United States Environmental Protection Agency
Region 7
Enforcement and Compliance Assurance Division

Air Branch

Air Branch Inspection Report
Unannounced Partial Compliance Evaluation
Enersys Energy Products, Inc.
617 North Ridgeview Drive
Warrensburg, MO 64093
FRS# 110000442931

Inspection Date(s):
November 09, 2022

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INSPECTION OBJECTIVE

The objective of the partial compliance evaluation (PCE) inspection was to determine compliance of the facility with the Clean Air Act (CAA), specifically those requirements located in the code of federal regulations at 40 CFR Part 63, Subpart PPPPPP, National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources. The inspection was part of the U.S. Environmental Protection Agency's (EPA) Creating Cleaner Air for Communities National Enforcement Compliance Initiative.

This inspection was conducted by Luke Rodriguez, EPA Region 7, Enforcement and Compliance Assurance Division, Air Branch.

FACILITY CONTACT INFORMATION

Table 1 lists the primary facility contacts.

Table 1. FACILITY CONTACT INFORMATION

Name, Title	Phone No.	Email Address
Matthew Scherer, EHS Manager	660-262-7106	Matthew.scherer@enersys.com
Brent Johnson, EHS Technical Supervisor		Brent.Johnson@enersys.com
John Staples, Facilities Engineering Manager	660-429-7557	John.staples@enersys.com

FACILITY OVERVIEW

The code of federal regulations at 40 CFR Part 63, Subpart PPPPPP, regulates certain materials and activities at lead acid battery manufacturing plants. Enforcement of this Subpart of the CFR has not been delegated to the State of Missouri. The Missouri Department of Natural Resources (MoDNR) has issued an Intermediate State Permit to Operate, Permit number OP2017-057.

The facility is subject to the following regulations and standards subject to review during this inspection (**Table 2**):

Table 2. APPLICABLE REGULATIONS AND STANDARDS	
Code of Federal Regulation	**Standard Name**
40 CFR Part 63	Subpart A, General Provisions Subpart PPPPPP, National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources

FACILITY OPERATIONS SUMMARY

Enersys Energy Products, Inc., "Enersys," manufactures specialty lead-acid batteries for various commercial and industrial applications including automotive, telecom, medical systems and powersports. The facility employs around 670 people and operates 24 hours a day and seven days a week. Lead emissions from this facility derive exclusively from the Lead Prep and Pasting Section of the plant. This section consists of three subsections; Lead Oxide (visible in Photo 4 of Appendix A), Lead Casting (visible in Photos 2 and 3 of Appendix A and Paste Mixing/Pasting (visible in Photos 5, 6 and 7 of Appendix A). The Lead Oxide subsection consists of 3 Ball Mills, silos and nitrogen tanks. The facility manufactures grey lead oxide on-site and purchases red lead oxide from a third party. The Lead Casting Subsection includes two Continuous Casters (ConCast) which directly produce a perforated grid and one multialloy Caster (MAC) which produces unperforated grids. The unperforated grids must be perforated by one of several perforation machines located nearby on the manufacturing floor. ConCast and MAC grids are produced to meet different product specifications for different applications. The Paste Mixing/Pasting subsection consists of 4 mixers on two mix decks (mix deck 1 is visible in Photos 5 of Appendix A) where sulphuric acid (H_2SO_4) is mixed with lead oxide to produce the paste slurry. This subsection also includes 6 pasters and drying ovens. Paste is applied to the grids which are stacked and dried for 34-48 hours depending on specific product requirements. Drying concludes the Lead Prep and Pasting section of the plant. Following this are the sub assembly where plates are assembled into a cased battery and packaging for shipping off-site.

Emissions from the facility are controlled by various baghouses and fabric filters. The casting section produces high temperature gases which are controlled by 3 standard "high temperature baghouses." According to Mr. Johnson, the remainder of lead emitting activities are controlled by isolated duct systems which collect emissions at each emission point and route those emissions to an individual roof stack. There are about 70 individual vent stacks on the roof of the facility although he was not certain of the exact number. The facility records the differential pressure for the 3 standard baghouses and for 11 High Efficiency Particulate Air Filters "HEPA.

There are also four scrubbers which each control one of the four mixers on the mix decks (visible in photos 5 and 6 of Appendix A).

Testing for compliance with the emission standards for lead in 40 CFR § 60.372, as required by 40 CFR § 63.11423(a) was completed in 2009, 2010 and 2012 (See Appendix B for test results).

