

## Tips for Retrofitting QAPPs – Converting QAPPs Prepared in QA/R-5 to S-2, QAPP Standard

QAPP Element	QA/R-5 QAPP Requirements Element #	S-2 QAPP Standard Element #	Description of Changes to Convert from R-5 to S-2 (This Tips Sheet provides a summary of changes only. Refer to the QAPP Standard for full requirements.) <sup>1</sup>		
<b>Overall Changes</b>	—	<b>New or different requirements are highlighted in blue</b>	<ul style="list-style-type: none"> <li>• Replace &amp; update all references of EDO to EIO. S-2 applies the term environmental information operations (EIO) instead of environmental data operations (EDO).</li> <li>• Must address all QAPP standard elements; if an element is not applicable, QAPP preparer shall explain why.</li> <li>• Graded approach cannot be used to waive requirements.</li> <li>• Requires controlled documents to be attached or available online (hyperlink).</li> </ul>		
<b>Group A</b>	<b>Project Management</b>	<b>Project Management, Information &amp; Data Quality Objectives (DQOs)</b>	<ul style="list-style-type: none"> <li>• Note: “Information/Data Quality Objectives (DQOs)” was added to Group A title.</li> </ul>		
<b>Total Group A Elements</b>	<b>A1 – A9 (9 total)</b>	<b>A1 – A12 (12 total)</b>	<ul style="list-style-type: none"> <li>• The number of Group A elements increased from 9 to 12, which is reflected in the current version of the Region 8 Crosswalk to ensure all Group A information is provided in your QAPP.</li> </ul>		
Title and Approval Page	A1 Title and Approval Sheet	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">A1 Title Page</td> <td rowspan="2" style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <li>• Non-EPA organizations shall add the Agreement Traceability to the Title Page: grant or cooperative agreement #, contract or Task Order #s, Interagency Agreement #, Title/Date of Memorandum of Understanding/Memorandum of Agreement, Citation of Regulatory Requirements, or Title/Date of Enforcement/Legal Agreement.</li> <li>• If more than one non-EPA organization is involved, there may be additional operations and QA officers to add to the Approval Page.</li> </ul> </td> </tr> <tr> <td style="text-align: center;">A2 Approval Page(s)</td> </tr> </table>	A1 Title Page	<ul style="list-style-type: none"> <li>• Non-EPA organizations shall add the Agreement Traceability to the Title Page: grant or cooperative agreement #, contract or Task Order #s, Interagency Agreement #, Title/Date of Memorandum of Understanding/Memorandum of Agreement, Citation of Regulatory Requirements, or Title/Date of Enforcement/Legal Agreement.</li> <li>• If more than one non-EPA organization is involved, there may be additional operations and QA officers to add to the Approval Page.</li> </ul>	A2 Approval Page(s)
A1 Title Page	<ul style="list-style-type: none"> <li>• Non-EPA organizations shall add the Agreement Traceability to the Title Page: grant or cooperative agreement #, contract or Task Order #s, Interagency Agreement #, Title/Date of Memorandum of Understanding/Memorandum of Agreement, Citation of Regulatory Requirements, or Title/Date of Enforcement/Legal Agreement.</li> <li>• If more than one non-EPA organization is involved, there may be additional operations and QA officers to add to the Approval Page.</li> </ul>				
A2 Approval Page(s)					
Table of Contents	A2 Table of Contents	A3 Table of Contents, Document Format, & Document Control	<ul style="list-style-type: none"> <li>• Document control shall be included on every page in either the header or footer and, at a minimum, include:                             <ul style="list-style-type: none"> <li>• Title of document (abbreviations are acceptable)</li> <li>• Version # (original or version #)</li> <li>• Date of the version</li> <li>• Page # in relation to the total # of pages</li> </ul> </li> </ul>		
Distribution List	A3 Distribution List	A7 Distribution List	<ul style="list-style-type: none"> <li>• Distribution List element moves from A3 (in R-5) to A7 (in S-2).</li> <li>• S-2 element A7 - Distribution List shall include all personnel involved in EIO for both operations &amp; quality role(s) (e.g., EPA, grant recipient, contractors, subcontractors).</li> </ul>		
Independence of Project QA Officer (QAO)	Appears in A4	(New) Standalone Element - A9 Project QAO Independence	<ul style="list-style-type: none"> <li>• Move discussion of project QAO's independence of environmental information operations from within A4 (in R-5) to new standalone element A9 (in S-2).</li> <li>• For project-level QAPPs, use Project QA Officer (QAO) instead of QA Manager (QAM).</li> </ul>		

