

Riverview Land Preserve

Continuous Monitoring System Quality Control Program

Pursuant to 40 CFR 63, Subpart AAAA

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PRESENTED TO

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PLAN UPDATES AND REVISIONS

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TABLE OF CONTENTS

1.0 INTRODUCTION	1-2
1.1 Site Description.....	1-2
1.2 CMS Description.....	1-3
2.0 PREVENTIVE MAINTENANCE ACTIVITIES, PROGRAM OF CORRECTIVE ACTION, AND SPARE PARTS	2-5
2.1 Process Sensors.....	2-5
2.2 Data Acquisition System.....	2-6
3.0 CMS DATA RECORDING, CALCULATIONS, AND REPORTING	3-7
4.0 CMS CALIBRATION AND ACCURACY AUDIT PROCEDURES	9
5.0 LIMITATIONS	10

1.0 INTRODUCTION

The Riverview Land Preserve (RLP) is a Municipal Solid Waste Landfill (MSW) facility owned and operated by the City of Riverview. RLP is located in Riverview, Michigan. The facility is subject to 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart AAAA as the landfill design capacity exceeds 2.5 million Megagrams and the facility has demonstrated a non-methane organic compounds (NMOC) emission rate exceeding 34 Mg per year.

This plan presents the facility's continuous monitoring system (CMS) quality control program (QCP) per §63.8(d)(2) as required in Table 1 to NESHAP 40 Subpart AAAA. The primary objective of this QCP is to provide a written protocol that describes how CMS equipment which collects data to demonstrate compliance with Subpart AAAA regulations is calibrated and maintained, and how the data produced is recorded, calculated, and reported.

Per the requirements of §63.8(d)(2), this plan summarizes:

- The initial and any subsequent calibrations of the CMS;
- Determination and adjustment of calibration drift of the CMS;
- Preventive maintenance activities performed on the CMS, including spare parts maintained;
- Data recording, calculations, and reporting procedures;
- Accuracy audit procedures, including sampling and analysis methods; and
- A program of corrective action for a malfunctioning CMS.

It is not intended that this manual serve as the maintenance or operating instructions manual for any of the CMS equipment. Due to the variety of equipment included in the system, this manual should be supplemented with manufacturer's recommendations concerning the maintenance and care of the system.

1.1 SITE DESCRIPTION

RLP serves the residents of the city of Riverview, and selected portions of adjacent counties that include a multi-county municipality. The facility accepts most household and commercial wastes, as well as non-hazardous industrial wastes. As of 2020, the landfill design capacity is approximately 39.26 million tons (35.38 million Mg). The landfill began receiving refuse in December 1968 and is expected to reach capacity in the year 2031. LFG generated from the landfill is collected by the facility's Gas Collection and Control System (GCCS) and routed to one or more control devices for combustion.

RLP owns and operates two open flares with the ability to act as LFG control devices per § 63.1959(b)(2)(iii)(A). Each of the two flares are subject to continuous monitoring requirements as control devices under NESHAP Subpart AAAA. All control devices owned and operated by RLP are summarized in the table below.

Table 1: RLP Control Devices

Unit ID	Description	Subpart AAAA Monitoring Requirement
Flare 1	2,131 scfm open flare	§63.1961(c)
Flare 2	4,700 scfm open flare	§63.1961(c)

The two RLP flares are generally operated to provide additional or backup capacity to a third-party owned LFGTE project. During normal operation, approximately 3,000 scfm of landfill LFG produced is controlled by an adjacent LFGTE plant owned and operated by DTE Energy. The plant uses a treatment system to control the gas by compression, filtration and dewatering per the definition of §63.1990 prior combustion to produce energy for commercial use. The treatment system control device is not covered by this CMS plan.

1.2 CMS DESCRIPTION

This plan covers the total equipment that may be required to meet the subpart's data acquisition and availability requirements used to sample, condition (if applicable), analyze, and provide a record of the parameters listed in Table 2 below per the definitions of a continuous parameter monitoring system (CPMS) as defined in § 63.2. Though NESHAP Subpart AAAA requirements cover both CPMS and continuous emissions monitoring systems (CEMS), RLP is not required to perform any continuous monitoring of emissions under Subpart AAAA regulations.

The facility monitors four separate CMS data parameters under NESHAP Subpart AAAA. Per §63.1961(b)(2) and §63.1961(c)(2), the facility is required to continuously monitor LFG flow to both flares by installing, calibrating, and maintaining a gas flow rate measuring device that records the flow to the treatment system at least every 15 minutes. Additionally, the facility must continuously monitor flame presence at the open flare by installing a heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame. Table 2 below summarizes the CMS monitoring parameters and data collection equipment used to comply with Subpart AAAA requirements.

