US EPA REGION 4 BROWNFIELDS GENERIC QAPP TEMPLATE

Brownfields Generic QAPP Elements and general information/template for writers	**Notes**
A1. Title and Approval Page Including the following items on the Title and Approval Page: Title (including brownfields cooperative agreement recipient name and revision #) Brownfields cooperative agreement grant number Date Organization's name: the name of the organization preparing the QAPP Dated signature of approving officials: printed names, titles, organizations, dates, and signatures	
A2. Table of Contents The table of contents must include tables, figures and appendices.	
A3. Distribution List Name, title/position, organization, and contact information (telephone & email) of all entities requiring copies of the QAPP. Should include all individuals mentioned in the QAPP. If portions are unknown, indicate information will be in site-specific QAPP, such as the Field Team Leader.	
A4. Project/Task Organization Identify key project personnel, specify technical disciplines, and detail each individual's roles/responsibilities. Include an organizational chart or table depicting lines of authority and reporting responsibilities. Include all agencies, contractors, and individuals responsible for performing QAPP preparation, sample collection, laboratory analysis, data verification, review and validation, data quality assessment, and project oversight responsibilities.	
A5. Problem Definition/Background Indicate in the Generic QAPP that a project's Problem Definition will be provided in a Site-Specific QAPP Addendum (see Appendix B Brownfields Site-Specific QAPP Elements for information on concepts to be covered in this section).	

A6. Project/Task Description/Timeline Indicate in the Generic QAPP that a project's Project Description/Timeline will be provided in a Site-Specific QAPP Addendum (see Appendix B Brownfields Site-Specific QAPP Elements for information on concepts to be covered in this section).	
A7. Quality Objectives and Criteria for Measurement Data State the project objectives and limits, both qualitatively and quantitatively. Also, state and characterize measurement quality objectives to applicable action levels or criteria.	
A8. Special Training Requirements and Special Certifications List training of personnel, including any special or non-routine training or certifications needed by personnel, to conduct project activities (e.g. asbestos certification). For each non-routine training or certification, include the following items within its description: Succinctly state the project activity; Specialized training course title (or description); By whom the training was provided; Date of training and expiration date of training credentials; Description of how this training will be documented. Indicate where the records will be kept. Be sure to discuss the importance of QA training and discuss how this training is provided.	
A9. Documentation and Records Provides a comprehensive list of the documents and records required for this project (including raw data, field logs, audit reports, QA reports, quarterly reports, analytical data reports, data validation reports/data quality assessment reports, etc.) Specify the turnaround time for laboratory data deliverables (both hardcopy and electronic formats). Provide hardcopy data package content requirements and electronic data requirements. Indicate the retention time and repository of study records, reports, and formal documents.	
B1. Sampling Process Design & Site Figures Indicate in the Generic QAPP that a project's sampling process design and site figures will be provided in a Site-Specific QAPP Addendum. Describe SOPs that be used to characterize and dispose of all IDW. See Appendix B Brownfields Site-Specific QAPP Elements for information on concepts to be covered in this section.	

B2. Sampling & Analytical Method Requirements In the Generic QAPP, please provide an example of the Sampling and Analytical Methods Requirements table that will be used in all site-specific QAPP Addenda. The table should be completed with all pre-established analytical information (i.e. matrix, parameter, container, preservation and holding time information). This table may be used in the future as a template that can be edited for the individual site-specific QAPP Addendum. Provide the required field sample collection procedures, protocols, and methods. Provide a list of sampling/collection equipment (including make and model of equipment). Identify on-site support facilities that are available to field staff. Identify key personnel in charge of or overseeing sampling/collection activities. Describe equipment decontamination procedures and requirements. Discuss whether sampling equipment is dedicated or non-dedicated.	
B3. Sample Handling & Custody Requirements Provide a detailed description of the procedures for post sample handling (once the sample has been collected). Provide a detailed description of the chain-of-custody (COC) procedures that will follow in preparing the field samples for transport to the laboratory. If a SOP is available, simply reference and include the SOP in an appendix. Provide a copy of a COC form, sample label, and custody seal.	

