

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

A143042726

FACILITY: CALUMET ELECTRONICS CORP		SRN / ID: A1430
LOCATION: 25830 DEPOT STREET, CALUMET		DISTRICT: Upper Peninsula
CITY: CALUMET		COUNTY: HOUGHTON
CONTACT: EDWIN D KRAAI , VICE PRESIDENT		ACTIVITY DATE: 11/13/2017
STAFF: Shamim Ahammod	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Conducted a scheduled inspection to determine the company's compliance with their issued permit.		
RESOLVED COMPLAINTS:		

**FACILITY:** Calumet Electronics Corporation  
**INSPECTION DATE:** November 13, 2017  
**MDEQ-AQD Staff:** Shamim Ahammod, Environmental Engineer  
**FACILITY REPRESENTATIVE:** Edwin D Kraai, Vice President  
**LOCATION:** The facility is located at 25830 Depot Street, Calumet, MI 49913

**SOURCE DESCRIPTION:**

Calumet Electronics Corporation manufactures printed circuit board (PCB). The company has active permits as follows:

Permit No. 79-16: EU-SES3; Permit No. 163-12: EUHARDGOLD; Permit No. 130-06: SVWDES; Permit No. 137-05: EU-SES2; Permit No. 41-04: FGELECTROLYTIC; Permit No. 280-03: EU-ENIG & EU-GOLDTAB; Permit No. EU-LPI, EU-SES and EU-DES 1; Permit No. 159-02 EU-SOLDERLEVEL; Permit No. 158-02: EUELECTROLYTIC; Permit No. 157-02: EUELECTROLESS and Permit No. 166-95: Permanganate desmear line.

Permit No. 163-12 is for EUHARDGOLD and Permit No. 41-04 is for FG-Electrolyte should be voided because these emission units were never installed. I have sent a note to the Permit Section to void out Permit # 163-12 and Permit # 41-04. All other permits are active now.

**INSPECTION:**

On November 13, 2017, Ed Lancaster and I (Shamim Ahammod) conducted a scheduled inspection of the Calumet Electronics Circuit Board (PCB) manufacturing plant. The facility is located at 25830 Depot St, Calumet, MI 49913. We arrived at the facility's office at late morning, and then we met with Edwin D Kraai-Vice President, Rob Johnson, John Brewer and Eliot Nagler-Process Engineer. I told them the purpose of the inspection was to conduct a scheduled inspection of the facility to determine the company's compliance with their issued permit. At the beginning of our meeting, we discussed about all issued permit and then we went on a brief walk through the plant to get an idea of the overall operations at the plant.

**REGULATORY ANALYSIS:****Emission unit: EU-SES2 and Permit 137-05**

EU-SES-2 has two resist stripper tanks, a post strip tank, a cascade water rinse tank, two ammoniacal etch tanks, a replenisher tank, a cascade water rinse tank, a tin strip tank and a cascade water rinse tank. According to Special Condition 1.2, the permittee shall not use more than 480 pounds per calendar day of free ammonia contained in the ammoniacal etchant material in EU-SES2. As I requested, they submitted the required information and I found, 429

**gallons of ammonia per calendar day was the maximum used in SES2. This satisfies the permit conditions set forth in SC 1.2.**

**According to Special Condition (SC) 1.8, the permittee shall keep the following information daily for EU-SES2: gallons of ammoniacal etchant used, free ammonia content (lbs/gallons) of ammoniacal etchant used and ammonia usage calculations determining the daily usage rate in pounds per calendar day. As I requested, Ed Kraai sent a spreadsheet mentioning all required information via email. For the period of 10/18/2017-11/10/2017, the average range of pressure drop, liquid flow rate and P<sup>H</sup> of the wet scrubber for EU-SES3 were 0.3 (inches of water), 1.6 GPM and 7.5 respectively (SC1.9).**

**Emission Unit: EU-SES3 and Permit No. 79-16**

**EU-SES3 is a strip ammoniacal etching process line that is used primarily as a back-up to the SES-2 line.**

**Emission Unit: EUWDES & EUMDES and Permit No. 130-06**

**There are two lines. Only one line is used at a time. The reason for the redundancy is to have one as a back-up. Screenshot records were received which shows that for the period of 10/18/2017-11/10/2017, the average range of pressure drop, liquid flow rate and P<sup>H</sup> of acid scrubber portion of EU-WDES were 0.25 (inches of water), 45 GPM and 3.2 respectively (SC1.7 and SC 2.5).**

**Emission unit: EU-ENIG and EU-GOLDTAB and Permit No. 280-03**

**EU-ENIG is a electroless nickel, gold and silver plating line. The permittee shall keep records of the bath make up of each tank and the usage amounts for each tank in EU-GOLDTAB (SC 1.1, 1.2, and 1.3). At my request, all records were sent via email. ENIG total monthly average emission rate (in lbs) was 0.20 lbs/hr, and annual emission rate was 3.264 lbs (12 month rolling total) for the period of Jan-17 through Nov-17 (SC 1.1, 1.2 and 1.3).**

