DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

N268848693

FACILITY: Advanced DisposalServices Arbor Hills Landfill Inc		**SRN / ID:** N2688
LOCATION: 10690 W. SIX MILE RD, NORTHVILLE		**DISTRICT:** Jackson
CITY: NORTHVILLE		**COUNTY:** WASHTENAW
CONTACT:		**ACTIVITY DATE:** 04/25/2019
STAFF: Mike Kovalchick	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Site visit of Fortistar to investigate an issue with Turbine 4 and discrepancy in power rating. Also site visit at the landfill to continue on-going investigation/observation of ETLF event.		
RESOLVED COMPLAINTS:		

On April 25, 2019, I conducted unannounced compliance inspection of Advanced Disposal Services (ADS) Arbor Hills landfill located in Northville, Michigan (Washtenaw County) at 10690 6 Mile Road. The purpose of this inspection was to determine the facility's compliance status with applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules, conditions of the ADS's Renewable Operating Permit (ROP) number MI-ROP-N2688-2011a and Permit to Install (PTI) permits 19-17B and 79-17. The inspection was also conducted to support on-going EGLE efforts at negotiating a proposed Consent Order with ADS to resolve previously identified violations.

Some highlights:

I was at Fortistar between 8:20 & 9:15 am. Meet with Manager Carlos Wilson. Told him that I was there to investigate discrepancy between original PTI permit application that showed 4800 KW size turbine vs current size of 5200 KW.

Carlos indicated that the turbine is swooped out every 40,000 hours. (They are used about 8500 hours per year.) He said that the 3rd version of turbine 4 was installed on December 1, 2014.) He said that the generator itself should be the original one. I asked him to search his records to see if he can locate specific spec for the previous turbines. He said he would get back to me by the end of the day if he was able to find anything.

Note: Suparna sent me the following email and attachment.

"Mike;

You requested nameplate data on Turbine 4 from Carlos this a.m. Please see attached. It is also a Version 7301 and rated at 5,200 KWe as mentioned in the engineer's note.

Also note that the A2A analysis doesn't use KW output, it is based on a maximum heat input of 61.4 MMBTU/hr. Emissions are due to burning of landfill gas, and not dependent on quantity of power generated."

I will be discussubg this response with Amber. The attached face plate appears to note two different power ratings on the original 2004 turbine.

Carlos showed me Turbine 4. Verified that turbine 4 had a name plate of 5200 KW dated 2014. The generator plate showed 5300 KW dated 2004 so it does appear to be the original.

Carlos noted that they were operating at a raw flow of 9785 scfm today with everything running. They measure sulfur daily and it was currently at 300 ppm which he was stable from previous readings. He thinks they can handle a maximum raw flow of 10,600 scfm and he fully expects that a flare will be needed to burn continuously once the dewatering projected had commenced. We discussed the possibility of bad gas being directed to the gas plant during the dewatering project and potential emission problems that it might cause.

Carlos indicated that the DTE planned plant-wide outage had been moved to May 20 and 21. He said that a new blower was being installed today and that next week a blower capacity test was scheduled for all the flares to ensure that they had full capacity during the upcoming outage.

At 9:15 am, meet Diane at the landfill office. We ran into Mark J. in the parking lot and requested that he take us around starting at TS-01 and ending at the subsidence area of the north side.

On the way to TS-01, we took the west perimeter road and stopped at various locations where there are storm drain outlet pipes to test for H2S. Mark noted that landfill gas has infiltrated this pipes and used them as conduits. This pipes are cracked in many places. Only minor odor levels were detected during this visit. Mark discussed his plans to dig-up/replace of this. This area is one the main persistent areas of odors at the landfill.

We briefly stopped at the 2 active Frac tanks. (2 others next to it appear to be inactive.) Very little odors noted. The aeration system they were testing appeared to be working very well. We stopped at the leachate pump station for Cell 4. Mark indicated that on 4/24, they once again had shutdown the entire leachate system to search for a problem. They discovered the pump for Cell 4 had failed due to plastic gumming it up. This resulted in a clogged pipe. The pump had yet to be fixed. Based on the digital readout at the pump station, it appeared to show ten feet of liquid sitting on the liner.

