San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAR 0 1 2010

Lyle Ens
TKV Containers, Inc.
8906 W. Herndon Avenue
Fresno, CA 93723

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: C-1074595

Dear Mr. Ens:

Enclosed for your review and comment is the District's analysis of TKV Containers, Inc.'s application for Emission Reduction Credits (ERCs) resulting from the shutdown of an entire polystyrene foam box manufacturing facility, located at 1420 N. Maple Avenue in Fresno, CA. The quantity of ERC's proposed for banking is 27,722 lb-VOC/year, 177 lb-NOx/year, 46 lb-CO/year, 110 lb-PM10/year and 62 lb-SOx/year.

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Dustin Brown of Permit Services at (559) 230-5932.

Sincerely,

David Warner
Director of Permit Services

DW:ddb

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
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Southern Region
34946 Flyover Court
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www.valleyair.org www.healthyairliving.com

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

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MAR 0 1 2010

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

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: C-1074595

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of TKV Containers, Inc.'s application for Emission Reduction Credits (ERCs) resulting from the shutdown of an entire polystyrene foam box manufacturing facility, located at 1420 N. Maple Avenue in Fresno, CA. The quantity of ERC's proposed for banking is 27,722 lb-VOC/year, 177 lb-NOx/year, 46 lb-CO/year, 110 lb-PM10/year and 62 lb-SOx/year.

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MAR 0 1 2010

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

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: C-1074595

Dear Mr. Rios:

Enclosed for your review and comment is the District's analysis of TKV Containers, Inc.'s application for Emission Reduction Credits (ERCs) resulting from the shutdown of an entire polystyrene foam box manufacturing facility, located at 1420 N. Maple Avenue in Fresno, CA. The quantity of ERC's proposed for banking is 27,722 lb-VOC/year, 177 lb-NOx/year, 46 lb-CO/year, 110 lb-PM10/year and 62 lb-SOx/year.

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

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Sincerely,

David Warner
Director of Permit Services

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Fresno Bee
Fresno Bee

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
EMISSION REDUCTION CREDITS**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Emission Reduction Credits to TKV Containers, Inc. for the shutdown of an entire polystyrene foam box manufacturing facility, at 1420 N. Maple Avenue in Fresno, CA. The quantity of ERCs proposed for banking is 27,722 lb-VOC/year, 177 lb-NOx/year, 46 lb-CO/year, 110 lb-PM10/year and 62 lb-SOx/year.

The analysis of the regulatory basis for this proposed action, Project #C-1074595, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 1990 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

Emission Reduction Credit Banking Application Review

Shutdown of Polystyrene Foam Box Manufacturing Facility

Processing Engineer: Dustin Brown
Lead Engineer: Joven Refuerzo
Date: February 25, 2010

Facility Name:	TKV Containers, Inc.
Mailing Address:	8906 W. Herndon Avenue Fresno, CA 93723
Contact Name:	Lyle Ens – Chief Financial Officer
Phone:	(559) 289-3143
E-mail:	Lyle@Cal-ByProducts.com
Facility Location:	1420 N. Maple Avenue Fresno, CA 93702
Deemed Complete Date:	September 18, 2009
Project Number:	C-1074595

I. Summary:

TKV Containers, Inc. operated a polystyrene foam box manufacturing facility in Fresno, CA. The facility ceased production operations in September of 2007 and began disassembling and removing the equipment associated with the polystyrene (EPS) mold operation (PTO C-2929-1) and the EPS recycling operation (PTO C-2929-2), which were both served by a 10.6 MMBtu/hr boiler/oxidizer steam system (B.O.S.S.), from the site in November of 2007. Therefore, the facility is applying for NO_X, CO, VOC, PM_{10} and SO_X emissions reduction credits for the shutdown of their entire stationary source.

TKV Containers, Inc. has also surrendered Permits to Operate (PTO's) C-2929-1-2 and '-2-0. A copy of the surrendered PTO's is included in Attachment A of this document.

Pursuant to information provided by the applicant, TKV Containers, Inc., a California corporation, has gone through dissolution and no longer exists. As of November 18, 2008, all of the remaining assets associated with TKV Containers, Inc. were transferred and assigned to Martin Anderson, the sole shareholder of the corporation. Therefore, the ERC credits and certificates issued as a part of this project will be issued in the name of Martin Anderson.

Based on the historical operating data prior to the shutdown, the amounts of bankable Actual Emission Reductions (AER's) for NO_X, CO, VOC, PM_{10} and SO_X emissions are as shown in the table below. These values are calculated in Section V of this document:

Summary of ERC Amounts				
Pollutant	**1st Qtr ERC's (lb/qtr)**	**2nd Qtr ERC's (lb/qtr)**	**3rd Qtr ERC's (lb/qtr)**	**4th Qtr ERC's (lb/qtr)**
VOC	8,699	12,348	6,585	90
NO_X	52	77	45	3
CO	13	20	12	1
PM_{10}	32	48	28	2
SO_X	18	27	16	1

II. Applicable Rules:

Rule 2201 - New and Modified Stationary Source Review Rule (9/21/06)
Rule 2301 - Emission Reduction Credit Banking (12/17/92)
Rule 4201 - Particulate Matter Concentration (12/17/92)
Rule 4301 - Fuel Burning Equipment (12/17/92)
Rule 4306 - Boilers, Steam Generators and Process Heaters – Phase 3 (10/16/08)
Rule 4320 - Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4682 - Polystyrene, Polyethylene and Polypropylene Products Manufacturing (9/20/07)
Rule 4801 - Sulfur Compounds (12/17/92)

III. Location of Reductions:

Physical Location of Equipment: 1420 N. Maple Avenue in Fresno, CA.

IV. Method of Generating Reductions:

The AER's were generated by shutting down the polystyrene foam box production operation and the polystyrene foam box recycling operation which were both served by a 10.6 MMBtu/hr boiler/oxidizer system (B.O.S.S), as authorized by PTO's C-2929-1-2 and C-2929-2-0. The equipment description for each unit is as follows:

C-2929-1-2:

EPS MOLD OPERATION SERVED BY 10.6 MMBTU/HR BOILER-OXIDIZER STEAM SYSTEM (B.O.S.S.) EQUIPPED WITH A LOW-NOX BURNER & FGR SYSTEM (COMMON TO C-2929-2)

C-2929-2-0:

EPS RECYCLING OPERATION INCLUDING REGRINDER AND GRINDER MILL, CONTROLLED BY CK TEKNIK MODEL 36.60 CYCLONE, & TWO CLOTH STORAGE SILOS CONTROLLED BY FABRIC FILTER DUST COLLECTOR, VENTED TO 18 MMBTU/HR BOILER OXIDIZER STEAM SYSTEM (COMMON TO C-2929-1)[1]

V. Calculations:

A. Assumptions

- The boiler/oxidizer system was only fired on PUC-regulated natural gas (current permit condition)
- VOC was the only pollutant emitted from the expanded polystyrene foam processing operations
- NO_X, CO, PM_{10} and SO_X emissions were generated from the combustion of natural gas in the boiler/oxidizer system
- VOC emissions generated from the combustion of natural gas in the boiler/oxidizer system will be accounted for in the VOC calculations for the expanded polystyrene foam processing operations
- Natural gas higher heating value is 1,000 Btu/scf (typical District value)
- For natural gas, 10 therms = 1 MMBtu of heat output (conversion factor received from Pacific Gas and Electric Company)

B. Emission Factors (EF's)

C-2929-1 and '-2 (boiler/oxidizer system):

NO_X and CO Emissions:

This boiler/oxidizer system was source tested for NO_X and CO emissions two times during the baseline period, October 6, 2004 and August 17, 2005 (boiler/oxidizer system source test result summary pages included in Attachment G). Therefore, the historical actual NO_X and CO emissions during the baseline period will be calculated utilizing the lower of either the permitted emission factor or the average of the emission factors measured during the source tests.

[1] The boiler/oxidizer system originally was permitted with a maximum rating of 18 MMBtu/hr. However, in 2004, under project 1040650, TKV Containers applied for a modification to PTO C-2929-1 to de-rate the burner rating on the boiler/oxidizer system from 18 MMBtu/hr to 10.6 MMBtu/hr. However, even though the boiler oxidizer system serves units C-2929-1 and '-2, PTO C-2929-2 was not modified at that time to reflect the new burner rating. Therefore, even though the permit for unit '-2 lists a maximum burner rating of 18 MMBtu/hr for the boiler oxidizer system, it will be assumed that the maximum burner rating is 10.6 MMBtu/hr, as indicated on PTO C-2929-1.

Source Test	NO_X Source Test EF		NO_X Permit EF	HAE EF (lb/MMBtu)
	ppmvd @ 3% O_2	lb/MMBtu	lb/MMBtu	
October 6, 2004	8.7	0.011	0.018	0.011
August 17, 2005	4.0	0.005		0.005
Average	6.35	0.008	0.018	0.008

Source Test	CO Source Test EF		CO Permit EF	HAE EF (lb/MMBtu)
	ppmvd @ 3% O_2	lb/MMBtu	ppmvd @ 3% O_2	
October 6, 2004	1.5	0.0011	100	0.0011
August 17, 2005	4.2	0.0031		0.0031
Average	2.85	0.0021	100	0.0021

PM_{10} Emissions:

This boiler/oxidizer system was never source tested for PM_{10} emissions. Therefore, the historical actual PM_{10} emissions during the baseline period will be calculated utilizing the lower of either the permitted emission factor or the emission factor for natural gas combustion from AP-42, Tables 1.4-1 and 1.4-2 (7/98), as presented in the table below.

Pollutant	Permitted EF (lb/MMBtu)	AP-42 EF (lb/MMBtu)	HAE EF (lb/MMBtu)
PM_{10}	0.005	0.0076	0.005

SO_X Emissions:

This boiler/oxidizer system was never source tested for SO_X emissions. Therefore, the historical actual SO_X emissions during the baseline period will be calculated utilizing the lower of, either the permitted SO_X EF, or the SO_X EF for natural gas combustion from District Policy APR 1720, *Generally Accepted SO_X Emission Factor for Combustion of PUC-Quality Natural Gas*, as presented in the table below.

