DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

P008964667

FACILITY: BASF Toda America LLC		SRN / ID: P0089
LOCATION: 4750 West Dickman Rd, BATTLE CREEK		DISTRICT: Kalamazoo
CITY: BATTLE CREEK		COUNTY: CALHOUN
CONTACT: David Sheaves , Environmental Protection Expert		ACTIVITY DATE: 08/17/2022
STAFF: Cody Yazzie	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Schedule Inspection		
RESOLVED COMPLAINTS:		

On August 17, 2022, Air Quality Division (AQD) staff (Cody Yazzie) arrived at 4750 West Dickman Road, Battle Creek Michigan at 9:30 AM to conduct an unannounced air quality inspection of BASF Toda America (hereafter BASFTA) SRN (P0089). Staff made initial contact with David Sheaves, BASF Toda, Environmental Protection Expert, who took staff to a conference room for further discussions.

BASFTA is a stationary source that produces the cathode portion of the lithium-ion powdered mixture that is used to make the cathodes in lithium-ion batteries. This stationary source is a minor source based on Potential to Emit; however, this facility is subject to 40 CFR Part 63 Subpart VVVVVV – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Chemical Manufacturing Area Sources. In this NESHAP, 63.11494(e) requires that any source that installed a federally enforceable control device on an affected Chemical Manufacturing Processing Unit (CMPU) is required to obtain a Title V permit if the control device on the affected CMPU is necessary to maintain the source's emissions at area source levels. BASFTA in a new owner audit to the United States Environmental Protection Agency (USEPA) identified that the facility is subject to NESHAP VVVVVV and should have completed and applied for a Title V permit no later than December 21, 2013.

On April 30, 2019 the Kalamazoo District Office received the initial ROP application for BASFTA. In the August 26, 2020 inspection report it outlined a more specific timeline for how BASFTA identified and notified that it was subject to the Title V program and steps taken toward compliance during the time period of August 2018 through August 2020. Since the previous inspection Staff have been working on issuing the ROP. As of the inspection BASFTA is currently undergoing a PTI modification to PTI No. 70-10B to address changes that cannot be done through the ROP process. The NSR permit application to modify PTI No. 70-10B was received June 22, 2022 by the AQD.

As a result of the last inspection and the compliance issue identified with the 12-month rolling nickel emission exceedances BASFTA had agreed to enter into a Consent Order on April 19, 2021. From this consent order the facility is subject to stipulated penalties for compliance issues associated with the nickel emission limit identified in in FGLINES of their PTI. The order is in effect for at least a period of 2 years. Once the two-year time period has been fulfilled the facility must request that the order be terminated.

Mr. Sheaves gave staff a tour of the facility. Required personal protective equipment are safety glasses, hard hat, steel toe boots, and hearing protection. Due to safety hazards inside the production area of the facility a full respiration device has to be wore that needs medical clearance. Staff does not maintain the needed medical clearance, so observation of the

production was not done. Staff observed the stacks outside the facility and a dust collector that is located outside the production area. Staff observations and review of records provided during and following the inspection are summarized below:

EULINE1:

This emission unit includes all Line 1 equipment that handles the raw material, weighing, mixing, filtering, calcination process, processing, and pack out room used in the manufacturing of lithium-ion battery cathode material. This line was installed on December 6, 2010.

BASFTA has three bagfilters that control the mixing, blending, grinding, and transfer processes of the operation. These bagfilters are A1BF010, A1BF210, and A1BF020 are then ducted to a common vent header that is shared with EULINE2 for its bagfilters that control similar operations for line 2. After these ducts converge, they are sent to a HEPA filter and out the stack.

The EULINE1 calciner has two stacks which are controlled by a Dust collector followed by a HEPA Dust Collector each prior to exiting the stack. The Dust collectors on these lines are designated by DC961 and DC962. These dust collectors and HEPA filters replaced the wet scrubbers that the facility previously used. The facility is having these changes updated in their current PTI modification application.

EULINE1 has A1BF330 which controls a lithium hydroxide milling unit. This emission unit is permitted under EULINE1.

The packaging operations have a similar set up to the mixing operations previously noted. There are three bagfilters that control final processing and packaging. These bagfilters are A1BF030, A1BF720, and A1BF650. After the bagfilters line 1 converges with the line 2 packaging bagfilters exhaust to a vent header. After they all converge they are ducted and controlled by a HEPA filter before exiting out a single Stack. These stack convergences along with the scrubber replacement are being addressed in the current PTI modification application.

BASFTA is required to monitor on a continuous basis and record on a calendar day basis the pressure drop reading for each fabric filter for EULINE1. To check compliance with these recordkeeping requirements Staff asked BASFTA to provide the pressure drop reading of each fabric filter for the following several random dates: 7/1/21, 8/20/21, 9/8/21, 10/13/21, 11/24/21, 12/15/21, 1/13/22, 2/9/22, 3/4/22, 4/20/22, 5/10/22, and 6/29/22. In the records response BASFTA indicated for the dates provided that there are times when the monitoring device records a zero value. The facility indicated that this is due to the fact that the equipment operating on a batch basis, therefore there are times when the equipment is not in operation. BASFTA also indicated that all pressure drop values for dry media systems are evaluated for compliance by comparing against a range of 0.1 to 6.0 inches of water column pressure drop.

