Welcome to the CLU-IN Internet Seminar

OSC Readiness Presents...QA for OSCs

Sponsored by: EPA Office of Superfund Remediation and Technology Innovation

Delivered: August 9, 2012, 1:00 PM - 3:00 PM, EDT (17:00-19:00 GMT)

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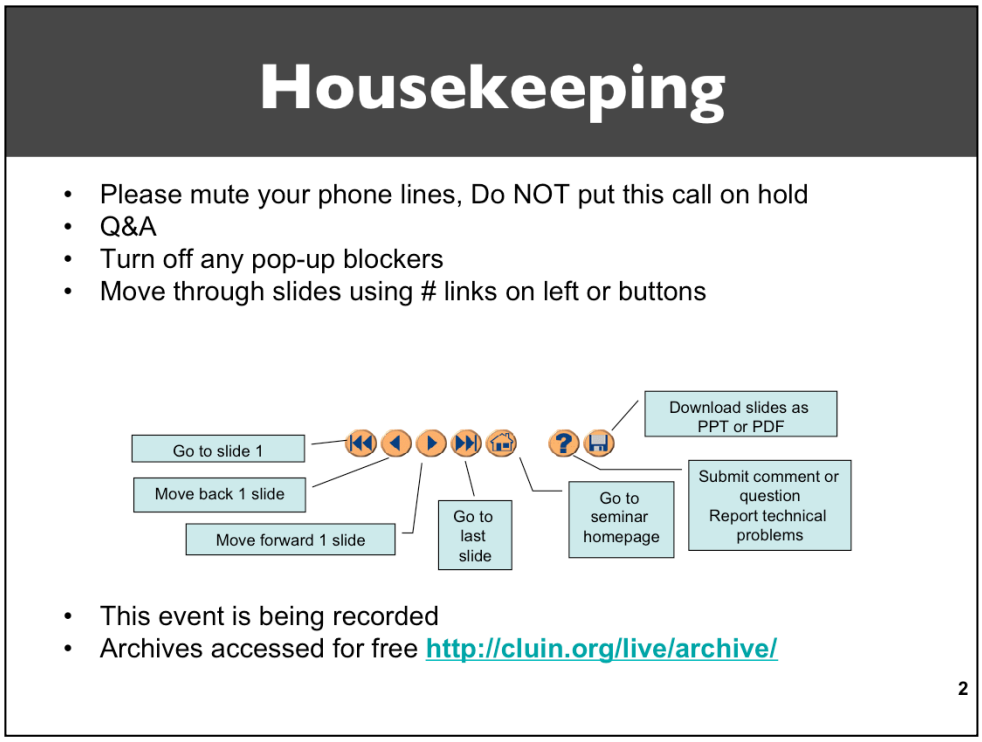

Although I'm sure that some of you have these rules memorized from previous CLU-IN events, let's run through them quickly for our new participants.

Please mute your phone lines during the seminar to minimize disruption and background noise. If you do not have a mute button, press *6 to mute #6 to unmute your lines at anytime. Also, please do NOT put this call on hold as this may bring delightful, but unwanted background music over the lines and interupt the seminar.

You should note that throughout the seminar, we will ask for your feedback. You do not need to wait for Q&A breaks to ask questions or provide comments. To submit comments/questions and report technical problems, please use the ? Icon at the top of your screen. You can move forward/backward in the slides by using the single arrow buttons (left moves back 1 slide, right moves advances 1 slide). The double arrowed buttons will take you to 1st and last slides respectively. You may also advance to any slide using the numbered links that appear on the left side of your screen. The button with a house icon will take you back to main seminar page which displays our agenda, speaker information, links to the slides and additional resources. Lastly, the button with a computer disc can be used to download and save today's presentation materials.

With that, please move to slide 3.

Quality Assurance Training For Chemical Emergency Response

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QA Training: Objectives

1. What is QA?
2. What is Environmental Information?
3. What is the basis for EPA's Quality System?
4. What is the QA Process?
   - Planning
   - Implementation
   - Evaluation
9. What are your roles and responsibilities?
10. How will QA help you?

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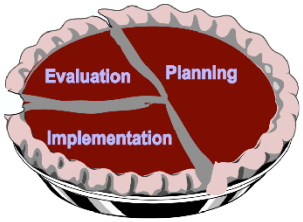
What is the EPA QA Process?

- Planning
- Implementation
- Evaluation/Assessment



- We call this PIE – easy to remember, and tastes good too.