Pollutant	Permitted EF (lb/MMBtu)	District Policy APR 1720 (lb/MMBtu)	HAE EF (lb/MMBtu)
SO_X	0.00285	0.00285	0.00285

C-2929-1 and '-2 (Polystyrene Processing Operations):

Uncontrolled VOC Emissions:

The VOC emission points from the polystyrene processing operations at this facility can be separated in to three parts: pre-expansion, pre-puff aging, and expansion molding. TKV Containers performed various source tests, dating from May 21, 2001 through January 19, 2003, on the amount of VOC retained in the polystyrene products throughout each phase of their foam box production process (VOC retention source test result summaries included in Attachment E). The results of those source tests showed that the average VOC content retained in the polystyrene products at each phase of the polystyrene production process was as follows:

Process	VOC Content (%, by weight)	VOC Lost (%, by weight)
Raw Material	3.8	N/A
After Pre-Expansion	3.4	0.4
After Pre-Puff Aging	2.1	1.3
After Molding	2.1	0.0

VOC Capture Efficiency:

Each step of the polystyrene processing operations was served by a collection system that captured a majority of the VOC's emitted and sent them to the boiler/oxidizer control system. TKV Containers never performed, and was never required to perform, a source test on the VOC capture efficiency on the collection system serving these polystyrene processing operations. The current permit for the EPS mold operation limits the overall VOC capture efficiency of the collection system to a minimum of 90%[(1)]. However, the application review performed for project C-960492 indicates that the collection system manufacturer specified that the overall VOC capture efficiency for this system would be a minimum of 91.9% (VOC capture efficiency documentation included in Attachment F). Therefore, in accordance with the application review performed for project C-960492, the VOC capture efficiency of each processing step will be as follows:

[(1)] Minimum capture efficiency taken from condition 15 on PTO C-2929-1-2.

Process	Manufacturer VOC Capture Efficiency (%)	Permit VOC Capture Efficiency (%)	HAE VOC Capture Efficiency (%)
Pre-Expansion	98	N/A	98
Pre-Puff Aging	98	N/A	98
Molding	70	N/A	70
Overall Total	91.9	90	91.9

VOC Destruction Efficiency:

TKV Containers performed three source tests during the baseline period on the VOC destruction efficiency of the boiler oxidizer system (boiler/oxidizer system source test result summary pages included in Attachment G). Therefore, the historical actual VOC emissions during the baseline period will be calculated utilizing the lower of either the permitted VOC destruction efficiency or the average destruction efficiency measured during the three source tests.

Source Test	Source Test VOC Destruction Efficiency (%)	Permit VOC Destruction Efficiency (%)	HAE VOC Destruction Efficiency (%)
October 6, 2004	99.8	99	99.8
August 17, 2005	99.8[(3)]	99	99.8
September 7, 2006	99.8[(3)]	99	99.8
Average	99.8	99	99.8

Captured and Controlled VOC Emissions:

The captured and controlled VOC emission factor from each part of TKV Containers polystyrene production processes can be determined using the uncontrolled VOC emission rate, the capture efficiency of the collection system and the VOC destruction efficiency of the boiler/oxidizer system.

VOC EF = Uncontrolled VOC's (lb-VOC/lb polystyrene processed) x Capture Efficiency (%) x (1 – Control Efficiency) (%)

[(3)] The outlet VOC emission values measured during both of these source tests was below the detection limit of the source testing company's equipment. Therefore, the destruction efficiency will be established assuming the outlet VOC emission rate was at or near the detection limit of 0.004 lb-VOC/hour.

Process	Uncontrolled VOC's (lb/lb-processed)	Capture Efficiency (%)	Control Efficiency (%)	VOC EF (lb/lb processed)
Pre-Expansion	0.004	98	99.8	0.00000784
Pre-Puff Aging	0.013	98	99.8	0.00002548
Molding	0.0	70	99.8	0.0
			Total Captured and Controlled VOC EF:	0.0000332

Uncaptured VOC Emissions:

The uncaptured VOC emission factor from each part of TKV Containers polystyrene production processes can be determined using the uncontrolled VOC emission rate and the capture efficiency of the collection system.

VOC EF = Uncontrolled VOC's (lb-VOC/lb polystyrene processed) x Un-Captured Efficiency (%)

Process	Uncontrolled VOC's (lb/lb-processed)	Un-Captured Efficiency (%)	VOC EF (lb/lb processed)
Pre-Expansion	0.004	2	0.00008
Pre-Puff Aging	0.013	2	0.00026
Molding	0.0	30	0.0
		Total Un-Captured VOC EF:	0.00034

Overall VOC Emissions:

The total overall VOC emission factor from TKV Containers polystyrene processing operations can be determined by taking the sum of the captured and controlled and the uncaptured VOC emission factors listed above.

Overall VOC HAE EF = Total Captured and Controlled EF (lb/lb-polystyrene processed) + Total Un-Captured VOC EF (lb/lb-polystyrene processed)
Overall VOC HAE EF = 0.0000332 lb/lb-polystyrene processed + 0.00034 lb/lb-polystyrene processed

Overall VOC HAE EF = 0.0003732 lb/lb-polystyrene processed

C-2929-1 and '-2 (Finished Product Storage):

The permits for TKV Containers did not address the VOC emissions from the manufactured polystyrene foam boxes during the time that they were sitting on-site, in storage, prior to being shipped or sold. In addition, upon review of the information on file, it does not appear that the District ever accounted for any of the VOC emissions from finished products beings stored on-site.

Based on information that was available when the facility was originally permitted in 1996, the District considered polystyrene foam product storage warehouses to be emissions sources of "minor significance" and exempt from permitting requirements in accordance with District Rule 2020, Exemptions, Sections 6.19 and 3.7 (sources with emissions of less than 2.0 pounds per day).

On November 15, 1999, the District received information and comments from the Environmental Protection Agency (EPA) regarding the processing of a project for a similar polystyrene foam production facility, Pactiv Corporation, in Fresno, CA. Based on the information and EPA's comments for that project, it was determined that the foam product storage warehouses were a significant source of VOC emissions and should be subject to District permitting requirements. Therefore, it was determined that all foam finished product storage warehouses lost their permit exemption based on the date of EPA's comments. Subsequently, when the following facilities applied for Authority to Construct (ATC) or Title V permit modifications after that date, permits were issued for the finished product storage areas/warehouses: Pactiv Corporation Fresno (FID C-36) on 8/6/2002; Pactiv Corporation Visalia, now Pregis Innovative Packaging (FID S-334) on December 8, 2003; and Dart Container (FID N-257) on September 10, 2004.

TKV Containers did not have a Title V permit and did not apply for any ATC modifications for their polystyrene foam processing operations between November 15, 1999 and the date that their facility operations shutdown in December of 2007. Therefore, they never were required to apply for, or obtain, a permit for their polystyrene foam finished product storage area/warehouse.

In addition, the latest revisions to District Rule 4682, *Polystyrene, Polyethylene and Polypropylene Products Manufacturing*, dated September 20, 2007, include requirements for the VOC's emitted, or off-gassed, from manufactured foam products that are stored on-site for any period of time prior to being shipped or sold (reference Sections 3.10 and 5.3.3).

Therefore, even though the last versions of their permits and the information in the facility files did not account for the VOC emissions from the finished polystyrene products being stored by TKV Containers prior to being shipped or sold, those VOC emissions will be included as a part of this ERC project.

Based on polystyrene VOC retention source testing data provided by the applicant for this project, the average VOC content remaining in the polystyrene foam boxes once all of the processing steps have been completed, was 2.1%, by weight (VOC retention source test result summaries included in Attachment E). Pursuant to additional information provided by the applicant, each polystyrene foam box that was manufactured at this facility was stored on-site for a minimum of 60 days (TKV Container product storage records included in Attachment H). After sitting in storage for 60 days, the polystyrene VOC retention source testing data showed that the VOC content remaining in the boxes had been reduced to 0.8%, by weight. Therefore, the amount of VOC that was lost during the storage of the finished product operations was 1.3%, by weight.

The on-site storage area at this facility was not served by any control devices. Therefore, using the information provided above, the VOC emission factor, per pound of polystyrene processed, can be calculated as follows:

VOC $EF_{Storage}$ = 0.013 lb-VOC/lb of polystyrene processed

C. Baseline Period Determination and Data

Baseline Period Determination:

In accordance with District Rule 2201, Section 3.8, the baseline period is the two consecutive years of operation immediately prior to the submission of the complete application; ***or*** another period of at least two consecutive years within the five years immediately prior to the submission of the complete application if it is more representative of Normal Source Operations (NSO).

The primary purpose of this facility was to manufacture plastic foam boxes out of raw expandable polystyrene pellets. The facility has furnished polystyrene resin consumption records from their facility dating from January 2003 through December 2007. The baseline period has been determined to be the **five year period dating from January 2003 to December 2007** (see **Attachment C** for the Baseline Period Determination Calculations).

Baseline Period Data:

Expanded Polystyrene Processing:

Year	Quarter 1 (lb-resin/qtr)	Quarter 2 (lb-resin/qtr)	Quarter 3 (lb-resin/qtr)	Quarter 4 (lb-resin/qtr)
2003	999,149	1,111,963	617,049	0
2004	963,934	1,028,953	704,539	37,479
2005	651,066	1,186,719	538,104	0
2006	999,754	1,069,337	740,086	0
2007	0	732,641	136,129	0

Boiler/Oxidizer System Natural Gas Usage:

Year	Quarter 1 (therms/qtr)	Quarter 2 (therms/qtr)	Quarter 3 (therms/qtr)	Quarter 4 (therms/qtr)
2003	116,864	119,882	72,540	172
2004	97,102	111,501	72,319	15,978
2005	61,293	119,017	63,438	0
2006	85,710	106,903	78,690	312
2007	254	76,942	22,230	0

D. Historical Actual Emissions (HAE's)

C-2929-1 and '-2 (boiler/oxidizer system):

NO_X Emissions:

As shown above, a NO_X emission factor of 0.008 lb/MMBtu (6.35 ppmvd @ 3% O_2) will be used to calculate the HAE's from the shutdown of this boiler/oxidizer. Therefore, the historical actual NO_X emissions can be estimated using this emission factor and the fuel usage rates listed above.

NO_X HAE = 0.008 lb/MMBtu x NG Usage (therms/qtr) x 1 MMBtu / 10 therms

NO_X HAE				
Year	**Q1 (lb/quarter)**	**Q2 (lb/quarter)**	**Q3 (lb/quarter)**	**Q4 (lb/quarter)**
2003	93	96	58	0
2004	78	89	58	13
2005	49	95	51	0
2006	69	86	63	0
2007	0	62	18	0
Average	**58**	**86**	**50**	**3**

CO Emissions:

As shown above, a CO emission factor of 0.0021 lb/MMBtu (2.85 ppmvd @ 3% O_2) will be used to calculate the HAE's from the shutdown of this boiler/oxidizer system. Therefore, the historical actual CO emissions can be estimated using this emission factor and the fuel usage rates listed above.

