UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAY 13 2013

REPLY TO THE ATTENTION OF:

Douglas Harris, General Manager
Veolia ES Technical Solutions, L.L.C.
7 Mobile Avenue
Sauget, Illinois 62201

Re: EPA's comments on Veolia ES Technical Solutions, L.L.C.'s Comprehensive Performance Test Plans for Incinerators 2, 3, and 4

Dear Mr. Harris:

Veolia ES Technical Solutions, L.L.C. (Veolia) submitted its Comprehensive Performance Test (CPT) plans and Quality Assurance Project Plan (QAPP) for Incinerators 2, 3, and 4 at its Sauget, Illinois facility to the U.S. Environmental Protection Agency on September 5, 2012. Veolia is required to conduct a CPT pursuant to the Clean Air Act (CAA) National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors, 40 C.F.R. Part 63, Subpart EEE (HWC MACT). Prior to commencing the CPT, Veolia must submit a complete CPT plan for each incinerator to EPA for review and approval or intent to deny, 40 C.F.R. § 63.1207(e). The HWC MACT lists specific information that HWCs must provide in their CPT plans. Upon review of Veolia's September 5, 2012 submittal, EPA has discovered that the CPT plans and QAPPs are missing required information. EPA cannot approve the CPT plans or the QAPPs until they meet the requirements of the HWC MACT, including providing all of the required information. Therefore, EPA is providing Veolia with notice of its intent to deny the approval of its September 5, 2012 CPT plans.

Specifically, Veolia's September 5, 2012 CPT plan and QAPP failed to include the following information:

CPT Comments:

1. Pursuant to 40 C.F.R. § 63.1206(b)(2), EPA must determine compliance with the emission standards of this subpart as provided by § 63.6(f)(2). Therefore, due to the synergistic nature of chlorine and mercury, Veolia must test Incinerator 4 for dioxin/furans (D/F), mercury (Hg), at the maximum chlorine level over the past five years at the same time with runs at each: low, medium, and high temperatures. At each Incinerator 2 and 3, Veolia must test for Hg and D/F during the same test runs with at least one run at the maximum chlorine level over the past five years and at least one run at low chlorine.

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Recycled Paper (50% Postconsumer)

2. Pursuant to 40 C.F.R. § 63.1206(h)(2), pretesting is defined as: (i) Operations when stack emissions testing for D/F, Hg, semi-volatile metals (SVMs), low-volatile metals (LVMs), particulate matter (PM), or hydrochloric acid or hydrogen chloride (HCl/Cl_2) is being performed; and (ii) operations to reach steady-state operating conditions prior to stack emissions testing under paragraph (g)(1)(iii) of this section. Veolia's operating parameter limits (OPLs) will be waived ONLY during the testing period and the time it takes for operations to reach steady-state operations prior to each run that Veolia has claimed are required to reach steady-state operation. Veolia has not satisfactorily substantiated how its requested 720-hour pretesting period meets the above definition. Therefore, EPA will not approve waiving the OPLs for 720 hours prior to the test.

3. Pursuant to 40 C.F.R. § 63.1207(f)(1)(i)(A), the CPT plan must include an analysis of each feedstream, including hazardous waste, other fuels, and industrial furnace feedstocks, as fired. The analysis must include the heating value, and concentrations of ash, SVMs, LVMs, mercury, and total chlorine (organic and inorganic). EPA recognizes that Veolia may have waste profiles for several hundred hazardous wastes that it receives during the course of its business. However, EPA requests that Veolia include in the CPT plan the waste profile [with the information listed in 40 C.F.R. § 63.1207(f)(1)(i)(A)] for each waste that Veolia plans to burn during the performance test along with the sampling procedure and analysis appropriate for each waste.

4. Pursuant to 40 C.F.R. § 63.1207(f)(1)(iii), the CPT plan must include a detailed description of the HWC. In Table 2-1 of the CPT plan for each Incinerator 2 and 3, Veolia indicates an external combustion chamber length for both primary and secondary combustion chambers of "1." However, the narrative in Section 2.3.2 indicates the external length is 17.5 feet. Please explain or correct this inconsistency. Additionally, Veolia should include units of measurement for the external length, external diameter, and internal diameter in Table 2-1. Veolia should also correct the Date of Manufacture from "1" to the correct date.

