

## **REGION 3 QAPP Review Checklist**

**Document Number:**

**Site Name:**

**Document Title:**

**Account Number:**

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Reference Code (Section #)	Elements & Required Information	IA	IU	NI	NA	Location of Element in Submitted Document (Section #, Table #, figure #, etc)	COMMENTS
<b>PROJECT MANAGEMENT</b>							
1 ( A1)	Title & Approval Page						
	Includes title of plan						
	Includes name of the organizations						
	Includes names, titles, signatures of appropriate officials and their approval dates						
1 (A2)	Table of Contents (Lists sections, figures, tables, references, and appendices)						
	Effective Document Control Format						
1 (A3)	Distribution List (Lists all the individuals and their organizations who will receive copies of the approved QAPP and any subsequent revisions.)						
1 (A4)	Project Organization						
	Identifies key individuals or organizations participating in the project with their responsibilities (e.g., data users, decision-makers, project QA manager, subcontractors, etc.)						

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<b>PROJECT MANAGEMENT</b>							
	Identifies/Describes individual(s) responsible for overall QA/QC (Project QA manager is independent of the data generating unit)						
	Identifies individual(s) responsible for sampling operations and sampling QC						
	Identifies individual(s) responsible for data processing and data processing QC						
	Identifies organization(s) involved with data analysis						
	Identifies individual(s) responsible for data validation (needs to be independent of data generator/laboratory)						
	Project Organization Chart(s) [Shows lines of authority and reporting responsibilities, includes contractors and subcontractors]. Includes EPA's role and other stakeholders/decision makers.						
1 (A5)	Site Background						
	Includes a list of the known and suspected contaminants in each medium and estimates of their concentration, variability, distribution, and location.						
	Includes the site's physical and chemical characteristics that influence migration and associated human, environmental and physical targets.						
	Includes a conceptual site model and exposure pathways						

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	Includes a summary of the outcome and status of any previous response(s) at the site, such as early actions or previous data collection activities						
	Includes Site Maps (historical & present)						
1 (A5)	Problem Definition						
2 (Chap.1)	Includes statement(s) of the decision(s) that will be made based on the outcome of the field investigation						
3 (Chap. 1)	Includes list of actions that will be taken toward remediation or removal of the potential contamination problem based on the outcome of the field investigation						
4 (Chap. 1)							
	Includes the types of informational inputs needed for decision (e.g., sampling, modeling, or a combination of these approaches). If applicable, include collection of previous data collection (identifying sources).						
	Identifies Applicable technical quality standards or criteria (e.g., ARARS, State standards, other federal agency standards, action levels).						
	Includes specific action levels and the criteria for choosing between alternative actions						

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	Includes a decision rule - an "if...then...." statement that defines the conditions that would cause the decision maker to choose among alternative courses of action. The decision rule should include the decision, the actions, the parameter of interest and the action level.						
1 (A6)	Project Description & Schedule						
4 (Chap. 3)	Provides a description of the work to be performed; provides sufficient information as to the project's goals and types of activities to be conducted						
	Includes special personnel and equipment requirements that may indicate the complexity of the project (particularly for any new or innovative sampling or analytical technique being employed)						
	Includes Project Schedule Timeline (graphical or tabular format). Includes start and completion dates for all project activities (including quality assurance assessments).						
	Includes procedure for notification of project participants concerning schedule delays (identify job function, org. name, personnel responsible for providing and receiving such notification, and personnel responsible for approving schedule changes)						
	Includes discussion of resource and time constraints, such as seasonal sampling restrictions and considerations (if applicable)						

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1 (A7)	Quality Objectives & Criteria						
	Lists measurement methods for each item of necessary information (list chemical and/or biological analytical methods). Specific tables may be included here or under A7 and/or B4 of this checklist. Tables need to include Project Action limits, project quantitation limits and laboratory detection limits.						
	Includes the range of anticipated concentrations of the parameters of interest						
	Defines and evaluates the potential consequences of decision errors (i.e., false positive error or false negative error) near the action level.						
	Includes how sufficient data will be collected to ensure that the proposed action limits are not exceeded after remediation and/or removal of contaminants of concern.						
	Describes when screening and definitive data <sup>1</sup> will be used to make site decisions. Also, defines limitations on the use of screening data. For screening data being used for site decisions, at least 10% must be confirmed by fixed laboratory. Provides justification when not confirming.						

