UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
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SEP 27 2013

OFFICE OF
AIR, WASTE AND TOXICS

Mrs. Sally McLeod, CEM, REM
Environmental Manager
Sumitomo Metal Mining Pogo LLC
3204 International Street
Fairbanks, Alaska 99701

Dear Mrs. McLeod:

This is the response to the May 14, 2013, submittal from Sumitomo Metal Mining Pogo, LLC (Pogo) as supplemented by letters dated August 6, 2013, and September 2, 2013. Pogo operates a solid waste incinerator (the incinerator) at its mine facility located near Delta Junction, Alaska that is subject to the requirements of the Clean Air Act (CAA) New Source Performance Standards (NSPS) for Commercial Industrial Solid Waste Incineration units (CISWI), 40 C.F.R. Part 60, Subpart CCCC (Subpart CCCC). Pogo has petitioned the U.S. Environmental Protection Agency (EPA) according to 40 C.F.R. § 60.2115 for specific operating limits to be established during an initial performance test and continuously monitored thereafter. The incinerator is a Small Remote Incinerator (SRI) that is considered a new unit under Subpart CCCC. Pogo's SRI does not use a wet scrubber, fabric filter, activated carbon injection, selective noncatalytic reduction, an electrostatic precipitator, or a dry scrubber to comply with the emission limitations under 40 C.F.R. § 60.2105. According to 40 C.F.R. § 60.2115, an owner or operator that does not use one of those control devices must petition the EPA Administrator for specific operating limits to be established during the initial performance test and continuously monitored thereafter. Operating limits will be established during the initial performance test, as discussed below.

Background

According to 40 C.F.R. § 60.2015(a) and 60.2105, the incinerator is subject to the emission limits in Table 8 of Subpart CCCC. Pogo intends to conduct the initial performance test at the end of September 2013 to demonstrate compliance with Subpart CCCC. The incinerator is an ACS Inc. Model PC 0400-VO5-RC6 whose emissions are limited by proper operation and maintenance of the incinerator according to the manufacturer's specifications, and no add-on control device is utilized. The incinerator has one 800,000 Btu/hr primary chamber propane burner, and two 800,000 Btu/hr secondary chamber propane burners. Both chambers are equipped with modulating combustion air blowers. The unit fires only propane as fuel. Pogo does not incinerate waste oil generated at the facility in the incinerator. The anticipated feedstock materials for the incinerator are classified as solid wastes but not hazardous wastes for purposes of the Resource Conservation and Recovery Act (RCRA).

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According to 40 C.F.R. § 60.2115, the petition must be submitted at least 60 days before the performance test is scheduled to begin. The petition was initially submitted to the EPA on May 14, 2013, and the test is currently scheduled to occur in late September 2013, therefore this deadline has been met.

The petition also must include these five items, as listed in paragraphs (a) through (e) of §60.2115:

(a) Identification of the specific parameters Pogo proposes to use as additional operating limits.
(b) A discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters and how limits on these parameters will serve to limit emissions of regulated pollutants.
(c) A discussion of how Pogo will establish the upper and/or lower values for these parameters which will establish the operating limits on these parameters.
(d) A discussion identifying the methods Pogo will use to measure and the instruments Pogo will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments.
(e) A discussion identifying the frequency and methods for recalibrating the instruments Pogo will use for monitoring these parameters.

In its petition, Pogo has proposed limits and averaging times for its proposed operating parameters. The petition itself does not establish the specific limits and averaging times for the parameters; rather, operational limits and monitoring parameters are included in the petition to facilitate and guide the collection of data that is representative of performance of the incinerator during the initial performance test. Operating limits and averaging times will be established after the results of the initial performance test are available for analysis. According to 40 C.F.R. §60.2145 3-hour block average values are used to demonstrate compliance unless a different averaging period is established under 40 C.F.R. § 60.2115. If an averaging period other than 3-hour block average values will be used to demonstrate ongoing compliance, Pogo must present results from the performance test that justify that an alternative averaging time would be more appropriate.

