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

N089554697

FACILITY: LACKS INDUSTRIES INC		**SRN / ID:** N0895
LOCATION: 4260 AIRLANE SE, KENTWOOD		**DISTRICT:** Grand Rapids
CITY: KENTWOOD		**COUNTY:** KENT
CONTACT: Jim Morrissey , General Manager		**ACTIVITY DATE:** 08/18/2020
STAFF: April Lazzaro	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Announced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Staff, April Lazzaro arrived at the facility to conduct an announced, scheduled inspection of the Lacks Airlane facility and met with Karen Baweja, Environmental Manager. The AQD Field Procedures have designated that inspections shall be announced during the COVID-19 pandemic. We met with other Lacks staff during the inspection, including Ben Seitz, Plating Engineer, Steve Morrissey, Plant Manager and Steve Greiner Maintenance Manager. Proper PPE was utilized, and social distancing was maintained to the extent possible during the inspection.

FACILITY DESCRIPTION

The Airlane North and South facilities primarily conduct decorative hexavalent chrome plating on plastic parts. The process consists of pre-treatment, alkaline cleaning, acid dipping, and strike plating of copper, copper/nickel electroplating, nickel electroplating, chromium etching and chromium electroplating. Electroless copper or nickel electroplating, conditioner, and rack stripping are controlled by wet scrubbers while the chrome plating and etching are controlled by composite mesh pad scrubbers. The facility is a major source of Hazardous Air Pollutants and equipment at the facility is regulated pursuant to MI-ROP-N0895-2018a. No odors or visible emissions were observed as I arrived at the facility.

The Airlane Northwest and Airwest Mold facilities conduct plastic injection molding using acrylonitrile, butadiene, styrene (ABS) copolymer and ABS blended with a polycarbonate called HIPP (high impact plastic) that is more temperature and impact resistant. There are no requirements that apply to plastic injection molding support facilities in this permit.

The decorative hexavalent chrome plating operations are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Chromium emissions in Subpart N. All Lacks plating operations use the same PFOS free surfactant product manufactured by MacDermid Enthone. This surfactant is however, a source of PFAS. Lacks continues to make it a priority to search for acceptable PFAS alternatives.

The four boilers are subject to the NESHAP 40 CFR Part 63 Subpart DDDDD. One emergency generator is identified as subject to 40 CFR Part 63 Subpart ZZZZ.

During the inspection, stack testing was being conducted on Chromium emissions from Airlane North by Network Environmental. Present for Network was Scott Cargill, Dave Englehardt, Rick Eerdmans and Steve Byrd.

COMPLIANCE EVALUATION

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The table below identifies emission limits and available test results. In the Test Data column, there may be two dates if there has been a test conducted recently and the results are currently pending.

Process Unit	Control	Observed Pressure Drop (inches of H2O)	Observed Water Flow (gpm)	Water Bleed Off Rate (gpm)	Surface Tension at time of Inspection (dynes/cm)	Emission Limits	Test data
Chrome Plate North (EUPN12/AN8)	CMP	Scrubber 3.13 Evaporator 3.35	NA	NA	8/18/20 Tank 1 R1 42.5 Tank 2 R1 41.5 Tank 3 R1 42.5	Total Chromium 0.00043 pph	8/22/18 0.00015 pph 8/18/20 results pending
Chrome Etch North (EUPN10/AN2)	CMP	Scrubber 3.17 Evaporator 2.1	NA	NA	Tank 1 40.6 Tank 2 45.6 Tank 3 39.7	Total Chromium 0.00037 pph	8/23/18 0.00024 pph 8/19/20 Test results pending
Electroless Copper North (EUPN-6/AN4)	PBS	0.775	98	4	NA	Formaldehyde 2.72 pph Methanol 8.25 pph	10/24/17 0.04 pph 5.72 pph
Conditioner North (EUPN-11/AN1)	PBS	1.3	68	5.6	NA	DCP 0.84 pph	10/24/17 0.05 pph
Nitric Strip North (EUPN-13/AN9)	PBS	1.34	92	6.2	NA	Nitric Acid 1.23 pph	5/2001 0.0212
Nickel North (EUPN-1, 2, 3)	NA	NA	NA	NA	NA	Total Nickel 0.598 pph	10/24/17 0.0070 pph
-All Airlane South Data shown below is from the previous inspection due to current shutdown-							
Chrome Plate South (EUPS-7/A9)	CMP	Scrubber 2.9 Evaporator 3.1	NA	NA	Tank 1 40.4 Tank 2 41.8 Tank 3 40.2	Total Chromium 0.000489 pph	5/8/11 ND
Chrome Plate #4 South (EUCHROME4/A10)	CMP	Scrubber 4.1 Evaporator 0.81	NA	NA	Tank 4 42.6	Total Chromium 0.01 mg/dscm 0.0005 pph	5/10/17 ND ND
Chrome Etch South (EUPS-5/A2)	CMP	6.5	NA	NA	Tank 1 35.5 Tank 2 38.1	Total Chromium 0.000542 pph	ND
Conditioner South (EUPS-6/A1)	PBS	1.42	39.2	4.5	NA	DCP 0.84 pph	04/2015 0.044 pph
Electroless Copper South (EUPS-3/A4)	PBS	0.35	103.2	5.2	NA	Formaldehyde 0.6458 pph Methanol 9.12 pph	04/2015 0.092 pph 3.909 pph
Nitric Strip South (EUPS-8/A12)	PBS	1.33	122	6.1	NA	Nitric Acid 0.11 pph	05/2001 0.02 pph

