

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

B158924952

FACILITY: L L JOHNSON LUMBER MFG CO		SRN / ID: B1589
LOCATION: 563 N COCHRAN, CHARLOTTE		DISTRICT: Lansing
CITY: CHARLOTTE		COUNTY: EATON
CONTACT: Mark R. Johnson , Plant Manager		ACTIVITY DATE: 04/18/2014
STAFF: Brad Myott	COMPLIANCE STATUS: Pending	SOURCE CLASS: Minor
SUBJECT: Perform scheduled inspection and determine compliance with PTI 684-82A.		
RESOLVED COMPLAINTS:		

On 4/18/2014, I conducted an unannounced, scheduled inspection at L.L. Johnson Lumber Manufacturing. The facility has two wood-fired boilers. EUBoiler1 is a 80 horsepower (hp) unit, and EUBoiler2 is a 150 hp unit. Both boilers share a multiclone collector and exhaust stack. They do not operate the two boilers at the same time.

Emission unit	Permit	status
EUBoiler1	684-82A	pending
EUBoiler2	684-82A	Not operating

L L Johnson Lumber is a minor source located off of M-50 in the north side of the city of Charlotte. There are residential areas directly to the east, north and south of the business and about a block to the west. The source emits particulate matter (PM), Carbon Monoxide (CO) and Nitrogen Oxides (NOx) from the wood fired boilers. L L Johnson Lumber is also a minor source of HAPs and considered an "Area Source" as they emit less than 10 tpy of HAPs.

Because L L Johnson Lumber is an "Area Source" of HAP they may be subject to 40 CFR 63 Subpart JJJJJJ, the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boiler Area Sources. This subpart requires facilities subject to this subpart mail an initial notification to the EPA, conduct an energy assessment and perform boiler tune-ups. Michigan DEQ presently does not have administrative authority to enforce this subpart.

I arrived at 10:00 AM. From the parking lot south of the office, I could see no opacity or heat waves from the exhaust stack. It appeared that the boilers were not operating. Weather conditions were sunny, and 49 degrees F, with no wind.

I met with Mr. Mark Johnson, Plant Manager of L.L. Johnson Lumber. I provided him with a copy of the DEQ Environmental Inspections brochure. Mr. Johnson confirmed the boilers were not operating and he explained the different operating scenarios and operating schedule of the boilers at the facility. They have only been operating EUBoiler1. The boiler is used to provide building heat when needed and to heat treat wood pallets. EUBoiler1 was not operating when I arrived since they didn't need the heat for the building on this day. The boilers are used to supply heat to the building during the colder months and to heat treat wood pallets year round. The heating of the wood pallets is usually done later in the day around 5:00 p.m.

The international standard for heat treating wood pallets requires Johnson Lumber to heat the innermost wood fibers of a pallet to 140 degrees F for 30 minutes. For an extra assurance that they are eliminating any pests that might live inside the boards of the wood pallets, Johnson Lumber heat treats for 40 minutes, rather than the required 30. They use a thermocouple to measure the internal temperature of the wood. The wood pallets are treated in a large chamber next to the sawmill building that houses the boilers. Mr. Johnson showed me the chamber building and he informed me they would be heat treating later in the day.

They shut the sawmill part of this facility down in 2008. On rare occasions, they do some custom cutting/planing of wood for customers, but otherwise, the sawmill is not used. There is a small amount of wood waste generated by this, and it goes to the fuel bin for the wood boilers. The air permit also allows L L Johnson to burn office paper and hand towels but Mr. Johnson informed me that they recycle their office paper and only burn a small amount of hand towels in the boiler.

Johnson Lumber buys ground up pallets from the Potterville site of Kamps Pallets, for use as fuel. Some of the pallets have a manufactured board or hardboard layer on them, and is ground up, along with the wood. The wood is not treated with any kind of wood preservative. The moisture content of every load of wood is checked by L L Johnson prior to firing it in the boiler. I observed the ground up wood pile in the fuel bin next to the boilers and it appeared to be dry and free of any debris.

The smaller, 80 horsepower boiler is the only one being used at this time. It typically operates between 15-20 lbs of pressure. Over the years, the firebox has been made smaller/narrower, utilizing refractory brick. This has allowed the boiler to operate more efficiently. An additional benefit from the extra refractory brick is that the bricks are a heat sink, storing heat and releasing it, if the temperature of the boiler starts to dip down. This has a moderating effect on the performance of the boiler.

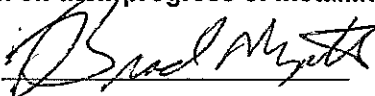
Their computerized controller for the boilers requires fairly frequent maintenance. To protect the electronic components from extreme temperatures, dust, and moisture, they have located the more sensitive parts of the system in a box that protects them from such conditions. The normal boiler temperature range is 2,300 to 2,500 degrees F. The desired boiler draft range is 0.06-0.07" water column (w.c.). They also monitor the induced draft fan capacity to ensure proper air flow.

I left the facility around noon and decided to return later that day to witness the operation of the boiler. I arrived back at the facility at 5:40 PM, and I witnessed white smoke from the boiler stack, between 10-20% opacity. Around 5:50 black smoke appeared around 10% but it quickly rose to over 50% and by 5:55 thick black smoke was emitting from the stack. I witnessed the black smoke being emitted for several minutes. The opacity at times was over 80%. I was unable to get in the proper position to conduct an actual method 9 opacity reading but I did drive to different locations to confirm the visual emissions. By 6:10 the black smoke had dissipated and white smoke appeared at an opacity around 20%. I left the facility shortly thereafter. On Monday, I sent Mr. Johnson an email requesting information about the high opacity incident on the evening of 4/18/14.

Mr. Johnson promptly responded to my email and explained that nothing out of the ordinary happened during the opacity incident and the black smoke was most likely caused by low over fire air and that they should have been aware of the incident and responded quicker. He assured me that he notified his staff of the seriousness of the opacity and that they would make every effort to keep opacity to a minimum at the facility in the future. Mr. Johnson also informed me that he would shop for an opacity recorder with alarm in an attempt to help minimize opacity.

I will periodically check the opacity from this facility when I am in the area to ensure that the boilers are meeting the requirements of the opacity limit in their permit. I will also follow up with Mr. Johnson to check on their progress of installing an opacity recorder and alarm.

NAME



DATE

3/5/14

SUPERVISOR