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Project / Task Organization	A4 Project / Task Organization	A8 Project Organization	<ul style="list-style-type: none"> <li>• A8 Project Organization - identify and describe the individual(s) &amp; organization(s) involved, their roles &amp; responsibilities, and QAPP approval authority to describe the approval authority of the senior manager &amp; operations manager.</li> <li>• Either the Operations Manager (used in S-2) or the Project Manager or PM (used in R-5) is acceptable.</li> </ul>
		A10 Project Organization Chart & Communications	<ul style="list-style-type: none"> <li>• A10 Project Organization Chart &amp; Communications: In the organization chart, present the names of organization(s)/all individual(s) identified in A8 and include with lines of reporting &amp; communication; demonstrate the Project QAO's independence from EIO, authority to communicate up the supervisory chain/independent line of communication to Senior Manager; and describe the communication procedures &amp; reporting relationships between the Senior Manager, Project Operations Manager, &amp; Project QAO.</li> <li>• For Non-EPA Organizations, describe communication procedures to EPA including elevating discrepancies &amp; QAPP non-conformances.</li> </ul>
Problem Definition / Background	A5 Problem Definition / Background	A4 Project Purpose, Problem Definition, & Background	<ul style="list-style-type: none"> <li>• Move element A5 (in R-5) to A4 (in S-2), include discussion of project purpose, &amp; include/describe conceptual site model(s) (CSM).</li> <li>• S-2 element A4 includes identifying the sources of existing information (non-direct measurements/existing data), which was exclusively within standalone element B9 (in R-5).</li> </ul>
Project / Task Description	A6 Project / Task Description	A5 Project Task Description	<ul style="list-style-type: none"> <li>• Move element A6 (in R-5) to A5 (in S-2).</li> </ul>
Data Quality Objectives (DQOs) / Quality Assurance (QA)	A7 Quality Objectives & Criteria	A6 Information / Data Quality Objectives & Performance / Acceptance Criteria	<ul style="list-style-type: none"> <li>• Move element A7 (in R-5) to A6 (in S-2).</li> <li>• Describe performance &amp; acceptance criteria of EIO.</li> </ul>
Training / Certifications	A8 Special Training / Certifications	A11 Personnel Training / Certification	<ul style="list-style-type: none"> <li>• Move element A8 (in R-5) to A11 (in S-2).</li> </ul>
Documentation / Records	A9 Documentation & Records	A12 Documents & Records	<ul style="list-style-type: none"> <li>• Move element A9 (in R-5) to A12 (in S-2).</li> </ul>
Information storage/ storage & retrieval (i.e., back-up) of electronic media	Appears in A9	Part of B7	<ul style="list-style-type: none"> <li>• Move discussion of information storage/storage &amp; retrieval (back-up plans) of electronic media from within A9 (in R-5) to part of B7 (in S-2).</li> <li>• S-2 includes and embeds information storage/storage &amp; retrieval (back-up plans) of electronic media within element B7.</li> </ul>