B4. Analytical Methods & Requirements Clearly identify the extraction, digestion, analytical methodologies (provide the actual method numbers) to be followed (include all relevant options or modifications required) and the required instrumentation. Specify the turnaround time for hardcopy and electronic laboratory data deliverables. Provide the laboratory SOPs as appropriate. Identify the individual(s) responsible for overseeing the analysis and for implementing corrective actions, if deemed necessary.	
B5. Field Quality Control Requirements Design the field QC program that will be routinely performed on Brownfield projects and provide a corresponding field sampling QC table in the QAPP. Break the QC program down by parameter and matrix to identify the appropriate criteria that will be used for the evaluation. The information presented in this table is what will be used in the data evaluation process. Include the following at a minimum: Each type of field QC sample included in the project; Frequency it will be included; Acceptance criteria (control limits) that the data will be compared against; Actions the data evaluator performs when control limits are exceeded. Typical Brownfield projects will include field duplicate samples for each matrix and parameter, trip blanks for VOC samples, and temperature blanks for the shipping coolers. Other types of field QC samples should be considered for inclusion in the project, if warranted.	
B6. Laboratory Quality Control Requirements Determine the laboratory QC data to be routinely included with the laboratory's data package and provide a corresponding laboratory analytical QC table in the QAPP. Break down by parameter and matrix, as appropriate, based on the information provided by the laboratory. The information presented in this table is what will be used in the data evaluation process described in Section D2. Include the following at a minimum: Each type of laboratory QC sample and frequency; Laboratory acceptance criteria (control limits); The actions the data evaluator performs when control limits are exceeded. Typical Brownfields projects will include the following laboratory QC results: Organic Analyses: method blanks, surrogate data and lab control samples/lab	

control sample duplicates (LCS/LCSD). Inorganic analyses: method blanks, lab control samples (LCS).	
B7. Field Equipment & Corrective Action Below is the general field equipment calibration QA/QC information that needs to be provided in a QAPP. If this information is clearly contained in SOPs attached to the QAPP, simply reference that appendix in this section of the QAPP. Otherwise, provide a field equipment calibration table for the various types of field equipment routinely used on Brownfields projects (e.g. PID, individual low flow water quality parameters, etc.). Document the initial calibration (including standards and concentrations used); Any continuing calibration checks used throughout operation to check for drift (standards, blanks, etc.) and the frequency of such actions; Indicate the acceptance criteria (control limits) that need to be met to proceed; and, Discuss the corrective actions taken in the field when the control limits are not met.	
B8. Lab Equipment & Corrective Action Below is an outline of the laboratory equipment calibration QA/QC information that needs to be provided in a QAPP. If this information is clearly contained in the laboratory SOPs attached to the QAPP, simply reference that appendix in this section of the QAPP. Otherwise, please provide a laboratory equipment calibration table for each analytical method routinely used on Brownfields projects. If this information is unknown, specify it will be in the Site-Specific Addendum. Initial calibration (include the number of initial calibration standards and calibration range); Independent calibration check standard (include relevant concentrations); and, Continuing calibration checks (calibration blanks and concentration of continuing calibration check standard). For each calibration step, include: Frequency that each is performed; Acceptance criteria (control limits); and, Laboratory corrective actions to be taken when control limits are not met.	

B9. Analytical Sensitivity & Project Criteria

Provide an analytical method sensitivity and project criteria table for the analytical methods that will be routinely performed on Brownfields projects.

If data from multiple laboratories is presented, the site-specific QAPP will need to clarify which laboratory is being used on the project. As new methods and/or new laboratories are added on, this table is to be updated accordingly. If this information is unknown, specify it will be in the Site-Specific Addendum.