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QAPP Categories for Emergency Response

- **Initial Incident Monitoring QAPP** (for immediate needs monitoring)
- **Transitional or Follow-up Monitoring QAPP** (for transitional or follow-up monitoring may be time critical)
- **UFP QAPP** (for long term monitoring)

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Emergency Response – Chemical Incident

- Use of Generic QAPP for Chemical Measurements and site specific Initial Incident Monitoring QAPP
- Generation of Screening level data or Screening with Definitive Confirmation
- Production of a QA Sampling Report within 30 days

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How will QA help you?

- Confidence (YOU know data are useful)
- Credibility (OTHERS know it)
- Defensibility (legal standing)
- Efficiency (saves time)
- Economical (saves money)

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QA helps you because it:

- Puts everything on paper, so not forgotten or ignored.
- Structures planning to focus on the usefulness of results.
- Fosters communication among all the participants.
- Involves YOU in making the PIE happen.

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QUESTIONS

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CROSSWALK

The following table provides a "cross-walk" between the QAPP elements outlined in the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP Manual), the necessary information, and the location of the information within the text document and corresponding QAPP Worksheet. Any QAPP elements and required information that are not applicable to the project are circled.

QAPP Element(s) and Corresponding Section(s) of UFP-QAPP Manual	Required Information	Crosswalk to QAPP Section	Crosswalk to QAPP Worksheet No.
Project Management and Objectives			
2.1 Title and Approval Page	- Title and Approval Page	Approval Page	1
2.2 Document Format and Table of Contents 2.2.1 Document Control Format 2.2.2 Document Control Numbering System 2.2.3 Table of Contents 2.2.4 QAPP Identifying Information	- Table of Contents - QAPP Identifying Information	TOC Approval Page	2
2.3 Distribution List and Project Personnel Sign-Off Sheet 2.3.1 Distribution List 2.3.2 Project Personnel Sign-Off Sheet	- Distribution List - Project Personnel Sign-Off Sheet	Approval Page	3 4
2.4 Project Organization 2.4.1 Project Organizational Chart 2.4.2 Communication Pathways 2.4.3 Personnel Responsibilities and Qualifications 2.4.4 Special Training Requirements and Certification	- Project Organizational Chart - Communication Pathways - Personnel Responsibilities and Qualifications - Special Personnel Training Requirements	2	5 6 7 8
2.5 Project Planning/Problem Definition 2.5.1 Project Planning (Scoping) 2.5.2 Problem Definition, Site History, and Background	- Project Planning Session Documentation (including Data Needs tables) - Project Scoping Session Participants Sheet - Problem Definition, Site History, and Background - Site Maps (historical and present)	1	9 10

QAPP Worksheet #1: Title and Approval Page

Title: Organic and Inorganic Chemical Measurement –Generic Quality Assurance Project Plan
Site Name/Project Name: [ ]
Site Location: [ ]
Revision Number: [ ]
Revision Date: DD/MM/Year

[Name of Organization]
Lead Organization
e.g., [Contractor Project Manager's Name; or EPA Region 2 DESA Sampler Lead Name]
[Contractor Project Manager's phone #; or EPA Region2 DESA Sampler Lead phone #]
[Contractor Project Manager's e-mail; or EPA Region 2 DESA Sampler Lead e-mail]
Preparer's Name and Organizational Affiliation

Preparer's Address, Telephone Number, and E-mail Address
[Date]
Preparation Date (Day/Month/Year)

Environmental Unit Leader:
Signature
Printed Name/Organization/Date
Planning Section Chief:
Signature
Printed Name/Organization/Date
Operations Section Chief:
Signature
Printed Name/Organization/Date

Document Control Number: [ ]

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QAPP Worksheet #2: QAPP Identifying Information

Site Name/Project Name: [ ]
Site Location: | |
Operable Unit: [ ]
Title: Quality Assurance Project Plan
Revision Number: | |
Revision Date: [ ]

1. **Identify guidance used to prepare QAPP:** Uniform Federal Policy for Quality Assurance Project Plans. Refer to CLP, SW 846, EPA, NIOSH and ASTM Methods

2. **Identify regulatory program:** [Insert EPA Region 2 , Appropriate Target Agency, and Emergency Response Authority]

3. **Identify approval entity:** EPA Region 2 or Incident Management Team (IMT)

4. **Indicate whether the QAPP is a generic or a project-specific QAPP. (Generic QAPP)**

5. **List dates of scoping sessions that were held:** DD/MM/YY

6. **List dates and titles of QAPP documents written for previous site work, if applicable:**

7. **List organizational partners (stakeholders) and connection with lead organization:** **e.g.,** NYSDEC, NYSDOH, NJDEP, DOE, FBI]

8. **List data users:**
EPA Region 2, Appropriate Target Agency, and Emergency Response Authority (see Worksheet #4 for individuals)

9. **If any required QAPP elements and required information are not applicable to the project, then provide an explanation for their exclusion below:**
   - [Worksheet No. XX not applicable because…]. This worksheet will be completed in site-specific QAPP for each project. Project team members will complete all the required information and identify which Worksheets are not required for the current project.

