



OFFICE OF THE VICE CHANCELLOR FOR RESEARCH
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Via email to compliance@baaqmd.gov and hard copy sent via U.S. Postal Service

June 1, 2020

Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
Attn: Title V Reports

RE: UC Berkeley, Facility #A0059 – Semi-Annual Monitoring Report for the Title V Operating Permit, February 1, 2019 – July 31, 2019

Dear Director of Compliance and Enforcement:

This monitoring report satisfies the semi-annual reporting requirements for the University of California, Berkeley (Facility #A0059), for the reporting period of **February 1, 2019 – July 31, 2019**.

Enclosed are the Tables of Applicable Emission Limits and Compliance Monitoring Requirements referenced in the Title V Operating Permit, issued December 12, 2017. Minor revisions to the source numbers were made in the tables, as Source 1, Source 40 and Source 41 were reassigned to Source 200, Source 201 and Source 202, respectively.

Below is the summary of DAS system events, CEMS system events and other events as previously submitted in our monthly emission reports during this time period:

Summary of DAS System Events

- On March 10, 2019, the computer monitoring system recorded bad data between 02:00 to 03:00 due to the daylight savings time change.
- On April 19, 2019, the computer monitoring system recorded bad data between 14:00 to 16:00. The computer was reset and the monitoring resumed. The sources were operating at base load and the parametric trends are included in the daily reporting.
- On May 21, 2019, the CEMS monitors failed daily calibration due to low calibration gas pressure. The calibration gas bottle was replaced and the CEMS recalibrated satisfactory. During the out of calibration period, parametric monitoring of the source parameters was performed manually and is on file at the facility.

- On June 21, 2019, the CEMS monitors recorded bad data to a missing minute in the data caused by an error in the computer time clock. The minute data is resident in the computer, but because of a missing minute, the DAHS recorded "BAD" data for that hour.

Summary of CEMS System Events

- None.

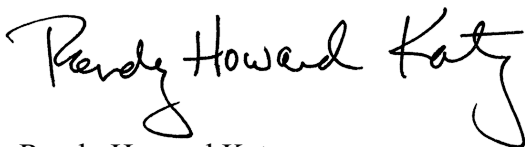
Summary of Other Events

- On March 23, 2019, at approximately 01:00, the Cogen was shut down for scheduled maintenance until approximately 12:00 on March 24, 2019.
- On March 26, 2019, at approximately 12:00, the Cogen was shut down by an unplanned event until approximately 11:30 on March 28, 2019.
- On March 28, 2019, at approximately 14:00, the Cogen was shut down by an unplanned event until approximately 14:00.

If you have any questions regarding the enclosed information, please contact Bernadette Santos at bsantos@berkeley.edu.

Based upon the information and belief formed after a reasonable inquiry, I, as the Responsible Official, certify the information contained in this report as accurate and true to the best of my knowledge.

Sincerely,



Randy Howard Katz
Vice Chancellor for Research

cc Grace Leung, BAAQMD Inspector
Norris Herrington, UC Berkeley
Greg Haet, UC Berkeley
Bernadette Santos, UC Berkeley
Patrick Goff, UC Berkeley

