

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

N137446770

FACILITY: TRI-COUNTY CREMATION SERVICE		SRN / ID: N1374
LOCATION: 1100 E MICHIGAN, YPSILANTI		DISTRICT: Jackson
CITY: YPSILANTI		COUNTY: WASHTENAW
CONTACT: Bill Hudson , General Manager		ACTIVITY DATE: 10/25/2018
STAFF: Mike Kovalchick	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Inspection and complaint investigation for black smoke.		
RESOLVED COMPLAINTS:		

Minor Source-**Facility Contacts**

Mr. Bill Hudson- General Manager

Tcs48198@icloud.com

ph 734-482-2024

Website: <http://www.cremations800.com/>**Purpose**

On October 25, 2018, I conducted an unannounced compliance inspection of Tri-County Cremation Service (Company) located in Ypsilanti, Michigan in Washtenaw 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, Permit to Install (PTI) # 609-95A which was issued on April 29, 2011 and Consent Order AQD No. 3-2011 that became effective on March 24, 2011. It was also to investigate a complaint about black smoke coming from crematorium on September 20, 2018 as observed from a restaurant across the street.

Facility Location

The facility is located in a commercial area of Ypsilanti. See Google Earth street view.

Facility Background

The Company has 2 incinerators used for cremation of human remains.

The facility had an inspection on October 3, 2011 and resulted in a VN being issued on October 25, 2011 for a number of violations mostly related to the temperature of the incinerators. This resulted in violations of the Company's Consent Order as well.

The Consent Order contains a compliance program to resolve violations of conditions of the previous PTI and the Rule 301 for exceeding the visible emissions standard of 20% opacity from both East and West Units over a period of several years. The AQD required the Company to revise permit to accommodate additional restrictions to demonstrate ongoing compliance and resolve violations. In addition a new Permit was required because the Company proposed to replace the West Unit with a new larger Unit as opposed to upgrading/retrofitting the existing Unit. The Company proposed and AQD agreed to the September 30, 2011 deadline to cease operating the existing Unit and have the new Unit installed. The new PTI is an attachment to the Consent Order. The Order requires compliance with the PTI and contains stipulated penalties.

Another inspection was conducted on 4/20/2017 with additional violations identified including the opacity monitor not working properly, temperature in the afterburner not being maintained and not conducting required quarterly maintenance.

Regulatory Applicability

PTI 609-95A covers the entire facility.

Arrival & Facility Contact Bill Hudson (BH)-General Manager of the facility

Visible emissions or odors were not observed upon my approach to the Company's facility. I arrived at 9:20 am, proceeded to the facility office to request access for an inspection, provided my identification and spoke with Alan Ballenberger (AB). I informed him of my intent to conduct a facility inspection and to review the various records as necessary.

AB extended his full cooperation and fully addressed my questions.

Pre-Inspection Meeting

AB outlined that the facility is operating from 9 to 5 pm, 5 days a week. Business is down by 50% due to recent news scandals related to funeral homes and the fact that they have increased their prices. They are doing about 100 cremations per month. The incinerator is warmed up for about 10 to 20 minutes prior to the cremations occur. It can take as little as 45 minutes or most of the day to complete a cremation depending on weight. A separate afterburner temperature, opacity and weight record exist for each cremation. EU-CREMATORY1 has been removed. EU-CREMATORY2 is no longer in useable condition and was last operated on 9/13/2017. (It was previously decided that it would be too costly to rebuild.) EU-CREMATORY3 is currently their only useable incinerator. It was last operated the previous day. It was rebuilt in the August 2017 time frame by Matthews International which is also a crematorium service company. AB indicated he wasn't overly familiar with the incinerator operation and placed a call to Bill Hudson (BH)-General Manager who I had met on the previous inspection so I could speak with him.

I told BH that I would be requesting records at the conclusion of the inspection and BH indicate that he work on the request later in the day when he arrived.

Onsite Inspection

The crematorium operator gave me a tour of the room housing the 2 incinerator units.

EU-CREMATORY3 was still warm from the previous day. I confirmed that EU-CREMATORY2 was no longer being used.

