

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

P035940274

FACILITY: CHEMETALL US, INC		SRN / ID: P0359
LOCATION: 1100 TECHNOLOGY DRIVE, JACKSON		DISTRICT: Jackson
CITY: JACKSON		COUNTY: JACKSON
CONTACT: Brian Sauer , Safety Health & Environmental Coordinator		ACTIVITY DATE: 06/15/2017
STAFF: Mike Kovalchick	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced compliance inspection. Company found to be subject to MACT Subpart VVVVVV and RICE MACT.		
RESOLVED COMPLAINTS:		

Minor Source**Facility Contact**

Brian Sauer: Safety, Health & Environmental Manager

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http://chemetall.com

Purpose

On June 15, 2017, I conducted an unannounced compliance inspection of Chemetall US, Inc.(Company) located in the city of Jackson 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 the Company's Permit To Install (PTI) 88-12D.

Facility Location

The facility is located in the city of Jackson in an industrial park area with no residential homes nearby. See aerial photo dated October, 2016.

Facility Background

The facility began operation in 2012 and was last inspected on April 4, 2013. The following are descriptions of each of the emission units at the facility taken from their Malfunction Abatement Plan.

Chemetall US, Inc. (Chemetall) blends approximately 700 different raw materials into approximately 650 liquid, primarily water-based products. Raw materials will be stored in drums, totes, or one of approximately 40 storage tanks. Blending operations will be carried out in one of 39 tanks segregated by material type (oil products, chrome products, general acid/alkaline products, small batch products, or flammable products.) Off-gases from these blending operations will be controlled by three wet scrubbers, one for each product type of oil, chrome and general acid/alkaline products and two for small batch and flammables products.

CRMIX Emission Unit

This emission unit is associated with the mixing of chrome products and is manufactured by Midwest Air Products Col, Inc. of Traverse City, Michigan. The component is a Model MW-200-3-3-SC countercurrent unit with a design airflow rate of 2,000 CFM. The chrome products are kept segregated from other products for the purpose of emission control. Process devices associated with this emission unit include two mixing tanks (KT1-KT2) with capacities ranging from 1,000 to 5,000 gallons. The tanks vent to the packed bed wet scrubber which exhausts to atmosphere. The unit and all ductwork are made of PVC and includes a mist eliminator which is designed for 99% removal of chromic acid mist to 2 microns. Scrubber water pH will be controlled by the use of caustic soda.

GENMIX Emission Unit

This emission unit is associated with mixing of acid, alkaline, and other aqueous liquids and do not

include chrome products. The unit is a Model MW-200-12-3-SC countercurrent unit with a design airflow rate of 12,600 CFM. Process devices associated with this emission unit include 16 general purpose mixing tanks (KT3-KT18) with capacities ranging from 220 to 5,000 gallons. All tanks vent to the packed bed wet scrubber which exhausts to atmosphere. In addition, the sulfuric acid (6,000 gal) and nitric acid (6,500 gal) storage tanks (SULFURICTK11 and NITRICTK12) will also be vented to the scrubber to minimize emissions of acid gases. The unit and all ductwork are made of PVC. It includes a mist eliminator and is designed for 99% removal of acid and alkaline mists to 5 microns. Scrubber water pH will be controlled by the use of caustic soda.

OILMIX Emission Unit

This emission unit is associated with the mixing of mineral oil products and is a Model MW-200-4-3-SC countercurrent unit with a design airflow rate of 4,000 CFM. The mineral oil products are kept segregated from other products for the purpose of emission control. Process devices associated with this emission unit include four mixing tanks (KT19, KT21-KT23) with capacities ranging from 2,00 to 5,000 gallons. These tanks vent to a packed bed wet scrubber with exhausts to atmosphere. The unit and all ductwork are made of PVC, and includes a mist eliminator and is designed for 99% removal of acid and alkaline mists to 5 microns. Scrubber water pH will be controlled by the use of caustic soda.

SMBATMIX Emission Unit

This emission unit is associated with the mixing acid, alkaline and other aqueous liquids and is a Model MW-200-12-3-SC countercurrent unit with design airflow rate of 12,700 CFM. The small batch products are utilized in conjunction with the flammables products in terms of emission control. Process devices associated with this emission unit include 4 mixing tanks with capacities ranging from 60 325 gallons (SMBAT1-SMBAT4), and 1 fume collection manifold (CHOVER.) These tanks vent to a packed bed wet scrubber (SC04) with exhausts to atmosphere. The unit and all ductwork are made of stainless steel. It includes a mist eliminator, and is designed for 99% removal of water soluble vapors and mists.

FLMMIX Emission Unit

This emission unit is associated with the mixing aqueous and non-aqueous liquids with flammable components and liquids which require high-shear mixing and is a Model MW-300-3-3-SC countercurrent unit with design airflow rate of 2,450 CFM. The flammable liquid products are kept segregated from other products from the purpose of emission control. Process devices associated with this emission unit include 10 flammable liquid mixing tanks with capacities ranging from 92 to 2000 gallons (FLMMIX1-FLMMIX10.) These tanks vent to a packed bed wet scrubber (SC05) which exhausts to atmosphere. The unit and all ductwork are made of stainless steel. It includes a mist eliminator, and is designed for 99% removal of water soluble vapors and mists.

The raw materials are monitored and tracked using a programmable logic control system which records all material feeds to each tank for each batch, including manually added material based upon the recipe driven entry. The manual additions have the bar code scanned to ensure that it is the proper material and there is an on board scale of the drum or bulk dry material handling unit, so the amount added can be tracked. After batch completion and after product packaging, a record is generated that describes the ingredients and amounts used.

Emission testing was conducted at the facility on April 30, 2013. Emission units EUKT1 and EUKT2 were tested for hexavalent chromium. The results were 0.000001 pounds per hour. The results were in compliance with their emission limit of 0.0001 pounds/hour.

Regulatory Applicability

The entire facility currently operates under PTI 88-12D which was issued on March 24, 2016. The facility is considered a true minor source of all regulated pollutants.

The facility is subject to 40 CFR Part 63, Subpart VVVVVV - National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources.

The facility is exempt from 40 CFR Part 63, Subpart BBBB - National Emission Standards for Hazardous Air Pollutants for Area Sources: Chemical Preparations Industry since it is subject to Subpart VVVVVV.

