

## STATEMENT OF BASIS

*for issuance of Air Permit No. 288-AR-13*

- **PERMITTING AUTHORITY:**

Arkansas Department of Environmental Quality  
8001 National Drive  
Post Office Box 8913  
Little Rock, Arkansas 72219-8913

- **APPLICANT:**

Exide Corporation (dba GNB Industrial Power- A Division of Exide Technologies)  
4115 South Zero Street  
Fort Smith, AR 72903

- **PERMIT WRITER:**

Siew Low

- **PROCESS DESCRIPTION AND SIC CODE:**

**SIC Description: Storage Batteries (lead-acid battery manufacturing)**  
**SIC Code: 3691**

- **SUBMITTALS: March 28, 2002, April 18, 2002**

- **REVIEWER'S NOTES:**

Exide Technologies, formerly GNB Technologies Inc., owns and operates a lead-acid battery manufacturing facility in Fort Smith, Arkansas. With this modification, Exide will be:

1. removing the PDQ area and its associated burn box, and rerouting the ventilation from the existing M assembly area to SN-01; the N assembly area will remain ducted and controlled by SN-02;
2. installing three new natural gas curing ovens, each with a heat input capacity of 150,000 Btu/hr, and one plate boxing back-draft hood (SN-04);
3. installing four new natural gas curing ovens (approximately 285 ft<sup>3</sup>/min each), each with a heat input capacity of 150,000 Btu/hr (SN-51), removing the Absolyte Line 1 ventilation duct (to be rerouted to SN-53), adding the ventilation ductwork from Absolyte Line 3 (to be rerouted from SN-53), and adding a burn box each to Absolyte Lines 2 and 3 (two burn boxes total);
4. removing the Absolyte Line 3 ventilation ducts (to be rerouted to SN-51), adding the ventilation ductwork from Absolyte Line 1 ( to be rerouted from SN-51), and adding one burn box to Absolyte Line 1 (SN-51); and

- 5. reconfiguring the melting and casting operation to replace outdated equipment (adding four new grid casters) at SN-56.
- 6. authorized to stack test the nine baghouses for lead and PM/PM<sub>10</sub> emissions every five years instead of every year.
- 7. COMPLIANCE STATUS: The following summarizes the current compliance status of the facility including active/pending enforcement actions and recent compliance activities and issues.

There are no current or pending enforcement actions for this facility.

8. APPLICABLE REGULATIONS:

A. **Applicability**

**Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, et cetera) (Y/N)**

  N  

**Has this facility underwent PSD review in the past (Y/N)   N   Permit #**

**Is this facility categorized as a major source for PSD? (Y/N)   N**

**\$ 100 tpy and on the list of 28 (100 tpy)? (Y/N)   N**

**\$ 250 tpy all other (Y/N)   N**

2. PSD Netting

**Was netting performed to avoid PSD review in this permit? (Y/N)   N**

3. Source and Pollutant Specific Regulatory Applicability

Source(s)	Pollutant	Regulation [NSPS, or NESHAP (Part 61 & Part 63)]
01-04, 37, 51, 53, 56, 57	Lead	NSPS Subpart KK

9. EMISSION CHANGES:

The following table summarizes plantwide emission changes associated with this permitting action.

<b>Plantwide Permitted Emissions (ton/yr)</b>
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Pollutant	Air Permit 288-AR-12	Air Permit 288-AR-13	Change
PM/PM <sub>10</sub>	45.9	46.3	+0.4
SO <sub>2</sub>	0.6	0.6	0
VOC	18.2	18.2	0
CO	6.3	8.0	+2.7
NO <sub>x</sub>	9.4	10.2	+0.8
H <sub>2</sub> SO <sub>4</sub>	0.8	0.8	0
Lead	3.2	3.2	3.2

10. MODELING:

A. Criteria Pollutants

Modeling of particulate matter, sulfur dioxide, volatile organic compounds, carbon monoxide, and nitrogen oxides is not required for this permit modification. The permitted emissions of each pollutant is less than 100 tons per year.

The modeled concentration of lead must be less than the NAAQS to “pass” the modeling. The averaging period for the lead NAAQS is quarterly. The model does not contain this averaging period option. As an alternative, the lead emissions were modeled using a hourly averaging period and then multiplied by a factor of 0.15.

SN(s)	Pollutant	Modeled Concentration (µg/m <sup>3</sup> )	NAAQS (µg/m <sup>3</sup> )	Pass?
01, 02, 03, 04, 37, 51, 53, 56, 57	Lead	0.959 (0.15*hourly = quarterly)	1.5 (quarterly)	Yes

In addition, Exide has ambient lead monitors. According to GNB, these monitors indicate concentrations of approximately 0.05 µg/m<sup>3</sup>, well below the standard of 1.5 µg/m<sup>3</sup>.

B. Non-Criteria Pollutants

**1st Tier Screening (PAER).**

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The PAER was deemed by the Department to be the product, in lb/hr, of 0.11 and the Threshold Limit Value ( $\text{mg}/\text{m}^3$ ), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

SN(s)	Pollutant	TLV ( $\text{mg}/\text{m}^3$ )	PAER (lb/hr) = 0.11*TLV	Proposed lb/hr	Pass?
06, 47, 48	H <sub>2</sub> SO <sub>4</sub>	1	0.11	0.3	No
54	Isopropyl Alcohol	983	108.13	11.6	Yes

**2nd Tier Screening (PAIL).**

ISCST3 air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound was deemed by the Department to be one one-hundredth of the Threshold Limit Value, as listed by the ACGIH.