FIELD ACTIVITIES SUMMARY

I arrived at the facility at 9:30 AM on November 9, 2022 and completed a drive by surveillance inspection. I made entry at the Front Office and introduced myself, presented my credentials, and provided my business card to Mr. Scherer and Mr. Johnson. I conducted an opening conference during which I explained that the purpose of the visit was to conduct an inspection to determine compliance with the CAA specifically, to determine compliance with the conditions listed in Table 2. In attendance at this opening conference were Mr. Scherer, Mr. Johnson and Mr. Staples. I explained that after asking for some general business information, I would observe work practices, process units, emission units, control equipment and review associated records demonstrating compliance with 40 CFR Part 63 Subpart PPPPPP. I explained to Mr. Scherer that the facility could make a claim of business confidentiality and provided him with a Confidential Business Information (CBI) form (Appendix C). Mr. Scherer did not make a claim of confidentiality at the time of the inspection, but Mr. Johnson later emailed me that on further consideration, the facility considered all photos taken during the inspection to be CBI.

I was given a facility tour by Mr. Scherer, Mr. Johnson and Mr. Staples. I was asked to take special precautions and wear facility provided coat in accordance with the facility's lead control program.

I reviewed the condition of the emission units associated with lead emissions, the operating status of the equipment, and any required record keeping for the equipment for compliance with the regulations and permit conditions noted in Table 2 only. I obtained copies of the records as indicated on the Receipt for Documents (Appendix D).

I conducted a closing conference with Mr. Scherer, Mr. Johnson, Mr. Staples, Mr. Bob Brownrigg, the plant manager, and Nathan Peters, the corporate Environmental Specialist (who joined by phone). Both Mr. Brownrigg and Mr. Peters were only present for the closing conference. I provided the facility with copies of CBI form (Appendix C) and the Receipt for Documents (Appendix D). I listed what I considered to be likely findings which would be

included in the report and told the facility representatives that they were encouraged to correct those deficiencies but that correcting them would not preclude the Agency from bringing an enforcement action.

Observations and potential findings from the facility tour, and records review, and sampling/measurement activities are noted in the **Investigation Observation and Potential Findings** section below.

INVESTIGATION OBSERVATIONS AND POTENTIAL FINDINGS

Ambient weather, site conditions and activities were documented in field records. All photographs are attached as Appendix A. I made the following observations during the inspection. I discussed all observations with facility representatives during the closeout meeting unless otherwise noted in the observation description.

These observations are not final compliance determinations. The EPA Region 7 Air Branch case review team will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

According to Mr. Scherer, this facility commenced construction prior to April 4, 2007, and is therefore an existing affected source. The facility consists of grid casting, paste mixing, lead oxide manufacturing and three process operations. Mr. Staples explained that there are individual fabric filters set up controlling individual lead emission points which each vent to one of the stacks. The facility only showed me records for 14 emission units which they were monitoring with a differential pressure gauge. The facility does not conduct any opacity monitoring beyond a monthly fugitive fence line opacity observation.

Emission Rate Requirements

40 CFR § 63.11423(a) requires compliance with the emission standards for lead in 40 CFR § 60.372. This facility conducted testing on various units considered by the facility to be a representative subset of emission units in 2009, 2010 and 2012. See Appendix B for results pages of these tests. The test results indicate that the emission units are in compliance with the lead emission standards in 40 CFR § 60.372.

Requirements for Emission Points controlled by a scrubbing system

40 CFR § 63.11423(b)(1) requires compliance with 40 CFR § 60.373 for emission points controlled by a scrubber. Paste mixers 1 – 4 are controlled by scrubbers 1 – 4. 40 CFR § 60.373 requires that the facility install, calibrate, maintain, and operate a monitoring device(s) that measures and records the pressure drop across the scrubbing system(s) at least once every 15 minutes. The facility records the differential pressure from the scrubbers every 15 minutes. Calibrations of differential pressure gauges are completed semi-annually by the meteorology department. A calibration sticker is visible in photo 9 of Appendix A. I also viewed preventative maintenance work order schedules for this activity.

Requirements for Emission Points controlled by a fabric filter

40 CFR § 63.11423(b)(2)(i) requires semi-annual inspections and maintenance to ensure proper performance of each fabric filter. The facility employs a preventative maintenance program which automatically creates work orders at various intervals for inspections of the baghouses. These work orders include a visual inspection every two weeks, and a third-party intensive inspection every 90 days.

40 CFR § 63.11423(b)(2)(ii) requires the installation and maintenance of a pressure drop monitoring device to measure the differential pressure drop across the fabric filter during all times when the process is operating. The pressure drop must be recorded at least once per day. If the pressure drop is observed outside of the normal operating range, the incident must be recorded, and corrective action taken. The corrective action should also be recorded, and the incident included in the monitoring system performance report. **40 CFR § 63.11423(b)(2)(iv)(A)** specifies that emission units controlled by a fabric filter equipped with a HEPA filter are subject to the requirement in 40 CFR § 63.11423(b)(2)(ii) but allowed to monitor less frequently, once per week as opposed to once per day.

