

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

N165138962

FACILITY: CertainTeed Corp		SRN / ID: N1651
LOCATION: 701 E Washington, JACKSON		DISTRICT: Jackson
CITY: JACKSON		COUNTY: JACKSON
CONTACT:		ACTIVITY DATE: 02/22/2017
STAFF: Mike Kovalchick	COMPLIANCE STATUS: Unknown	SOURCE CLASS:
SUBJECT: Inspection. Company may need an Opt-out permit to restrict HCL emissions to below ten tons.		
RESOLVED COMPLAINTS:		

**Minor Source-(Note: Existing permits effectively restricts PM emissions below major source thresholds.)**

#### Facility Contacts

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**Mark Skinner: Facility Coordinator**

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#### Purpose

On February 22, 2017, I conducted an unannounced compliance inspection of CertainTeed Corporation (Company) located in Jackson, Michigan in Jackson County. The purpose of the inspection was to determine the facility's compliance status with the applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules and their Permit to Install (PTI) # 1061-91A & #259-94.

#### Facility Location

The facility is located in an industrial area with a residential area located about 500 feet to the North of the facility. See aerial photo dated October, 2016.

#### Facility Background

The facility was originally called the Walker Manufacturing Company. It was sold to Wolverine Technologies, a subsidiary of CertainTeed Corporation in 1981. Polyvinyl siding was first manufactured at this location around 1982.

Permit 1061-91 was issued on August 11, 1992 for 2 polyvinyl chloride (PVC) weighting and blending processes controlled by three fabric filter collectors. The permit writer noted that the permit application was submitted prior to the effective date of Rule 230 so only particulate emissions were looked at. Attachment (1) is the flow diagram for this process which was originally installed in 1981. The PVC Compound weighing and blending process is actually 2 separate blending processes: the Littleford Blender process and the Welex Blender process.

The permit application noted that stabilizer is added to the PVC resin to help prevent the formation of HCL but air toxic emissions were not addressed as part of the application. The existence of an extruder was only mentioned in passing. The application contained no discussion about emissions from the extruders(s) and associated stack ventilation equipment.

On December 21, 1993 the facility was inspected by the AQD. The inspector noted the 2 blender operations and mentioned in passing the extruder lines.

On May 27, 1997, Wolverine notified the DEQ that some new equipment was installed including a new blending system with a new dust collector but an overall change was not expected in emissions. This eventually lead to a new PTI 1061-91A being issued and the old permit voided out on September 2, 1997.

The permit described the new blending system as the Henschel blending system which is similar to the Littleford system. For all three systems, the liquid stabilizer is pumped from two 6000 gallon indoor stainless steel storage tanks into 100 gallon hoppers. The blending is controlled by 3 baghouse dust collectors. The permit application again mentioned that stabilizer prevents the formation of corrosive hydrochloric acid by reacting with any free chlorine in the PVC before the Cl can combine with hydrogen to form HCL. However, CL is broken off of the PVC during the processing of the compound in the extruder and when a panel is exposed to sunlight. Total PM-10 emissions from the 3 blending operations were estimated at 0.95 tons per year. Air toxics were not addressed and the existence of an extruder was only mentioned in passing. In other words, the blending process is thought of as a completely separate process from the extrusion process.

Application 259-94 was received on May 27, 1994 for 1 baghouse dust collector to capture dust generated by the grinding of scrap vinyl siding. The permit was modified with the final version dated September 1, 2010.

The original 259-94 application did state that the facility was currently operating 26 extruders(13 base, 13 cap) on thirteen lines in the manufacturing of solid vinyl siding. However, the extruders were not part of the application.

On May 29, 1996, Wolverine sent a letter to the DEQ for the purpose of identifying whether the facility was subject to Michigan's Renewable Operating Permit (ROP) Program. Potential emissions of PM-10 exceeded 100 tons per year. Actual emissions of facility-wide hazardous air pollutants were listed as 5.3 tons per year and facility-wide PM10 totals of 11.8 tpy. Potential HCL emissions were listed at 8.03 tons per year. The Company further stated that they request to opt out of the ROP program by accepting enforceable limits which would restrict potential emissions to 50 tpy for each criteria pollutant, 5 tpy for each HAP and 12.5 tons for total HAPs. The basis of HCL emissions was a stack test report.

