

Lane Regional Air Protection Agency
 Simple Air Contaminant Discharge Permit

REVIEW REPORT

King Retail Solutions, Inc.

3850 West 1st Avenue
 Eugene, Oregon 97402
<http://www.kingrs.com/>

Permit No. 204412

Source Information:

SIC - Primary	2541
SIC - Secondary	NA
NAICS - Primary	337215
NAICS - Secondary	NA
Source Categories (LRAPA Title 37, Table 1)	B.69: Surface Coating Operations: coating operations whose actual or expected usage of coating

	materials is greater than 250 gallons per month, excluding sources that exclusively use non-VOC and non-HAP containing coatings.
Public Notice Category	II

Compliance and Emissions Monitoring Requirements:

Unassigned emissions	n
Emission credits	n
Compliance schedule	n
Source test date	n

COMS	n
CEMS	n
Ambient monitoring	n

Reporting Requirements:

Annual reports (due dates)	February 15th
Semi-annual reports (due dates)	n
SACC (due date)	n

Quarterly report (due dates)	n
Monthly report (due dates)	n
Excess emissions report	y
Other reports	n

Air Programs:

NSPS (list subparts)	n
NESHAP (list subparts)	n
CAM	n
Regional Haze (RH)	n
Synthetic Minor (SM)	n
Part 68 Risk Management	n
Title V	n
ACDP (SIP)	n
New Source Review (NSR)	n
Prevention of Significant	n

Deterioration (PSD)	
Acid Rain	n
Clean Air Mercury Rule (CAMR)	n
TACT	n

General Background Information

1. Lane Regional Air Protection Agency (LRAPA) has reviewed the permit application received on December 5, 2016. The contents of the application and subsequent correspondence with the facility were the basis for the calculations contained within this review report.
2. King Retail Solutions, Inc. operates a retail display production facility (SIC Code 2541) in Eugene. The facility uses four (4) spray paint booths, two (2) air make-up furnaces, one (1) digital printing operation, and one (1) baghouse to control emissions from various wood-working tools that are used to produce signs for commercial and private use. The facility added welding and laser metal cutting activities with a baghouse for control during the drafting phase of the 2018 renewal by way of a "Non-technical Permit Modification". The facility operates approximately 2,080 hours per year (8 hours/day, 5 days/week, and 52 weeks per year).

The screen printing emission unit SP-6 was removed during the permit term and replaced with a digital printing unit DP-6.

Emission Point Identification

3. The facility's emission units (EU) are:

Emission Unit	EU-ID
Woodworking Controlled by a Baghouse	BH-1
Welding and Metal Cutting Controlled by a Baghouse	BH-2
Spray Booths (4)	PB-1, PB-2, PB-3, PB-4
Digital Printing Operations	DP-6
Categorically Insignificant Activities Including: Air Make-up Furnaces (2)	AMU-1 and AMU-2

Reasons for Permit Issuance

4. This action is a renewal of Air Contaminant Discharge Permit (ACDP) 204412 which was originally issued October 14, 1996, renewed in 2001 and 2012 and expired on April 19, 2017. The facility operates a process listed in LRAPA Title 37, Table 1, Part B (B. 69 - Surface Coating Operations: coating operations whose actual or expected usage of coating materials is greater than 250 gallons per month, excluding sources that exclusively use non-VOC and non-HAP containing coatings) and is therefore required to obtain an ACDP. The primary reason for this permit action is to renew the expired permit. The facility is not required to obtain a Standard ACDP because the facility no longer has actual emissions above the 50% of the HAP major source thresholds.

New Source Review (NSR) and Prevention of Significant Deterioration (PSD)

- This source is not subject to PSD for the affected criteria pollutants. The PSEL of 39 tons VOC per year is below the 40 ton per year significant emission rate (SER) as established in LRAPA Title 12. The maximum estimated annual emissions of VOC since the last permit renewal was 6.2 tons per year in 2014 which is less than the 40 ton/year SER in LRAPA Title 38.