The table helps evaluate potential concerns with the sensitivity of an analytical method in relation to the project criteria, particularly for primary contaminants of concern. Also, the table is critical in understanding the usability of a data point when a sample result is near the project criteria, which is in turn near the quantitation limits and/or detection limits of the method (i.e. is the data point usable or is more data needed to support a decision/trend in site contamination). The information presented in this table can be used as a reference in the data evaluation process. The table is to include:

Laboratory providing the data;

Analytical method reference (e.g. VOCs 8260B); Matrix (soil, groundwater, air, etc.);

Analyte/compound list;

Method Detection Limit (MDL);

Quantitation/Reporting Limit (QL/RL);

Relevant state/federal criteria or standard that is associated with each analyte/compound and each matrix.

If the laboratory provides only one analytical method limit, note in the table whether it is the MDL or the QL/RL that is being reported. When project criteria is near the MDL, special care should be taken in reviewing this data, particularly if it is a primary contaminant of concern. Depending on the situation, the environmental professional may choose to seek an alternate method with a lower limit of detection.

B10. Data Management & Documents Describe the documentation that will be generated for the project and the data management procedures that will be used in handling both hard copy and electronic media. The three basic areas to cover include the field data, laboratory data, and manipulated data. Clearly specify what documentation goes into the project file and what documentation will be provided in the final report. Include a description of the project data management process and reference the office's record keeping procedures, document control, data storage, retrieval, and security systems. Also include a description for control mechanism for detecting/correcting errors and ensuring accuracy. Include the name, title, and organization of the person(s) responsible for these activities. Attach any forms or checklists to be used for data management purposes.	
C1. Assessments & Response Actions Develop and describe the assessment/oversight plan that will be followed with each project to ensure adherence to the generic QAPP and site-specific QAPP, including: Types of assessments and oversight that will be performed and frequency (when during the project); Identify the person responsible for performing the assessments/oversight (e.g. field leader, QA officer, etc.), and describe where the results will be documented; Identify who will receive the assessment/oversight report; Identify who will be responsible for dealing with corrective actions and follow up on assessments/oversight. Since Brownfields projects are relatively short-term projects, a typical assessment plan would include: 1) oversight of the field team and field subcontractors (early in the project) by an experienced field leader knowledgeable in the project objectives, and 2) peer review of the final report. Oversight, in this case, essentially means determining if the project is going according to the plan and reviewing the procedures in place, helping with problems and questions that arise, and providing another set of eyes to keep the total project in perspective. Please indicate in this section of the QAPP when additional assessment/oversight is planned for a project. The scope and purpose behind the assessment should be described in the site-specific work plan (and include the identified information listed above).	

C2. Project Reports Identify the types of reports that will be routinely generated during the Brownfields project (e.g. Phase I/II ESA, final reports, etc.). Include: Type of report; Frequency of reporting; Position(s) of the person(s) who will be responsible for preparing the reports; Organizations receiving the reports. For the final project report, a fairly detailed description of its contents should be provided to establish appropriate expectations between report preparer and client. Please describe primary components of the main body of the document and specify any routine tables and graphics being provided. Also list the various appendices routinely included in the report. Identify reports and items that will be routinely provided in electronic format.	
D1. Field Data Evaluation Describe the final data evaluation process that will be routinely performed on the field data (field notes, boring logs, field screening results, field analytical data, etc.). This evaluation is intended to gather and document important information from the field data that may impact the project or assist in the interpretation of the laboratory data and the conceptual site model. It is important that any observations, trends, conclusions, and limitations discovered in reviewing the field data be interpreted and documented in the final report. For each component of the field data evaluation, indicate how the results of the evaluation will be documented and what will be presented in the final report. Indicate the position(s) of the person(s) who will be performing the field data evaluation.	