CO HAE = 0.0021 lb/MMBtu x NG Usage (therms/qtr) x 1 MMBtu / 10 therms

CO HAE				
Year	**Q1 (lb/quarter)**	**Q2 (lb/quarter)**	**Q3 (lb/quarter)**	**Q4 (lb/quarter)**
2003	25	25	15	0
2004	20	23	15	3
2005	13	25	13	0
2006	18	22	17	0
2007	0	16	5	0
Average	**15**	**22**	**13**	**1**

PM_{10} Emissions:

As shown above, a PM_{10} emission factor of 0.005 lb/MMBtu will be used to calculate the HAE's from the shutdown of this boiler. Therefore, the historical actual PM_{10} emissions can be estimated using this emission factor and the fuel usage rates listed above.

PM_{10} HAE = 0.005 lb/MMBtu x NG Usage (therms/qtr) x 1 MMBtu / 10 therms

PM_{10} HAE				
Year	**Q1 (lb/quarter)**	**Q2 (lb/quarter)**	**Q3 (lb/quarter)**	**Q4 (lb/quarter)**
2003	58	60	36	0
2004	49	56	36	8
2005	31	60	32	0
2006	43	53	39	0
2007	0	38	11	0
Average	**36**	**53**	**31**	**2**

SO_X Emissions:

As shown above, a SO_X emission factor of 0.00285 lb/MMBtu will be used to calculate the HAE's from the shutdown of this boiler. Therefore, the historical actual SO_X emissions can be estimated using this emission factor and the fuel usage rates listed above.

SO_X HAE = 0.0285 lb/MMBtu x NG Usage (therms/qtr) x 1 MMBtu / 10 therms

SO_X HAE				
Year	**Q1 (lb/quarter)**	**Q2 (lb/quarter)**	**Q3 (lb/quarter)**	**Q4 (lb/quarter)**
2003	33	34	21	0
2004	28	32	21	5
2005	17	34	18	0
2006	24	30	22	0
2007	0	22	6	0
Average	**20**	**30**	**18**	**1**

C-2929-1 and '-2 (Polystyrene Processing Operations):

Overall VOC Emissions:

As shown above, a VOC emission factor of 0.0003732 lb/lb-polystyrene processed will be used to calculate the HAE's from the shutdown of this expanded polystyrene foam box processing operations. Therefore, the historical actual VOC emissions can be determined using this emission factor and the total facility polystyrene processing records listed above.

VOC HAE = EF (lb-VOC/lb-polystyrene processed) x Polystyrene Processed (lb/qtr)

VOC HAE				
Year	**Q1 (lb/quarter)**	**Q2 (lb/quarter)**	**Q3 (lb/quarter)**	**Q4 (lb/quarter)**
2003	373	415	230	0
2004	360	384	263	14
2005	243	443	201	0
2006	373	399	276	0
2007	0	273	51	0
Average	**270**	**383**	**204**	**3**

C-2929-1 and '-2 (Finished Product Storage):

VOC Emissions:

As shown above, a VOC emission factor of 0.013 lb/lb-polystyrene processed will be used to calculate the HAE's from the shutdown of this expanded polystyrene foam box on-site storage operation. Therefore, the historical actual VOC emissions can be determined using this emission factor and the total facility polystyrene processing records listed above.

VOC HAE = EF (lb-VOC/lb-polystyrene processed) x Polystyrene Processed (lb/qtr)

VOC HAE				
Year	**Q1 (lb/quarter)**	**Q2 (lb/quarter)**	**Q3 (lb//quarter)**	**Q4 (lb/quarter)**
2003	12,989	14,456	8,022	0
2004	12,531	13,376	9,159	487
2005	8,464	15,427	6,995	0
2006	12,997	13,901	9,621	0
2007	0	9,524	1,770	0
Average	**9,396**	**13,337**	**7,113**	**97**

E. Adjustments to HAE's

Pursuant to Section 3.22 of Rule 2201, Historical Actual Emissions must be discounted for any emissions reduction which, is:

- required or encumbered by any laws, rules, regulations, agreements, orders, or
- attributed to a control measure noticed for workshop, or proposed or contained in a State Implementation Plan, or
- proposed in the District Air Quality Plan for attaining the annual reductions required by the California Clean Air Act.

Adjustment for Rule 2201 – New and Modified Stationary Source Review Rule:

Section 2.0 states that this rule shall apply to all new stationary sources and all modifications to existing stationary sources which are subject to the District permit requirements and after construction emit, or may emit, one or more affected pollutants.

C-2929-1 and '-2 (Polystyrene Processing Operations):

As discussed above, TKV Containers is proposing to receive emission reduction credits for the shutdown of the polystyrene processing operations at this location. This facility is not a new stationary source and the shutdown of this operation does not meet the definition of a modification. Therefore, Rule 2201 does not apply at this time.

This operation was previously subject to District Rule 2201 when the original permits were issued in 1996. Based on the actual production records provided by TKV containers, this operation demonstrated compliance with all of the Rule 2201 requirements (best available control technology (BACT), daily emission limits, etc.). Therefore, no adjustment to the calculated HAE's above is necessary.

C-2929-1 and '-2 (Finished Product Storage):

As discussed above, TKV Containers is proposing to receive emission reduction credits for the shutdown of the polystyrene processing operations at this location. This facility is not a new stationary source and the shutdown of this operation does not meet the definition of a modification. Therefore, Rule 2201 does not apply at this time.

The finished product storage area at this facility was not previously permitted and was not previously subject to District Rule 2201 requirements Therefore, the HAE's may need to be discounted for any District Rule 2201 requirements that may have been applicable if the operation had been permitted in 1996 along with the rest of the TKV Containers equipment.

However, based on information that was available when the facility was originally permitted in 1996, the District considered polystyrene foam product storage warehouses to be emissions sources of "minor significance" and exempt from permitting requirements in accordance with District Rule 2020, Exemptions, Sections 6.19 and 3.7 (sources with emissions of less than 2.0 pounds per day).

On November 15, 1999, the District received information and comments from the Environmental Protection Agency (EPA) regarding the processing of a project for a similar polystyrene foam production facility, Pactiv Corporation, in Fresno, CA. Based on the information and EPA's comments for that project, it was determined that the polystyrene foam product storage warehouse had VOC emissions greater than 2.0 pounds per day and should be subject to District permitting requirements. Therefore, it was determined that all polystyrene foam finished product storage warehouses lost their permit exemption based on the date of EPA's comments. Subsequently, when the following facilities applied for ATC or Title V permit modifications after that date, permits were issued for the finished product storage areas/warehouses: Pactiv Corporation Fresno (FID C-36) on 8/6/2002; Pactiv Corporation Visalia, now Pregis Innovative Packaging (FID S-334) on December 8, 2003; and Dart Container (FID N-257) on September 10, 2004.

TKV Containers did not have a Title V permit and did not apply for any ATC modifications for their polystyrene foam processing operations between November 15, 1999 and the date that their facility operations shutdown in December of 2007. Therefore, they never were required to apply for, or obtain, a permit for their polystyrene foam finished product storage are/warehouse.

Per District Rule 2020, Section 9, units that were previously exempt from permits requirements, which have now become subject to District Rule 2010, shall not be subject to District Rule 2201 (New and Modified Stationary Source Review Rule), until such time that the unit is modified. At the time TKV Containers installed their original equipment, their polystyrene foam finished product storage warehouse was exempt from permitting requirements. After November 15, 1999, it was determined that these types of operations had lost their permit exemption had become subject to District Rule 2010. Therefore, if TKV Containers would have applied for, and received, a PTO for their polystyrene foam finished product storage area/warehouse, that project would not have been subject to District Rule 2201. TKV Containers never performed any modifications to their facility or the polystyrene foam finished product storage warehouse. Therefore, this operation would never have been subject to the requirements of District Rule 2201 and no adjustments to the calculated HAE's are necessary.

Adjustment for Rule 4201 – Particulate Matter Concentration:

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

F-Factor for NG:	8,578 dscf/MMBtu at 60 °F
PM_{10} Emission Factor:	0.0076 lb-PM10/MMBtu
Percentage of PM as PM_{10} in Exhaust:	100%
Exhaust Oxygen (O_2) Concentration:	3%

Excess Air Correction to F Factor = $\dfrac{20.9}{(20.9 - 3)} = 1.17$

$$GL = \left(\frac{0.0076\ lb - PM}{MMBtu} \times \frac{7{,}000\ grain}{lb - PM} \right) / \left(\frac{8{,}578\ ft^3}{MMBtu} \times 1.17 \right)$$

$$GL = 0.0053\ grain/dscf < 0.1\ grain/dscf$$

Therefore the emission factor used to calculate the actual PM emission concentration from this boiler/oxidizer system meets the requirements for this rule and no adjustment is necessary.

Adjustment for Rule 4301 – Fuel Burning Equipment:

This rule specifies maximum emission rates in lb/hr for SO_2, NO_2, and combustion contaminants (defined as total PM in Rule 1020).

District Rule 4301 Limits			
Pollutant	**NO_2**	**Total PM**	**SO_2**
Rule Limit (lb/hr)	140	10	200
Boiler/Oxidizer System (lb/hr)	0.085	0.081	0.03

Therefore the emission factors used to calculate the historical actual emissions from this boiler/oxidizer system meets the requirements for this rule and no adjustment is necessary.

Adjustment for Rule 4306 – Boilers, Steam Generators and Process Heaters – Phase 3:

District Rule 4306, Section 5.1 requires a 10 MMBtu/hr natural gas fired boiler to comply with the following limits: NO_X: 15 ppmv @ 3% O_2; and CO: 400 ppmv @ 3% O_2. As shown above, the HAE's for the boiler/oxidizer system were as follows: NO_X: 6.35 ppmv @ 3% O_2; and CO: 2.85 ppmv @ 3% O_2. Therefore the emission factors used to calculate the actual emissions from this boiler/oxidizer system meets the requirements for this rule and no adjustment is necessary.

Adjustment for Rule 4320 – Advanced Emission Reduction Options for Boilers, Steam Generators and Process Heaters Greater than 5.0 MMBtu/hr:

District Rule 4320, Section 5.2 requires a 10 MMBtu/hr natural gas fired boiler to comply with the following limits to have the following emissions limits: NO_X: 9 ppmv @ 3% O_2; and CO: 400 ppmv @ 3% O_2. In addition, Section 5.4 states that in to limit particulate matter emissions, all boilers shall fire exclusively on PUC-quality natural gas. As shown above, the HAE's for the boiler/oxidizer system were determined using the following emission concentrations: NO_X: 6.35 ppmv @ 3% O_2; and CO: 2.85 ppmv @ 3% O_2. In addition, this unit was exclusively fired on PUC-regulated natural gas. Therefore, the fuel used in this boiler and the emission factors used to calculate the historical actual emissions from this boiler/oxidizer system meet the requirements for this rule and no adjustment is necessary.

