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

B596666129

FACILITY: Sun Chemical Corp		**SRN / ID:** B5966
LOCATION: 4925 EVANSTON AVE, MUSKEGON		**DISTRICT:** Grand Rapids
CITY: MUSKEGON		**COUNTY:** MUSKEGON
CONTACT: Richard Rings , Senior EHS Specialist		**ACTIVITY DATE:** 12/01/2022
STAFF: Scott Evans	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: On site inspection to assess compliance with air quality rules and regulations.		
RESOLVED COMPLAINTS:		

Introduction

On December 1, 2022, State of Michigan Department of Environment, Great Lakes, and Energy Air Quality Division (AQD) staff member Scott Evans (SE) conducted an on-site inspection of the Sun Chemical facility located at 4925 Evanston Ave. in Muskegon, Michigan, to assess compliance with air quality regulations. Sun Chemical is a classified as a Title V opt-out facility with synthetic minor limits for sulfur dioxide (SO2), nitrogen oxides (NOx), particulate matter (PM), and Hazardous Air Pollutants (HAPs). It has four currently active Permits to Install (PTIs): PTI Nos 1058-84D, 153-13, 155-13, and 156-13A.

Sun Chemical is a chemical manufacturer that manufactures pigments for various uses including cosmetics and printing inks. Raw materials are used in the facility and put through various processes including mixing, processing, blending, and drying to produce the final pigment products. This facility produces red and yellow pigments.

Upon arrival at the facility, SE conducted a perimeter observation of the facility. During this perimeter observation, no visible emissions (VEs) or odors were observed. After this observation, SE entered the facility and was greeted by Senior Project Engineer James Kellington (JK). After a brief discussion of the purpose of the visit, an inspection was conducted of the facility interior. During this inspection all process buildings were visited as well as all control rooms where automated machine readings could be observed.

PTI No. 1058-84D

This PTI is a modified version of PTI No. 1058-84. PTI No. 1058-84 was first approved in 1984 and has undergone multiple changes throughout its life. This current version (PTI No. 1058-84D) was approved on May 17, 2013. It includes the following Emission Units (EUs) and Flexible Groups (FGs):

- EU-S1
- FG-FACILITY

EU-S1

This EU consists of one 750 HP dual fuel fired Johnston boiler that can operate on natural gas and landfill gas. During the inspection, Johnston Boiler was not operating. It was explained that use of this boiler had been sporadic due to the current supply of landfill gas from local sources being limited and two other natural gas fired boilers being sufficient to operate the facility when the Johnston boiler does not have landfill gas for operation.

This EU has one emission limit within the permit, which is shown in the table below. Recorded maximum values and compliance assessments were determined using the provided records discussed further below.

Pollutant	Limit	Time Period / Operating Scenario	Recorded Maximum	Compliant?
SO_2	89 tpy	12-month rolling time period as determined at the end of each calendar month	0.00288 tpy	Yes

This EU also has one material limit within the permit, which is shown in the table below. Recorded maximum values and compliance assessments were determined using the provided records discussed further below.

Material	Usage Limit	Time Period / Operating Scenario	Recorded Maximum	Compliant?
Landfill Gas	492.0 MMcf	12-month rolling time period as determined at the end of each calendar month	7.33 MMcf	Yes

This EU has one design parameter that states the facility shall install, calibrate, maintain, and operate a monitoring device to record landfill gas usage. During the inspection it could be seen that a monitor was installed and used at the facility. At the time of inspection, the boiler was not running as mentioned above and so there was no reading to observe on the monitor. However, the monitor was installed and appeared functional. This is acceptable compliance with the special condition.

This EU has the following applied recordkeeping requirements:

- The facility shall maintain monthly and 12-month rolling annual SO_2 emission calculations.
- The facility shall maintain monthly and 12-month rolling annual landfill gas usage records.
- The facility shall maintain records demonstrating compliance with New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart Dc.

During the inspection it was observed that appropriate records were maintained as required. Copies of these records were provided remotely to the AQD for a more detailed review. Records provided included monthly records from November 2021 through October 2022. The Emission and Material limit analyses seen in the tables above were determined during this detailed review. Review of any NSPS applicable records is discussed later in this report.

The facility was required to inform the AQD within 30 days of completion of construction of the permitted EU equipment. This equipment is on record as having been installed and has been observed in multiple past inspections as well as this one. No further action is required by the facility regarding this condition.

There are two permitted stacks associated with this EU. These stacks were not measured directly during the inspection for safety reasons, but visual observation appeared to confirm that they are appropriate height and diameter to be in compliance with the permitted conditions.

FG-FACILITY

This FG encompasses all process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment.

This FG has three emission limits within the permit, which are shown in the table below. Recorded maximum values and compliance assessments were determined using the provided records discussed further below.