5. Pursuant to 40 C.F.R. § 63.1207(f)(1)(iii)(F), the CPT plans must include a detailed engineering description of the automatic waste feed cut off (AWFCO) system. In Section 2.8.1 of the Veolia's CPT plan, Veolia stated that it tests the AWFCO system biweekly. Pursuant to 40 C.F.R. § 63.1206(c)(3)(vii), Veolia must test the AWFCO system and associated alarms at least weekly to verify operability, unless it is documented in the operating record that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. Veolia made a conclusory statement in the test plans that the AWFCO is tested biweekly because weekly testing would interfere with operations and potentially increase emissions. EPA will consider the biweekly testing if Veolia provides documentation to demonstrate that weekly testing will unduly restrict or upset operations. Please submit a copy of the required operating record documentation and summarize that information in Section 2.8.1 of the CPT plan.

6. Pursuant to 40 C.F.R. § 63.1207(f)(1)(vii), the CPT plan must include a description of, and planned operating conditions for, any emission control equipment that will be used.

Section 2.5 of the Veolia's plans provides a description of the air pollution control equipment. For Incinerators 2 and 3, please amend Section 2.5.1.1 to identify the sorbent feedrate. Section 2.5.1.2 notes that the spray dry absorber (SDA) cools the combustion gases from between 1600 degrees Fahrenheit (°F) and 2000°F to between 300°F and 500°F. Please amend Section 2.5.1.2 to include the flow rate of quenching water. For Incinerator 4, please amend Section 2.5.1.2 to identify the sorbent feedrate. Section 2.5.1.3 notes that the SDA cools the combustion gases from between 600°F and 800°F to between 300°F and 500°F. Please amend Section 2.5.1.3 to include the flow rate of quenching water.

7. Pursuant to 40 C.F.R. § 63.1207(f)(1)(viii), the CPT plan must provide procedures for rapidly stopping the hazardous waste feed and controlling emissions in the event of an equipment malfunction. In Sections 2.3.6 and 2.4 of Veolia's CPT plan, Veolia specifies how it plans to rapidly stop the feed; however, Veolia does not specify how it plans to control emissions. Please modify the CPT plan to specify how Veolia plans to control emissions in the event of an equipment malfunction during the CPT.

8. Pursuant to 40 C.F.R. § 63.1207(f)(1)(xii), the CPT plan must include documentation justifying the duration of system conditioning required to ensure the combustor has achieved steady-state operations. In Section 4.9, Veolia indicated that Incinerator 4 has a solids residence time of 30 minutes and Incinerator 2 has a solids residence time of 60 minutes. However, the CPT plans provide for a 15-minute conditioning time. Please revise the time required to meet steady state operations to reflect the residence time for solids.

9. Pursuant to 40 C.F.R. § 63.1207(f)(1)(xx)(B), the CPT plan for Incinerator 4 must provide key parameters that affect carbon adsorption, and the operating limits Veolia will establish for those parameters based on the carbon used during the performance test. In Table 1-2 for Incinerator 4, Veolia failed to include the carbon feedrate. The carbon feedrate OPL is proposed to be the average of three runs. Veolia needs to consider the carbon to mercury ratio when evaluating each run. The carbon-to-mercury ratio is an important variable in quantifying mercury removal. Therefore, Veolia must conduct testing at a sufficient number of different carbon-to-mercury ratios to be able to understand the synergistic relationship between carbon and mercury. *See Modeling Sorbent Injection for Mercury Control in Baghouse Filters: I—Model Development and Sensitivity Analysis*, Flora, J., et al, Journal of Air and Waste Management Association, Volume 53, pp. 489-496, April 2003.

