

P0380
MANILA

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

P038034280

FACILITY: Sakthi Automotive Group USA, Inc		SRN / ID: P0380
LOCATION: 6401 WEST FORT STREET, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Deepak Bhalla, Director of Purchasing and Facilities		ACTIVITY DATE: 04/14/2016
STAFF: Stephen Weis	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: Syn Minor Opt Out
SUBJECT: Compliance inspection of the Sakthi Automotive Group USA, Inc. facility. The Sakthi facility is scheduled for inspection in FY 2016.		
RESOLVED COMPLAINTS:		

Location:

Sakthi Automotive Group USA, Inc. (SRN P0380)
6401 West Fort Street
Detroit, MI 48209

Dates of Activity:

Thursday, April 14, 2016 and Thursday, July 14, 2016

Personnel Present:

Steve Weis, DEQ-AQD Detroit Office
Todd Zynda, DEQ-AQD Detroit Office (for April 14 visit)
Deepak Bhalla, Director of Purchasing and Facilities, Sakthi (for April 14 visit)
Steve Pergeau, Maintenance Supervisor, Sakthi
Tyrone Jarrett Sr., Manager Facilities and Safety, Sakthi

Purpose of Activity

A self-initiated inspection of the Sakthi Automotive Group USA, Inc. (hereinafter "Sakthi") facility was conducted on Thursday, April 14, 2016, and a follow-up visit was conducted on Thursday, July 14, 2016. The Sakthi facility was on my list of sources targeted for an inspection during FY 2016. The purpose of this inspection was to determine compliance of operations at the Sakthi facility with applicable rules, regulations and standards as promulgated by Public Act 451 of 1994 (NREPA, Part 55 Air Pollution Control), and with applicable Federal air quality standards. In addition, regarding the initial visit on April 14, Todd Zynda and I were tasked with visiting sources in this area of Detroit and checking whether they use any materials that contain 2-ethylhexanol; this was due to ambient air concentrations of this compound that were measured via summa canister sampling at the site of the former Southwestern High School between September 3rd and November 2nd, 2015.

Facility Site Description

The Sakthi facility is located in three separate buildings on the south side of Fort Street; these three buildings constitute the Sakthi stationary source. The offices of the Sakthi facility, as well as some of the facility's manufacturing processes, are located in a portion of the former Arvin Meritor complex. This building is located on the south side of West Fort, extending from Waterman to the east approximately 325 yards to a street called Reissman; this street separates the facility from the building next door, which houses Evans Distribution Systems/Progressive Distribution (6307 W. Fort St.).

Sakthi has been operating at this location since 2012, when it purchased the building from Arvin Meritor. Another company, Mobis North America, LLC (hereinafter "Mobis", SRN P0543), leased office and manufacturing space from Arvin Meritor, and now has a similar lease agreement with Sakthi. Mobis' offices are in the northeastern part of the office portion of the building, and the manufacturing portion of their facility occupies a 211,000 square foot building at the east end of the former Arvin Meritor complex, right in back of and adjacent to the office area.

Sakthi also operates in a building having addresses 100-150 American Way. American Way runs south of Fort Street to the west of the former Southwestern High School, and just east of Green Street. In addition, Sakthi is in the midst of constructing a new building south of the high school building; the address for the building 201

Waterman Street. This building will house an aluminum die casting operation in a portion of the building, and the same type of operation as occurs in Sakthi's other two buildings in another portion of this building. From the perspective of DEQ-AQD, the three buildings in which Sakthi operates are considered a single stationary source; all three buildings are under the common ownership and control of the same entity, the activities that occur in each are classified under the same NAICS code, and all three buildings are geographically located contiguously/in close proximity to one another.