EUCHROME4

This emission unit includes one decorative chrome electroplating tank with fume suppressant and three stage composite mesh pad scrubber system for control located at Airlane South. The Airlane South line is not currently operational. I observed the plating line and confirmed it is not operating.
Emission limits for EUCHROME4 include total chromium- 0.01 mg/dscm and total chromium- 0.0005 pound per hour (pph). Report emissions from the May 2017 testing were at the non-detect level. The non-detect level means that test results indicate emissions were below the laboratory detection level which is less than 0.00069mg/dscm and 0.000055 pph chromium. A non-detect test result indicates compliance with the permit limits.

As indicated above all Lacks facilities use the same mist suppressant, and no PFOS has been used at this facility since pre-2015.

The Operation & Maintenance (O&M) Plan requirements are contained in the facility Malfunction Abatement Plan (MAP). The Airlane South equipment has not operated during the evaluation period associated with this inspection.

FGN-1

This flexible group includes 13 emission units that comprise the North Plater-electroplating of coper, nickel and decorative hexavalent chrome on plastic parts and is located at Airlane North.

As indicated above all Lacks facilities use the same mist suppressant, and no PFOS has been used at this facility since pre-2015, however PFAS is used.

Compliance with emission limits is determined through stack testing and operational parameters. Stack test results from recent testing is detailed in the table above.

The Operation and Maintenance (O&M) Plan requirements are contained in the facility MAP. The O & M Plan establishes the operating parameters of the control devices and equipment associated with each emission unit.

After arrival at the facility and a brief meeting, we went to the roof to inspect the control device for EUPN-12. Stack testing for hexavalent chromium emissions from the EUPN-12 was taking place during the inspection. Run #1 of the testing had started at approximately 8:30 AM. As we approached the three-stage composite mesh pad scrubber the patches and repairs that have taken place over time were visible due to the black rubber strips that have been installed to eliminate leaks in the ductwork. (see attached photos) Standing water was observed in the bottom of each of the three stages. I inspected the scrubber exterior, using visual and auditory (sound) ques as I did so. I identified an active liquid leak from the scrubber stage one bleed off pipe that was green in nature. The leak was not new, as evidenced by the corrosion of the steel framework that was observed (see attached photos). I discussed this with Lacks representatives who indicated that the green color was likely mold. I stated that moldy water does not corrode steel framework and that due to the fact that it is coming from stage one is comprised of water containing the chromic acid from the plating solution.