The stack test report is dated November 1, 1993. It described the process as having 22 extruders on eleven lines. The process was described as follows:

*"A PVC mixture, produced in a blending operation, is the primary raw material used in the process. This mixture is a powder consisting of PVC resin, titanium dioxide, calcium stearate, paraffin wax, calcium carbonate, an impact modifier and various process aids and has the consistency of sand. In addition to this mixture, occasionally a regrind material, finished product that has been ground up because of a defect, will be used in the process.*

*The mixture or regrind, stored in silos or Gaylord boxes, is conveyed to the extruder by vacuum loaders and fed into the feed throat of the twin screw extruder by a weigh belt. Colorants may also be added by pump (liquid colorant) or screw feeder (solid colorant) at the feed throat of the extruder. The PVC material is then transformed from a powder or regrind into a molten plastic or "melt" by means of heat, friction and pressure as it passes through the extruder.*

*The hot "melt" exits the extruder and is forced through a sheet die. The hot PVC sheet is embossed with a pattern and then fed through a series of sizers to form it into a specific shape. Once in this desired shape, the material is cooled in a water bath, at which time the material becomes rigid, and cut to length by means of on-line automatic cutting equipment. The final product is then packaged by hand, palletized and stored in the warehouse.*

*A local exhaust ventilation system has been installed in order to capture emissions off the dies of each of the 11 processing lines in the plant. A 30,000 cfm blower on the roof of the east end of the plant pulls air from the 11 hoods positioned over the dies of each line. Emissions from the dies pass through a series of fiber glass filters and pleated filters just before reaching the blower. The blower then discharges the collected emissions vertically into the outside atmosphere. A no-loss rain protection ring is installed at the top of the stack with a hinged flow through rain cap."*

Hydrogen chloride emissions were measured to be 1.25 pounds/hour from a single stack with a flow rate of 26,713 DSCFM. (Note: All the 11 lines were exhausted to a single stack at that time.) The stack was 5 feet higher than 20 feet high building with a 48" stack diameter. (Note: 1.25 pounds X 8760 hours equals 5.475 tons for 12 months.)

Production data taken during the test showed that only 16 extruders (8 lines X 2) were operating during the test. It doesn't appear that the material that was being processed in each line was necessarily at the

maximum rated capacity.

The report contained no discussion on the capture efficiency of the 11 hoods.

It is unknown why the AQD did not act on the request of the Company to opt-out of T5 at this time.

(Note: It appears that 2 additional extruder lines were installed between 9/15/93 and May 27, 1994 when it was first mentioned that there was a total of 13 lines (26 extruders).)

The facility was again inspected on July 15, 1998. The extruder lines were not discussed in the inspection report. There was no mention in the report that the facility was in the process of being rebuilt at that time. (Note: The extruder lines were moved from one building to another purportedly around 1997. The exhaust system was also completely changed from a single exhaust point to an exhaust point above each of the 13 lines.) Another inspection occurred on July 25, 2000 with no comment about the extruder lines.

In April, 2005 it was noted in the file that Wolverine Technologies was now called CertainTeed Corporation and owned by a French company named Saint-Gobain.

The facility was again inspected on June 8, 2010. The extruder lines were not inspected.

A note was made in the file on March 19, 2013. It was about the Company's plans to install a polyurethane molding line. It appeared based on information provided by the Company that the process would be exempt. (Note: This was later to be called the NEXGEN line.)

The Company has received few odor and particulate fall-out complaints since the 1990's.

#### Regulatory Applicability

PTI 1061-91 is applicable to the three baghouse that control the polyvinyl chloride weighing and blending processes. The permit contains basically no substantive permit conditions.

PTI 259-94 is applicable to a grinding operation from the recycling of scrap vinyl siding that is controlled by a dust collector. It limits the Company to grinding no more than 9388 tons per a 12 month period but has no other substantive permit conditions.

(2) 6000 gallon indoor storage tanks that contain stabilizer that have been ruled exempt per Rule 284(i) since the stabilizer has a very low vapor pressure.

(16) large storage silos each controlled by a dust collector. Rule 286 2(a) exempts plastic extrusion, rotocasting, and pultrusion equipment and associated plastic resin handling, storage and drying equipment. This process would also be considered exempt per Rule 290 due to the very limited particulate emission.