The facility is exempt from 40 CFR Part 63, Subpart CCCCCC - National Emission Standards for Hazardous Air Pollutants for Area Sources: Paints and Allied Products Manufacturing since the Company's NAICS code is 325611 which is not associated with paint manufacturing.

The facility has a new natural gas fired emergency generator (100 Kw) that is subject to 40 CFR Part 60, Subpart JJJJ -Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. r rival & Facility Contact

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Visible emissions or odors were not observed upon my approach to the Company's facility. I arrived at 9:00 am, proceeded to the facility's entrance lobby to request access for an inspection, provided my identification and spoke with Brian Sauer-Safety, Health & Environmental Manager for the facility.

I informed him of my intent to conduct a facility inspection and to review the various records as necessary.

Brian extended his full cooperation during my visit and fully addressed my questions.

Pre-Inspection Meeting

Brian outlined that the facility is currently operating 2 shifts 4 to 5 days a week. There are currently 110 employees and business remains good with expansion expected in the FLMMIX emission unit line of business. The last expansion occurred the previous spring associated with the newly modified PTI permit. (The Company expects to submit a new PTI application in a few months to cover the anticipated expansion.)

Next, we went through the list of emission units at the facility to determine which ones are currently active and operating during the visit. Attachment (1) shows a list of all current emission units that are active at the facility.

Brian discussed how records are kept and how waste products are handled at the facility. He noted that wastewater from the chrome emission unit is treated as hazardous waste and is collected in 275 gallon totes 2 to 4 times a month. Other wastewater from the 4 other scrubbers is sent to an offsite POTW after first being treated for pH. (The full onsite treatment plant is no longer used due to numerous problems.)

Brian indicated that he had a consultant working on a couple of issues. One of determining the compliance requirements for 40 CFR Part 63, Subpart VVVVVV and he hope to submit the initial compliance report in July. The second issue was updating the facility's MAP. Attachment (2) is a copy of the MAP last updated in May of 2016. Brian provided an updated sheet for new proper operating parameters for the five scrubbers which he intends to include in a revised MAP to be submitted in July. See Attachment (3).

Brian provided process flow diagram sheets for all 5 wet scrubbers. See Attachment (4).

Onsite Inspection

Brian gave me a tour of the facility. (Note: Safety glasses and steel toed boots required. A long sleeved safety vest is also required which was provided by the Company. The FLMMIX emission unit area is an intrinsically safe area where no electronic devices are allowed.) Overall, the facility appeared to be clean and well maintained with limited odors noted.

We first visited the FLMMIX Emission unit area. (SC5) The wet scrubber associated with this unit was inspected. No pH meter was present. (Permit requirement.) Brian indicated that they manually check pH of the scrubber water solution once per day as they haven't been able to find a pH that was intrinsically safe. The magnehelic gauge was showing less than 0 so was assumed to not be operating properly. (Permit requirement.) The recirculation rate of the scrubber solution was 14 gallons/min. It was noted that scrubber water solution was hitting the glass side panel of the scrubber.(Refer to MAP Page 7 "Spray pattern from nozzles should be adjusted so spray does not hit scrubber side wall".) The scrubber water discharge rate was zero. Brian noted that the liquid was discharged once a day every morning manually into totes. We went outside to view the stack associated with the scrubber. See attached picture. No opacity was noted.

Next, we went to the SMBATMIX Emission unit area. (SC4) The wet scrubber associated with this unit was inspected. See attached pictures. The pH was reading 7.87. The magnehelic gauge was showing 0.5". The recirculation rate of the scrubber solution was 12 gallons/min. The scrubber water discharge rate was zero. Brian noted again that the liquid was manually discharged. We went outside to view the stack associated with the scrubber. See attached picture. No opacity was noted.

Next, we went to the CRMIX Emission unit area. (SC1) The wet scrubber associated with this unit was inspected. See attached pictures. The pH was reading 9.94. The magnehelic gauge was showing 0.75". The recirculation rate of the scrubber solution was 12 gallons/min. The scrubber water discharge rate was zero. Brian noted again that the liquid was manually discharged and was treated as hazardous waste from this emission unit. We went outside to view the stack associated with the scrubber. See attached picture. No opacity was noted.

Directly next to CRMIX Emission unit area was the wastewater treatment plant. See attached picture. Note that only part of the treatment plant is still being used. They use part of it to make simple pH adjustments to the wastewater.

Near this area is the truck unloading bay. See attached picture. Directly adjacent to the truck unloading bay is raw material storage area. See attached picture.

Next, we went to the GENMIX Emission unit area. (SC2) The wet scrubber associated with this unit was inspected. See attached pictures. The pH was reading 7.53. The magnehelic gauge was showing 2.2". The recirculation rate of the scrubber solution was 44 gallons/min. The scrubber water discharge rate was 0.8 gallons/minute. We went outside to view the stack associated with the scrubber. See attached picture. No opacity was noted.

The last scrubber to visit was the one associated with the OILMIX Emission unit area. (SC3). The wet scrubber associated with this unit was inspected. See attached pictures. The pH was reading 8.52. The magnehelic gauge was showing 1". The recirculation rate of the scrubber solution was 10 gallons/min. The scrubber water discharge rate was 0.15 gallons/minute. We went outside to view the stack associated with the scrubber. See attached picture. No opacity was noted.

The mixing mezzanine area was inspected. There were no findings. See attached pictures. One of the pictures shows the mixing vessels with another showing inside one of the vessels and a paddle.

I asked Brian if the facility has any emergency generators. He said that one was installed last inspected. We went outside to take a look at it. See attached picture. Attachment (5) is the spec sheet for it. It is rated at 134 hp. They use to make sure the flammables area is supplied with power to continuously vent any generated vapors to prevent the possibility of a fire in the event of a power failure.

Recordkeeping/Permit Requirements Review

Attachment (6) is all required records that must be kept for the PTI. This include material tracking, and emission calculations for chromium, particulate and VOC's. Depending on the particular emission unit, the facility is processing between 17% to as much as 59% of the allowed amount of material. Emission calculations for all pollutants are low and probably conservative based on the calculation method used which likely overestimates emissions that are generated/collected by the scrubbers. Emissions calculations are based on manufacturer's scrubber efficiency guarantees for PM, VOC, nickel and chromium corrected for material throughput. All the records indicate compliance with the PTI.

