules 2201 and 4604] Federally Enforceable Through Title V Permit

24. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

25. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit

26. The permittee shall maintain and have available during inspections, a current list of the coatings in use. The list shall include the coating data necessary to evaluate compliance including the following information as applicable: 1) Specific manufacturer's name of coatings, catalysts, and thinners used; 2) Mix ratio of components used; 3) VOC content of each coating, as applied in g/l or lb/gal; 4) VOC content of each catalyst and thinner in g/l or lb/gal. [District Rule 4604] Federally Enforceable Through Title V Permit

27. Coating usage records shall be maintained on a daily basis and shall include the following information: 1) Specific coating used and the mix ratio of components added to the coating material prior to application; 2) Volume of coatings applied (gallons); 3) Specific solvents, catalysts, and thinners used; 4) Volume of each solvent, catalyst, and thinner (gallons) used. [District Rule 4604] Federally Enforceable Through Title V Permit

28. The permittee shall maintain and have available during inspections, a current list of cleaning solvents in use that provides all data necessary to evaluate compliance including the following information as applicable: 1) The name of the cleaning solvent and its manufacturer's name; 2) VOC content of the solvent in g/l or lb/gal. [District Rule 4604] Federally Enforceable Through Title V Permit

29. Cleaning solvent usage records shall be maintained on a daily basis and shall include the following solvent information: 1) Name of cleaning solvent used; 2) When the solvent is a mixture of different materials that are blended by the operator, the mix ratio of the batch; 3) Volume of each cleaning solvent used (gallons); 4) The type of cleaning activity for each solvent. [District Rule 4604] Federally Enforceable Through Title V Permit

30. The permittee shall keep a daily record of the VOC emissions from this side seam stripe application line. [District Rule 2201] Federally Enforceable Through Title V Permit

31. The permittee shall keep a daily record of the quantity of powder coatings applied, in pounds, by this side seam stripe coating line. [District Rule 2201] Federally Enforceable Through Title V Permit

32. The permittee shall keep a record of the total rolling 12-month facility-wide VOC emissions. This record shall be updated on at least a monthly basis. [District Rule 2201] Federally Enforceable Through Title V Permit

33. The permittee shall keep a record of the thermal oxidizer chamber operating temperature readings. [District Rule 2201] Federally Enforceable Through Title V Permit

34. All records shall be maintained on site for a period of at least five years and shall be made available for District inspection upon request. [District Rules 2201 and 4604] Federally Enforceable Through Title V Permit

35. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

36. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

37. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

38. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or increase in firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1719-11-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: SILGAN CONTAINERS MFR. CORP.
MAILING ADDRESS: 567 S RIVERSIDE DRIVE
MODESTO, CA 95354

LOCATION: 567 S RIVERSIDE DR
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
CAN INSIDE/OUTSIDE SIDE SEAM STRIPE COATING LINE #6 CONSISTING OF A SOUDRONIC RESISTANCE CAN WELDING BODYMAKER (OR EQUIVALENT) WITH A CAPTURE HOOD AND A PERMIT-EXEMPT CURING OVEN (LOW-EMITTING UNIT) SERVED BY A SHARED 1.5 MMBTU/HR NATURAL GAS-FIRED TANN MODEL TR1295C REGENERATIVE THERMAL OXIDIZER (SHARED WITH UNITS N-1719-1, '-2, AND '-3, '-8 AND '-10)

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. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. {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
5. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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Arnaud Marjollet, Director of Permit Services
N-1719-11-0 Oct 10 2017 8:13AM -- HARADERJ Joint Inspection NOT Required

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38. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or increase in firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

APPENDIX B
BACT Guideline 4.3.14 and Top-Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 4.3.14*

Last Update: 07/14/2005

Side Seam Stripe Spray Coating Operation for 3-Piece Metal Can Manufacturing at a Facility-wide Can Manufacturing Rate of >= 180,000 Can/hr

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	VOC capture and control system at the side seam stripe coater with a fume hood (71% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal r catalytic oxidizer (70% overall control efficiency).	1. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater an curing tunnel) with a total enclosure (100% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal or catalytic oxidizer (98% overall control efficiency). 2. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and curing tunnel) with a total enclosure (100% capture efficiency) and the curing tunnel exhaust stack all vented to a carbon adsorption system (95% overall control efficiency). 3. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and curing tunnel) with a fume hood (95% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal or catalytic oxidizer (93% overall control efficiency). 4. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and curing tunnel) with a fume hood (95% capture efficiency) and the curing tunnel exhaust stack all vented to a carbon adsorption system (90% overall control efficiency).	

