Scope of Duties for Project QAO

General
- Ensure all individuals included on the signature page of the QAPP receive any revisions to the QAPP
- Verify that field and lab procedures are performed in compliance with QAPP objectives (See below for specific areas)

Field – QAO must be on-site during the entire course of the test burn.
- Audit train setups, stack sampling, and train recovery procedures
- Audit sample preparation, storage and shipment
  - Appropriate chain of custody documentation?
  - Appropriate sample labeling?
    - Are samples labeled?
    - Is the labeling system in accordance with QAPP?
  - Appropriate sample preservation?
  - Appropriate holding times prior to shipment?
- Audit waste feed sampling procedures
- Audit field QA/QC activities
  - Collection of field blanks, trip blanks, etc.
  - Are all planned test samples taken?
- Verify calibration of spiking system and certification of materials used for spiking if applicable
- Verify calibration of any on-site sampling or analytical equipment including CEMS etc.
- Make recommendations to the test project manager regarding any problems detected
- Verify that the appropriate corrective actions are taken if problems are detected
- Document observances during the test burn to be incorporated into the test burn report

Lab/Data
- Review package for completeness:
  - The appropriate samples taken and analyzed
  - For each lab report:
    - Case narrative
    - Chain of custody documentation
    - Summary of results for samples
    - Summary of QA/QC results
    - Raw data
    - Most recent calculation/verification of MDL/RDL's
- Assess the results of all QC checks and procedures:
  - Review for all samples
    - Holding times
    - Sample integrity
    - Sample preservation techniques
    - Analysis run logs
    - QC sample results
      - Laboratory/instrument performance
        - Calibrations

- Were the appropriate analytes included in the calibration standard?
- Where the calibration standard analytes at appropriate levels to bracket the anticipated sample results?
- Do the calibration curves have a good fit?
- Is there continuing calibration verification?
- Are calibrations performed at appropriate intervals?
    - Method blanks
    - Tuning
    - Retention times and acceptance windows
    - Standards certifications
    - LCS/LCSD
    - *Other items required by specific method*
  - Sample preparation/matrix effects
    - Surrogate recoveries
    - Matrix spike recoveries
    - Method blanks
    - Sample extraction and clean-up logs
    - Etc.
  - Field QA/QC performance
    - Field blanks
    - Trip blanks
    - Etc.
- Examine the raw data to verify the accuracy of all information presented:
  - Review the raw data for all samples in detail via lab instrument print-outs to ensure identification and quantitation of analytes
    - Retention times
    - Peak resolution
    - Etc.
  - Assessment of qualified data
    - Appropriateness of qualifier?
    - Effect on sample results

Generate QA/QC Data Report – Should Include the Following:

- **Field Assessment**
  - Summary of field observations and required corrective actions
  - Results of field audits
  - Impact of deviations in sampling, recovery, etc. on data quality/emissions results
- **Lab Assessment/Data Validation**
  - Results of completeness review
    - Include discussion on appropriateness of lab MDL/RDL with respect to level of desired analysis
  - Results of any laboratory audits performed by the QAO
  - Results of data verification/validation
    - Evaluation of Precision, Accuracy, and Completeness
    - Performance Evaluation (Audit) Sample Results
    - Appropriateness of qualifiers assigned to data

- Impact of issues noted by lab (i.e. matrix interferences, blank contamination, etc.)
    - This should not merely be a restatement of the labs case narrative. The validator should include a discussion on whether or not the issue will impact analyte results and why or why not.
- Impact of qualified data on emission results. **This is crucial to the data validation.** Again, this should not be a mere restatement of the labs' generic qualifier information.
- Any other items of concern which may impact emission results