(13) active vinyl siding manufacturing lines with 26 extruders. Rule 286 2(a) is applicable. (Note: The Company considers this to be actually 13 extruders; as they define an extruder as having both a base extruder and cap extruder that work in tandem together to produce the product.)

NEXGEN Process. Rule 290 applies.

(2) Emergency generators. One is rated at 650 HP; the other at 100 HP. They are fired by diesel fuel. The federal RICE MACT regulations apply to the larger generator.

#### Arrival & Facility Contact

Visible emissions or odors were not observed upon my approach to the Company's facility. I arrived at 12:50 PM, proceeded to the facility office to request access for an inspection, provided my identification and spoke with Tammy Clark (TC) who handles the environmental program at the facility. I informed her of my intent to conduct a facility inspection and to review the various records as necessary. I was also introduced to Mark Skinner (MS) who is the facility coordinator at the plant who is very familiar with plant operations.

Both TC and MS extended their full cooperation and fully addressed my questions.

## Pre-Inspection Meeting

TC outlined that the Company has 168 employees and plant is operating 24 hours a day (12 hour shifts), 7 days a week. Business levels are stable. They have 13 vinyl siding production lines of which they rarely are operating more than 6 to 8 at a time. 9 of lines are similar to each other. The 4 other lines are similar to each other. They recently scaled up an R&D process to full production as of January 1, 2017. They call it the NEXGEN process. It was not operating during the inspection. TC indicated that they have 3 dust collectors controlling the blending and one controlling the grinding of the scrap vinyl.

## Onsite Inspection

MS then conducted a tour of the facility. (TC accompanied us part of the time.) Required safety equipment included a hard hat, safety shoes, safety glasses, safety vest and hearing protection. We started out walking towards the original section of the facility that is next to E. Washington Street which is on the North side of the facility. Near the building we encountered a moderate rotten egg smell. TC indicated that it was a resulting of once a week "purging" that takes place. The purging is done over an 8 hour period to clean stabilizer out of the lines. (More details about this purging were provided in Attachment (2) The mercaptans in the stabilizer are responsible for the odors.) Upon entering the building, we encountered a strong rotten egg smell.

This building contains the blending and grinding operations. (The blending operations were active; the grinding operations were not active during the inspection.) 4 different dust collectors were examined. No visible emissions were noted coming out of any of the exhaust stacks. The areas directly adjacent to the location of each dust collector were fairly dusty on the ground.

What they called the day bin dust collector showed a pressure differential of 0" of water which indicated that there was a problem with the gauge since the dust collector fan was on. (TC indicated later that she would put in a work request later to have it looked at.) The Little Ford dust collector showed a pressure differential of 3". The Henschel dust collector showed a pressure differential of 4".

Looking out the window from near the Henschel dust collector it was noted that there was some minor amount of white fallout on the mechanical room roof.

Outside the building on the area near the sidewalk, some minor amounts of white fallout was also noted along E. Washington Street but on Company property.

Next, we went to the main production building. First up was the NEXGEN process. (Refer to recordkeeping section for a discussion about this process.) It had one outdoor exhaust stack that were capturing emissions from 4 hoods located along the process line. Part of the process is control by a dust collector that vents only to the indoor plant environment.

We then looked at 13 vinyl siding lines that each has 2 extruders. Approximately 4 of the lines were running during the time of the inspection. Each line has a hood over the location where fumes are generated in the process just before the water quenching. (Temperature readings were around 395 degrees F. where the smoke was being generated.) Small amounts of smoke were being generated from each of the operating lines that were drifting up and being captured by the hoods that were approximately 5 feet above the emission points. The area around the hood is somewhat screened in on 3 sides by hanging plastic panels in an attempt to improve capture and protect the workers from fumes.

In some cases the plastic panels were broken or completely absent. The draft into the hoods appeared to be barely adequate. Some of the hoods were visibly damaged by apparent corrosion of the hood metal which suggested they were potentially being impacted by acidic emissions. The hoods contain some type of fiber filters that appeared to be changed on a regular basis. The stacks from the hoods went up to the near the ceiling where fans located just below the roof line. Due to the location of the fans, it was impossible to examine more carefully. MS was able to pull up design CFM specs for the fans. There are 13 fans that are all approximately rated at 3600 CFM. This adds up to a total draft from the hoods at approximately 46,800 CFM. (Note: This compares to a single exhaust stack for each of the 11 lines that was rated at 26,713 CFM back in 1993.) I estimate capture of the emissions at no more than 90%. MS further indicated that there was approximately 300,000 CFM that was going out the main production building via side wall ventilation.