Pollutant	Limit	Time Period / Operating Scenario	Recorded Maximum	Compliant?
NO_x	89.9 tpy	12-month rolling time period as determined at the end of each calendar month	11.75 tpy	Yes
PM	89.9 tpy	12-month rolling time period as determined at the end of each calendar month	0.74 tpy	Yes
SO_2	89.9 tpy	12-month rolling time period as determined at the end of each calendar month	0.057 tpy	Yes

This FG has one process restriction, which states that the facility shall not operate unless an approvable preventative maintenance and operating plan has been submitted to the AQD within 90 days of this permit being issued. The AQD has a copy of the submitted plan on file and, during the inspection it was observed that the facility still retains and follows this same plan.

This FG has two equipment parameters as listed below:

- Facility must maintain a device to monitor natural gas usage monthly.
- Facility must maintain a device to monitor landfill gas usage monthly.

During the inspection it was observed that monitoring devices for landfill gas and natural gas usage were present. Readouts from these monitors are tracked by the facility and used to compile usage records for each fuel type. These records are included with this report and appear to reflect compliance with record keeping requirements.

This FG has the following recordkeeping requirements:

- The facility shall maintain monthly and 12-month rolling annual NO_x emission calculations.
- The facility shall maintain monthly and 12-month rolling annual PM emission calculations.
- The facility shall maintain monthly and 12-month rolling annual SO_2 emission calculations.
- The facility shall maintain monthly and 12-month rolling annual natural gas usage records.
- The facility shall maintain monthly and 12-month rolling annual landfill gas usage records.

During the inspection it was observed that all necessary records were maintained on site as required. Copies of these records were provided to the AQD remotely for a more detailed analysis of these records. Records provided included monthly records from November 2021 through October 2022. During this detailed analysis, the compliance evaluations for emission limits in the table above were determined. The facility appears to be compliant with all recordkeeping and emission limit requirements applicable to FG-Facility.

PTI No. 153-13
This permit was approved on April 28, 2014. It includes requirements for the following EUs and FGs:

- EU-SSlurry04T008
- EU-SSlurry04T018
- EU-NDcon04T7302
- EU-SDcon04T7312
- EU-HdTnk04T205
- EU-HdTnk04T215
- EU-Tank04T4206
- EU-Tank04T4216
- EU-Tank04T4208
- EU-Tank04T4218
- EU-TZ4302
- EU-TZ4312
- FG-IB
- FG-TZ

FG-IB
This FG includes requirements for the following EUs:

- EU-SSlurry04T008
- EU-SSlurry04T018
- EU-NDcon04T7302
- EU-SDcon04T7312

This FG also includes an Absolute Filter and a Caustic Scrubber for pollution control.

This FG has four emission limits within the permit, which are shown in the table below.

Pollutant	Limit	Time Period / Operating Scenario
Hydrogen Chloride	1.02 mg/m^3	Test Protocol
3,3'-Diclorobenzidine (DCB)	0.02 $\mu g/m^3$	Test Protocol
PM	0.10 pound per 1,000 pounds of exhaust gasses	Test Protocol
Visible Emissions	0%	6-minute average

There were no VEs observed during the inspection as well as no reported incidents of VEs since the last inspection. Compliance with the above limits with operating scenarios specified as "Test Protocol" are determined through operational assessment of the control equipment associated

with this FG. Based on the discussions below regarding the control equipment, the facility appears to be compliant with all of the above limits.

This FG has two associated operational restrictions. The first states that raw materials for production must be charged in such a way as to minimize fugitive air emissions. During the inspection processes were observed and discussed and appeared to comply with this requirement. Actions taken to limit fugitive emissions include loading materials into large vats through small openings at the top within closed buildings. This helps ensure that any fugitive material remains within the production buildings. The second requirement states that this FG cannot operate unless a malfunction abatement plan (MAP) has been provided to the AQD within 60 days of startup and is actively followed at the facility. The AQD has a copy of the currently used MAP, which was observed as being followed on site during the inspection, demonstrating compliance with this requirement.

This FG has four design parameters:

- Caustic Scrubber must have a liquid flow monitor and audible malfunction alarm.
- Absolute Filter must have pressure sensors with audible malfunction alarm.
- FG must not operate unless Caustic Scrubber and Absolute Filter are installed and functional.
- All equipment must be labeled in correspondence with this PTI and the MAP.

During the inspection the following observations were made regarding these design parameters:

- Caustic Scrubber flow rate was 18.5 gpm. (MAP normal operating range 15 – 40 gpm)
- Absolute Filter pressure readings were 1.89 DP. (MAP normal operating range 1 – 5 DP)
- Caustic Scrubber and Absolute Filter were installed and operational.
- All equipment was labeled appropriately.

At the time of inspection, the facility appeared compliant with these design parameters.

This FG has the following recordkeeping requirements:

- The facility must record 3,3’-Diclorobenzidine emissions quarterly.
- Caustic Scrubber and Absolute Filter must be monitored in accordance with the MAP.