**EU-GOLDTAB contains an electrolytic strip tank, an acid activator tank, a nickel electroplating tank and a gold electroplating line. The permittee shall keep records of the bath make up of each tank and the usage amounts for each tank in EU-GOLDTAB (SC 2.2 and 2.3). At my request, all records were sent via email. According to their records, they have used monthly average solder strip of 26 gallons and solder strip (rolling 12-month average) of 26 gallons in EU-GOLDTAB for the period of Jan-2017 through Dec 2017. This satisfies the permit requirements set forth in SC 2.2, 2.3 and 2.4.**

**Emission unit: EU-LPI and Permit No. 290-01A**

**EU-LPI emission unit consists of solder mask ink line with two enclosed screen coaters, two electric tack cure ovens, a developer, a final electric bake oven and a UV oven. This emission unit requires keep the VOCs limit of 12.4 tons per year (SC 1.1a) for EU-LPI and 5.5 tons per year (SC 1.1b) for EU-LPI (clean-up solvents). According to their record, they have emitted VOCs of 6.80 tons from EU-LPI and 3.309 tons from EU-LPI (Clean-up solvents) during the period of October 2016 through October 2017. This satisfies the permit requirements set forth in SC1.6 and SC 1.7. EU-SES has been removed and EU-DES 1 has replaced by SVWDES (Permit Number130-06).**

**Emission unit: EU-SOLDERLEVEL and Permit No. 159-02**

**EU-SOLDERLEVEL emission unit has quicksilver and alchemy solder leveling lines. Both lines**

consist of a modular series of enclosed tanks, including: a micro-etch, sulfuric acid rinse, lightening process, leveler tank and flux cleaner. This emission unit is required to keep the VOCs emission limit of 1.0 tpy (SC 1.1). According to their records, VOC emission was 0.211 tons from this unit for the period of January-November 2017. At this rate, the company should stay below the VOC limit for the year.

**Emission unit: EUELECTROLYTIC and Permit No. 158-02**

EUELECTROLYTIC is a copper and tin plating line consisting of an acid clean, micro-etch, copper pre-dip, copper plating bath, tinplating bath, and associated water rinses. The facility is required to keep the record of liquid flow rate and pressure drop for the wet scrubber portion of EUELECTROLYTIC (SC 1.5). At my request, monthly flow rate and pressure drop data of wet scrubber was sent via email (SC 1.1, 1.4 and 1.5). In the month of October and November -2107, the average flow rate and pressure drop were 2.2 GPM and 2.5 Inches respectively

**Emission unit: EU-ELECTROLESS and Permit No. 157-02**

EU-ELECTROLESS is an electroless copper plating line consisting of the following tanks: conditioner, micro-etch, pre-dip, activator, accelerator, and plating bath, followed by a sulfuric dip, and anti-tarnish. The permittee shall keep the monthly usage records of all formaldehyde containing materials (SC 1.2). At my request, monthly usage data of formaldehyde was sent via email. In January 2017, they used 660 gallons of Formaldehyde (3-8% by weight) and 110 gallons of M-Formaldehyde (30-40% by weight) in EU-ELECTROLESS. Similarly, they have kept record for others month. This satisfies the permit condition set forth in SC 1.2, and SC 1.3.

**Emission unit: Permanganate desmear line and Permit No. 166-95**

This is a permanganate desmear line. A record of the amount of potassium permanganate and N-methylpyrrolidone used per month were received via email. They used monthly average 38 gallons of permanganate and average 110 gallons of M-treat Bio (N-methylpyrrolidone) in desmear line during the period of Ja20-17 through dec-2017. This satisfies the permit condition as specified in SC 17. Visible emissions were not measured during inspection.

**Emission Unit: FG-Electrolyte and Permit No. 41-04**

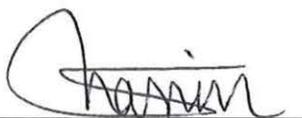
Ed said, FG-Electrolyte has never been installed. Therefore, Permit No. 41-04 should be voided. I have sent send a note to the Permit Section to void out Permit # 41-04.

**Emission unit: EUHARDGOLD and Permit No. 163-12.**

This unit is for EUHARDGOLD. Mr. Kraai stated that this line was never installed, and it should be voided. He also stated that the line was not installed for two reasons: 1) the customer demand wasn't high enough to justify the cost of making up an expensive gold bath, and 2) upon further inspection the equipment was determined to be non-serviceable. I have sent a note to the Permit Section to void out permit # 163-12.

Via onsite inspection, review of follow-up records, and discussion with staff, the facility appeared to be in compliance with the conditions of issued permit.

NAME



DATE 12.28.2017

SUPERVISOR