The newer unit is called EU-CREMATORY3 "West Unit". It is a Matthews Cremation Division Super Power Pak (IE43-SPPIII) model that has a maximum charge capacity of 750 pounds and a burn rate of 200 pounds/hour. (See attached photo) Human remains are first weighed on a scale to make sure the weight is under the 750 pounds PTI weight limit restriction then placed into the incinerator generally inside a wooden casket. (See attached photo.) Any metal etc. or other unburnable objects are removed.

The unit is equipped with chart recorders for opacity and afterburner temperature. The control panel showed that the temperature was still about 450 degrees F. due to left-over heat from the previous day. The inside of the unit appeared to be clean and in good shape although some minor cracking of the firebrick was visible. (See attached photo.) The opacity monitor lens could be seen adjacent to the stack above the unit but below the roof.

The operator indicated that he frequently checks for smoke both outside looking at the stacks and also using the opacity chart recorders. He indicated that generally there is no smoke except for human remains in the 200 pound or higher range. He makes various air flow/temperature adjustments for these cases to limit smoke generation. Very large human remains also causes problems with temperature control. Occasionally, very high temperatures are generated which damage the inside of the incinerator units and the thermocouple.

The operator noted that he was on hand when a complaint was received about black smoke from a complainant that was located across the street at a local restaurant. He made some adjustments to the airflow and afterburner so that the smoke was quickly reduced shortly after the call was received.

Based on further conversations with the operator, it appears that high opacity conditions occur much more frequently than was previously understood but happens only for a few minutes per each of larger cremations. He described black smoke opacity that was likely close to 100% when the complainant called. There was no reason to think that particular cremation was unusual in any way.

The operator said that black smoke was generated when the afterburner temperature gets too high and grey smoke is generated when the temperature is too low.

Recordkeeping/Permit Requirements Review

See photos of maintenance logs. Based on the log and discussions with the operator, the required quarterly inspections to check and service all equipment associated with the crematory isn't being done. Matthews International has not been out since August 2017. The operator is only able to service/inspect some of the components.

Attachment (1) shows temperature and opacity chart for 9/20/2018. Not included in the attachment is the weight of the individual (236 pounds), duration of the cremation (2 hours) and the time (6:30 pm). The afterburner temperature ranged from 1600 to 2250 degrees F. Some opacity was noted on the chart around 6:45 pm which was shortly after the highest temperatures were observed.

A closer look at the opacity chart shows a pattern consistent with either a poorly calibrated opacity monitor or one that has a dirty lens. It is consistently reading too low. The opacity chart showed 0% opacity at all times besides a few spikes to 10% opacity. It is believed that spikes may represent times of nearly 100 % opacity instead of ten percent or lower that it shows. It isn't clear that the cremation unit is capable of complying with the six minute 20% opacity requirement

Attachment (2) shows other temperature/opacity charts for September and October 2018 that show a similar pattern. However, on numerous occasions, the temperature chart showed the temperature dropping below the required 1600 degrees F. level.

Post-Inspection Meeting

I held a brief post-inspection meeting with AB. I indicated that I would be reviewing the records that they submit for compliance. I indicated that several violations of their PTI were already noted and a VN would be forthcoming. I also indicated that violations of the PTI would also be considered violations of their Consent Order. I thanked AB for his time and cooperation, and I departed the facility at approximately 11:15 am.

Compliance Summary

The Company is out of compliance with their PTI for the following conditions:

PTI 609-95A. General Condition #11. 20% opacity requirement. (Opacity well in excess of 20% for a six-minute average occurred on September 20, 2018 based on a complaint received and discussions with crematorium operator. Opacity excursions are likely occurring on a regular basis during cremations.)

For EU-CREMATORY3

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not combust waste in EU-CREMATORY2/3 unless a minimum temperature of 1600 F. and a minimum retention time of 1.0 seconds in the secondary combustion chamber are maintained. (Temps occasionally drop below 1600 F during the cremations.)

IV. DESIGN/EQUIPMENT PARAMETERS.

The Permittee shall no operate EU-CREMATORY2 unless an opacity monitor is installed, maintained and properly operated. Proper operation includes a maximum alarm set-point of 10% opacity. (Opacity monitor has not been calibrated.)