Enforcement Actions

- There have been no enforcement actions against the facility since the last permit renewal.

Source Tests

- No source testing has been performed at this facility. Safety Data Sheets (SDS), Certified Product Data Sheet (CPDS), and material usage are used to determine the facility's VOC and HAP emissions.

Hazardous Air Pollutants (HAPs)

- The maximum estimated annual emissions of total HAPs were 8.5 tons per year in 2000 and likely represent maximum actual historical emissions. Recently, HAP emissions are significantly lower due to changes in coatings. For example, in 2014, the maximum 12-month rolling VOC/HAP emissions were estimated to be 6.2 tons/year. The maximum individual HAP is Toluene, estimated to be 1 ton/year actual and 3.6 tons/year projected maximum based upon a report submitted to LRAPA from 2016. As an area source of HAPs the facility is not subject to any major source National Standard for Hazardous Air Pollutants (NESHAP). Also, the facility is not subject to any area source NESHAP including the Paint Stripping and Miscellaneous Surface Coating Operations (Subpart HHHHHH) because the facility does not spray apply coatings to metal or plastic substrates - only wood substances; additionally, the facility does not spray apply any coatings containing the Subpart 6H target HAPs (Cd, Cr, Mn, Ni, or Pb). Synthetic minor conditions were removed in the previous renewal because the facility has made changes to lower VOC and HAP coatings which resulted in emissions that are well below the HAP major source thresholds. However, the permit maintains the HAP emissions estimation requirements to allow LRAPA to continue reviewing HAP emissions at the facility.

- Table of Air Toxics and Estimated 2016 Actual and Projected Maximum Emissions

HAP/Toxic	2016 Actual (pounds/year)	Projected Maximum (tons/year)
Aluminum	2.27	0.02
n-Butyl alcohol	39.90	0.04
Copper and compounds	0.58	0.00
Ethyl benzene	62.47	0.04
Ethylene glycol monobutyl ether	279.24	1.46
Propylene glycol monomethyl ether acetate	156.50	0.12
Isopropyl alcohol	556.55	2.58
Methanol	1.54	0.17
Methyl ethyl ketone	450.35	0.34
Methyl isobutyl ketone	160.32	0.11
Nitric acid	0.001	0.00
Phosphoric acid	2.21	0.02
Silica, crystalline (respirable)	10.78	0.01

HAP/Toxic	2016 Actual (pounds/year)	Projected Maximum (tons/year)
Toluene	2170.18	3.58
1,2,4-Trimethylbenzene	0.16	0.00
Xylenes (mixed)	746.21	0.49
Zinc	0.03	0.00
Zinc oxide	1995.79	1.25
TOTAL	6635.07	10.23

Plant Site Emission Limits (PSELs) Information

10. PSELs for the source restrict potential emissions from the facility to 39 tons per year of Volatile Organic Compounds (VOCs), 9 tons per year for any single HAP and 24 tons per year for total HAPs. The attachment to this Review Report contains the calculations and further explanation of the emissions estimates. PM PSELs were removed in the previous renewal because the facility emits less than 0.5 ton of PM per year from both woodworking activities (BH-1) and laser metal cutting (BH-2) as well as minimal amounts of welding fumes. PSELs were evaluated for CO and NO_x but have not been added because expected actual emissions from the furnaces are less than the 1.0 ton/year de minimis level. The devices are categorically insignificant under the definition of the term in LRAPA Title 12.

Baseline Emission Rate (BER)

11. The BER has been set at zero (0) tons per year for all pollutants since the facility was not in operation during the 1978 baseline year.

Significant Emission Rate (SER)

12. The PSEL increase over the baseline emissions is less than the SER, as defined in LRAPA Title 12, for PM, PM₁₀, PM_{2.5}, CO, NO_x, VOC, and SO₂ as shown below. No further air quality analysis is required for these pollutants.