The facility provided all fabric filter differential pressure records. Staff found these differential pressure records showed that the differential pressures of each fabric filter were maintained in the accepted operation range for the reviewed dates for EULINE1. It was also indicated that the electronic database that the facility uses to record all their records (Historian) appeared to not collect and store the data for A1BF330 on 9/8/21. The facility indicated that they would reported this deviation in the second half semi-annual notice of compliance status report for 2022 regardless of the deviation happening in 2021 as it appears to not be reported in the appropriate

notice of compliance. Staff believes this instance appears to be resolved as the more recent readings appear to all be recorded. If there continues to be more issues with Historian recording pressure drop data then further action may be necessary.

BASFTA is required to maintain visible emission readings for any baghouse that is not using a bag leak detection system (BLDS) at least once per calendar month. The visible emission readings are allowed to be either certified or non-certified. EULINE1 only has one baghouse that does not have the BLDS operating on it. This baghouse is A1-BF-330 as lithium compounds are used exclusively in the section of the process. Lithium compounds are not considered a HAP therefore are not calculated as a part of metal HAP emissions and do not require the BLDS. Facility are keeping these observations and only indicate if there is opacity or not as they are not required to be Method 9 opacity readings.

EULINE2

This emission unit includes all Line 2 equipment that handles the raw material, weighing, mixing, filtering, calcination process, processing, and pack out room used in the manufacturing of lithium-ion battery cathode material. This line was installed on September 29, 2014. One major difference to EULINE2 is that the device that supports the addition of lithium compounds to the process is not permitted under EULINE2 in PTI No. 70-10B. Instead the facility is claiming exemption Rule 290 for emissions that are associated with stack and bag filter A2-BF-330. Emissions from this stack are evaluated in the Rule 290 portion of the Records review.

BASFTA has three bagfilters that control the mixing, blending, grinding and transfer processes of the operation. These bagfilters are A2BF010, A2BF015, and A2BF020 are then ducted to a common vent header that is shared with EULINE1 for its bagfilters that control similar operations for line 1. After these ducts converge, they are sent to a HEPA filter and out the stack.

The EULINE2 calciners have four stacks which are controlled by a Dust collector followed by a HEPA Dust Collector each prior to exiting the stack. The Dust collectors on these lines are designated by DC963, DC964, DC965, and DC966. These dust collectors and HEPA filters replaced the wet scrubbers that the facility previously used. The facility is having these changes updated in their current PTI modification application.

EULINE2 has A2BF330 which controls a lithium hydroxide milling unit. This emission unit is currently not permitted and operating under Rule 290. The emissions records that are required by Rule 290 will be discussed in the Rule 290 section of this report. It is also important to note that in the current PTI modification application the facility is applying to permit this emission unit. The emission unit will like have similar requirements that are used for A1BF330.

The packaging operations have a similar set up to the mixing operations previously noted. There are three bagfilters that control final processing and packaging. These bagfilters are A2BF030, A2BF720, and A2BF650. After the bagfilters line 1 converges with the line 2 packaging bagfilters exhaust to a vent header. After they all converge, they are ducted and controlled by a HEPA filter before exiting out a single Stack. These stack convergences along with the scrubber replacement are being addressed in the current PTI modification application.

BASFTA is required to monitor on a continuous basis and record on a calendar day basis the pressure drop reading for each fabric filter for EULINE2. To check compliance with these

recordkeeping requirements Staff asked BASFTA to provide the pressure drop reading of each fabric filter for the following several random dates: 7/1/21, 8/20/21, 9/8/21, 10/13/21, 11/24/21, 12/15/21, 1/13/22, 2/9/22, 3/4/22, 4/20/22, 5/10/22, and 6/29/22. In the records response BASFTA indicated for the dates provided that there are times when the monitoring device records a zero value. The facility indicated that this is due to the fact that the equipment operating on a batch basis, therefore there are times when the equipment is not in operation. BASFTA also indicated that all pressure drop values for dry media systems are evaluated for compliance by comparing against a range of 0.1 to 6.0 inches of water column pressure drop.

The facility provided all fabric filter differential pressure records. Staff found these differential pressure records showed that the differential pressures of each fabric filter were maintained in the accepted operation range for the reviewed dates for EULINE2 except for a portion of the day on 7/1/21 on A2BF720. The deviation appears to be associated with the magnehelic and not the actual dust collector. The deviation appears to have been address and is currently working properly. It was also indicated that the electronic database that the facility uses to record all their records (ASPEN-tech Historian) appeared to have the same issue of not collecting data for the bagfilters on 9/8/21 that EULINE1 had. The facility indicated that they would report this deviation in the second half semi-annual notice of compliance status report for 2022 regardless of the deviation happening in 2021 as it appears to not be reported in the appropriate notice of compliance. Staff believes this instance appears to be resolved as the more recent readings appear to all be recorded. If there continues to be more issues with ASPEN-tech Historian recording pressure drop data, then further action may be necessary.