Next we proceeded to TS-01. While on haul road, I noted another black pond similar to TS-01 about a couple of hundred yards to the West and not far from a previous leachate spill related to a frozen French drain pipe. I noted to Mark that I want to see that as well.

TS-01 was very active with very high levels of odors. It appeared once again to be close to over toping the small levees. Steam was visible coming off the upper pond with obvious bubbles coming up. Temperatures measured 135 degrees F. which was significant increase from the 110 degrees F measured 2 weeks prior. Mark mentioned that they recently measured 10 ppm (10 min OSHA exposure limit is also 10 ppm). We used our meter and detected 6.5 ppm. Downwind odors were so strong that I had to place the monitor on the ground and retreat to where the air was cleaner and came back later to pick up the device. H2S were drastically higher than from the previous visit. A number of areas above TS-01 appeared to have gas coming out of the ground. (Didn't have methane detector with me.) It appeared that gas had broken through areas were dirt cover had been placed previously to stop leaks.

Mark mentioned that there was a delay in starting the project to re-engineer TS-01. It was determined that the previous design wouldn't work, so a much more elaborate system was necessary in order for a permanent fix. He gave no new times for when it would be installed.

Next, we went to the brand new leachate pond couple of hundred yards west of TS-01 and about the same elevation. It appeared to likely to contain even more leachate than TS-01. It appeared that workers previously dug a hole to work on repairing a French drain leachate collection pipe that ran East downwards a sump/pump station. (Note: This definitely was a separate location that the previously reported French drain leachate incident.) Mark immediately noted that a rather massive area of bubbling was occurring in this pond. He quickly determined that a main leachate header line had ruptured. Mark believe it had just occurred as workers had been there earlier in the day and didn't see it. Odors/H2S levels were minimal from this leachate and temperatures were not elevated. He had to quickly go back to the truck and call in a repair crew. It appeared that pump in the nearby sump area was able to keep up with all the liquid collecting in this pond. They would have to dewater it in order to make repairs.

Due to all the problems on-going, we elected to skip walking to the Northside and drove there instead. I noted that new leachate seep discovered during the previous visit had grown larger. There was a now a very small stream of it draining off and moving in the general direction of the active north face. Due to the small size, it doubtful that much if any would be able to reach the storm water ditches. The area where the leachate was coming out of the ground was just above well W282R by a few feet in elevation. This is the new well discussed during previous visits. Mark noted that there was a liquid fountain about waist high for 15 minutes when it was drilled with a waste mass temperature measured in the mid 130's.

Moderate odors noted in numerous places in the vicinity of the subsidence area with a number of areas of gas coming out of the ground. The boiling little geyser feature noted 2 to 3 visits ago but not during the last visit appears to have just broken out again through the additional soil cover that had been placed.

Thermal scans of the well heads in the vicinity of the subsidence areas all appear to be significantly elevated from the previous visit. The well with the previously high CO levels showed outer well casing temps of 115. Well W282R and WW271R were around 90 degrees. (I had Anthony pull latest gas well data for those. WW 272R2 was at 157 degrees for gas as of Mid April and only 23.1% methane. The other 2 around 115 degrees F and 55% methane.))

Asked Mark about the 2 green 50,000 leachate tanks that were being cleaned out while we were out there for the public meeting last week. Those 2 tanks have been inactive since March. The plan is to pump the leachate

from TS-01 to these 2 tanks after an aeration system has been installed. From there, this leachate will be pumped off site.

Back at the office, Mark showed us what they had pulled from the leachate pipe. (See attached pic). It appeared to have many layers of calcium scale build-up. Mark noted that they had one 250 foot section of main leachate pipe that still needed to be cleaned out. This section is proving to be very difficult to clean out even using a specialized crew using high pressure water cannon and other devices.

