



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

DATE: DEC 19 2019

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Battery Builders Inc., Naperville, Illinois

FROM: Daniel Heins, Environmental Scientist
AECAB (IL/IN)

THRU: Nathan Frank, Section Chief
AECAB (IL/IN)

TO: File

BASIC INFORMATION

Facility Name: Battery Builders, Inc. (BBI)

Facility Location: 31 W. 238 91st Street, Naperville, Illinois

Date of Inspection: 12/16/2019

EPA Inspector(s):

1. Daniel Heins, Environmental Scientist
2. Jason Schenandoah, Environmental Engineer
3. Karina Kuc, Environmental Scientist

Other Attendees

1. Jim Hanslik, President - BBI
2. Chris Gatrel, Health & Safety Engineer - BBI

Contact Email Address: chris.gatrel@batterybuilders.com

Purpose of Inspection: To determine compliance with State and Federal regulations.

Facility Type: Industrial lead-acid battery manufacturer

Arrival Time: 11:55AM

Departure Time: 12:45PM

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Credentials Presented
- ☒ CBI warning to facility provided

The following information was obtained verbally from BBI representatives unless otherwise noted.

Company Ownership: Invision Capital bought Battery Builders in June 2017, retaining previous management on-site.

Process Description:

Lead alloy ingots are delivered to the facility via truck. The ingots are melted down and cast into grid plates. Grid plates form the base of the battery. Grid plates are then brought to the pasting room. In the pasting room, lead oxide, water, and acid are mixed to form a paste, which is used to fill the voids in the grid plates. The filled plates are then conveyed through an oven and curing chamber to cure the paste. Cured plates that are designated to be positively charged are sent to the plate wrapping machine, which wraps each plate in fiberglass to act as a nonconductive barrier between negative and positive plates. Plates next go to one of two Cast-On-Strap (COS) machines, where they are grouped to form battery cells and positive and negative bars are affixed to the battery cell. There is an older, manually run machine that was made by TBS Engineering (the "TBS[®] COS"), and a newer, automated machine made by MAC Engineering and Equipment (the "MAC[®] COS"). The cells are brought to the formation room, water and acid levels are adjusted to specification, and the batteries are charged. After charging, cells are put into battery trays and final touches are added, resulting in completed batteries ready to be shipped to customers via truck. The complete process, from casting to finished product, takes roughly three-weeks. Emissions from all stages of the manufacturing process from grid casting through the COS machine are routed to one of three baghouses. The plate wrapping and TBS[®] COS machine areas have an integrated ventilation system, which can route emissions from just the plate wrapping and stacking area or both the plate wrapping and stacking process and the TBS[®] COS machine areas to a baghouse. The integrated ventilation system is manually switched between operating modes depending on if the TBS[®] COS is in use.

Staff Interview: Around 2017/2018, the facility upgraded equipment and ran an emissions stack test in association with a construction permit issued for the MAC[®] COS. The permit replaced most operations of the TBS[®] COS machine with the MAC[®] COS machine and subsequently increased production and reduced worker lead exposure. The modern MAC[®] COS machine is primarily in operation, though the older TBS[®] COS machine normally operates about 4 hours a day in the evening. Based on improved performance test results in their emissions stack test, BBI may seek to re-open its permit with the state again to increase production and operating hours.

All baghouses are typically operated with a pressure drop in the range of 2"-5" of water, with pressure drop manually recorded daily. The pasting process and the MAC[®] COS have their own baghouses. Filter changes are initiated when pressure drops approach 4.5-5" water. Dust is collected in drums from the baghouses and sent off site for recycling. Formulation room acid mist is vented through filters.

TOUR INFORMATION

EPA toured the facility: Yes

Data Collected and Observations:

The baghouse that serves the pasting area had a pressure drop of 4" water. The MAC[®] COS baghouse was at 4" water. The baghouse serving the plate wrapping area had a pressure drop at 0.5" water. Mr. Gatrel stated that they had just replaced the baghouse filters and that the pressure drop would go up to approximately 2" of water if the integrated ventilation system started routing emissions from both the plate wrapping and TBS[®] COS machine processes.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

RECORDS REVIEW

1. Schematic obtained of ventilation for plate wrapping and TBS[®] cast on strap machine

CLOSING CONFERENCE

Requested documents:

- Most recent emissions stack test

SIGNATURES

Report Author: _____

Date: _____

Section Chief: _____

Date: _____

Facility Name: Battery Builders, Inc.
Facility Location: 31 W. 238 91st Street, Naperville, IL
Date of Inspection: December 16, 2019

APPENDICES AND ATTACHMENTS

Appendix A – Digital Image Log

Facility Name: Battery Builders, Inc.

Facility Location: 31 W. 238 91st Street, Naperville, IL

Date of Inspection: December 16, 2019

APPENDIX A: DIGITAL IMAGE LOG

1. Inspector Name: Karina Kuc	2. Archival Record Location: CD-R labeled "Battery Builders, Inc.; Naperville, IL; Inspection Pics; 12/16/2019"
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Image Number	File Name	Date and Time (CST)	Latitude and Longitude	Description of Image
1	PC160004.JPG	2019:12:16 12:19:22	41.708889, -88.207222	Pasting ventilation
2	PC160005.JPG	2019:12:16 12:25:52	41.708889, -88.207222	Gauge at 0.5" for plate wrapping baghouse
3	PC160006.JPG	2019:12:16 12:25:57	41.708889, -88.207222	Control indicating baghouse operation for wrapping/stacking and TBS® COS machine areas