The facility is located in the Delray area of Southwest Detroit. The area around the facility is a mix of industrial, commercial, institutional and residential properties. The closest residential properties are located approximately 0.15 miles from the former Arvin Meritor building, ¼ mile from the new building that will contain the aluminum die casting operation, and ¼ mile from the building on American Way. The facility is located in an area that is currently classified as non-attainment for the National Ambient Air Quality Standards (or NAAQS) for sulfur dioxide; the area is in attainment with the NAAQS for the other criteria pollutants. An area map that shows the location of the Sakthi facility and its associated buildings is attached to this report for reference.

Facility Operations

Sakthi Automotive Group USA is a subsidiary of Sakthi Group, which is based in India. According to the company website (www.sakthigroup.com), Sakthi Group is involved in a variety of industry sectors, including power, logistics, IT services, textiles, and food products. Sakthi Automotive Group produces iron and aluminum cast, machined and assembled components.

The Sakthi facility in Detroit manufactures iron and aluminum automobile suspension components for automotive companies. Their main customers are currently General Motors and Ford Motor Company. Cast iron axle arms and wheel knuckles are produced for use in Ford vehicles (axles for the 250 Econoline van and F250/F350 trucks, knuckles for the Lincoln MKC, brackets for the F450 truck), while cast aluminum wheel knuckles are produced for use in the GM Canyon pickup. During the site visit, I was told that the Sakthi facility is currently operating 7 days per week, 3 shifts per day (a 24/7-type operation), and has roughly 217 employees.

At this time, the iron and aluminum that makes up the automobile components that are produced at Sakthi's Detroit facility is cast at a separate facility, and shipped to this facility to be machined into the final product. The cast iron comes from Cadillac Castings, Inc. in Cadillac, MI (SRN B2178), while the aluminum castings are imported from Sakthi facilities in China and Portugal.

The castings are machined in various CNC (computer numerical controlled) lathes at the facility. These lathes machine the castings, shaping and sizing them to meet the specifications of the final product. It was mentioned during the inspection that for a typical iron casting that is processed at the facility, 10-15 pounds of iron is removed from the casting during the machining process to craft the final part.

The CNC lathe machines are self-contained units – castings are loaded into them, the units are closed, and the machining occurs. The units are not vented to the ambient air. Air from inside of the machines is passed through an air filtration system (a Losma air filtration device), then vented to the in-plant environment. These filters have an estimated life of 2000-3000 hours. All of the metal trimmings are collected and stored in separate, sealed containers, and shipped offsite for recycling.

The following is a description of the processes in each of the three buildings that are currently comprised as the Sakthi stationary source.

6401 W. Fort (former Arvin Meritor complex)

As mentioned earlier in this report, Sakthi purchased this building from Arvin Meritor in 2012, and a portion of the building is leased to Mobis, a separate stationary source. This address contains the office portion of the Sakthi facility, as well as a manufacturing area. The manufacturing area contains 11 CNC lathe machines; 4 of them are dedicated to cast iron products for Ford vehicles, and the remainder are used to machine aluminum castings for GM products. Sakthi has some de-rusting compound that is used on an infrequent basis on cast iron parts adjacent to the lathes; it is not directly vented outside. There is a loading/unloading area at the rear of the building through which castings and finished parts enter and leave the building, respectively, and through which waste coolants and metal turnings are staged for recycling.

The processing area of this building is heated with small ceiling-mounted natural gas-fired heaters. The climate of the office portion of the building is controlled via a HVAC system. There are no boilers or process heaters located in this building. There are two Kohler emergency generators and one fire pump located at this facility, at

the west side of the building that is leased by Mobis. These units were installed by Arvin Meritor to provide emergency back-up power, and they are now part of the Sakthi facility.

100-150 American Way

Sakthi purchased this building in 2014. The building was formerly used by American Mailer, but had stood empty prior to Sakthi purchasing it. I was told that Sakthi began moving equipment into the building in March 2015, and began operations in the summer of 2015.

This building contains 28 CNC lathe/horizontal milling machines. All of the machines at this location process aluminum castings for use in GM vehicles. The metal trimmings from the lathes are processed in a "chip ringer", which is a machine that washes and spins the collected metal to separate the metal (aluminum) from the coolant. The aluminum scrap is directed to a truck for offsite recycling.

