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

B400130236

FACILITY: LBWL, Erickson Station		**SRN / ID:** B4001
LOCATION: 3725 South Canal Road, LANSING		**DISTRICT:** Lansing
CITY: LANSING		**COUNTY:** EATON
CONTACT: Susan Pemberton , Environmental Engineer		**ACTIVITY DATE:** 06/09/2015
STAFF: Michelle Luplow	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Conducted an unannounced, scheduled inspection to determine compliance with MI-ROP-B4001-2010, all state and federal regulations, and to discuss the fugitive dust from the facility's coal pile and ash handling units.		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow

Personnel Present: Deb Allen, Plant Manager (das@lbwl.com)
Scott Mills (Ash Handling site)

Other Relevant Personnel: Sue Pemberton, Environmental Compliance Specialist (slp1@lbwl.com)
Shannon Whiton, Environmental Engineer (smw@lbwl.com)

Purpose: Conduct an unannounced, scheduled compliance inspection by determining compliance with the Lansing Board of Water and Light's Renewable Operating Permit MI-ROP-B4001-2010. Also, to speak with LBWL about the unresolved fugitive dust being released from the site's coal pile and fly ash handling system, creating fallout on complainant John Pemberton's property.

Facility Background/Regulatory Overview:
The Erickson Station is a major source of criteria air pollutants NOx, SO2 and CO, and a major source of HAPs hydrogen chloride (HCl) and hydrogen fluoride (HF). The facility has permit requirements for CAIR for SO2, NOx (annual), and NOx ozone, which expire in July 2015 and will not be renewed because CSPAR will take its place in the near future. The current ROP is up for renewal and the draft is currently under review by LBWL before going out to public comment.

The Cleaver Brooks No.2 oil-fired auxiliary boiler, EUAUXBLR, is subject to the Boiler MACT subpart DDDDD (for major sources of HAPs) and was repermitted as a "limited use" boiler in May 2015 (PTI 71-15). The compliance deadline for this existing unit is January 31, 2016.

EUFPENGINE is currently not in the ROP. It was installed in 2013 as exempt from Rule 201, but is subject to the NSPS Subpart IIII and will be included in the ROP Renewal this year.

The Erickson boiler, EU001, is considered an electrical generating unit (EGU) which is subject to 40 CFR 63 Subpart UUUUU NESHAP for Coal- and Oil-fired Electric Utility Steam Generating Units. Compliance was originally required by April 16, 2015; however, on September 28, 2012, Mark Matus requested an extension of the compliance deadline for the Federal Mercury and Air Toxics Standards (40 CFR 63 Subpart UUUUU, MATS) because of the need to stagger installation schedules so that reliable power can be provided during outage periods. The AQD granted an extension compliance date of April 16, 2016 on December 17, 2012.

On December 15, 2014 AQD received a complaint from John Pemberton (who lives directly east of the LBWL coal pile) stating that coal dust was all over his outdoor vehicles and inside his business. This was a follow-up complaint from the one he filed back in 2008 for coal dust on his property. Sample results verified the dust as fly ash and coal dust (see 1/29/15 activity report "Sample Results Review" in MACES). On February 9, 2015 I met with LBWL staff (See 2/92015 report in MACES) to discuss the sample results and discuss necessary updates to the fugitive dust plan. Updates include more frequent monitoring of the fly ash handling baghouse pressure drop monitors and specifying the application rates of dust suppressant on the coal.

Observations of the coal pile during frequent drive-by visits after the February meeting, during wind speeds greater than 15 mph, showed that there was virtually no dust being blown off the coal pile itself.

Inspection: This was an unannounced compliance inspection. At approximately 9:30 a.m. on June 9, 2015 I met with Deb Allen at the LBWL Erickson Station office. I provided her with a "DEQ Environmental Inspections: Rights and Responsibilities" brochure.