10. **Document Control Number:**
[ ]

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QAPP Worksheet #3: Distribution List

[List those entities to which copies of the approved QAPP, subsequent QAPP revisions, addenda, and amendments are sent]

QAPP Recipient	Title	Organization	Telephone Number	Fax Number	E-mail Address	Document Control Number
[Project Manager Name]	Contractor Project Manager; and EPA Region 2 Remedial Project Manager, Brownfields Project Manager or On-Scene Coordinator	Name of Organization	[ ]	[ ]	[Name]@e-mail address	[Repeat DCN throughout]
[QAO Name]	Contractor QA Officer; and EPA Region 2 QAO	Name of Organization	[ ]	[ ]	[Name]@e-mail address	
[Lead Sampler's Name]	Contractor Project Manager	Name of Organization	[ ]	[ ]	[Name]@e-mail address	
[ENVL Name]	Environmental Unit Leader	Name of Organization	[ ]	[ ]	[Name]@e-mail address	
	Operation Section Chief	Name of Organization	[ ]	[ ]	[Name]@e-mail address	

QAPP Worksheet #6: Communication Pathways

Communication Drivers	Responsible Entity	Name	Phone Number	Procedure (Timing, pathways, etc.)
Preparation of QAPP	Sampling and Monitoring Plan Coordinator			Preparing QAPP, approval of the QAPP from EPA OSC. All technical, QA and decision-making matters in regard to the project (written or electronic).
Approval of QAPP	Environmental Unit Leader/Quality Assurance Coordinator			Approval of the QAPP and all technical/ QA/QC changes to QAPP. Provide guidance as required.
Modification to Site QAPP due to field Changes.	Sampling and Monitoring Plan Coordinator			Modification to QAPP and all technical, QA/QC, changes to field work, and other issues related to site.
Health and Safety Plan and On-Site Field Inspection	Safety Officer			Assign site safety responsibility, characterize site hazards, established control zones, assess site-specific training requirements for responders, ensure safety briefings, establish decontamination stations, and emergency medical plan.
Data Review and Recommendation to stop work (due to H & S)	Data Assessment and Interpretation Coordinator			Develop and recommend measures for ensuring personnel safety, and assess and anticipate hazardous and unsafe situations. Notifies all environmental unit teams of any corrections to analytical data.
Procurement of Field Services	Assistant Environmental Unit Leader			Arrange for use of special equipment (e.g., GPS equipment, boats, and helicopters)
Procurement of Analytical Services	Analytical Coordinator/Contractor Organization PM			Soliciting and obtaining laboratories, resolve sampling and analysis problems, distributing preliminary and/or final data.

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QAPP Worksheet #10: Problem Definition

PROBLEM DEFINITION

Purpose and Reason for this sampling event, QA objectives and goals. An organizational structure to implement the QA objectives, mechanisms to establish standards for performance, audit mechanisms to evaluate performance and corrective action mechanisms to address identified problems, documentation protocols to demonstrate a level of performance.

SITE IIISTORY/CONDITIONS

SITE LOCATION

A generic QAPP will be used as a basis for all site-specific sampling plans. [Brief description of the site and sampling locations and how they were chosen] For example, "Residential drinking water wells in Edison have shown increasing level of Benzene".

PROJECT DESCRIPTION

The Environmental question being asked: For example, "What is the source of the Benzene contamination in the drinking water wells of Edison, NJ?

OBSERVATION FROM ANY SITE RECONNAISSANCE REPORT

Observe present site condition (e.g., evident soil staining and the presence of free product materials, odors, and other known hazards), physical evidence (e.g., metallic debris, drums, known safety hazards), transportation accident, existing reports (e.g., monitoring report, remedial investigation/.remedial action reports).

PROJECT DECISION STATEMENTS: for example,

1. If the mean perchloroethylene (PCE) concentration of each downgradient well is greater than the PCE concentration in an upgradient well, then further assessment and response is required; otherwise, no further evaluation is necessary.