VI. MONITORING/RECORDKEEPING

The permittee must make inspections, at least quarterly, to check and to service, as necessary, all equipment associated with EU-CREMATORY2/3. (Quarterly inspections have not been done since the crematory was rebuilt in August 2017.)

A Violation Notice (VN) will be sent noting the above findings. The Company will be given 21 days to respond.

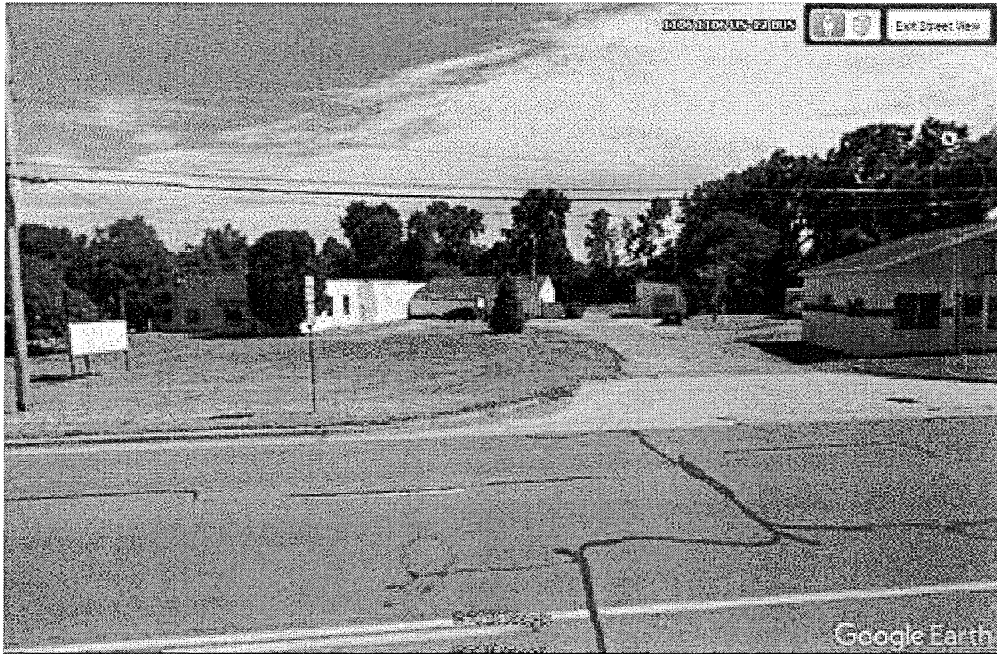
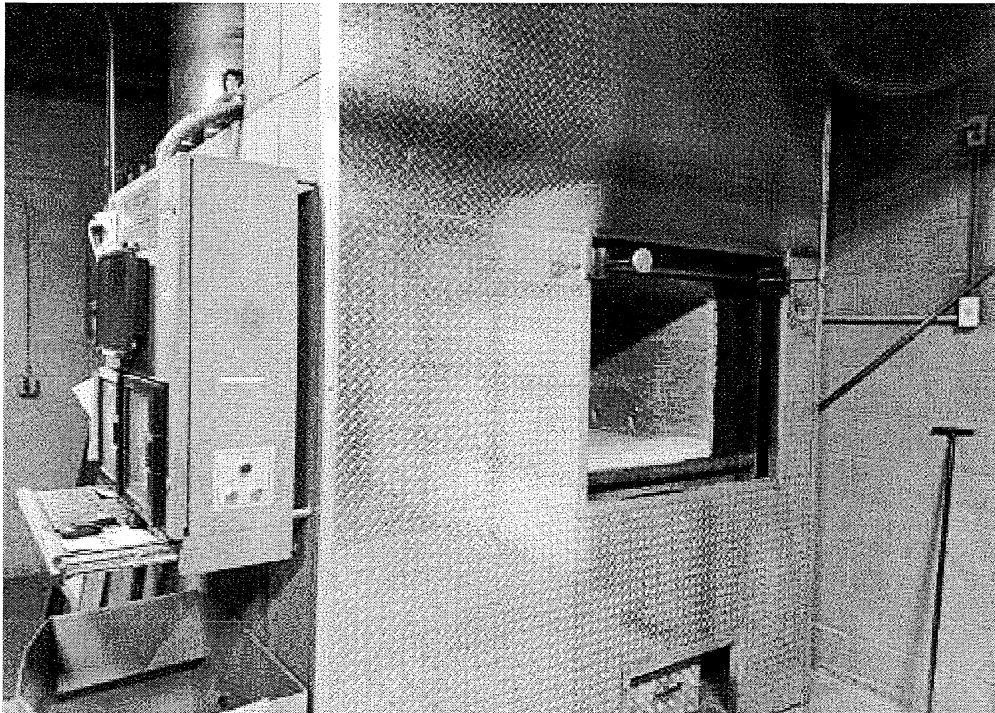