**Table VII-A
Applicable Limits and Compliance Monitoring Requirements
S-200, Emergency Diesel Engine Generator**

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance	
								Yes	No
Opacity	BAAQMD Regulation 6-1-303.1	N		>=Ringlemann 2.0 for no more than 3 minutes in any hour.		N		X	
Opacity	SIP Regulation 6-303.1	Y		>=Ringleman 2.0 for no more than 3 minutes in any hour		N		X	
FP	BAAQMD Regulation 6-1-310	N		0.15 gr/dscf		N		X	
FP	SIP Regulation 6-310	Y		0.15 gr/dscf		N		X	
SO ₂	BAAQMD 9-1-301	Y		Property Line Ground level limits: <=0.5 ppm for 3 minutes and <= 0.25 ppm for 60 min. and <= 0.05 ppm for 24 hours.	None	N	N/A	X	
	BAAQMD 9-1-304	Y		0.5% wt. Sulfur in liquid fuel		P/E	Fuel certification of each delivery	X	
Hours of Operation	BAAQMD 9-8-330.1	N		Unlimited hours for emergencies	BAAQMD 9-8-530.2	C P/M	Hour Meter, Records of Operating Hours	X	
	BAAQMD 9-8-330.2	N		100 hours per calendar year or permit limit whichever is lower for reliability-related activities	BAAQMD 9-8-530	C P/M	Hour Meter, Records of Operating Hours	X	
	BAAQMD 9-8-330.3	N	1/1/2012	50 hours per calendar year or permit limit whichever is lower for reliability-related activities	BAAQMD 9-8-530	C P/M	Hour Meter, Records of Operating Hours	X	
	BAAQMD Condition #22820 Part 2	Y		Unlimited Hours for Emergencies	BAAQMD Condition #22820, Part 3 and 4	C P/M	Hour Meter, Record Keeping	X	
	BAAQMD Condition #22820 Part 1	Y		<=20 hours per year for reliability-related activities	BAAQMD Condition #22820 Part 3 and 4	C P/M	Hour Meter, Record Keeping	X	

**Table VII-B
Applicable Limits and Compliance Monitoring Requirements
S-201, Turbine**

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance	
								Yes	No
NO _x	BAAQMD 9-9-303.2	N		20.2 ppmv @ 15% O ₂ , dry (adjusted per 9-9-401), except during start-up	BAAQMD 9-9-501	C	CEM	X	
NO _x	SIP 9-9-303.2	Y		20.2 ppmv @ 15% O ₂ , dry (adjusted per 9-9-401), except during start-up	SIP 9-9-501	C	CEM	X	
	BAAQMD 9-9-303.2	N		42 ppmv @ 15% O ₂ , dry during natural gas curtailment or short testing periods	BAAQMD 9-9-501	C	CEM	X	
	SIP 9-9-303.2	Y		42 ppmv @ 15 O ₂ , dry during natural gas curtailment or short testing periods	SIP 9-9-501	C	CEM	X	
	BAAQMD Cond #366, Part 4	Y		20.2 ppmv – natural gas: @ 15% O ₂ , 3 hr avg, except during start-up	BAAQMD Cond #366 Part 12	C	CEM	X	
NO _x	BAAQMD Cond #366, Part 5	Y		20.2 ppmv – natural gas: @ 15% O ₂ (combined S-201 & S-202), 3 hr avg, except during start-up	BAAQMD Cond #366, Part 12	C	CEM	X	
	BAAQMD Cond #366, Part 6	Y		42 ppmv – fuel oil: @ 15% O ₂ , 3 hr avg, except during start-up	BAAQMD Cond #366 Part 12	C	CEM	X	
NO _x	BAAQMD Cond #366, Part 7	Y		39 ppmv – fuel oil: @ 15% O ₂ (combined S-201 & S-202), 3 hr avg, except during start-up	BAAQMD Cond #366 Part 12	C	CEM	X	
	BAAQMD Cond #366 Part 10	Y		547 lb/day when burning natural gas and 1093 lb/day when burning fuel oil (combined S-201 & 202)	BAAQMD Cond #366 Part 12	C	CEM	X	
	NSPS Subpart GG, 60.332(a)(1)	Y		99 ppmv @ 15% O ₂ dry, 4-hr average	NSPS Subpart GG, 60.334(b)	C	CEM	X	
CO	BAAQMD Cond #366 Part 4a	Y		200 ppm @ 15% O ₂ 3-hour average except during start-up	BAAQMD Cond #366 Part 12a	C	CEM	X	
CO	BAAQMD Cond #366 Part 5a	Y		200 ppm @ 15% O ₂ (combined S-201 & S-202) 3-hour average except during start-up	BAAQMD Cond #366 Part 12a	C	CEM	X	
CO	BAAQMD Cond #366 Part 10	Y		2195 lb/day (natural gas or fuel oil) (combined S-201 & 202)	BAAQMD Cond #366, Parts 10, 12a and 19	C	CEM, Annual source test	X	
SO ₂	BAAQMD Cond #366 Part 2	Y		Maximum 0.12% by wt. Sulfur in fuel oil	BAAQMD Cond #366 Parts 2	P/E	At each delivery, fuel sampling using District's laboratory procedure method 10	X	