2. If the level of benzene in residential soil is greater than 3.0ppm, then determine the additional remediation actions required to reduce the concentrations to comply with applicable and/or relevant and appropriate standards.

Note: This worksheet will be completed to define the problem and the environmental questions that should be answered for the current investigation and to develop the current project decision "If…., then…" statement(s) to be included in the site specific QAPP.

Refer to action level guidelines for: NY Remedial Program Soil Cleanup Objectives, Subpart 375-6
http://www.dec.ny.gov/regs/15507.html#15513

NJ Soil Cleanup Criteria http://www.nj.gov/dep/srp/guidance/scc/
National Primary Drinking Water Regulations National Primary Drinking Water Regulations

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QAPP Worksheet # 11: Project Quality Objectives/Systematic Planning Process Statement

Overall project objectives include: This approach encourages optimal data usability across EPA program lines and reduces the need for repetitive sampling. The DQO approach includes defined steps, including: 1) stating the site problem (source/location of contamination); 2) identifying the decision (which may require additional data); 3) identifying the needed inputs for the decision (data needed for the decision); 4) defining the site boundaries (area and time- frame for study); 5) developing a decision rule (logical "if...then" statement); and 6) specifying limits on decision errors (acceptable error limits).

Who will use the data?
Data will be used by EPA Region 2 ERRD (RPM and/or OSC); Incident Commander, Environmental Unit Leader, and Technical Specialist, Public Information Officers, and/or other agencies.

What will the data be used for?
Explain the ultimate use of data: e.g., to determine potential risk to human health; contamination in drinking water from benzene exceeding regulatory limit; to determine the location of the leading edge of the contaminated plume

What types of data are needed?

Sampling type and matrix: Drinking water, soil/sediment, surface wipe, air, drum.
Definitive or Screening data
Analytical Techniques: Field screening, on-site and/or off-site laboratory analyses
Parameters: e.g., VOCs, PAH, TCE, TAL Metals
Type of sampling equipments: augar, spoons, sample jars
Access Agreement, if applicable:
Sampling locations: On-site/Off-site

How much data are needed?
The numbe of sample needed for each analytical group, matrix, and concentration level.

How "good" does the data need to be in order to support the environmental decision?
Establish project sampling/analytical measurement performance criteria for PARCC parameters. Refer to Worksheet#12, criteria for performance measurement for screening and definitive data.

Where, when, and how should the data be collected/generated?
Access agreement, if applicable; existing locations; the number of samples needed for each analytical group, matrix, and concentration level. Site map; refer to sampling SOPs for procedures on how samples will be collected.

Who will collect and generate the data?
e.g., Lead organization, IMT, Contractor organizations, and others

How will the data be reported?
The data will be reported by the field personnel and the assigned laboratory (Preliminary, Electronic, and Hardcopy format) and provided to environmental unit leader and IMT.

QAPP Worksheet #15: Reference Limits and Evaluation Table

Matrix: Soil, Sediment**
Analytical Group: Target Compound List – Semi-Volatile Organic Compounds - Continued
Concentration Level: Low and Medium

Analyte	CAS Number	NJDEP Soil Cleanup Criteria (mg/kg)*			NYSDEC 6NYCRR Part 375 (mg/kg)***	Project Quantiation Limit (mg/kg)	Analytical Method – SOM01.2 (Low) Quantitation Limits (mg/kg)	Analytical Method – SOM01.2 (Medium) Quantitation Limits (mg/kg)
		Residential	Non-Residential	Impact to GW				
Isophorone	78-59-1	1100	12,000	50			0.17	5.0
Naphthalene	91-20-3	230	4200	100	12		0.17	5.0
Nitrobenzene	98-95-3	28	520	10			0.17	5.0
N-Nitrosodiphenylamine	86-30-6	140	600	100			0.17	5.0
N-Nitroso-di-n-propylamine	621-64-7	0.66	0.66	10			0.17	5.0
Pentachlorophenol	87-86-5	6	24	100	0.8		0.33	10
Phenanthrene	85-01-8				100		0.17	5.0
Phenol	108-95-2	10,000	12,000	50	0.33		0.17	5.0
Pyrene	129-00-0	1700	12,000	100	100		0.17	5.0

*New Jersey Department of Environmental Protection (NJDEP) - Direct Contact Soil Cleanup Criteria, May 12, 1999. [Use the most recent version]. http://www.nj.gov/dep/srp/guidance/scc/