Permit requires a MAP for operation of all five scrubbers. The Company is in compliance with the MAP (using the newly modified scrubber parameters specs) and implementing it as required by PTI Condition FGFLMMIX III. PROCESS/OPERATIONAL RESTRICTIONS No. 1 with the exception of Scrubber (SC05).

It was noted that scrubber water solution was hitting the glass side panel of Scrubber SC05. (Refer to MAP Page 7 "Spray pattern from nozzles should be adjusted so spray does not hit scrubber side wall".)

The Permit also requires,

"The permittee shall not operate FGFLMMIX unless the packed bed wet scrubber is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes, but is not limited to, maintaining the scrubbing liquid pH, liquid flow rate, and pressure drop across the scrubber as specified

by the manufacturer. The proper liquid flow rate and pressure drop range shall be specified in the malfunction abatement plan, as required by SC III.1.”

“The permittee shall install, calibrate, maintain and operate in a satisfactory manner, devices to monitor the FGFLMMIX packed bed wet scrubber scrubbing liquid pH, liquid flow rate, and pressure drop on a continuous basis”

The pressure drop gauge associated with SC05 was not operating properly and there was no pH meter that continuously measures pH.

All other PTI conditions were reviewed and the Company was found to be in compliance.

Regulations associated with federal NESHAP Subpart VVVVVV were researched to determine compliance requirements. The facility was required to be in compliance with this Subpart when it started up in 2012. Currently, the facility is out of compliance with this Subpart. They need to submit the initial Notification of Compliance Status report which needs to outline how they will meet the requirements of the Subpart.

2016 MAERS Review

The Company reported the following emissions:

PM10,PRIMARY16137.99LB

VOC 7304.06 LB

CHROMIUM 79.68 LB

Both the PM10 and Chromium(Trivalent) emissions were likely overstated based on the conservative calculation methods used by the Company.(Note that the Company has an emission limit for hexavalent chromium; not for the trivalent variety.) No compliance issues. The facility is a true minor source. The facility is subject to air emission fees since it is a CAT 3 facility due to Subpart VVVVVV but there is probably little reason to continue to require they report emissions to MAERS.

Post-Inspection Meeting

I held a brief post-inspection meeting with Brian. I indicated that I would be citing the Company for Scrubber SC5 operating violations and for Subpart VVVVVV. I indicated that he need to also submit a revised MAP for review/approval as soon as possible to incorporate the new scrubber operating conditions. I also indicated I would need additional information to determine RICE MACT/NSPS regulations applicability for their new natural gas fired emergency generator. (Follow-up email confirmed non-compliance.) I thanked Brian for his time and cooperation, and I departed the facility at approximately 10:30 am.

Compliance Summary

The Company is in compliance with the following exceptions:

- 1) Federal NESHAP requirements under Subpart VVVVVV.
- 2) PTI 88-12D Conditions related to scrubber operation for Emission Unit FGFLMMIX.
- 3) 40 CFR Part 60, Subpart JJJJ.

A Violation Notice (VN) will be sent to the Company. They have 21 days to respond and provide a compliance plan.