10. In Section 4.6 of its CPT plans, Metals Extrapolation Method, Veolia indicates that it plans to extrapolate to higher feedrate limits than what is actually fed during the CPT. Consistent with current EPA guidance and the criteria in 40 C.F.R. §§ 63.1209(l)(1)(v) and 63.1209(n)(2)(vii), EPA cannot approve Veolia's proposed extrapolation methodology until EPA has reviewed and considered whether the performance test metal feedrates are appropriate, based on historical metal feedrate data, and whether the

extrapolated feedrates requested are warranted.[1] Pursuant to 40 C.F.R. § 63.1207(f)(1)(x), because Veolia is requesting to extrapolate metal feedrate limits from the performance test levels under 40 C.F.R. § 63.1209(l)(1)(v) and (n)(2)(vii)[2], the test plans must include:

(a) A description of the extrapolation methodology and rationale for how the approach ensures compliance with the emission standards. Section 4.6 of the CPT Plans, states, "This is appropriate since it is generally agreed that [system removal efficiencies] SREs at higher feedrates would be at least as good as those observed at the lower level." However, Veolia has not provided data to support this statement. Please amend Section 4.6 of the CPT plans to include a more robust explanation of how the extrapolated feedrate limits will adequately ensure compliance with the emission standards, including documentation of observed SREs at the requested extrapolated feedrates;

(b) Documentation of the historical range of normal (i.e., other than during compliance testing) metals feedrates for each feedstream. EPA will not entertain approval of an extrapolation methodology that requests feedrate limits that are significantly higher than the facility's historical range of feedrates. To consider a request for an extrapolated feedrate limit, it must be limited to levels within the range of the highest historical feedrates for the source;[3]

(c) Documentation that the level of spiking recommended during the performance test will mask sampling and analysis imprecision and inaccuracy to the extent that the extrapolated feedrate limits adequately assure compliance with the emission standards. Note that the intended purpose of metal spiking when

---

[1] Veolia is proposing to calculate feedrate limits for each metal category by dividing the maximum emission rate determined using 75% of the emission standard for that category by 1 minus the system removal efficiency (as a percentage) for the spiked compound representing that metal category, and to limit the maximum feedrate for any one metal category to three times the spiked feedrate during the testing. *See* Section 4.6 of the CPT plans.

[2] 40 C.F.R. § 63.1209(l)(1)(v) states:

> In lieu of establishing mercury feedrate limits as specified in paragraphs (l)(1)(i) through (iv) of [Section 63.1209], you may request as part of the performance test plan under §§ 63.7(b) and (c) and §§ 63.1207 (e) and (f) to use the mercury feedrates and associated emission rates during the comprehensive performance test to extrapolate to higher allowable feedrate limits and emission rates. The extrapolation methodology will be reviewed and approved, as warranted, by the Administrator. The review will consider in particular whether:
>
> (A) Performance test metal feedrates are appropriate (*i.e.*, whether feedrates are at least at normal levels; depending on the heterogeneity of the waste, whether some level of spiking would be appropriate; and whether the physical form and species of spiked material is appropriate); and
> (B) Whether the extrapolated feedrates you request are warranted considering historical metal feedrate data.

40 C.F.R. § 63.1209(n)(2)(vii) provides the requirements for requesting approval to extrapolate to higher allowable feedrate limits and emission rates for SVMs and LVMs.

[3] *See* 62 *Fed. Reg.* 24211, 24238, Fn 51, and 64 *Fed. Reg.* 52946-529447.

conducting CPTs is to enable a facility to verify compliance with HWC MACT limits under worst-case conditions. Therefore, if Veolia spikes metals when conducting CPTs, as proposed in the CPT plan, EPA will generally use the metal spike rates and the native mercury, SVM and/or LVM content of the waste to set the feedrate limit with little or no extrapolation, provided the corresponding stack emissions assure compliance with all MACT limits with an ample margin of safety; and

(d) For Incinerator 4, documentation of the activated carbon injection rate that is required to maintain the calculated mercury system removal efficiency at the extrapolated mercury feedrate. EPA will not approve a mercury extrapolation methodology for Incinerator 4 that does not document the carbon injection rate required to achieve and maintain the projected mercury removal efficiency at the proposed extrapolated mercury feedrate.