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 s 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**

Top-Down BACT Analysis for VOC Emissions from Liquid Coatings

Each of the two additional side seam stripe lines triggers BACT for VOC emissions. BACT Guideline 4.3.14 is applicable to "Side Seam Stripe Spray Coating Operations for 3-Piece Metal Can Manufacturing".

Step 1: Identify All Possible Control Technologies

BACT Guideline 4.3.14 lists the following possible control techniques:

1. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and curing tunnel) with a total enclosure (100% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal or catalytic oxidizer (98% overall control efficiency) – Technologically Feasible

2. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and the curing tunnel) with a total enclosure (100% capture efficiency) and the curing tunnel exhaust stack vented to a carbon adsorption system (95% overall control efficiency) – Technologically Feasible

3. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and the curing tunnel) with a fume hood (95% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal or catalytic oxidizer (93% overall control efficiency) – Technologically Feasible

4. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and the curing tunnel) with a fume hood (95% capture efficiency) and the curing tunnel exhaust stack all vented to a carbon adsorption system (90% overall control efficiency) – Technologically Feasible

5. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and the curing tunnel) with a fume hood (71% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal or catalytic oxidizer (70% overall control efficiency) – Achieved in Practice

Step 2: Eliminate Technologically Infeasible Options

The BACT Guideline for Can Side Seam Stripe Coatings includes BACT options that use a permanent total enclosure (PTE). This option would require the facility to enclose each of the coating operations; however, the welder is adjacent to the spray equipment and would be inside the enclosure. Everything contained within a PTE must be certified as fire-proof. Enclosing this operation, with the welder inside, would not meet the fire-proof requirement. Therefore, options that require 100% capture through use of a PTE are determined to be technologically infeasible and will be removed from consideration.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

1. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and the curing tunnel) with a fume hood (95% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal or catalytic oxidizer (93% overall control efficiency) – Technologically Feasible

2. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and the curing tunnel) with a fume hood (95% capture efficiency) and the curing tunnel exhaust stack all vented to a carbon adsorption system (90% overall control efficiency) – Technologically Feasible

3. VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and the curing tunnel) with a fume hood (71% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal or catalytic oxidizer (70% overall control efficiency) – Achieved in Practice

Step 4: Cost Effectiveness Analysis

A cost analysis is required to determine whether technologically feasible control options are cost effective. If cost effective, technologically feasible control options must be proposed. Since the use of one control system to serve all the side-seam stripe lines at the facility is expected to be more economical than using a separate control system for each line, the cost analyses will be conducted assuming one control system will serve all six lines that would exist following the modification to add two lines.

Cost Analysis for 95% Capture Hood with Oxidizer

Airflow Rate Required for 95% Capture

As discussed in District Project N-1122502, an exhaust flow rate of approximately 11,200 CFM per side seam stripe line would be required to achieve 95% capture. Thus, the airflow required for the entire system is:

Airflow Required = 6 units x 11,200 CFM/unit
Airflow Required = 67,200 CFM

This does not include the airflow from the six curing ovens. Pursuant to application forms from past projects and the applicant, the curing ovens are rated at:

N-1719-1: 1,000 CFM (Application District Project N-960086)
N-1719-2: 1,000 CFM (Application District Project N-960086)
N-1719-3: 1,000 CFM (Application District Project N-960086)
N-1719-8: 1,000 CFM (Estimated by Applicant)
N-1719-10: 1,000 CFM (Estimated by Applicatint)
N-1719-11: 1,000 CFM (Estimated by Applicant)

Thus, the total airflow for to be treated by the thermal oxidizer would be:

Total Airflow = 73,200 CFM

RTO Rating

The applicant is proposing an RTO rated at 1.5 MMBtu/hr; however, that RTO is rated to process a maximum of 12,000 CFM. To accommodate the additional airflow due to the addition of a more efficient capture system, a larger RTO would be required. It is assumed that the rating of the RTO is proportional to the quantity of air treated. Thus,

Adjusted RTO Rating = 1.5 MMBtu/hr/12,000 CFM x 73,200 CFM
Adjusted RTO Rating = 9.2 MMBtu/hr

It is assumed that the facility would conservatively purchase an oxidizer rated at 10 MMBtu/hr.