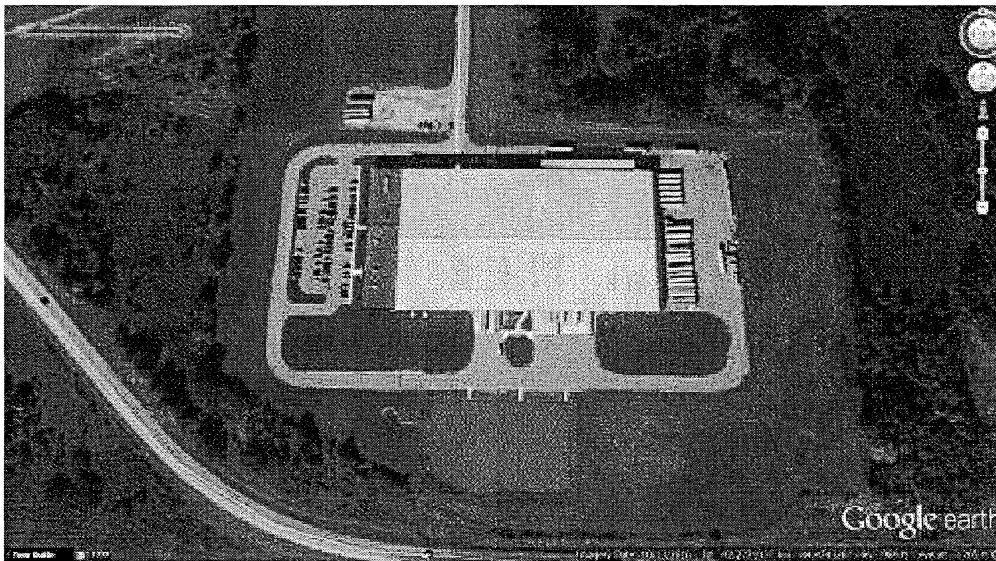


Image 1(aerial photo) : Aerial photo



Image 2(SC5 Stack) : Stack associated with FLMMIX emission unit

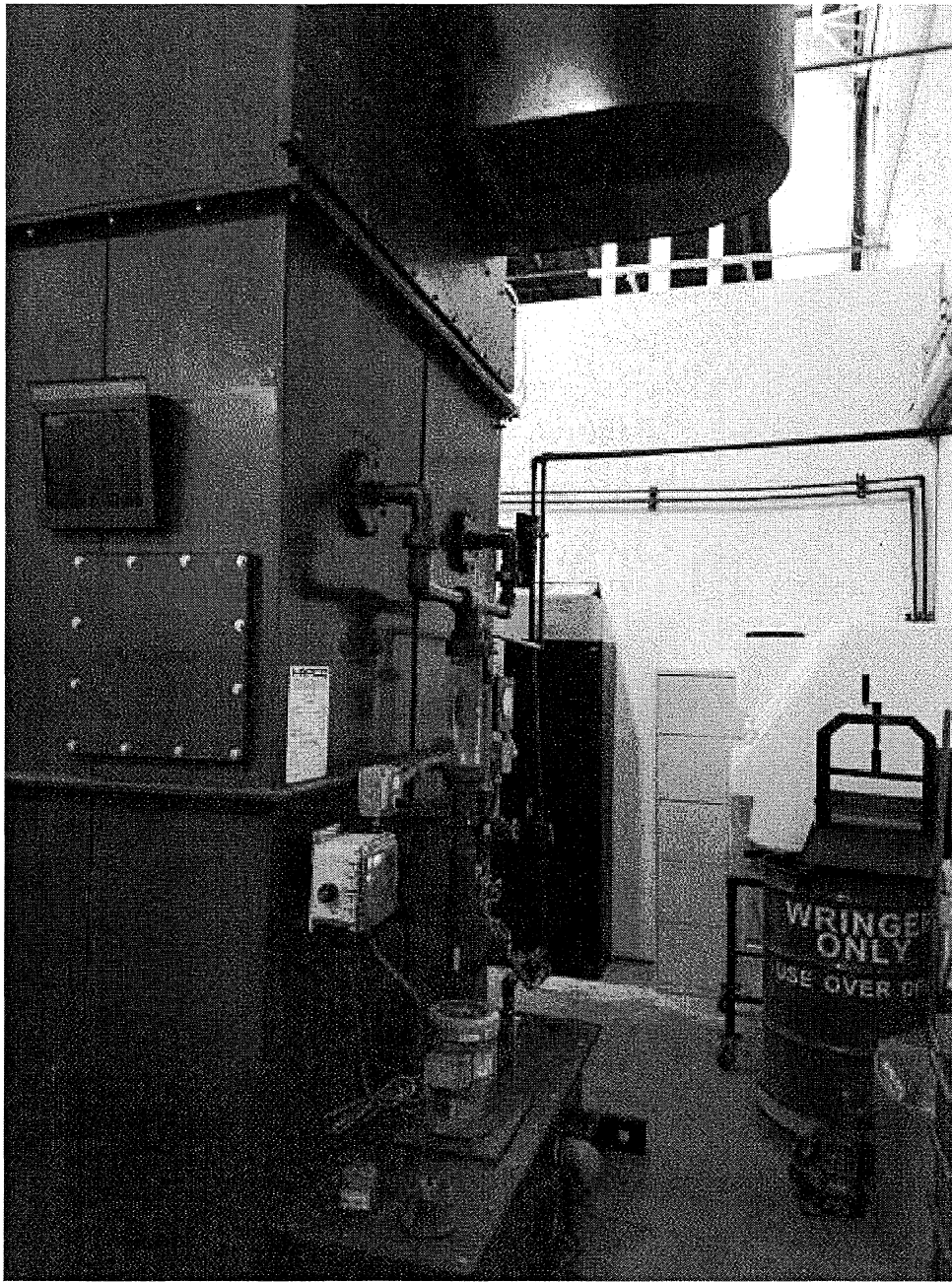


Image 3(SC4 Scrubber) : SC4 Scrubber

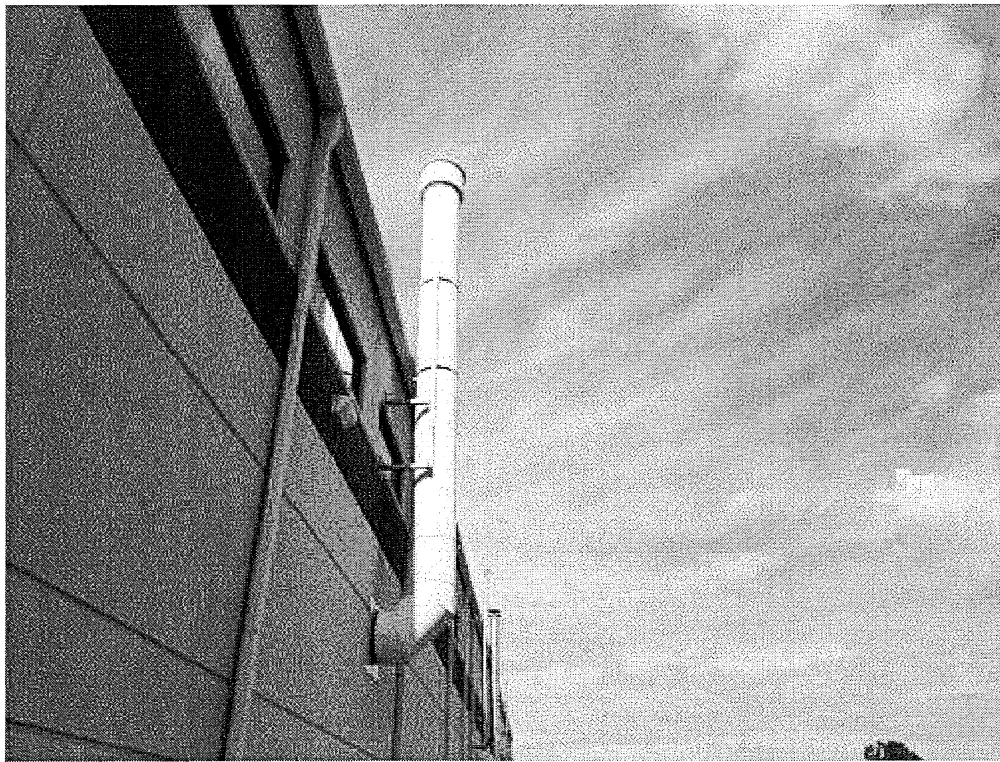


Image 4(SC4 Stack) : SC4 Scrubber Stack