Image 1(Street view) : Street view



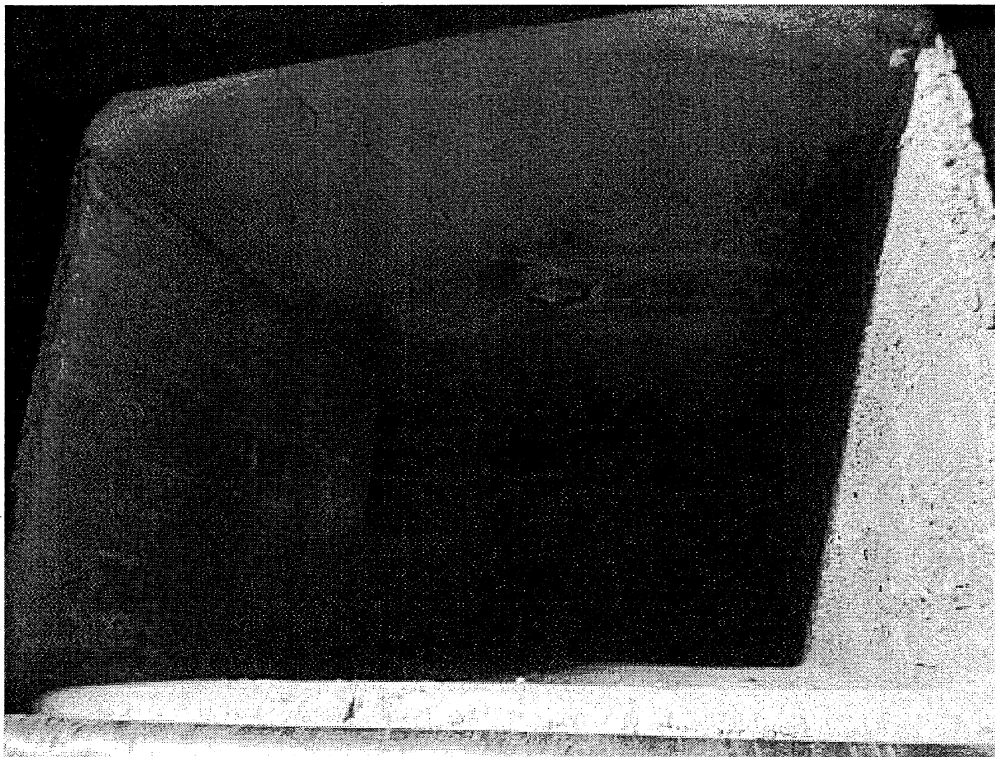
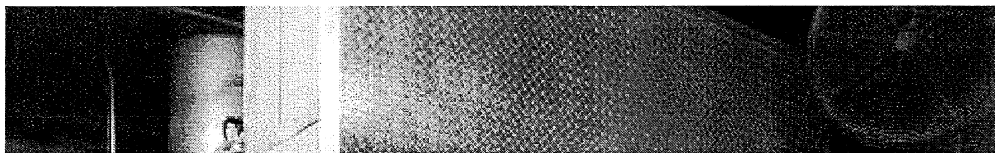


Image 3(Crematorium unit) : Crematorium unit-inside.

