United States Environmental Protection Agency: Region 5

Proposed Reopening of Air Pollution Control Title V Permit to Operate Issued to Veolia ES Technical Solutions, L.L.C., 7 Mobile Avenue, Sauget, Illinois Permit No. V-IL-1716300103-08-01; Expires October 12, 2013

Docket ID No. U.S. USEPA-R05-OAAR-2012-0649

Comments and Affidavit of Michael Fuchs
In Support of Veolia ES Technical Solutions, L.L.C.

I, Michael Fuchs, being over the age of 18 and of sound mind, state and depose under oath as follows:

1. I am a Project Manager in the Measurements Group in URS Corporation's Austin, Texas office. I primarily manage projects related to the treatment of hazardous waste (primarily combustion); emissions measurements including source testing; and regulatory compliance (RCRA, TSCA, and HWC MACT) for hazardous waste combustion facilities. I prepare test plans and QAPPs; supervise trial burns and related projects; and prepare reports and regulatory filings. URS has been working with Veolia ES Technical Solutions, L.L.C.'s Sauget facility ("Veolia") in meeting regulatory requirements of the HWC MACT. I have attached my curriculum vitae hereto as Attachment 1 and incorporate it as if set forth herein.
2. I have reviewed portions of the Draft Permit and the Statement of Basis ("Statement") dated January 2013 for Permit No. V-IL-1716300103-08-01 issued to Veolia. I focused in particular on the portions of the Draft Permit and Statement relating to the Cooper Environmental Services, LLC /Pall Corporation Power Generation Group Xact 640 Multi-Metal Continuous Emissions Monitoring System ("Cooper/Pall CEMS").

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2. I have reviewed portions of the Draft Permit and the Statement of Basis ("Statement") dated January 2013 for Permit No. V-IL-1716300103-08-01 issued to Veolia. I focused in particular on the portions of the Draft Permit and Statement relating to the Cooper Environmental Services, LLC /Pall Corporation Power Generation Group Xact 640 Multi-Metal Continuous Emissions Monitoring System ("Cooper/Pall CEMS").

3. I have over 35 years of experience in conducting air pollution emission measurements and assessing the performance of air pollution measurement technologies at numerous combustion sources. Through projects I have performed at URS over the past several years, I have become familiar with multi-metals and mercury CEMS technology. I know of no hazardous waste incinerator currently operating multi-metals CEMS technologies.
4. Due to my familiarity with multi-metals and mercury CEMS technology, Veolia requested that I review the Statement of Basis. I am familiar with the technology employed by the multi-metals CEMS Xact 640 device referenced in the Statement of Basis. The Xact multi-metals CEMS was developed by Cooper Environmental Services, LLC, ("Cooper") and has now licensed the system to Pall Corporation ("Pall"). The Xact multi-metals CEMS uses x-ray fluorescence for the measurement of metals collected on filter tape.
5. During my review, I noted that the Statement of Basis stated that "multi-metals CEMS has been proven to be reliable for measuring actual emissions of HAP metals from a hazardous waste combustor such as Veolia." Statement of Basis at 23. The Statement of Basis also sets forth: 1) that multi-metals CEMS was used by Evonik Degussa Corporation ("Evonik") after it purchased the Tippecanoe Laboratory facility in 2010; 2) the U.S. Army successfully installed and evaluated a multi-metals CEMS on one of its hazardous waste incinerators; and 3) that the U.S. Department of Defense purchased three Xact units for use at army munitions incinerators. Statement of Basis at 24 & n.33. However, upon investigation, I could not find a single hazardous waste incinerator that is currently using multi-metals CEMS and could not find any documentation that would support USEPA's claim that multi-metals CEMS

3. I have over 35 years of experience in conducting air pollution emission measurements and assessing the performance of air pollution measurement technologies at numerous combustion sources. Through projects I have performed at URS over the past several years, I have become familiar with multi-metals and mercury CEMS technology. I know of no hazardous waste incinerator currently operating multi-metals CEMS technologies.
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has been proven to be reliable for measuring actual emissions of HAP metals from a hazardous waste combustor such as Veolia.