Adjustment for Rule 4682 – Polystyrene, Polyethylene and Polypropylene Products Manufacturing:

Section 5.1 states that no person shall operate controllable VOC emission sources at a polystyrene foam, polyethylene, or polypropylene manufacturing or processing operation unless one of the following VOC emission reduction methods is provided:

5.1.1 A blowing agent other than a VOC or trichlorofluoromethane (CFC-11) or dichlorodifluoromethane (CFC-12) is exclusively used; or

5.1.2 A system designed to achieve at least 90 percent VOC capture efficiency and a thermal oxidizer which abates captured VOC emissions by at least 95 percent by weight; or

5.1.3 VOC emissions are controlled by a method which achieves an emission reduction equivalent to Section 5.1.2 and which does not include the use of trichlorofluoromethane (CFC-11) or dichlorodifluoromethane (CFC-12), and is approved by the APCO.

Per Section 3.5, controllable VOC emission sources are defined as fluff silos or bins, reclaim extruders, condenser devolatizer, styrene recovery unit vents and reclaim die hood exhausts in which materials manufactured with a VOC blowing agent are processed, or are stored, and from which emissions are vented to the atmosphere. TKV Containers operated their polystyrene processing operations with an overall VOC capture efficiency of 91.9%. The boiler/oxidizer system destroys the captured VOC emissions with an efficiency of 99.8%.

Section 5.1 above is only applicable until September 10, 2010. On and after September 10, 2010, the requirements of Sections 5.3 become effective and replace the requirements of Section 5.1 above. Section 5.3 requires that the operator shall not conduct any manufacturing operations, unless one of the following emission reduction methods is met:

5.3.1 The operator demonstrates, to the satisfaction of the APCO, that the total product emissions do not exceed 2.4 pounds of VOC per 100 pounds of total material processed, calculated over a monthly period. The total product emissions include emissions from the manufacturing operation, after controls, plus the residual blowing agent in the finished product.

5.3.2 A blowing agent other than a VOC or trichlorofluoromethane (CFC -11) or dichlorodifluoromethane (CFC-12) is exclusively used.

5.3.3 An approved emission control system is installed and operating with manufacturing emissions vented only to the approved emission control system; and emissions from the final manufactured product are to be vented only to the approved emission control system for at least:

5.3.3.1 48 hours, in the case of expandable polystyrene molding operations that process more than 800,000 pounds per calendar year of raw material; or

5.3.3.2 24 hours, in the case of all other manufacturing operations.

5.3.3.3 The provisions of Sections 5.3.3.1 and 5.3.3.1 are not required for any facility that only manufactures polystyrene products and the highest concentration of the blowing agent in the product is 1.8 percent or less by weight, within 15 minutes after the completion of the final processing step, prior to any finished product storage. Verification of the concentration shall be demonstrated annually, pursuant to a protocol submitted to the District and subject to approval by the APCO.

5.3.4 The operator demonstrates to the satisfaction of the APCO that the manufacturing emissions are no greater than the facility emissions which would occur under Section 5.3.3, as calculated according to Section 5.5, and which does not include the use of trichlorofluoromethane (CFC -11) or dichlorodifluoromethane (CFC-12).

5.3.5 A control system that meets all of the following requirements shall be deemed as meeting the requirements of Section 5.3.4, unless the APCO determines that additional controls are required

5.3.5.1 The beads used in manufacturing have an annual-average VOC content of less than 4.2% per weight; and

5.3.5.2 The manufacturing emissions (not including finished product storage emissions) are controlled with an overall capture and control efficiency of at least 93% by weight.

As shown in the calculations section above, TKV Containers operated their polystyrene foam processing operations with VOC emissions of 1.34 lb-VOC/100 lb-polystyrene processed (equivalent to 0.0133732 lb-VOC/lb-polystyrene processed). This VOC emission rate did not include the VOC retained in the final shipped products. Based on the VOC retention testing the TKV Containers performed, the average VOC content of the finished products when they were shipped offsite was 0.8%, by weight. Therefore, an additional 0.008 lb-VOC/lb-polystyrene processed would need to be added to the emission rates listed above. The total VOC emission rate from TKV Conatiners polystyrene processing operations is 2.14 lb-VOC/100 lb-polystyrene processed.

Therefore, the emission factors used to calculate the historical actual emissions from TKV Containers polystyrene processing operations meet the requirements of both Sections 5.1 and 5.3 of this rule and no adjustment is necessary.

Adjustment for Rule 4801 - Sulfur Compounds:

District Rule 4801 requires that 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.

Using the ideal gas equation and the emission factors presented in Section VII, 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) = $\frac{10.73\,psi \cdot ft^3}{lb \cdot mol \cdot °R}$

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

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

Therefore, compliance with District Rule 4801 requirements is expected.

Total Adjusted Historical Actual Emissions

Based on the discussions here in Section V.E, there are no additional adjustments made to the emission factors. All necessary adjustments were made during the EF1 determinations in Section V.B of this document.

F. Actual Emissions Reductions (AER's):

The total AER's are shown in the table below:

Actual Emission Reductions (AER)				
Pollutant	1st Qtr. AER (lb/qtr)	2nd Qtr. AER (lb/qtr)	3rd Qtr. AER (lb/qtr)	4th Qtr. AER (lb/qtr)
VOC	9,666	13,720	7,317	100
NO_X	58	86	50	3
CO	15	22	13	1
PM_{10}	36	53	31	2
SO_X	20	30	18	1

G. Air Quality Improvement Deduction

In accordance with District Rule 2201, Sections 3.5 and 4.12.1, prior to banking, all AER's shall be discounted by 10 percent (10%) for Air Quality Improvement Deduction (AQID). The AQID for the AER's associated with this project are shown in the table below:

Air Quality Improvement Deduction (AQID)				
Pollutant	1st Qtr. AQID (lb/qtr)	2nd Qtr. AQID (lb/qtr)	3rd Qtr. AQID (lb/qtr)	4th Qtr. AQID (lb/qtr)
VOC	967	1,372	732	10
NO_X	6	9	5	0
CO	2	2	1	0
PM_{10}	4	5	3	0
SO_X	2	3	2	0

H. Bankable AER's

The bankable emission reduction credits (ERC's) are determined by subtraction of the AQID's from the AER's and are summarized in the table below.

Bankable Emissions Reductions Credits (ERC's)				
Pollutant	1st Qtr ERC's (lb/qtr)	2nd Qtr ERC's (lb/qtr)	3rd Qtr ERC's (lb/qtr)	4th Qtr ERC's (lb/qtr)
VOC	8,699	12,348	6,585	90
NO_X	52	77	45	3
CO	13	20	12	1
PM_{10}	32	48	28	2
SO_X	18	27	16	1

VI. Compliance:

To comply with the definition of Actual Emissions Reductions (Rule 2201, Section 3.2.1 and Rule 2301, Sections 3.6 and 4.2.1), the reductions must be:

A. Real

The emissions reductions were generated by the shutdown of TKV Containers polystyrene foam box manufacturing operations. The associated permits for these units have been surrendered to the District. The emissions reductions were calculated based on actual historic production data, manufacturer's specifications, and source test results. Therefore, the allowed reductions are real.

B. Enforceable

The PTO's for TKV Containers polystyrene foam box production operations at this facility have been surrendered to the District. Operation of any of the equipment without a valid permit would subject the permittee to enforcement actions. Therefore, the reductions are enforceable.

C. Quantifiable

The reductions are quantifiable since they were calculated from historic production and fuel use data, source testing data, established EF's, permitted limits, and methods according to District Rule 2201.

D. Permanent

The reductions will be permanent since the changes are major physical changes where the facility cannot revert back to the old technology. Further, any change in operation, including an increase in emissions, would require a permit from the District. If the facility were to propose an increase in emissions in the future, offsets (as ERCs) will be required for 100% of the potential increase.

E. Surplus

To be considered surplus, Actual Emission Reductions shall be in excess, at the time the application for an Emission Reduction Credit or an Authority to Construct authorizing such reductions is deemed complete, of any emissions reduction which:

- **Is required or encumbered by any laws, rules, regulations, agreements, orders, or**

  No laws, rules, regulations, agreements or orders were responsible for the surrendering the facility's permits or their subsequent application for Emission Reduction Credits (ERC's).

- **Is attributed to a control measure noticed for workshop, or proposed or contained in a State Implementation Plan, or**

  Currently there are no control measures noticed for workshop, or proposed or contained in a State Implementation Plan that require the reduction of the emissions at this facility.

- **Is proposed in the APCO's adopted air quality plan pursuant to the California Clean Air Act.**

  The shutdown of this polystyrene foam production facility is not proposed in the APCO's adopted air quality plan.

Shutdown of the polystyrene foam production facility was voluntary and not required by any law, rule, agreement, or regulation. The ERC's are not needed for their current or proposed operations. The ERC's are not in excess of TKV Containers permitted emission levels. Therefore, the reductions are surplus.

F. Not used for the approval of an Authority to Construct or as offsets

The ERC's generated by the proposed modifications were not used for the approval of any ATC or as offsets.

G. Timely submittal

Section 5.5 of Rule 2301 – Emissions Reduction Credit Banking (12/17/92) states that ERC certificate applications for reductions shall be submitted within 180 days after the emission reduction occurs. The ERC application was received on December 20, 2007. The facility permanently ceased operations at this location in September of 2007, began disassembling the equipment at the facility in November of 2007, and requested to surrender their PTO's in January 2008. Therefore, the application was submitted in a timely fashion.

VII. Recommendation:

Pending a successful Public Noticing period, issue Emission Reduction Credit certificates C-1051-1 (VOC), C-1051-2 (NO_X), C-1051-3 (CO), C-1051-4 (PM_{10}), and C-1051-5 (SO_X) to TKV Containers, Inc. in accordance with the amounts specified on the draft ERC certificates in Attachment I.

