



State of Idaho
Department of Environmental Quality
Air Quality Division

**AIR QUALITY PERMIT
STATEMENT OF BASIS**

Permit to Construct No. P-2007.0219

Final

Packaging Specialties of Idaho, Inc.

Burley, Idaho

Facility ID No. 031-00036

February 6, 2008

Jonathan Pettit

A handwritten signature in black ink, appearing to read "Jonathan Pettit", written over the printed name.

Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

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Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Btu	British thermal unit
CAA	Clean Air Act
CFR	Code of Federal Regulations
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
HAPs	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MMBtu	million British thermal units
PTC	permit to construct
PTE	potential to emit
scf	standard cubic feet
SIC	Standard Industrial Classification
SIP	State Implementation Plan
T/yr	tons per year
$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

STATEMENT OF BASIS

Permittee:	Packaging Specialties of Idaho, Inc.	Permit No.: P-2007.0219
Location:	Burley, Idaho	Facility ID No. 031-00036

1. FACILITY INFORMATION

1.1 Facility Description

Packaging Specialties of Idaho, Inc. is a new flexographic printing facility in Burly. This facility is a natural minor facility.

1.2 Permitting History

This is the initial PTC for this facility.

2. APPLICATION SCOPE

This is the initial PTC for construction and operation of a new flexographic printing facility. Printing press operations consist of two 10-color flexographic printing presses which utilize clear film that is unwound in the press as it passes through each of the printing decks where the ink is applied. An electric dryer with forced air dries the ink and exhausts the VOC-laden air to the Regenerative Thermal Oxidizer (RTO).

2.1 Application Chronology

November 23, 2007	DEQ received 15-day Pre-Permit Approval and PTC Application.
December 7, 2007	DEQ declared the application complete and granted 15-day Pre-Permit Approval
December 11, 2007	DEQ submitted a draft permit to its Twin Falls Regional Office for review. Comments were received and incorporated into the permit.
January 3, 2008	DEQ submitted a draft permit to Packaging Specialties of Idaho for review. Comments were received and incorporated into the permit
January 16, 2008	DEQ Received the PTC Processing fee of \$5000.00 that satisfies the requirements of IDAPA 58.01.01.225.
January 31, 2008	DEQ submitted a second draft permit to Packaging Specialties of Idaho for review. Comments were received and incorporated into the permit
February 6, 2008	DEQ issued P-2007.0219 final

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3. TECHNICAL ANALYSIS

Emission Unit and Control Device

Table 3.1 EMISSION UNIT AND CONTROL DEVICE INFORMATION

Emission Unit ID No.	Description	Control Device
EU-001	<u>10-Color Printing Press</u> Manufacturer: P.C.M.C. Model: Infinity NT Max Capacity: 360 lb/hr Date of Construction: November 2007	<u>Regenerative Thermal Oxidizer (RTO) (EU-003)</u> Manufacturer: Anguil. Model: 150 Max Capacity: 3.7 MMBtu/hr Fuel: Natural Gas Control Efficiency: 97% for VOCs Date of Construction: November 2007
EU-002	<u>10-Color Printing Press</u> Manufacturer: P.C.M.C. Model: Infinity NT Max Capacity: 360 lb/hr Date of Construction: November 2007	

3.1 Emissions Inventory

Table 3.2 EMISSIONS ESTIMATES OF CONTROLLED CRITERIA POLLUTANTS

Emissions Unit	PM ₁₀		SO ₂		NO _x		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
EU-0001	[REDACTED]									
EU-0002	[REDACTED]									
EU-0003	0.03	0.14	0.00	0.01	0.37	1.70	0.32	1.50	13.50	50.10
Total, Point Sources	0.03	0.14	0.00	0.01	0.37	1.70	0.32	1.50	13.50	50.10
Total, Process Fugitives	None									