I continued to listen for sounds that are cues of air leaks in the ductwork. I paused at the ductwork inlet to the scrubber as I noted a noise there. I pointed it out to Lacks representatives who thought the sound came from the scrubber observation port that consists of a somewhat loose plexiglass cover. I stated that I wasn't convinced that the observation port was the cause of the noise I heard, so I asked that Lacks get a ladder so we can look up on top of the unit where the ductwork attaches to the scrubber body. Mr. Greiner from maintenance climbed up the ladder first and reported that there was, in fact, a problem and air infiltration occurring. I climbed the ladder as well and found that the top of the scrubber where the walls connect had separated. The seams were worn and there was some minor staining indicative of chromic acid. There was also separation of the ductwork into the body of the scrubber itself. These two breaches in the structure of the control device were substantial in nature. See attached photos of the two structural failures of the composite mesh pad scrubber. Lacks representatives insisted that the structural failures were not present the week before during their inspections of the unit. Based on the visual presentation of the seam and ductwork breach it would appear they had been that way for some time.

I had concerns regarding the viability of the stack test because the leakages were in between the two stack test probes. During previous testing on the Airlane South equipment a similar air leak was observed, and testing was deemed invalid at that time. I contacted the supervisor of the Technical Programs Unit, Karen Kajiya-Mills, to discuss what I had just observed. Ms. Kajiya-Mills confirmed that the current, ongoing test is invalid.

I immediately informed Steve Byrd of Network Environmental who was conducting the inlet stack testing and Lacks representatives that the data collected for the ongoing Run #1 was invalid for determining compliance and that the scrubber needed to be repaired prior to restarting the compliance testing. Mr. Byrd responded directly to me that (the decision) I made was "f*ing ridiculous". I informed Mr. Byrd that it is not acceptable for him to speak to me in that manner, and that I had consulted AQD management and had made the determination with their oversight and approval.**

I discussed Mr. Byrd's language with Ms. Baweja, who responded that she had already reported the incident to her management, and they wanted me to know that the language and manner of Mr. Byrd in no way represents Lacks Industries.

I did suggest that Lacks consider sending the sample from the aborted Run #1 to be analyzed for comparison purposes. They indicated that they would consider that.

Due to the severity of the ductwork failure, it was not able to be permanently repaired with the scrubber on because the air flow was prohibiting the sealing of the rubber strips. A compromise was reached with Lacks whereby they were able to seal the ductwork and scrubber body temporarily with duct tape. (see attached photo) I inspected the seal of the tape after it was applied and found that it was sound; and it was acceptable to re-start the testing. I asked for Lacks to provide me with an update and information to confirm that the repair was conducted during the upcoming weekend downtime. I received documentation on September 3, 2020 that included photos demonstrating that the repair to the scrubber had been made.

During the visual and auditory inspection as I pointed out the issues to Lacks Maintenance Personnel, I discussed in depth the items that the maintenance staff need to be looking for when doing their inspections of equipment. I suggested that they

need to modify and or increase their training, so they know what to look and listen for.

Due to the disrepair of the scrubber, and the fact that Lacks has identified that the scrubber is the method of compliance with the chrome NEHSAP, this is a violation of MI-ROP-N0895-2018a, Special Condition III.3, Rule 910 and 40 CFR 63.342(f). A Violation Notice will be issued.

The Violation Notice will also include the requirement that Lacks modify the existing O&M Plan to increase the frequency of inspections of the scrubber from quarterly to monthly. In addition to the increased frequency, Lacks will need to modify the plan to include a checklist that identifies individual components of the scrubber for inspection. The modified plan shall also include the requirement for generating visual documentation of each component of the unit, using photographic means. Using this method with support two things: 1- that the inspections are conducted thoroughly and completely and 2- it will provide evidence of the timeframe of any structural issues that may appear over time. The modified plan should also include a training module for all Lacks staff that are conducting the inspections of the control equipment. All documentation generated during the monthly O&M inspections shall be maintained on file for a minimum of five years and made available upon request. The changes to this plan are being required by the AQD (Administrator) as allowed in 40 CFR 63.342(f) because the current plan has failed to provide for the proper operation of the affected source in a manner consistent with good air pollution control practices. If the scrubber and ductwork is replaced at some point, the requirements of the plan can be revisited.

Stack testing on the chrome etch (EUPN-10) occurred during day two of the inspection. Visual observation of the chrome etch scrubber found that the first mesh pad was covered in some sort of white material that was becoming brown due to chromic acid in the air stream. (see attached photos). The presence of materials was noted during the previous stack test and inspection and does not appear to have changed. I was told by Mr. Jaracz that he thinks that the interior of the stack is perhaps being degraded and what is observed is shreds of fiberglass, which is what the stack is made of. Additionally, there was standing water in between stages 1-3 and standing/bubbling water in the scrubber channel in stage 3 to the exhaust. This was also noted during the previous inspection. No discoloration of the water was noted.