6. USEPA did not identify any hazardous waste combustors in the Statement of Basis that are similar to Veolia's incineration units, either operationally or with regard to the types of wastes that are incinerated. Veolia is a commercial hazardous waste incinerator. Veolia burns a heterogenous feedstream in its incinerators. The feed can vary significantly based on Veolia's clients. Eli Lilly, the U.S. Army; and the U.S. Department of Defense (collectively "Sole Source Incinerators") all have very few clients and the clients have, for the most part, homogenous feedstreams. Due to the variety of wastes that Veolia accepts, the metals content in Veolia's feedstreams will likely vary considerably compared to these Sole Source Incinerators. This significant variance in metals content would likely affect the ability of multi-metals CEMS to produce valid data over an extended period. Additionally, due to the design and operation of Veolia's air pollution control systems, the moisture content of stack gas from Veolia's incinerators is considerably higher than most incinerators. The concentration of moisture in the stack gas from Veolia's incinerators will likely have a negative impact upon the operation of multi-metals CEMS and their ability to produce valid data. To my knowledge, multi-metals CEMS have not been operated on incinerators with moisture concentrations similar to those presented by the stack gas from the incinerators at Veolia. Given these facts, multi-metals CEMS technology has not been demonstrated to be reliable—and has not been proven to be reliable—for measuring actual emissions of HAP metals from hazardous waste combustors such as Veolia.

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7. In addition, based on information I have received, Evonik no longer uses a multi-metals CEMS on the incinerator at the Tippecanoe facility. The Evonik multi-metals CEMS is no longer in operation for functional and economic reasons.
8. Further, the Statement of Basis sets forth that "the U.S. Department of Defense has purchased three Xact units for use at army munitions incinerators." Statement of Basis at 24 n.31. I was advised that Veolia received information from Pall that indicated that Larry Wells with the U.S. Army at the Tooele Army Depot ("TEAD") in Tooele County, Utah, may have additional information on how the Xact units have been utilized.
9. I contacted Mr. Wells on January 29, 2013. Mr. Wells related that TEAD had two Xact multi-metals CEMS with one installed on each of the two incinerators at TEAD. Of the two incinerators, one is a unit used for testing and the other is used for production. The unit used for testing only operates periodically, while the production unit operates more often. Mr. Wells said that, while there is a Xact multi-metals CEMS at the test unit, he was not aware that it had ever been operated. Mr. Wells then introduced me to his colleague, Joe Peterson, who is involved in the operation/monitoring of the production incinerator at TEAD. Mr. Peterson recalled that the Xact multi-metals CEMS was installed and calibrated when it was acquired (in approximately 2007) and that testing of the production furnace was performed shortly thereafter that allowed comparison of measurements performed by the multi-metals CEMS to an EPA reference method. He also remembered that the Xact multi-metals CEMS was operated for about 15 to 20 days before it failed mechanically. Mr. Peterson said that the Xact multi-metals CEMS has not operated since it failed. Based my phone conversations with both Mr. Wells and Mr.

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Peterson, it is apparent that, while both of the Xact multi-metals CEMS are still physically present at TEAD, they are not being used and are not operational.

10. The third Xact multi-metals CEMS referenced in footnote 31 of the Statement of Basis has not been located based upon the information provided by USEPA and Pall. It is not known if a third Xact system, which USEPA represents was sold to the U.S. Department of Defense for disposing of munitions, is in use. In any case, munitions incinerators are not commercial hazardous waste incinerators like Veolia. Munitions incinerators are more likely to have a homogenous feed; therefore a multi-metals CEMS employed on a munitions incinerator would likely not face the same challenges as presented by the high temperature and high moisture environment found in Veolia's stacks.

FURTHER AFFIANT SAYETH NOT.

Michael Fuchs

SWORN AND
SUBSCRIBED Before me
this day of March, 2013.