During the inspection it was observed that records were maintained on site as required. Copies of these records were provided to the AQD remotely at a later date for detailed analysis. Records provided included monthly records from November 2021 through October 2022. Records showed monthly records of DCB instead of quarterly. This is acceptable as quarterly emissions can be determined through monthly records. Below analysis reflects highest monthly recordings:

- 3,3’-Diclorobenzidine emissions were 4.60E-06 tons in June 2022.
- The facility has automatic alarm systems installed to alert and record instances of improper control equipment function. No incidents have been reported since the last inspection, demonstrating proper function of control equipment.

Though there are not monthly emission limits within this permit, provided records did include monthly emissions, which were used in conjunction with control equipment operational analyses to assess compliance with emission rates. A copy of these records is included with this report. These analyses appear to demonstrate compliance with record keeping and emission limit requirements.

This FG has one permitted exhaust stack. This stack was not measured direction for safety reasons. However, observation appeared to confirm compliance with height requirements.

FG-TZ

This FG includes the following EUs:

- EU-HdTnk04T205
- EU-HdTnk04T215
- EU-Tank04T4206
- EU-Tank04T4216
- EU-Tank04T4208
- EU-Tank04T4218
- EU-TZ4302
- EU-TZ4312

This FG also includes two Caustic Scrubbers used as pollution control equipment.

This FG has two emission limits within the permit, which are shown in the table below.

Pollutant	Limit	Time Period / Operating Scenario
Hydrogen Chloride	1.02 mg/m^3	Test Protocol
3,3'-Diclorobenzidine	0.02 $\mu g/m^3$	Test Protocol

Compliance with the above limits is determined through operational assessment of the control equipment associated with this FG. Based on the discussions below regarding the control equipment, the facility appears to be compliant with all four of the above emission limits.

This FG has two associated operational restrictions. The first states that raw materials for production must be charged in slurry form. During the inspection processes were observed and discussed and appeared to comply with this requirement. Actions taken to limit fugitive emissions include loading materials into large vats through small openings at the top within closed buildings. This helps ensure that any fugitive material remains within the production buildings. The second requirement states that this FG cannot operate unless a malfunction abatement plan (MAP) has been provided to the AQD within 60 days of startup and is actively followed at the facility. The AQD has a copy of the currently used MAP, which was observed as being followed on site during the inspection, demonstrating compliance with this requirement.

This FG has the following design parameters:

- Caustic Scrubbers must have a liquid flow monitor and audible malfunction alarm.
- FG may only operate if Caustic Scrubbers are properly installed and functioning.
- All equipment must be labeled in correspondence with this PTI and the MAP.

During the inspection the following observations were made to assess compliance with the above design parameters:

- Caustic scrubber flow rates were recorded at 21 gpm and 18 gpm. (MAP normal operational range 14 – 35 gpm)
- All equipment was appropriately and visibly labeled.

The facility appeared to be compliant with all above design parameters.

This FG has the following recordkeeping requirements:

- The facility must record 3,3'-Diclorobenzidine emissions quarterly.
- Caustic Scrubbers must be monitored in accordance with the MAP.

During the inspection it was observed that records were maintained on site as required. Copies of these records were provided to the AQD remotely at a later date for detailed analysis. Records provided included monthly records from November 2021 through October 2022. Records showed monthly records of DCB instead of quarterly. This is acceptable as quarterly emissions can be determined through monthly records. Below analysis reflects highest monthly recordings:

- 3,3'-Diclorobenzidine emissions were 2.93E-04 tons in August 2022.
- The facility has automatic alarm systems installed to alert and record instances of improper control equipment function. No incidents have been reported since the last inspection, demonstrating proper function of control equipment.

Though there are not monthly emission limits within this permit, provided records did include monthly emissions. A copy of these records is included with this report. These analyses along with analysis of control equipment operation appear to demonstrate compliance with record keeping and emission limit requirements.

This FG has two permitted exhaust stacks. These stacks were not measured direction for safety reasons. However, observation appeared to confirm compliance with height requirements.

PTI No. 155-13
This permit was approved on April 28, 2014. It includes the following EUs and FGs:

- EU-Strike03T401
- EU-Strike03T411
- EU-Strike03T402
- EU-Strike03T412
- EU-RsnCrusher
- EU-RedSlryTnk
- EU-Weigh01

- EU-Weigh02
- EU-Weigh03
- EU-Strike01T401
- EU-Strike01T411
- EU-Strike01T421
- EU-Strike02T401
- EU-Strike02T401
- EU-Tank05T104N
- EU-Tank05T104S
- EU-Tank05T106
- EU-Tank05T116
- FG-Azo
- FG-MAIN
- FGFACILITY

FG-Azo

This flexible group includes the following emission units:

- EU-Strike03T401
- EU-Strike03T411
- EU-Strike03T402
- EU-Strike03T412
- EU-RsnCrusher
- EU-RedSlryTnk
- EU-Weigh02

This FG also includes two Caustic Scrubbers and one Absolute Filter as pollution control equipment.

This FG has five emission limits within the permit, which are shown in the table below.