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Group B	Data Generation and Acquisition	Implementing Environmental Information Operations (EIO)	<ul style="list-style-type: none"> <li>Note: Group B Title includes EIO instead of data generation/data operations.</li> </ul>
Total Group B Elements	B1 – B10 (10 total)	B1 – B7 (7 total)	<ul style="list-style-type: none"> <li>The number of Group B elements decreased from 10 to 7, which is reflected in the current version of the Region 8 Crosswalk to ensure all Group B information is provided in your QAPP.</li> </ul>
B1 Title Updated	B1 Sampling Process Design (Experimental Design)	B1 Identification of Project EIO	<ul style="list-style-type: none"> <li>S-2 updates definition of EIO<sup>1</sup> &amp; includes experimental design information.</li> </ul>
B2	B2 Sampling Methods	B2 Methods for Environmental Information (EI) Acquisition	<ul style="list-style-type: none"> <li>S-2 element B2 combines B2 &amp; B4 from R-5 into one element &amp; renames it B2 Methods for EI Acquisition - includes field sampling methods &amp; laboratory or analytical methods.</li> <li>Move description of existing information sources from element B9 (in R-5) to B2 (in S-2).</li> <li>Move description of EI to be obtained from databases, websites, existing literature/studies etc., the collection process, intended use, and acceptance &amp; evaluation criteria to element B2.</li> <li>Identifies personnel responsible for updating standard operating procedures (SOPs), if applicable.</li> <li>If existing EI is combined with new EI, include description to ensure EI/data compatibility.</li> </ul>
B3	B3 Sample Handling & Custody	B3 Integrity of Environmental Information (EI)	<ul style="list-style-type: none"> <li>Change title of element B3 Sample Handling &amp; Custody (in R-5) to B3 Integrity of Environmental Information (EI) (in S-2).</li> <li>Describe process to ensure lab accreditation &amp; certification for project analyses.</li> <li>Must include chain-of-custody procedure, forms, and sample labels, if applicable.</li> </ul>
B4	B4 Analytical Methods	B2 Methods for Environmental Information (EI) Acquisition	<ul style="list-style-type: none"> <li>S-2 element B2 combines B2 &amp; B4 from R-5 into one element &amp; renames it B2 Methods for EI Acquisition - includes field sampling methods &amp; laboratory or analytical methods.</li> <li>Include Environmental Technology<sup>2</sup> in element B2 - identify purpose of technology (e.g., pollution prevention, contamination containment, storage, remediation); describe physical parameters or processes collected; &amp; describe systems, devices, and components applicable to hardware &amp; methods or techniques that measure/remove/prevent pollutants or contaminants from entering the environment.<sup>2</sup></li> </ul>

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B5	B5 Quality Control	B4 Quality Control	<ul style="list-style-type: none"> <li>• Move element B5 Quality Control (in R-5) to B4 Quality Control (in S-2).</li> <li>• Describe QC activities for models or modeling (e.g., model calibration, model validation, sensitivity analyses).</li> <li>• For EPA organizations only, if field activities are required, QAPP must identify Quality Assurance Field Activities Procedure (QAFAP) elements.</li> </ul>
B6	B6 Instrument / Equipment Testing, Inspection, & Maintenance	B5 Instrument / Equipment Calibration, Testing, Inspection, & Maintenance	<ul style="list-style-type: none"> <li>• Combine elements B6 &amp; B7 (in R-5) into single element B5 (in S-2).</li> <li>• S-2 consolidates instrument/equipment testing, inspection, &amp; maintenance with instrument/equipment calibration &amp; frequency into single element B5.</li> </ul>
B7	B7 Instrument / Equipment Calibration & Frequency		
B8	B8 Inspection / Acceptance for Supplies & Consumables	B6 Inspection / Acceptance of Supplies & Services	<ul style="list-style-type: none"> <li>• Move element B8 (in R-5) to B6 (in S-2).</li> <li>• S-2 retitle of element B6 replaces “consumables” with “services” - more description of inspection/acceptance of services in addition to supplies (i.e., other consumables).</li> <li>• Acceptance of supplies &amp; consumables will be on items or traceable to items.</li> </ul>
B9 Use of existing data / existing information (non-direct measurements)	B9 Use of Existing Data (non-direct measurements)	Part of A4 & Part of B2	<ul style="list-style-type: none"> <li>• Move standalone element B9 use of existing data/information (non-direct measurements) descriptions (in R-5) to within B2 (in S-2) &amp; replace “data” with “environmental information (EI).”</li> <li>• Move sources of existing data/information discussion from within element B9 (in R-5) to part of element A4 (in S-2).</li> <li>• Move description of EI to be obtained from databases, websites, existing literature/studies etc., the collection process, intended use, and acceptance &amp; evaluation criteria to within element B2 (in S-2).</li> </ul>
B10 Data Management	B10 Data Management	B7 Environmental Information (EI) Management	<ul style="list-style-type: none"> <li>• Move element B10 (in R-5) to B7 (in S-2) &amp; rename to “Environmental Information (EI) Management.”</li> </ul>