Attachments:

Attachment A, Surrendered PTO's C-2929-1-2 and '-2-0
Attachment B, ERC Application
Attachment C, Baseline Period Determination
Attachment D, TKV Containers Polystyrene Resin and Natural Gas Usage Records
Attachment E, Polystyrene VOC Retention Testing Result Summaries
Attachment F, VOC Collection System Capture Efficiency Justification
Attachment G, Boiler/Oxidizer System Source Test Result Summaries
Attachment H, Finished Product On-Site Storage Records
Attachment I, Draft ERC Certificates

Attachment A

Surrendered PTO's C-2929-1-2 and '-2-0

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-2929-1-2 **EXPIRATION DATE:** 12/31/2012

EQUIPMENT DESCRIPTION:
EPS MOLD OPERATION SERVED BY 10.6 MMBTU/HR BOILER-OXIDIZER STEAM SYSTEM (B.O.S.S.) EQUIPPED WITH A LOW-NOX BURNER & FGR SYSTEM (COMMON TO C-2929-2)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. The Expandable Polystyrene (EPS) Molding Operation includes 2 compressors, 1 air dryer, 8 blowers, 5 molding machines, 2 water circulating pumps, 1 grinder, 2 wrapping machines, 1 pre-expander, and 15 pre-expanded bead storage silos. [District Rule 2201]
5. The VOC Collection System shall include a vapor collection piping network serving pre-expander, pre-puff, molding machines and water drain vents, connected to the thermal oxidizer for destruction of collected VOC. [District Rule 2201]
6. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
7. The unit shall only be fired on PUC-regulated natural gas. [District Rule 2201]
8. Emissions rates from the natural gas-fired unit shall not exceed any of the following limits: 15 ppmv NOx @ 3% O2 or 0.018 lb-NOx/MMBtu, 0.00285 lb-SOx/MMBtu, 0.005 lb-PM10/MMBtu or 100 ppmv CO @ 3% O2. [District Rules 2201, 4305, and 4306]
9. VOC emissions from the thermal oxidizer outlet shall not exceed 6.2 lb/day. [District Rules 2201 and 4682]
10. Maximum pentane content of raw bead materials shall not exceed 4.5% by weight. [District Rules 2201 and 4682]
11. The raw bead process rate shall not exceed 19,750 lb/day. [District Rules 2201 and 4682]
12. Uncaptured VOC emissions shall not exceed 46.1 lb/day. [District Rules 2201 and 4682]
13. The thermal oxidizer shall be in operation whenever pre-expander, bead storage silos, or molding machines are in operation. [District Rules 2201 and 4682]
14. The thermal oxidizer firebox shall be equipped with operational temperature indicator and shall be maintained at not less than 1400 degrees Fahrenheit. [District Rules 2201 and 4682]
15. Minimum VOC (pentane) collection system efficiency shall be 90% of VOC's released during EPS system operation. [District Rules 2201 and 4682]
16. Minimum VOC (pentane) control efficiency across the thermal oxidizer shall be 99%. [District Rules 2201 and 4682]
17. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

18. This unit shall be tested for compliance with the NOx and CO emissions limits at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306]
19. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306]
20. 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]
21. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306]
22. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306]
23. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306]
24. This unit shall be tested for compliance with the VOC emissions limits at least once every twelve (12) months. [District Rule 2201]
25. VOC emissions from the thermal oxidizer outlet and the control efficiency of the thermal oxidizer shall be determined using EPA Methods 25 and 25A for measuring total gaseous organic concentrations at the inlet and outlet of the oxidizer. [District Rule 4682]
26. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306]
27. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
28. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e., the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306]
29. If the NOx and/or CO concentrations , corrected to 3% O2 as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate that a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been reestablished, and resume monitoring procedures. If the deviations are the result of a qualifying break down condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306]
30. The permittee shall maintain records of: (1) the date and time of NOx and CO measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records,and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306]
31. All portable analyzer emissions measurements shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five readings evenly spaced out over the 15-consecutive-minute period. [District Rules 4305 and 4306]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

32. The portable analyzer shall be calibrated as recommended by the manufacturer. All instrument calibration data shall be kept on file including the date of calibration. The calibration date shall not exceed 6 months prior to the date the stack concentrations are measured and recorded. [District Rules 4305 and 4306]
33. Concentration measurements shall not be taken until the sample acquisition probe has been exposed to the stack gas for at least 150% of the response time. [District Rules 4305 and 4306]
34. If water vapor is not removed prior to measurement, the absolute humidity of the gas stream must be determined so that the gas concentrations may be reported on a dry basis. [District Rules 4305 and 4306]
35. If water vapor creates an interference with the measurement of any component, then the water vapor must be removed from the gas stream prior to concentration measurements. [District Rules 4305 and 4306]
36. Records of daily raw bead process rate and pentane content shall be maintained and retained on the premises for at least five years and made available for District inspection upon request. [District Rules 2201 and 4682]
37. Daily records shall be maintained of the key system operating and maintenance procedures which will demonstrate continuous operation and compliance of the VOC Collection System and Thermal Oxidizer. Key system operating parameters are those necessary to ensure compliance with VOC emission requirements such as temperature, pressures, and flow rates. Such records shall be retained for five years and made available for inspection by the District upon request. [District Rule 4682]
38. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: C-2929-2-0 **EXPIRATION DATE:** 12/31/2012

EQUIPMENT DESCRIPTION:
EPS RECYCLING OPERATION INCLUDING REGRINDER AND GRINDER MILL, CONTROLLED BY CK TEKNIK MODEL 36.60 CYCLONE, & TWO CLOTH STORAGE SILOS CONTROLLED BY FABRIC FILTER DUST COLLECTOR, VENTED TO 18 MMBTU/HR BOILER OXIDIZER STEAM SYSTEM (COMMON TO C-2929-1)

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
5. Material removed from dust collector(s) shall be disposed of in a manner preventing entrainment into the atmosphere. [District Rule 2201]

Attachment B

ERC Application

JR

RECEIVED
DEC 20 2007
Permits Srvc
S.JVAPCD

San Joaquin Valley Air Pollution Control District

Application for

[ ] EMISSION REDUCTION CREDIT (ERC) [ ] CONSOLIDATION OF ERC CERTIFICATES

1. ERC TO BE ISSUED TO: TKV Containers, Inc. Facility ID: C-2929 (if known)

2. MAILING ADDRESS: Street/P.O. Box: 4582 E. Harvey Ave.
City: Fresno State: CA. Zip Code: 93702-1544

3. LOCATION OF REDUCTION:
Street: 1420 N. Maple
City: Fresno, Ca. 93702
____/4 SECTION ____ TOWNSHIP ____ RANGE ____

4. DATE OF REDUCTION:

5. PERMIT NO(S): EXISTING ERC NO(S):

6. METHOD RESULTING IN EMISSION REDUCTION:

[X] SHUTDOWN [ ] RETROFIT [ ] PROCESS CHANGE [ ] OTHER

DESCRIPTION:

(Use additional sheets if necessary)

7. REQUESTED ERCs (In Pounds Per Calendar Quarter):

	VOC	NOx	CO	PM10	SOx	OTHER
1ST QUARTER						
2ND QUARTER						
3RD QUARTER						
4TH QUARTER						

8. SIGNATURE OF APPLICANT: Lyle W. Ens

TYPE OR PRINT TITLE OF APPLICANT: C.F.O.

9. TYPE OR PRINT NAME OF APPLICANT: Lyle W. Ens

DATE: 12/4/07

TELEPHONE NO: (559) 251-5551

FOR APCD USE ONLY:

DATE STAMP
DEC 24 2007

FILING FEE RECEIVED: $ 650.00 / # 273000
DATE PAID: 12/20/07
PROJECT NO.: C-1074595 FACILITY ID.: C-2929

Detailed Facility Report

For Facility=2929 and excluding Deleted Permits
Sorted by Facility Name and Permit Number

TKV CONTAINERS INC	FAC #	**C 2929**	TYPE:	EXPIRE ON:	12/31/2012
1420 N MAPLE	STATUS:	**A**	TOXIC ID:	AREA:	8 /
FRESNO, CA 93702	TELEPHONE:	**(559) 251-5551**		INSP. DATE:	03/08

PERMIT NUMBER	FEE DESCRIPTION	FEE RULE	QTY	FEE AMOUNT	FEE TOTAL	PERMIT STATUS	EQUIPMENT DESCRIPTION
C-2929-1-2	10,600 KBTU/HR	3020-02 G	1	698.00	698.00	A	EPS MOLD OPERATION SERVED BY 10.6 MMBTU/HR BOILER-OXIDIZER STEAM SYSTEM (B.O.S.S.) EQUIPPED WITH A LOW-NOX BURNER & FGR SYSTEM (COMMON TO C-2929-2)
C-2929-2-0	9 MMBTU/HR EPS OPERATION	3020-02 G	1	698.00	698.00	A	EPS RECYCLING OPERATION INCLUDING REGRINDER AND GRINDER MILL, CONTROLLED BY CK TEKNIK MODEL 36.60 CYCLONE, & TWO CLOTH STORAGE SILOS CONTROLLED BY FABRIC FILTER DUST COLLECTOR, VENTED TO 18 MMBTU/HR BOILER OXIDIZER STEAM SYSTEM (COMMON TO C-2929-1)

Number of Facilities Reported: 1

Attachment C

Baseline Period Determination

Baseline Period Determination - TKV Containers, Inc.

Non-Seasonal Source (Foam Box Production)					
Calendar Quarter	**Resin Throughput (lb/qtr)**	**8-Qtr Block Differences vs NSO**	**12-Qtr Block Differences vs NSO**	**16-Qtr Block Differences vs NSO**	**20-Qtr Block Differences vs NSO**
Q1 2003	999,149				
Q2 2003	1,111,963				
Q3 2003	617,049				
Q4 2003	0				
Q1 2004	963,934				
Q2 2004	1,028,953				
Q3 2004	704,539				
Q4 2004	37,479	106,888			
Q1 2005	651,066	63,378			
Q2 2005	1,186,719	72,722			
Q3 2005	538,104	62,854			
Q4 2005	0	62,854	77,251		
Q1 2006	999,754	67,332	77,302		
Q2 2006	1,069,337	72,380	73,749		
Q3 2006	740,086	76,823	84,002		
Q4 2006	0	72,138	84,002	89,513	
Q1 2007	204,090	16,266	20,682	39,822	
Q2 2007	528,551	66,005	21,018	3,359	
Q3 2007	139,129	115,877	68,136	26,511	
Q4 2007	0	115,877	71,259	26,511	0
NSO Average	**575,995**				

This value is the smallest "difference" compared to the Normal Source Operation (NSO) average. Therefore, the 20 consecutive quarters associated with it (Q1 2003 - Q4 2007) most closely represent NSO. As

=AVERAGE(B5:B32)

=ABS(B25-AVERAGE(B25:B32))

=ABS(B25-AVERAGE(B21:B32))

=ABS(B25-AVERAGE(B17:B32))

=ABS(B25-AVERAGE(B13:B32))

Attachment D

TKV Containers Polystyrene Resin and Natural Gas Usage Records

TKV Containers, Inc
Resin Usage by quarter
2003 - 2007

1st qtr 2003	999,149	
2nd qtr 2003	1,111,963	
3rd qtr 2003	617,049	
4th qtr 2003	-	2,728,161
1st qtr 2004	963,934	
2nd qtr 2004	1,028,953	
3rd qtr 2004	704,539	
4th qtr 2004	37,479	2,734,905
1st qtr 2005	651,066	
2nd qtr 2005	1,186,719	
3rd qtr 2005	538,104	
4th qtr 2005	-	2,375,889
1st qtr 2006	999,754	
2nd qtr 2006	1,069,337	
3rd qtr 2006	740,086	
4th qtr 2006	-	2,809,177
1st qtr 2007	204,090	
2nd qtr 2007	528,551	
3rd qtr 2007	136,129	
4th qtr 2007	-	868,770

