

Facility Name: **Honda Lock – America (HLA)**

City: Bremen

County: Haralson

AIRS #: 04-13-143-00027

Application #: 16417

Date SIP Application Received: 10/11/05

Date Title V Application Received: N/A

Permit No: 3429-143-0027-V-02-1

<b>Program</b>	<b>Review Engineers</b>	<b>Review Managers</b>
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<b>TOXICS</b>	N/A	N/A

## **Introduction**

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and operate and Section 502(b)(10) change to the Part 70 source. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1), 391-3-1-.03(2), and 391-3-1-.03(10). of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the permit and is presented in the same general order as the permit amendment. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

**I. Facility Description**

A. Existing Permits

Table 1 below lists the current Title V permit, all administrative amendments and minor and significant modifications to that permit, and any 502(b)(10) changes. Comments are listed in Table 2 below.

**Table 1: Current Title V Permit and Amendments**

Permit/Amendment Number	Date of Issuance	Comments	
		Yes	No
3429-143-0027-V-02-0	4/30/05	x	

**Table 2: Comments on Specific Permits**

Permit Number	Comments
3429-143-0027-V-02-0	Initial Title V permit after SM source expanded from 100 tpy limit to 249 tpy limit on VOC

B. Regulatory Status

1. PSD/NSR/RACT

This facility is minor under PSD. Potential emissions are limited to less than the PSD major source threshold. Nonattainment provisions of NAA NSR or RACT do not apply in Haralson County.

2. Title V Major Source Status by Pollutant

**Table 3: Title V Major Source Status**

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	x			x
PM <sub>10</sub>	x			x
SO <sub>2</sub>				
VOC	x	x		
NO <sub>x</sub>	x			x
CO	x			x
TRS				
H <sub>2</sub> S				
Individual	x			x
Total HAPs	x			x

## II. Proposed Modification

### A. Description of Modification

HLA is planning to install a VOC control system consisting of two rotary zeolite concentrators and a recuperative thermal oxidizer (grouped as one Air Pollution Control Device ID No. RCO1) to control VOC emissions from paint booths PB01, PB02, and PB03. The control system will have an inlet capacity of 100,000 ACFM into the concentrators. VOC/HAP will be adsorbed into a section of the concentrators while another section of the concentrator is being desorbed (regenerated). The VOC/HAP collected in the concentrators will be desorbed using hot air and routed to a thermal oxidizer for destruction in a low-volume/high concentration flow. The oxidizer exhaust and the concentrator exhaust will be discharged via a common stack. The airflow of the oxidizer will be 10,000 ACFM.

HLA plans to reconfigure the booth exhausts such that each paint booth and its associated curing oven will exhaust to a manifold routed to the two concentrators. The existing spray booth exhaust stacks will be shortened from 65 feet to 51 feet to reduce weight on the roof. However, the existing stacks will only be used for bypass purposes.

While each booth will likely be a permanent total enclosure, there may be times that a portion of the exhaust is vented to the bypass stacks instead of to RCO1. Under current estimated operation, the airflow from the booths will not exceed the capacity of RCO1 and all the booth exhaust will be controlled. However, the system will be equipped with an automatic damper system that will direct a portion of the booth exhaust to the bypass stacks if the airflow exceeds the capacity of RCO1.

The predicted collection efficiency of the concentrators is 98 percent. The predicted destruction efficiency of the oxidizer is 99%. Therefore, the overall removal efficiency of this control system is 97 percent.

B. Emissions Change

**Table 4: Emissions Change Due to Modification**

<b>Pollutant</b>	<b>Is the Pollutant Emitted?</b>	<b>Net Actual Emissions Increase (Decrease) (tpy)</b>	<b>Net Potential Emissions Increase (Decrease) (tpy)</b>
PM	x	0	0
PM <sub>10</sub>	x	0	0
SO <sub>2</sub>			
VOC	x	-95 <sup>1</sup>	0
NO <sub>x</sub>	x	<5	<5
CO	x	<5	<5
TRS			
H <sub>2</sub> S			
Individual	x		0
Total HAPs	x		0

1. While the installation of the control device RCO1 will reduce emissions, production will be increasing. Currently actual emissions are ~100 tpy; this number will drop to ~5 tpy for a short period before production increases raise emission levels.

C. Title I Modification

- PSD/NSR Applicability

This is a minor source under PSD regulations, therefore PSD does not apply.

- NSPS Modification

No NSPS apply.

- NESHAP Modification

The facility is a minor source of HAPs therefore no NESHAPs apply.

### **III. Facility Wide Requirements**

A. Emission and Operating Caps

No changes.