Pollutant	Limit	Time Period / Operating Scenario
Hydrogen Chloride (SV-Stack01 equipment)	3.88 µg/m3	Test Protocol
Hydrogen Chloride (SV-Stack02 equipment)	0.52 µg/m3	Test Protocol
Beta-naphthylamine (BNA)	0.02 µg/m^3	Test Protocol
PM	0.10 pound per 1,000 pounds of exhaust gasses	Test Protocol
Visible Emissions	0%	6-minute average

There were no VEs observed during the inspection as well as no reported incidents of VEs since the last inspection. Compliance with the above limits with operating scenarios specified as “Test

Protocol" are determined through operational assessment of the control equipment associated with this FG. Based on the discussions below regarding the control equipment, the facility appears to be compliant with all of the above limits.

This FG has three material limits within the permit, which are shown in the table below along with the maximum monthly amount processed based on records November 2021 to October 2022 Compliance with these limits is determined through analysis of other records and requirements as discussed in more detail below.

Material	Limit	Time Period / Operating Scenario	Recorded Maximum	Compliant?
Red Pigment	12,500,000 lbs. pigment processed through the strike tanks per year	12-month rolling time period as determined at the end of each calendar month	3,482,030 lbs.	Yes
Yellow Pigment	18,500,000 lbs. pigment processed through the strike tanks per year	12-month rolling time period as determined at the end of each calendar month	2,607,842 lbs.	Yes
BNA content of tobias acid used.	0.1% by weight	Instantaneous	N/A	Yes

This FG has three operational restrictions:

- If yellow pigment DCB content for yellow pigment exceeds 0.5% by weight, process must shut down until AQD grants approval to resume process.
- Empty tobias acid bags and color containers disposed in containers in building before ultimate disposal.
- FG-Azo may only operate if MAP is on site and followed.

During the inspection discussions and observations were made to determine the following compliance evaluations:

- No incidents of shutdown had occurred since the last inspection in 2019.
- Empty bags and containers were in lidded waste bins to await final disposal.
- MAP was on site and in proper use.

The above observations demonstrate compliance with the operational restrictions.

This FG has the following design parameters:

- The Caustic Scrubbers must have an operational flow meter and malfunction alarm.
- The Absolute Filter must have a pressure sensor and malfunction alarm.
- Equipment cannot operate unless connected to one of the two caustic scrubbers as permitted.
- Equipment cannot operate unless connected to the absolute filter as permitted.
- Equipment shall charge raw materials in a way that minimizes fugitive emissions.
- All equipment shall be labeled as permitted.

During the inspection the following observations were made to assess compliance with the above design parameters:

- Flow meter for one caustic scrubber was observed and reading 316.1 gpm (MAP normal operational range 230 – 350 gpm)
- Flow meter for one caustic scrubber was observed and reading 525.1gpm. (MAP normal operational range 440 – 540 gpm)
- Pressure sensors for the absolute filter were installed but were not operating at the time due to the stage in manufacturing. This is acceptable.
- All equipment was appropriately connected to caustic scrubbers and absolute filter as permitted.
- Charging process was observed and discussed and appears to appropriately minimize fugitive emission release.
- All equipment was appropriately labeled.

The above observations demonstrate compliance with the permitted design parameters.

The facility is required to keep the following records regarding this FG:

- DCB content of diarylide yellow on a quarterly basis.
- BNA content of tobias acid shall be obtained from manufacturer data and retained on site.
- Flow rates for caustic scrubbers and pressure drops from the absolute filter must be monitored and recorded in compliance with the MAP.
- Monthly and 12-month rolling annual Red and Yellow pigment throughputs.

Records were observed on site during the inspection. Copies were provided to the AQD remotely at a later date for detailed analysis. The detailed analyses demonstrated the following compliance determinations:

- DCB is properly tested and recorded. The most recent test had a result of 0.0025 DCB emission factor.
- BNA content data was held on site in the form of safety data sheets from manufacturers.
- Flow rates were recorded and could be observed as illustrated above in the discussion of design parameters.
- Red and Yellow throughputs were properly recorded, and compliance was determined as discussed in the material limits table above.

Though there are not monthly emission limits within this permit, provided records did include monthly emissions. A copy of these records is included with this report. These analyses appear to demonstrate compliance with record keeping and emission limit requirements.

This facility is required to report any incidents of diarylide yellow product DCB content exceeding 0.1% by weight to the AQD. During discussions the facility expressed awareness of this requirement. No such incidents were reported since the last inspection in 2019.

There are two stacks associated with this FG. These stacks were not measured directly during the inspection for safety reasons. Visual observation appeared to confirm that the stacks were compliant with height requirements.

FG-Main
This FG contains the following EUs:

- EU-Weigh01
- EU-Weigh03
- EU-Strike01T401
- EU-Strike01T411
- EU-Strike01T421
- EU-Strike02T401
- EU-Strike02T401
- EU-Tank05T104N
- EU-Tank05T104S
- EU-Tank05T106
- EU-Tank05T116

This FG also has one course filter, one absolute filter, and two caustic scrubbers for control equipment.

This FG has fourteen emission limits within the permit, which are shown in the table below.