Notary Public

VALERIE J. TEACLE
Notary Public, State of Texas
My Commission Expires
December 19, 2013

My Commission Expires:

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Expertise
- ✓ Project Management
- ✓ Air Regulatory Compliance (Federal and State, RCRA, TSCA, and HWC MACT)
- ✓ Source Emissions Testing: U.S. EPA 40 CFR Part 60 and 75, SW-846, and ASTM Sampling Methods
- ✓ Trial Burn Plans, Comprehensive Performance Test (CPT) Plans, Confirmatory Performance Test (CfPT) Plans and Quality Assurance Project Plans
- ✓ Trial Burn, CPT, and CfPT Reporting
- ✓ HWC MACT Regulatory Filings

Education
BS, Chemistry, Southwest Texas State University (now Texas State University), 1973

Training
Hazardous Waste Operations & Emergency Response (HAZWOPER)

HAZWOPER Refresher, Annually

Basic Plus Refresher, Annually

Qualifications

Mr. Michael Fuchs is a Principal Project Manager in the Measurements Group in URS' Austin office, and has over 35 years of experience doing environmental consulting. Over the past 25+ years, he has focused on the permitting of hazardous waste combustion units including RCRA and TSCA incinerators, RCRA BIF (Boiler and Industrial Furnace) units, and units subject to the *National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors* (i.e., the *HWC MACT*).

Mr. Fuchs began his career performing source testing and now manages projects for both industrial and government clients while continuing to provide hands-on participation. Mr. Fuchs primarily manages projects related to the treatment of hazardous waste (primarily combustion); emissions measurements including source testing; and regulatory compliance (RCRA, TSCA, and HWC MACT) for hazardous waste combustion facilities. He actively participates in those projects preparing test plans and QAPPs; supervising trial burns, CPTs, and related projects; and preparing reports and regulatory filings. Mr. Fuchs manages the trial burns, CPTs, and related projects and the development, installation, and annual RATAs of the mercury monitoring system at TOCDF.

Similar Work Experience

- **Project Manager, TOCDF Alternative Monitoring Request (AMR) Mercury Monitoring of the MPF, 2006, Tooele, UT.** An AMR was developed and prepared for the MPF at TOCDF (an incinerator) to provide HWC MACT compliance data for the mercury standard. The AMR is based on Appendix K. URS developed the sampling and analytical procedures, procured all systems for sampling and analysis, transferred the sampling and analysis procedures to TOCDF, and trained personnel at TOCDF. SOPs were prepared for integral procedures.

- **Project Manager, TOCDF RATA of the AMR Mercury Monitoring System, Annually 2006 - 2012, Tooele, UT.** A RATA (Relative Accuracy Test Audit) of the AMR mercury compliance monitoring system of the MPF (I.e., an incinerator at TOCDF) is performed annually in accordance with EPA Performance Specification (PS) 12A. The RATA was initially performed in 2006 using EPA Method 29 as the reference method. Since 2006, the reference method used in the RATAs has been EPA Method 30B with Ohio Lumex on site analysis.

- **Project Manager, TOCDF Mercury Process Monitoring for Mercury from the MPF, 2006, Tooele, UT.** Mercury Process Monitoring (MPM) of the MPF was performed using an adaptation of Appendix K with on site analysis using an Ohio Lumex analyzer. URS developed the sampling and analytical procedures, transferred the sampling and analysis procedures to TOCDF, and trained personnel at TOCDF.

- **Project Manager, TOCDF Preparation of AMR and MPM Sorbent Traps, 2006, 2007, 2008, 2009 Tooele, UT.** URS prepares the AMR (3-bed, spiked) and MPM (2-bed, unspiked) sorbent traps for TOCDF. The AMR and MPM sorbent traps are shipped to TOCDF weekly.

- **Project Manager, TOCDF Quarterly Calibration of Appendix K Meter Boxes, 2006, 2007, 2008, 2009 Tooele, UT.** URS performed the quarterly calibrations of the Appendix K meter boxes as required by Appendix K.

