GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

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NARRATIVE

TO: Heather Brown

FROM: Tyneshia Tate

DATE: February 7, 2023

Facility Name:	**Trojan Battery Corporation, LLC**
AIRS No.:	08900012
Location:	Lithonia, GA (DeKalb County)
Application #:	28665
Date of Application:	December 13, 2022

Background Information

Trojan Battery Corporation, LLC (formerly Trojan Battery Corporation) is located at 5174 Minola Drive in Lithonia, Georgia. The facility manufactures deep-cycle, lead-acid batteries and lead oxide and operates 8,760 hours per year. The facility currently operates under Air Quality Permit Number 3691-089-0012-S-05-0 issued July 11, 2013. The facility received Air Quality Permit Amendment Number 3691-089-0012-S-05-1 issued December 11, 2019 to allow the installation and operation of Intermediate Baghouse BH5.

Purpose of Application

Per Application Number 28665, Trojan proposes to install the following equipment:

- One (1) Continuous Caster (CC1); This equipment will be controlled by existing baghouse BH3.
- Three (3) Lead Melting Pots (LP7 through LP9); These pieces of equipment will be controlled by existing baghouse BH3.
- Three (3) Grid Casting Machines (GC20 through GC22); These pieces of equipment will be controlled by existing baghouse BH3.
- One (1) Continuous Paster (CP1); This equipment will be controlled by existing baghouse BH2.
- One (1) Paste Mixer (PM2); This equipment will be controlled by existing baghouse BH2.
- One (1) Plate Stacker Station (PS1); This equipment will be controlled by existing baghouse BH2.
- One (1) Plaste Pasting Machine (PA2); This equipment will be controlled by existing baghouse BH2.

- One (1) Lead Oxide Batch Silo (PO3); This equipment will be controlled by existing baghouse BH1.
- One (1) WIRTZ Oven (OV2); This equipment will be controlled by existing baghouse BH2.
- One (1) Central Vacuum System (V2); This equipment will be controlled by existing baghouse BH4.
- One (1) 100 ton Unmilled oxide storage silo (US3); The silo will be enclosed and will be controlled by existing baghouse DC1.
- One (1) 50 ton Milled oxide storage silo (MS4;) The silo will be enclosed and will be controlled by existing baghouse DC1.

According to Application Number 28665, these equipment additions will not result in changes to the facility's lead and particulate matter (PM) emission rates as they will be accommodated within the existing ventilation capacity of the facility's baghouses with no adjustments to fan speeds or exhaust air flows.

In addition, Trojan proposes to remove the following equipment:

- Four (4) Melting Pots (NP5 through MP8)
- Three (3) Small Parts Casting Machines (SC1 through SC3)
- Two (2) Wingnut Terminal Machines (WN1 and WN2)
- Two (2) Automatic Stacking Machines (ASI and AS3)
- Eleven (11) Banks of Rectifiers (BR21 through BR31)

Additionally, the current permit narrative lists six (6) pig feeders (P1 – P6) as emission units. However, the pig feeders are not sources of emissions as they are just roller conveyors, per Application Number 28655. Therefore, Trojan requests to remove these pieces of equipment from the equipment list.

The facility also wishes to incorporate the newly promulgated 40 Code of Federal Regulations (CFR) Part 60 Subpart KKa – Standards of Performance for Lead Acid Battery Manufacturing Plants for which Construction, Modification or Reconstruction Commenced After February 23, 2022 into its permit.

A public advisory was issued for this application which expired on February 3, 2023. No comments were received.

Updated Equipment List

The equipment list is as included in Appendix 2 of the narrative of Application Number 28665.

