

### **QUALIFIED SOURCE TESTING INDIVIDUAL (QSTI) EXAM PREPARATION**

- **Objective:** Training for new or experienced stack testers in preparation for taking the Source Evaluation Society's (SES) Qualified Source Testing Individual (QSTI) exams.
- **Training Company:** Apex Instruments, Inc. ("AI" or "Apex")  
Address: 212 Technology Park Ln., Fuquay-Varina, NC 27526 USA  
Phone: +1-919-557-7300  
Website: [www.apexinst.com](http://www.apexinst.com)
  - Training Coordinator: Terrance Odom
    - Email: [todom@apexinst.com](mailto:todom@apexinst.com)
    - Phone: +1-919-346-5021
- **Days:** Office (5 Days)
  - Daily Start Time: 8:00am Eastern Time
    - First day registration start time is 7:45am Eastern Time
  - Daily Lunch Time: 12:00-13:00pm Eastern Time
  - Daily End Time: 16:00pm Eastern Time
- **Expenses:**
  - The following are **NOT** covered by Apex Instruments (these costs are not included in the course price):
    - Travel:
      - *Raleigh-Durham International Airport* – Morrisville (27 Miles)
        - 2400 John Brantley Blvd, Morrisville, NC 27560, USA
    - Hotel/Lodging Recommendations:
      - *Holiday Inn Express* – Holly Springs (2.5 Miles)
        - 150 Collins Crossing, Holly Springs, NC 27540, USA
      - *Hampton Inn* – Holly Springs (2.9 Miles)
        - 1050 S Main St, Holly Springs, NC 27540, USA
    - Transport: Airport transfers or hotel transfers
    - Meals: Only breakfast refreshments and lunch will be provided daily
      - **If you have any meal restrictions, please inform us upon registration**

**DAY 1: GROUP 1 – MANUAL GAS VOLUME AND FLOW MEASUREMENTS AND ISOKINETIC PARTICULATE SAMPLING METHODS****\*\*\*Introduction\*\*\*****US EPA Method 1***M1 | Traverse Points**M1A | Small Ducts***US EPA Method 2***M2 | Velocity – S-Type Pitot**M2A | Volume Meters**M2C | Standard Pitot**M2D | Rate Meters**M2F | Flow Rate – 3-D Probes**M2G | Flow Rate – 2-D Probes**M2H | Velocity Decay Near Stack Walls***US EPA Method 3***M3 | Molecular Weight**M3B | O<sub>2</sub> and CO<sub>2</sub> – Orsat***US EPA Method 4***M4 | Moisture Content***US EPA Methods 5 and 17***M5 | Particulate Matter (PM)**M5A | PM Asphalt Roofing**M5B | PM Nonsulfuric Acid**M5D | PM Baghouses**M5E | PM Fiberglass Plants**M5F | PM Fluid Catalytic Cracking Unit**M5I | Low-Level PM**M17 | In-Stack PM***\*\*\*Lunch\*\*\*****US EPA Method 19***M19 | SO<sub>2</sub> Removal, PM, SO<sub>2</sub>, and NO<sub>x</sub> – Electric Utility Steam Generators***Other Particulate Matter***M201A | PM<sub>2.5</sub> and PM<sub>10</sub> – Constant Sampling Rate**M202 | Condensable PM***Other Documentation****40 CFR Part 60.8(f) |****40 CFR Part 63.7(e)(3) |****\*\*\*Wrap-up\*\*\***

**DAY 2: GROUP 2 – MANUAL GASEOUS POLLUTANTS SOURCE SAMPLING METHODS**

**\*\*\*Recap or Further Discussion  
of Day 1's Overlapping Agenda\*\*\***

**Overlap**

*M1 | Traverse Points*

*M2 | Velocity – S-Type Pitot*

*M3/3B | Molecular Weight*

*M4 | Moisture Content*

*M19 | SO<sub>2</sub> Removal, PM, SO<sub>2</sub>, and  
NO<sub>x</sub> – Electric Utility Steam  
Generators*

*M202 | Condensable PM*

**40 CFR Part 60.8(f) |**

**40 CFR Part 63.7(e)(3) |**

**US EPA Method 6**

*M6 | Sulfur Dioxide (SO<sub>2</sub>)*

*M6A | SO<sub>2</sub>, Moisture, Carbon  
Dioxide (CO<sub>2</sub>) (Fossil Fuel  
Combustion)*

*M6B | SO<sub>2</sub> and CO<sub>2</sub> Daily Avg.  
Emissions (Fossil Fuel  
Combustion)*

**US EPA Method 7**

*M7 | Nitrogen Oxides (NO<sub>x</sub>)*

*M7C | NO<sub>x</sub> – Colorimetric*

*M7D | NO<sub>x</sub> – Ion Chromatography*

**US EPA Method 8**

*M8 | Sulfuric Acid Mist*

**US EPA Method 11**

*M11 | Hydrogen Sulfide (H<sub>2</sub>S)  
Content in Fuel*

**\*\*\*Lunch\*\*\***

**US EPA Method 13**

*M13A | Total Fluoride – SPADNS  
Zirconium Lake*

*Method 13B | Total Fluoride –  
Specific Ion Electrode*

**US EPA Method 15A**

*Method 15A | Total Reduced Sulfur  
(TRS) – Sulfur Recovery, Petroleum  
Refineries*