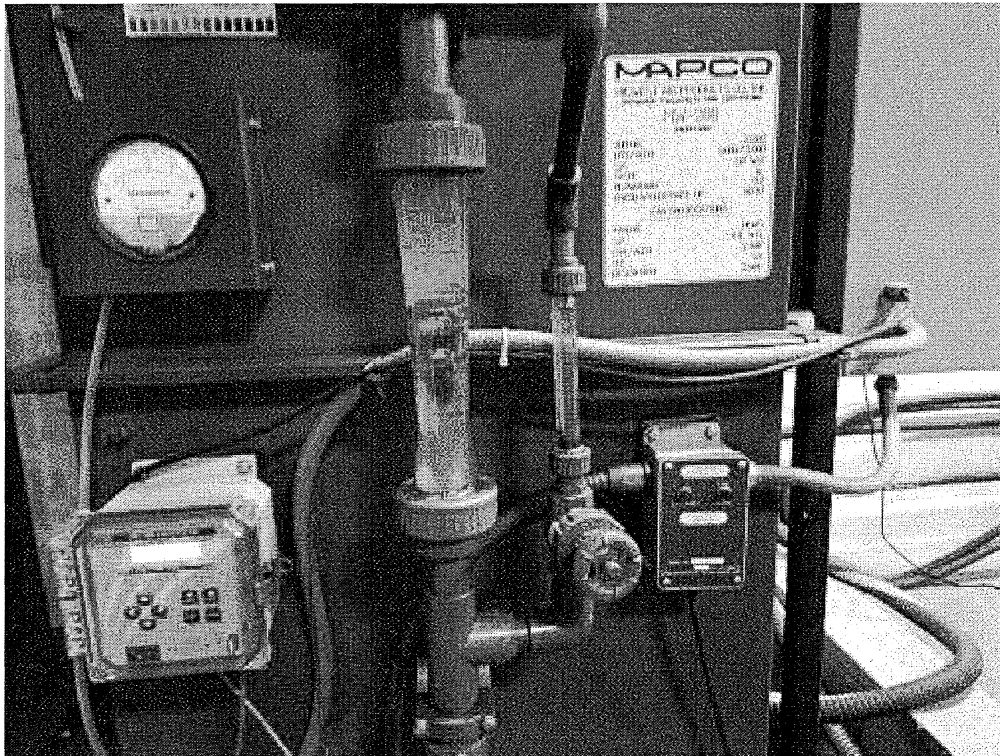


Image 5(SC1 Scrubber) : SC1 Scrubber panel



Image 6(Chromium Waste) : Wastewater tank from Chromium scrubber (SC1)

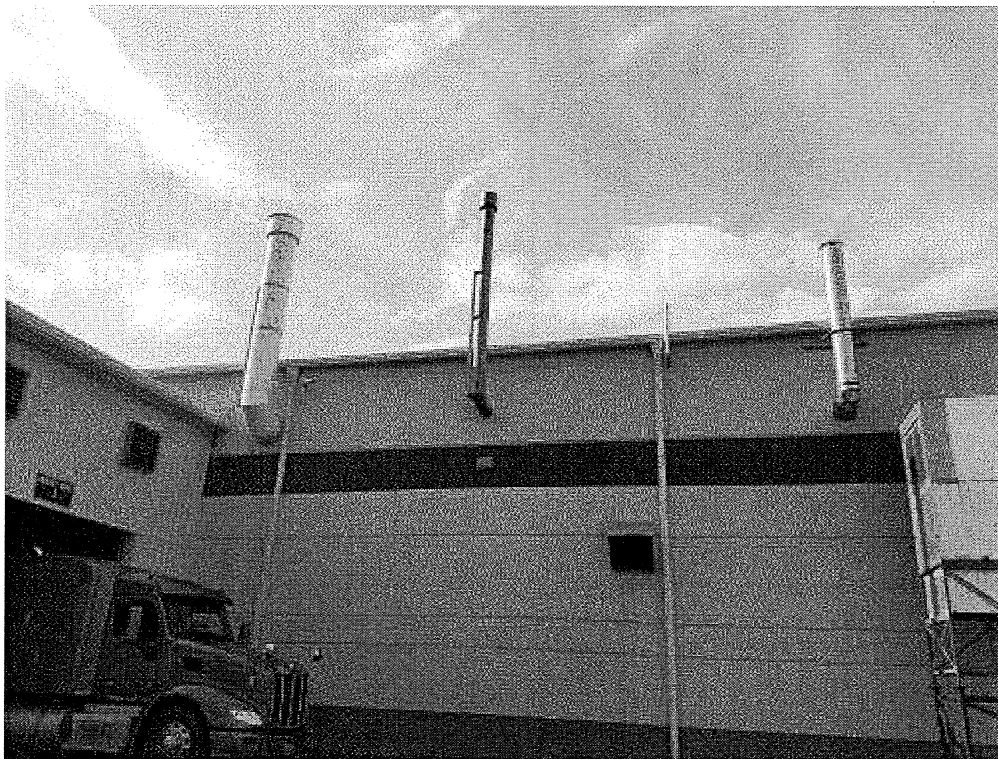


Image 7(Scrubber Stacks) : Scrubber stacks for SC1 and SC2. (SC2 is the stack on the left.)