Emission Units			Associated Control Devices	
Source Code	**Description**	**Installation Date**	**Source Code**	**Description**
Lead Oxide Facility				
MP1 – MP**4**	**4** Melting Pots	Since 2001	None	None
OM1 – OM8	8 Barton Oxide Mills & oxide cyclones	Since 2001	B1-B8	Baghouses
US1-US3	**3** 100 ton Unmilled oxide storage silos	Since 2001	Enclosed	**Baghouse DC1**
HM1-HM3	3 Hammermills	Since 2001	Enclosed	None
MS1-MS**4**	**4** 50 ton Milled oxide storage silos	Since 2001	Enclosed	**Baghouse DC1**
GVS	General Ventilation System	Since 2004 **Since 2020**	DC1 BH5	Baghouse Baghouse
Battery Manufacturing Operations				
Grid Casting Facility				
CC1	**Continuous Caster**	**Q4 2022**	**BH3**	**Baghouse**
LP1-LP**9**	**9** Lead Melting Pots		BH3	Baghouse
GC1-GC**22**	**22** Grid Casting Machines		BH3	Baghouse
~~**SC1-SC3**~~	~~**3 Small Parts Casting Machines**~~		~~**BH3**~~	~~**Baghouse**~~
~~**WN1-WN2**~~	~~**Wingnut Terminal Machines**~~		~~**BH3**~~	~~**Baghouse**~~
~~**P1-P6**~~	~~**6 Pig Feeders**~~		~~**None**~~	~~**None**~~
Paste Mixing Facility				
CP1	**Continuous Paster**	**Q4 2022**	**BH2**	**Baghouse**
PO1	Lead Oxide Storage Silo		BH1	Baghouse
PO2	Lead Oxide Batch Silo		BH**1**	Baghouse
PO3	**Lead Oxide Batch Silo**	**Q4 2022**	**BH1**	**Baghouse**
PM1- **PM2**	Paste Mixers		BH2	Baghouse
PA1 – **PA2**	Plaste Pasting Machines		BH2	Baghouse
OV1	OSI Oven		BH2	Baghouse
OV2	**WIRTZ Oven**	**Q4 2022**	**BH2**	**Baghouse**
PP1	Plate Shingling Station		BH2	Baghouse
PS1	**Plate Stacking Station**	**Q4 2022**	**BH2**	**Baghouse**
CR1-CR6	6 Curing Rooms		None	Plant Atmosphere
Three-Process Operation Facility				
~~**AS1**~~	~~**Automatic Stacking Machine**~~		~~**BH2**~~	~~**Baghouse**~~

Emission Units			Associated Control Devices	
Source Code	**Description**	**Installation Date**	**Source Code**	**Description**
~~**AS3**~~	~~**Automatic Stacking Machine**~~		~~**BH3**~~	~~**Baghouse**~~
	Eberle Plate Stacker	2011	BH4	Baghouse
	TBS Engineering Cast-on-Strap Machine	2011	BH4	Baghouse
	Eberle Plate Stacker	2012	BH1	Baghouse
	TBS Engineering Cast-on-Strap Machine	2012	BH1	Baghouse
CW1-CW2	Inner Cell Welding Stations		BH1	Baghouse
HS1-HS2	Heat Seal Stations		ME1-ME2	Mist Eliminators
PW1-PW2	Post Welding Stations		BH1	Baghouse
PW3-PW4	Post Welding Stations		**BH4**	**Baghouse**
N/A	Room Heat and Fugitive Dust		BH4	Baghouse
Other Lead-Emitting Sources				
MC	Welding, Sorting, and Cleaning		BH1	Baghouse
V1	Central Vacuum System		BH1	Baghouse
V2	**Central Vacuum System**	**Q4 2022**	**BH4**	**Baghouse**
Other Emission Sources				
SA1-SA9	Formation Acid Area tanks		None	Plant Atmosphere
F	Formation Room Charging		ME3-ME6	Mist Eliminators
BR1-BR**20**	**20** Banks of Rectifiers		None	Plant Atmosphere

Bold text indicates proposed modifications as included in Application Number 28665.