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Group C	Assessment and Oversight	Assessment, Response Actions, and Oversight	<ul style="list-style-type: none"> <li>• Note: Group C Title includes response actions with assessment and oversight.</li> </ul>
Total Group C Elements	C1 – C2 (2 total)	C1 – C2 (2 total)	<ul style="list-style-type: none"> <li>• The number of Group C elements remains the same and are reflected in the current version of the Region 8 Crosswalk to ensure all Group C information is provided in your QAPP.</li> </ul>
Group C Element Titles	C1 Assessments & Response Actions	C1 Assessment & Response Actions	<ul style="list-style-type: none"> <li>• Move the description of oversight activities from element C1 (in R-5) to C2 (in S-2), but the C1 Assessment &amp; Response Actions element title remains the same.</li> <li>• Corrective action &amp; QAPP non-conformance procedures must be described, including the timeframe for responding to corrective actions &amp; how corrective actions will be developed &amp; tracked.</li> <li>• Assessment activities are required &amp; assessors shall be free from conflicts of interest.</li> </ul>
	C2 Reports to Management	C2 Oversight & Reports to Management	<ul style="list-style-type: none"> <li>• Move the description of oversight activities from element C1 (in R-5) to C2 (in S-2) &amp; rename C2 “Oversight &amp; Reports to Management.”</li> <li>• Preserve all descriptions/information related to reports to management within element C2.</li> <li>• Identify individual responsible for oversight activities within QAPP.</li> <li>• Add description of report requirements (i.e., content, format, timing, distribution) &amp; process for report delivery/submission.</li> <li>• Describe how management reports will be delivered/submitted; distribution shall include Project Operations Manager (i.e., Project Manager (PM)), Project QA Officer, &amp; sponsoring EPA organization).</li> </ul>

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Group D	Data Validation and Usability	Elements for Environmental Information (EI) Review and Usability Determination	<ul style="list-style-type: none"> <li>• Note: Group D Title includes Elements for EI Review and Usability Determination instead of Data Validation and Usability.</li> </ul>
Total Group D Elements	D1 – D3 (3 total)	D1 – D2 (2 total)	<ul style="list-style-type: none"> <li>• The number of Group D elements decreased from 3 to 2, which is reflected in the current version in the Region 8 Crosswalk to ensure all Group D information is provided in your QAPP.</li> </ul>
Group D Element Titles	D1 Data Review, Verification, & Validation	D1 Environmental Information (EI) Review – (Data and Methods EI Review, Verification, & Validation)	<ul style="list-style-type: none"> <li>• Combine elements D1 &amp; D2 (in R-5) to D1 (in S-2) &amp; rename D1 “Environmental Information (EI) Review.”</li> <li>• S-2 combines data &amp; method review, verification, &amp; validation processes/procedures into 1 element D1.</li> </ul>
Group D Element Titles	D2 Verification & Validation Methods	D1 Environmental Information (EI) Review – (Data and Methods EI Review, Verification, & Validation)	<ul style="list-style-type: none"> <li>• Combine elements D1 &amp; D2 (in R-5) to D1 (in S-2) &amp; rename to “Environmental Information (EI) Review.”</li> <li>• S-2 combines data &amp; method review; verification &amp; validation processes/procedures into 1 element D1.</li> </ul>
	D3 Reconciliation with User Requirements / Usability	D2 Usability Determination (Reconciliation with DQOs)	<ul style="list-style-type: none"> <li>• Move element D3 (in R-5) to D2 (in S-2) and rename D2 “Usability Determination”; include reconciliation with DQOs/User Requirements processes &amp; usability determination discussions/descriptions.</li> </ul>
<sup>1</sup> For more information, see the <a href="https://www.epa.gov/quality/quality-program-directives">EPA Quality Directives (https://www.epa.gov/quality/quality-program-directives)</a> and the <a href="https://www.epa.gov/system/files/documents/2024-04/quality_assurance_project_plan_standard.pdf">S-2 QAPP Standard: EPA IT/IM Directive No. CIO 2105-S-2 (https://www.epa.gov/system/files/documents/2024-04/quality_assurance_project_plan_standard.pdf)</a> .			
<sup>2</sup> For additional guidance on QAPPs for the design, construction, and operation or application of environmental technology, refer to the current version of <a href="https://www.epa.gov/sites/default/files/2015-06/documents/g11-final-05.pdf">EPA Guidance on Quality Assurance for Environmental Technology Design, Construction and Operation (https://www.epa.gov/sites/default/files/2015-06/documents/g11-final-05.pdf)</a> .			