The inspection of the chrome etch scrubber continued, using visual and auditory cues which identified a split in the seam at the front of the scrubber body, and air infiltration was occurring. (see attached photo) This breach of the seam was approximately 5' off the ground and was easily visible and heard through auditory inspection.

As with the chrome scrubber, Lacks representatives insisted that the structural failure of the chrome etch scrubber was not present the week before during their inspections of the unit. Based on the visual presentation of the seam and ductwork breach it would appear it had been that way for some time.

This is a violation of MI-ROP-N0895-2018a, Special Condition III.1 and Rule 910 which include the requirement to use, install, and operate a control device in a satisfactory manner. A Violation Notice will be issued.

Additionally, pursuant to the requirements set forth in Rule 911, the AQD finds the current plan unsatisfactory. As such, the Violation Notice will also include the

requirement that Lacks modify the existing O&M/Malfunction Abatement Plan to increase the frequency of inspections of the scrubber from quarterly to monthly. In addition to the increased frequency, Lacks will need to modify the plan to include a checklist that identifies individual components of the scrubber for inspection. The modified plan shall also include the requirement for generating visual documentation of each component of the unit, using photographic means. Using this method with support two things: 1- that the inspections are conducted thoroughly and completely and 2- it will provide evidence of the timeframe of any structural issues that may appear over time. The modified plan should also include a training module for all Lacks staff that are conducting the inspections of the control equipment. All documentation generated during the monthly O&M/Malfunction Abatement Plan inspections shall be maintained on file for a minimum of five years and made available upon request.

All other control devices in FGN-1 were visually inspected while on the roof. No additional issues with the devices were identified during the visual inspection. There were two items of note. New paint was identified on one of the scrubbers on the east side of the roof. This should be closely monitored during future inspections. Also, it is noted that the rubber roof is covered with stones. These stones vary in color, but quite a few of them are shades of white. As we approached the EU-PN6 scrubber which controls the electroless coper plating tanks, I noted something different about the stones. The white stones surrounding this unit were green in color (see attached photo). I picked up a few of the white stones to find that the undersides of them were still white, with some visible "drippage" of green down the sides. I pointed this out to Ms. Baweja. At the time of the inspection there were no green emissions noted. I later discussed this phenomenon with Mr. Greiner. He indicated that there is a green powder that they put in the tanks on the weekend, and perhaps there was an issue with that sometime in the past. This issue was to be internally investigated. In the Violation Notice, AQD will request that Lacks report on the findings of this investigation.

REPORT REVIEW

The Semi-Annual Report Certification was received on March 17, 2020 and reviewed. The report was a couple days late due to COVID-19 and will not be cited as a violation. The Chrome NESHAP requires the implementation of an O & M Plan, which specifies that the surface tension of the decorative hexavalent chromium tanks (EUPN-12) must be less than 45 dynes/cm. There were 4 instances of surface tension exceedances for the decorative hexavalent chrome tanks (EUPN-12) for the months of July-December 2019. A Violation Notice was not cited at the time.

The NESHAP Ongoing Compliance Status Report for the North Facility which was received on August 24, 2020 which identified that the hexavalent decorative chrome plating tanks (EUPN-12) exceeded the surface tension limit established in the O&M Plan of 45 dynes/cm a combined 14 times from January-June 2020. Due to the fact that the surface tension limit exceedances increased to 14 a Violation Notice will be issued. Specifically, this is a violation of 40 CFR 63.342(f).

Additional data gathered during the stack test will be detailed in a Stack Test Observation Report in MACES.

FGS-1

This flexible group includes 10 emission units that comprise the South Plater-electroplating of coper, nickel and decorative chrome on plastic parts and is located at Airlane South. This flexible group is not currently operational. Lacks continues to report the delay in stack testing in the deviation reports which is appropriate.

As a result of leaks of chromic acid onto the roof during a previous inspection, Mr. Jaracz had committed to requesting a capital expenditure to have the ductwork replaced during fiscal year 2019. On September 17, 2018, I requested a written commitment to conduct this repair via e-mail. The AQD received email confirmation that the ductwork was replaced on August 22, 2019. This work was completed even though the line was not operational.