Emissions Summary

Per Application Number 28665, the proposed modification will not result in an increase in potential emissions as all proposed equipment will be controlled by the existing baghouses, and the exhaust flow rates of existing baghouses will not be changed with the installation of the new equipment. Specifically, PM and lead emissions from the equipment related to the Grid Casting Facility (CC1, LP7-LP9, and GC20-GC22) will be controlled by existing baghouse BH3 while equipment related to the Paste Mixing Facility (CP1, PM2, PO3, PA2, OV2, and PS1) will be controlled by existing baghouses BH1 and BH2. The emissions from the equipment related to other lead-emitting operations (V2) will be controlled by existing baghouse BH4. The equipment related to the Lead Oxide Facility will be enclosed and will be controlled by existing baghouse DC1. As outlined in USEPA guidance[1], baghouses are constant outlet concentration devices and not constant efficiency devices. Therefore, the emissions from baghouses are a factor of the air-to-cloth ratio and are not dependent on the production rate of the process equipment or the inlet loading.

[1] https://www3.epa.gov/ttnchie1/mkb/documents/ff-pulse.pdf

According to Application Number 28665, there will also emissions related to combustion with regard to Oven OV2 which is associated with Continuous Paster CP1. The oven will have a heat input capacity of 1.625 million British Thermal Units Per Hour (10^6 Btu/hr) and can fire propane or natural gas. Due to the heat input capacity of proposed Oven OV2 and the fuel fired, combustion emissions increases from this source are considered negligible.

As specified by the narrative dated December 14, 2009 for Permit Number 3691-089-0012-S-04-0 issued January 27, 2010, see the narrative associated with Permit Number 3691-089-0012-S-03-0 issued March 2007 for a detailed discussion of the facility's emissions.

Regulatory Applicability

Part 60, Chapter I, Title 40 of the Code of Federal Regulations (40 CFR 60) - New Source Performance Standards (NSPS) Subpart A – General Provisions
Except as provided in Subparts B and C of 40 CFR 60, the provisions of this regulation apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of any standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility [40 CFR 60.1(a)]. Any new or revised standard of performance promulgated pursuant to Section 111(b) of the Clean Air Act applies to equipment located at the Southwire site for which the construction or modification is commenced after the date of publication in 40 CFR 60 of such new or revised standard (or, if earlier, the date of publication of any proposed standard) applicable to that equipment and/or processes [40 CFR 60.1(b)]. The facility has proposed equipment to be located at this facility subject to 40 CFR 60.

40 CFR 60, Subpart KK – Standards of Performance for Lead-Acid Battery Manufacturing Plants
Under this regulation, an *affected facility* has the design capacity to produce in one day (24 hours) batteries containing an amount of lead equal to or greater than 6.5 tons. The 40 CFR 60, Subpart KK standards for lead are noted in the following table:

Process Component	**NSPS KK Definition**	**Pb (grains/dscf)/(mg/dscm)**
Grid Casting Facility	Includes all lead melting pots and machines used for casting the grid used in battery manufacturing.	0.000175/0.40
Paste Mixing Facility	Includes lead oxide storage, conveying, weighing, metering, and charging operations; paste blending, handling, and cooling operations	0.000437/1.00
3-Process Operation Facility	Includes those processes involved with plate stacking, burning or strap casting, and assembly of elements into the battery case.	0.000437/1,00

Process Component	NSPS KK Definition	Pb (grains/dscf)/(mg/dscm)
Other Lead-Emitting Operation	Includes any lead-acid battery manufacturing plant operation from which lead emissions are collected and ducted to the atmosphere and which is not part of a grid casting, lead oxide manufacturing, lead reclamation, paste mixing, or three-process operation facility, or a furnace affected under 40 CFR 60 Subpart L.	0.000437/1.00

Process Component	Opacity %
Any affected facility other than a lead reclamation facility	Any gases with greater than 0 percent opacity (measured according to Method 9 and rounded to the nearest whole percentage).

NSPS KK establishes an *equivalent standard* for the total exhaust from the commonly controlled facilities.

The facility must conduct performance tests required in 40 CFR 60.8 using the reference methods and procedures the test methods in appendix A of 40 CFR 60 or other methods and procedures as specified in 40 CFR 60.374, except as provided in 40 CFR 60.8(b).

The facility must determine compliance 40 CFR 60.372 with the applicable lead standards for the lead oxide manufacturing facility as specified in 40 CFR 60.374(c).

The facility has existing equipment subject to this regulation.