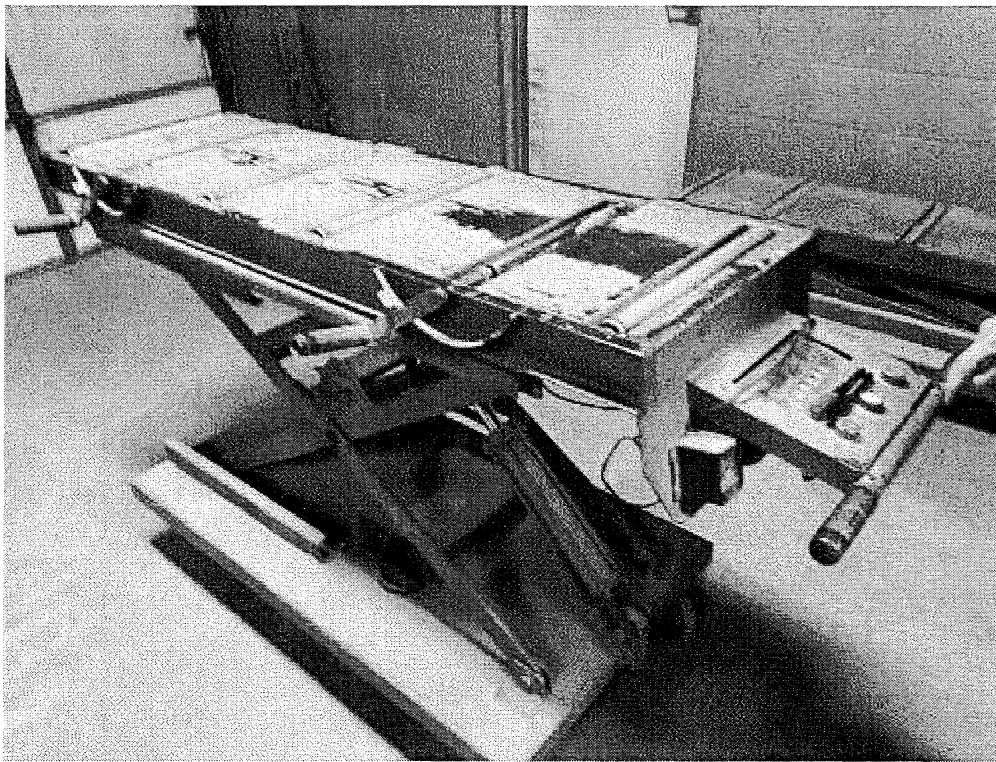


Image 4(Weight scale) : Weight scale

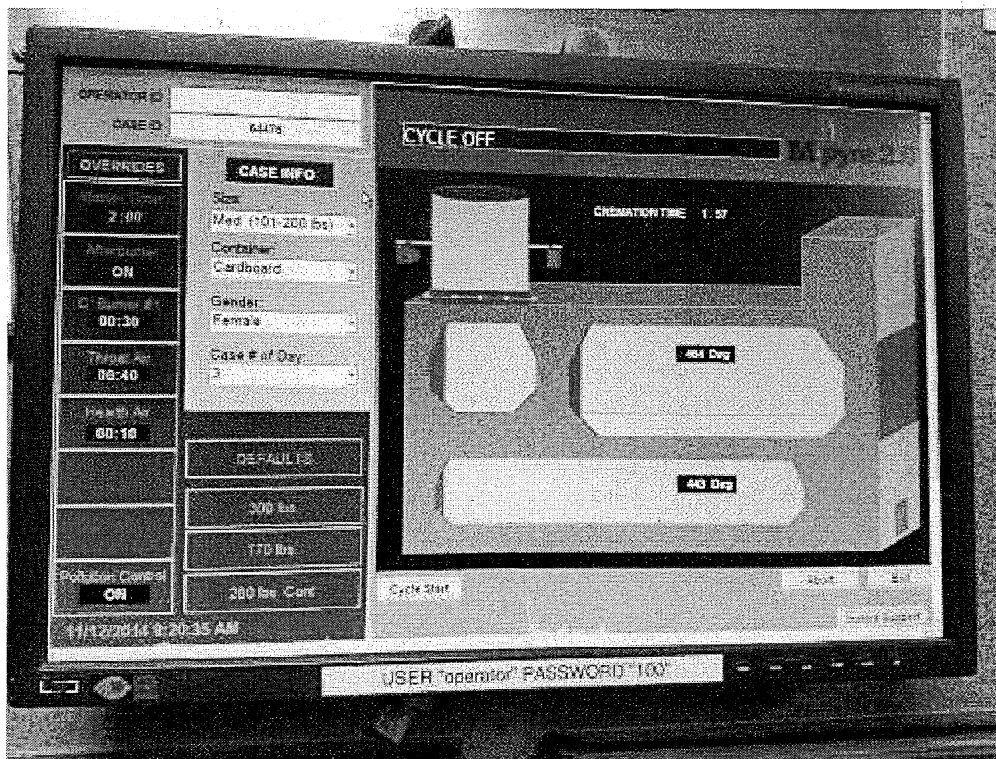


Image 5(Control panel view) : Control panel view