FGEMERGENCYRICE-SI

The facility maintains the emergency generator as required and following AQD request was able to provide a copy of the last annual oil change and maintenance service report. The facility is conducting the proper maintenance on the equipment, and it is equipped with a non-resettable hour meter. The maintenance record is attached.

FGBOILERS

This flexible group includes 4, natural gas fired, boilers all less than 10 MMBtu/hr in size boilers subject to minimal requirements of 40 CFR Part 63, Subpart DDDDD. The first 5-year compliance report for these boilers is due no later than January 31, 2019. The USEPA CEDRI reporting system must be used. A copy of the CEDRI report was received on February 25, 2019.

FGCOLDCLEANERS

There are no cold cleaners currently in use.

ANCILLARY EQUIPMENT

During the inspection I observed a robotic assembly cell. Following a brief discussion with Ms. Baweja, it was determined that no air pollutants are generated during the assembly activities of this cell.

ADDITIONAL SAFETY DISCUSSION

While at the facility, I observed an employee of Network Environmental, the stack testing company, stand at the edge of the facility roof to lower equipment down using a rope. This employee was much closer than 6' to the leading edge of the unprotected side/edge of the roof which is multiple stories high. No fall protection was utilized. This could be a violation of 29 CFR Part 1910.28. While the AQD does not have authority over this regulation, I specifically pointed it out to Lacks representatives.

<u>CONCLUSION</u>

Lacks Airlane was in non-compliance at the time of the inspection.

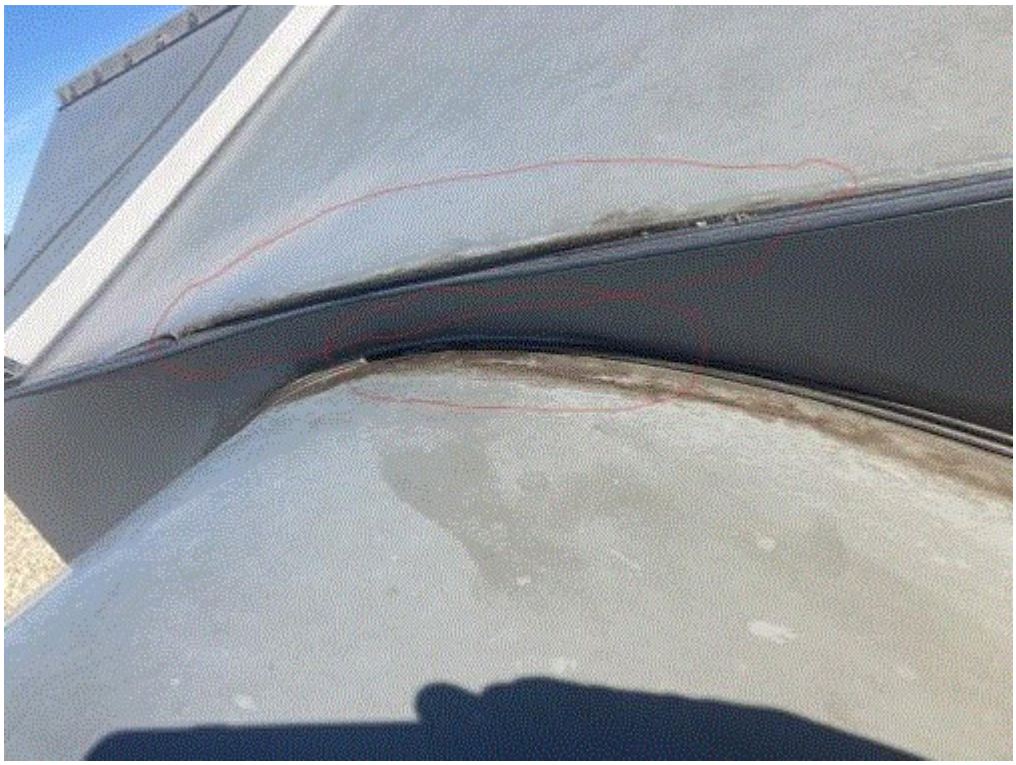

Image 1(Chrome plate) : Areas where two seams have separated, allowing for air infiltration on the inlet side of the hexavalent chrome plating scrubber.