Attachment 1

Michael Fuchs
URS Project Manager

Expertise
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Attachment 1

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- **Project Manager, EG&G, TOCDF MPF and LIC2 Mustard ATBs, January 2007, Tooele, UT.** The TOCDF Metal Parts Furnace (MPF) exhaust gas was simultaneously sampled by U.S. EPA Method 5/SW-846 Method 0050; U.S. EPA Method 29; SW-846 Method 0023A; SW-846 Method 0010 for Semivolatiles; SW-846 Method 0010 for Total Organic Emissions (GRAV/TCO); SW-846 Method 0040; SW-846 Method 0031; and CEMS for CO_2, NO_x, SO_2, and THC. The same testing was performed on the Liquid Incinerator (LIC2) exhaust gas following the completion of the MPF ATB. Mr. Fuchs served as the Project Manager for these trial burns and provided on-site supervision of the performance of the trial burns. Mr. Fuchs was responsible for providing daily sampling data and updates for the performance of the trial burns. He also managed and participated in the preparation of the Sampling and Analytical Reports and QA/QC Reports for the MPF and LIC2 Mustard ATBs.
- **Project Manager, EG&G, TOCDF MPF Secondary Waste Demonstration Test (SWDT), March 2006, Tooele, UT.** The TOCDF MPF exhaust was simultaneously sampled by U.S. EPA Method 5/SW-846 Method 0050; U.S. EPA Method 29; SW-846 Method 0023A; SW-846 Method 0010 for semivolatiles; SW-846 Method 0010 for Total Organic Emissions; SW-846 Method 0040; SW-846 Method 0031; and CEMS for CO_2, NO_x, SO_2, and THC. Mr. Fuchs served as the Project Manager for the SWDT and provided on-site supervision of the performance of the test. Mr. Fuchs was responsible for providing daily sampling data and updates for the performance of the test. He also managed and participated in the preparation of the Sampling and Analytical Reports and QA/QC Reports for the SWDT.
- **Project Manager, Veolia Environmental Services, CPT, RCRA Periodic Testing, and TSCA Risk Burn, April-July 2006, Port Arthur, TX.** Mr. Fuchs served as the Project Manager for the tests – an initial test, mini-burns, and a final test. During the April 2006 CPT for the Interim Standards of the HWC MACT, RCRA Periodic Testing, and TSCA risk burn, the incinerator exhaust was simultaneously sampled by U.S. EPA Method 5/26A, U.S. EPA Method 29, SW-846 Method 0010 for semivolatile POHC and organics, SW-846 Method 0023A for dioxins/furans, SW-846 Method 0010 for PCBs, SW-846 Method 0030 for volatile organics, SW-846 Method 0061 for Cr(VI), and CEMS for NO_x and THC. Mr. Fuchs worked closely with Veolia, and was the primary author of the test plan and QAPP. Mr. Fuchs provided on-site supervision of the performance of the tests. He managed and participated in the preparation of the final reports and preparation of the Notification of Compliance.
- **Project Manager, EnerSol Technologies, Plasma Energy Pyrolysis System (PEPS) Testing, August 2006, Springfield, VA.** Managed the project involving testing the PEPS to determine its suitability for processing secondary waste from chemical demilitarization sites. The PEPS exhaust was simultaneously sampled by U.S. EPA Method 5/SW-846 Method 0050, U.S. EPA Method 29, SW-846 Method 0010, and SW-846 Method 0031.
- **On-site Project Manager/Test Supervisor, Waste Control Specialists, October 2004, Andrews, TX.** Served as On-Site Project Manager and Test Supervisor for evaluation of the Geomelt process operated by Waste Control Specialists was performed by simultaneously sampling the exhaust by U.S. EPA Method 5/26A; U.S. EPA Method 29; CARB Method 428 for dioxins/furans and PCBs; SW-846 Method 0010 for semivolatile organics; SW-846 Method 0030 for volatile organics; and CEMS for O_2, CO_2, CO, NO_x, SO_2, and THC. Mr. Fuchs also managed and participated in the preparation of the report.
- **Project Manager, EG&G, TOCDF LIC2 VX ATB, February 2004, Tooele, UT.** The TOCDF LIC2 exhaust was simultaneously sampled by U.S. EPA Method 5/SW-846 Method 0050; U.S. EPA Method 29; SW-846 Method 0023A; SW-846 Method 0010 for semivolatile organics; SW-846 Method 0010 for Total Organic Emissions; SW-846 Method 0040; SW-846 Method 0031 for volatile organics; and CEMS for CO_2, NO_x, SO_2, and THC. Mr. Fuchs served as the Project Manager for this trial burn and provided on-site supervision of the performance of the trial burn. Mr. Fuchs was responsible for providing daily sampling data and updates for the performance of the trial burns. He managed and participated in the preparation of the Sampling and Analytical Report for the LIC2 VX ATB.