MI-ROP-B4001-2010 Emission Units Table

Emission Unit	Description	Installation/Mod Date	Flex Group
EU001	Babcock & Wilcox 1668 MMBTU/hr pulverized coal-fire boiler. No. 2 fuel oil used for startup and flame stabilization	7-1-1970	NA
EUAUXBLR	Cleaver Brooks aux boiler, No. 2 fuel oil-fired. Supplies heat to plant	5-7-1971	NA
EUASHDC1	Ash handling equipment w/ particulate control device for transfer of ash from storage to load out silos	10-1-1978/ 12-28-1991	FGASHHANDLING
EUASHDC2	Ash handling equipment w/ particulate control device for loading trucks from silos	7-1-1970	FGASHHANDLING
EUASHDC3	Ash handling equipment w/ particulate control device for transfer of ash to storage silos	10-1-1970/ 1-1-1982	FGASHHANDLING
EUASHDC4	Ash handling equipment w/ particulate control device for transfer of ash to mass storage building	7-1-1970	FGASHHANDLING
EUASHDC5	Ash handling equipment w/ particulate control device for transfer of ash from Erickson to ash storage facilities	7-1-1970	FGASHHANDLING

EU's that will be included in the ROP Renewal MI-ROP-B4001-2015

Emission Unit	Description	Installation/Mod Date	Flex Group
EUFPENGINE	John Deere Power Systems 175 bhp 4-stroke Diesel Compression Ignition Clark Fire Pump Emergency Engine, Model JU6H-UFADM8. Maximum heat input is approximately 1.4 MMBTU/hr with a 6.8 L/cylinder displacement.	11-2013/ NA	NA
EUCOLDCLEANER	Thirty gallon parts washer for cleaning/degreasing parts using Stoddard solvent/mineral spirits.	1998	FGCOLDCLEANERS

FGASHHANDLING: EUASHDC1, 2, 3, 4, 5 – fly ash handling
The LBWL Erickson Station has ash handling at both the power plant site and the Millett ash handling site approximately a quarter of a mile northeast of the Erickson Station. Ash is transferred from the Erickson Station to the Millett facility through baghouses and pneumatic pipes to the storage building and used as a marketable product or is disposed of. EUASHDC1 is the main dust collector, EUASHDC2 is the load-out silo bin vent, EUASHDC3 is the truck unloading dust collector, EUASHDC4 is the mass storage dust collector, and EUASHDC5 is the Erickson Station fly ash system baghouse. There are 2 baghouses located at this facility: one baghouse is used for the silos above the truck loadout and the other is located within the mass storage building. See attached photos

Because of the concerns with fly ash on the complainant's properly I discussed with D. Allen the possible sources of the fly ash. D. Allen said that sometime either in February or March 2015 she noticed that fly ash was being emitted through the cracks in the seals of one of the Mass Storage building's vehicle entrance overhead doors. She said that she immediately had the system shut down, and kept it shut down until the baghouse was fixed, which she said involved replacing all the bags in the baghouse. She said that under normal operation the building is under vacuum,

and when the baghouse malfunctioned it placed positive pressure on the system, forcing the fly ash out through the cracked seals on the door. Currently there is a fiber-glass like insulation material stuffed into the crevices between the overhead door and the door jamb as a substitute for the cracked door seals. D. Allen said that they have ordered new seals, door rollers, and a new door, all of which will be installed on the outside of the building so that visual inspection of the door and seals can be done more easily to detect any wear. (see attached photos for the current condition of the door)

Another potential source of the fugitive fly ash is the loadout chute for the trucks. D. Allen pointed out that there were holes in the chute and in the seal that connects to the trucks for loadout of the fly ash. (see attached photo). It is uncertain how long this equipment has been operating with the current condition of the loadout chute/seal; however, D. Allen said that they first noticed the chute wasn't sealing properly onto the trucks in May 2015, and got a quote for replacement of the chute on May 27th. During the inspection D. Allen said that the new chute had already been ordered and would arrive in 4-5 weeks. She said that since noticing that the loadout chute is in disrepair she has not allowed the loadout of any fly ash into trucks. The general loading schedule, D. Allen explained is usually daily loadout during the summertime and loadout in the fall and spring whenever there is a sale.

Testing/Sampling
As long as the baghouses are properly functioning, LBWL should be meeting their particulate limit of 0.10 lb/1000 lbs boiler exhaust gases. See monitoring/recordkeeping section below for discussion on records of baghouse operation.