11. Pursuant to 40 C.F.R. §§ 63.7(e)(1) and 63.1207(g), Veolia must conduct performance testing under operating conditions representative of the extreme range of normal conditions.[4] In order to conduct performance tests under operating conditions that represent the extreme range of normal conditions, Veolia must feed each metal group (i.e., mercury, LVM, and SVM) at no less than the highest 12-hour rolling average during the previous 5 years. Please amend the CPT Plan to include the 12-hour rolling average data for mercury, LVM, and SVM for the previous 5 years. Veolia must amend the proposed feedrate ranges to ensure the proposed feedrates during the CPT capture the extreme range of normal conditions.

12. Pursuant to 40 C.F.R. § 63.1209(n)(4), Veolia must establish a SVM/LVM maximum, total chlorine, and chloride feedrate OPL. Thus, Veolia must feed chlorine at its normal or higher 12-hour rolling average feedrate. (On September 30, 1999, EPA provided the rationale for normal or higher chlorine feedrates during the SVM and LVM tests. *See* 64 *Fed. Reg.* 52946.) Veolia included an expected feedrate for chlorine during the test in the CPT plan but did not provide documentation to demonstrate that those levels are at its normal or higher 12-hour rolling average feedrates. Please amend the CPT plans to include such documentation.

13. Pursuant to 40 C.F.R. § 63.1207(g)(1)(i)(B), the ash feedrate during the SVM and LVM performance test must be normal or higher. Please amend the CPT plans to include the highest 12-hour rolling average ash feedrate during the previous 5 years and the planned ash feedrate for the SVM and LVM performance test.

14. Pursuant to 40 C.F.R. § 63.1208(b)(8), Veolia must use reliable analytical methods to determine feedstream concentration of metals, chlorine, and other constituents. It is Veolia's responsibility to ensure that the sampling and analysis procedures are unbiased, precise, and that the results are representative of the feedstreams. Please

[4] 64 Fed. Reg. 52922 clarifies that "sources will operate under "worst-case" conditions during the comprehensive performance tests..."

amend the CPT plan and Quality Assurance Project Plan (QAPP) to include the following information:

CPT Plan Analytical Method Comments:

(A) In Section 2.2.1.2, Veolia references its Resource Conservation and Recovery Act (RCRA) Waste Analysis Plan (WAP) and CAA Feedstream Analysis Plan (FAP). For the purpose of the upcoming CPT, Veolia must follow the requirements in an EPA-approved CPT plan to the extent that they differ from the WAP or FAP. Furthermore, this letter and any potential subsequent approval of Veolia's CPT plan should not be misconstrued as approval of Veolia's current WAP and/or FAP.

(B) In Section 4.5, Veolia must include detailed descriptions of spike preparation procedures including manufacturer certificates of purity, scale calibration documentation, and detailed lab methodology demonstrating good laboratory practices for preparing the spikes. Provided that these procedures are appropriate and carried out with good practices, the best estimate of spike feedrate will be based on the concentrations mathematically calculated from a mass balance of spike preparation. Laboratory analysis of spike grab samples can be used to confirm the spike concentration by showing a comparable concentration; however, the spike mass balance will yield the best estimate of spike concentration. Additionally, please replace the word "verified" with "confirmed." EPA also requests that Veolia notify us, at least four weeks in advance, of when the spikes will be prepared, to allow EPA to witness the preparation, if we deem it necessary.

(C) In Section 4.5.4, please provide the standard operating procedure (SOP) for producing the mercury spike solution and vials.

(D) In Section 5.1, EPA requests that Veolia plan for the preparation of duplicate samples in the event that EPA or Illinois Environmental Protection Agency requests split samples for confirmatory analysis.

(E) In Section 5.1.1, Veolia must state who will be collecting and compositing waste samples. Additionally, the spike solution samples collected need to be analyzed and not archived. The narrative in this section indicates there will be two chromium spike samples collected per run and Table 5-1 indicates three. Please rectify this discrepancy.

(F) In Table 5-2, please explain why Veolia believes only three grab samples are adequate for characterizing solid-matrix waste streams.

(G) In Section 5.2, Veolia must clearly state that results are to be provided on an *as received* or *wet-weight* basis. Veolia must not allow pre-dried samples to be analyzed for volatile constituents, such as mercury.

(H) In Section 5.4, Veolia references a very outdated EPA document. Please use and reference the *EPA Requirements for Quality Assurance Project Plans (QA/R-5)*, which EPA has attached.

