



Sunnyvale

July 30, 2021

Water Pollution Control Plant
1444 Borregas Avenue
Sunnyvale, CA 94088-3707
TDD/TYY 408-730-7501
sunnyvale.ca.gov

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

TV Tracking #: 280

1. RECEIVED IN 07/30/2021
ENFORCEMENT: _____

Attn: Title V Reports

Re: Semiannual Monitoring Report, City of Sunnyvale Water Pollution Control Plant, Facility No. A0733

To Whom It May Concern:

Per Section I, Part F of its Title V permit, the City of Sunnyvale Water Pollution Control Plant (Facility No. A0733) is submitting this Semiannual Monitoring Report for the period from January 1 through June 30, 2021. After reasonable inquiry, we conclude the following regarding this period of operation:

- S-14 exceeded the 200 mmBTU daily limit for one day during June;
- The City received NOV A58384 for the exceedance of TNMNEOC and CO limits during a January 11, 2021, source test of S-15;
- All reports were submitted on time;
- All CEM QA procedures, methodologies, and maintenance were performed as required.

PGF Input Heat Limits Monitoring [Condition 10844 (2)]:

S-14 and S-15 are the two cogeneration engines that comprise the Power Generation Facility. Gas throughput for each fuel type is metered continuously at five-second intervals on a daily basis, well in compliance with the required 15-minute interval. Monthly samples are collected from each fuel stream and analyzed for the high-heat value, which is used with the gas throughput to calculate the daily and consecutive 12-month total heat inputs for each engine to determine compliance.

On June 3, 2021, a slight exceedance of the daily input heat value limit of 200 mmBTU (Condition #10844, Part 2) occurred in S-14. The maximum daily input heat value for this incident was 201 mmBTU on June 3, 2021. The exceedance is associated with a temporary low-pressure condition that developed in the utilized gas pressure system, which impacted the collection of the monthly air-blended natural gas sample on June 14, 2021, and resulted in an abnormally high heat content value of 713 BTU/scf for that component of the S-14 feed gas. The heat content of ABNG typically averages around 470 BTU/scf. Operator intervention reversed the low-pressure condition within 1-hour of its detection. The overlap of

these events was not clear at the time the input heat values were calculated in late June by which time the City was unable to collect a replacement gas sample during normal operating conditions. As such, a calculated conservative heat content value for air-blended natural gas of 565 BTU/scf was substituted for the abnormal analytical result and used to calculate the daily input heat values as described in Condition #10844, Part 7c. The heat content was calculated using measured total and average flow rates of ABNG and natural gas for the month of June and a standard heat content value for natural gas of 1,020 BTU/scf.

In response to the exceedance, the City submitted RCA #08A83 on July 28, 2021, after completing its evaluation of analytical and operational data and identifying the exceedance. The City is in the process of updating its gas sample collection SOP and training Operations staff to prevent potential future impacts to sample collection during abnormal operating conditions. The City will submit 10- and 30-day Deviation Reports in the appropriate timeframe.

Source Test [BAAQMD 8-34-301.4; Condition 10844 (4, 6)]:

On January 11, 2021, Blue Sky Environmental performed annual source testing on the two power generating engines (Sources S-14 and S-15). Results indicated that the TNMNEOC emissions in the exhaust gas for S-15 were 202.3 ppmv @ 3% O₂ and 0.52 g/bhp-hr, confirming its non-compliance and triggering Sunnyvale's submittal of RCA #07X88. CO emissions also exceeded the 2.5 g/bhp-hr limit at an average of 2.98 g/bhp-hr. Sunnyvale took S-15 out of service and performed a top-end overhaul on the engine. The engine was briefly restarted on February 11, 2021, to facilitate retesting and the returned to continuous operation on February 25, 2021. The City was issued NOV A58384 for this incident on July 16, 2021.

PGF Combustion Temperature Monitoring [Condition 10844 (8)]:

The thermocouple data collected during this reporting period are accurate, reflective of the operating conditions of S-14 and S-15, and in compliance with Part 8 of Condition 10844.

PGF Quarterly Emissions Monitoring [9-8-503, 9-8-302.1, 9-8-302.3]:

First and second quarter emissions monitoring events for S-14 and S-15 were conducted on January 11 and May 26, 2021, respectively. All results were in compliance with the applicable emissions limits of 70 ppm NO_x and 2,000 ppm CO.

RICE Oil Change Frequency [Table 2d.13 of NESHAP 63.6603(a)]:

There was no exceedances of the oil and filter change and hose and spark plug inspection 1,440-hour limit established in Table 2d.13 of NESHAP 63.6603(a) for all applicable RICE engines at the facility.

Sulfur Compounds Monitoring [Condition 19978 (2)]:

The results from quarterly monitoring of total reduced sulfur compounds in digester gas used to operate S-16, S-17, and S-18 provided in the following table demonstrate compliance with the 1,550 ppmvd limit:

Total Reduced Sulfur Compounds – Draeger Tube Test Results				
S-16, 17 & 18	Date of Test	Requirement	Result ppmv (dry)	Compliant (Y/N)
Q1 2021	3/10/2021	19978 (2)	1,000	Y
Q2 2021	6/2/2021	19978 (2)	1,300	Y

Emergency Blackstart Generator Reliability-Related Activities [Condition 23110 (3)]:

The blackstart generator (S-19) was decommissioned and removed from the site in June 2020. No reliability-related activities were performed during this reporting period. The City submitted BAAQMD’s Device Data Update (DDU) Form to document the removal of this sources on July 20, 2020.

Emergency Standby Diesel Generator Reliability-Related Activities [Condition 22850 (1)]:

During the reporting period, reliability-related activities performed on the emergency standby diesel generators (S-26 and S-27) were in compliance with the limitation of ≤ 50 hours/year.

Landfill Gas Component System Leak Testing [8-34-301.2]:

First and second quarter monitoring of the landfill gas system components at the Facility were conducted on January 14 and April 13, 2021, to identify any presence of organic compound concentrations above the permit limit of 1,000 ppmv measured as methane. Results from both monitoring events were below the limit.

Landfill Gas Emission Control System [8-34-113.2]:

During the reporting period, the LFG emission control system was in compliance with the shutdown time limitation of ≤ 240 hours/year.

I am the responsible person for the City of Sunnyvale Water Pollution Control Plant. I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate and complete.

Please contact Melody Tovar at (408) 730-7740 if you have any questions or comments on this report.

Sincerely,



Ramana Chinnakotla
 Director, Environmental Services Department