Monitoring/Recordkeeping

LBWL is required to conduct random visible emissions observations daily on EUASHDC1-4 and are required per MI-ROP-B4001-2010 to record the visible emission result at least once per week, regardless if there is opacity or not. LBWL is also required to monitor the pressure differential across the ash handling units' (EUASHDC1-4) particulate control devices and record the differential pressure reading once per week, per the ROP. The current Fugitive Dust Plan was updated in March 2015 in response to the fugitive dust complaints. Contained in the new plan are more strict checks on pressure drop and VE: checks on pressure drop and VE will be conducted daily instead of weekly, which also reflects the CAM requirements in the ROP renewal MI-ROP-B4001-2015 (ROP date is pending). S. Pemberton provided me with LBWL's "**Weekly** Differential Pressure and Visible Emission Readings" for EUASHDC1-4 (Millett Ash Handling) and EUASHDC5 (Erickson Ash Handling) for August – December 2014 under the old Fugitive Dust Plan/ROP (see attachments), and the **daily** differential pressure and visible emission readings for EUASHDC1-5 for February, April, May and the first half of June for the 2015 updated Fugitive Dust Plan (see attachments).

In the current 2010 ROP there are no conditions present to address operations outside of the pressure drop operating parameter required by CAM. Malfunctions, maintenance or inspection of the fly ash handling baghouse are also not addressed. The renewed ROP will have conditions for both a malfunction abatement plan and inspection of the bags in the baghouse, as well as redefining what an "excursion" is considered and any necessary mitigation procedures. These changes will ensure that if there are operating conditions outside of the specified pressure drop range in the ROP, maintenance/inspection shall be conducted to return the baghouse operation back to acceptable operating conditions.

The reason these items are being addressed in the ROP renewal is because the pressure drop data from the Mass Storage building (which, as discussed, had baghouse failure in February/March 2015) provided for this inspection indicates the unit was being operated outside of the appropriate operating range for at least 3 months, but was not being addressed because the ROP does not require maintenance, only that VE readings be done when operating outside of the range. The Erickson Station is in compliance with keeping all records associated with FGASHHANDLING (pressure drop, visible emissions check if the pressure drop is outside of the operating range), and has done everything in terms of monitoring that the 2010 ROP requests; however, records show that the Mass Storage Dust Collector (for the mass storage building) has been operating consistently higher than the 1-7" H_2O operating range required in the ROP:

Mass Storage Dust Collector Weekly Pressure Drop Readings Outside of Operating Range

Dates of Operation (Week of)	Pressure Drop (in H_2O)
September 3 – October 8	**8**
October 15 - November 19	**Not Operating**
December 3	**8.5**
December 10 – December 31	**10**
Weeks in January	**Did not check**

February 4	**10**

Mass Storage Dust Collector Daily Pressure Drop Readings Outside of Operating Range

Dates of Operation (Daily)	Pressure Drop (in H_2O)
February 9 – February 11	**Not Operating**
February 12 – February 13	**10**
February 16 – February 23	**10**
April 6 – April 14	**9**
April 15 – May 6	**10**
May 12 – May 14	**6**
May 15	**8**
May 18	**8**
May 19 – May 22	**10**

S. Pemberton said she would also look into what the baghouse manufacturer specifies in terms of an appropriate baghouse pressure drop operating range. Proper operation of a particulate control system is required in the General Conditions of the ROP.

Reporting
The required CAM reports have been submitted for all semi-annual reporting periods to-date. See FCE report for details.

2015 Fugitive Dust Management Plan (FDMP)
The fugitive dust plan was required to be updated, per AQD request. The fugitive dust plan now contains procedures set in place to control fugitive dust from FGASHHANDLING.

Besides the daily logs for VE and pressure drop, LBWL has also included that they conduct visual inspections of the ash transport line during times when ash is being pushed from the Erickson Station to the ash handling plant. S. Pemberton provided me with a "Shift Log" (see attachment) noting the day and the times when certain actions were performed during a specified shift (shifts are 12-hour days). "VEC," visible emissions check, is noted when the operators are checking the transport line. S. Pemberton said that if they spot dust or any other issues during this check, they enter a work order in LBWL work management system to address and fix the problem.