There is a quality control testing area located in the southern portion of this building. I was told that GM requires that a sample of the suspension components produced at the facility undergo a 150,000 mile simulation test. The testing area has hydraulic machines that simulate loads that the suspension components will encounter through typical usage.

The building has a loading dock/loading/offloading area through which inbound and outbound materials are moved in and out of the facility. This building is heated with small ceiling-mounted natural gas-fired heaters.

A copy of a plan view diagram of this building was provided to me during my site visit, and it is attached to this report.

201 Waterman (the new building which will contain the aluminum die casting process)

This building, which is located just behind the former Southwestern High School building, was under construction at the time of my site visits. It is being built on the site of the school's former football field and track. During the July site visit, the building structure was completed, and work was ongoing to install utilities for the building and the processes that will take place inside of it.

The building is 181,000 square feet in area. The western third (approximation) of the building (60,000 square feet) contains CNC lathe/horizontal milling machines that process iron castings into parts for Ford. These machines are already in operation.

The aluminum die casting process will encompass 110,000 square feet of the building. This process will be used to produce aluminum castings that will in turn be used in the facility's CNC lathe machines to produce parts for GM vehicles. A Permit to Install application has been submitted for the aluminum die casting process, and it is currently under review by the DEQ-AQD Permit Unit. The following description of the aluminum die casting process is taken from the Fact Sheet of the Public Participation Documents for Permit Application Number 92-16:

"The proposed facility will consist of three melting furnaces with natural gas fired low-NOx burners rated at 6.7 million Btu per hour (MMBtu/hr) each, two heat treat furnaces with natural gas fired low-NOx burners rated at 6.2 MMBtu/hr each, and 30 electrically heated crucible holding furnaces. Emissions from each melting furnace will be captured by a hood for that furnace and exhausted to a stack for the furnace. Additional facility support processes include aluminum receiving and storage, dross storage and handling, a die cleaning enclosure, casting inspection, and facility heating, ventilation and air conditioning.

The melting furnaces will be charged with only clean ingots of aluminum, clean scrap produced within the facility, customer returns, and flux material (chloride and fluoride salts) which is used to remove impurities from the aluminum and also for weekly cleaning of the furnaces. The flux bonds with non-aluminum material in the melt, creating dross which rises to the surface where it is removed before casting. The melting furnaces will operate in melting mode five days per week and remain idle in heated standby mode for two days per week.

The crucible furnaces will be mobile units within the facility. Melted aluminum tapped from the melting furnaces will be transferred to the crucibles. Additional flux will be added while the crucible is under the melting furnace hood and/or after the tapping process step when the crucibles are outside the hood. The crucible furnaces then transport the metal to the casting machines. When the crucibles are outside the hood, fugitive emissions during transport and casting are vented within the plant and exit through general plant wide roof exhaust ventilation consisting of 28 roof vents.

Completed castings will undergo a heat treat process to meet customer specifications. Heat treating can require more time than melting, so the two heat treat furnaces may need to be operated six days per week to process the throughput from five days of melting and casting production.”

A copy of a plan view diagram of this building was provided to me during my site visit, and it is attached to this report. It should be noted that DEQ-AQD operates an ambient air monitoring station on the opposite side of Waterman Street from the new building. The monitoring equipment at this station monitors levels of PM2.5 (particulate matter less than or equal to 2.5 microns in size), PM10 (particulate matter less than or equal to 10 microns in size), sulfur dioxide (SO₂), manganese, arsenic, cadmium, nickel, VOCs, and carbonyl compounds in the ambient air, and also provides meteorological data.

Inspection Narrative

The inspection for this facility occurred over the course of two sites visit. Todd Zynda and I conducted the first site visit on April 14, 2016 as part of our task of visiting sources in this area of Detroit and checking whether they use any materials that contain 2-ethylhexanol. This visit ran into the late afternoon, and focused on the building at 6401 W. Fort St. When we found out that there were now two additional buildings that are part of this facility, I planned a follow-up inspection to visit the building on American Way, and the new building.