40 CFR 60, Subpart KKa – Standards of Performance for Lead Acid Battery Manufacturing Plants for which Construction, Modification or Reconstruction Commenced After February 23, 2022
As indicated in Application Number 28665, US Environmental Protection Agency (USEPA) has made updates to 40 CFR 60, Subpart KK by finalizing Part 60 Subpart KKa. The newly promulgated regulation sets forth the emission requirements for new facilities beginning construction, reconstruction, or modification after February 23, 2022.

The revised regulation does the following:

- Revise lead emission limits for grid casting and lead reclamation operations for both the area source National Emissions Standards for Hazardous Air Pollutants (that applies to all new and existing area source facilities) and in the new NSPS update (subpart KKa) that applies to new, reconstructed, or modified sources;

- Revise lead emission limits for paste mixing at large facilities (with capacity to process in one day an amount of lead greater than or equal to 150 tons) for both the National Emissions Standards for Hazardous Air Pollutants (that applies to new and existing large facilities) and for the new NSPS subpart that applies to new, reconstructed, or modified sources at large facilities;

- Require periodic compliance testing of once every five years;

- Establish work practices to minimize fugitive lead dust emissions;

- Require bag leak detection systems for facilities with capacity to process - in one day - an amount of lead greater than or equal to 150 tons;

- Increase inspection frequency of fabric filters that do not have secondary filters or bag leak detection systems;

- Electronic reporting; and

- Removal of exemptions for periods of startup, shut down, and malfunctions.

Table 1, provided below as included in the narrative associated with Application Number 28665**,** summarizes the final changes to the emission requirements.

Table 1. Changes to NSPS Lead Standard

Facility Type	Current Lead Limits	New Lead Limits[2]
Grid Casting Facility	0.40 mg/dscm	0.08 mg/dscm
Paste Mixing Facility	1.00 mg/dscm	0.1 mg/dscm
Three-Process Operation Facility	1.00 mg/dscm	No Changes
Lead Oxide Manufacturing Facility	5.0 mg/kg lead feed	No Changes
Lead Reclamation Facility	4.50 mg/dscm	0.45 mg/dscm
Other Lead-Emitting Operations	1.00 mg/dscm	No Changes

Note:

1. No changes are proposed to the opacity limits.

The facility is requesting to update Permit Condition 2.1 of its permit to reflect the new lead limits finalized in 40 CFR, Subpart KKa. Additionally, per 40 CFR 60.8, a performance test on the affected units will be conducted within 180 days of startup of the emission units associated with the Grid Casting and Paste Mixing Facilities and Other Lead-Emitting Operations. Per the facility's permit, compliance testing will be completed annually.

[2] https://www.epa.gov/system/files/documents/2023-02/LeadAcidBattery_FinalRule.pdf

This regulation also requires applicable facilities to develop and implement a fugitive dust mitigation plan per the requirements specified in 40 CFR 60, Subpart KKa. The facility will develop a fugitive dust mitigation plan and will submit to the Division for approval according to Application Number 28865. This regulation is applicable to specified equipment included in this modification.

40 CFR 63- National Emissions Standards for Hazardous Air Pollutants (NESHAP) Subpart A – General Provisions
This regulation contains national emission standards for hazardous air pollutants (NESHAP) established pursuant to section 112 of the Act as amended November 15, 1990. These standards regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants listed in this part pursuant to section 112(b) of the Act. This facility is a synthetic source of HAPs under this regulation since it operates under emission limitations to remain below the applicable major source emissions levels of 10 ton per year of individual HAPs and 25 tons per year for combined emissions of HAPs. Therefore, equipment located at this site are subject to a specified standard under this regulation as an area source of HAPs emissions.

40 CFR 63, Subpart PPPPPP – National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources
The facility is subject to this subpart because the *affected facility* is an area source of hazardous air pollutants (HAPs) emissions. This subpart applies to each *affected source*: all grid casting facilities, paste mixing facility, three-process operation, and any other lead-emitting operation. The facility must meet all the emission standards for lead as specified in 40 CFR 60, Subpart KK. The facility must meet all testing and monitoring requirements for the proposed equipment specified in this rule.