FGLINES:

This flexible group includes special conditions that include both EULINE1 and EULINE2. Special conditions that apply to both emission units are a set of bag leak detection requirements that specify things such as to what concentration the BLDS must be certified to detect PM emissions to, what type of alarm system must be installed, the initial adjustment of the BLDS, and where the BLDS sensors must be installed. This flexible group also has a 12-month rolling Nickel emission limit.

For this emission limit the facility is required to maintain a monthly and 12-month rolling record of Nickel emissions calculations. Staff was provided monthly EULINE1 and EULINE2 Nickel emissions and 12-month rolling Nickel Emissions that combine both EULINE1 and EULINE2. The 12 -month rolling Nickel emissions show that from the time period of January 2021 through July 2022 the highest calculated Nickel emissions occur in January 2021 where 79.51 lbs of Nickel are calculated to be emitted on the 12-month rolling time period. This is about half of the 145 pounds per year 12-month rolling emission limit in PTI No. 70-10B. Nickel Emission appear to be trending downwards as well. From the period of September 2021 through July 2022 the facility averages around 10 pounds of Nickel emissions per year. The facility is well below the 145 pounds per year of nickel emissions. From this review the facility appears to be in compliance with the agreed consent order and Special Condition I.1 of PTI No. 70-10B.

Staff did observe the BLDS during the inspection that was set up for each dust collector. The system continuously monitors the picoAmps registered across the bagfilters. The duct collector is determined to be a leaking dust collector when the picoAmps record great than 30 picoAmps for a continuous period of 5-minutes. The facility has also equipped the dust collectors with a weight

scale that will notify when the collection bag has reached a certain weight indicating that the collection bag needs to changed out to avoid overflowing.

Other NESHAP 6V Records:

The NESHAP 6V requires that the facility follow some management practices that require recordkeeping. These management practices include quarterly inspections with recordkeeping of these inspections and documentation of any equipment malfunctions.

The facility is completing the required inspection quarterly. The inspections for Lines 1 and 2 appear to be have been conducted in December 2021, February 2022, April 2022, May 2022, and September 2022. The inspection included a list of what equipment was inspected along with an indication if there was any leaks detected. If there was repairs or maintenance conducted this is also indicated in the records along with who inspected the equipment. These recordkeeping practices appear to comply with the requirements of 63.11501(c)(i). In section 63.11495(a)(3)(i-v) specify how and when the inspections should be conducted for compliance with NESHAP VVVVVV.

Section 63.11501(c)(1)(vii) of NESHAP VVVVVV outline the recordkeeping requirements for each malfunction of operation process equipment, control devices, recovery devices, or continuous monitoring systems apart of the CMPU subject to the federal regulation. The facility has been reporting any malfunctions under Rule 912 of any issues that are incurred with their control equipment. As previously stated the facility plans the report the deviations talked about in the differential pressure readings for EULINES 1 and 2. The most recent Rule 912 submission was on 9/27/21. The facility appears to be recording and reporting malfunctions appropriately as they occur.

Rule 290:

The device supports the addition of lithium compounds to the process. The process is essentially a manual add hopper and a mixing vessel, that is then connected to the precursor line. From there the products are blended to create the pre-calcined cathode material. Emissions from this source are controlled by a bag filter that the facility recognizes as A2-BF-330. Lithium Hydroxide has an ITSL of 0.25 micrograms per cubic meter. This classifies this pollutant in the range of ITLS that have screening levels greater than 0.04 micrograms per cubic meter but less than 2.0 micrograms per cubic meter. Under this classification in Rule 290 the facility is only allowed to emit 10 pounds per month of controlled emission of this pollutant.

Staff was provided with calculated emissions of lithium hydroxide occurred for the time period of January 2021 through July 2022. During this time the largest monthly emissions of lithium hydroxide occurred in April 2022 in which 0.038 pounds per month of lithium hydroxide emissions were recorded. These records appear to be in compliance with permit exemption Rule 290.

Emergency Generator:

The facility does have one emergency generator that is diesel fired and appears to be subject to NSPS IIII. This emission unit appears to be exempt from Rule 201 however will be included in the ROP permit. The facility is keeping records of when the facility is operating and servicing the

emergency generator. The most recent annual maintenance occurred on 2/21/22. The facility appears to be operating the engine around 20 hours per year.

At the time of the inspection and based on a review of records obtained during or following the inspection, the facility appears to be in compliance with PTI No. 70-10B. Staff stated to Mr. Sheaves that a report of the inspection would be sent to the facility for their records. Staff concluded the inspection at 10:15 AM.-CJY

NAME Cody Yungjan DATE 9/20/22 SUPERVISOR RIL 9/21/22