April 14, 2016

Todd and I arrived at the main lobby of the Sakthi facility at 2:45pm after completing an inspection of the adjacent Mobis facility. We were met by Deepak Bhalla, who took us to the office area of the facility, where we were joined by Steve Pergeau, Maintenance Supervisor and Tyrone Jarrett Sr., Manager Facilities and Safety. Todd and I met with Steve and Tyrone, discussing the purpose of our visit, as well as the monitored 2-ethylhexanol concentration in the area. Steve and Tyrone mentioned that the primary material used at the site is coolants, which are used in the CNC lathe machines. We discussed facility operations, and the types of processes found in each of the buildings.

After our initial discussion, we proceeded to walk through the processing area of the Sakthi operations at 6401 W. Fort. We observed the CNC lathe machines, and watched both iron and aluminum castings being processed in their respective machines. Steve explained the entire process to us, including the workings of the CNC lathes and the air filtration devices that are affixed to them. I inquired as to how the building is heated. We were shown the ceiling-mounted natural gas-fired heaters, and told that there are no boilers associated with the building. We then visited the back of the facility to observe the material management area; this is where incoming and outbound materials are routed in and out of the facility, and scrap materials are staged for off-site recycling.

We inquired about emergency generators. Steve and Tyrone led us to the west side of the building that is leased by Mobis, where we were shown two emergency generators that are located next to each other. Both of the units are manufactured by Kohler, and are diesel-fired. Steve and Tyrone told us that the units are started up once per week for maintenance purposes, as is the fire pump; Todd and I did not view the fire pump. Todd and I inquired about the generators, asking about the rating, manufactured or installation dates, etc. We waited while Steve and Tyrone located keys to open up the access doors for the generators. When the doors were opened, Todd and I found the following information about the generators:

- The generator located to the north is a Kohler Model 800ROZ D4 unit, serial number 0713756. This generator is a 3 phase, 810 kW unit with a manufactured date of September 2001. There is a 1,050 gallon capacity fuel tank attached as part of the unit. The hours meter on this unit reads 469.5 hours.
- The second generator is a Kohler Model 600ROM-S unit, serial number 0685183. This generator is a 3 phase, 605 kW unit. We could not find a manufactured date on this unit, but Steve and Tyrone said that they think that units were installed around the same time. There is a 600 gallon capacity fuel tank attached as part of the unit. The hours meter on this unit reads 549.7 hours.

After viewing the generators, I told Steve and Tyrone that I would need to return to the facility to visit the other two buildings. Todd and I left the facility after 5pm.

July 14, 2016

I returned to the facility for my follow-up visit, arriving at 12:45pm. I was met in the lobby at 6401 W. Fort by Steve Pergeau and Tyrone Jarrett, and the three of us proceeded to the building on American Way. Steve and Tyrone told me how long Sakthi has owned this building and operated at this location. They told me that this

building currently operates 3 shifts per day, so it operates on a 24/7 basis. We walked through the building, while Steve described this portion of the Sakthi facility. The American Way building contains 28 CNC lathe horizontal milling machines that currently all machine aluminum castings to produce parts for GM. The aluminum castings are currently shipped to the facility from Sakthi facilities in China and Portugal; when the aluminum die casting process is operational at this facility, it will supply the aluminum castings. Steve showed me several of the machines in various states of operation, from the loading of a casting to the removal of a finished, machined part. We observed some of the small ceiling-mounted natural gas-fired heaters as we walked through the building.

We visited the quality control testing area located in the southern portion of this building. I spoke with one of the staff from this area, and he described the types of tests that are performed on samples of the parts that Sakthi produces at this facility for GM.