Table 3.3 TAP AND HAP EMISSIONS SUMMARY

TAPS	IDAPA EL lb/hr	24-hour Average ^a
		lb/hr
1-METHOXY-2-PROPANOL	24.00	0.068
Dibutyl Phthalate	0.33	0.001
Dipropylene Glycol Methyl Ether	40.00	0.012
Ethyl Acetate	93.30	0.186
Ethyl Alcohol	125.00	5.092
Heptane	109.00	0.891
Isopropyl Acetate	69.30	0.133
Isopropyl Alcohol	65.30	0.211
Normal Butyl Alcohol	10.00	0.001
Normal Propyl Acetate	56.00	1.950
Normal Propyl Alcohol	33.30	3.651
Propylene Glycol Monomethyl Ether	24	0.045
Toluene	25.00	0.001
VM&P Naphtha	91.30	0.314

a. 24-hour average only applies to non-carcinogenic TAPs. Annual average only applies to carcinogenic TAPs.

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3.2 Ambient Air Quality Impact Analysis

Comparing controlled emissions to the ELs is not listed as an option in the regulations for demonstrating preconstruction compliance with TAPs. Since using the controlled ambient concentration is listed as an option (IDAPA 58.01.01.210.08), and generic modeling conducted for the development of the TAP rules indicates that if emissions are below the ELs then ambient concentrations will be below AACs or AACCs, it follows that controlled ambient concentrations will be below AACs or AACCs if controlled emissions are below the ELs. Therefore, since controlled emissions are below ELs, compliance with TAPs has been demonstrated in accordance with IDAPA 58.01.01.210.08. Emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. The facility has also demonstrated compliance to DEQ's satisfaction that an emissions increase due to this permitting action will not exceed any AAC or AACC for TAPs. A summary of the modeling analysis results is presented in the above tables.

4. REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The facility is located within AQCR 63 and UTM zone 12. The facility is located in Cassia County, which is designated as unclassifiable/attainment for all regulated criteria pollutants (PM₁₀, CO, NO_x, SO₂, lead, and ozone). Reference 40 CFR 81.313.

4.2 Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 Permit to Construct Required

The facility's proposed project does not meet the permit to construct exemption criteria contained in Sections 220 through 223 of the Rules. Therefore, a PTC is required.

IDAPA 58.01.01.203 Permit Requirements for New and Modified Stationary Sources

The applicant has shown to the satisfaction of DEQ that the facility will comply with all applicable emissions standards, ambient air quality standards, and toxic increments.

IDAPA 58.01.01.210 Demonstration of Preconstruction Compliance with Toxic Standards

The applicant has demonstrated preconstruction compliance for all TAPs identified in the permit application.

4.3 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

Packaging Specialties of Idaho, Inc. is classified as a minor facility because the facilities potential to emit is emitted to less than major source thresholds. The AIRS classification is "B".

4.4 PSD Classification (40 CFR 52.21)

Packaging Specialties of Idaho, Inc. is classified as a PSD minor facility because without limits on the potential to emit, all emissions are less than PSD major thresholds.

4.5 NSPS Applicability (40 CFR 60)

Packaging Specialties of Idaho, Inc. is not subject to any NSPS.

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4.6 NESHAP Applicability (40 CFR 61)

Packaging Specialties of Idaho, Inc. is not subject to any NESHAP.

4.7 MACT Applicability (40 CFR 63)

Packaging Specialties of Idaho, Inc. is not major for HAPs, therefore 40 CFR 63, Subpart KK – *National Emission Standards for the Printing and Publishing Industry*, does not apply.

4.8 CAM Applicability (40 CFR 64)

Packaging Specialties of Idaho, Inc. is not subject to CAM.

4.9 Permit Conditions Review

This section describes only those permit conditions (PC) that have been added, revised, modified or deleted as a result of this permitting action. All other permit conditions remain unchanged.

PRINTING PRESS OPERATIONS

Permit Condition 2.3

Permit Condition 2.3 establishes VOC and HAP emission limit based on applicant recommendations and emission inventory. This assumes that if the VOC is emission are met then the toxic air pollutant emissions are maintained below AAC increments of IDAPA 58.01.01.585. Compliance shall be demonstrated through Permit Conditions 2.12 and 2.13.

Permit Condition 2.4

Permit Condition 2.4 establishes an opacity limit for all stacks, vents or functionally equivalent opening.