Pollutant	Baseline Emissions (tons/yr)	Previous PSEL (tons/yr)	Proposed PSEL (tons/yr)	Change in PSEL (tons/yr)	Increase From Baseline (tons/yr)	SER (tons/yr)
PM	0	NA	NA	0	0	25
PM ₁₀	0	NA	NA	0	0	15
PM _{2.5}	NA	NA	NA	0	0	10
CO	0	NA	NA	0	0	100
NO _x	0	NA	NA	0	0	40
VOC	0	39	39	0	39	40
SO _x	0	NA	0	0	0	40
GHG	0	NA	NA	0	0	75,000

Performance Standards and Limitations

13. The facility has emission units and activities subject to the visible emissions standards in LRAPA 32-010, the particulate grain-loading standard in LRAPA 32-015, and the highest and best requirement of LRAPA 32-005. Operation of well-maintained paint booth filters should assure compliance with the grain loading and visible emissions limits. The facility is also required to conduct inspections and maintenance of the equipment to assure compliance with the highest and best requirement.
14. The facility is subject to the PSEL rules in LRAPA 42-0040 and 42-0060. To assure compliance with the PSEL, detailed records are required to be maintained which demonstrate that the emissions of VOC and HAPs are below the limits.

Monitoring, Recordkeeping and Reporting

15. The facility is required to record all inspections and maintenance of air pollution control equipment including the paint booth filters and baghouse maintenance. The facility is also required to keep records of the amount and types of VOC- and HAP-containing materials used, the VOC and HAP compositions of each material, and calculations of VOC and HAP emissions. Monitoring for NO_x and CO is not necessary because maximum emissions from the air make-up furnaces are not capable of emitting over the de minimis level. Additionally, PM, PM₁₀, and PM_{2.5} PSEL monitoring is not required due the low level of particulate emissions (below the de minimis) from woodworking with baghouse control. Particulate emissions are minimized through regular inspection and maintenance of the baghouse.
16. As part of the previous permit renewal requirements for semiannual compliance reports were removed because the facility was and is currently operating below half of the major source threshold for HAPs. The annual report is due on February 15th.
17. Additionally, the facility is required to implement and maintain an LRAPA-approved Inspection and Maintenance (I&M) plan. The plan will be required to specify items such as: proper spray booth filter inspections and replacements, maintaining closed containers when not in use, proper minimization and clean-up of any spillage, proper spray gun cleaning that minimizes emissions, and inspection and maintenance.

Public Notice

18. The draft permit was on public notice from May 11, 2018 to June 14, 2018. No written comments were submitted during the 30-day comment period.

Emission Details

VOC Emission Estimations:

Paint Booths (PB)	Material Name	2016 annual thrpt gallons/year	Projected Max.thrpt gallon/year	Material Density lbs/gallon	Percent Weight %wt VOC	2016 VOC tons/year	VOC Projected Max tons/year
PB1, PB2, PB3 and PB4	Waterborn Primer	753	900	12.8436	6	0.18	0.21
	Lacquer Thinner	371	450	6.995	72.5	1.92	2.33
	Ultra Spec	3598.55	4500	11.0922	25	4.06	5.07
	Satin Lacquer	556.4	650	7.65	5	0.18	0.21
	2K Sealer	11.1	20	10.71	24.3	0.01	0.02
	Etch Primer	30.1	60	7.81	53.5	0.10	0.21
	Tie Bond	99.23	150	7.55604	67.5	0.44	0.67
	2K Urethane	363.8	500	8.21	27	0.60	0.82217
	Metal Prep 79	0.87	2	9.8	0	0	0
	POR 15	1.12	2	8.96	0	0	0
	Klean-Strip	0.25	1	8.34	2.5	0.00004	0.00015
	Color Tools Dye Blue GL	0.015625	0.015625	6.87	95	0.00011	0.00011
	Cres-Lite Metallic Pigment	0.1	2	22.6576	0	0	0
	229G1 Gennex WB Colorant White	21.25	30	9.65	0	0	0
	229W1 Gennex WB Colorant White	28.45	30	15.15	0	0	0
	Tool Black Liquid	0.00525	0.125	8.78	0	0	0
	Chromatone Pewter	0.125	0.5	8.89	0	0	0
	Wood Classics Interior Oil Stain	0.75	2	7.32	3	0.00015	0.00041
Pro 680	6.215	10	8.78	2	0.00071	0.00114	
TOTAL		5842.3				7.49	9.55
NOTES:	This VOC emission estimation information was derived from the facility's air toxics inventory						