***usage reported in pounds

TKV Containers, Inc
Styrofoam boxes production by month
2003 - 2007

January-2003	307,491
February-2003	375,711
March-2003	369,509
April-2003	292,191
May-2003	461,674
June-2003	409,136
July-2003	336,551
August-2003	294,430
September-2003	0
October-2003	0
November-2003	0
December-2003	0
January-2004	182,656
February-2004	396,286
March-2004	384,992
April-2004	393,053
May-2004	442,153
June-2004	265,345
July-2004	379,904
August-2004	129,492
September-2004	95,898
October-2004	38,239
November-2004	0
December-2004	0
January-2005	0
February-2005	152,715
March-2005	100,106
April-2005	388,297
May-2005	297,619
June-2005	350,922
July-2005	170,444
August-2005	244,226
September-2005	92,323
October-2005	0
November-2005	0
December-2005	0
January-2006	143,526
February-2006	351,957
March-2006	391,297
April-2006	382,253
May-2006	345,201
June-2006	288,594
July-2006	238,942
August-2006	390,620
September-2006	82,042
October-2006	0
November-2006	0
December-2006	0
January-2007	0
February-2007	0
March-2007	0
April-2007	193,726
May-2007	266,720
June-2007	234,990
July-2007	0
August-2007	53,845
September-2007	75,372
October-2007	0
November-2007	0
December-2007	0

TKV Containers, Inc.
Natural Gas Usage by quarter (therms)
2003 - 2007

1st qtr 2003	116,864	
2nd qtr 2003	119,882	
3rd qtr 2003	72,540	
4th qtr 2003	172	309,458
1st qtr 2004	97,102	
2nd qtr 2004	111,501	
3rd qtr 2004	72,319	
4th qtr 2004	15,978	296,900
1st qtr 2005	61,293	
2nd qtr 2005	119,017	
3rd qtr 2005	63,438	
4th qtr 2005	0	243,748
1st qtr 2006	85,710	
2nd qtr 2006	106,903	
3rd qtr 2006	78,690	
4th qtr 2006	312	271,615
1st qtr 2007	254	
2nd qtr 2007	76,942	
3rd qtr 2007	22,230	
4th qtr 2007	0	99,426

Attachment E

Polystyrene VOC Retention Testing Result Summaries

TKV Containers, Inc.
Pentane Tests
Original done June-2003
Reviewed and updated April-2007

SDate	Tdate	Lot #	Btch #	Hrs @ H1	G1	D1	SO1	SO2	H1	B01	B07	B30	B60	B90
5/21/2001	5/29/2001	104M5011	10521021552		3.8%	3.4%	3.4%							
5/22/2001	5/29/2001	104M5011	10521021552	24				2.7%	2.7%	2.6%				
6/6/2001	6/11/2001	104M5011	10521021552								1.7%			
6/6/2001	6/11/2001	104M5011	10606010839		3.8%	3.4%	3.3%							
6/8/2001	6/15/2001	104M5011	10607001430	24				2.5%	2.6%	2.5%				
2/12/2002	2/15/2002	108M5031	20208010826	101					2.2%					
(old silo)														
2/15/2002	2/22/2002	108M5031	20208011214	169					1.8%					
(old silo)														
2/25/2002	2/27/2002		Aptco Box											
1.0% at B01)														
3/11/2002	3/14/2002	108M5031	20306011004	119					2.2%					
(new silo)														
3/19/2002	3/20/2002	108M5031	20313010937					2.2%						
3/19/2002	3/20/2002	108M5031	20313010937					2.2%						
(transfer test)														
3/19/2002	3/20/2002	108M5031	20313010937	144					2.1%					
(new silo)														
4/5/2002	4/11/2002	201M5121	20405011146		3.8%	3.4%								
4/5/2002	4/11/2002	201M5121	20405011146		3.7%	3.5%								
4/10/2002	4/15/2002	201M5121	20405011146	121					1.9%	1.9%				
(Old silo)														
5/10/2002	5/16/2002	201M5121	20405011146									1.1%		
6/10/2002	6/20/2002	201M5121	20405011146										0.7%	
4/1/2002	4/11/2002	112P35005B	20401011407		3.9%	3.6%								
4/4/2002	4/11/2002	112P35005B	20401011407	72					2.4%	2.3%				
(old silo)														
4/11/2002	4/24/2002	112P35005B	20401011407								1.9%			
5/3/2002	5/14/2002	112P35005B	20401011407									1.5%		
6/10/2002	6/22/2002	112P35005B	20401011407										0.9%	
4/12/2002	4/24/2002	Sam 192256	20410021613	44					2.5%					
4/15/2002	4/24/2002	201M5121	20415021316		3.7%	3.3%								

TKV Containers, Inc.
Pentane Tests
Original done June-2003
Reviewed and updated April-2007

SDate	Tdate	Lot #	Btch #	Hrs @ H1	G1	D1	SO1	SO2	H1	B01	B07	B30	B60	B90
4/16/2002	4/24/2002	201M5121	20412020737					2.1%						
old silo - 97 hrs at sample														
4/16/2002	4/24/2002	201M5121	20412021320					1.8%						
new silo - 90 hrs at sample														
4/22/2002	4/29/2002	201M5121	20422021105		3.6%	3.2%								
4/25/2002	5/6/2002	201M5121	20423011335					2.2%						
47 hrs at sample														
4/25/2002	5/6/2002	201M5121	20423020737					2.1%						
43 hrs at sample														
4/29/2002	5/14/2002	201M5121	20429021049			3.4%								
5/2/2002	5/14/2002	204P35001	20502021242		3.9%	3.4%								
5/2/2002	5/16/2002	204P35001	20502021242	120					2.7%					
1,000 lb batch														
5/6/2002	5/16/2002	204P35001	20506021338		3.9%	3.5%								
5/10/2002	5/16/2002	204P35001	20506021338	91					2.0%					
1,000 lb batch														
5/8/2002	5/16/2002	112P350058	20508020827			3.4%								
5/13/2002	5/30/2002	112P350058	20508020827	118					1.2%					
2,000 lb silo														
5/9/2002	5/16/2002	204P35001	20509020923		3.8%	3.3%								
5/14/2002	5/30/2002	204P35001	20509020923	117					1.8%	1.9%				
2,000 lb silo														
5/21/2002	5/30/2002	204P35001	20509020923								1.5%			
6/10/2002	6/20/2002	204P35001	20509020923									1.0%		
5/10/2002	5/20/2002	204P35002	20510021209		3.8%	3.6%								
5/15/2002	5/30/2002	204P35002	20510021209	118					1.9%					
5/13/2002	5/23/2002	112P35005B	20510020951					2.6%						
bx 71 - 4K lb silo - 72 hrs														
5/13/2002	5/23/2002	112P35005B	20510020951					2.2%						
bx 75 - 2K lb silo - 68 hrs														
5/22/2002	6/5/2002	204P35003	20522020802		3.9%	3.6%								

TKV Containers, Inc.
Pentane Tests
Original done June-2003
Reviewed and updated April-2007

SDate	Tdate	Lot #	Btch #	Hrs @ H1	G1	D1	SO1	SO2	H1	B01	B07	B30	B60	B90
5/25/2002	6/7/2002	204P35003	20522020802	68					2.1%					
5/22/2002	6/4/2002	204P35001	20522020554			3.6%								
5/28/2002	6/7/2002	204P35001	20522020554	143					2.0%					
5/29/2002	6/7/2002	204P35002	20529020721			3.3%								
7/26/2002		108M5141	5371X	61					2.4%					
12/19/2002	1/9/2003	210M5021							1.4%					
1/19/2003	1/28/2003	211M5041							1.4%					
	2/6/2003	211M5041	3012803						1.2%					
	4/22/2003	302P35013							2.8%					
	6/11/2003	304M5151								1.3%				
last														
			AVERAGE		3.8%	3.4%	3.4%	2.3%	2.1%	2.1%	1.7%	1.2%	0.8%	

% of pentane by weight in 1,000 lb volume(gaylord container)

Pentane released into collection system at:

Preexpander - from Gaylord (G1) to Delumper (D1)	0.4%
Aging System (bags) - from D1 to Hopper (H1)	1.4%
Presses - from H1 to box hot from press (B01)	0.0%
Total from B01 to B60	1.3%

	Total
Total bead processed per 24 hours	14000

TKV Containers, Inc.
Pentane Tests
Original done June-2003
Reviewed and updated April-2007

SDate	Tdate	Lot #	Btch #	Hrs @ H1	G1	D1	SO1	SO2	H1	B01	B07	B30	B60	B90
Pentane lbs released per 24 hours				240.3		51.6			191.0	(2.3)				
Storage released per 14K lbs													179.7	

Total pentane lbs per 14K lbs bead (14,000 x 3.8%) 532 Lbs

			3.8%	Acum
Manufacturing to B01	240	45%	2.1%	-1.7%
Storage yard to B60	180	34%	0.8%	-3.0%
After 60 days	112	21%		
	532	100%		

How to Calculate the Pentane Released into Collection system

							Total bead processed p/24 Hrs	Pentane lbs released per 24 hours
Location G1	3.8%	minus -	Location D1	3.4%	=	0.4%	14,000	51.6
Location D1	3.4%	minus -	Location H1	2.1%	=	1.4%	14,000	191.0
Location H1	2.1%	minus -	Location B01	2.1%	=	0.0%	14,000	(2.3)
		Pentane lbs released per 24 hours /Manufacturing to B01						240.3
Location B0	2.1%	minus -	Location B90	0.8%	=	1.3%	14,000	179.7
		Storage released per 14K lbs / Storage yard to B60						179.7
		After 60 days (difference with 532 lbs per 14K lbs bead)						112.0
		Total pentane lbs per 14K lbs bead (14,000 x 3.8%)						**532.0**

Attachment F

VOC Collection System Capture Efficiency Justification

ATC APPLICATION REVIEW

Project #960492
Deemed Complete: 10/07/96

Engineer: JOVENCIO REFUERZO
Date: 10/25/96, revised 12/27/96

Facility Name: Western Foam
Location Address: 1420 N. Maple Avenue, Fresno
Mailing Address: 4582 E. Harvey Avenue
Fresno, CA 93702-1544

Contact Name: Keith Hand c/o Amir Sardari
Phone: (209) 251-5551, or (714) 438-9270

Section 1 - Proposal

The primary business of this new facility is Expandable Polystyrene (EPS) table grape box molding facility. Raw material consisting of expandable polystyrene beads with 4.5% maximum pentane content are supplied in lined 1,000 lb. boxes and injected into the 2 pre-expanders at a maximum rate of 22,000 lb/day. The continuous operation consists of pre-expansion, pre-puff aging, and molding processes served by a BOSS™ (Boiler Oxidizer Steam System) as the pentane collection and control system. The VOC laden air would be oxidized in the oxidizer chamber then through the Exhaust Heat Recovery unit, thus generates steam required for plant operations. The 18 MMBtu/hr BOSS system is primarily an afterburner by design equipped with Flue Gas Recirculation (FGR).