We then proceeded to walk through the loading/offloading area of the building. Steve and Tyrone showed me the "Chip Ringer" machine in which metal trimmings/chips from the lathes are processed; the machine washes and spins/centrifuges the chips to remove coolant residue. The cleaned metal chips are directed to trucks in the loading dock area for offsite recycling.

We left the American Way building, and proceeded to the new building at 201 Waterman St., located behind the former Southwestern High School. The building structure is complete, but the access roads/driveways and lots around the building were still unpaved at the time of my visit. A concrete pad was being completed at the east end of the building that will be used to hold argon tanks. We walked inside the eastern portion of the facility that will eventually house the aluminum die casting operation. At the time of my visit, this portion of the plant was empty. Quench pits in the floor of the building were complete, and utilities that will serve the die casting process equipment were in the installation stage (some utilities were in place, while the installation of others was just being initiated). We also walked through the air compressor room, which will contain two compressor units, and observed some of the piping leads that have been installed as part of the cooling water recirculation system, which will serve as part of the die casting process. At the west end of the die casting side of the building, an elevated, open mezzanine that will hold some of the process controls for the die casting process was in place, and some of the electronic control panels were being installed.

We walked through the west side of the building, where some CNC lathe/horizontal milling machines have been installed and were in operation. These machines perform the same task as those operating at the 6401 W. Fort building, processing iron castings into parts for Ford.

We left the building, and discussed a few issues. Steve and Tyrone mentioned that some emergency generators may be installed adjacent to this building. I advised them that the generators should be evaluated for permitting applicability, and that the generators will most likely be subject to Federal air standards. They mentioned that Sakthi is looking into doing some renovations on the former Southwestern High School building, which they currently own. I advised that, prior to commencing any renovation work, Sakthi should contact staff from DEQ's Asbestos program. We also discussed the permitting status of the die casting facility. I advised Steve and Tyrone that since construction of the die casting facility had commenced prior to not only the issuance of a Permit to Install (PTI) by AQD, but prior to the submittal of the PTI application, I would be issuing a Violation Notice to the facility. Sakthi submitted correspondence dated June 21, 2016 through which they requested a Michigan Administrative Rule 202 construction waiver. DEQ-AQD denied this request via correspondence dated July 6, 2016. I followed up on these issues by sending Steve and Tyrone an e-mail message that provided background about the asbestos regulations, the contact information for the DEQ-AQD Asbestos Program staff in the AQD Detroit Office, and a copy of the construction waiver denial letter.

Permits/Regulations/Orders/Other

Permits

The Sakthi facility does not currently possess any air quality permits from DEQ-AQD. Based on what I observed during my site visits, the processes and operations at the 6401 W. Fort and at the American Way buildings appear to be exempt from the requirement to obtain a Permit to Install from DEQ-AQD.

The equipment used to heat these two buildings meets the exemption requirements of Administrative Rule 282 (b)(i) (Rule 282(b)(i)) due to the small size of this equipment.

The machining operations in both of the buildings are also exempt from permitting requirements. The CNC lathes are self-contained, closed operations that do not directly vent to the ambient air. The air from inside of

these machines is vented to an air filtration device, which is designed to remove coolant mists and other particulates from the air prior to it being vented to the in-plant environment. This type of operation is typically exempted from permit requirements through meeting the exemption criteria of Rule 285(l)(vi)(B); this provision exempts equipment used for various machining operations of metal products that is vented only to the general in-plant environment. This exemption would also apply to the CNC lathe machines operating inside of the building at 201 Waterman Street.

The aluminum die casting operation is required to obtain a permit in order to operate. A PTI application was submitted on behalf of Sakthi for the aluminum die casting process, and was received for review by AQD's Permit Unit on June 3, 2016. The application was assigned an application number of 92-16. In addition, as mentioned earlier in this report, Sakthi submitted a request for a construction waiver, in accordance with Michigan Administrative Rule 202, that would allow construction to commence on the site of the die casting process prior to AQD's final action of the PTI application. DEQ-AQD denied the waiver request on the grounds that Section 5511(3) of Public Act 451 does not allow the department to issue a permit for which there is known public controversy without providing public notice, including an opportunity for public comment and public meeting. A Violation Notice dated July 20, 2016 was issued to Sakthi for commencing construction on the die casting plant prior to the issuance of a Permit to Install. In Sakthi's response to the Violation Notice, that stated that they will cease any further work on the portion of the building at 201 Waterman that is related to the aluminum die casting process until the PTI No. 92-16 is approved and issued by DEQ-AQD.

