**1.0 General Contract**

**1.1 Overview**

X Quality Assurance Consulting (hereafter “Contractor”) proposes to continue to provide environmental consulting services to the Environmental Department of the X Tribe during FY 20XX. It is proposed that the services be provided on a fixed price or time-and-materials basis for each service, as shown in Section 6.0. These proposed services are designed to provide key elements in support of X’s air quality program.

**1.2 Objective and Strategy of the Proposed Contract**

The objective of this effort is to provide the necessary services, resources, instruction, and information to X, so that the ambient air monitoring program is operated and managed according to all applicable U.S. EPA regulations and guidelines, yielding valid air quality data. The proposed services consist of the tasks described in Section 2.0. It is the intent of the Contractor is to assist X in the management of its ambient air monitoring programs in areas where assistance and/or training is needed.

The strategy under this effort will be to provide timely services where needed, bearing in mind that the overall goal is to ensure that the data collected at the X Ambient Air Monitoring Station are valid, defensible~~, and usable for comparison to the National Ambient Air Quality Standards delete this if your data are not to be used to make NAAQS compliance determinations~~.

**2.0 Proposed Tasks**

Under this proposed Contract, Tasks to be provided by the Contractor would be initiated by an authorized X point of contact. In order to expedite the work and minimize accounting time, the task logistical details may be defined informally (by email), and the cost will be based on a fixed price or a time-and-materials schedule, based on the information presented in Section 6.0 below.

**2.1 Task 1: Annual Audit and Recalibration of Ozone Analyzer**

It is proposed that on-site annual audits and, if audit results are outside of specifications, recalibration of the X ozone analyzer by the Contractor be continued on a annual basis, as specified in the X Quality Assurance Project Plan. The exact dates of the annual audit visits to the X ambient air monitoring station will be determined jointly by X and the Contractor. The last annual audit was performed on X, 20XX. The next annual audit would then be due in early X 20XX.

The Contractor will provide a certified ozone transfer standard, traceable to an EPA/NIST Standard Reference Photometer and a primary ozone standard. This transfer standard is an API Model 400 ~~(or specify model if the contractor uses a different transfer standard, but verify it meets the EPA requirements)~~ ozone analyzer, modified and maintained as a primary standard for the assay of ozone as described in 40CFR50, Appendix D. The Contractor will also provide a zero air generation system and a dilution calibrator equipped with an ozone generator. This portable ozone generation system is capable of providing stable ozone concentrations for the Contractor’s certified ozone transfer standard and X’s ozone analyzer at a nominal sample flow rate of 5.0 Liters per minute.

The operation of the Contractor’s certified ozone transfer standard will be fully compliant with all applicable EPA regulations in Appendix A of 40CFR58 and guidelines as described in EPA’s Technical Assistance Documents: “Transfer Standards for the Calibration of Air Monitoring Analyzers for Ozone” (EPA-600/4-79-056), September 1979, and “Technical Assistance Document for the Calibration of Ambient Ozone Monitors” (EPA-600/4-79-057), September 1979*.* The Contractor will operate the certified ozone transfer standard and all data recorded during the annual performance evaluation will be collected by the Contractor.

The transfer standard will be allowed to warm up for a period of at least one hour. The data and all other pertinent status indicators from the transfer standard and X’s analyzer will be recorded on an electronic raw data sheet designed specifically for this purpose.

The two sample lines for the audit transfer standard and X’s analyzer will be attached to the same zero air and ozone sample manifolds. Each of these manifolds will be maintained at ambient barometric pressure and shall indicate an excess flow. The annual performance evaluation shall begin with introduction of zero air into both manifolds, and be followed by introduction of a nominal 400 ppb of ozone. The stable responses from both instruments will be recorded. These data will represent the as-found condition of the analyzer, and will be used to validate the data from the previous calendar quarter.

Next, the sample line inlet filter will be replaced and a test of the integrity of the sample line will be performed. If the X analyzer response exceeds the expected ozone concentration by more than 2%, the X analyzer response is outside the limits (see attached EPA Handbook table 2; Operational Criteria; see highlighted rows) the X analyzer must be recalibrated. In this case, the analyzer gain will be adjusted accordingly. Thereafter, at least four additional upscale ozone concentrations will be introduced into the analyzer to verify linearity to within 2% for each point.