Section 2 - Applicable Rules

Rule 1081 Source Sampling (Adopted April 11, 1991, Last Amended December 16, 1993)

Rule 2201 New and Modified Stationary Source Review Rule (Adopted September 19, 1991; Last Amended June 15, 1995)

Rule 4101 Visible Emissions (Adopted May 21, 1992, Amended December 17, 1992)

Rule 4102 Nuisance (Adopted May 21, 1992, Amended December 17, 1992)

Rule 4201 Particulate Matter Concentration (Adopted May 21, 1992; Amended December 17, 1992)

Rule 4301 Fuel Burning Equipment (Adopted May 21, 1992; Amended December 17, 1992)

Rule 4305 Boilers, Steam Generators, and Process Heaters (Adopted December 16, 1993; Last Amended December 19, 1996)

Rule 4351 Boilers, Steam Generators, and Process Heaters - RACT (Adopted October 20, 1994; Last Amended October 19, 1995)

Rule 4682 Polystyrene Foam, Polyethylene, and Polypropylene Manufacturing (Adopted May 21, 1992; Last Amended June 16, 1994)

Rule 4801 Sulfur Compounds (Adopted May 21, 1992; Amended December 17, 1992)

Rule 4001 New Source Performance Standards - Code of Federal Regulations (CFR) Title 40, Part 60, Subpart Dc (Standards of Performance for Small Industrial-Commercial Institutional Steam Generating Units (Adopted April 11, 1991; Last Amended January 19, 1995)

Section 3 - Project Location

Location of equipment: 1420 N. Maple Avenue, Fresno, CA

The source is not located within 1,000 feet of the outer boundary of any K-12 school.

Section 4 - Process Description

Western Foam's proposal is an 11 tons per day expandable polystyrene (EPS) molding operation consisting of the following phases/steps for the manufacture of table grape box products (see schematic flow diagram, **Appendix A**).

Step 1 - Pre-Expansion:

Raw material consisting of expandable polystyrene beads with no greater 4.5% pentane content are supplied in lined 1,000 lb. boxes. The plastic beads are

stored at certain temperature (@70 degrees F) in sealed boxes to prevent pentane loss which is the blowing agent.

The plastic beads are vacuum transported from each dedicated bead bin into the 2 pre-expanders at a maximum rate of 22,000 lb/day. Pressurized steam is injected into the bottom of the pre-expander cylinders to provide sufficient heat for the plastic beads to soften and the expanding agent, pentane, expands each bead which "puffs up" to about 20 times its original size. The steam vent pipe from each of the pre-expander chambers extends into a shroud which is under negative pressure created by the 2,000 SCFM to draw pentane, steam, and air into the vapor collection line. The vapor collection system captures fugitive pentane released at this point. As per applicant, about 25% of the pentane is released at this point and captured by the vapor collection system at 98% capture efficiency, then feeds into the thermal oxidizer of the BOSS™ (Boiler Oxidizer Steam System) for incineration. Pentane destruction efficiency by the BOSS™ has been demonstrated in excess of 99%.

Step 2 - Pre-Puff Aging:

After the pre-expansion process the beads are collected, and through a network of material handling ducts, are transported into the 15 enclosed storage silos (pre-puff aging bins) to cool down and stabilize. Depending on product requirements, the stabilization period varies from 8 to 24 hours (24 hours in most cases). Pentane is released during the aging process. The silos are also vented to the vapor collection system through direct piping under negative pressure at 2,000 SCFM. Similar to the pre-expansion, about 25% of the original total pentane is released during aging process, which is captured by the vapor collection system at 98% capture efficiency.

Step 3 - Molding:

Pre-expanded (stabilized) beads from the pre-puff silos are conveyed to hopper bins of 10 molding machines. The pre-puff beads are loaded into an enclosed steam chest and pressurized steam is injected into the mold. The expanded beads fuse together to form solid shapes of expanded polystyrene which are water cooled to halt the expansion process, and then discharged during the de-molding cycle as finished styrofoam products.

The steam vent pipe from the molding machines extends into a shroud which is then vented, along with the vent pipes from the cooling water, into the vapor collection line which is under negative pressure. Pentane released from the vacuum transport system, the molds and the water collection system is expected

to be at a 14% emission rate. Because of the complex nature of the molding process, the capture efficiency is expected to be at least 70%, per applicant.

The vapor collection system is expected to achieve at least 90% overall capture efficiency, after which the captured pentane is incinerated at the BOSS™ capable of > 99% destruction efficiency.

The 18 MMBtu/hr BOSS™ is equipped with an Exhaust Heat Recovery unit which generates steam required for plant operations, thus expected to run continuously. Operating schedule: 24 hours/day, 365 days/yr.

Section 5 - Equipment Listing

EPS Molding Operation		
#	Equipment	Rating (total hp)
2	Air compressors	200
2	Air dryers	30
8	Material conveyance blowers	80
10	EPS molding machines	330
4	Water circulating pumps	200
2	Pre-Expanders	40
1	Grinder for material recycling	100
2	Wrapping machines	20
15	2200 cu. Ft. Capacity pre-expanded storage silos	
1	Boiler Oxidizer Steam System	18 MMBtu/hr

Because the EPS molding process consisting of the above equipment is a continuous operation, it is determined as one permit unit, per District Policy GPG 9 Permit Unit Determination.

(2) Calculation of Potential to Emit (PE)

BACT IPE CALCULATIONS:

PE = IPE (for new emissions unit)

Pentane Emissions

Daily Potential to Emit (Pentane)							
Emission Point	Process Rate (lb/day)	Pentane (%)	Emission Rate (%)[1]	$PE_{uncontrolled}$ (lb/day)	Capture Efficiency	Captured Emission	Uncaptured Emission
Pre-expander	22,000	4.5%	25%	247.5	98%	242.55	4.95
Pre-puff aging	22,000	4.5%	25%	247.5	98%	242.55	4.95
Molding	22,000	4.5%	14%	138.6	70%	97.0	41.6
Total Pentane Emission				633.6	-	582.1	51.5

Capture Efficiency = $582.1_{(captured)}$ / $633.6_{(uncontrolled\ emission)}$ = 91.9% > 90%, per achieved in practice BACT Guideline 8-12.

$Captured\ Emission_{total}$ = 582.1 x 99% (destruction efficiency) = 576.3 lb VOC/day

where: $PE_{pentane\ (controlled)}$ = 582.1 x (1 - CE) = 5.8 lb VOC/day

$PE_{pentane\ (total)}$ = 633.6 - 576.3 = 57.3 lb VOC/day; or

$PE_{pentane\ (total)} = 51.5_{(uncaptured)} + 5.8$ = **57.3 lb VOC/day**, ∴OK

[1] Pentane emission release rate occurring during each process, per applicant.

Annual Potential to Emit (Pentane)							
Emission Point	Process Rate (lb/year)[2]	Pentane (%)	Emission Rate (%)	$PE_{uncontrolled}$ (lb/year)	Capture Efficiency	Captured Emission	Uncaptured Emission
Pre-expander	7,500,000	4.5%	25%	84,375	98%	82,687.5	1,687.5
Pre-puff aging	7,500,000	4.5%	25%	84,375	98%	82,687.5	1,687.5
Molding	7,500,000	4.5%	14%	47,250	70%	33,075	14,175.0
Annual Pentane Emission				216,000	-	198,450	17,550.0

Captured $Emission_{total}$ = 198,450 x 99% (destruction efficiency) = 196,465.5 lb VOC/year

$PE_{pentane\ (total)}$ = (216,000 - 196,465.5) / 2,000 = **9.767 tons/year**

[2] Based on maximum annual process rate, per applicant.

Emissions From Natural Gas Combustion

Potential to Emit (Thermal Oxidizer/Waste Heat Recovery Boiler)					
Pollutant	EF[3] (lb/MMBtu)	Input Rating	PE[4] (lb/day)	NSR[6] Balance	SSPE[7] (tpy)
PM10	0.005	18 MMBtu	2.16	2.2	-
SOx	0.0006	18 MMBtu	0.3	0[5]	-
NOx	0.036	18 MMBtu	15.5	-	2.83
CO	0.03	18 MMBtu	13.0	13.0	-
VOC (NMHC)	0.003	18 MMBtu	1.3	-	$9.767_{(pentane)}$ + $0.237_{(natural\ gas)}$[8] = 10 tpy

[3] Emission Factors proposed by the applicant.
[4] Based on 24 hr/day boiler operation. In this case, BACT IPE > 2 lb/day for PM10, NOx, and CO emissions, so BACT is triggered.

Attachment G

Boiler/Oxidizer System Source Test Result Summaries

Table 2-1. Test Results for BOSS, Test date: October 6, 2004

Time	Run 1 1113-1143	Run 2 1212-1242	Run 3 1304-1334	Average	Permit Limits
O_2 (%)	5.3	5.0	4.8	5.0	
Flow rate, Inlet (dscfm)	1,607	1,681	1,767	1,685	
Flow rate, Outlet (dscfm)	1,828	1,775	1,841	1,815	
Oxidizer temperature (°F)	1,714	1,725	1,721	1,720	
NOx:					
NO_x, ppmv	7.8	7.5	7.8	7.7	
NO_x, ppmv corrected to 3% O_2	9.0	8.4	8.7	8.7	15
NO_x, lb/hr	0.10	0.10	0.10	0.10	
CO:					
CO, ppmv	1.0	1.3	1.5	1.3	
CO, ppmv corrected to 3% O_2	1.2	1.5	1.7	1.5	100
CO, lb/hr	0.008	0.010	0.012	0.010	
VOC as methane:	**Inlet**				
VOC, ppmv	193	190	156	180	
VOC, lb/hr	0.77	0.80	0.69	0.75	
	Outlet				
VOC, ppmv	0.4	0.4	0.5	0.4	
VOC, lb/hr	0.0018	0.0018	0.0023	0.0020	
VOC, lb/day	0.044	0.042	0.055	0.047	6.2
	Efficiency				
DRE percent	99.8	99.8	99.7	99.7	> 99