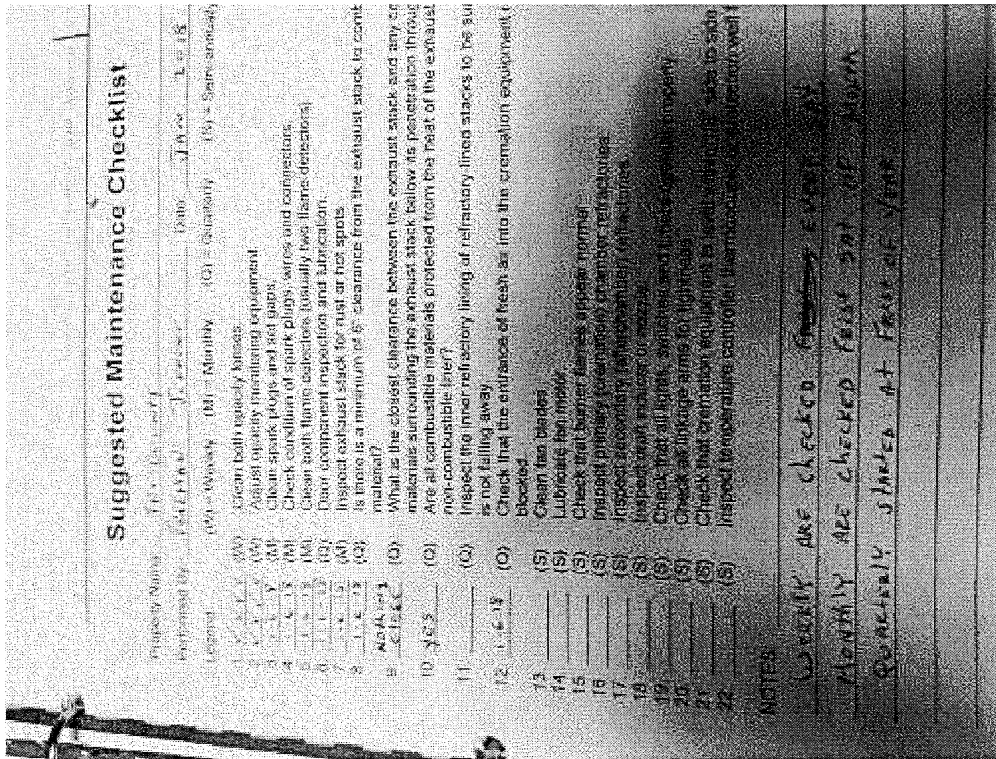


Image 6(Maintenance log) : Maintenance log

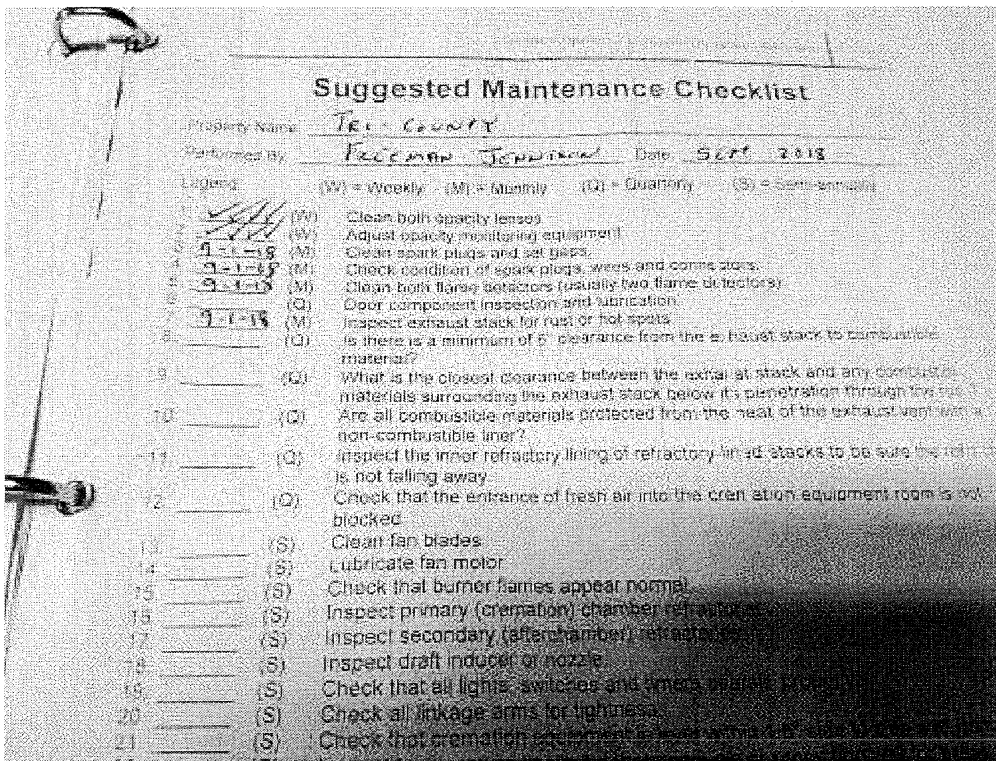


Image 7(Maintenance Log) : Maintenance Log for September

