Appendix A

Brownfields Generic QAPPs Guidance and Writer/Reviewer Checklist

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1. Primary QAPP elements required in a Site-Specific QAPP Addendum.
2. **Generic QAPP elements for field and laboratory SOPs, QC criteria, and State standards/criteria.**
3. **Generic QAPP elements for a consultant's routine procedures for handling Brownfields projects.**

QAPP Elements	
PROJECT MANAGEMENT	
Section A - Title and Approval Page	
✓ Project Title ✓ EPA QA RFA Number ✓ Prepared for, prepared by (include mailing addresses) ✓ Plan date and revision number ✓ Approving Officials (names, titles, signatures, and date signed) Examples: Project Manager Project QA Officer EPA Project Officer Approval EPA QA Officer Approval State, Grantee or other key signatures, as requested on the project NOTE: GENERIC QAPP APPROVAL MUST BE OBTAINED PRIOR TO INITIATING FIELD ACTIVITIES.	
Section A (Cont.) – Introduction	
Provide a brief introduction to the Generic QAPP that includes: ✓ Preparation in accordance with EPA's Brownfields program, ✓ Identify the state, or states, that the Generic QAPP was developed for use in, and include a brief overview of the state's rules and regulations governing the work, references to any specific state guidance documents or that are being followed, and a general reference to the state standards/criteria that data are evaluated against. ✓ Indicate the organization's commitment to maintaining the Generic QAPP over its shelf life and providing yearly updates on the document (incorporating appropriate modifications and additions encountered during site-specific work). ✓ Indicate the organization's commitment and understanding of the site-specific QAPP Addendum program for individual projects, including: o Approval of the Addendum prior to conducting any site work o All project work will be performed in accordance with the processes and procedures described in the Generic QAPP o When site-specific work involves any modifications and/or additions to the Generic QAPP, they will be provided in the relevant QAPP Addendum.	
Section A (Cont.) – Table of Contents	
Due to the size and complexity of the Generic QAPP, please provide a table of contents outlining all appropriate sections and appendices. (Note: Generally, a table of contents is not needed for site-specific QAPP Addenda; however, it may be beneficial in certain circumstances.)	
Section B – Project Organization and Responsibility	
An approved Brownfields Generic QAPP can be used on multiple Brownfields assessment or cleanup grants. With each grant, the project organization and area	

QAPP Elements	
covered by the grant will be different. Thus, the complete project organization will not be known until the Generic QAPP is submitted for work on a particular grant. To permit versatility in the review, approval and distribution, the project organization in the Generic QAPP will only contain relevant information on the lead environmental consulting firm and their known subcontractors. Place markers will be open for the remaining grant-specific personnel. An example of the basic organizational chart that would routinely be used on a Brownfields project is provided in Section 5.0 of the main Brownfields QAPP program guidance. When a consulting firm begins work on a Brownfields grant, they will need to submit a copy of their approved Generic QAPP and an updated Project Organization chart containing all relevant personnel on the project team. The organization chart will be accompanied by a brief cover letter that assigns the Generic QAPP to the particular grant (including the type of Brownfields grant and the EPA Grant number), and provides some relevant background information on the grantee and the geographic area covered by the grant. The updated grant-specific Project Organization should identify key individuals in all organizations participating in the project, including: Grantee, EPA Project Officer, EPA QA Officer, State contact (if relevant), the prime consultant (project manager, field supervisor, QA officer), and their subcontractors (laboratories, drilling firms, etc.). An Organization chart is preferred, but a table or text format is acceptable. ✓ Include their name, title/position, organization, and contact information (telephone number and email address).	
Section C - Problem Definition	
Please indicate in the Generic QAPP that a project's Problem Definition will be provided in a site-specific QAPP Addendum. ★ (See Appendix B, Guidance for Brownfields Site-Specific QAPP Addenda, for information on the concepts to be covered in this section.)	
Section D - Project Description	
Please indicate in the Generic QAPP that a project's Project Description will be provided in a site-specific QAPP Addendum. ★ (See Appendix B, Guidance for Brownfields Site-Specific QAPP Addenda, for information on the concepts to be covered in this section.)	
Section D (Cont.) - Project Timeline	
Please indicate in the Generic QAPP that a project's Timeline will be provided in a Site-Specific QAPP Addendum. ★ (See Appendix B, Guidance for Brownfields Site-Specific QAPP Addenda, for information on the concepts to be covered in this section.)	