Mr. Johnson explained the system to me:

> The facility currently complies with this requirement by using a data acquisition and handling system that sends a reading from each differential pressure gauge every 15 minutes. The system does not have any alarms set up to alert the facility when the differential pressure gauge reading is outside of the normal operational range. Mr. Johnson looks at the data at least once per day and if he notices a reading outside of the range, he will send an email to the maintenance staff to ask whether the unit is malfunctioning, not in operation or the differential pressure is actually operating correctly

and the differential pressure is outside of the range. There is no indication in the system that any of the units are in operation or not. When there is a reading that is determined to actually represent a reading outside of the normal operational range, a work order would be created, and corrective action taken and recorded.

As seen in Appendix E, the Normal Operational Range as indicated on the record specify a range of 0 – 10 inches of water for EP-37, EP-42, EP-46B, EP47A, EP47B, EP- 107A, EP-82SO and EP-112, 0 -3 inches of water for EP-46A, EP-87 and EP-82, 0 – 15 inches of water for EP-106B and EP107B and 0 – 40 inches of water for EP106A. I asked Mr. Johnson and Mr. Scherer how the normal operational ranges were determined for each of the units, and neither could identify a specific document or methodology. I asked if they could provide the manufacturer specifications for the units and they could not. There is a record of the differential pressure for each unit during the performance test located on the test record (Appendix B). Differential pressure devices are used to ensure that a baghouse filter is functioning by indicating that there is something in place resisting the flow of air. In this system, a reading of 0 could indicate that there was no impediment to the flow of air and could mean that either there was no filter in place, the filter had ripped, the gauge or data acquisition system were malfunctioning, or the unit was not in operation. From the records provided during the inspection, there is no way to differentiate between these options. Additionally, there are readings with negative values. I asked Mr. Johnson what a negative value meant, and he replied that it might mean the unit was not in operation or that it was malfunctioning. There were numerous incidences of negative values in the record which could not be readily explained including a value of -10.0 for EP-106A on the date of the inspection. Mr. Johnson indicated that it might be possible to cross – reference these records with other facility records which would show when the equipment was operating to verify which were readings indicative of excursions outside of the normal operating range, but I did not request that he attempt this at the time of the inspection. I requested to look at records from dates within the previous reporting period of January 1 to June 30, 2022. On March 13, 2022, there were numerous incidences of negative values interspersed with positive values for EP-106A, I requested that Mr. Staples look in the work order system to determine whether a corrective action had been recorded for this date and he was unable to locate a record. Additionally, on March 13, 2022, EP-112 was recording a value of 10.4 inches of water while its' normal operational range was specified as 0 – 10 inches of water. I requested to review the correspondence or record of a corrective action for this excursion of the normal operating range and Mr. Staples could not find a record for this either. I requested a copy of the most recent

Monitoring System Performance Report submitted by the facility which covers the period from January 1 to June 30, 2022, and includes the reporting for the date of March 13, 2022, this is included is Appendix F. The facility reported that "The pressure drop on the dust collectors was in the normal range throughout the reporting period."

Potential Finding 1: Normal Operational Ranges are inadequate for purposes of monitoring baghouse efficacy.
Observation Summary: The normal operational ranges include too large a range and a 0 value.
Citation: *§ 63.11423(b)(ii) and § 63.11423(b)(iv)(A)*
Evidence: Appendix E
Description of Observation: Normal Operational Ranges for all the monitored units - EP-37, EP-42, EP-46B, EP47A, EP47B, EP- 107A, EP-82SO, EP-112, EP-46A, EP-87, EP-82, EP-106B and EP107B contain the value of 0 inches of water.

Potential Finding 2: Failure to record corrective action
Observation Summary: The facility failed to record an incident of a pressure drop observed outside the normal operational range and failed to record the corrective actions taken.
Citation: § 63.11423(b)(ii) and § 63.11423(b)(iv)(A)
Evidence: Appendix E
Description of Observation: On March 13, 2022, there were numerous incidences of negative values interspersed with positive values for EP-106A, I requested that Mr. Staples look in the work order system to determine whether a corrective action had been recorded for this date and he was unable to locate a record. Additionally, on March 13, 2022, EP-112 was recording a value of 10.4 inches of water while its' normal operational range was specified as 0 – 10 inches of water. I requested to review the correspondence or record of a corrective action for this excursion of the normal operating range and Mr. Staples could not find a record for this either.

Potential Finding 3: Failure to report
Observation Summary: As noted above, on March 13, 2022 two units had recorded pressure drops outside of the normal operational range. These were not included in the January to June 2022 Monitoring System Performance Report.
Citation: § 63.11423(b)(ii) and § 63.11423(b)(iv)(A)
Evidence: Appendix E and Appendix F
Description of Observation: The most recent Monitoring System Performance Report submitted by the facility which covers the period from January 1 to June 30, 2022, and includes the reporting for the date of March 13, 2022, includes that "The pressure drop on the dust collectors was in the normal range throughout the reporting period."