Pollutant	Limit	Time Period/ Operating Scenario
PM	0.10 pound per 1,000 pounds of exhaust gases, calculated on a dry gas basis	Test Protocol
3-amino-naphthalene-2,7 disulfonic acid	0.4 µg/m^3	Test Protocol
1-amino-naphthalene-2-sulfonic acid	0.4 µg/m^3	Test Protocol
2-naphthylamine-3,6-disulfonic acid	0.4 µg/m^3	Test Protocol
2-naphthylamine-6-sulfonic acid, sodium salt	0.4 µg/m^3	Test Protocol
Beta-naphthylamine (BNA)	0.33 µg/m^3	Test Protocol
Benzene sulfonic acid	0.4 µg/m^3	Test Protocol
3,3'-Dichlorobenzidine (DCB)	0.01 µg/m^3	Test Protocol
Dichlorobiphenyl	0.2 µg/m^3	Test Protocol
Dimethoxybenzidine (DMB)	0.01 µg/m^3	Test Protocol
Hydrogen chloride (HCl)	0.26 lb per hour (to scrubber 1 of 2)	Test Protocol
Hydrogen chloride (HCl)	0.37 lb per hour (to scrubber 2 of 2)	Test Protocol
Sulfamic acid	0.16 mg/m^3 [A,1]	Test Protocol*
Visible Emissions	0% opacity [B]	6-minute average

There were no VEs observed during the inspection as well as no reported incidents of VEs since the last inspection. Compliance with the above limits with operating scenarios specified as "Test

Protocol" are determined through operational assessment of the control equipment associated with this FG. Based on the discussions below regarding the control equipment, the facility appears to be compliant with all of the above limits.

This FG has three material limits within the permit, which are shown in the table below. Compliance with these limits is determined through analysis of other records and requirements as discussed in more detail below.

Material	Limit	Time Period / Operating Scenario	Recorded Maximum	Compliant?
Red Pigment	5,000,000 lbs.	12-month rolling time period as determined at the end of each calendar month	1,991,291 lbs	Yes
BNA content of tobias acid used.	0.1% by weight	Instantaneous	N/A	Yes

This FG has three operational restrictions:

- If yellow pigment DCB content for yellow pigment exceeds 0.5% by weight, process must shut down until AQD grants approval to resume process.
- Empty tobias acid bags and color containers disposed in containers in building before ultimate disposal.
- FG-Main may only operate if MAP is on site and followed.

During the inspection discussions and observations were made to determine the following compliance evaluations:

- No incidents of shutdown had occurred since the last inspection in 2019.
- Empty bags and containers were in lidded waste bins to await final disposal.
- MAP was on site and in proper use.

The above observations demonstrate compliance with the operational restrictions.

This FG has the following design parameters:

- Equipment may only operate if control equipment is installed and operational as permitted.
- Equipment shall charge raw materials in a way that minimizes fugitive emissions.
- The Caustic Scrubbers must have an operational flow meter and malfunction alarm.
- All equipment shall be labeled as permitted.

During the inspection the following observations were made to assess compliance with the above design parameters:

- Flow meter for one caustic scrubber was observed and reading 316.7 gpm (MAP normal operational range 230 – 350 gpm)
- Flow meter for one caustic scrubber was observed and reading 528.6 gpm. (MAP normal operational range 440 – 540 gpm)

- Pressure sensor for the coarse filter was installed and reading 4.8 DP. (MAP normal operational range 1 – 8 DP).
- Pressure sensor for the absolute filter was installed and reading 1.27 DP. (MAP normal operational range 1 – 4 DP)
- All equipment was appropriately connected to caustic scrubbers and filters as permitted.
- Charging process was observed and discussed and appears to appropriately minimize fugitive emission release.
- All equipment was appropriately labeled.

The above observations demonstrate compliance with the permitted design parameters.

The facility is required to keep the following records regarding this FG:

- DCB content of diarylide yellow on a quarterly basis.
- BNA content of tobias acid shall be obtained from manufacturer data and retained on site.
- Flow rates for caustic scrubbers and pressure drops from the filters must be monitored and recorded in compliance with the MAP.
- Monthly and 12-month rolling annual red pigment throughput.

Records were observed on site during the inspection. Copies were provided to the AQD remotely at a later date for detailed analysis. The detailed analyses demonstrated the following compliance determinations:

- DCB is properly tested and recorded. The most recent test had a result of 0.0007 as an emission factor.
- BNA content data was held on site in the form of safety data sheets from manufacturers.
- Flow rates and pressure drops were recorded and could be observed as illustrated above in the discussion of design parameters. All control equipment has alarm systems installed to alert of any instances of operation out of normal range. No incidents were reported, demonstrating proper operation.
- Red pigment throughputs were properly recorded, and compliance was determined as discussed in the material limits table above.

Though there are not monthly emission limits within this permit, provided records did include monthly emissions. A copy of these records is included with this report. These analyses appear to demonstrate compliance with record keeping and emission limit requirements.