QAPP Elements	
MEASUREMENT DATA ACQUISITION	
Section E - Sampling Design and Site Figures	
Please indicate in the Generic QAPP that a project's Sampling Design and Site Figures will be provided in a Site-Specific QAPP Addendum. ★ (See Appendix B, Guidance for Brownfields Site-Specific QAPP Addendums, for information on the concepts to be covered in this section.)	
Section F - Sampling and Analytical Methods 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-establish 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. The table is intended to provide a detailed summary of the samples being collected on a project and should clarify and reflect the sampling design presented in the text (i.e., the numbers must match). The table (or tables) can be of your own design, but should include the following information: ✓ Sample matrix (e.g., soil, sediment, groundwater, etc.) ✓ Parameter (e.g., VOCs, PCBs, 13 priority pollutant metals, etc.) ✓ The number of field samples to be collected for that matrix/parameter, and number of each type of field QC sample to be collected with that matrix/parameter (e.g., 10 field samples, 1 field duplicate, 1 trip blank). ✓ Sampling Method reference number (corresponding to field SOPs provided in Section G) ✓ Analytical method reference, <u>including preparation and analysis methods</u> (e.g., SW846 5035A/8260B, 3540C/8270C, 5010A/6020, etc.) ✓ Laboratory SOP reference number(s) (corresponding to laboratory SOPs provided in Section G) ✓ Sample containers (number per sample, size, and type) ✓ Sample preservation (temperature, light, chemical, etc.) ✓ Maximum holding time requirements (preparation and analysis)	
Section G - Method and SOP Reference Table	
Provide a reference table of the field and laboratory Standard Operating Procedures (SOPs) that will be routinely used for Brownfields projects. Note: A reference numbering system should be developed for the SOPs and included in this table. This will be particularly important when multiple laboratories are included in the Generic QAPP. Please include the following: ✓ <u>Field sampling SOPs</u> (e.g., field notes, sample collection procedures for each type of sample and matrix, soil headspace analysis, water level measurements, soil characterization, equipment decontamination, etc.): Include document title, revision	

number, and date. ✓ Analytical method references for the preparation and analysis of the samples. Include document title, method name and number, revision number and date. ✓ The corresponding laboratory SOP reference for each analytical procedure listed. Include document title, revision number, date and author (i.e., laboratory). ✓ Provide copies of all field and laboratory SOPs as an appendix to the QAPP. Remember, these are organization-specific SOPs on how the individual organization performs the task, and the QA/QC steps they use to monitor their work. *Copies of published methods, EPA or state guidance documents, instrument manuals, and laboratory Quality Assurance Manuals **should not** be included. Double-sided hard copies of all the SOPs should be submitted to the EPA Quality Assurance Unit as a separate appendix to the Generic QAPP. This will allow for easy editing of the main body of the QAPP without having to re-print and reissue of all the SOPs. Electronic copies of all the SOPs should be submitted to all other recipients of the Generic QAPP. Electronic copies of SOPs should be provided on a properly indexed CD that is easy to navigate around, and allow for easy printing of individual SOPs for closer review (i.e., a single 200 page file of 10 SOPs strung together is not acceptable). ✓ Note, if any project-specific modifications are made to a standardized procedure, please document those changes in the site-specific QAPP Addendum. If the modifications will be used on other projects, the SOP should be modified to reflect these changes.	
Section H - Field Equipment Calibration and Corrective Action	
Below is an outline of the field equipment calibration QA/QC information that needs to be provided in a QAPP. If this information is clearly contained in the field SOPs attached to the QAPP, simple reference that appendix in this section of the QAPP. If this information is not clearly contained in the SOPs, please 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), and any continuing calibration checks used throughout operation to check for drift (standards, blanks, etc.) ✓ Indicate the frequency that each is performed (when and how often). ✓ Indicate the acceptance criteria (control limits) that need to be met to proceed. ✓ Discuss the corrective actions taken in the field when the control limits are not met.	
Section I - Laboratory Equipment Calibration and 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, simple reference that appendix in this section of the QAPP. If this information is not clearly contained in the SOPs, please provide a laboratory equipment calibration table for each analytical method routinely used on Brownfields projects. ✓ Initial calibration (include the number of initial calibration standards and calibration range) ✓ Independent calibration check standard (include relevant concentrations)	