RTO Capital Cost (A)

The capital cost of the RTO will be estimated using the data from EPA FACT Sheet EPA-452/F-03-021 for regenerative thermal incinerators. Per the fact sheet, the capital cost of an RTO ranges from $35/CFM to $140/CFM. Using the lower value as a conservative estimate,

RTO Capital Cost = 73,200 CFM x $35/CFM = $2,562,000

Direct Equipment Costs (B)

The direct equipment costs are estimated using the methods outlined in the EPA OAQPS Control Cost Manual (6th Edition, EPA 452/B-02-001).

Control Equipment Cost (A) = $2,562,000
Instrumentation Cost = 0.1 x A = 0.1 x $2,562,000 = $256,200
Sales Tax = 0.07375 x A = 0.07375 x $2,562,000 = $188,948
Freight = 0.05 x A = 0.05 x $2,562,000 = $128,100
Total Direct Equipment Cost (B) = $3,135,248

Direct Installation Costs

The direct installation costs are estimated using the methods outlined in the EPA OAQPS Control Cost Manual (6th Edition, EPA 452/B-02-001).

Foundation and Supports = 0.08 x B = 0.08 x $3,135,248 = $250,820
Handling and Erection = 0.14 x B = 0.14 x $3,135,248 = $438,935
Electrical = 0.04 x B = 0.04 x $3,135,248 = $125,410
Piping = 0.02 x B = 0.02 x $3,135,248 = $62,705
Insulation for Ductwork = 0.01 x B = 0.01 x $3,135,248 = $31,352
Painting = 0.01 x B = 0.01 x $3,135,248 = $31,352
Total Direct Costs = $909,222

Indirect Costs (installation)

The direct installation costs are estimated using the methods outlined in the EPA OAQPS Control Cost Manual (6th Edition, EPA 452/B-02-001).

Engineering = 0.1 x B = 0.1 x $3,135,248 = $313,525
Construction and Field Expenses = 0.05 x B = 0.05 x $3,135,248 = $156,762
Contractor Fees = 0.1 x B = 0.1 x $3,135,248 = $313,525
Start-up = 0.02 x B = 0.02 x $3,135,248 = $62,705
Performance Tests = 0.01 x B = 0.01 x $3,135,248 = $31,352
Contingencies = 0.03 x B = 0.03 x $3,135,248 = $94,057
Total Indirect Costs = $971,926

Total Capital Investment (TCI)

Total Capital Investment (TCI) = $3,135,248 + $940,574 + $971,926
Total Capital Investment (TCI) = $5,047,748

Annualized Capital Cost

The annualized capital cost is calculated below, pursuant to the method required by District Policy APR 1305, Section X (11/09/1999).

$A = [\$5,047,748 \times 0.1 \times (1.1)^{10}] \div [(1.1)^{10} - 1)]$
A = $821,498/year

Annual Fuel Cost

The annual fuel cost will be estimated using cost data from the US Department of Energy (http://www.eia.gov/dnav/ng/hist/n3035ca3m.htm). Pursuant to this source, the average natural gas fuel cost (July 2016 – June 2017) is $7.51/1000 scf of natural gas, or $7.51/MMBtu.

The oxidizer could operate up to 8,760 hr/year. The fuel use would be:

Annual Heat Input = 10.0 MMBtu/hr x 8,760 hr/year
Annual Heat Input = 87,600 MMBtu/year

The actual annual heat input will be lower since the inlet stream contains some combustible VOC's. The heating value of the VOC's being controlled is not known, so the heating value of benzyl alcohol (14,900 Btu/lb) will be utilized in the calculation.

