

Lane Regional Air Pollution Authority  
Synthetic Minor Air Contaminant Discharge Permit

**REVIEW REPORT**

Georgia-Pacific Resins, Inc.

Permit No. 203129

General Background Information

1. Georgia-Pacific Resins operates a synthetic resin manufacturing plant located at 2665 Highway 99 North, Eugene, Oregon. The facility uses two batch resin kettles to produce a variety of resins including urea-formaldehyde (UF) resin, phenol-formaldehyde (PF) resin, flammable resin and phenol-resorcinol-formaldehyde (PRF) resin. The facility has a natural gas boiler (62 MMBtu/hr) with diesel backup, an emergency generator and numerous storage tanks for raw materials and finished products.

Georgia-Pacific Resins, Inc. purchased the facility from Pacific Resins and Chemicals in November 1981. While owned by Pacific Resins and Chemicals, the facility operated a formaldehyde plant which ceased operation in 1980. Emissions from the formaldehyde plant were not banked and are not considered part of Georgia-Pacific's baseline emissions. Plant Site Emission Limit (PSEL) calculations reflect synthetic resin manufacturing only.

2. The facility is located in a nonattainment area for PM<sub>10</sub> but is **not** a large (> 100 ton/yr) source of these emissions. The Eugene-Springfield area is in attainment for all other criteria pollutants.
3. The facility is located within 100 kilometers (62 miles) of three Class I Wilderness air quality protection areas: Mt. Washington, Three Sisters and Diamond Peak Wilderness areas.
4. The facility also holds a Water Pollution Control Facility Permit (NPDES #101474) issued by the Department of Environmental Quality.
5. The facility was inspected on 8/16/85, 8/25/86, 8/28/87, 8/18/88, 12/14/89, 7/16/90, 12/6/91, 1/20/93, 2/2/94, 1/25/95, 7/30/97, 9/9/98, and 7/13/00 and found to be in compliance with permit conditions.
6. No odor complaints were received during the prior permit period.
7. No enforcement actions have been taken against this facility since the last permit renewal.

Reasons for Permit Action

8. The proposed Synthetic Minor permit will replace the existing Synthetic Minor permit (SM-ACDP) No. 203129 which was issued on November 15, 1995, and expired on August 1, 2000. The facility operates a process listed in Table A, Part II, of LRAPA Rule 34, and is therefore required to obtain a permit.

Emission Units Description

9. Existing emission units at the facility consist of the following:

- a. *1 Cleaver-Brooks water tube boiler (B-1): 47,500 pounds steam per hour maximum capacity (61.67 MMBtu/hr heat input), natural gas-fired with diesel oil backup. The boiler supplies steam to the batch resin kettles and the resin storage tanks and a portion is sold off-site to a nearby veneer plant.*
- b. *1 diesel-fired emergency generator (EG-1) rated at 200 KW (268.2 HP) with a heat input rating of 0.7 MMBtu/hr.*
- c. *2 batch resin kettles: Kettle 1 (K-1) has a capacity of 6,000 gallons per batch; Kettle 2 (K-2) has a capacity of 19,000 gallons per batch.*
- d. *A urea unloading operation which consists of:*
  - 1) *Urea storage silo fed from truck or railcar by pneumatic conveyor. The urea storage silo is controlled by a baghouse (BH-1).*
  - 2) *Urea loading hopper which is pneumatically fed from the urea storage silo and controlled by a baghouse (BH-2). The urea loading hopper discharges measured quantities of urea directly to one of the resin kettles.*
- e. *Resi-Mix process which consists of a resin mixing tank controlled by a baghouse (BH-3). "Resi-Mix" resin is prepared by mixing PF resins with different types of flours/extenders (wheat, walnut shell flour) in the resi-mix tank.*
- f. *3 Phenol storage tanks (ID#s 301, 302 and 303).*
- g. *4 Formaldehyde storage tanks (ID#s 304 and 306 to be removed; and ID#s 100, 101, 102, 103, and 104 to be added during permit term).*
- h. *2 UFC storage tanks (ID# 308 to be removed; and ID#s 104 and 105 to be added during permit term).*
- i. *1 DETA storage tank (ID# 703).*
- j. *17 PF resin storage tanks (ID#s 402, 405 through 407, 410 through 413, 604, RM1 through RM6, I5, and I6).*
- k. *7 UF resin storage tanks (ID#s I-3 through I-4, 602, 603, and 606 through 610).*
- l. *1 Methanol storage tank (ID# 800).*
- m. *2 Epichlorohydrin storage tanks (ID#s 801 and 802).*
- n. *8 Polyamide Resin tanks (ID#s 501 through 508)*
- o. *1 Rosin Sizing Tank (ID# 900)*
- p. *6 Resi-mix tanks (ID#s RM1 through RM6)*
- q. *7 PRF resin storage tanks (ID#s I-1 through I-4 and I-7)).*
- r. *7 Weigh tanks (ID #'s WT-1 through WT-7).*