Identification of Parameters

Pogo has identified the following specific parameters it proposes to use as operating limits:

1. Waste Charge-Rate Limit: A maximum charge weight that would be calculated as a rolling average of individual batch loads to the SRI;
2. Charge Interval Limit: Minimum time interval between waste charges;
3. Primary Combustion Chamber Temperature Limit: Minimum temperature that would be calculated as a rolling average of 5-minute average temperature values;
4. Primary Combustion Chamber Burn Time Limit: Minimum burn time after the final load is charged to the primary chamber;

5. Secondary Combustion Chamber Temperature Limit: Minimum temperature that would be calculated as a rolling average of 5-minute average temperature values;
6. Secondary Combustion Chamber Burn Time Limit: Minimum burn time after the end of the primary chamber burn cycle has completed; and
7. Waste Composition: The average (i.e., batch) composition of waste burned. The specific parameters are the percent by weight of each type of waste in the feed stream. The weight percents that would be evaluated against the range established would be calculated as rolling averages. Pogo has classified their waste into three primary types of solid waste. Pogo will not burn hazardous waste in the SRI. The oily absorbs that are burned in the incinerator are sampled and tested and do not exhibit a hazardous characteristic. The three primary types of waste Pogo combusts are:
    a. Municipal solid waste (MSW): comprised of a roughly even mix of Type 2 waste (i.e., refuse consisting of rubbish and garbage from residential sources) and Type 3 waste (garbage consisting of animal and vegetable food wastes);
    b. Sludge: sewage sludge from Pogo's wastewater treatment facility; and
    c. Rags: rags/wipes from maintenance and spill cleanup activities.

Relationship between Parameters and Emissions

Pogo has presented information regarding the relationship between these parameters and emissions of regulated pollutants. Proper and complete combustion is what minimizes the emission of regulated pollutants. The seven key parameters listed above, which impact combustion, were monitored and correlated against the results of a performance test conducted in June 2013 to examine how these parameters relate to the emissions of the regulated pollutants. The results of the June 2013 performance test were provided to EPA as part of the supplementary information submitted on September 2, 2013.

Establishing Upper and Lower Values for Parameters

As Pogo has presented, the correlation between results of the initial performance testing and the operating parameters during that testing indicate that proper and complete combustion is occurring, and forms the basis for understanding where the upper and/or lower operating parameter values should be set. Pogo has proposed the following:

1. The Waste Charge-Rate Limit or individual load weight limit is proposed as a maximum value only with an averaging time for ongoing monitoring. The volume of waste will impact the quality of combustion. Proper and complete combustion could not be assured if more waste was loaded than this value. During the initial performance test, each type of waste in the feed stream of each load will be weighed and the total weight of the load will be calculated and recorded. Pogo proposes that this be monitored as a rolling average of the individual total batch load weights. During the initial performance test, the individual load weights will be monitored and recorded to establish the operating limit and averaging time.
2. Charge Interval Limit is proposed as a minimum value. The frequency with which the SRI is loaded with each individual load will impact the volume of waste in the primary

combustion chamber at any given time. The volume of waste will impact the quality of combustion. The manufacturer's operation manual specified 15 minutes as a default value, designed to provide sufficient time between individual loads for complete combustion of the maximum design load weight. Complete combustion could not be assured if a greater volume of waste is present in the primary combustion chamber than can be completely combusted in the time frame spent in that chamber. During the initial performance test, the charge interval will be monitored as the time between the charge of each load (i.e., the time between when the operator activates the "Feedram Extend" button for each waste load) and recorded to establish the operating limit.

3. Primary Combustion Chamber Temperature Limit is proposed as a minimum value only with an averaging time for ongoing monitoring. The temperature in the primary combustion chamber will impact the quality of combustion. Proper and complete combustion could not be assured if waste was combusted at a lower temperature in the primary combustion chamber than this value. The primary combustion chamber minimum temperature limit will be continuously monitored and recorded at 5-minute intervals, to develop 5 minute average readings, during the initial performance test to establish the operating limit and averaging time.