This facility is required to report any incidents of diarylide yellow product DCB content exceeding 0.1% by weight to the AQD. During discussions the facility expressed awareness of this requirement. No such incidents were reported since the last inspection in 2019.

There are two stacks associated with this FG. These stacks were not measured directly during the inspection for safety reasons. Visual observation appeared to confirm that the stacks were compliant with height requirements.

FGFACILITY

This FG includes all process equipment within the facility.

This FG has two emission limits for all process equipment source-wide including equipment covered by other permits, grand-fathered equipment, and exempt equipment.

The limits are shown in the table below. Recorded maximum values from records between November 1, 2021 and October 32, 2022 and compliance assessments were determined using the provided records discussed further below.

Pollutant	Limit	Time Period / Operating Scenario	Recorded Maximum	Compliant?
Aggregate HAPs	<25 tpy	12-month rolling time period as determined at the end of each calendar month	0.352 tpy	Yes
Each Individual HAP	<10 tpy	12-month rolling time period as determined at the end of each calendar month	All < 1 tpy	Yes

The facility is required to keep Hazardous Air Pollutant (HAP) emissions records that demonstrate compliance with the above emission limits. During the inspection it was observed that records were retained on site. Copies of these records were provided to the AQD remotely at a later date for a detailed analysis, which yielded the above compliance determinations.

At the time of the inspection the facility appeared to be compliant with the recordkeeping requirements for this FG.

PTI No. 156-13A
This permit was approved on October 16, 2015. It includes the following EUs and FGs:

- EU-Nauta01BL801
- EU-Nauta02BL811
- EU-Nauta02BL801
- EU-Ribbon01BL811
- EU-EirichBlender
- EU-BeltDryer
- EU-SprayDryer
- EU-TD06D612
- EU-TD06D622
- EU-TD06D632
- EU-TDPackOut
- EU-SpinNorth
- EU-SpinSouth
- FG-Blend
- FG-TrayDry
- FG-SpinDry

<u>EU-EirichBlender</u>
This EU consists of a rotary vacuum blender as well as one baghouse used for pollution control.

This EU has one emission limit of 0.01 lbs. of particulate matter (PM) per 1,000 lbs. of exhaust gasses as determined by testing protocols established during permitting. Compliance with this limit is determined through observations of control equipment function, which is discussed further below.

This EU has one operational restriction, which requires that the equipment only operate if a MAP is on site and in use. The AQD has a copy of the currently used MAP, which was also observed to be in use at the facility, demonstrating proper compliance.

This EU has three equipment parameters:

- Equipment may only operate if the baghouse is installed and operational.
- A pressure gauge must be installed on the baghouse to monitor functionality.
- All equipment must be labeled as permitted.

During the inspection the baghouse was operational and the pressure reading at the time was 196 gpm. Normal operational range as described within the facility MAP is 100 – 250 gpm. All equipment was properly labeled.

EU-BeltDryer

This EU consists of a belt dryer, baghouse, filter, separator, water quencher, venturi cyclone, caustic scrubber, and acetic scrubber.

This FG has two emission limits within the permit, which are shown in the table below.

Pollutant	Limit	Time Period/ Operating Scenario
Dichlorobenzidine (DCB)	4.22 µg/m^3	Test Protocol
Dimethoxybenzidine (DMB)	4.22 µg/m^3	Test Protocol

Compliance with the above limits is determined through operational assessment of the control equipment associated with this FG. Based on the discussions below regarding the control equipment, the facility appears to be compliant with the above emission limits.

This EU has one operational restriction that states that the equipment may not operate unless the current MAP is on site and followed. During the inspection the current MAP was on site and appeared to be in use, demonstrating compliance with the requirement.

This EU has the following three equipment parameters:

- Equipment may not operate unless all control equipment is installed and operational.
- The control filter and baghouse must have pressure gauges installed during operation.
- All equipment must be labeled as permitted.

During the inspection the following observations of these parameters were made:

- All control equipment was installed and operational.

- The filter and baghouse had pressure drop gauges which were operational. Readings were recorded during the inspection and are discussed further below.
- All equipment was appropriately labeled.

These observations demonstrated compliance with the permit requirements.

This EU has the following recordkeeping requirements:

- DCB readings shall be measured quarterly.
- Control equipment monitors must be read and recorded according to the MAP.

During the inspection it was observed that DCB records were maintained appropriately. Copies of this data were provided to the AQD remotely for detailed review. The most recent DCB recording was 1.11E-05 tons in October 2022. Control equipment monitors were all operational and yielded the following readings on site:

- Baghouse pressure drop: 1.3 DP (MAP normal range 1 – 7 DP)
- Absolute Filter pressure drop: 23.1 DP (MAP normal range 15 – 45 DP)
- Venturi Cyclone pressure drop: 4.9 DP (MAP normal range 1 – 7 DP)
- Water Quench flow rate: 6 gpm (MAP normal range 1 – 8 gpm)
- Venturi Cyclone flow rate: 196 gpm (MAP normal range 100 – 250 gpm)

Past recordings of control equipment monitor readings were observed on site and demonstrated compliance with record keeping requirements. Additionally, all readings were within compliance of MAP parameters, as all pressure drops and flow rates were within normal ranges. This proper function also demonstrates compliance with above mentioned pollutant emission limits.