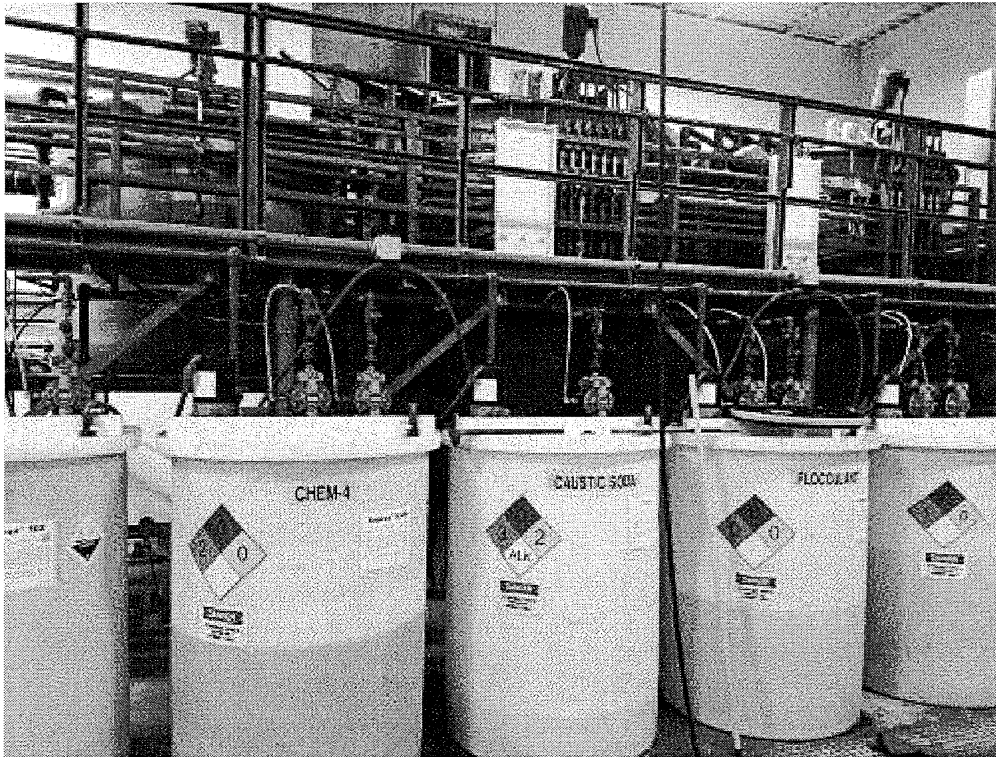


Image 8(wastewater treatment) : Wastewater treatment plant

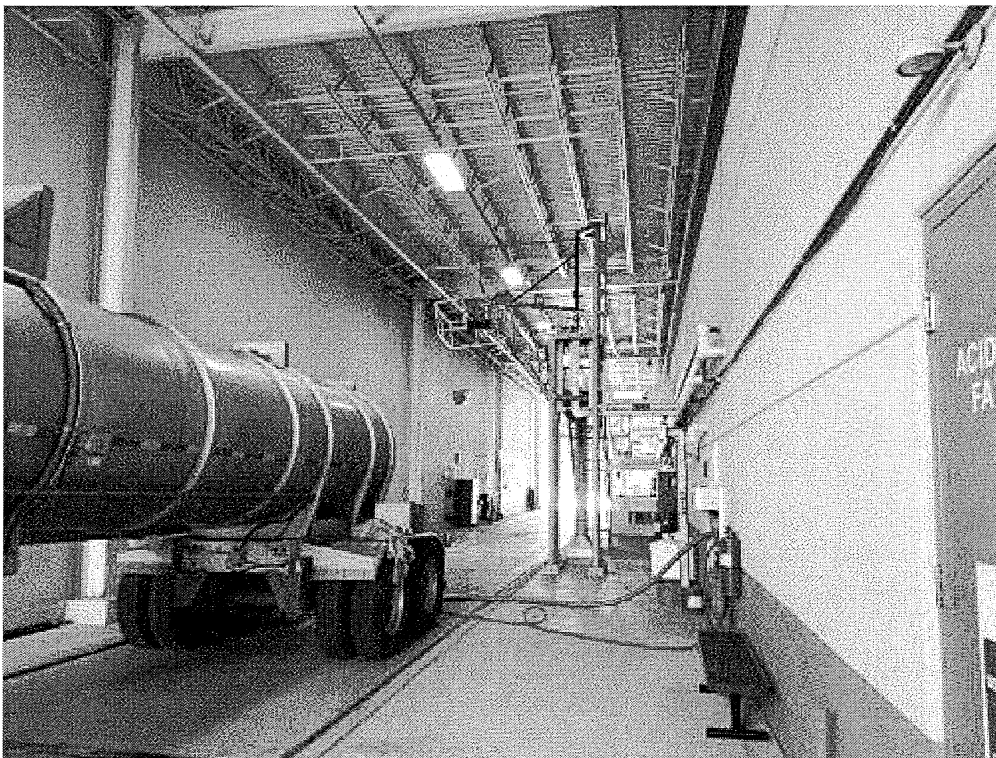


Image 9(Truck unloading) : Truck unloading bay



Image 10(Raw Material Area) : Raw Material Storage Area