1 Ground level Concentration

**Table VII-B
Applicable Limits and Compliance Monitoring Requirements
S-201, Turbine
Continued...**

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance	
								Yes	No
SO ₂	BAAQMD Cond #366 Part 3	Y		Maximum of 0.25% by wt. Sulfur in fuel oil during periods of natural gas curtailment	BAAQMD Cond #366 Parts 2	P/E	At each delivery, fuel sampling using District's laboratory procedure method 10	X	
	BAAQMD Cond #366 Part 11	Y		987 lb/day (natural gas) 40 tons/year (combined S-201 & S-202)	BAAQMD Cond #366 Parts 11	P/E	Fuel sampling using District's laboratory procedure method 10	X	
SO ₂	BAAQMD 9-1-301	Y		GLC ¹ of 0.5 ppm for 3 min or 0.25 ppm for 60 min or 0.05 ppm for 24 hours		N		X	
SO ₂	BAAQMD 9-1-302	Y		300 ppm (dry)		N		X	
	BAAQMD 9-1-304	Y		0.5% wt. Sulfur in liquid fuel		P/E	Fuel certification	X	
SO ₂	NSPS Subpart GG, 60.333(a)	Y		0.015% (vol) @ 15% O ₂ (dry), or 0.8% sulfur in gaseous fuel by weight	NSPS Subpart GG, 60.334 (h)(3)	P/M or EN	Monthly gaseous fuel analysis of current, valid purchase contract, tariff sheet or transportation contract	X	
SO ₂	NSPS Subpart GG 60.333(b)	Y		0.8% sulfur in fuel oil by weight	NSPS Subpart GG, 60.334(h)(1), 60.334(i)(1)	P/E	At each fuel oil delivery, fuel sampling using District's laboratory procedure method 10	X	
Opacity	BAAQMD 6-1-301	N		>=Ringlemann No. 1 for no more than 3 minutes in an hour	BAAQMD Cond #366 Part 19	P/E, during distillate oil combustion	Visible emissions monitoring	X	
Opacity	SIP 6-301	Y		>=Ringlemann No. 1 for no more than 3 minutes in an hour	BAAQMD Cond #366 Part 19	P/E during distillate oil combustion	Visible emissions monitoring	X	
FP	BAAQMD 6-1-310	N		0.15 grain/dscf @ 6% O ₂		N		X	
FP	SIP 6-301	Y		0.15 grain/dscf @ 6% O ₂		N		X	