The multipoint calibration will be tabulated on the raw data sheet and a linear regression analysis will be performed, where y is the reference ozone concentration in ppb and x is the ozone concentration indicated by X’s analyzer in ppb. The results of the annual performance evaluation will be considered satisfactory if the slope is within a range of 0.950 - 1.050, the intercept is within a range of -3.0 to 3.0, and the correlation coefficient (R2) is 0.9995 or higher. If these criteria are not met, the appropriate troubleshooting will be performed and the performance evaluation may be repeated.

If the performance evaluation fails a second time, the X ozone analyzer’s internal ozone source will be activated and referenced to a new calibration. After this calibration, the performance evaluation will be repeated to verify that the analyzer meets the specifications cited in the previous paragraph. A performance evaluation report will be presented to X by e-mail within 3 days after the performance evaluation is performed. The report will consist of an Excel file presenting the detailed raw, supporting, and calibration data, a narrative describing the process and any corrective actions that are recommended, and the contractor’s SOP for how the performance evaluation was conducted and data analyzed.

**2.2 Task 2. Data Validation**

In previous years this task was performed by the Contractor, but currently the responsibility for this task is transitioning to X. However, the contractor hereby offers to provide a backup role if needed. During previous efforts the Contractor developed the necessary list files and spreadsheets, established a validation system, and validated the data from 20XX through 20XX. All data validation would be performed according to all applicable U.S. EPA regulations, guideline documents, and Section 5.0 in the X Quality Assurance Project Plan. This Task includes detailed reviews of the data for reasonableness and interpretation. The Contractor will also provide further instruction for X personnel in data validation (see Section 2.4).

The Contractor would obtain raw monitoring station data approximately once per month and review the results of all zero/span calibrations of the gaseous analyzers, and enter these results on control charts. These data will be provided by X in the form of .wsl files or .txt files from its data collection computer at the X and copied onto the Contractor’s computer, who will then use MS Excel or his version of Wincollect to validate the data. All monitoring data will be reviewed for reasonableness and anomalies. If problems are encountered or suspected with any of the measurement or support equipment, the Contractor will contact X to perform the appropriate troubleshooting and initiate corrective actions, so that instrument down time is minimized. The Contractor will follow up on all such problems until they are resolved.

The Contractor will request copies of the station checklists, logs, and calibration forms from the station operator. The information from these documents will be reviewed, entered into a Station System Checklist and Calibration Summary and will provide additional information necessary for the data validation process. The Contractor will validate the monitoring data per the procedures specified in Section 5.0 of the X Quality Assurance Project Plan and will assemble and deliver a ~~quarterly~~ ~~(or annual, or semiannual, specify interval here)~~ data report package. Included in the report package will be a copy of the contractor’s SOP for data review and interpretation.

**2.3 Task 3. Performance Audits**

According to the requirements for compliance ambient air monitoring in 40CFR58 Appendix A, performance audits of ambient air monitoring stations must be conducted at least annually. The Contactor proposes to audit all measurements in the X air monitoring station. The Contractor has the capability of providing audits for the continuous analyzers for O3 and NO/NOx; particulate sampler flow rates; and meteorological instruments for wind speed and direction, temperature, precipitation, barometric pressure, and solar radiation. In addition, during the audit, a general evaluation of the monitoring station operation will be conducted.

The purpose of performance audits is to provide independent assessments of the accuracy of the measurements performed at the monitoring station. The assessment results will then used to support the validity of the monitoring data and to provide determination as to whether or not the project data quality objectives are being met. All performance audits will be conducted according to the requirements in 40CFR58 Appendix A. At the time of the audit, detailed audit procedures will be written and provided to X.

The monitoring equipment will be evaluated for compliance to reference or equivalent methods according to the criteria specified by EPA in 40CFR53, Subparts A-C. The air sampling methodologies will be evaluated with respect to the EPA probe siting criteria described in 40CFR58 Appendix E, and the station siting criteria in 40CFR58 Appendix D.