<sup>1</sup> For definition of screening and definitive data see reference 2.

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	Addresses Precision (quantitative measurement performance criteria, QA/QC activities, and/or QC checks/samples being used to determine acceptable precision for each matrix, analytical parameter and concentration level). Includes equations to be used to calculate precision.						
	Addresses Accuracy (quantitative measurement performance criteria, QA/QC activities, and/or QC checks/samples being used to determine acceptable accuracy/bias for each matrix, analytical parameter and concentration level). Includes equations to be used to calculate accuracy.						
	Addresses Representativeness (quantitative measurement performance criteria, QA/QC activities being used to determine representativeness for each matrix, analytical parameter and concentration level).						
	Addresses Comparability (quantitative measurement performance criteria, QA/QC activities, and/or QC checks/samples being used to determine comparability for each matrix, analytical parameter and concentration level). Sampling and analytical procedures are consistent within and between data sets.						
	Provides criteria for comparing oversight split sampling, if applicable.						
	Provides Comparability criteria for field screening/confirmatory results, if applicable.						



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	Addresses Completeness. If applicable, includes a list of critical samples. Includes equations to be used to calculate completeness.						
	Includes a table with the project's QA objectives for precision, accuracy and completeness. The QA objectives should include requirements for "Total system" variability and bias not just laboratory error or criteria (Total system = sampling design error + measurement error).						
1 (A8)	Special Training Requirements/Certification Listed (Unique methods, Validators, Water Plans)						
	Lists or states how training is provided, documented, and assured						
1 (A9)	Documentation and Records						
	Itemizes the information and records (field operation records, laboratory records, data handling records) that must be included in the data report package and specifies the desired reporting format for hard copy and electronic forms						
	Identifies any other records and documents applicable to the project, such as audit reports, interim progress reports, and final reports, that will be produced. Includes electronic data from instrumentation (tapes).						
	Specifies or references all applicable requirements for the final disposition of records and documents, including location and length of retention period.						

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<b>PROJECT MANAGEMENT</b>							
	States Revisions/updates to QAPP are every 3-5 years						
<b>MEASUREMENT/DATA ACQUISITION ELEMENTS</b>							
1 (B1)	Sample Design						
	Identifies Type (composite, grab, etc.) and number of samples required. Table format recommended. Provides justification for type and number of samples; MDL rationale/impact. Identifies Background samples (if applicable)						
	Sampling Process Design (Experimental Design) [Describes the experimental design or data collection design for the project]						
	Sample Locations and frequency (e.g. map)						
	Sample & Analysis Methods (General description)						
	Sample matrices						
	Classifies each measurement parameters as either critical or needed for information only						
	Provides Appropriate validation study information; for nonstandard situations						
1 (B2)	Sampling Methods Requirements						

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	Identifies sample collection procedures and methods (if referencing sampling, SOPs may be attached to QAPP)						
	Describes filtering procedures, if applicable.						
	Describes sequencing of samples, if applicable						
	Describes homogenizing of samples, if applicable						
	Identifies support facilities						
	Identifies individuals for corrective action. Describe decision/who's responsible and documentation required.						
	Includes Sampling SOP Modifications						
	Provides Cleaning & Decontamination Procedures of Equipment/Sample Containers [Decontamination Procedures includes acid, water, and solvent rinse (methanol is preferred solvent)]; SOPs						
	Provides Sampling Containers, Volumes, Holding Times, & Preservation Table						

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	Provides Field Sampling Equipment Calibration w/ table						
	Identifies Field Equipment Maintenance, Testing & Inspection Requirements						
	Provides Inspection & Acceptance Requirements for Supplies/Sample Containers						
1 (B3)	Sample Handling, Tracking & Custody Requirements <i>Note: Laboratory QAP should include information about laboratory sample handling and custody.</i>						
	Provides Sample Handling, Tracking & Custody SOPs with Sample Handling Flow Diagram (used for multiple sampling events with multiple laboratories)						
	Provides Sample Collection Documentation (includes form to track custody)						
	Provides Sample Container Label / Sample Tag (include examples)						
	Identifies Field Notes (lists information to be entered in field logbook)						
	Documents source of field reagents or supplies, includes sample containers						