In the time since the Violation Notice was issued, DEQ-AQD and Sakthi have agreed to draft permit conditions for application No. 92-16. A public comment period regarding the permit application and draft permit will take place from September 15 through October 14, 2016 and a public hearing, if requested, has been scheduled to take place on October 20, 2016. At this draft stage of the permit review process, DEQ-AQD Permit Unit staff have determined that the installation and operation of the die casting facility, as proposed by Sakthi and with conditions as determined by DEQ-AQD, will not violate any of DEQ-AQD's rules, nor the Federal NAAQS. The permit contains limitations on the amount of metal that may be charged to the furnaces, as well as the amount a flux that can be injected during the processing of the aluminum. These material usage restrictions serve to limit the potential emissions from the operation of the die casting facility, so the PTI serves as a synthetic minor permit. The Fact Sheet that has been prepared by DEQ-AQD Permit Unit staff as part of the Public Participation Documents for the PTI include the following table that summarizes the estimated emissions associated with the operation of the die casting process:

Pollutant	Estimated Emissions (tpy)
Particulate Matter (PM)	1.6
PM10*	
PM2.5**	
Sulfur Dioxide (SO ₂)	0.1
Carbon Monoxide (CO)	18.0
Nitrogen Oxides (NO _x)	10.7
Volatile Organic Compounds (VOCs)	1.2
Lead	1.07E-04
Fluorides	1.04 (HF)
Sulfuric Acid Mist	not applicable

The issuance of a final PTI (No. 92-16) for the die casting process will allow Sakthi to commence operation of this portion of their facility.

Regulations

The die casting facility is not subject to 40 CFR Part 63, Subpart RRR (National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production). The applicability criteria for this regulation, as put forth in 63.1500, exempts aluminum die casting facilities from the provisions of this regulation provided that the only materials that are melted at the facility are clean charge, customer returns or internal scrap, and if the facility does not operate sweat furnaces, thermal chip dryers, or scrap dryers/delacquering kilns/decoating kilns. The draft permit contains a condition limiting the melting furnace to only melting clean charge, as defined

by Subpart RRR, to ensure that the process is not subject to Subpart RRR.

Regarding the emergency generators, they appear to be classified as "Existing emergency compression ignition (CI) engines less than 500 hp located at area source, constructed before June 12, 2006" for the purposes of applicability with 40 CFR Part 63, Subpart ZZZZ. Given that the generators were installed prior to June 12, 2006, and the facility is a minor/area source of HAPs, the generators must abide by the provisions of 63.6640(f) to be classified by Subpart ZZZZ as emergency generators. The requirements of 40 CFR Part 60, Subpart IIII (New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines) do not appear to apply to these existing generators as this regulation applies to CI engines that were manufactured on or after April 1, 2006. Any new emergency generators that may be installed at this facility will presumably be subject to the requirements of one of these Federal regulations.

Compliance Determination

Barring any unforeseen circumstances, the Sakthi facility should be issued Permit to Install No. 92-16 sometime this year. This permit will address the operation of an aluminum die casting operation in the portion of the Sakthi facility located at 201 Waterman Street. The other production-related processes at the facility appear to be exempt from DEQ-AQD permitting requirements. Due to the Violation Notice that was issued, the Sakthi facility is considered to be in **non-compliance** until the PTI is issued. When the aluminum die casting facility commences operation, it will be evaluated in relation to the requirements of PTI No. 92-16.

NAME Steve Was DATE 9/16/16 SUPERVISOR JK