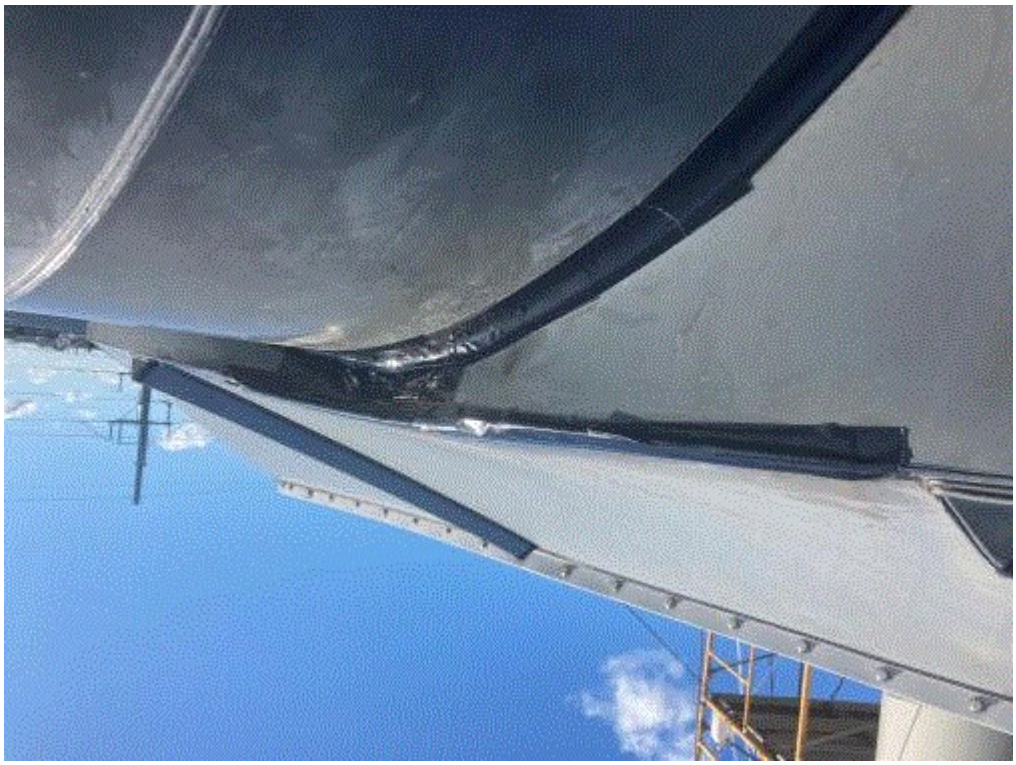

Image 2(Chrome plate) : Temporary repair of scrubber.