Btu Content = Uncontrolled VOC Emissions lb/year × HV Btu/lb
= 32,600 lb-VOC/yr ÷ (1-0.8265) × 14,900 Btu/lb × MMBtu/10^6 Btu
= 2,800 MMBtu/yr

Adjusted Annual Heat Input = 87,600 MMBtu/year – 2,800 MMBtu/yr
= 84,800 MMBtu/yr

The annual natural gas cost is estimated to be:

Annual Fuel Cost = 84,800 MMBtu/year x $7.51/MMBtu
Annual Fuel Cost = $636,848/year

Annual Electricity Cost

In District project N-1042586, it was estimated that a HP rating of 100 HP would be required for a system rated at 36,000 CFM. Thus, the electric HP rating for this project is estimated to be:

Electric HP Rating = 100 HP/36,000 CFM x 73,200 CFM
Electric HP Rating = 203 HP

Electricity usage is estimated to be:

Annual Electricity usage = 8,760 hr/year x 203 HP x 0.746 kW/hp
Annual Electricity usage = 1,326,597 kW-hr

The current PG&E average rate for industrial-general service (Rate Schedule E20) is approximately $0.146/kW-hr. The annual cost of electricity is estimated below:

Annual Electricity Cost = 1,326,597 kW-hr x $0.146/kW-hr
Annual Electricity Cost = $193,683/year

Other Annual Costs

The other direct and indirect annual costs estimated using the methods outlined in the EPA OAQPS Control Cost Manual (6th Edition, EPA 452/B-02-001).

Direct Annual Costs (excluding utilities)

Operating Labor (Operator) = 1,095 shifts/year x 0.5 hr/shift x $12.95/hr = $7,090/year
Supervisor = 0.15 x Operator = 0.15 x $7,090 = $1,064/year
Maintenance Labor = 1,095 shifts/year x 0.5 hr/shift x $14.95/hr = $8,185/year
Materials = 100% x Maintenance Labor = $8,185/year
Total Direct Annual Costs = $24,524/year

Indirect Annual Costs

Overhead = 0.6 x (Direct Annual Costs) = 0.6 x $24,524/year = $14,714/year
Administrative Charges = 0.02 x TCI= 0.02 x $5,047,748 = $100,955/year
Property Taxes = 0.01 x TCI= 0.02 x $5,047,748 = $50,477/year
Insurance = 0.01 x TCI= 0.02 x $5,047,748 = $50,477/year
Total Indirect Annual Costs = $216,623/year

Total Other Annual Costs

Total Other Annual Costs = $24,524/year + $216,623/year = $241,147/year

VOC Emission Reductions

Proposed Controlled Emission Rate: 32,600 lb-VOC/year
Proposed Overall Control Efficiency = 82.65%
Uncontrolled Emission rate = 32,600 lb-VOC/year ÷ (1-0.8265)
Uncontrolled Emission Rate = 187,896 lb-VOC/year

Control Efficiency of BACT Option: 93%
Emission Reductions = 187,896 lb-VOC/year x 0.93
Emission Reductions = 174,743 lb-VOC/year (87.4 tons-VOC/year)

Cost/ton of VOC Reduced

Cost/ton = ($821,498/year + $636,848/year + $193,683/year + $241,147/year)
÷ 87.4 tons-VOC
Cost/ton = $21,661/ton

The cost is greater than the cost effectiveness threshold of $17,500/ton. Thus, this control option is not cost effective.

Cost Analysis for 95% Capture Hood with Carbon Adsorption

VOC Emission Reductions

Proposed Controlled Emission Rate: 32,600 lb-VOC/year
Proposed Overall Control Efficiency = 82.65%
Uncontrolled Emission rate = 32,600 lb-VOC/year ÷ (1-0.8265)
Uncontrolled Emission Rate = 187,896 lb-VOC/year

Control Efficiency of BACT Option: 90%
Emission Reductions = 187,896 lb-VOC/year x 0.9
Emission Reductions = 169,106 lb-VOC/year (84.6 tons-VOC/year)

Annual Carbon Cost

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

Since carbon can adsorb 20% of its weight in VOCs, and the overall control efficiency of the carbon adsorption is required to be 90%, the total amount of carbon required per year can be determined as follows:

Carbon Required = 187,896 lb-VOC/year x 0.90 x 1 lb-Carbon/0.2 lb-VOC
= 845,532 lb-Carbon/year