Baghouse and Furnace Emission Estimates

Baghouse Emissions						
	Annual Throughput (BDT)		Emission Factor (lb/BDT)		Annual PM/PM10 Emissions (pounds)	
Baghouse BH-1	25.1		0.04		1.00	
Baghouse BH-2					28	
Welding					2.00	
			Total		31.00	pounds/year
Emission factor is from DEQ AQ-EF02 for sanderdust with baghouse control						
Annual throughput is the sum of all the annual throughput wood waste materials for all wood working equipment						
Air Make-Up Furnace (2) Emissions						
Natural Gas-Fired						
Pollutant	Max Design capacity (cubic ft/hr)	Actual Maximum Gas Usage (MMcubic ft/yr)	emission factor (lbs/MMcubic ft)	Conversion Factor (tons/lb)	Potential Emissions (tons/yr)	Actual Maximum Emissions (tons/yr)
PM	3366	2	7.6	0.0005	0.1	0.0
SO ₂	3366	2	0.6	0.0005	0.0	0.0
NO _x	3366	2	100	0.0005	1.5	0.1
CO	3366	2	84	0.0005	1.2	0.1
VOC	3366	2	5.5	0.0005	0.1	0.0
Furnaces (2) operate 8760 hours per year.						
One furnace operates at a maximum rate of 1.584 MM BTU per hour , and the other operates at 1.782 MM BTU/hr or aprox 3.366 MM BTU/hr total.						
Furnaces operate at a combined maximum rate of 3,366 cubic feet per hour (1 cubic foot of natural gas = 1000 BTU).						
Furnace gas usage is estimated to be 2 million cubic feet per year as an "actual maximum" ; 2016 gas usage was 1.66 million cubic feet						
Gaseous emission factors are obtained from AP-42 table 1.4-2 (3/98).						
Annual Emissions (tons) = maximum gas usage x emission factor x 1 ton/2000 pounds x 8760 hours per year x 1/10 ⁶ .						

Air Toxics

HAP and/or Air Toxic	2016 Actual	2016 Actual	Projected Max.	Projected Max.
	pounds/year	tons/year	pounds/year	tons/year
Aluminum	2.27	0.00	44.97	0.02
n-Butyl alcohol	39.90	0.02	70.51	0.04
Copper and compounds	0.58	0.00	2.06	0.00
Ethyl benzene	62.47	0.03	87.03	0.04
Ethylene glycol monobutyl ether	279.24	0.14	2921.22	1.46
Propylene glycol monomethyl ether aceta	156.50	0.08	238.46	0.12
Isopropyl alcohol	556.55	0.28	5150.84	2.58
Methanol	1.54	0.00	346.78	0.17
Methyl ethyl ketone	450.35	0.23	686.83	0.34
Methyl isobutyl ketone	160.32	0.08	218.31	0.11
Nitric acid	0.001	0.00	0.027	0.00
Phosphoric acid	2.21	0.00	30.10	0.02
Silica, crystalline (respirable)	10.78	0.01	11.36	0.01
Toluene	2170.18	1.09	7163.49	3.58
1,2,4-Trimethylbenzene	0.16	0.00	0.44	0.00
Xylenes (mixed)	746.21	0.37	986.28	0.49
Zinc	0.03	0.00	0.54	0.00
Zinc oxide	1995.79	1.00	2495.75	1.25
TOTAL	6635.07	3.32	20454.99	10.23

This air toxics emission estimation information was derived from the facility's air toxics inventory submitted to LRAPA in 2017.