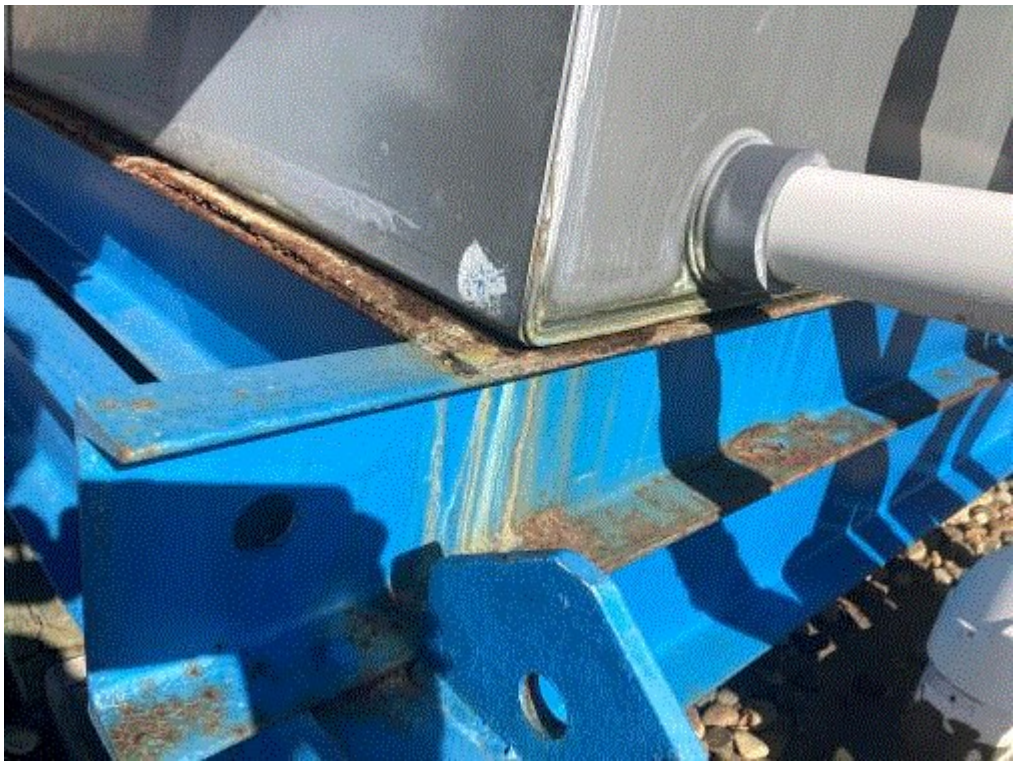

Image 3(Chrome plate) : Liquid leak from stage 1 of scrubber, causing deterioration of structural support.

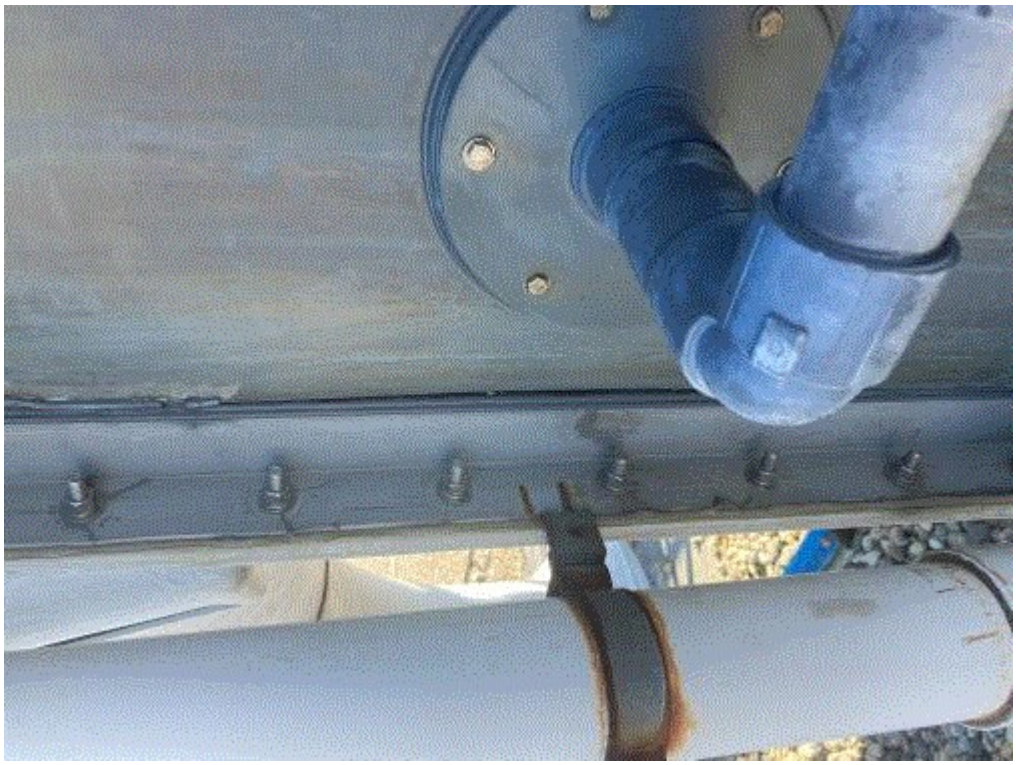

Image 4(Chrome etch) : Seam separation at stage 1 of chrome etch scrubber allowing for air infiltration.

Image 5(Electroless copper) : Green stained rocks near electroless copper scrubber.

NAME April Lazzaro DATE 09/10/2020 SUPERVISOR HH