✓ 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). ✓ Laboratory corrective actions to be taken when control limits are not met.	
Section J – Sample Handling and Custody Requirements	
✓ Describe the standard chain-of-custody (COC) procedures that will be followed in preparing the field samples for transport to laboratory (if an SOP is available, simply reference and include in the SOP appendix). ✓ If field analyses are being performed (e.g., TPH test kits, XRF, field GC, etc.), describe the routine sample documentation and transfer procedures that will be used in the field for these samples. ✓ Provide a copy of a COC form, sample label, and custody seal (here or in appendix).	
Section K – Analytical Sensitivity and Project Criteria	
Provide an analytical method sensitivity and project criteria table for the analytical methods that will be routinely performed on Brownfields projects. Note: If data from multiple laboratories is presented, the site-specific QAPP Addendum needs to clearly identify the laboratory being used on the project. (As new methods and/or new laboratories are added on, this table is to be updated accordingly.) This is a very important table for both planning the project and evaluating the resulting data. Initially, 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. Finally, 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 or trend in site contamination). The information presented in this table can be used as a handy reference in the data evaluation process described in Section S. 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) ✓ Note: EPA expects the laboratory reporting limit to be based on the low calibration standard and for the value to be less than the appropriate action limit. The QAPP should include how data will be handled if the routine reporting limit is greater than the associated action limit. If the analyte is a primary contaminant of concern, the environmental professional should request an alternate method with a lower limit of detection to verify the absence of the analyte. ✓ Relevant state/federal criteria or standard that is associated with each analyte/compound and each matrix. **Note: please make sure the appropriate units are specified and that the analytical method and project criteria units are the same.**	