This regulation requires testing within 60 days of any changes to the facility's process.

According to Application Number 28665, this regulation was updated to reflect the lead emission limits and requirements as those for 40 CFR 60, Subpart KKa. This regulation is applicable to specified equipment included in this modification. According to Application Number 28665, the facility will comply with 40 CFR 63, Subpart PPPPP by complying with 40 CFR 60, Subpart KKa.

Georgia Rule for Air Quality Control (*Georgia Rule) 391-3-1-.02(2)(b) – Emission Limitations and Standards Visible Emissions*
This regulation limits opacity to less than forty (40) percent, except as may be provided in other more restrictive or specific rules or subdivisions of Georgia Rule 391-3-1-.02(2). This limitation applies to direct sources of emissions such as stationary structures, equipment, machinery, stacks, flues, pipes, exhausts, vents, tubes, chimneys or similar structures. All equipment being added to the permit as part of this modification are subject to this regulation, with exception to the oven.

Georgia Rule 391-3-1-.02(2)(d) – Emission Limitations and Standards Fuel Burning Equipment
This regulation limits particulate emissions from fuel burning equipment. Oven OV2 is subject to Georgia Rule 391-3-1-.02(2)(d)2.(i) because it is a fuel burning source with a heat input less than 10×10^6 Btu/hr and constructed after January 1, 1972. Georgia Rule 391-3-1-.02(2)(d)2.(i) limits PM emissions based on the following equation:

P = 0.5 pounds per million Btu heat input

Oven OV2 added in this project is subject to opacity limits in Rule (d). Georgia Rule 391-3-1-.02(2)(d)3.(i) limits opacity from fuel-burning equipment constructed or extensively modified after January 1, 1972 to less than twenty percent except for one six minute period per hour of not more than twenty-seven percent opacity.

Georgia Rule 391-3-1-.02(2)(e) – Emission Limitations and Standards – Particulate Emission from Manufacturing Processes
The equipment is subject to Georgia Rule 391-3-1-.02(2)(e)1(i) because it is a source of particulate emissions and will be put into operation or extensively altered after July 2, 1968. Georgia Rule 391-3-1-.02(2)(e)1(i) limits PM emissions based on the following equations:

$E = 4.1P^{0.67}$; for process input weight rate up to and including 30 tons per hour.
$E = 55P^{0.11} - 40$; for process input weight rate greater than 30 tons per hour.

In the equation, E is the emission rate in pounds per hour and P is the process input weight rate in tons per hour.

Table 2, provided below as included in the narrative associated with Application Number 28665, summarizes how the applicable proposed equipment will remain in compliance with the allowable emission rates under this regulation.

Table 2. Process Weight Rate Emissions

Emission Unit	Process Weight Rate (ton/hr)	Allowable Emission Rate (lb/hr)	Potential Emission Rate (lb/hr)
Continuous Paster (CC1)	1.32	4.95	0.035
Lead Melting Pot (LP7)	0.80	3.53	0.035
Lead Melting Pot (LP8)	0.66	3.11	0.035
Lead Melting Pot (LP9)	0.66	3.11	0.035
Grid Casting Machine (GC20)	0.40	2.22	0.035
Grid Casting Machine (GC21)	0.40	2.22	0.035
Grid Casting Machine (GC22)	0.40	2.22	0.035
Continuous Paster (CP1)	3.81	10.05	0.035
Paste Mixer (PM2)	2.49	7.55	0.035
Plaste Pasting Machine (PA2)	3.81	10.05	0.035
Lead Oxide Batch Silo (PO3)	2.49	7.55	0.035

Georgia Rule 391-3-1-.02(2)(g) – Emission Limitations and Standards Sulfur Dioxide
This regulation regulates fuel sulfur content, by weight. This regulation is applicable to Oven OV2 at this facility. All fuel burning sources below 100 million British Thermal Units (Btus) of heat input per hour shall not burn fuel containing more than 2.5 percent sulfur, by weight. The oven added in this application is subject to Rule (g) and will be able to comply with this regulation based on the proposed fuel usage of natural gas or propane.