The procedures used for the NO/NOx and O3 analyzer audits will meet or exceed the guidelines and requirements in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II (EPA-454/B-08-003, December 2008), and the October 2006 version of 40CFR58, Appendices A-E. The audit of the O3 analyzer will be conducted using a ~~CSI Model 1700 dilution calibrator~~ as the certified O3 transfer standard ~~(this is the specification for contractor’s equipment)~~. The transfer standard is certified every 90 days or sooner using a primary standard for O3. The procedures used to provide this certification and operate the certified O3 transfer standard are described in EPA’s Technical Assistance Documents: Transfer Standards for the Calibration of Air Monitoring Analyzers for Ozone (EPA-600/4-79-056), September 1979, and Technical Assistance Document for the Calibration of Ambient Ozone Monitors (EPA-600/4-79-057), September 1979. This transfer standard has been calibration against an independent calibration standard other than that used to calibrate the ozone standard that is used to verify the ozone analyzer on an annual basis (as described in section 2.1).

The PM2.5 samplers will be audited using the general procedures described in the EPA Quality Assurance Handbook. The audit will consist of a test of the accuracy of the sampler total flow rate and a comparison of the sampler’s measured flow rates to its design flow rate. In addition, the samplers will be inspected for proper operation, leaks, cleanliness, and structural integrity. All gaskets and fittings will be inspected, and the filter tape and bypass systems will be inspected for integrity.

The Contractor will conduct an audit of the X meteorological instruments at least once during this contract period. X will receive from the contractor the audit report and procedures used by the Contractor. The procedures utilized reflect the requirements described in the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements (EPA-454/B-08-002), March 2008).

The anemometer and wind vane will be inspected for integrity and proper operation. The wind speed component will be audited by collocation for 20 minutes with a ~~SIMS hand-held~~ anemometer, and the wind direction component will be audited with a precision field compass. The temperature, relative humidity, solar radiation, and barometric pressure sensors will be audited by collocation with audit standards, and the precipitation gauge will be audited by adding a known volume of water.

**2.4 Miscellaneous Tasks**

If, during the course of the proposed contract period, additional work is needed that is outside the scope of Tasks 1-3 above, the Contractor will work with X to determine a scope of work, budgets, timelines, and deliverables for the new Task. The labor rate to be used by the Contractor will remain at $80.00 per hour. The following items were provided by the Contractor during the previous contract period ~~(for example)~~:

1. Developed a memo with responses to EPA Region ~~9~~’s concern about the siting of the meteorological instruments and the data quality objectives utilized.

2. Conducted a new site survey with particular emphasis on obstructions.

3. Updated the QAPP per EPA Region ~~9~~’s comments and to accommodate the regulatory changes in the quality control procedures for PM2.5 measurements.

4. Developed and finalized a network design plan.

5. Developed a data validation template for all criteria pollutants.

6. Provided a Standard Operating Procedure for O3 measurements.

7. Provided numerous documents in preparation for the EPA Region ~~9~~ technical systems audit.

8. Developed downloading capability in WinCollect to compare raw data versus validated text files.

9. Revalidated the 2008 data to a higher level in order to incorporate the data into AQS.

10. Provided text files of all validated data for uploading into AQS.

11. Wrote draft letter for certification of ~~2009~~ data.

During the future contract period it may be necessary to provide other similar tasks, depending on what specific needs arise. These tasks are not necessarily limited to, but may include the following:

1. Conduct a review of all applicable U.S. EPA regulations and guidance documents in the custody of X and provide any additional necessary documents, so that X has a complete and current set of all such documents.

2. Provide overviews of the pertinent information in these documents to X, including how the materials in these documents are implemented in an air monitoring program.

3. Assist in the implementation of the QC procedures in which the filter-based PM2.5 measurements are compared to the BAM continuous measurements.

4. Provide troubleshooting assistance.

5. Conduct a technical systems audit (required once every three years by regulation).

6. Provide assistance with airshed characterization and attainment/non-attainment designations.

7. Provide a rationale for explaining why the O3 data are lower than other nearby monitoring stations.

8. Provide further instruction on data validation.

9. Provide equipment for and assist with instrument calibrations.

**3.0 Deliverables and Schedules**

All documents and reports emanating from this project will be considered confidential and the sole property of X. Copies of these documents and reports will be delivered to third parties only with the express written authorization of X. If requested, the Contractor will sign a non-disclosure agreement. The deliverables and Task timelines under this contract are summarized below.