¹ Ground level Concentration

**Table VII-C
Applicable Limits and Compliance Monitoring Requirements
S-202, Duct Burner**

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance	
								Yes	No
NO _x	BAAQMD 9-9-303.2	N		20.2 ppmv @ 15% O ₂ , dry (adjusted per 9-9-401), except during start-up	BAAQMD 9-9-501	C	CEM	X	
NO _x	SIP 9-9-303.2	Y		20.2 ppmv @ 15% O ₂ , dry (adjusted per 9-9-401), except during start-up	BAAQMD 9-9-501	C	CEM	X	
	BAAQMD 9-9-303.2	N		42 ppmv @ 15% O ₂ , dry during natural gas curtailment or short testing periods	BAAQMD 9-9-501	C	CEM	X	
	SIP 9-9-303.2	Y		42 ppmv @ 15% O ₂ , dry during natural gas curtailment or short testing periods	BAAQMD 9-9-501	C	CEM	X	
NO _x	BAAQMD Cond #366 Part 5	Y		20.2 ppmv – natural gas: @ 15% O ₂ (combined S-201 & S-202), 3 hr avg, except during start up	BAAQMD Cond #366 Part 12	C	CEM	X	
	BAAQMD Cond #366 Part 7	Y		39 ppmv – fuel oil: @ 15% O ₂ (combined S-201 & S-202), 3 hr avg, except during start up	BAAQMD Cond #366 Part 12	C	CEM	X	
	BAAQMD Cond #366 Part 10	Y		547 lb/day when burning natural gas and 1093 lb/day when burning fuel oil (combined S-201 & S-202)	BAAQMD Cond #366 Parts 9 and 12	C	CEM	X	
	NSPS Subpart GG, 60.332(a)(1)	Y		99 ppmv @ 15% O ₂ dry, 4-hr average	NSPS Subpart GG, 60.334(b)	C	CEM	X	
CO	BAAQMD Cond #366 Part 5a	Y		200 ppm @ 15% O ₂ (combined S-201 & S-202) 3-hour average except during start-up	BAAQMD Cond #366 Part 12a	C	CEM	X	
	BAAQMD Cond #366 Part 10	Y		2195 lb/day (natural gas) 2195 lb/day (fuel oil) (combined S-201 & 202)	BAAQMD Cond #366 Parts 10, 12a and 18	C	CEM, Annual source test	X	
SO ₂	BAAQMD Cond #366 Part 11	Y		987 lb/day (natural gas) 40 tons/year (combined S-201 & 202)	BAAQMD Cond #366 Parts 11	P/E	At each fuel delivery, fuel sampling using District's laboratory procedure method 10	X	
SO ₂	BAAQMD 9-1-301	Y		GLC ¹ of 0.5 ppm for 3 min or 0.25 ppm for 60 min or 0.05 ppm for 24 hours		N		X	

SO ₂	BAAQMD 9-1-302	Y		300 ppm (dry)		N		X	
	BAAQMD 9-1-304	Y		0.5% wt. Sulfur in liquid fuel		P/E	Fuel certification	N/A ²	

¹ Ground level Concentration

² Not applicable. Source #41 configured for gaseous fuel only.

Table VII-C
Applicable Limits and Compliance Monitoring Requirements
S-202, Duct Burner
Continued...

Type of Limit	Emission Limit Citation	FE Y/N	Future Effective Date	Emission Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type	Compliance	
								Yes	No
SO ₂	NSPS Subpart GG, 60.333 (a)	Y		0.015% (vol) @ 15% O ₂ (dry) or 0.8% sulfur in gaseous fuel by weight	NSPS Subpart GG, 60.334(h)(3)	P/M or EN	Monthly gaseous fuel analysis of current, valid purchase contract, tariff sheet or transportation contract	X	
SO ₂	NSPS Subpart GG, 60.333 (b)	Y		0.8% sulfur in fuel oil by weight	NSPS Subpart GG, 60.334 (h)(1), 60.334(i)(1)	P/E	At each fuel delivery, fuel sampling using District's laboratory procedure method 10	NA ²	
Opacity	BAAQMD 6-1-301	N		>=Ringlemann No. 1 for no more than 3 minutes in any hour	BAAQMD Cond #366 Part 19	P/E, during distillate oil combustion	Visible emissions monitoring	NA ²	
Opacity	SIP 6-301	Y		>=Ringlemann No. 1 for no more than 3 minutes in any hour	BAAQMD Cond #366 Part 19	P/E, during distillate oil combustion	Visible emissions monitoring	NA ²	
FP	BAAQMD 6-310	N		0.15 grain/dscf @ 6% O ₂			N	X	
FP	SIP 6-310	Y		0.15 grain/dscf @ 6% O ₂			N	X	

¹ Ground level Concentration

² Not applicable. Source #41 configured for gaseous fuel only.