Mark noted that he would be at the enforcement meeting tomorrow and outlined a few things that he planned on saying. Advanced is having a pre-meeting this afternoon in preparation for the call. We had various discussions about the ETLF event. Mark mentioned that he was definitely very frustrated with all the problems at the landfill and the strain of the observations made during today's visit on him were obvious. We left the office around 11:30 am.

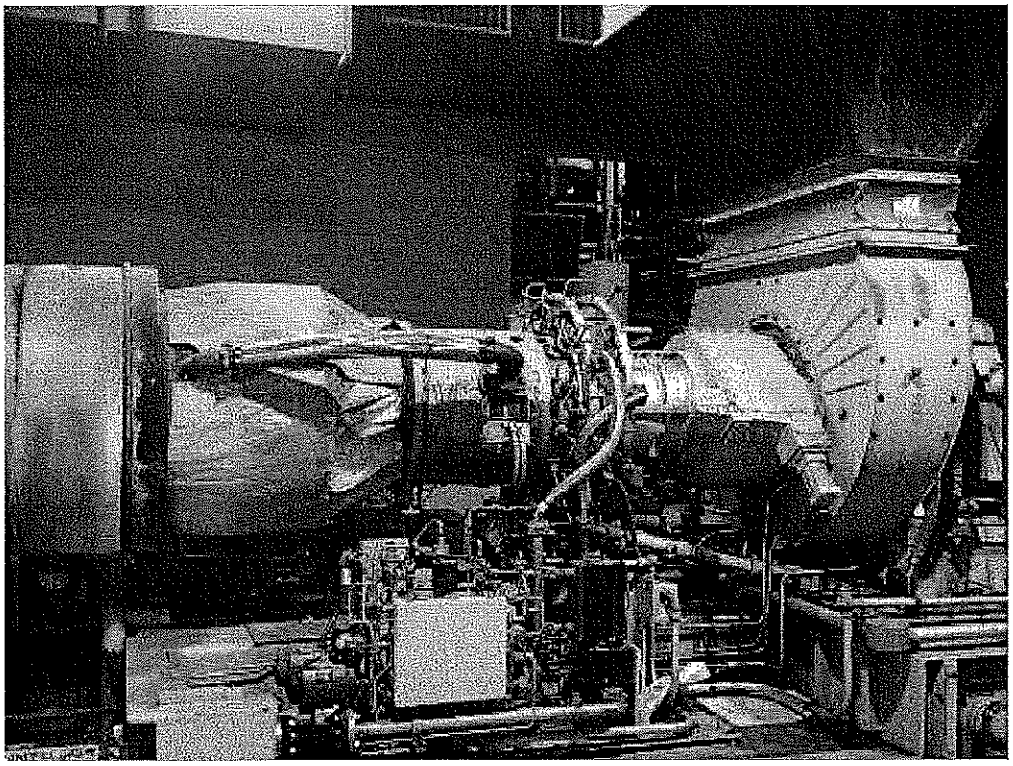
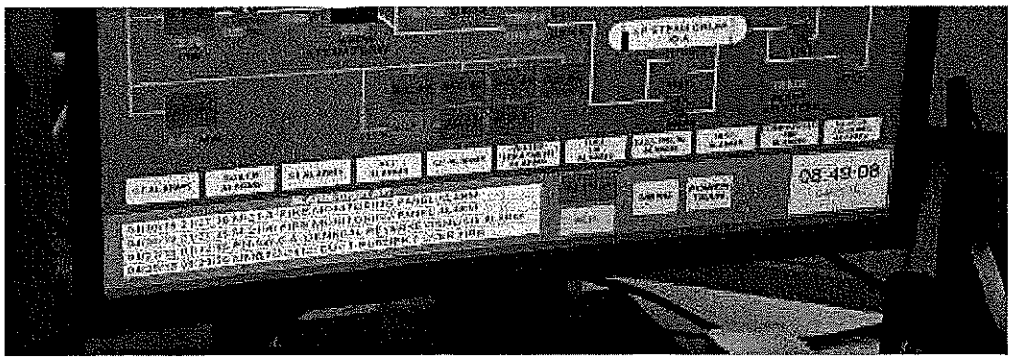


