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

B400125088

FACILITY: LBWL, Erickson Station		**SRN / ID:** B4001
LOCATION: 3725 South Canal Road, LANSING		**DISTRICT:** Lansing
CITY: LANSING		**COUNTY:** EATON
CONTACT: Angie Goodman , Environmental Compliance Specialist		**ACTIVITY DATE:** 03/31/2014
STAFF: Michelle Luplow	**COMPLIANCE STATUS:**	**SOURCE CLASS:** MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow

Other DEQ staff: Jenine Camilleri, AQD Enforcement

Personnel Present: Angie Goodman, Environmental Compliance Specialist (ame1@LBWL.com)
Dave Klemish
Aaron Berg

Purpose: Receive a tour of the plant and to conduct an announced, scheduled compliance inspection by determining compliance with the Lansing Board of Water and Light's Renewable Operating Permit MI-ROP-B4001-2010.

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.

The Cleaver Brooks No.2 oil-fired auxiliary boiler, EUAUXBLR, is subject to the Boiler MACT subpart DDDDD (for major sources of HAPs). The compliance deadline for this existing unit is January 31, 2016.

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 is required by April 16, 2015.

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.

Void was requested on 3/28/14 for PTI No. 94-12 for a trial burn of torrefied wood in the Babcock Wilcox boiler. The permit was issued September 5, 2012. According to the permit's general condition 2, the permit becomes void after 18 months. As of March 5, 2014, the 18 month period has passed.

Inspection: This was an unannounced compliance inspection. At approximately 8:30 a.m. on March 31, 2014 Jenine Camilleri and I met with Angie Goodman and Dave Klemish.

MI-ROP-B4001-2010

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

EU001 – Babcock Wilcox pulverized coal-fired boiler
The boiler unit was operating at 165 megawatts (full load, according to D. Klemish).

Material Limits
The ROP limits the amount of ash content in the coal to 14%. Sue Pemberton supplied a specification sheet of coal that was shipped to the Erickson Station on 3/31/2014 from the Thunder Basin Coal Company (see attachment). The ash content in the 3/31/14 shipment was 6.59%. LBWL Erickson is in compliance with all material limits.

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 9139E and 9138E (see attachment for SDS's). Dustreat 9138 contains diethylaminoethanol has a 24-hour ITSL of 4 $\mu g/m^3$. A request has been made to LBWL Erickson to show that the change in the additives used is exempt per Rule 285 (b). S. Pemberton said Dustreat 9139E 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 9138E 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. LBWL currently uses ChelClean 675. According to the SDS (see attachment), tetraammonium ethylene diaminetetraacetate and ammonium hydroxide are the major components, but neither of these are considered HAPs by the EPA.

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

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.

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.

Monitoring/Recordkeeping
The following table lists the current CEMS/COMS monitors that are installed at this time, including a gas flow monitor not included here:

Table 1

Parameter	Manufacturer	Model
CO2	Teledyne	T360M
NOx	Teledyne	T200
SO2	Teledyne	T100H
Opacity	Teledyne	560 Light Hawk

According to Scott McQuiston, new installations of CO_2, NOx and SO_2 CEMS were the result of 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. The RATA report was received 3/26/13 and results showed that the RA% was in compliance with the allowable limits for all CEMS. Another RATA was conducted on CO2, SO2, NOx and CEMS exhaust flowrate on August 20, 2013. Results were received October 17, 2013 and were in compliance with the allowable RA% limits.

From January 6 – early January 8, 2014, the LBWL COMS were reporting opacity exceedances greater than 20%. Mark Matus called me the day of the exceedance and sent me an email on January 9, 2014 explaining why the exceedances were possibly occurring. According to M. Matus, the ambient temperature at the COMs on the stack was -10°F with a windchill of -45°F on January 6, 2014. He said the COMs unit is rated at or above -10°F. The LBWL technicians called Teledyne (the COMs manufacturer), who explained that the malfunction was likely related to the extremely cold temperatures the Lansing area was experiencing around that time. A Method 9-trained employee conducted opacity readings January 7th and 8th during the periods that COMs were reporting opacity exceedances. All Method 9 opacity readings ranged from 5-15%. In addition to the temperature affecting COMs, Teledyne also suggested checking the shutter on the optical head, checking the purge blower output and checking the retro reflector for obstruction.

During the inspection I spoke with Aaron Berg concerning the COMs issues and he verified that all 3 of the check items Teledyne had suggested were completed. LBWL has determined that the subzero temperatures were the cause of the false opacity readings. A. Berg said that heaters have been purchased as a temporary solution to keep temperatures within the COMS operating range. Heaters will be placed in an enclosure housing the COMS. He also said that LBWL is looking into a long-term solution, possibly placing the COMs within the stack in November/December when they have their planned outage. LBWL has acknowledged that moving the COMs within the stack may not be possible.