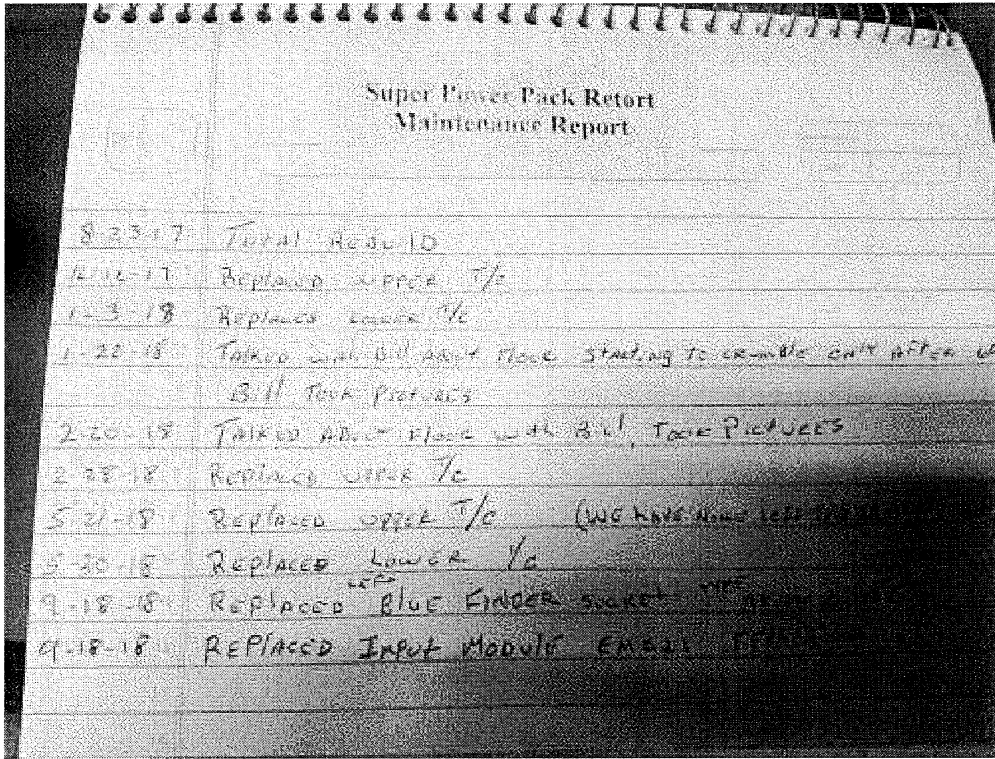


Image 8(Maintenance Report) : Maintenance Report since unit was rebuilt.

NAME M. Kovalchuk

DATE 10/29/2018

SUPERVISOR [Signature]