Section L - Field Quality Control	
Describe the field QC program that will be routinely performed on Brownfields 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 described in Section R. Include: ✓ 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 ✓ The 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. However, several other types of field QC samples should be considered for inclusion in the project. These may include equipment blanks, performance evaluation samples (i.e., a certified standard submitted to the laboratory as a blind QC sample), and matrix spike/matrix spike duplicates samples. The environmental professional should weigh several factors in making these decisions, including the project objectives, issues with particular primary contaminants of concern (e.g., the project criteria is near the limits of sensitivity of the method, etc.), and issues associated with certain difficult matrices (i.e., highly organic soil/sediment, brackish water, etc.). When additional field QC is deemed appropriate, the purpose behind including the additional QC samples should be described in the site-specific QAPP Addendum, along with the relevant information described above. ➢ NOTE: For field duplicate soil samples, document whether they are being collected as collocated duplicates (collected adjacent to each other), or as a split of a single homogenized sample. Collocated duplicate data is useful for evaluating the homogeneity of the soil/sediment matrix within a relative area. ➢ NOTE: Individual states may require matrix spike samples as part of the QA/QC requirements. These state requirements take precedence and should be reflected in this table. ➢ NOTE: Matrix spike samples are being considered as part of the field QC program because they need to be specified on the chain-of-custody and often require the field sampler to collect additional sample volume for the laboratory.	
Section M – Laboratory Quality Control	
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 R. Include: ✓ Each type of laboratory QC sample: ✓ 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 (LCS) and lab control sample duplicates (LCSD) ✓ Inorganic analyses: method blanks, lab control samples (LCS). NOTE: Method blanks and laboratory control samples are QC samples that are brought through the identical extraction and analysis procedures as the field samples. NOTE: Individual states may have specific laboratory QA/QC requirements. These state requirements take precedence and should be reflected in this table.	
Section N - Data Management and Documentation	
Describe the documentation that will be generated for the project, and the data management procedures that will be used in handling that information. The three basic areas to cover include the field data, laboratory data, and manipulated data presented in final report. Clearly specify what documentation goes into the project file and what documentation will be provided in the final report. **Field Documents and Records** Discuss the field documents and records that will be routinely generated, collected, and managed in a Brownfields project (e.g., field notes, field screening and analytical data, boring logs, low flow parameters, photographs, etc.). For each: ✓ Describe the process for the collection and organization of the field documents and records, and the relevant data reduction steps that are routinely preformed, including new documents generated based on manipulating the data. (If an SOP for taking daily field notes is not provided in the appendix to the QAPP, please discuss those procedures in this section.) ✓ Describe any QA checks (i.e., for completeness, consistency, accuracy, etc.) that are performed on originally collected data and manipulated data. ✓ Specify what documents and records will be stored in the project file and which will be provided in the final report. ✓ Provide copies of all field forms that will be routinely used in an appendix to the QAPP. Evaluation and interpretation of this field data is covered in Section Q. **Laboratory Documents and Records** Specify the contents of the routine laboratory data package deliverable. For a typical Brownfields project the following minimum deliverable is recommended: ✓ Project Narrative which contains an explanation of any qualified data, and any observations or deviations encountered during analysis. ✓ Data results sheets (including preparation and analysis dates, percent solids for soil/sediment samples, sample concentrations, units, reporting limits, etc.). ✓ Laboratory QC package (Section M): Method blanks, surrogates, laboratory control samples, MS/MSDs if requested. Completeness checks on the laboratory data package are covered in Section R. NOTE: Individual states may have specific QA/QC program requirements. These state requirements take precedence and should be reflected in this section. When the ability to perform an in-depth evaluation of the data may be desired, or if cost recovery or data defensibility is anticipated in the future, the environmental professional should consider requesting complete data packages from the laboratory at the time the	

work is performed. Although an in-depth evaluation of this data may not needed, it is important to obtain this data at the time of the project so appropriate completeness checks can be performed while it is current. When full data packages are deemed appropriate, the purpose should be described in the site-specific work plan, along with an updated contents list of what is being required in the deliverable. Complete packages generally include all of the above requirements, plus:

✓ All Initial and Continuing Calibration Results and Acceptance Limits.
✓ All other method QC data.
✓ All sample preparation and analysis raw data (including printouts, chromatograms and laboratory notebook pages).

Post Laboratory Data Manipulation

Describe the routine data entry/manipulation process that takes place in crunching the laboratory data for further evaluation and reporting (i.e., transfer into databases for manipulation into data tables, graphics, forms, etc.). Include relevant QC data that is manipulated for presentation. In addition:

✓ Describe any checks that will be performed to detect and correct errors, and to prevent loss of data during data reduction, data reporting and data entry into forms/reports/databases.
✓ Specify what hardcopy and electronic documents and laboratory records will be stored in the project file and what hardcopy and electronic documents and laboratory records will be provided in the final report.
✓ Identify applicable software routinely used in data manipulation.

Project File

Specify how long the project file will be maintained and stored, and its final disposition after that period.

ASSESSMENT/OVERSIGHT

Section O - Assessments and Response Actions

Develop and describe the assessment/oversight plan that will be routinely followed with each project, including:

✓ Types of assessments and oversight that will be performed,
✓ 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 (indicate written or verbal)
✓ 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 on 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 checking on if the project is going according to the plan and procedures in place, helping with problems and questions, and providing a set of eyes keeping the total project in perspective.