Fugitive Dust Log
The FDMP also states that a fugitive dust log will be kept when fugitive dust mitigation efforts fail and fugitive dust is observed that has the potential to reach the plant boundary. The log should include the date, time, duration, wind speed, description and corrective actions planned at taken. S. Pemberton clarified this statement saying that LBWL has made a management decision to have dusting conditions recorded regularly, regardless whether dust has the potential to reach the plant boundary or not, in an effort to make the coal handling staff more aware of this responsibility. Therefore, regular observations are records are kept. S. Pemberton provided me with December 2014 – May 2015 Fugitive Dust logs (December 2014 logs are attached). D. Allen said that they do not load out coal when winds are 25 mph or more.

The FDMP also requires training for employees once per calendar year and within 30 days of any plan revisions. The most recent training was conducted on October 4, 2014. S. Pemberton said that the annual training is conducted every fall, in which they revisit the plan and discuss each person's obligations for meeting dust management plan requirements. She also said that they have not conducted group training on the March 2015 plan, but instead, have conducted one-on-one discussions of the new fugitive dust plan with the plant manager, operating supervisor, shift supervisors, coal operations leader, and ash handling coordinator.

EU001 – Babcock Wilcox pulverized coal-fired boiler

D. Allen and I also had a discussion about fugitive dust from the coal pile, as a high percentage of the content of the samples taken in January at the complainant's property contained particulate similar in nature to coal. D. Allen said that she and the operations supervisor, Cindy, have spoken with and visited the complainant and have developed a variety of ways to help mitigate the transfer of coal dust onto neighboring properties.

She said that there is a prevailing wind from the west that blows through the plant yard and which carries the coal dust off the property if the coal pile is left with a pyramidal peak. To mitigate fugitive dust from strong prevailing

winds, she said that since May 10, 2015 they have been maintaining the pile at a lower height. As soon as they offload the coal onto the pile, the coal is graded to maintain that height. They have also created a berm with the coal that is adjacent to the fly ash handling property. This berm is flush with the top of the coal pile, so that any fugitive dust being blown off the coal pile hits the berm, thus preventing it from moving off the LBWL property.

In addition to the berm, the LBWL also has plans to plant trees (most likely poplars) between the coal pile and ash handling site, as well as near the front of the plant near Canal Rd between the coal pile and the cooling towers, to create a wind break. D. Allen said that the wind speeds can get up to 75 mph because the topography (buildings and flat land) surrounding the ash handling and coal pile creates a wind tunnel effect, in which she said there is really nothing to control the dust at those wind speeds, except potentially a wind break. The plans for ordering and planting trees D. Allen said will be put into action post-July 1, 2015. She also said she will send me plans/maps of the final location of the trees when they are planted. She said they will likely plant trees sometime between July and September 2015.

Process/Operational Restrictions
LBWL Erickson is permitted to use Nalco 1277, Nalco 1221, and Nalco 3UF-715, or additives of the same formulation to treat the coal. The Nalco company was able to furnish the SDS for Nalco 1277 (see attachment), but could not find SDS's for the other 2 compounds. According to the SDS, Nalco 1277 does not contain any compounds with an Initial Threshold Screening Level (ITSL). S. Pemberton said LBWL Erickson no longer uses the Nalco series additives, but now uses GE Dustreat DC9139E and GE Dustreat DC9138E, the same compounds that were used during the 3/2014 inspection (see file for SDS's). The current LBWL Erickson Fugitive Dust Plan (2015) specifies that as of March 2015 the GE Dustreat DC9139E and GE Dustreat DC9138E are still being used, and the plan provides feed rates of 0.0417 lbs/ton coal and 0.0083 lb/ton of coal, respectively, as recommended by the vendor. Dustreat 9139E contains polyglycol 59-13 (CAS#24938918), which has an annual ITSL of 8 $\mu g/m^3$. Dustreat DC9138E contains diethylaminoethanol, which has a 24-hour ITSL of 4 $\mu g/m^3$. On June 11, 2014, S Pemberton provided a 285(c) exemption demonstration for DC9138E, and based on the information that was submitted, using DC9138E dust suppressant appears to be exempt from a PTI per Rule 285(c)(iii). On July 9, 2015, per request of AQD, S. Pemberton also submitted a 285(c)(iii) exemption for DC9139E, which also appears to meet the 285(c) exemption criteria. S. Pemberton said Dustreat DC9139E is used for dust suppression at the coal loading and transfer points to minimize fugitive dust from the coal dumper and on the coal feed belts, and additive DC9138E is a crusting agent that minimizes fugitive dust emissions from the coal pile.