Permit Condition 2.5

Permit Condition 2.5 establishes an odor emission provision. Compliance shall be demonstrated through Permit Condition 2.11.

Permit Condition 2.6

Permit Condition 2.6 establishes that the facility may changes inks and solvents different than the application. But shall quantify the TAP contents compared with IDAPA 58.01.01.585 and 586 increments and calculate the TAP emissions for uncontrolled in the case of water based inks that emit directly to the atmosphere, RTO controlled and volatile TAPs, and to determine the amount of ink used in operations where there is a known in solids transfer efficiency. All non-carcinogenic TAPs shall be monitored and recorded on a 24-hour average in accordance with IDAPA 58.01.01.585 and all carcinogenic TAPs shall be monitored and recorded on an annual average in accordance with IDAPA 58.01.01.686. Compliance shall be demonstrated through permit condition 2.12.

Permit Condition 2.7

Permit Condition 2.7 establishes that the RTO shall combust pipeline grade natural gas exclusively. Compliance shall be demonstrated through permit condition 2.15.

Permit Condition 2.8 and 2.9

Permit Condition 2.8 and 2.9 establishes that the owner or operator shall maintain records of the solvents and inks used. This information shall be used in the calculation in permit condition 2.6 to assure compliance with emission limits of permit condition 2.3 and IDAPA 58.01.01.585 and 586. Compliance shall be demonstrated through permit condition 2.12.

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Permit Condition 2.10

Permit condition 2.10 establishes uncontrolled emissions may occur while printing operations are operating with water based inks. The RTO shall operate at all times when the printing operations are not operating with water based inks. This permit condition ensures the VOC and HAP emission will remain in compliance with permit condition 2.3. Compliance shall be demonstrated through permit condition 2.12.

5. PERMIT FEES

Table 5.1 lists the processing fee associated with this permitting action. The facility is subject to a processing fee of \$5,000.00 because its permitted emissions are 53.4 T/yr. Refer to the chronology for fee receipt dates.

Table 5.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	1.7	0	1.7
SO ₂	0.0	0	0.0
CO	1.5	0	1.5
PM10	0.1	0	0.1
VOC (TAPS/HAPS)	50.1	0	50.1
Total:			53.4
Fee Due			\$5,000.00

6. PUBLIC COMMENT

An opportunity for public comment period on the PTC application was provided from December 4, 2007 to December 18, 2007 in accordance with IDAPA 58.01.01.209.01.c. During this time, there were no comments on the application and no requests for a public comment period on DEQ's proposed action.

APPENDIX A – AIRS INFORMATION



AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

Permittee/Facility

Name:

Packaging Specialties of Idaho, Inc.

Facility Location:

Burley, ID

AIRS Number:

031-00036

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO ₂	B						B	U
NO _x	B						B	U
CO	B						B	U
PM ₁₀	B						B	U
PT (Particulate)								
VOC	B						B	U
THAP (Total HAPs)	B							
			APPLICABLE SUBPART					

^a Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

^b AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

Appendix B – Emissions Inventory

REGENERATIVE THERMAL OXIDIZER (RTO) - COMBUSTION

The natural gas combustion emissions from the RTO are calculated assuming continuous operation and using emission factors from Section 1.4 of EPA's AP-42 for natural gas combustion. Since the burner is rated at 3.7 mmBtu/hr, the fuel rate is 3,700 SCF/hr.

$$\text{PM/PM}_{10}: 7.6 \text{ lb}/10^6 \text{ ft}^3 * 3,700 \text{ SCF/hr} = \underline{\mathbf{0.03 \text{ lbs/hr}}}$$

$$0.03 \text{ lbs/hr} * 8,760 \text{ hours/yr} * \text{ton}/2,000 \text{ lbs} = \underline{\mathbf{0.14 \text{ TPY PM/PM}_{10}}}$$

$$\text{SO}_2: 0.6 \text{ lb}/10^6 \text{ ft}^3 * 3,700 \text{ SCF/hr} = \underline{\mathbf{0.003 \text{ lbs/hr}}}$$