This emission unit has one associated stack. This stack was observed and has no size restrictions or requirements.

EU-SprayDryer

This EU consists of one spray dryer, two baghouses, and one absolute filter.

This EU has no emission or material limits.

This EU has one process limit that states the equipment cannot operate unless a current MAP that has been submitted to the AQD is on site and in use. The current MAP was observed on-site and matched what the AQD has on file.

This EU has the following three design parameters:

- The equipment may only operate if the baghouses and filter are installed and operational.
- All baghouses and filters must have pressure sensors and malfunction alarms installed.
- All equipment must be labeled as permitted.

During the inspection the following observations were made:

- All control equipment was properly installed and operational.
- All control equipment had proper pressure gauges installed.
- All equipment was properly labeled.

This EU has a record keeping requirement that states all control equipment pressure readings must be recorded in accordance with the on-site MAP. The following pressure readings were observed during the inspection:

- First Baghouse Pressure: 1.3 DP (MAP normal range 1 – 7 DP)
- Second Baghouse Pressure: 1.3 DP (MAP normal range 1 – 7 DP)
- Filter Pressure: 1.8 DP (MAP normal range 1 – 7 DP)

No instances of operation out of MAP established ranges were reported and all equipment appeared to be operating as required by the MAP.

This EU has one stack that was present during the inspection. There are no requirements or restrictions about the size of this stack.

FG-TrayDry

This FG includes requirements for the following emission units:

- EU-TD06D612
- EU-TD06D622
- EU-TD06D632
- EU-TDPackOut

This FG also includes one baghouse and three water filters as pollution control equipment.

This FG has five emission limits within the permit, which are shown in the table below.

Pollutant	Limit	Time Period/ Operating Scenario
Dichlorobenzidine (DCB)	0.05 µg/m^3	Test Protocol
Dimethoxybenzidine (DMB)	0.05 µg/m^3	Test Protocol
Dichlorobiphenyl	0.2 µg/m^3	Test Protocol
PM	0.10 pound per 1,000 pounds of exhaust gasses	Test Protocol
VEs	0% Opacity	6-minute average

There were no VEs observed during the inspection as well as no reported incidents of VEs since the last inspection. Compliance with the above limits with operating scenarios specified as “Test Protocol” are determined through operational assessment of the control equipment associated with this FG. Based on the discussions below regarding the control equipment, the facility appears to be compliant with all of the above limits.

This FG has one process limit that states the equipment cannot operate unless a current MAP that has been submitted to the AQD is on site and in use. The current MAP was observed on-site and matched what the AQD has on file.

This FG has the following three design parameters:

- The equipment may only operate if the baghouse and filters are installed and operational.
- All baghouses and filters must have pressure sensors and malfunction alarms installed.
- All equipment must be labeled as permitted.

During the inspection the following observations were made:

- All control equipment was properly installed and operational.
- All control equipment had proper pressure gauges installed.
- All equipment was properly labeled.

This FG has the following recordkeeping requirements:

- DCB readings shall be measured quarterly.
- Control equipment monitors must be read and recorded according to the MAP.

During the inspection it was observed that DCB records were maintained appropriately. Copies of this data were provided to the AQD remotely for detailed review. The most recent DCB recording was 4.24E-07 tons in October 2022. Control equipment monitors were all operational and yielded the following readings on site:

- Baghouse pressure drop: Not running due to stage in manufacturing process.
- Filter 1 pressure drop: 0.1 DP (MAP normal range 0 – 1.5)
- Filter 2 pressure drop: 0.13 DP (MAP normal range 0 – 1.5)
- Filter 3 pressure drop: 0.2 DP (MAP normal range 0 – 1.5)

No instances of operation out of MAP established ranges were reported and all equipment appeared to be operating as required by the MAP.

FG-SpinDry

This FG includes requirements for the following emission units:

- EU-SpinNorth
- EU-SpinSouth

This FG also includes two baghouses and two absolute filters as pollution control equipment.

This FG has two emission limits within the permit, which are shown in the table below.

Pollutant	Limit	Time Period/ Operating Scenario
PM	0.006 pph	Test Protocol
PM10	0.012 pph	Test Protocol

Compliance with the above limits is determined through operational assessment of the control equipment associated with this FG. Based on the discussions below regarding the control equipment, the facility appears to be compliant with all of the above emission limits.

This FG has one process limit that states the equipment cannot operate unless a current MAP that has been submitted to the AQD is on site and in use. The current MAP was observed on-site and matched what the AQD has on file.

This FG has the following four design parameters:

- The equipment may only operate if the baghouse and filters are installed and operational.
- All baghouses must have pressure sensors and malfunction alarms installed.
- All filters must have pressure sensors and malfunction alarms installed.
- All equipment must be labeled as permitted.