Many other areas of a project (including the laboratory) can gain from assessment and oversight, and prime contractors are encouraged to develop and implement a long term

approach to this type of a quality assurance program. Please indicate in this section of the QAPP, that 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).	
Section P - Project Reports	
Identify the types of reports (written and verbal) that will be routinely provided to during the Brownfields project (e.g., status reports, final reports, etc.). Include: ✓ Type of report ✓ Frequency of reporting ✓ Identify the position(s) of the person(s) who will be responsible for preparing the reports ✓ Identify the organizations that will be 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 items that will be routinely provided in electronic format). ➢ For the format of final project reports, it is preferred that the main body of the report, the summary tables and the graphics all be provided in hardcopy. Appendices that would require large volumes of paper to reproduce (such as the laboratory data package) are preferred in electronic format on a CD. Proper indexing of the CD, for easy review of the information, is recommended and greatly appreciated. ➢ Summary data tables of the field sample results should always include the relevant project criteria/standards for easy comparison, and results exceeding criteria should be highlighted in some manner. ➢ In the final report, it is preferred that summary discussion of the tasks performed on the project, and the results for those tasks, not be separated out into two sections. The flow of the review goes much smoother if the summary of each task is followed immediately by the results (i.e., here's how the soil boring program was laid out and here's the results). The combined discussion, along with the tables and maps, helps the reviewer better visualize the layout of contamination on site.	
DATA EVALUATION	
Section Q – 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, and 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 the final report.	

✓ Indicate the position(s) of the person(s) who will be performing the field data evaluation.	
Section R – Laboratory Data Evaluation	
Describe the final data evaluation process that will be routinely performed on the laboratory data. For Brownfields projects, the basic steps include: ✓ Perform a completeness check of the laboratory data package to ensure it is compliant with the requirements in the QAPP (as specified in Section N). 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 (specified in Section L). For the field duplicates 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 (specified in Section M). 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.	
Section S - Data Usability and 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 for the property, and to determine if the objectives of the project have been met. The basic steps include: ✓ Tabulate the field sample data together 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 specified in Section K. (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.)

- ✓ The results of the field data evaluation specified in Section R.
- ✓ The results of the laboratory data evaluation specified in Section Q.
- ✓ Some items to look for may include:
  - ✓ Pay attention to contaminants of concern where the concentration is near the project criteria and reporting limits for the method. Are there sufficient surrounding data points to support a trend of real contamination? Or is more data needed to support a conclusion or decision?
  - ✓ Look at the field duplicate results in evaluating the heterogeneity of a particular matrix. This variability can impact the usability of low level results near the project criteria. Are more data points needed to support a conclusion or decision (i.e., or was it a solo hit just above the criteria).
  - ✓ Look at sample results that are reported at elevated reporting limits due to dilution of the sample during analysis. Is the usability of the data compromised because the reporting limits are greater than the project criteria? Does the laboratory need to be contacted to determine the reason for the dilution? Can cleanup and reanalysis be performed to salvage the data?
  - ✓ Look at the low flow groundwater quality data. Does the turbidity data impact the use of the SVOC, PCB or metals data where the concentration is near the project criteria and reporting limits for the method? Etc.

✓ Based on the results of the data usability study conducted above, 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 above, 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.

Appendix B

Brownfields Site-Specific QAPP Addenda Guidance and Writer/Reviewer Checklist

Land & Community Revitalization
BROWNFIELDS
EPA New England

PROJECT MANAGEMENT		
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2. Generic QAPP elements for field and laboratory SOPs, QC criteria, and State standards/criteria.
3. Generic QAPP elements for a consultant's routine procedures for handling Brownfields projects.