- **Project Manager, Veolia HWC MACT CPT, 2006, Port Arthur, TX.** URS performed and reported the HWC MACT CPT of Veolia's incinerator in Port Arthur, TX. Veolia uses a proprietary process to control mercury emissions. The mercury standard was not demonstrated in the initial performance of the CPT. The proprietary process was optimized, including testing. Testing for mercury during the optimization phase was performed using Appendix K with on site analysis using an Ohio Lumex mercury analyzer. The mercury standard was successfully demonstrated during the optimization tests (using Appendix K) and the subsequent CPT (using EPA Method 29).
- **Project Manager, EG&G, TOCDF MPF and LIC2 Mustard ATBs, January 2007, Tooele, UT.** The TOCDF Metal Parts Furnace (MPF) exhaust gas was simultaneously sampled by U.S. EPA Method 5/SW-846 Method 0050; U.S. EPA Method 29; SW-846 Method 0023A; SW-846 Method 0010 for Semivolatiles; SW-846 Method 0010 for Total Organic Emissions (GRAV/TCO); SW-846 Method 0040; SW-846 Method 0031; and CEMS for CO_2, NO_x, SO_2, and THC. The same testing was performed on the Liquid Incinerator (LIC2) exhaust gas following the completion of the MPF ATB. Mr. Fuchs served as the Project Manager for these trial burns and provided on-site supervision of the performance of the trial burns. Mr. Fuchs was responsible for providing daily sampling data and updates for the performance of the trial burns. He also managed and participated in the preparation of the Sampling and Analytical Reports and QA/QC Reports for the MPF and LIC2 Mustard ATBs.
- **Project Manager, EG&G, TOCDF MPF Secondary Waste Demonstration Test (SWDT), March 2006, Tooele, UT.** The TOCDF MPF exhaust was simultaneously sampled by U.S. EPA Method 5/SW-846 Method 0050; U.S. EPA Method 29; SW-846 Method 0023A; SW-846 Method 0010 for semivolatiles; SW-846 Method 0010 for Total Organic Emissions; SW-846 Method 0040; SW-846 Method 0031; and CEMS for CO_2, NO_x, SO_2, and THC. Mr. Fuchs served as the Project Manager for the SWDT and provided on-site supervision of the performance of the test. Mr. Fuchs was responsible for providing daily sampling data and updates for the performance of the test. He also managed and participated in the preparation of the Sampling and Analytical Reports and QA/QC Reports for the SWDT.
- **Project Manager, Veolia Environmental Services, CPT, RCRA Periodic Testing, and TSCA Risk Burn, April-July 2006, Port Arthur, TX.** Mr. Fuchs served as the Project Manager for the tests – an initial test, mini-burns, and a final test. During the April 2006 CPT for the Interim Standards of the HWC MACT, RCRA Periodic Testing, and TSCA risk burn, the incinerator exhaust was simultaneously sampled by U.S. EPA Method 5/26A, U.S. EPA Method 29, SW-846 Method 0010 for semivolatile POHC and organics, SW-846 Method 0023A for dioxins/furans, SW-846 Method 0010 for PCBs, SW-846 Method 0030 for volatile organics, SW-846 Method 0061 for Cr(VI), and CEMS for NO_x and THC. Mr. Fuchs worked closely with Veolia, and was the primary author of the test plan and QAPP. Mr. Fuchs provided on-site supervision of the performance of the tests. He managed and participated in the preparation of the final reports and preparation of the Notification of Compliance.
- **Project Manager, EnerSol Technologies, Plasma Energy Pyrolysis System (PEPS) Testing, August 2006, Springfield, VA.** Managed the project involving testing the PEPS to determine its suitability for processing secondary waste from chemical demilitarization sites. The PEPS exhaust was simultaneously sampled by U.S. EPA Method 5/SW-846 Method 0050, U.S. EPA Method 29, SW-846 Method 0010, and SW-846 Method 0031.
- **On-site Project Manager/Test Supervisor, Waste Control Specialists, October 2004, Andrews, TX.** Served as On-Site Project Manager and Test Supervisor for evaluation of the Geomelt process operated by Waste Control Specialists was performed by simultaneously sampling the exhaust by U.S. EPA Method 5/26A; U.S. EPA Method 29; CARB Method 428 for dioxins/furans and PCBs; SW-846 Method 0010 for semivolatile organics; SW-846 Method 0030 for volatile organics; and CEMS for O_2, CO_2, CO, NO_x, SO_2, and THC. Mr. Fuchs also managed and participated in the preparation of the report.
- **Project Manager, EG&G, TOCDF LIC2 VX ATB, February 2004, Tooele, UT.** The TOCDF LIC2 exhaust was simultaneously sampled by U.S. EPA Method 5/SW-846 Method 0050; U.S. EPA Method 29; SW-846 Method 0023A; SW-846 Method 0010 for semivolatile organics; SW-846 Method 0010 for Total Organic Emissions; SW-846 Method 0040; SW-846 Method 0031 for volatile organics; and CEMS for CO_2, NO_x, SO_2, and THC. Mr. Fuchs served as the Project Manager for this trial burn and provided on-site supervision of the performance of the trial burn. Mr. Fuchs was responsible for providing daily sampling data and updates for the performance of the trial burns. He managed and participated in the preparation of the Sampling and Analytical Report for the LIC2 VX ATB.