Boiler cleaning solutions are also allowed to be combusted for the cleaning of internal surfaces of boiler tubes and related steam and water cycle components if the solution does not contain HAPs. S. Pemberton said that the Erickson boiler undergoes chemical cleaning approximately every 7 years with an EDTA chelating agent. D. Allen said that the last time the boiler was cleaned was in 2010, and is scheduled to be cleaned again in 2017/2018. D. Allen verified that LBWL still currently uses ChelClean 675. According to the SDS attached to the previous inspection report, tetraammonium ethylene diaminetetraacetate and ammonium hydroxide are the major components, but neither of these are considered HAPs by the EPA. D. Allen said that the LBWL will likely be using a different boiler cleaning solution in the future, as the one they currently use may no longer be produced. She said LBWL will contact AQD if/when they make the change to a new cleaning solution to ensure its use is in compliance with the permit conditions

LBWL Erickson Station is currently in compliance with the boiler's Process/Operational Restrictions at this time.

Design/Equipment Parameters
D. Klemish explained that the ESP's transformer/rectifier set operate on spark-limited mode. Both voltage and amperage are metered and displayed, for each of the 5 sections of the ESP. Brian Culham's activity report for the inspection on 6/4/12 details that voltage, amperage and secondary amperage are being metered and displayed. D. Klemish explained that a remote computer is used to adjust power levels based on the sparking rate limits. LBWL is in compliance with all Design/Equipment Parameters at this time.

Testing/Sampling
The PM emission limit is 0.17 lb/1000 lb of exhaust gas. A stack test was completed on May 19, 2010 to satisfy the Information Collection Request of the EGU MACT. The results showed 0.0085 lb PM/1000 lb exhaust gas, corrected to 50% excess air. LBWL is in compliance with all Testing/Sampling conditions at this time.

Monitoring/Recordkeeping
The following table lists the current CEMS/COMS monitors that are installed at this time based on results from a RATA letter dated November 5, 2014 for the August 19, 2014 RATA (the type of opacity monitor was not verified during the RATA):

Table 1

Parameter	Manufacturer	Serial No	Model
CO2	Teledyne API	63	T360M
NOx	Teledyne API	71	T200
SO2	Teledyne API	61	T100H
Opacity	Teledyne	unknown	560 Light Hawk
Flow	Ultraflow	1501157	150

According to Scott McQuiston, new installations of CO_2, NOx and SO_2 CEMS were the result of the CEMS failing on February 4, 2013, largely a result of the freezing of the umbilical. Because LBWL was planning to install new CEMS later that year, they took advantage of the downtime to install the newer models. Based on the November 5, 2014 RATA, the monitors have met the performance specification criteria in NSPS Parts 60 and 75.

Whenever opacity exceeds 20%, a light comes on (visual alarm) in the control room to signal the operators that opacity limits have been exceeded. All excess emission reports list all exceedances of 20% opacity, the majority of the exceedances the result of boiler startup/shutdown or malfunction. D. Allen said that a "purge air heater" was installed in the fall 2013 after the February 2013 CEMs failure. This installment should prevent CEMs failure in the event of subzero ambient temperatures.

A. Berg, at the previous inspection, explained that the COMS samples and analyzes every 2-3 seconds and then averages this data every 6 minutes. Daily zero and span checks are conducted and the records are stored in a data logger. A. Berg showed me the electronic records for the checks. Span checks are conducted throughout the night and the results are checked in the morning to determine if the calibration passed or not. He also said that a cabinet is kept with parts for routine repairs on the COM system, and an electronic list of all the parts is kept.

LBWL has met all requirements for operating and maintaining the COMS system at this time.