- s. *Loading of Formaldehyde and UFC into trucks.*
  - t. *Loading of Methanol into trucks.*
  - u. *Loading of Resin into trucks.*
  - v. *Fugitives resulting from material handling.*
  - w. *Truck washing.*
10. VOC emission control systems include a vapor return system on the Methanol storage tank (ID# 800) and the Epichlorohydrin storage tanks (ID# 801, and 802). Methanol and Epichlorohydrin loading is prohibited when the vapor return control system is not in operation.
11. Vapor balance is used to control emissions during truck filling of Methanol.

Non-Emitting Units

12. A list of non-emitting units at the facility and justification for the non-emitting status is provided in the attachment to this permit.

Plant Site Emission Limit (PSEL) Information

**1978 Baseline Emission Rate**

13. The operating schedule for the facility in the 1978 baseline year was:  
24 hrs/day x 7 days/wk x 52 wks/yr = 8760 hrs/yr
14. The reported plant resin production for the 1978 baseline year was:
- a. PF resin . . . . . 27000 tons/1978
  - b. UF resin . . . . . 14445 tons/1978
15. The reported raw material usage for the 1978 baseline year was:
- a. Phenol usage . . . . . 1233184 gals/1978
  - b. Formaldehyde usage . . . . . 3333333 gals/1978
  - c. Methanol . . . . . 5,900,000 gals/1978
  - d. Urea usage . . . . . 6500 tons/1978
  - e. #2 fuel oil (estimate) . . . . . 254160 gals/1978
16. In 1978, the facility was owned and operated by Pacific Resins and Chemicals. In addition to resin manufacturing, Pacific Resins operated a formaldehyde plant which ceased operation in 1980. In November 1981, the plant was purchased by Georgia-Pacific Resins which operated only the resin manufacturing facility. Particulate and gaseous emissions for the 1978 baseline reflect only the resin manufacturing facility and are established below using current emission factors.

**1978 Baseline Emissions Table**

Emissions Unit	TSP ton/yr (#/day)	PM <sub>10</sub> ton/yr (#/day)	SO <sub>x</sub> ton/yr (#/day)	NO <sub>x</sub> ton/yr (#/day)	VOC ton/yr (#/day)	CO ton/yr (#/day)	Pb ton/yr (#/day)
Natural Gas Boiler (B-1)	1.7 (26.2)	1.7 (26.2)	9.1 (601.9)	17.5 (263.5)	0.3 (3.6)	4.4 (65.9)	0.0002 (0.011)
Emergency Generator (EG-1)	0.0 (5.2)	0.0 (5.2)	0.0 (4.9)	0.3 (74.1)	0.0 (4.9)	0.1 (16.0)	NA NA
Urea Silo (BH-1)	0.1 (0.4)	0.1 (0.4)	---	---	---	---	---
Urea Weigh Hopper (BH-2)	0.1 (0.4)	0.1 (0.4)	---	---	---	---	---
Resin Kettle (K-1, K-2)	---	---	---	---	2.2 (12.4)	---	---
Storage Tanks	---	---	---	---	0.2 (1.3)	---	---
<b>TOTAL</b>	<b>1.9</b>	<b>1.9</b>	<b>9.1</b>	<b>17.8</b>	<b>2.7</b>	<b>4.5</b>	<b>0</b>

17. A breakdown of the individual Hazardous Air Pollutants (HAPs) which are components of the VOC emissions presented above for the 1978 baseline year are as follows:

Source	Formaldehyde tons/yr	Phenol tons/yr	Methanol tons/yr	Total HAPs* tons/yr
Kettles	0.25	0.01	2.9	3.2
Storage Tanks	0.13	0.1	0.0	0.2
<b>Total</b>	<b>0.38</b>	<b>0.11</b>	<b>2.9</b>	<b>3.4</b>

\* Totals represent the sum of individual HAPs; HAPs have not been corrected to a carbon (C) equivalent basis.