Table 2: CMS QCP Monitoring Parameters & Equipment

Continuously Monitored Parameter	Data Sampling Device	Data Analysis Device	Data Recording Device	Subpart AAAA Monitoring Requirement
Flare 1 LFG Flow	Flowmeter	Flare Station DAS	Flare Station DAS	63.1961(c)(1)
Flare 1 Temperature or Flame Presence	Thermocouple or UV Flame Scanner	Flare Station DAS	Flare Station DAS	63.1961(c)(2)
Flare 2 LFG Flow	Flowmeter	Flare Station PLC/ Flare Station DAS	Flare Station DAS	63.1961(c)(1)
Flare 2 Temperature or Flame Presence	Thermocouple or UV Flame Scanner	Flare Station PLC/ Flare Station DAS	Flare Station DAS	63.1961(c)(2)

The Flare 1 CMS data is collected and managed by a Yokogawa DX1000 data acquisition system (DAS), located in a control panel in the RLP flare compound. Raw process data is collected by a variety of sensors (such as flowmeters or thermocouples) directly measure process parameters listed in this plan and are linked directly to the system's data logger which may convert this raw process data into a useable format. Once received from the sensors, DAS displays trend data on the system's display screen in real time and records the data onto a removeable memory card. Process parameters can be monitored by RLP personnel on the DAS display or by direct download of data from the DAS via memory card.

The Flare 2 CMS data is collected and managed by a Yokogawa FX100 data acquisition system (DAS), located in a control panel in the RLP flare compound. Raw process data is collected by a variety of sensors (such as flowmeters or thermocouples) that directly measure the process parameters listed in this plan and are wired directly to the system's data logger, which may convert this raw process data into a useable format. Once received from the sensors, DAS displays trend data on the system's display screen in real time and records the data onto a removeable memory card. Process parameters can be monitored by RLP personnel on the DAS display or by direct download of data from the DAS via memory card. The Flare 2 CMS has an installed backup FleetZOOM FXA-2309 backup DAS, with remote access that stores data on an external database. Raw process data is collected in the same manner as the primary Yokogawa FX100 DAS via direct link to a variety of sensors. Process parameters can be monitored on a continuous basis remotely by VPN from the facility's network to detect an issue within the system that may require maintenance or repair.

2.0 PREVENTIVE MAINTENANCE ACTIVITIES, PROGRAM OF CORRECTIVE ACTION, AND SPARE PARTS

Throughout the year, RLP may perform routine maintenance on the various components of the CMS equipment covered by this plan. The facility operations staff observe and document the operation of the flare(s) and CMS equipment on regular intervals. If an operator observes that a flare is operating abnormally, or if an operator notes that an operating parameter is far out of its normal range, then the flare component and the associated CMS equipment will be examined, and maintenance action will be taken as appropriate.

Below is a summary of preventative maintenance activities, a program of corrective action for common problems which may occur during normal operation of the facility CMS systems, and a list of spare parts typically maintained on each piece of equipment. This list is not anticipated to be entirely comprehensive, and at all times the facility may conduct additional preventative maintenance activities at its discretion in order to ensure that the treatment system functions in accordance with its originally designed intent.

In general, if any component of the CMS system is out of service, the facility will take immediate corrective steps within 24-72 hours, or as soon as can be scheduled. If a piece of equipment needs preventative maintenance (but is observed to be operating within tolerable ranges) the facility will schedule maintenance activities within 60 days. Documentation of all maintenance activities on the treatment system will be kept on-site including, at a minimum, the equipment description, the type of maintenance performed, and the duration of time required to complete the maintenance.

2.1 PROCESS SENSORS

A sensor is used to collect raw process data for each of the CMS continuously monitored parameters. Temperature or flame presence at each flare is measured with a thermocouple or ultraviolet flame scanner. LFG flow to each flare is measured with an insertion-type flowmeter (FCI model ST98 for Flare 1, and Kurtz model 454FTB-WGF for Flare 2). Sensor data is observed daily by facility personnel, and each sensor is calibrated (if applicable) per manufacturer's recommendations and cleaned or replaced on an as-needed basis in order maintain performance.

CMS sensor malfunction may occur when a sensor is not calibrated correctly or has lost communication with the data logger. The facility's maintenance staff will be the primary source responsible to troubleshoot and repair any sensor malfunctions, and may take corrective procedures such as checking connections, replacing the sensor, or calling a third-party technician to allow for recalibration or further troubleshooting. The facility will document when maintenance is conducted on each of the process sensors. Corrective activities by facility staff, including the contact of a professional if necessary, will typically be performed within 48 hours, or as soon as can be scheduled.

Spare temperature and flame presence sensors are typically maintained by the facility to allow for easy replacement. RLP maintains an inventory of all spare parts, which is subject to fluctuation based on demand and availability, and an up-to-date list can be pulled on request.