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	Includes procedures/forms for recording the location & specific consideration associated with samples						
	Documents specific preservation method (including temperature upon receipt)						
1 (B4)	Analytical Methods Requirements						
	Provides SOPs and validation information for nonstandard methods						
	Provides 10% offsite laboratory confirmation for screening methods						
	Identifies laboratory (ies)						
	Includes laboratory(ies) information (QA Manual, SOPs, PE results, certifications) <i>[Use LQAP checklist if LQAP submitted separately]</i>						
	Identifies individuals responsible for corrective action						
	Specifies needed laboratory turnaround time (if important to the project schedule)						
	Provides Field Analytical Methods & SOPs (includes modifications if applicable)						

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	Provides Field Analytical Instrument Calibration						
	Provides Field Analytical Instrument/ Equipment Maintenance Testing & Inspection Requirements						
	Identifies Field Analytical Inspection & Acceptance Requirements for Supplies						
	Provides Fixed Lab Analytical Method Requirements (include sub-sampling, preparation, cleanup, or extraction methods/procedures)						
	Provides Fixed Lab Analytical Methods & SOPs (includes modifications if applicable; includes reporting limits, etc.) <i>[Use LQAP checklist if LQAP was submitted separately]</i>						
	Provides Fixed Lab Instrument Calibration procedures <i>[Use LQAP checklist if LQAP was submitted separately]</i>						
	Identifies Fixed lab Instrument/Equipment Maintenance, Testing & Inspection Requirements <i>[Use LQAP checklist if LQAP was submitted separately]</i>						
	Identifies Fixed Lab Inspection & Acceptance Requirements for Supplies (audits) <i>[Use LQAP checklist if LQAP was submitted separately]</i>						

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1 (B5)	Quality Control Requirements (Identifies required measurement QC checks for both the field and the laboratory)						
	Includes Trip blank (1/cooler containing volatiles)						
	Includes Field blank (1 blank/matrix/day or 1 blank/20 samples/matrix, whichever is more frequent)						
	Includes Rinsate/Equipment Blank (1 blank/matrix/day or 1 blank/20 samples/matrix, whichever is more frequent)						
	Includes Temperature Blank (1/cooler)						
	Includes Field Duplicate (1 duplicate/20 samples)						
	Includes Matrix Spike/Matrix Spike Dup (1/20 samples/matrix)						
	Identifies acceptance criteria and corrective action for QC procedures						
	Identifies Field Analytical QC (calibration check samples), includes frequency and limits						
1 (B6)	Provides Fixed Laboratory QC procedures, frequency and limits <i>[Use LQAP checklist if LQAP was submitted separately]</i>						
	Instrument/Equipment Testing, Inspection, and Maintenance Requirements						

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	Identifies acceptance testing of sampling and measurement systems						
	Describes equipment preventative and corrective maintenance						
	Notes availability and location of spare parts						
1 (B7)	Instrument Calibration and Frequency						
	Identifies equipment needing calibration and frequency for such calibration						
	Identifies frequency of calibration verification or continuing calibration						
	Notes required calibration standards and/or equipment						
	Cites calibration records and manner traceable to equipment						
1 (B8)	Inspection/Acceptance Requirements for Supplies and Consumables						



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	States acceptance criteria for supplies and consumables						
	Notes responsible individuals						
1 (B9)	Data Acquisition Requirements for Non-Direct Measurements (Historical/Databases/Modeling)						
	Identifies types of data needed for non-measurement sources (e.g., computer databases and literature files), along with acceptance criteria for their use						
	Describes any limitations of such data						
	Documents rationale for original collection of data and its relevance to this project						
1 (A9, B10)	Data Management <i>Can be included in separate Data Management Plan</i>						
	Describes Data Recording (Describes standard record-keeping and data storage and retrieval requirements)						

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	Describes Data Validation (Details the process of data validation; should address how the method, instrument, or system preforms the function it is intended to -consistently, reliably, and accurately when generating the data) <i>Note: Part D addresses the overall project data validation</i>						
	Describes Data Transformation (Documents Procedures) Data transformation is the conversion of individual data point values into related values or possibly symbols using conversion formulas or a system for replacement) <i>Note: Transformation and aberration of data for statistical analysis should be outlined in element D3.</i>						
	Describes Data Transmittal (Describes each data transfer step and the procedures used to characterize data transmittal error rates and to minimize information loss in transmittal)						
	Describes Data Reduction - involves irreversible reduction in the size of the data set and an associated loss of detail. (For manual calculation, includes an example of how raw data is reduced; for automated data process, indicates how the raw data are to be reduced with a well-defined audit trail, and references specific software documentation)						