Georgia Rule 391-3-1-.02(2)(n) – Fugitive Dust
This regulation limits emissions from fugitive dust sources. This regulation requires facilities to take reasonable precautions to limit fugitive dust from becoming airborne. Further, opacity form fugitive dust sources, such as roads and the handling of dusty materials, are limited to 20% opacity. According to Application Number 28865, the facility will comply with the requirements of this rule, including during periods of construction, through appropriate mitigative measures and through the implementation of its fugitive dust minimization plan.

Per *Georgia Rule 391-3-1-.03(2)(c)*, the Division may specify conditions under which the facility must be operated in or to comply with the Clean Air Act and State rules and regulations. The Division will require the facility to provide written notification when the facility has completed construction of equipment as proposed in Application Number 28665.

Permit Conditions

This narrative will address only permit conditions added, removed, and/or modified as a result of the proposed modification in Application Number 28665.

Section 1.0

Permit Condition 1.8 was added to indicate applicability of 40 CFR 60, Subpart KKa to the facility.

No permit conditions were modified or removed from this section.

Section 2.0

Permit Condition 2.1 specifies the emission limits for applicable equipment per 40 CFR 60, Subpart KK. This condition was modified to update the applicable emissions limitations per 40 CFR 60, Subpart KKa.

No permit conditions were added or removed from this section.

Section 3.0

Permit Condition 3.2 was added to require the facility to develop a fugitive dust mitigative plan per the requirements of 40 CFR 60, Subpart KKa.

No permit conditions were modified or removed from this section.

Section 4.0

Permit Conditions 4.4 and 4.5 were added to specify control equipment requirements for fabric filters per 40 CFR 60, Subpart KKa.

No permit conditions were modified or removed from this section.

Section 5.0

Permit Condition 5.8 and 5.9 were added to specify the requirements for control equipment monitoring per the requirements of 40 CFR 60, Subpart KKa.

No permit conditions were modified or removed from this section.

Section 6.0

Permit Condition 6.11 was added to require performance testing for applicable equipment as specified in 40 CFR 60, Subpart KKa requirements.

No permit conditions were modified or removed from this section.

Section 7.0

Permit Condition 7.8 was added to require the facility to notify the Division of the installation and operation of equipment proposed in Application Number 28865.

Permit Condition 7.9 was added to specify the record keeping schedule per 40 CFR 60, Subpart KKa requirements.

Permit Condition 7.10 was added to specify the performance testing results reporting per 40 CFR 60, Subpart KKa requirements.

Permit Conditions 7.11 through 7.14 were added to specify the electronic reporting requirements of 40 CFR 60, Subpart KKa.

No permit conditions were modified or removed from this section.

Section 8.0

No permit conditions were added, modified, or removed from this section.

Toxic Impact Assessment

According to the State's *Guideline for Ambient Impact Assessment of Toxic Air Pollutant (TAP)Emissions (Revised March 2017)*, existing facilities that require a State Implementation Plan (SIP) permit that are either adding new equipment or modifying existing equipment that results in an increase in the emission of specified toxic air pollutants must demonstrate compliance with the Allowable Ambient Concentration (AAC) for each air toxic. If the facility-wide annual emission rate of a given toxic air pollutant (TAP) is less than the Minimum Emission Rate (MER) no further analysis is required. However, if the facility-wide emission rate exceeds the MER, the facility must show that the resulting maximum ground- level concentration (MGLC) determined by air dispersion analysis does not exceed the AAC of the TAP in question.

According to Application Number 28665, there is no expected increase in toxic emissions as a result of the proposed modification, therefore no toxic impact assessment is needed.

Summary & Recommendations

It is recommended that Permit Number 3691-089-0012-S-05-2 is issued to Trojan Battery Company, LLC for the modification as described above in this document. A public advisory was issued for this application which expired on February 3, 2023. No comments were received.

Inspection responsibility will continue to be with the Air Protection Branch Stationary Source Compliance Program Central Office [Toxics Unit].