Per EnviroSupply & Service Inc. (http://envirosupply.net, July 25, 2017), the cost of carbon replacement is $5.00/lb for standard carbon. The annual cost of spent carbon replacement will be:

Annual Carbon Replacement Cost = 845,532 lb-Carbon/year × $5/lb-Carbon
Annual Carbon Replacement Cost = $4,227,660/year

Cost/ton of VOC Reduced

Cost/ton = $4,227,660/year ÷ 84.6 tons-VOC
Cost/ton = $49,972/ton

This cost estimate does not include capital equipment costs, installation costs, annual electricity costs, and other miscellaneous operating costs. The cost is greater than $17,500/ton. Thus, this control option is not cost effective.

Step 5 - Select BACT

The only remaining control option is the achieved in practice option, which is:

- VOC capture and control system at the side seam stripe coater and the can conveyor (between the coater and the curing tunnel) with a fume hood (71% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal or catalytic oxidizer (70% overall control efficiency) – Achieved in Practice

The applicant is proposing to install a system that exceeds the above parameters. Therefore, BACT for VOC emissions is satisfied.

APPENDIX C
HAP Emission Calculations

HAP Emission Calculations

HAP emission calculations will be performed to determine whether this facility is a Major HAP source. The facility is a Major HAP source if the facility-wide emissions of any one HAP exceeds 10 tons/year or if the cumulative facility-wide emissions of all HAPs exceeds 25 tons/year. There are two sources of HAP emissions at this facility. The first source is the use of liquid side seam stripe coatings. The second source is natural gas combustion emissions from the shared thermal oxidizer. The powder coatings at this facility were determined to not contain any HAPS in a recent health risk analysis. Additionally, this facility includes a can end-line, unit N-1719-7; however, that unit was determined to use materials that do not contain HAPs.

HAP Emissions from Liquid Side Seam Stripe Coatings

The side-seam stripe material with the highest HAP content (by weight) at this facility is Valspar 9790014. The VOC emissions for this facility are limited to 32,600 lb/year. Since this determination is being conducted to determine whether or not the facility is subject to 40 CFR Part 63 Subpart KKKK, which is a Federal rule, only the Federal Clean Air Act Amendment (CAAA) pollutants will be included.

Annual Controlled VOC Emission Limit: 32,600 lb
PPG 2238803 VOC Content: 4.10 lb/gal
Overall VOC Control Efficiency: 82.65%
Material Density: 8.55 lb/gal

Uncontrolled VOC Emissions = Controlled VOC Emissions ÷ (1- Control Efficiency)
Uncontrolled VOC Emissions = 32,600 lb/year ÷ (1-0.8265)
Uncontrolled VOC Emissions = 187,896 lb-VOC/year

Maximum Usage = Uncontrolled VOC Emissions ÷ VOC Content x Material Density
Maximum Usage = 187,896 lb-VOC/year ÷ 4.10 lb-VOC/gal x 8.55 lb/gal
Maximum Usage = 391,832 lb/year

The following table shows the maximum material usage, the HAP contents (from the material safety data sheet) and the potential uncontrolled HAP emissions.

Uncontrolled HAP Emission Rate from Liquid Coatings			
CAAA HAP	**HAP % by wt.**	**Annual Usage (lb)**	**PE_{HAP} (lb/year)**
Xylene	5.60	391,832	21,943
Ethyl Benzene	1.30		5,094
Formaldehyde	0.1		392
		Total	**27,429**

The controlled HAP emissions will be calculated as follows:

Controlled HAP = Uncontrolled HAP x ($1-CE_{Shared\ Thermal\ Oxidizer}$)

Where,

CE = Overall Thermal Oxidizer Efficiency of 82.65% = 0.8265

Thus,

Controlled HAP = Uncontrolled HAP x (1-0.855)

Controlled HAP Emission Rate from Liquid Coatings			
CAAA HAP	**Uncontrolled (lb/yr)**	**Thermal Oxidizer Control Efficiency**	**PE_{HAP} (lb/year)**
Xylene	21,943	82.65	3,807
Ethyl Benzene	5,094		884
Formaldehyde	392		68
		Total	**4,759**

HAP Emissions from the Combustion of Natural Gas by the Thermal Oxidizer

There are no available HAP emission factors for thermal oxidizers. Therefore, HAP emissions from the shared thermal will be estimated using the emission factors for a natural gas-fired boiler. ARB's CATEF emission factors, shown in the table below, will be used to calculate HAP emissions.