$$0.003 \text{ lbs/hr} * 8,760 \text{ hours/yr} * \text{ton}/2,000 \text{ lbs} = \underline{\mathbf{0.014 \text{ TPY SO}_2}}$$

$$\text{NO}_x: 100.0 \text{ lb}/10^6 \text{ ft}^3 * 3,700 \text{ SCF/hr} = \underline{\mathbf{0.37 \text{ lbs/hr}}}$$

$$0.37 \text{ lbs/hr} * 8,760 \text{ hours/yr} * \text{ton}/2,000 \text{ lbs} = \underline{\mathbf{1.7 \text{ TPY NO}_x}}$$

$$\text{CO}: 84.0 \text{ lb}/10^6 \text{ ft}^3 * 3,700 \text{ SCF/hr} = \underline{\mathbf{0.32 \text{ lbs/hr}}}$$

$$0.32 \text{ lbs/hr} * 8,760 \text{ hours/yr} * \text{ton}/2,000 \text{ lbs} = \underline{\mathbf{1.5 \text{ TPY CO}}}$$

$$\text{VOC}: 5.5 \text{ lb}/10^6 \text{ ft}^3 * 3,700 \text{ SCF/hr} = \underline{\mathbf{0.02 \text{ lbs/hr}}}$$

$$0.02 \text{ lbs/hr} * 8,760 \text{ hours/yr} * \text{ton}/2,000 \text{ lbs} = \underline{\mathbf{0.09 \text{ TPY VOC}}}$$

REGENERATIVE THERMAL OXIDIZER (RTO) – VOC DESTRUCTION

Emissions from the two (2) printing presses will be captured and routed to the RTO. Based on the operation of a similar unit at PSI's Fayetteville, Arkansas location, the destruction efficiency is conservatively estimated to be 95%.

The pressroom is maintained under negative pressure with all emissions being routed to the RTO. It is assumed that 100% of the VOC and TAP compounds introduced into the process are volatilized and routed to the RTO.

PSI bases emissions on purchase records. PSI proposes to demonstrate compliance through monthly recordkeeping and purchase records. The attached spreadsheet demonstrates how this is achieved.

The first column indicates all volatiles and TAPs present in the solvents and inks used. The next nine (9) columns indicate the purchases of inks and solvents at the Fayetteville, Arkansas plant broken down by constituent. The next two (2) columns are the 9-month summation and that summation scaled to a twelve (12) month basis.

The Burley plant will conservatively be approximately 33% of the size of the Arkansas facility. The next column is simply 33% of the scaled 12-month values. In reality, it is expected that Burley will be about 25% of the capacity of the Arkansas facility.

The next column reduces the total pounds by 95% to reflect the destruction capacity of the RTO. This results in total facility emissions of 15.3 TPY of VOC emissions. For cushion, PSI proposes to permit with an emissions limit/cap of 50 TPY of VOC emissions. Thus, the next column scales up emissions by a factor of $50.0 / 15.3$.

Lastly, this column is divided by the number of operating hours (6 days per week, 24 hours per day, 52 weeks per year) to arrive at an estimated pounds per hour. This is represented in Column P. These emission rates were compared to the screening emission levels (EL's) where all were below the respective EL and signifying no modeling was required.

Thus, to demonstrate ultimate compliance PSI recommends the following permit conditions:

1. The facility shall combust only pipeline quality natural gas. Natural gas usage shall be limited to 32,412,000 cubic feet on a rolling 12-month average. Compliance will be demonstrated by maintaining a monthly log of gas used.
2. Facility VOC emissions shall be limited to 50 tons per year. The facility will maintain a log of ink and solvent purchases, updated on a monthly basis to demonstrate compliance on a 12-month rolling average.
3. Facility TAP emissions for any single TAP shall be limited to 9.5 tons per year. The facility will maintain a log of ink and solvent purchases, updated on a monthly basis to demonstrate compliance on a 12-month rolling average.
4. Facility TAP emissions for all TAPs combined shall be limited to 24.5 tons per year. The facility will maintain a log of ink and solvent purchases, updated on a monthly basis to demonstrate compliance on a 12-month rolling average.