QAPP Elements	
PROJECT MANAGEMENT	
Section A - Title and Approval Page	
✓ Project Title ✓ Addendum sequence number (for example: A1, where A = 1st site and 1 = first Addendum for that site, etc.) ✓ EPA Brownfields Grant Number, and EPA QA RFA Number ✓ Prepared for, prepared by (include mailing addresses) ✓ Plan date and revision number ✓ Approving Officials (names, titles, signatures, and date signed) Examples: Project Manager Project QA Officer EPA Project Officer Approval EPA QA Officer Approval State, Grantee or other key signatures, as requested on the project NOTE: SITE-SPECIFIC QAPP ADDENDUM APPROVAL MUST BE OBTAINED PRIOR TO INITIATING FIELD ACTIVITIES.	
Section A (cont.) – Introduction	
Provide a brief introduction to the Site-Specific QAPP Addendum that includes: ✓ Identify the grantee and the type of grant, ✓ Indicate the Addendum is prepared in accordance with EPA's Brownfields program, ✓ Identify the Addendum's association with the approved Generic QAPP (including a complete reference to the Generic QAPP, and the QA RFA #), ✓ Provide a statement indicating that the work described in the addendum will be performed in accordance with the processes and procedures described in the Generic QAPP, and ✓ Include any other relevant information that sets the stage for the project.	
Section B – Project Organization and Responsibility	
Should a specific project require any modifications or additions to this section, please provide those changes with the associated site-specific QAPP Addendum. These modifications and additions should be tracked and incorporated into the Generic QAPP at the yearly update. ➢ (See Appendix A, Guidance for Brownfields Generic QAPPs, for information on the concepts to be covered in this section.)	
Section C - Problem Definition	
For the initial site-specific QAPP Addendum on a particular site/property, the Problem Definition section should include a detailed description of the site history and environmental problem as discussed below. For any additional work that is needed to complete the site investigation or cleanup, follow-up QAPP Addenda will need to be prepared. For follow-up work on an on-going site, the Problem Definition section need	

QAPP Elements	
only describe 1) what happened in the previous investigation that has caused the need for the additional work, and 2) a clear explanation of the problems to be solved, decisions to be made, and/or outcomes to be achieved. NOTE: The level of detail in a follow-up QAPP Addendum (for the Problem Definition, Project Objectives, Sampling Design, and the Sampling and Analytical Methods Requirements sections) should always be adjusted to the amount and complexity of the work being performed. <u>Initial site-specific QAPP Addendum</u>: Provide sufficient background information from a historic, scientific, and/or regulatory perspective to establish the current understanding of the site. ✓ 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. Discuss known or likely chemicals/contaminants of concern. Whenever possible identify specific primary contaminants of concern (i.e., lead as opposed to just metals), and if historical data is available, indicate where known contamination is present and its magnitude relative to criteria/standards (i.e., just above, just below, 5-time above, etc.). Tables of historical data from previous investigations are very helpful. ✓ Present the current understanding of the conceptual site model (CSM) for the project, and indicate how contamination may be acting in the environment. Identify the size of the property, pertinent understanding of site hydrology and geology (include known or presumed groundwater flow direction, depth to groundwater, soil/overburden characteristics and depth to bedrock). Reference any important documents/reports used in development of the CSM. ✓ Provide a topographic map of area around the site, and a site map showing significant structures, terrain, previous sampling locations, inferred groundwater flow direction, and relevant summary data, as appropriate to illustrate the problem. ✓ If there are identified Recognized Environmental Conditions (RECs) or Areas of Concern (AOCs) that will not be addressed in this project, clearly state the limits of this investigation. ➢ Clearly state the problems to be solved, decisions to be made, and outcomes to be achieved.	
Section D - Project Description	
✓ Provide an <u>outline</u> for the tasks to be performed, and the principle use of the data obtained from each task. ✓ Identify the media and parameters being sampled. ✓ Identify the field measurements (PID, low flow parameters), field analytical testing (IA test kits, XFR metals, field GC, etc.), and off-site laboratory testing being performed. ✓ Distinguish between the critical data which will drive decisions (i.e., specific analytes or compounds of concern), and non-critical data used for supporting purposes. ✓ Cite the specific regulatory standards or criteria that data will be compared against. ✓ Define important conditions under which data should be collected (e.g., storm event,	