System Type	Material Type	CAS	Substance	Max Emission factor	Unit
Boiler	Natural gas	75-07-0	Acetaldehyde	1.47E-02	lb/MMcf
Boiler	Natural gas	71-43-2	Benzene	8.70E-03	lb/MMcf
Boiler	Natural gas	50-00-0	Formaldehyde	6.72E-01	lb/MMcf

HAP emissions from the thermal oxidizer will be calculated using the following formula:

PE_{HAP} = 1.5 MMBtu/hr x MMscf/1000 MMBtu x 8760 hr/year x EF (lb/MMscf)

HAP Emissions From Thermal Oxidizer		
CAAA HAP	**Emission Factor (lb/MMscf)**	**PE_{HAP} (lb/year)**
Acetaldehyde	0.0147	0
Benzene	0.0087	0
Formaldehyde	0.672	9
	Total	**9.3**

Total HAP Emissions

CAAA HAP	PE HAP Liquid Coatings (lb/year)	PE HAP Thermal Oxidizer (lb/year)	Total PE HAP (lb/year)
Acetaldehyde	0	0	0
Benzene	0	0	0
Ethyl Benzene	884	0	884
Formaldehyde	68	9	77
Xylene	3,807	0	3,807
		Total	**4,768**

As demonstrated in the above table, the potential to emit of each single HAP is below the single-HAP threshold of 10 tons/yr and the combined potential to emit of all HAPS is below the combined-HAP threshold of 25 tons/yr. Therefore, the facility is not a major HAP source.

APPENDIX D
Risk Management Review Results

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	James Harader – Permit Services
From:	Cheryl Lawler – Technical Services
Date:	July 26, 2017
Facility Name:	Silgan Containers
Location:	567 Riverside Drive, Modesto
Application #(s):	N-1719-10-0 & 11-0
Project #:	N-1161738

A. RMR SUMMARY

RMR Summary						
Units	**Prioritization Score**	**Acute Hazard Index**	**Chronic Hazard Index**	**Maximum Individual Cancer Risk**	**T-BACT Required?**	**Special Permit Requirements?**
Units 10-0 & 11-0 (Side Seam Strip Coating Lines)	34.1	0.00	0.00	1.37E-07	No	Yes
Project Totals	>1	0.00	0.00	1.37E-07		
Facility Totals	>1	0.00	0.00	1.37E-07		

Proposed Permit Requirements

Units 10-0 & 11-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.

B. RMR REPORT

I. Project Description

Technical Services received a request on July 11, 2017, to perform a Risk Management Review for the installation of an additional two side seam stripe coating lines. The lines will be served by the existing shared thermal oxidizer.

II. Analysis

Toxic emissions for this project were calculated after reviewing a SDS provided by the facility for the coating that's used to determine any Toxic Air Contaminants (TACs). Emission rates were then 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 project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization

Guidelines. The prioritization score for this 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 for the review:

Analysis Parameters Units 10-0 & 11-0			
Source Type	Point	**Location Type**	Urban
Stack Height (m)	6.1	**Closest Receptor (m)**	61
Stack Diameter (m)	0.76	**Type of Receptor**	Business
Stack Exit Velocity (m/s)	10.35	**VOC Emission Rates (lbs)**	2.25 hr 32,600 yr[1]
Stack Exit Temp. (°K)	700		

[1]The yearly VOC emission rate of 32,600 lbs is in any rolling 12-month period.

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 the proposed units.

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 Form & Attachments
B. TACs Wt. % Calculations
C. Convert
D. Prioritization
E. Facility Summary

APPENDIX E
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.

For units covered by a specific limiting condition,

$QNEC_{SLC} = PE2_{SLC} - PE1_{SLC}$, where:

NEC_{SLC} = Quarterly Net Emissions Change for units covered by the SLC.
$PE2_{SLC}$ = PE2 for all units covered by the SLC.
$PE1_{SLC}$ = PE1 for all units covered by the SLC.

Since the facility SLC is not changing, the quarterly net emission change is equal to zero.