D2. Laboratory Data Evaluation Describe the final data evaluation process that will be routinely performed on the laboratory data. Perform a completeness check of the laboratory data package to ensure it is compliant with the requirements in the QAPP. Missing information or questions concerning the data package are to be addressed with the laboratory and any pertinent information should be documented and/or provided in the final report. Review the chain-of-custody, sample preservation, and holding time results. Document the presence or absence of any problems with the data, and note any relevant sample data that may be impacted. Evaluate the field QC sample results including data qualifiers for sample results. For the field duplicate sample results, tabulate the relative percent differences (include these results in the final report). If other field QC samples were submitted, such as performance evaluation samples or matrix spike samples, this data should also be tabulated with appropriate recoveries and reported accordingly. Document the presence or absence of any problems or issues and note any relevant sample data that may be impacted, as appropriate. Evaluate the laboratory QC results. Document the presence or absence of any problems or issues and note any relevant sample data that may be impacted. For each of the components of the laboratory data evaluation, indicate how the results of the evaluation will be documented and what will be presented in the final report. Again, it is important that any observations, trends, and limitations discovered in the field and/or laboratory QC data be interpreted and documented in the final report. Indicate the position(s) of the person(s) who will be performing the laboratory data evaluation.	

D3. Data Usability & Project Evaluation Describe the overall project evaluation process that will be routinely performed to determine the nuances in the usability of the data, update the conceptual site model, and determine if the objectives of the project have been met. Tabulate the field sample data with the state/federal standards for presentation in the final report. Highlight any sample results exceeding criteria. Check the table for correctness and appropriate units. Prepare site figures/maps and other graphical representations, as appropriate, and check for correctness and accuracy. Using the summary tables and graphical presentations, evaluate the usability of the individual field sample results at the parameter level. Document any limitations on how the data should be used and/or interpreted. Draw on the sensitivity criteria, the results of the field data evaluation, and/or the results of the laboratory data evaluation. As sample concentrations approach the reporting limit, and on down to the MDL, the precision and accuracy of the data can be expected to worsen, which can impact how you judge the usability of this data. Based on the results of the data usability study, use the summary tables and site maps to perform the overall project evaluation. Document any observations, trends, anomalies, or data gaps that may exist. Evaluate how the sample results have impacted the conceptual site model for the property, and whether the objectives of the project have been met. Draw conclusions and recommendations from all the information obtained and document appropriately in the final report. For each of the components of the data usability and project evaluation, indicate how the results of the evaluation will be documented and what will be presented in the final report. Indicate the position(s) of the person(s) who will be performing the data usability and project evaluation.	

US EPA REGION 4 BROWNFIELDS SITE-SPECIFIC QAPP ADDENDUM TEMPLATE

Brownfields Site-Specific QAPP Elements and general information/template for writers	**Notes**
A1. Title and Approval Page Title (including brownfields cooperative agreement recipient name and revision #) Addendum Number - see guidance Brownfields cooperative agreement grant # Date Organization's name: the name of the organization preparing the QAPP Dated signature of approving officials: printed names, titles, organizations, dates, and signatures Indicate the Addendum is prepared in accordance with EPA's Region 4 Brownfields Program. Identify the Addendum's Association with the approved Generic QAPP (including a complete reference to the Generic QAPP). Provide a statement that the work described will be performed in accordance with the process described in the Generic QAPP.	
A2. Table of Contents A table of contents must include tables, figures, and appendices.	
A3. Distribution List Name, title/position, organization, and contact information (telephone and email) of all entities requiring copies of the Site Specific QAPP. Should include all individuals mentioned in the document.	
A4. Project/Task Organization: List key project personnel and describe their roles and responsibilities for the project. See Appendix A Brownfields Generic QAPP Elements for information on concepts to be covered in this section.	