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	Describes Data Analysis (includes an outline of the proposed methodology with a more detailed discussion included in final report)						
	Describes Data Tracking (describes procedures for tracking the flow of data through the data processing system)						
	Describes Data Storage and Retrieval (describes procedures for data storage and retrieval including security and time of retention included; includes documentation of the complete control system; discusses performance requirements of the data processing system, including provisions for the batch processing schedule and the data storage facilities). Includes storage and retrieval of electronic data (needs to be available upon EPA request)						
<b>ASSESSMENT/OVERSIGHT ELEMENTS</b>							
1 (C1)	Assessments and Response Actions						
	Lists required number, frequency and type of assessments, with approximate dates and names of responsible personnel (assessments include but are not limited to peer reviews, management systems reviews, technical systems audits, performance evaluations, and audits of data quality)						

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	Identifies individual(s) responsible for corrective actions						
	Provides Feedback from performance audits (field and laboratory)						
	Includes Schedule of audits						
1 (C2)	Reports to management						
	Identifies frequency and distribution of reports for project status						
	Identifies frequency and distribution of reports for results of performance evaluations and audits						
	Identifies frequency and distribution of reports for results of periodic data quality assessments						
	Identifies frequency and distribution of reports for changes in the QAPP						
	Identifies frequency and distribution of reports for any significant QA problems indicating EPA is notified immediately						
	Identifies frequency and distribution of reports for preparers and recipients of reports						
<b>DATA VALIDATION AND USABILITY ELEMENTS</b>							
1 (D1)	Data Review						

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	Describes the procedures being used to review field and laboratory data to ensure that it meets requirements specified in field and analytical SOPs.						
	Includes project-specific calculations or algorithms						
	Identifies issue resolution procedure and title(s) of individual(s) responsible for issue resolution						
1 (D2)	Data Verification and Validation Methods						
5							
6	Describes process for data validation and verification (provide SOPs or reference Region III Modifications to National Functional Guidelines for Data Review)						
7	Identifies issue resolution procedure and title(s) of individual(s) responsible for issue resolution						
	Identifies method for conveying these results to data users						
1 (D3)	Data Quality Assessment						
	Describe the procedures used to evaluate the uncertainty of data acquired during sampling and analytical procedures.						
	Describes the procedures that will be used to reconcile project results with DQOs.						
	Describes how the limitation on use of the data will be reported.						

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## References

1. EPA Requirements for Quality Assurance Project Plans, EPA QA/R5, March 2001. Can be downloaded from the Internet at [http://www.epa.gov/QUALITY/qa\\_docs.html](http://www.epa.gov/QUALITY/qa_docs.html)
2. Data Quality Objectives Process for Superfund: Interim Final Guidance (EPA, 1993)
3. Guidance on Systematic Planning using the Data Quality Objectives Process. EPA /240/B06?001, February 2006. Can be downloaded from the Internet at [http://www.epa.gov/QUALITY/qa\\_docs.html](http://www.epa.gov/QUALITY/qa_docs.html)
4. Data Quality Objectives Process for Hazardous Waste Site Investigations, EPA QA/G-4HW, January 2000. Can be downloaded from the Internet at [http://www.epa.gov/QUALITY/qa\\_docs.html](http://www.epa.gov/QUALITY/qa_docs.html)
5. Region III Modifications to the National Functional Guidelines for Inorganic Data Review, April 1993. <http://www.epa.gov/region03/esc/qa/dataval.htm>
6. Region III Modifications to the National Functional Guidelines for Organic Data Review, November 1994. <http://www.epa.gov/region03/esc/qa/dataval.htm>
7. Region III Innovative Approaches to Data Validation, June 1995. <http://www.epa.gov/region03/esc/qa/dataval.htm>
8. Region III Dioxin/Furan Data Validation Guidance, March, 1999. <http://www.epa.gov/region03/esc/qa/dataval.htm>