4. Primary Combustion Chamber Burn Time Limit is proposed as a minimum value only. The length of time a given volume of waste is allowed to burn in the primary combustion chamber will impact the quality of combustion. Proper and complete combustion could not be assured if combustion in the primary chamber occurred for less time than this value. The primary combustion chamber burn time begins when the final waste load is charged to the primary chamber (i.e., when the operator activates the "Feedram Extend" button for the final waste load). This time parameter will be monitored and recorded during the initial performance test to establish the operating limit.

5. Secondary Combustion Chamber Temperature Limit is proposed as a minimum value only with an averaging time for ongoing monitoring. The temperature in the secondary combustion chamber will impact the quality of combustion. Proper and complete combustion could not be assured if waste was combusted at a lower temperature in the secondary combustion chamber than this value. The secondary combustion chamber minimum temperature limit will be continuously monitored and recorded at 5-minute intervals, to develop 5-minute average readings, during the initial performance test to establish the operating limit and averaging time.

6. Secondary Combustion Chamber Burn Time Limit is proposed as a minimum value only. The length of time each batch is allowed to continue to burn in the secondary combustion chamber after the combustion in the primary chamber has ended will impact the quality of combustion. Proper and complete combustion could not be assured if waste was combusted for less time in the secondary chamber than this value.

The secondary combustion chamber burn time limit will begin to be calculated when the primary combustion chamber burn cycle is completed. This time parameter will be monitored and recorded during the initial performance test to establish the operating limit.

7. The Waste Composition Limits are proposed as ranges with a minimum and maximum weight percent for each type of waste to be incinerated. Ongoing compliance would be demonstrated by showing that the average weight percent for each type of waste was within the range established over the averaging time determined to be appropriate. The composition of the feed stream will impact the pollutants emitted and the quality of combustion. The waste composition ranges of MSW, sludge, and rags have been examined using actual incinerator records for the period of May 2, 2012, through August 15, 2013, (360 operating days). This data was used to calculate annual averages for the MSW component, the sludge component and rags/wipes component. The composition of the feed stream may be varied during the initial performance test to evaluate compliance over a range of waste compositions. The upper and lower waste composition values for each waste stream, as well as the averaging time, will be monitored and recorded during the initial performance test to establish the upper and lower value for this operating parameter, for each type of waste in the feed stream, such that proper and complete combustion can be assured.

Methods and Instruments to Measure and Monitor Parameters

Pogo has presented the following methods to be used to measure and continuously monitor the operating parameters. Pogo plans to install an electronic data acquisition system (DAS).

Each type of waste in the feed stream of each batch load will be physically weighed using a Cardinal Model SB-2500S floor scale to calculate a weight percent of each type of waste in the feed stream for that batch. The composition and total weight of each batch load charged to the SRI will be recorded in the DAS. To demonstrate continuous compliance on a per-charge basis a rolling average weight will be calculated with an averaging period to be determined based on the results of the initial performance test. Compliance with the maximum load-weight operating limit and the waste composition operating parameter limits will be determined as the rolling average total batch load weight and rolling average weight percentages for the averaging periods determined.

For the load time interval operating limit, the start time and end time of each charge interval will be monitored through the DAS. The charge interval will begin when the operator activates the "Feedram Extend" button, and end when the same button is activated for the next load. Each charge interval will be continuously measured by the control system electronic clock recorded by the DAS for determining continuous compliance with the charge interval operating limit.

For the primary-chamber and secondary-chamber temperature limits, continuous monitoring will be conducted by the DAS interface with the incinerator's control unit. The temperatures are measured with a K-Type Thermocouple. The DAS will determine 5-minute average temperatures for each combustion chamber. Compliance with the minimum temperature limits will be determined as the 1-hour rolling average temperature for each 5-minute average measurement.