**3.1 Task 1: Ozone Analyzer Verifications and if Necessary Calibrations**

A verification/calibration report will be presented to X by e-mail within 3 days after the verification/calibration is performed. The report will consist of an Excel file that presents the detailed raw, supporting, and calibration data. X has a copy of the most recent calibration performed on 20XX.

**3.2 Task 2: Data Validation**

At the end of each quarterly validation session, a data report package will be delivered to X in electronic format for review. After any comments are received from X and incorporated into the package, a final package will be issued. Each data report package will include the following:

1. A written report that presents a project overview, documentation of validation methods, a narrative description of the data collected for each measurement during the reporting period, anomalies and/or problems encountered, corrective actions undertaken, and limited interpretations of the data.
2. Three separate Excel files, each containing the validated data for one month, detailing the daily and monthly averages for each measurement, maximum hourly values, and percent data capture.
3. An Excel file presenting the annual validated PM2.5 data to date. These files present the data recovery statistics, maximum and average quarterly and annual concentrations, and reasons cited for any invalidation of data.
4. Excel files containing the validated hourly and daily data.
5. Text files containing the validated O3 data, in a format suitable for uploading into AQS, including all applicable codes for site, parameter, method, etc. such that the file is immediately uploadable to AQS without additional editing.
6. The System Checklist and Calibration Summary to date, which contains all information

extracted from the station logs, checklists and monthly calibrations.

Complete SOPs used by the contractor for each process paid for under this contract.

Recommendations for corrective action.

**3.3 Task 3: Performance Audits**

The performance audit dates will be determined mutually between the Contractor and X. After the audit is completed, X will receive a verbal debriefing concerning the audit results, with particular emphasis on any unsatisfactory audit results.

A draft audit report will be submitted within 10 working days following the audit. The report will document NIST traceability of all standards used, present the audit results, and will contain detailed evaluations and recommendations. The audit report will be sufficiently detailed to meet or exceed the reporting requirements in 40CFR58, Appendix A. After review of the draft report by X, if changes are necessary, the final report will be issued.

An audit procedures document will be presented to provide supplemental information to the material presented in the audit report. This document will contain an overview of the monitoring station and station calibration procedures, followed by the detailed audit procedures. The audit procedures document will be delivered concurrently with the audit report, or can be provided earlier if requested.

**3.4 Miscellaneous Tasks**

When the need arises for a particular service that is not addressed in this proposal (but discussed in Section 2.4), a statement of work, budget, timeline, and deliverables can be developed at that time.

**4.0 Period of Performance**

This proposed contract would begin on X, 20XX and would be in effect until X, 20XX.

**5.0 Insurance**

X Quality Assurance Consulting maintains General and Professional Liability coverage. The effective period of the current policy is X, 20XX to X, 20XX. At the time the policy is renewed, the carrier issues a new certificate of insurance to X. However, if needed, at the time of contract award, a certification of insurance will be presented upon request.

**6.0 Quoted Costs**

It is proposed that the work performed on this contract be charged on a fixed price or a time-and-materials basis, depending on the task. Table 1 presents the estimated costs for this proposed support program. These estimated costs for each task are based on a labor rate of $80.00 per hour. Task 1 includes the costs for calibration equipment preparation, verification of the ozone calibration standard against a Standard Reference Photometer, field time, and the time to write Proposal for the calibration report. It includes 6 hours per verification/calibration.

The assumption for Task 2 is that it will take 8 hours per month of data to validate and report the data. The estimate for Task 3 includes the costs for audit equipment and standards preparation and certification, field time, and the time to write the audit procedures document and audit report. If it not all of the measurements require audits, the price will be adjusted accordingly.

Quotations for Task 4 will be provided at the time the specific needs arise. During the past contract period, 131 hours expended on this task.

**Table 1 Quotation for Environmental Consulting Services**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task** | | **Price/Unit** | **Estimate for Year** | |
| 1 | Quarterly O3 analyzer calibrations (4 calibrations) | $500 per calibration | $2,000 | |
| 2 | Routine data validation (8 hours per month of data) | $640/month of data | $7,680 | |
| 3 | Annual performance audit (32 hours per audit for all measurements) | $2,560 | $2,560 | |
| 4 | Miscellaneous tasks | (will be provided at a rate of $80/hour) | | |
| **Estimated total for year:** | | | | **$12,240** |