During the inspection the following observations were made:

- All control equipment was properly installed and operational. One baghouse and filter combined system was not in use as the facility has not used the process equipment for multiple months due to production demand.
- All control equipment had proper pressure gauges installed.
- All equipment was properly labeled.

This FG has a recordkeeping requirement that states all control equipment monitors must be read and recorded according to the MAP.

Control equipment monitors were all operational and yielded the following readings on site:

- Baghouse 1 pressure drop: 1.7 DP (MAP normal range 1 – 7 DP)
- Baghouse 2 pressure drop: Not in use.
- Filter 1 pressure drop: 1.3 DP (MAP normal range 1 – 8 DP)
- Filter 2 pressure drop: Not in use.

No instances of operation out of MAP established ranges were reported and all equipment appeared to be operating as required by the MAP.

This FG has two stacks that were present during the inspection. These stacks were not measured directly for safety reasons. However, visual inspection appeared to confirm that both stacks were present and within permitted parameters.

FG-Blend

This FG includes requirements for the following emission units:

- EU-Nauta01BL801
- EU-Nauta02BL811
- EU-Nauta02BL801
- EU-Ribbon01BL811

This FG also includes seven baghouses and six absolute filters as pollution control equipment.

This FG has two emission limits within the permit, which are shown in the table below.

Pollutant	Limit	Time Period/ Operating Scenario
PM	0.04 pounds per 1,000 pounds of exhaust gasses.	Test Protocol

Compliance with the above limits is determined through operational assessment of the control equipment associated with this FG. Based on the discussions below regarding the control equipment, the facility appears to be compliant with all of the above emission limits.

This FG has one process limit that states the equipment cannot operate unless a current MAP that has been submitted to the AQD is on site and in use. The current MAP was observed on-site and matched what the AQD has on file.

This FG has the following three design parameters:

- The equipment may only operate if the baghouse and filters are installed and operational.
- All baghouses and filters must have pressure sensors and malfunction alarms installed.
- All equipment must be labeled as permitted.

During the inspection the following observations were made:

- All control equipment was properly installed and operational. Various pieces of control equipment were not in use due to production needs and stages at the time of inspection.
- All control equipment had proper pressure gauges installed.
- All equipment was properly labeled.

This FG has a recordkeeping requirement that states all control equipment monitors must be read and recorded according to the MAP.

Control equipment monitors were all operational and yielded the following readings on site:

- Baghouse 1 pressure drop: 1 DP (MAP normal range 0 – 1.5 DP)
- Baghouse 2 pressure drop: 1 DP (MAP normal range 0 – 1.5 DP)
- Five remaining Baghouses not in use during the inspection.
- Filter 1 pressure drop: 2 DP (MAP normal range 0.5 – 4 DP)

- Filter 2 pressure drop: 0.1 DP (MAP normal range 0 – 1.5 DP)
- Four remaining filters not in use during the inspection.

No instances of operation out of MAP established ranges were reported and all equipment appeared to be operating as required by the MAP.

This FG has two stacks that were present during the inspection. These stacks were not measured directly for safety reasons. However, visual inspection appeared to confirm that both stacks were present and within permitted parameters.

Exemptions
This facility is the owner and operator of what is classified as a Chemical Manufacturing Process Unit as specified in National Emission Standard for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63 Subpart VVVVVV. This facility has historically used two materials that contain chemicals listed within this NESHAP as relevant chemicals: Darvan No. 1 (quinoline <0.09%) and Bio-Soft N91-8 (acetaldehyde <0.1%). These chemicals are no longer in use at the facility and, as such, they are not subject to the NESHAP.

This facility has two emergency generators on site. One generator is a 37 kW engine that was installed in 2004 and the other is an 80 kW engine that was installed in 2012 but manufactured in March of 2006. Conversion calculations show that both of these engines are less than 1 mmBtu of heat input. This demonstrates that both generators are exempt from permitting requirements by Rule 285(2)(g). Both engines are exempt from New Source Performance Standard (NSPS) 40 CFR Part 60 Subpart IIII as one was installed prior to July 11, 2005, and the other was manufactured prior to April 1, 2006. Both engines are subject NESHAP 40 CFR Part 63 Subpart ZZZZ as they are diesel powered emergency generators. Hours of use of both engines were discussed and total hours of operation were found to be under 500 hours, meaning no further recordkeeping requirements are applicable at this time. The facility was advised to continue keeping record of maintenance and inspection activity to comply with the NESHAP requirements.

The facility has one parts washer. This is a small unit that appears to be exempt from permitting requirements by Rule 281(2)(h).

MAERS
This facility submitted a complete Michigan Air Emissions Reporting System (MAERS) report on time in 2022. A copy of this report is included with this report.

Conclusion
At the time of the inspection this facility appeared to be compliant with all permitted requirements as well as all other applicable rules and regulations.

NAME Scott Evans DATE 1/18/2023 SUPERVISOR HH