B. Applicable Rules and Regulations

No changes. A new toxic impact assessment on HDI emissions was conducted to ensure that the new RTO stack configuration would comply with Georgia's Toxic Guideline. The results of the assessment using SCREEN3 indicate compliance; a copy of the SCREEN3 printout is attached.

C. Compliance Status

No noncompliance issues are known.

D. Operational Flexibility

None requested.

E. Permit Conditions

No changes.

**IV. Regulated Equipment Requirements**

A. Brief Process Description

The facility extrudes and paints plastic automotive parts. Parts are painted in three paint booths (Primer - PB01; Base Coat - PB02, and Top Coat - PB03). Each booth has an associated curing oven. The VOC emissions are currently emitted uncontrolled, but HLA is proposing to install a rotary concentrator/recuperative thermal oxidizer to control VOC emissions from each of these booths. For more detail, see Section II.A of this narrative.

B. Updated Equipment List

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
PB01	Primer Surface Coating Booth	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2.1.1, 2.1.2, 3.2.1, 3.4.1, 3.4.2, 3.5.1, 4.2.1 through 4.2.4, 5.2.1 through 5.2.4, 6.2.1 through 6.2.12	RCO1	Concentrators and recuperative thermal oxidizer
PB02	Base Coat Surface Coating Booth	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2.1.1, 2.1.2, 3.2.1, 3.4.1, 3.4.2, 3.5.1, 4.2.1 through 4.2.4, 5.2.1 through 5.2.4, 6.2.1 through 6.2.12	RCO1	Concentrators and recuperative thermal oxidizer
PB03	Top Coat Surface Coating Booth	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	2.1.1, 2.1.2, 3.2.1, 3.4.1, 3.4.2, 3.5.1, 4.2.1 through 4.2.4, 5.2.1 through 5.2.4, 6.2.1 through 6.2.12	RCO1	Concentrators and recuperative thermal oxidizer

C. Equipment & Rule Applicability

There will be no changes to the applicable rules.

D. Compliance Status

No noncompliance issues are known.

E. Operational Flexibility

None requested.

F. Permit Conditions

Condition 3.5.1 requires that the concentrator adsorption bed material be replaced if the overall control of the concentrator/oxidizer combination falls below 86%. Since oxidizer DRE is not likely to fall below 95%, the 86% represents a concentrator efficiency of 90%. This requirement is established because once an adsorber begins to get “saturated” and lose efficiency, the drop off to complete failure is fairly rapid. The monitoring required only covers day to day operation and cannot fully account for aging of the adsorber bed material.

**V. Testing Requirements** (with Associated Record Keeping and Reporting)

Condition 4.2.1 requires an initial VOC control efficiency stack test on the concentrator and oxidizer.

Condition 4.2.2 requires a VOC control efficiency test on the concentrator and oxidizer every 36 months. Periodic testing is required because the concentrator parameters to be monitored may not account for fouling and overall aging of the adsorber zeolite material, which will eventually become ineffective. Although the useful life of the oxidizer is expected to be much longer than that of the adsorber material, since the concentrator and oxidizer exhaust from a common stack, both are essentially tested.

Condition 4.2.3 requires a VOC test on the concentrator and oxidizer whenever the adsorber material is replaced.

Condition 4.2.4 requires an initial test to verify a permanent total enclosure.

**VI. Monitoring Requirements** (with Associated Record Keeping and Reporting)

The chosen concentrator parameters to be monitored are desorption air inlet temperature and pressure drop across the adsorber section. If desorption temperature falls too low, the bed will not be cleaned out properly and may be unable to adsorb VOC adequately. If pressure drop gets too high, the bed may be getting fouled, reducing the efficiency of the bed material. Periodic inspection of the bed material is also recommended.

For the permanent total enclosure, a pressure differential across the enclosure of at least 0.007 inches water constitutes a PTE.

Condition 5.2.1 requires continuous monitoring of oxidizer temperature and desorption gas temperature.

Condition 5.2.2 requires daily recording of pressure differential drop across the PTE, and pressure drop across the adsorber section of the rotary concentrator.

Condition 5.2.3 requires annual inspections of the rotary concentrator bed.

Condition 5.2.4 requires monitoring to establish the amount of exhaust routed to bypass stacks in the event that the automatic RCO1 bypass is ever triggered. This is not likely to occur, but if paint booth emissions were routed to bypass, VOC and HAP emissions could be calculated using this monitoring.

**VII. Other Record Keeping and Reporting Requirements**

Condition 6.1.8 establishes the excursions regarding operation of RCO1.

Condition 6.2.9 establishes the circumstances during which modified control efficiencies should be used.

Condition 6.2.10 requires that paint usage be tracked on a per-booth format.

Condition 6.2.11 requires written notification if the concentrator bed material is replaced to keep track of when a retest would be needed.

Condition 6.2.12 requires written notification of the startup of RCO1.