For burn time operating limits, the start time and end time of each chamber will be monitored through the DAS. The primary chamber burn time will begin when the final load is charged, when the operator activates the "Feedram Extend" button, to the primary chamber and continuously measured using an electronic clock until the primary burn cycle is completed. The secondary chamber burn time will begin when the primary burn cycle is completed, and continuously monitored using an electronic clock until the secondary burn cycle is completed. Each total burn time will be used to determine compliance with the applicable operating limit.

Table 1 below summarizes each operating parameter and the corresponding proposed monitoring method.

TABLE 1 OPERATING LIMITS MONITORING PLAN

Parameters Identified as Operating Limits	**Continuous Measurement Methods**	**Measurement Frequency**
Charge Rate	Charge-weight data-entry to DAS	Weigh and record each type of waste in the feed steam for each load and calculate a total load weight prior to charging into incinerator.
Charge Interval	DAS interface with Control System's Clock	Interval start times recorded by DAS
Primary Chamber Temperature	DAS and K-Type Thermocouple	DAS to continuously measure and record temperature, derive 5-minute average values, and determine a rolling average of the 5-min average temperatures.
Primary Chamber Burn Time	DAS interface with Control System's Clock	Start time of final charge time of primary cycle completion recorded by DAS
Secondary Chamber Temperature	DAS and K-Type Thermocouple	DAS to continuously measure and record temperature, derive 5-minute average values, and determine a rolling average of the 5-min average temperatures.
Secondary Chamber Burn Time	DAS interface with Control System's Clock	Time of primary cycle completion and time of secondary burn completion recorded by DAS
Waste Composition	Charge-weight data-entry to DAS	Weigh and record each load and calculate weight percents for each type of waste in the feed stream prior to charging into incinerator.

The instruments to be used for measuring the parameters identified as operating limits are discussed below.

- **Waste Load Weight**. Each bag comprising each incinerator-charge is weighed immediately prior to loading on a Cardinal Model No. 205 electronic weight indicator connected to a Cardinal Model SB-2500S floor scale. The scale has an accuracy of 0.5 pound, or approximately ±1 percent, of the maximum waste load operating limit.
- **Charge Interval, Primary and Secondary Burn Times.** The automatic, computer-based control unit incorporates internal electronic timers that are extremely accurate. The DAS will interface with the electronic clock and timers displayed on the control unit to measure the charge interval and burn times.
- **Primary and Secondary Burn Temperatures.** The temperature measurements will be performed using Type K thermocouples mounted in each combustion chamber. The Type K thermocouple has an accuracy of ±0.4 percent at the operating temperatures of the primary and secondary chambers. The control unit presents digital displays of real time chamber temperatures. The DAS will interface with the incinerator's control unit and thermocouple output will be continuously recorded. The DAS will be programmed to calculate five-minute average temperature values, and use these values to calculate rolling average temperatures.

The following discusses the frequency and methods for recalibrating instruments to be used for monitoring parameters.

- On an annual basis, Pogo will use certified standard weights to confirm the scale's accuracy is ±1 percent of the incinerator's maximum load weight limit.
- ACS, Inc. will perform an annual inspection and maintenance service on the incinerator during which all systems, including the electronic timers, are verified for accuracy.
- ACS, Inc. will perform an annual inspection and maintenance service on the incinerator during which the thermocouples are checked for accuracy and replaced as necessary.

Determination

Pogo has presented information regarding the relationship between the proposed parameters and emissions of regulated pollutants. Pogo identified how the upper and/or lower values would be established, what the measurement methods would be, the monitoring instruments, the relative accuracy and precision of those methods and instruments, and the frequency and methods for recalibrating the instruments.

The EPA hereby accepts Pogo's petition to establish operating limits during the initial performance test. If you have any questions regarding the content of this letter, please contact Heather Valdez, Environmental Engineer, at (206) 553-6220.

Sincerely,

Wenona Wilson, Manager
Tribal and Air Toxics Unit

cc: Robin Wagner, Alaska Department of Environmental Conservation