(I) In Section 5.4.2, please indicate all the laboratories and sub-laboratories Veolia plans to use. Veolia shall provide all internal and contracted laboratory SOPs with the test plan.

QAPP Comments:

Veolia should follow the guidance at the *EPA Requirements for Quality Assurance Project Plans (QA/R-5)* or the QAPP development. Specifically, Veolia must should include and/or correct the following in the QAPP:

1. In Section 1.0, Veolia must include the missing required elements of a QAPP, such as distribution list, problem definition, and data quality objectives.

2. In Section 2.0, Veolia must indicate who will perform data validation.

3. In Section 3.0, on page 3 of 3, Veolia must state all the quality objectives for all sampling and analysis.

4. In Section 4.4, Veolia must submit with the CPT plans the profile of each waste it plans to burn during the CPT.

5. In Section 4.5, Veolia must state the SOP and quality assurance objectives for the waste feed spiking. The spike samples should be labeled as confirmed, not verified.

6. In Section 4.7, Veolia must correct the conditioning times to account for solids-residence time.

7. In Section 6.0, Veolia must include a discussion of compositing and sample splitting procedures. For example, will samples be composited in a safe manner, such as in a laboratory hood?

8. In Section 6.4, Veolia must provide names for all sub-contract laboratories and identify their respective analyses.

9. In Section 8.0, Veolia must provide all laboratory specific SOPs with the QAPP.

10. In Section 8.5, Veolia must state which moisture analysis method will be used by what lab. Veolia should specify that results will be presented on an *as received* or *wet weight* basis and that samples to be analyzed for volatile components, such as mercury, will not be dried before extraction.

11. In Section 9.1.2, Veolia must include a discussion or reference to compositing and sample splitting procedures.

12. In Section 9.2.6, Veolia must provide the procedure for spike preparation.

13. In Section 10.1.2, Veolia must account for the weight of charge boxes as fed. The boxes contribute to the weight of material fed to the incinerator, but are not expected to include the same amount of MACT metals as in the waste. The concentrations of MACT metals within the waste should be applied to the weight of the waste only in the mass balance, not the combined weight of the charge box and waste.

14. In Section 10.2, Veolia must include who will independently validate the data and how it will be validated. Using the laboratory validation is not acceptable.

15. In Section 11.0, Veolia must include who will perform the quality control analysis.

Veolia should note that in Table 2-3 of the CPT plan, Veolia incorrectly identifies the mercury OPLs. The table must include the corrected mercury limits based on the spike preparation/mass balance for calculating actual feedrates from the 2008 test burns as follows:

- The Incinerator 2 mercury feedrate adjusted for spike mass balance is 0.00165 lbs/hr.
- The Incinerator 3 mercury feedrate adjusted for spike mass balance is 0.0018 lbs/hr.
- The Incinerator 4 mercury feedrate is 0.0214 lbs/hr.

EPA's comments in this letter are solely for the purpose of conducting a CPT consistent with the HWC MACT. If Veolia intends to rely on the performance test to establish a mercury system removal efficiency for Veolia's RCRA permit, Veolia should consult with the appropriate RCRA permitting authority before finalizing its CPT plan.

EPA would also like to clarify that the Agency's approval of a CPT plan or lack of comment on ancillary references in a CPT plan, such as Veolia's Feedrate Analysis Plan, should not be deemed to be approval of such ancillary references.

Veolia is required to conduct a CPT pursuant to the HWC MACT, within 61 months of the August 5, 2008 test Veolia used for data-in lieu of its last CPT. On November 13, 2012, Veolia requested an extension under 40 C.F.R. § 63.1207(i). EPA sent a letter on December 13, 2012 outlining the deficiencies in the extension request. Since EPA did not grant Veolia's request for an extension, Veolia must commence its next CPT by September 5, 2013.

If you have any questions regarding this response, please contact Sarah Marshall, at (312) 886-6797, Shannon Downey at (312) 353-2151, or David Ogulei at (312) 353-0987, of my staff.

Sincerely,

George T. Czerniak
Director
Air and Radiation Division