2.2 DATA ACQUISITION SYSTEM

The DAS system are paperless data loggers with display which receives incoming process data directly from the sensors and records the data to internal and network databases. Incoming data can be viewed in real-time on the device display. As the system is self-contained and largely software-based, spare parts are not maintained for the DAS unit. Preventative maintenance will consist of calibration and removing dust and debris on an as-needed basis. The facility will replace the unit and update any network equipment (servers, keyboards, monitors, etc.) used to access the software remotely on an as-needed basis.

A malfunction of the DAS system is most likely to occur either when data is either not receiving data because of a communication issue or when data is not being properly logged and/or backed up due to a software malfunction. The facility's staff will be the primary source responsible to troubleshoot the cause of any malfunction and may attempt corrective actions as appropriate such as an examination of settings or a system restart. Correction of a DAS malfunction may require third-party assistance from a software or network professional. The facility will document when any third-party maintenance is conducted on this piece of equipment. Corrective activities by facility staff, including the contact of a professional if necessary, will typically be performed within 48 hours, or as soon as can be scheduled.

3.0 CMS DATA RECORDING, CALCULATIONS, AND REPORTING

CMS records covered by this plan are maintained according to §63.1983(c). Records are maintained for a minimum of five years. Each CMS parameter listed in Section 1.2 of this Plan is recorded on a minimum of 15-minute intervals by the DAS, which backs up data on regular intervals to both the system's storage system and to the backup network-based Fleetzoom data logger. Flow to each flare is monitored and recorded in standard cubic feet per minute, flare temperature is monitored and recorded in degrees Fahrenheit, and flame presence is recorded as an integer value (0 to indicate no flame presence, 1 to indicate flame).

Each month a full report of all CMS parameter data recorded is retrieved from the DAS by facility personnel. Compliance personnel will review the data and note periods of CMS downtime, missing or invalid CMS data, and compliance with regulatory and Title V permit parameters. During this evaluation, manual calculations are performed on the raw data to total the fuel flow and to calculate downtime durations.

Per § 63.1981(h), the facility is required to submit a semi-annual report to the Administrator (the Ohio Environmental Protection Agency (Ohio EPA) Division of Air Pollution Control). The results of the monthly CMS data analysis will be included in the report to meet the following requirements:

- § 63.1955(a) – Any deviations of the requirement to maintain flare flow and temperature or flame presence continuous monitoring records in § 63.1961(b) and § 63.1961(c), or any deviations of the enclosed flare temperature requirements of § 63.1961(c)(1)(i).
- § 63.1981(h)(3) – A description and duration of all periods when the control device or treatment system was not operating and length of time the control device or treatment system was not operating.

4.0 CMS CALIBRATION AND ACCURACY AUDIT PROCEDURES

Calibration is scheduled on CMS components at regular intervals. The insertion-type meters used to determine LFG flow to each of the flares (Kurtz model 454FTB-WGF & FCI model ST98) are calibrated per manufacturer's recommendations. The temperature and flame detection sensors do not have calibration capabilities. These sensors are inspected periodically per the facility's maintenance schedule and replaced with a new manufacturer-calibrated sensor element on an as-needed basis.

As detailed in earlier sections, facility process data is continuously accessible to facility personnel via display screen. As flow, temperature, and flame presence process data are used both by operators and by the flare automatic operating systems to inform operations, missing or invalid data would likely be noticed quickly and may trigger an automatic shutdown of the flare unit. The flare DAS are programmed to monitor communications to the rest of the CMS to assist with the detection of possible missing or invalid CMS data. Communications with the rest of the CMS are monitored and a status screen displays a visual status that indicates whether communications (and continuous monitoring) have been interrupted.

Facility process data is also reviewed in detail monthly (at a minimum) by compliance personnel to note periods of plant downtime, missing or invalid CMS data, and compliance with Title V permit parameters. Any unusual data or trends that may be characteristic of calibration drift or diminishing performance will be brought to the attention of RLP staff for further investigation.

5.0 LIMITATIONS

The work product included in the attached was undertaken in full conformity with generally accepted professional consulting principles and practices and to the fullest extent as allowed by law we expressly disclaim all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose. The work product was completed in full conformity with the contract with our client and this document is solely for the use and reliance of our client (unless previously agreed upon that a third party could rely on the work product) and any reliance on this work product by an unapproved outside party is at such party's risk.

The work product herein (including opinions, conclusions, suggestions, etc.) was prepared based on the situations and circumstances as found at the time, location, scope and goal of our performance and thus should be relied upon and used by our client recognizing these considerations and limitations. Cornerstone Environmental Group, LLC shall not be liable for the consequences of any change in environmental standards, practices, or regulations following the completion of our work and there is no warrant to the veracity of information provided by third parties, or the partial utilization of this work product