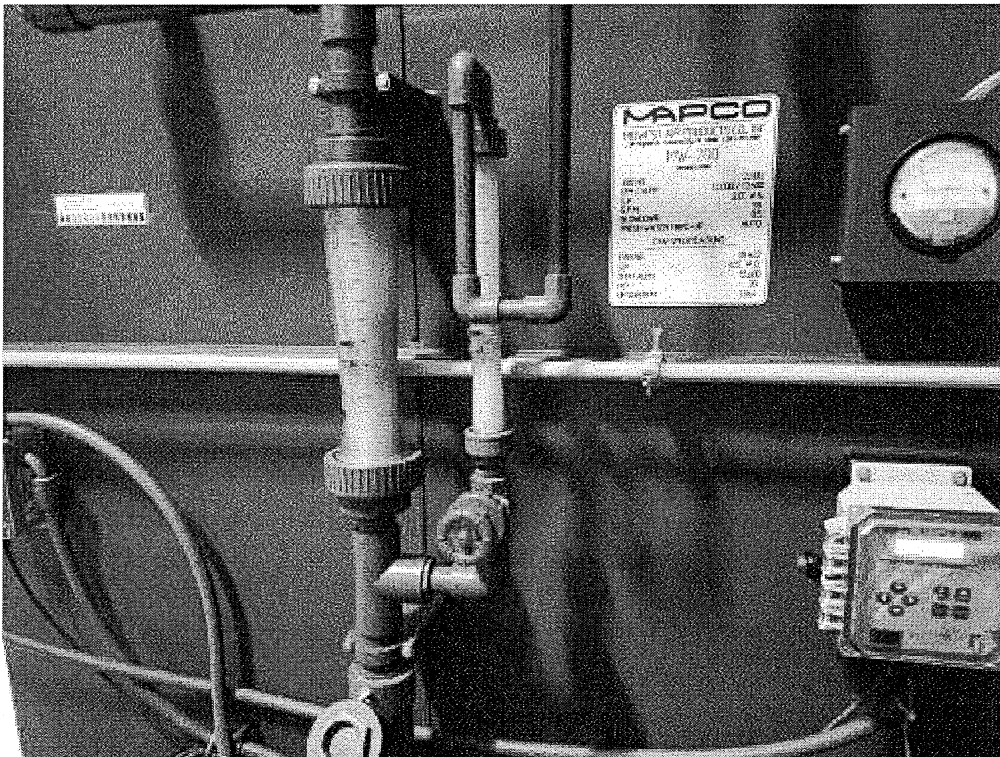


Image 11(SC2) : SC2 scrubber

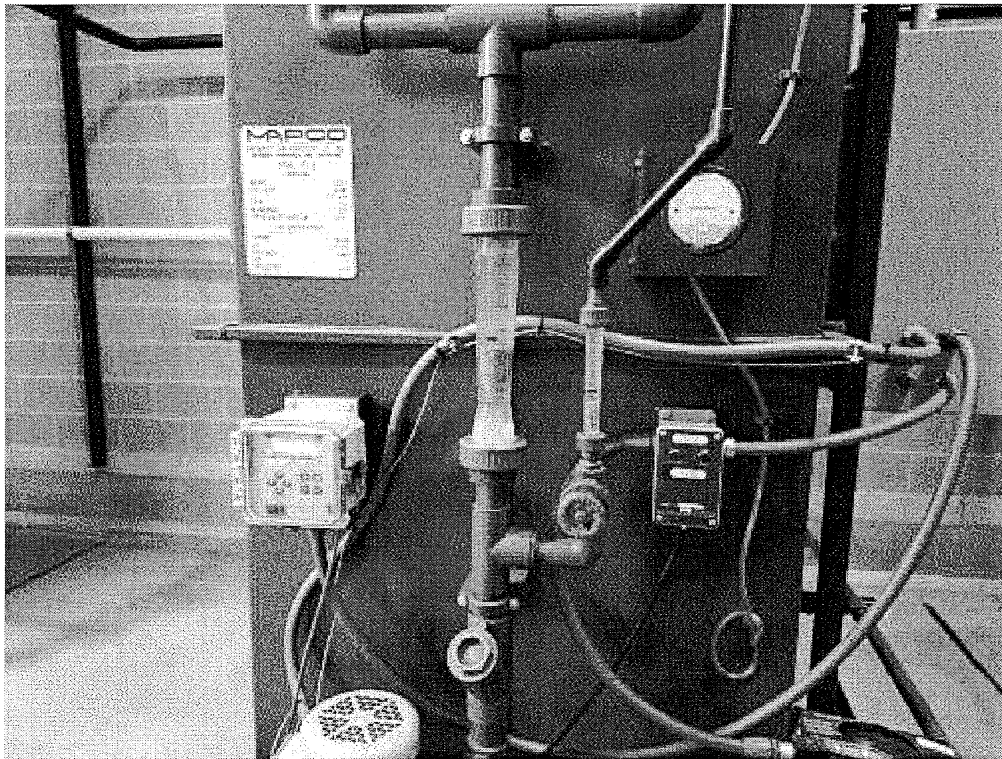


Image 12(SC3 Scrubber) : SC3 Scrubber

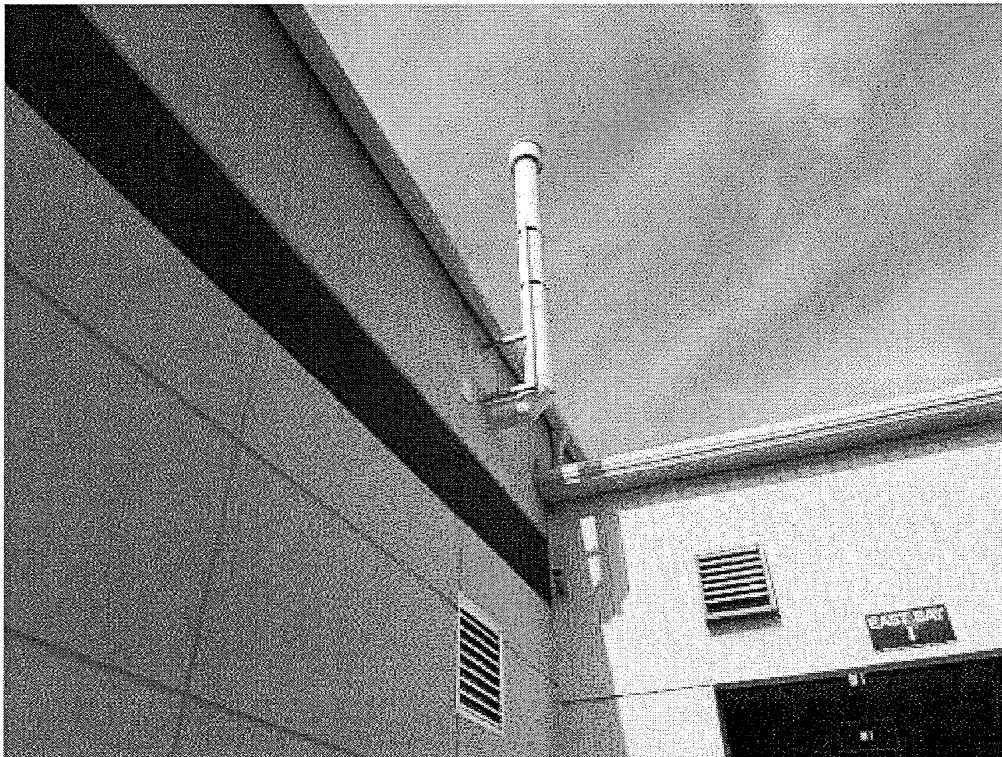


Image 13(SC 3 Stack) : SC3 Scrubber stack

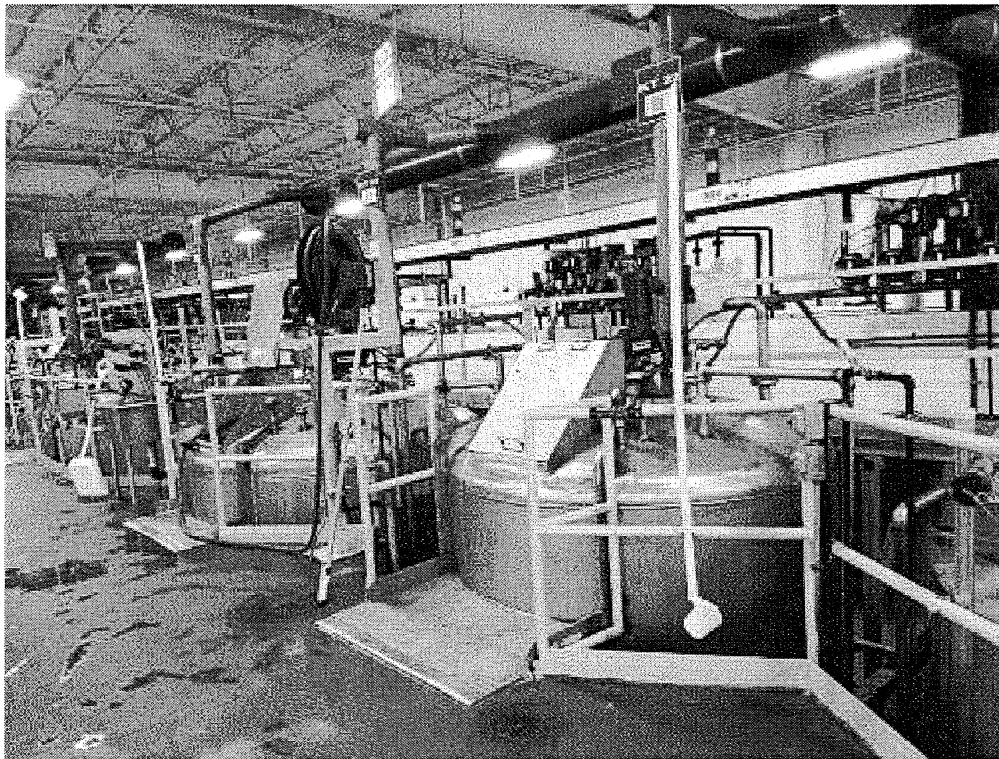