MS then took me on an inspection of the main production building roof. (At this point, TC went back to her office.) The roof is accessed by an outside ladder that is attached to the building wall and locked by

a protective cage. The roof was in good shape. Directly adjacent to the roof could be seen the 16 tall storage silos and associated dust collectors and conveying pipes. A little white fallout was noted in the vicinity of the storage silos. MS indicated that small holes develop in the lines conveying the powder that need to be addressed from time to time. He indicated that there were plans to replace all the duct collectors for all the silos coming up in April. The silos were too tall and separate from the building to attempt a closer examination.

The roof contained a line of stacks of which 13 were still active. For the most part, they are topped with a no loss rain cap which was approximately 10 feet above the roof line. Several of the stacks had a visible sticky substance coming out the side of the stacks and spreading out some of the roof. MS indicated that there are some waxing additives that condense out on the stack/roof. I did not see any clear evidence of damage from acidic emissions.

MS indicated there was a multi-year \$40 million major reconstruction of the plant centered around 1997. It was at that time, all the extruders lines were moved from the Washington street building to the main production building. Previous to that time, the extruder lines vented to a single stack. He thought that the design of the lines and the location of the hoods were keep in tack during the move.

On the way back to the office, I noted a locker that was labeled mercury lamps. TC indicated later that waste fluorescent bulbs are collected by the Environmental Recycling Group in Livonia. They process the lamps and send them on to somewhere in Ohio. TC thought they were a reputable group.

#### Recordkeeping/Permit Requirements Review

The day following the inspection, I sent the following email to TC:

*"Hi Tammy,*

*Per our conversation/my inspection yesterday, I would like to request the following information:*

*1) For each of the 13 production lines, I need the maximum rated capacity of each line in pounds/hour of material split up by the 2 primary components of each side of the extruder/product. Also provide the total amount of material that has been processed for all lines combined for each of the last 12 months ending January 31, 2017.*

*2)MSDS's and approximate composition of the components going into the mixes. If there are multiple similar compounds(such as dyes etc,) only provide representative MSDS's.*

*3) Written Summary of the NEXGEN process. I need the MSDS's for all compounds. Provide an estimate of emissions of any toxic compound in both actual expected emissions and potential emissions. Provide what the maximum production rate will be based on whatever units that are appropriate.*

*4) Written Summary of the once per week "purging" that occurs with sufficient detail that I can fully understand what is being performed. Let me know exactly where the odorous emissions are actually being generated/released and idea about the quantity of noxious emissions that are released. Provide some detail on when this occurs and for how long. (Every Wednesday or as needed?)*

*5) It appears that your emergency generators are subject to the RICE standards. [http://www.michigan.gov/deq/0,4561,7-135-3310\\_70317-254013--,00.html](http://www.michigan.gov/deq/0,4561,7-135-3310_70317-254013--,00.html) Please provide specific engine information/operating schedule/fuel type in sufficient detail in order to determine the exact regulatory applicability. (i.e. compression ignition internal combustion engines, spark ignition internal combustion engines, etc.)*

*6) Please provide the last 12 months of records of the amount of material(in tons) that is passing through the grinding operation for the recycling of scrap vinyl siding per Permit 259-94.*

*7) Status of the pressure gauge on the "day bin" dust collector.*

*8) Roof height and stack height above the roof of each of the stacks of the 13 operating lines. Provide the stack diameters as well.*

*Please provide the requested information as soon as possible. Let me know by no later than Monday on*

*when you will be able to provide the requested information. (FYI-I am working out of my home today, so I will not be able to provide you with the few promised documents that we discussed yesterday until Monday.) I will get back to you regarding a final decision on my compliance determination for your facility when I have one.*

*One other thing, your facility will now be subject to emission reporting/emission fees (MAERS reporting). You will receive a separate email in the near future about this requirement. Training information on MAERS is available on our website although it appears that you just missed a workshop on how to fill out the forms. Let me know if you have any questions. Thanks!"*

TC sent me several emails to me with the records I requested. See Attachment (2). Some of the information in the attachment the Company considers proprietary and confidential.

Review of the MSDS's show that there has not been a change in the materials used since the previous inspection.