History of Changes to the Plant Site Emission Limit

18. The following changes have been made to the baseline and the Plant Site Emission Limit:
- a. The baseline emission rate was established for all regulated pollutants in the last permit issuance. No changes have been made to the baseline emission rate for the current permit.
  - b. Plant Site Emission Limits (PSELs) were calculated to include emissions from the four (4) new Formaldehyde and two (2) new UFC storage tanks.
  - c. The Synthetic Minor limits were changed from gallons per year to pounds per year upon request by the facility.
  - d. The Synthetic Minor limits were changed from calendar year totals to 12-month rolling totals to reflect the correct emission limitation.
  - e. As part of the current Synthetic Minor application, the facility requested increases to the PSELs for VOC and CO. The increases are below the Significant Emission Rate (SER) and reflect levels which are below the Title V applicability triggers and allow the facility to operate as a Synthetic Minor source.

Current (2000) Plant Site Emission Limit (PSEL)

19. The proposed operating schedule for this Synthetic Minor permit is the same as the baseline year:

$$24 \text{ hrs/day} \times 365 \text{ days/year} = 8760 \text{ hrs/yr}$$

20. The proposed plant production for the facility is different than baseline and, as a Synthetic Minor source, production, fuel use and urea use are limited as listed below.

a.	Total resin . . . . .	618 MM lbs/yr
b.	"Other" PF resin . . . . .	.150 MM lbs/yr
c.	UF resin . . . . .	..200 MM lbs/yr
d.	Methanol Solvated P/F resin . . . . .	..14 MM lbs/yr
e.	Polyamide Resin . . . . .	.254 MM lbs/yr
f.	No. 2 fuel oil . . . . .	1,242,560 gal/yr
g.	Back-up Generator Operation Hours . . . . .	2000 hours/yr
h.	Tanker truck loading of Formaldehyde . . . . .	840,000 gal/yr
i.	Tanker truck loading of UFC . . . . .	420,000 gal/yr
j.	Tanker truck loading of Methanol . . . . .	2 MM gal/yr
k.	Truck or Railcar Loading of UF resin . . . . .	19,454,545 gal/yr

- l. Truck or Railcar Loading of PF resin . . . . . 21,400,000 gal/yr
- m. Truck or Railcar Loading of Polyamide resin . . . 70,887,131 gal/yr

21. The proposed PSEs for the facility as a Synthetic Minor are greater than baseline emissions for all regulated pollutants. Increases **over baseline** for each pollutant are as follows:

**Increases Over Baseline**

Pollutant	tons/year
PM/PM <sub>10</sub>	3.2
SO <sub>2</sub>	35.3
NO <sub>x</sub>	23.7
VOC	20.0
CO	14.1
Pb	0.0006

The PSEs shown below are based on emission calculations shown in the detail sheets in the attachment to this report. VOC emissions for the resin kettles are based on emission factors derived from source test data. Storage tank emissions are based on results from the "TANKS" emission program. See the attachment to this report and the facility's permit application received by LRAPA on July 3, 2000, for calculation details.

**Current Annual PSEL**  
 (tons/year)

Source	PM/PM <sub>1</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Pb
Storage and Weigh Tanks and Resin Chill and Product Storage Tanks	NA	NA	NA	4.1	NA	NA
Loading of Formaldehyde/UFC to Truck	NA	NA	NA	0.13	NA	NA
Loading of Methanol to Trucks	NA	NA	NA	0.06	NA	NA
Kettles	NA	NA	NA	10.5	NA	NA
Loading Resin into Trucks	NA	NA	NA	2.9	NA	NA
Fugitives from Material Handling	NA	NA	NA	2.8	NA	NA
Truck Washing	NA	NA	NA	0.7	NA	NA
Storage and Loading of Rosin Sizing	NA	NA	NA	0.13	NA	NA
Boiler	2.6	44.2	38.0	1.1	18.5	8×10 <sup>-3</sup>
Stand-By Generator	0.2	0.2	3.1	0.3	0.1	NA
Cooling Tower	1.7	NA	NA	NA	NA	NA
Urea Silo Baghouse	0.3	NA	NA	NA	NA	NA
Urea Loading Hopper Baghouse	0.3	NA	NA	NA	NA	NA
Resi-Mix Blending Baghouse	NA	NA	NA	NA	NA	NA
<b>Totals</b>	<b>5.1</b>	<b>44.4</b>	<b>41.1</b>	<b>22.7</b>	<b>18.6</b>	<b>8×10<sup>-3</sup></b>

A time frame of one month was chosen for the PSELs for the storage tanks, kettles, and loading of materials because the permit requires the facility to calculate 12-month rolling totals for this equipment/activity. The monthly totals were determined by dividing the annual totals by 12 months per year and multiplying the total by 1.2 to allow for month-to-month fluctuations.