Image 1(Turbine 4) : Turbine 4



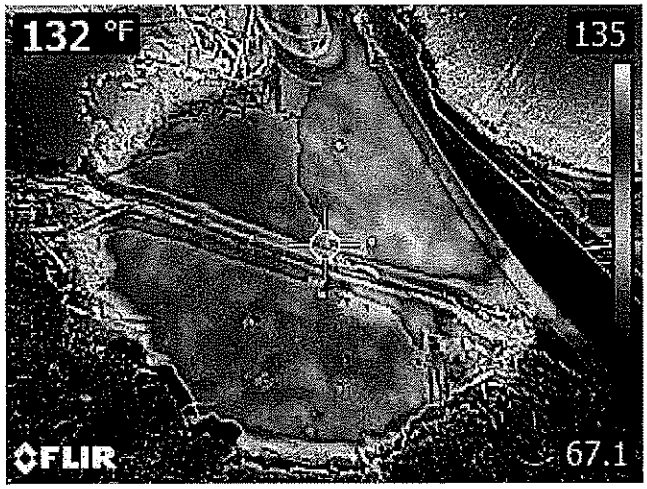


Image 3(TS-01 Temp) : TS-01 Temperature scan

Image 5(New Leachate Break) : Horizontal well leachate breakout 200 yards West of TS-01.

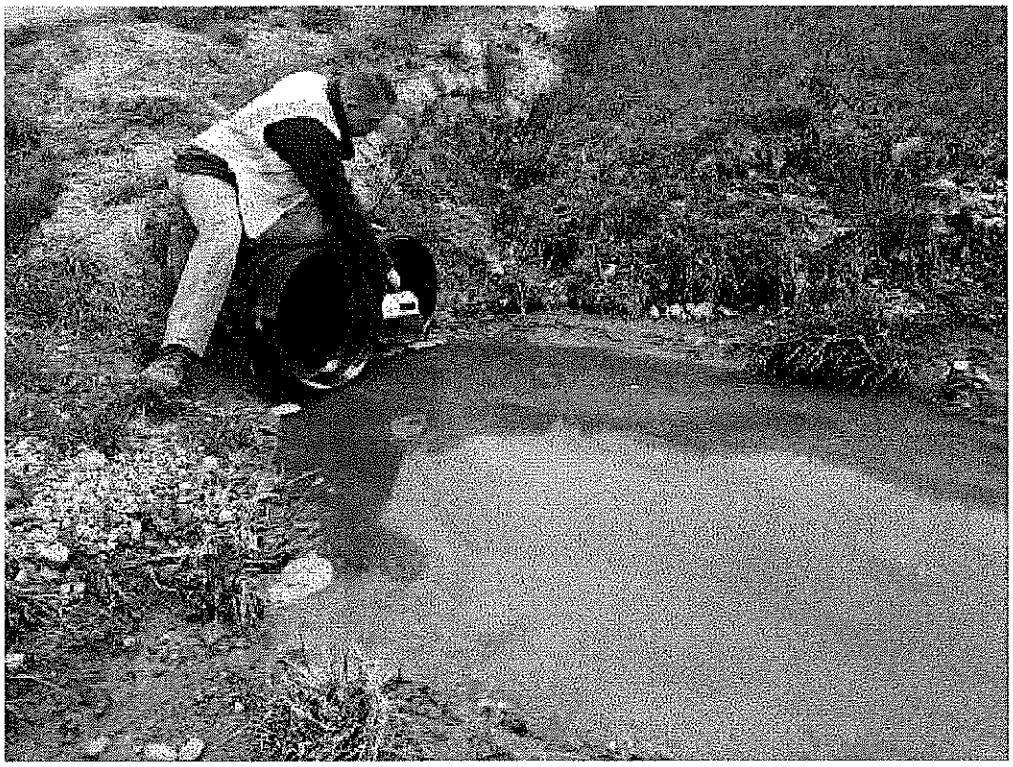


Image 6(H2S monitoring) : H2s monitoring from drain title.

NAME M. Kovalchick DATE 10/14/19 SUPERVISOR