- **Project Manager, Veolia Environmental Services, Confirmatory Performance Test, 2011, Sauget, IL.** Mr. Fuchs served as the Project Manager for the Confirmatory Performance Tests (CfPTs) required by the HWC MACT. In these tests the incinerator exhaust was sampled by U.S. EPA Method 0023A for dioxins/furans. Mr. Fuchs worked closely with Veolia, and was the primary author of the test plan and QAPP, and he managed and participated in the preparation of the final reports and preparation of the Notification of Compliance.
- **Project Manager, Veolia Environmental Services, CPT and RCRA Periodic Testing, December 2011, Port Arthur, TX.** Mr. Fuchs served as the Project Manager for the CPT for the Final Replacement Standards of the HWC MACT and the RCRA Periodic Testing. In these tests the incinerator exhaust was simultaneously sampled by U.S. EPA Method 5/26A, U.S. EPA Method 29, SW-846 Method 0023A for dioxins/furans, SW-846 Method 0061 for Cr(VI), and CEMS for NO_x and THC. Mr. Fuchs worked closely with Veolia, and was the primary author of the test plan and QAPP. Mr. Fuchs provided on-site supervision of the performance of the tests. He managed and participated in the preparation of the final reports and preparation of the Notification of Compliance.

- **Project Manager, Veolia Environmental Services, Confirmatory Performance Test, 2011, Sauget, IL.** Mr. Fuchs served as the Project Manager for the Confirmatory Performance Tests (CfPTs) required by the HWC MACT. In these tests the incinerator exhaust was sampled by U.S. EPA Method 0023A for dioxins/furans. Mr. Fuchs worked closely with Veolia, and was the primary author of the test plan and QAPP, and he managed and participated in the preparation of the final reports and preparation of the Notification of Compliance.
- **Project Manager, Veolia Environmental Services, CPT and RCRA Periodic Testing, December 2011, Port Arthur, TX.** Mr. Fuchs served as the Project Manager for the CPT for the Final Replacement Standards of the HWC MACT and the RCRA Periodic Testing. In these tests the incinerator exhaust was simultaneously sampled by U.S. EPA Method 5/26A, U.S. EPA Method 29, SW-846 Method 0023A for dioxins/furans, SW-846 Method 0061 for Cr(VI), and CEMS for NO_x and THC. Mr. Fuchs worked closely with Veolia, and was the primary author of the test plan and QAPP. Mr. Fuchs provided on-site supervision of the performance of the tests. He managed and participated in the preparation of the final reports and preparation of the Notification of Compliance.