Whenever opacity exceeds 20%, a light comes on in the control room to signal the operators that opacity limits have been exceeded. During the inspection opacity was holding steady around 10% while the boiler was at its maximum load.

A. Berg also 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. The last check was done that morning at 5:41 a.m. A. Berg 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.

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 for two particular days:

S. Pemberton provided me with the following data for January 8, 2014 (during the COMS outage) and November 23, 2013 (max opacity of 66%):

Date	Hours of Operation	Coal burned (tons)	Oil burned (gallons)
November 23, 2013	24	27,781	1,335
January 8, 2014	24	35,802 (restricted load)	192

A daily record of all 6-minute average opacity exceedances greater than 20 percent (and 1 incident of 27% within an hour) must be kept as well. S. Pemberton provided me with the opacity exceedances for 11/23/2013 (see attachment). There were 26 6-minute averages (excluding 2 events within 2 hours of exceedances that were not more than 27%). According to S. Pemberton, the initial exceedance at 11:30 a.m. was the result of a fan damper malfunction, the several other exceedances were the result of wet coal being burned.

S. Pemberton provided me with the coal analysis for the 3/31/14 delivery of coal. The permit requires that records for each delivery of coal be kept and that wt% ash, sulfur, and moisture, and BTU/lb be reported. The 3/31/14 analysis contained the following data:

Wt% Ash (dry)	Wt% sulfur (dry)	Wt% moisture	BTU/lb (wet)
6.59	0.31	26.1	8989

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 fourth quarter 2013. Individual 6-minute opacity averages for all instances where the opacity exceeded the 20% standard have not been provided with the quarterly Excess Emissions and Monitoring Systems Performance Reports; however, what has been submitted is opacity exceedances that are grouped according to the cause of the exceedence. These groupings cover greater intervals than the 6-minute average at times. I will work with the Jessica Harbitz to ensure that the Excess Emissions and Monitoring Systems reports are submitted with the correct information in the future.

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 (see attachment). 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); no revisions have been made since its original draft in 2009. The document addresses minimization of fugitive dust from the car dumper process, coal conveyance system, crusher house, and the coal pile.

EUAUXBLR – Cleaver-Brooks Auxiliary Boiler

Process/Operational Restrictions
The 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 3/5/2014 fuel oil analysis (see attachment). Wt% of sulfur per 18,000 BTU/lb fuel oil is less than 1%. LBWL is in compliance with this sulfur content requirement.

Monitoring/Recordkeeping

LBWL is required to maintain complete records of fuel analysis for each delivery of fuel, and contain the wt% sulfur, wt% moisture, and BTU/lb. The analysis for the 3/5/2014 shipment was provided by SGS North America: Minerals Services Division. The last delivery had 0.029% Sulfur, 12.8% moisture, and 19,595 BTU/lb fuel oil. Samples of the oil are taken onsite and sent in for analysis. LBWL is in compliance with all Monitoring/Recordkeeping requirements for EUAUXBLR.

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 pipes to the storage building and used as a marketable product or is disposed of.

Testing/Sampling
The emission limit is 0.10 lb/1000 lbs of boiler exhaust gas on a dry gas basis. To the best of my knowledge there is no evidence that a stack test was ever required by the AQD.

Monitoring/Recordkeeping
LBWL is required to conduct random visible emissions observations daily on EUASHDC1-4 and are required 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. S. Pemberton provided me LBWL's "Weekly Differential Pressure and Visible Emission Readings" for EUASHDC1-4 (Millett Ash Handling) and EUASHDC5 (Erickson Ash Handling) (see attachment).

According to S. Pemberton LBWL Erickson only records that VE reading are taken if there are visible emissions, but said that they will change the system to note when VE readings are okay at least once per week in order to maintain compliance with the permit conditions.

For the week of 3/23/14 the pressure differential of EUASHDC1-4 was recorded. The permit requires that each unit operates between 1 and 7 "H_2O. Readings for 3/26/14 were within the acceptable operating range. The readings reported at 0 "H_2O were, according to S. Pemberton, times when the baghouses were not operating. I requested that in the future, whenever a reading is 0 "H_2O and the equipment is not operating, to indicate as such in the record, to confirm that this reading is not indicative of the baghouse improperly operating.

Reporting
CAM requires that if there are no excursions and/or exceedances and no periods of monitor downtime for FGASHHANDLING, a statement should be made confirming this in the semi-annual reporting. For the 3rd and 4th quarters of 2013 (2nd semi-annual reporting period), CAM excursions/exceedances, nor monitor downtime, were reported. There were also no statements confirming that there had been no excursions/exceedances or monitor downtime. I will work with Jessica Harbitz to ensure that future semi-annual reports contains the appropriate documentation and/or statements.

I emailed a pdf copy of the DEQ "Environmental Inspections: Rights and Responsibilities" brochure to A. Goodman after the inspection. At this time the LBWL Erickson Station is in compliance with all state and federal regulations.

NAME [signature] DATE 5-13-14 SUPERVISOR [signature]