Notes:

dscfm = dry standard cubic feet per minute

lb/hr = pounds per hour

Table 2-1. Test Results for BOSS,
Test date: August 17, 2005

Time	Run 1	Run 2	Run 3	Average	Permit Limits
O_2 (%)	3.6	3.6	3.8	3.7	
Flow rate, Inlet (dscfm)	1,499	1,464	1,429	1,464	
Flow rate, Outlet (dscfm)	1,716	1,704	1,737	1,719	
Oxidizer temperature (°F)	1,610	1,617	1,617	1,615	
NOx:					
NO_x, ppmv	3.8	3.9	3.8	3.8	
NO_x, ppmv corrected to 3% O_2	3.9	4.0	4.0	4.0	15
NO_x, lb/hr	0.05	0.05	0.05	0.05	
CO:					
CO, ppmv	4.1	3.9	4.2	4.1	
CO, ppmv corrected to 3% O_2	4.2	4.0	4.4	4.2	100
CO, lb/hr	0.04	0.03	0.03	0.03	
VOC as methane:	**Inlet**				
VOC, ppmv	539	567	556	554	
VOC, lb/hr	2.0	2.1	2.0	2.0	
	Outlet				
VOC, ppmv	< 1	< 1	<1	<1	
VOC, lb/hr	< 0.004	< 0.004	< 0.004	< 0.004	
VOC, lb/day	< 0.1	< 0.1	< 0.1	< 0.1	6.2
	Efficiency				
DRE percent	> 99.8	> 99.8	> 99.8	> 99.8	> 99

Notes:
dscfm = dry standard cubic feet per minute
lb/hr = pounds per hour

2.0 Source Test Results

Shaw measured emissions of VOC at the inlet to the BOSS and from the boiler exhaust stack. Table 2-1 summarizes the test results. Triplicate 30-minute runs were conducted. During the test, the oxidizer was fired on natural gas and operated at an average temperature of 1,482 degrees Farenheight (°F). The average VOC destruction efficiency was 99.8 percent, and the average VOC mass emission was < 0.1 lb/day. VOC concentrations were measured as methane. All test data and sample calculations are presented in Appendix A. Figure 2-1 shows a picture of the BOSS and the inlet sampling location.

The inlet contained no source of methane concentrations and was not measured. A value of zero was assigned for methane in lieu of an actual measurement. The methane concentration of the outlet gas was not measured, as the concentrations of measured total hydrocarbons were at the minimum reporting limit of the analyzer.

Table 2-1. Test Results for BOSS
TKV Containers
Test Date: September 7, 2006

Time	Run 1	Run 2	Run 3	Average	Permit Limits
Flow rate, Inlet (dscfm)	1,636	1,654	1,690	1,660	
Flow rate, Outlet (dscfm)	1633	1,604	1,519	1,585	
Oxidizer temperature (°F)	1,475	1,480	1,490	1,482	> 1,400
VOC as methane:	**Inlet**				
VOC, ppmv	452	515	510	492	
VOC, lb/hr	1.84	2.12	2.15	2.04	
Outlet					
VOC, ppmv	< 1	< 1	<1	<1	
VOC, lb/hr	< 0.004	< 0.004	< 0.004	< 0.004	
VOC, lb/day	< 0.1	< 0.1	< 0.1	< 0.1	6.2
Efficiency					
DRE percent	> 99.8	> 99.8	> 99.8	> 99.8	> 99

Notes:
dscfm = dry standard cubic feet per minute
ppmv = parts per million by volume
lb/hr = pounds per hour

Attachment H

Finished Product On-Site Storage Records

TKV Containers, Inc.
Foam Box Aging

2005	January	February	March	April	May	June	July	August	September	October	November	December	Totals	
Beg. Inventory	298,675	298,675	645,154	1,007,091	1,395,388	1,538,007	1,578,929	1,284,369	696,599	577,922	564,368	564,368		
New Production		346,479	361,937	388,297	297,619	350,922	170,440	244,230	92,323				2,252,247	
Sales					155,000	310,000	465,000	832,000	211,000	13,554			1,986,554	
	298,675	645,154	1,007,091	1,395,388	1,538,007	1,578,929	1,284,369	696,599	577,922	564,368	564,368	564,368	564,368	
Age in Months														
0		346,479	361,937	388,297	297,619	350,922	170,440	244,230	92,323					
1			346,479	361,937	388,297	297,619	350,922	170,440	244,230	92,323			2,252,247	2,252,247
2				346,479	361,937	388,297	297,619	281,929	170,440	244,230	92,323		2,183,254	4,366,508
3					346,479	361,937	388,297		70,929	170,440	244,230	92,323	1,674,635	5,023,905
4	298,675					180,154	77,091			57,375	170,440	244,230	1,027,965	4,111,860
5		298,675									57,375	170,440	526,490	2,632,450
6			298,675									57,375	356,050	2,136,300
7				298,675									298,675	2,090,725
8					143,675								143,675	1,149,400
9						0							0	0
10													0	0
11													0	0
12													0	0
13														
	298,675	645,154	1,007,091	1,395,388	1,538,007	1,578,929	1,284,369	696,599	577,922	564,368	564,368	564,368	8,462,991	23,763,395
											Avg. # of months in yard			2.81

2006	January	February	March	April	May	June	July	August	September	October	November	December	Totals	
Beg. Inventory	564,368	564,368	991,233	1,382,530	1,764,783	1,949,984	1,951,578	1,757,520	1,536,140	1,345,182	1,315,478	1,315,478		
New Production		426,865	391,297	382,253	345,201	288,594	238,942	390,620	82,042				2,545,814	
Sales					160,000	287,000	433,000	612,000	273,000	29,704			1,794,704	
	564,368	991,233	1,382,530	1,764,783	1,949,984	1,951,578	1,757,520	1,536,140	1,345,182	1,315,478	1,315,478	1,315,478	1,315,478	
Age in Months														
0		426,865	391,297	382,253	345,201	288,594	238,942	390,620	82,042					
1			426,865	391,297	382,253	345,201	288,594	238,942	390,620	82,042			2,545,814	2,545,814
2				426,865	391,297	382,253	345,201	288,594	238,942	390,620	82,042		2,545,814	5,091,628
3					426,865	391,297	382,253	345,201	288,594	238,942	390,620	82,042	2,545,814	7,637,442
4	92,323					426,865	391,297	272,783	344,984	288,594	238,942	390,620	2,446,408	9,785,632
5	244,230	92,323					111,233	0		315,280	288,594	238,942	1,290,602	6,453,010
6	170,440	244,230	92,323					0			315,280	288,594	1,110,867	6,665,202
7	57,375	170,440	244,230	92,323								315,280	879,648	6,157,536
8		57,375	170,440	244,230	0								472,045	3,776,360
9			57,375	170,440	176,553	0							404,368	3,639,312
10				57,375	170,440	0							227,815	2,278,150
11					57,375	59,993							117,368	1,291,048
12						57,375							57,375	688,500
13							0							
	564,368	991,233	1,382,530	1,764,783	1,949,984	1,951,578	1,757,520	1,536,140	1,345,182	1,315,478	1,315,478	1,315,478	14,643,938	56,009,634
											Avg. # of months in yard			3.82

Note: This assumes first in first out. This was not always the case. Most of the time we shipped the current production instead of opening up the inventory stacks to ship boxes.

Dustin Brown

From: Lyle Ens [Lyle@Cal-ByProducts.com]
Sent: Tuesday, September 15, 2009 2:08 PM
To: Dustin Brown
Subject: TKV Foam Box
Attachments: TKV foam box aging.xls

Dustin,

I have attached the aging and worksheets used to calculate the foam box aging report. It may be helpful for you to know that the operation was originally called Valley Foam then Con Foam before it became TKV Foam. All these operations were operated by the same owner at the same location just different names.

I will keep looking for the information on the abbreviations used on the testing report we discussed. I may have to locate a former employee and that may take a some time.

Let me know if you have any questions.

Thank you,

Lyle Ens
(559) 289-3143

Attachment I

Draft ERC Certificates

San Joaquin Valley
Air Pollution Control District

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726

Emission Reduction Credit Certificate
C-1051-1

ISSUED TO: MARTIN ANDERSON

ISSUED DATE: <DRAFT>

LOCATION OF REDUCTION: 1420 N MAPLE AVENUE
FRESNO, CA 93702

For VOC Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
8,699 lbs	12,348 lbs	6,585 lbs	90 lbs

[ ] Conditions Attached

Method Of Reduction

[X] Shutdown of Entire Stationary Source
[ ] Shutdown of Emissions Units
[ ] Other

Foam Box Manufacturing

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

David Warner, Director of Permit Services

Feb 24 2010 7:51AM – BROWND

San Joaquin Valley
Air Pollution Control District

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726

Emission Reduction Credit Certificate
C-1051-2

ISSUED TO: MARTIN ANDERSON

ISSUED DATE: <DRAFT>

LOCATION OF REDUCTION: 1420 N MAPLE AVENUE
FRESNO, CA 93702

For NOx Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
52 lbs	77 lbs	45 lbs	3 lbs

[ ] Conditions Attached

Method Of Reduction

[X] Shutdown of Entire Stationary Source
[ ] Shutdown of Emissions Units
[ ] Other

Foam Box Manufacturing

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

David Warner, Director of Permit Services

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San Joaquin Valley
Air Pollution Control District

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726

Emission Reduction Credit Certificate
C-1051-3

ISSUED TO: MARTIN ANDERSON

ISSUED DATE: <DRAFT>

LOCATION OF REDUCTION: 1420 N MAPLE AVENUE
FRESNO, CA 93702

For CO Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
13 lbs	20 lbs	12 lbs	1 lbs

[ ] Conditions Attached

Method Of Reduction

[X] Shutdown of Entire Stationary Source
[ ] Shutdown of Emissions Units
[ ] Other

Foam Box Manufacturing

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

David Warner, Director of Permit Services

Feb 24 2010 7:51AM – BROWND

San Joaquin Valley
Air Pollution Control District

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726

Emission Reduction Credit Certificate
C-1051-4

ISSUED TO: MARTIN ANDERSON

ISSUED DATE: <DRAFT>

LOCATION OF REDUCTION: 1420 N MAPLE AVENUE
FRESNO, CA 93702

For PM10 Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
32 lbs	48 lbs	28 lbs	2 lbs

[ ] Conditions Attached

Method Of Reduction

[X] Shutdown of Entire Stationary Source
[ ] Shutdown of Emissions Units
[ ] Other

Foam Box Manufacturing

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

David Warner, Director of Permit Services

Feb 24 2010 7:51AM – BROWND

San Joaquin Valley
Air Pollution Control District

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726

Emission Reduction Credit Certificate
C-1051-5

ISSUED TO: MARTIN ANDERSON

ISSUED DATE: <DRAFT>

LOCATION OF REDUCTION: 1420 N MAPLE AVENUE
FRESNO, CA 93702

For SOx Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
18 lbs	27 lbs	16 lbs	1 lbs

[ ] Conditions Attached

Method Of Reduction

[X] Shutdown of Entire Stationary Source
[ ] Shutdown of Emissions Units
[ ] Other

Foam Box Manufacturing

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

David Warner, Director of Permit Services

Feb 24 2010 7:51AM – BROWND