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seasonal, flow conditions, etc.) ➢ Provide clear discussion on how project tasks relate to resolving problems/issues stated in background section (i.e., what is the task attempting to determine).	
Section D (Cont.) - Project Timeline	
✓ 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. (Please allow 30 days for QAPP review and approval in your planning.)	
MEASUREMENT DATA ACQUISITION	
Section E - Sampling Design and Site Figures	
Provide the details and design elements behind the various sampling tasks to be performed. This section describes the logic and rationale (the "why") behind the design of the sampling program. A thorough site reconnaissance should always be performed to conceptualize and solidify the design elements of the plan. ✓ Be specific as to the locations, numbers of samples, and analytical parameters for each task, including test pits, soil borings/monitoring wells, groundwater and surface water sampling, surface soil sampling, sediment sampling, soil vapor sampling, etc. Indicate the minimum sample quantities and/or analytical data points needed to meet completeness goals for the project. ✓ Explain the thought process behind the layout of the sample locations. Discuss the design in terms of the purpose behind individual locations, as well as more globally in terms of 1) the purpose behind a set or series of samples in a particular area or location, and 2) how the sampling design addresses the whole site. ✓ Discuss any out of the ordinary 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 can not be predetermined, document the decision logic or input that will be used in the field to make those determinations (i.e., describe the dynamic sampling strategies) and explain how the process will be documented and reported. (Remember, when making decisions at individual locations in the field, continually review the overall sampling design on the site to help avoid data gaps in the project and improve later trend analysis.) ✓ Include detailed sampling maps and sample summary tables (see Section F) that clarify and reflect the design text. Note: An updated sampling map should be provided with follow-up QAPP Addenda to illustrate the new sampling locations.	
Section F - Sampling and Analytical Methods Requirements	
Include a detailed sample summary table that clarifies and reflects the sampling design in the text. Note, if a defined field analytical program is part of the sampling design, please include that information in the summary table. The table (or tables) can be of your own	

design, but they need to include: ✓ Sample matrix (e.g., soil, sediment, groundwater, etc.) ✓ Parameter (e.g., VOCs, PCBs, 13 priority pollutant metals, etc.) ✓ The number of field samples to be collected for that matrix/parameter, and number of each type of field QC sample to be collected with that matrix/parameter (e.g., 10 field samples, 1 field duplicate, 1 trip blank). ✓ Analytical method reference, <u>including preparation and analysis methods</u> (e.g., SW846 5035A/8260B, 3540C/8270C, 5010A/6020, etc.) ✓ Analytical laboratory SOP reference number (corresponding to SOPS in Section G) ✓ Sampling Method reference number (corresponding to SOPs in Section G) ✓ Sample containers (number per sample, size, and type) ✓ Sample preservation (temperature, light, chemical, etc.) ✓ Maximum holding time requirements (preparation and analysis)	
Section G - Method and SOP Reference Table	
Section H - Field Equipment Calibration and Corrective Action	
Section I - Laboratory Equipment Calibration and Corrective Action	
Section J – Sample Handling and Custody Requirements	
Section K – Analytical Sensitivity and Project Criteria	
Section L - Field Quality Control	
Section M – Laboratory Quality Control	
Section N - Data Management and Documentation	
➢ Should a specific project require any modifications or additions to the above sections, please provide those changes with the associated site-specific QAPP Addendum. NOTE: When adding a new SOP to the Generic QAPP, several of the sections above will be affected. Only the pertinent information from those sections, related to that new SOP, needs to be provided in the site-specific QAPP Addendum. These modifications and additions should be tracked and incorporated into the Generic QAPP at the yearly update. ➢ (See Appendix A, Guidance for Brownfields Generic QAPPs, for information on the concepts to be covered in this section.)	
ASSESSMENT/OVERSIGHT	
Section O - Assessments and Response Actions	
Section P - Project Reports	
Should a specific project require any modifications or additions to these sections, please provide those changes with the associated site-specific QAPP Addendum. Note in the site-specific QAPP addendum whether the additional assessment or report information is a single occurrence or whether the modifications and additions should be tracked and incorporated into the Generic QAPP at the yearly update.	

➢ (See Appendix A, Guidance for Brownfields Generic QAPPs, for information on the concepts to be covered in this section.)	
DATA EVALUATION	
Section Q – Field Data Evaluation	
Section R – Laboratory Data Evaluation	
Section S - Data Usability and Project Evaluation	
Should a specific project require any modifications or additions to these sections, please provide those changes with the associated site-specific QAPP Addendum. Note in the site-specific QAPP Addendum whether the additional data evaluation information is a single occurrence or whether the modifications and additions should be tracked and incorporated into the Generic QAPP at the yearly update. ➢ (See Appendix A, Guidance for Brownfields Generic QAPPs, for information on the concepts to be covered in this section.)	