A5. Problem Definition/Background Provide historic, scientific, and/or regulatory background of the site or the project. Identify the current property owner and the proposed future reuse/development plans for the property. Describe pertinent historical and current uses of the property, as well as any uses of adjacent properties, that may be impacting the site. Describe the Recognized Environmental Conditions from the Phase I Environmental Site Assessment. Discuss known or likely contaminants of concern and where it may be located. Describe the findings of previous investigations and how/whether data will be used in this assessment or cleanup (this is particularly relevant for a cleanup QAPP). Provide a topographic map of the surrounding site area and a site map showing significant structures, terrain, previous sampling locations, and relevant summary data, as appropriate, to illustrate problem. Provide regulatory standards or criteria that data will be compared against.	
A6. Project/Task Description/Timeline Summarize the tasks that will be performed, the data that will be collected, the decisions to be made, and the timeline for the data and reports. Identify the media that will be sampled. Provide the projected timeline for key tasks in the project, including QAPP review and approval, field activities and sampling, laboratory results turnaround, and reporting activities to be completed. Allow 30 days for EPA QAPP review.	
A7. Quality Objectives and Criteria for Measurement Data Identify the seven steps in the DQO process for the project.	
A8. Special Training Requirements and Special Certifications Indicate in the Site-Specific QAPP that the project's special training requirements and special certifications are in the Generic QAPP. See Appendix A Brownfields Generic QAPP Elements for information on concepts to be covered in this section.	Indicate it is in the Generic QAPP.
A9. Documentation and Records Indicate in the Site-Specific QAPP that the project's documentation and records requirements are in the Generic QAPP. See Appendix A Brownfields Generic QAPP Elements for information on concepts to be covered in this section.	Indicate it is in the Generic QAPP

B1. Sampling Design and Site Figures Describe all the samples to be collected. Provide the logic and rationale of the sampling. Specify the locations, numbers of samples, and analytical parameters for all media. Provide the purpose behind a set or series of samples in a certain area or location, and how the sampling design addresses the problem identified in Section A5. Discuss any unusual communication/instructions that needs to take place between the field contractor and the laboratory to address special methods, matrices, particular samples, etc. When the sampling locations, sampling depths, and/or choice of analytical parameters cannot be predetermined, document the decision logic or input that will be used in the field to make those determinations (i.e. dynamic sampling strategies) and explain how the process will be documented and reported. Provide maps showing sample locations and a table that includes: -Sample matrix -Environmental parameters -Sampling collection method -Analytical method reference -Number of field samples -Type and number of field QC samples for each matrix and parameter -Samples used for background or control comparison Specify the site-specific concerns about all IDW and the methodology for characterizing the material for disposal.	
B2. Sampling and Analytical Procedures Describe the sampling methods and procedures or cite the specific SOPs to be used to guide the sample collection (include SOPs as attachments to the QAPP), for example, preparation of sample containers, sample volumes, preservation and holding times; sample packaging, labeling and shipping; equipment preparation; decontamination and disposal of waste by-products; how problems (lost samples, broken equipment, inaccessible sampling locations, etc.) will be resolved and documented. If SOPs are referenced, include a table listing all field sampling SOPs that will be used. Include the title of SOP, date, revision number, and organization that wrote the SOP. Describe any modifications to the SOPs that are necessary for your project.	

B3. Sample Handling and Custody Requirements	Indicate it is in the Generic QAPP
B4. Analytical Methods and Requirements	Indicate it is in the Generic QAPP unless site-specific methods are unique to a project
B5. Field Quality Control Requirements	Indicate it is in the Generic QAPP
B6. Laboratory Quality Control Requirements	Indicate it is in the Generic QAPP
B7. Field Equipment & Corrective Action	Indicate it is in the Generic QAPP
B8. Lab Equipment & Corrective Action	Indicate it is in the Generic QAPP
B9. Analytical Sensitivity & Project Criteria	Indicate it is in the Generic QAPP unless site-specific methods are unique to a project
B10. Data Management and Documents	Indicate it is in the Generic QAPP
C1. Assessments and Response Actions	Indicate it is in the Generic QAPP
C2. Project Reports	Indicate it is in the Generic QAPP
D1. Field Data Evaluation	Indicate it is in the Generic QAPP
D2. Laboratory Data Evaluation	Indicate it is in the Generic QAPP
D3. Data Usability and Project Evaluation	Indicate it is in the Generic QAPP