**US EPA Method 16A**

*Method 16A | TRS – Impinger*

**US EPA Method 26**

*Method 26 | Hydrogen Halides and  
Halogens*

*Method 26A | Hydrogen Halides  
and Halogens – Isokinetic*

**\*\*\*Wrap-up\*\*\***

**DAY 3: GROUP 3 – GASEOUS POLLUTANTS INSTRUMENTAL METHODS**

**\*\*\*Recap or Further Discussion  
of Day 1-2's Overlapping  
Agenda\*\*\***

**Overlap**

*M1 | Traverse Points*

*M2 | Velocity – S-Type Pitot*

*M3 | Molecular Weight*

*M4 | Moisture Content*

*M19 | SO<sub>2</sub> Removal, PM, SO<sub>2</sub>, and  
NO<sub>x</sub> – Electric Utility Steam  
Generators*

*M202 | Condensable PM*

**40 CFR Part 60.8(f) |**

**40 CFR Part 63.7(e)(3) |**

**US EPA Method 3A**

*M3A | O<sub>2</sub> and CO<sub>2</sub> – Instrumental*

**US EPA Method 6C**

*M6C | SO<sub>2</sub> – Instrumental*

**US EPA Method 7E**

*M7E | NO<sub>x</sub> – Instrumental*

**US EPA Method 10**

*M10 | Carbon Monoxide (CO) –  
Instrumental*

*M10B | Carbon Monoxide (CO) –  
Stationary Sources*

**US EPA Method 20**

*M20 | NO<sub>x</sub> – Gas Turbines*

**US EPA Method 25A**

*M25A | Gaseous Organics (VOCs) –  
Flame Ionization (FID)*

**\*\*\*Lunch\*\*\***

**US EPA Performance**

**Specification 2**

*PS-2 | Sulfur Dioxide (SO<sub>2</sub>) and  
Nitrogen Oxides (NO<sub>x</sub>)*

**US EPA Performance**

**Specification 3**

*PS-3 | Oxygen (O<sub>2</sub>) and Carbon  
Dioxide (CO<sub>2</sub>)*

**US EPA Performance**

**Specification 4**

*PS-4 | Carbon Monoxide (CO)*

*PS-4A | Carbon Monoxide (CO)*

**US EPA Performance**

**Specification 5**

*PS-5 | Total Reduced Sulfur (TRS)*

**US EPA Performance**

**Specification 6**

*PS-6 | Flow Rate*

**US EPA Performance**

**Specification 7**

*PS-7 | Hydrogen Sulfide (H<sub>2</sub>S)*

**US EPA Performance**

**Specification 8**

*PS-8 | Volatile Organic  
Compounds (VOCs)*

**US EPA Performance**

**Specification 15**

*PS-15 | Extractive Fourier  
Transform Infrared (FTIR)  
Spectroscopy*

**Other Documentation**

*40 CFR Part 75 Appendix A*

*40 CFR Part 75 Relative Accuracy*

*40 CFR Part 75 Appendix B*

*40 CFR Part 75 Appendix E*

**\*\*\*Wrap-up\*\*\***

**DAY 4: GROUP 4 – HAZARDOUS METALS MEASUREMENTS METHODS**

**\*\*\*Recap or Further Discussion  
of Day 1-3's Overlapping  
Agenda\*\*\***

**Overlap**

*M1 | Traverse Points*

*M2 | Velocity – S-Type Pitot*

*M3 | Molecular Weight*

*M4 | Moisture Content*

*M19 | SO<sub>2</sub> Removal, PM, SO<sub>2</sub>, and  
NO<sub>x</sub> – Electric Utility Steam  
Generators*

**40 CFR Part 60.8(f) |**

**40 CFR Part 63.7(e)(3) |**

**US EPA Method 12**

*M12 | Inorganic Lead*

**US EPA Method 29**

*M29 | Metals*

**US EPA Method 30B**

*M30B | Mercury Sorbent Trap  
Procedure*

**\*\*\*Lunch\*\*\***

**US EPA Method 101**

*M101 | Mercury – Chlor-Alkali  
Plants*

*M101A | Mercury – Sewage Sludge  
Incinerators*

**US EPA Method 102**

*M102 | Mercury – Chlor-Alkali  
Plants, Hydrogen Streams*

**Other Documentation**

**ASTM D6784-02 | Mercury –  
Ontario Hydro Method**

**\*\*\*Wrap-up\*\*\***

**DAY 5: GROUP 5 – PART 75 CEMS RATA TESTING****\*\*\*Recap or Further Discussion  
of Day 1-3's Overlapping  
Agenda\*\*\*****Overlap***M1 | Traverse Points**M2/2F/2G/2H | Velocity**M3/3A/3B | Molecular Weight**M4 | Moisture Content**M6C | SO<sub>2</sub> – Instrumental**M7E | NO<sub>x</sub> – Instrumental**PS-2 | Sulfur Dioxide (SO<sub>2</sub>) and  
Nitrogen Oxides (NO<sub>x</sub>)***Other Documentation****40 CFR Part 60 Appendix B |****40 CFR Part 75 Appendix A |****Section 3 – Performance  
Specifications****Section 6 – Certification  
Tests and Procedures****Section 7 – Calculations****Part 75 Emissions Monitoring  
Policy Manual****Section 3 – Flow Monitoring****Section 8 – Relative  
Accuracy****\*\*\*Lunch\*\*\*****U.S. EPA Traceability Protocol for  
Assay and Certification of Gaseous  
Calibration Standards****Section 2.1.1 – Purpose and  
Scope of the Protocol****Section 2.1.2 – Using the  
Protocol****Section 2.1.3 – Reference  
Standards****\*\*\*Wrap-up\*\*\***