SN(s)	Pollutant	(PAIL, $\mu\text{g}/\text{m}^3$ ) = 1/100 of Threshold Limit Value	Modeled Concentration ( $\mu\text{g}/\text{m}^3$ )	Pass?
06, 47, 48	H <sub>2</sub> SO <sub>4</sub>	10	2.0	Yes

11. CALCULATIONS:

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
All lead pots	AP-42	PM/PM <sub>10</sub> 7.6 lb/MMcf SO <sub>2</sub> 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO <sub>x</sub> 94 lb/MMcf	None	N/A	the lead pots were changed to insignificant sources
04-curing ovens	AP-42	PM/PM <sub>10</sub> 7.6 lb/MMcf SO <sub>2</sub> 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO <sub>x</sub> 94 lb/MMcf	Baghouse	99%	15 curing ovens @ .015 mmBTU/hr each
04- grid casters & ladle burners	AP-42	PM/PM <sub>10</sub> 7.6 lb/MMcf SO <sub>2</sub> 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO <sub>x</sub> 94 lb/MMcf	Baghouse	99%	Total Burner Rating = 0.1 mmBTU/hr (4 grid casters @ 0.025 mmBTU/hr each)
56- 7 grid casters & ladle burners	AP-42	PM/PM <sub>10</sub> 7.6 lb/MMcf SO <sub>2</sub> 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO <sub>x</sub> 94 lb/MMcf	Baghouse	99%	7 grid casters @ 0.025 mmBTU/hr each
56- 5 lead pots & emission ducts	AP-42	PM/PM <sub>10</sub> 7.6 lb/MMcf SO <sub>2</sub> 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO <sub>x</sub> 100 lb/MMcf	Baghouse	99%	5 casting pots @ 0.8 mmBTU/hr each

Previously performed calculations are listed in the table below:

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
03-oxide silos	N/A	PM insignificant Pb insignificant	Baghouse	99%	assumes that emissions of PM and lead will be insignificant from this addition
04- grid casters	AP-42	PM/PM <sub>10</sub> 7.6 lb/MMcf SO <sub>2</sub> 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 40 lb/MMcf NO <sub>x</sub> 94 lb/MMcf	Baghouse	99%	Maximum Gas Usage - 0.438 MMcf/yr  calculation of POCs from the 2 new grid casters
04-lead melt pots	AP-42	PM/PM <sub>10</sub> 7.6 lb/MMcf SO <sub>2</sub> 0.6 lb/MMcf VOC 5.5 lb/MMcf CO 84 lb/MMcf NO <sub>x</sub> 100 lb/MMcf	Baghouse	99%	Maximum Gas Usage - 13.14 MMcf/yr  calculation of POCs from the 2 new melt pots

12. **TESTING REQUIREMENTS:**

This permit requires stack testing of the following sources.

SN(s)	Pollutant	Test Method	Justification
01, 02, 03, 04, 37, 51, 53, 56, 57	PM/PM <sub>10</sub>	5	To demonstrate compliance with the permitted emission limits.
	Lead	12	

13. MONITORING OR CEMS

There are no monitoring requirements in this permit.

14. RECORD KEEPING REQUIREMENTS

The following are items (such as throughput, fuel usage, VOC content of coating, etc) that must be tracked and recorded, frequency of recording and whether records are needed to be included in any annual, semiannual or other reports.

SN	Recorded Item	Limit (as established in permit)	Frequency*	Report (Y/N)**
01-04, 37, 51, 53, 56, 57	Maintenance records	N/A	Monthly	N

15. OPACITY:

The following opacity limits are required by this permit.

SN	Opacity %	Justification (NSPS limit, Dept. Guidance, etc)	Compliance Mechanism (daily observation, weekly, control equipment operation, etc)
01-04, 37, 51, 53	0%	Opacity limit from last permit.	Baghouse-Annual Compliance Test Reference Method 12 for lead Reference Method 5 for PM/PM <sub>10</sub>
11, 55	5%	Department guidance. Natural gas fired.	EPA Reference Method 9
47, 48, 54	0%	Opacity limit from last permit.	EPA Reference Method 9
56, 57	0%	NSPS Subpart KK	Baghouse-Annual Compliance Test Reference Method 12 for lead Reference Method 5 for PM/PM <sub>10</sub>

16. DELETED CONDITIONS:

The following Specific Conditions were included in the previous permit, but deleted for the current permitting action.

<b>Former SC</b>	<b>Justification for removal</b>
<b>None</b>	

17. VOIDED, SUPERSEDED OR SUBSUMED PERMITS

List all active permits for this facility which are voided/superseded/subsumed by issuance of this permit.

<b>Permit #</b>
288-AR-12

18. CONCURRENCE BY:

The following supervisor concurs with the permitting decision:

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*Lyndon Poole, P.E.*