
How to Conduct a Successful Source Test

Stack Tester's Perspective
Jim Serne, PE, QSTI
TRC Environmental Corporation
JSerne@TRCSolutions.com

Six Steps for a Successful Stack Test

1. Understand the Test Objectives
 2. Carefully Plan the Test Program and Submit a Detailed Test Plan
 3. Thoroughly Prepare for the Field Effort
 4. Use an Experienced & Qualified Crew
 5. Follow Test Method QA Requirements
 6. Prepare an Organized & Comprehensive Test Report
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The Keys to Success

- Effective Communications Amongst:
 - Test Crew / Project Manager
 - Agency Staff / Observers
 - Facility Environmental Staff
 - Facility Operating Staff
 - Test Crew Team Work
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Test Objectives

- Types of Stack Tests
 - Engineering or Preliminary Tests
 - Control Device Performance Guarantee Testing
 - Establish Process / Control Device Operating Parameters – “range setting”
 - Compliance Tests
 - Performance Specifications & RATAs for CEMS
 - Emission Factor Development
 - Review the Regulatory Requirements
 - Air Permit – Test Conditions
 - Underlying Regulatory Requirements (NSPS, MACT, Part 75)
 - Understand how the test results will be used
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Test Plans

- Follow EPA Guidance for Site Specific Test Plans
 - Agency Specific Test Plans & Notifications
 - DHEC BAQ Site Specific Test Plan Summary
 - DENR DAQ Protocol Submittal Form
 - Highlight modifications or alternative procedures
 - EPA Request for Approval of Alternative Test Procedures – GD-022R3
 - Recommendation: The testing company should prepare / submit the Test Plan.
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Test Preparation – Test Firm Tasks

- Equipment Calibration, Cleaning & Maintenance
 - Sample Media Preparation
 - Sample Labels & Containers
 - Data Sheets & Spreadsheets
 - Test Crew Briefing
 - Discuss Site Preparation Needs with Facility
 - Sample ports – make sure location & size are OK
 - Scaffolding or manlifts
 - Power for sampling equipment
 - Coordination of test runs
 - Collection of process / control device operating data
 - Site safety requirements & hazards evaluation
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Test Preparation – Facility Tasks

- Check ladders, platforms, scaffolding for structural integrity.
 - Open and clean out sample ports.
 - Check electrical circuits that the testers will use.
 - Clear area where trailer will be parked.
 - Setup “drop zone” barriers or roof edge barricades.
 - Obtain facility work permits for test crew.
 - Coordinate with process / production manager.
 - Establish desired process rate / load with operations manager.
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Test Method Selection

There may be more than one available method.

- Do you need onsite results?
 - Detection Limits?
 - Interferences?
 - Previous test method used?
 - Qualifications & past experience of crew
 - Costs (equipment, labor, analytical)
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Test Coordination

- Test run start times should be coordinated with the facility / process
 - Synchronize watches ! (use facility DAS time)
 - Understand process type – continuous or batch, load or production changes, control device operating characteristics
 - Maintain communications with control room
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Qualifications & Experience – Current / Past Approach

- Facility selects test firm based on experience, qualifications, and cost.
 - Key Project Personnel
 - Project Manager / Field Team Leader
 - Test Location Leaders
 - Test Firm Experience & Reputation
 - Test Firm Safety Record
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Qualifications & Experience – New Requirement – January 1, 2009

- EPA Requirements in Part 75
 - Test Firm Conformance to ASTM D-7036
 - Qualified Individual – QSTI Exams by Test Method Group
 - ASTM requires conformance for all tests conducted by the test firm
 - Field Team Leader – QI / QSTI for each method being conducted
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“Laws” Applicable to Stack Testing

- Murphy’s Law – Be prepared, expect surprises, bring spares, allow for delays, be patient, and hang in there.
 - Quality and Test Crew Experience are Related.
 - Cost is Related to Experience.
 - Safety is always a concern. Pay Attention!
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Stack Test Safety Considerations

- Facility Specific Requirements
 - Test Firm Internal Training Requirements
 - Association of Reciprocal Safety Councils (ARSC)
 - Safety Checklist & Job Safety Analysis
 - Facility Work Permits
 - Roof Access
 - Hot Work Permits
 - Explosive Areas
 - OSHA 300 Logs & EMR
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Source Test Information

- EPA Technology Transfer Network (TTN)

www.epa.gov/ttn/emc - EPA Methods

- Source Evaluation Society (SES)

www.sesnews.org - QSTI Directory & Safety Handbook



Questions ?