**Current Monthly PSEL**  
 (pounds/month)

Source	PM/PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Pb
Storage and Weigh Tanks and Resin Chill and Product Storage Tanks	NA	NA	NA	812.7	NA	NA
Loading of Formaldehyde and UFC to Truck	NA	NA	NA	26.0	NA	NA
Loading of Methanol to Trucks	NA	NA	NA	12.0	NA	NA
Resin Kettles	NA	NA	NA	2101.5	NA	NA
Loading Resin Into Trucks	NA	NA	NA	580.0	NA	NA
Fugitives from Material Handling	NA	NA	NA	560.0	NA	NA
Truck Washing	NA	NA	NA	140.0	NA	NA
Storage and loading of Rosin Sizing	NA	NA	NA	26.0	NA	NA
<b>Totals</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>4258.2</b>	<b>NA</b>	<b>NA</b>

Hourly PSEs were set at the maximum hourly design rate for the equipment, thus compliance with the hourly PSEs is assured.

**HOURLY PSEL**  
 (pounds/hour)

Source	PM/PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Pb
Boiler	1.3	31.3	17.4	0.4	7.4	5x10 <sup>-4</sup>
Stand-By Generator	0.2	0.2	3.1	0.3	0.7	--
Cooling Tower	0.1	--	--	--	--	--
Urea Silo Baghouse	0.1	--	--	--	--	--
Urea Loading Hopper Baghouse	0.4	--	--	--	--	--
Resi-Mix Blending Baghouse	--	--	--	--	--	--
<b>Totals</b>	<b>2.1</b>	<b>31.5</b>	<b>20.5</b>	<b>0.7</b>	<b>8.1</b>	<b>5x10<sup>-4</sup></b>

22. A breakdown of the individual HAPs (which are components of the VOC emissions presented above) for the facility are as follows:

**HAPs**  
 (tons/year)

Source	Formaldehyde	Phenol	Methanol	Epichlorohydrin	Total HAPs*
Kettles	2.4	0.04	7.2	0.95	11.0
Other	3.1	2.35	2.2	2.85	10.5
<b>Total*</b>	<b>5.5</b>	<b>2.4</b>	<b>9.4</b>	<b>3.8</b>	<b>21.5</b>

\* Totals represent the sum of individual HAPs; HAPs have not been corrected to a carbon (C) equivalent basis.

#### TITLE V INFORMATION

##### Potential to Emit Hazardous Air Pollutants

23. This facility was also on the Title V call-in list due to its potential-to-emit greater than 10 tons of methanol and more than 25 tons of a combination of HAPs. Without resin production limits, the facility's potential-to-emit would be 21.7 tpy methanol and 29.5 tpy total HAPs combined. The limits on resin production established with this Synthetic Minor permit reduce anticipated potential to 9.4 tpy methanol and 21.5 tpy total HAPs combined.

##### Synthetic Minor Election

24. Because the source elected to avoid the Title V permitting requirements, the facility voluntarily agreed to federally enforceable conditions to reduce its potential to emit to levels below the Title V triggers for criteria and hazardous air pollutants. Federally-enforceable permit conditions include limits on resin production and raw material and fuel usage. Even with limits on resin production, the potential methanol emissions will be approximately 9.4 tpy, just under the 10 tpy trigger. Because this emission level leaves only a small operational cushion, the permit contains detailed monitoring and reporting requirements to ensure actual emissions are below the Title V triggers.

##### Additional Requirements

25. Monitoring requirements contained in the proposed permit include documentation of all methanol storage vapor return system downtimes, cause and corrective actions taken.
26. A special condition contained in the proposed permit include a requirement to apply for a Title V permit if emission levels, exclusive of LRAPA Title 36 allowable excess emission incidents, increase above the Title V triggers for criteria and hazardous air pollutants.
27. The facility is required to submit to LRAPA annual reports of operating and production data, including emission calculations for criteria and hazardous air pollutants.
28. Several storage tanks at the facility are subject to the federal regulations for New Source Performance Standards (NSPS) Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels ( Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984. For the tanks that are subject to the NSPS Subpart Kb, the permit contains record-keeping requirements.
29. This facility is not subject to federal regulations for New Source Review (NSR).
30. This facility is not subject to federal regulations for Prevention of Significant Deterioration( PSD).

31. This facility is not subject to federal regulations for National Standards for Hazardous Air Pollutants (NESHAPS).
32. The facility's permit application, received July 3, 2000, contains a complete review of all NSPS applicability and non-applicability.

Public Notice

33. The draft permit was on public notice from October 28, 2001 to November 27, 2001. No comments were during the 30-day comment period.

MH/bp  
12/3/01