Image 14(Mixing tanks) : Mixing Tanks

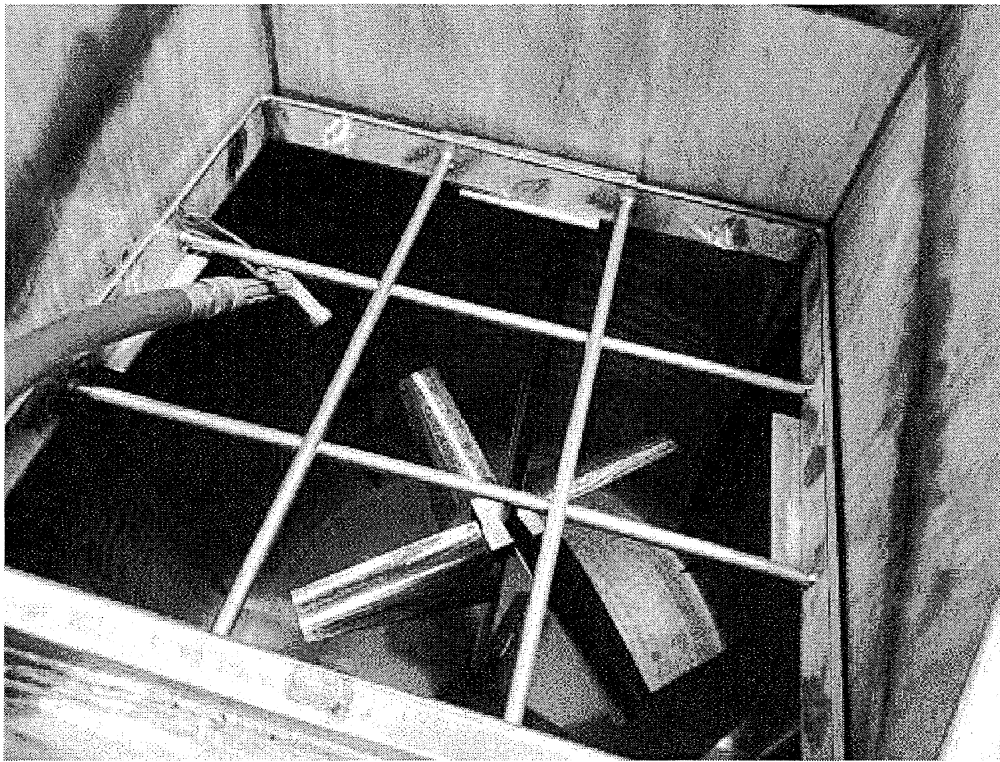


Image 15(Mixing Tank) : Baffle inside mixing tank

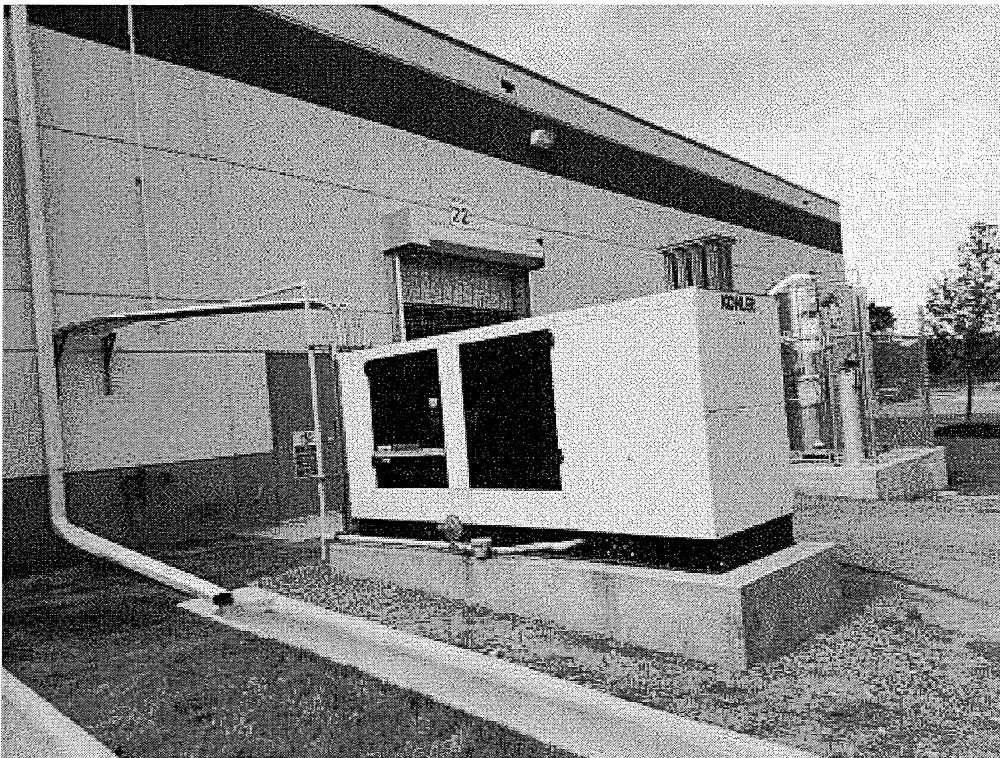


Image 16(Emergency Generator) : Emergency generator

NAME M. Kovalchuk

DATE 7/5/2017

SUPERVISOR [Signature]