Conditions in the ROP also require various parameters and data be recorded on a daily basis. The following are examples of how the LBWL is meeting those requirements:

S. Pemberton provided me with the following data for January – May 2015, as required under Monitoring/Recordkeeping condition 8:

Month, 2015	Hours of Operation	Coal burned (tons)	Fuel Oil burned (gallons)
January	744	58,892	2,268
February	294	24,462	6,832
March	742	54,576	3,102
April	510	34,873	15,539
May	669	45,799	6,681

Monitoring/Recordkeeping special condition 10 requires coal analysis records be kept and include the following data, which S. Pemberton provided for the past 3 deliveries of coal (June 2, June 5, June 9, 2015). The permit requires that records for each delivery of coal be kept and that wt% ash, sulfur, and moisture, and BTU/lb be reported.

Wt% Ash (dry)	Wt% sulfur (dry)	Wt% moisture	BTU/lb (wet)
6.31	0.27	26	8978
5.95	0.26	27	8941
6.72	0.26	26	9009

The ROP also limits the amount of ash content in the coal to 14% (under *Material Limits*). The 3 shipments of coal that were shipped to the Erickson Station on 6/2/15, 6/5/15 and 6/8/15 from the Thunder Basin Coal Company (see attachment) contain coal analysis for the ash content (dry) (as seen in the table above).

LBWL Erickson is in compliance with all material limits at this time. LBWL is currently in compliance with all Monitoring/Recordkeeping requirements for EU001.

Reporting
All required quarterly reporting for opacity and SO2 compliance and all required semi-annual reporting for deviations and CAM excursions/exceedances have been submitted in a timely fashion through the first quarter 2015.

LBWL is currently in compliance with all Reporting requirements for EU001.

Other Requirements
S. Pemberton provided me with LBWL Erickson's Malfunction Abatement Plan for particulate emissions in the ROP Renewal Application. The current version is August 2014. There has been no need to submit a Quality Improvement Plan to AQD because total hours of excursions in any given 6-month period have not exceeded 12 hours.

The LBWL maintains a copy of their Fugitive Dust Management Plan (see attachment); revisions have been made to the plan in March 2015, to make updates that are consistent with CAM regulations.

EUAUXBLR – Cleaver-Brooks Auxiliary Boiler

Process/Operational Restrictions
The current EUAUXBLR conditions (under "limited use" boiler, PTI 71-15, which will be rolled into the permit) no longer requires the fuel analysis be conducted on every delivery of fuel. In its place, LBWL is only required to show MSDS documentation that the fuel is "ultra low sulfur diesel." During this inspection, compliance was only checked against the AUXBLR conditions that are in the current ROP, as the permit had only been issued 5 days prior to the inspection and the majority of the conditions require at least a month to go by before compliance can be checked. The current ROP requires that the maximum sulfur content in the liquid fuel shall not exceed 1 wt% per 18,000 BTU/lb fuel oil. S. Pemberton provided me with the 4/13/15 delivery fuel oil analysis from Paragon Laboratories (see attachment). Wt% of sulfur according to the analsys is 0.001%, <0.005% moisture, and 19,534 BTU/lb. LBWL is in compliance with this sulfur content requirement and recordkeeping requirement.

EUCOLDCLEANER
The new ROP will have a cold cleaner emission unit. The Erickson Station currently has 1 cold cleaner in their maintenance room that was installed in 1998, S. Pemberton provided me with the SDS of the Crystal Clean solvent, attached. The cover was closed, is not a heated unit, and is approximately 7.5 square feet of surface area. I gave D. Allen the DEQ AQD orange cold cleaner stickers containing operating procedures to place near the unit. This unit is exempt from a permit to install per Rule 281(h) because the air/vapor interface is less than 10 ft^2. The reid vapor pressure for the mineral spirits (CAS 64742-47-8) is less than 0.1 psia at 38°C/100°F, which means that a mechanically-assisted cover is not required because the reid vapor pressure (based on another SDS found on the internet for this compound, also attached) is less than 0.3 psia and is not heated. LBWL Erickson is in compliance with Part 7 Rules for New Cold Cleaners.

Currently the LBWL Erickson Station is in compliance with all state and federal regulations at this time.

NAME Michelle M Lipton DATE 7-16-15 SUPERVISOR B. M.