The sum total of the maximum pounds per hour of production is currently 32,304. This compares to 13,345 pounds per hour production rate present during the 1993 stack test. Scaling up the original 1.25 pounds/hour stack test emission rate of HCL to the present maximum production level yields 3.02 pounds/hour. Correcting for 90% capture yields 3.36 pounds/hour. Operating for 8760 hours per year resulted in a PTE of 14.7 tons of HCL. No correction was made to account for the increase of SCFM from 26,713 during the stack test to 46,800 currently.

#### Post-Inspection Meeting

I held a brief post-inspection meeting with TC. I indicated that I would be following up with email to her to request additional information. I indicated that I had concerns about the vinyl siding production lines and associated HCL emissions that likely exceeded a potential to emit of ten tons which triggered the requirement for a ROP or Opt-out permit. I thanked TC for her time and cooperation, and I departed the facility at approximately 3:40 PM.

#### Compliance Summary

The Company is in compliance with their air permits.

Based on a 1993 stack test and correcting for current maximum production levels and configuration suggests the potential to emit of HCl exceeds 10 tons which triggers ROP requirements unless the Company can restrict their potential via an Opt-out permit.

Due to the uncertainty of the validity of the original stack test, a letter will be sent to the Company to request that they investigate this matter to come up with an accurate PTE of HCL (most likely based on new stack testing) before considering the need for a Violation Notice (VN).

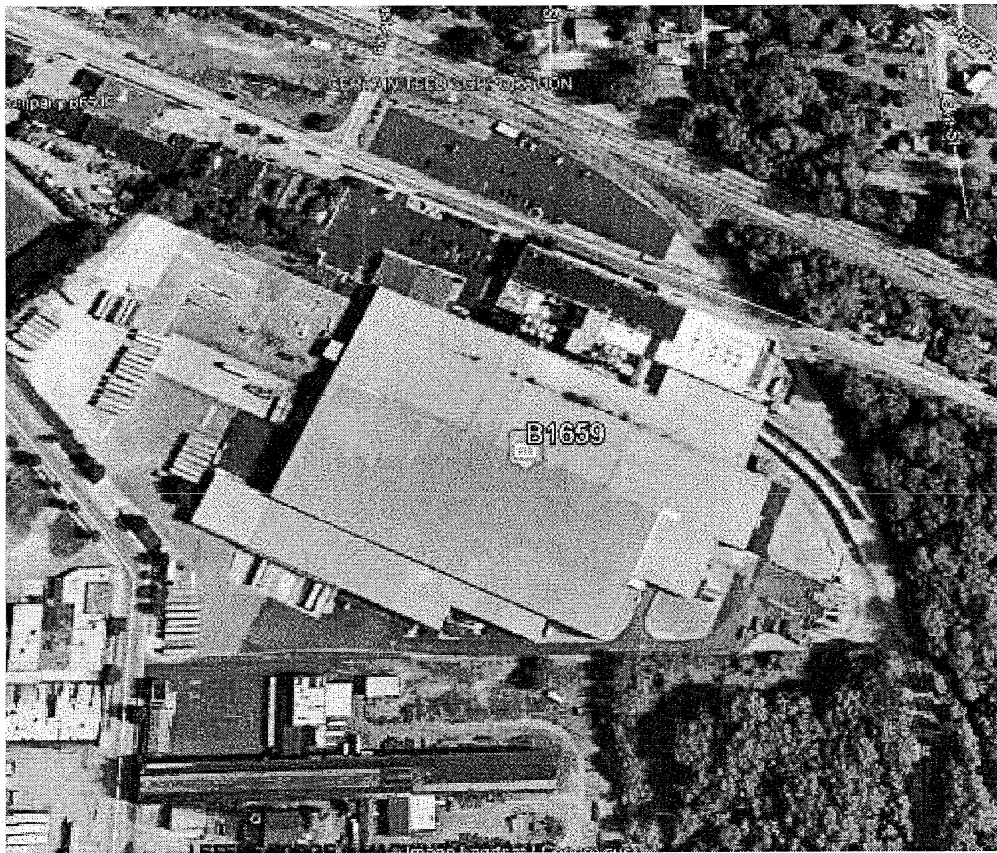


Image 1(aerial photo) : aerial photo

NAME *M. Kozlowski*

DATE *3/21/2017*

SUPERVISOR *[Signature]*