** For sediment guidance values refer to the NJDEP Guidance for Sediment Quality Evaluations, November 1998.

***New York Department of Environmental Conservation (NYSDEC), December 2006, 6 NYCRR Part 375 Environmental Remediation Programs, Subpart 375-6: Remedial Program Soil Cleanup Objectives (SCOs). Values listed from Table 375-6.8(a) for Unrestricted Use SCOs. The SCOs for unrestricted use were capped at a maximum value of 100 ppm. http://www.dec.ny.gov/regs/15507.html

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QAPP Worksheet #15: Reference Limits and Evaluation Table

Matrix: Groundwater, Surface Water**/***
Analytical Group: Target Compound List - Semi-Volatile Organic Compounds - Continued
Concentration Level: Low

Analyte	CAS Number	NJAC Groundwater Quality Standards (ug/L)*	NYS GW Quality Standards (ug/L)***	Project Quantitation Limit (ug/L)	Analytical Method – SOM01.2 Quantitation Limits (ug/L)
Benzo(a)anthracene	56-55-3	0.1			5
Benzo(a)pyrene	50-32-8	0.1			5
Benzo(b)fluoranthene	205-99-2	0.2			5
Benzo(g,h,i)perylene	191-24-2				5
Benzo(k)fluoranthene	207-08-9	0.5			5
Bis(2-Chloroethoxy)methane	111-91-1		5		5
Bis-(2-Chloroethyl) ether	111-44-4	7	1		5
bis(2-Ethylhexyl)phthalate	117-81-7	3	5		5
Butylbenzylphthalate	85-68-7	100			5
Caprolactam	105-60-2				5
Chrysene	218-01-9	5			5
Dibenzo(a,h)anthracene	53-70-3	0.3			5
Dibenzofuran	132-64-9				5
Diethylphthalate	84-66-2	6000			5
Dimethylphthalate	131-11-3				5
Di-n-butylphthalate	84-74-2	700	50		5
Di-n-octylphthalate	117-84-0	100			5
Fluoranthene	206-44-0	300			5
Fluorene	86-73-7	300			5
Hexachlorobenzene	118-74-1	0.02	0.04		5
Hexachlorobutadiene	87-68-3	1	0.5		5
Hexachlorocyclopentadiene	77-47-4	40	5		5
Hexachloroethane	67-72-1	7	5		5
Indeno(1,2,3-cd)pyrene	193-39-5	0.2			5
Isophorone	78-59-1	40			5
Naphthalene	91-20-3				5
Nitrobenzene	98-95-3	300	0.4		5
N-Nitrosodiphenylamine	86-30-6	10			5
N-Nitroso-di-n-propylamine	621-64-7	10			5
Pentachlorophenol	87-86-5	0.3	1		10
Phenanthrene	85-01-8				5
Phenol	108-95-2	2000	1		5
Pyrene	129-00-0	200			5

*NJDEP N.J.A.C. 7:9C, Ground Water Quality Standards (GWQS) dated November 7, 2005. [Use the most recent version]
** For surface water use NJDEP NJAC 7:9B Surface Water Quality Standards, October 2006; **For NYSDEC Criteria-See VOC ***Footnote**

QAPP Worksheet #21: Project Sampling SOP References Table
(Example for EPA ERT SOPs)

Reference Number	Title, Revision Date and / or Number	Originating Organization	Equipment Type	Modified for Project Work? (Y/N)	Comments
SOP#2011	Chip, Wipe, and Sweep Sampling	EPA/OSWER/ERT	Hammer and Chisel, Solvent wetted Gauze Pad, Dedicated Brush and Pan		
SOP#2017	Waste Pile Sampling	EPA/OSWER/ERT	Scoop, Shovel, Bucket Auger, or Similar		

Note: The website for EPA-ERT SOPs is: www.ert.org/mainContent.asp?section=Products&subsection=List

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QAPP Worksheet #22: Field Equipment Calibration, Maintenance, Testing, and Inspection Table

Field Equipment	Calibration Activity	Maintenance Activity	Testing/ Inspection Activity	Frequency	Acceptance Criteria	Corrective Action	Responsible Person	SOP Reference
Alpha Beta Sample Counter Model 3030 #1 and # 2	Annual manufacturer calibration	AC is primary power. Keep Internal trickle-charged battery with an approximate life of 8 hours.	Visually inspect the unit	Yearly	Follow equipment instruction	Replace batteries or replace unit if not working correctly	Equipment Vendor	
AP2Ce #1 # 2, Chemical Warfare Agent Detector	Check with a confidence test before each use	Need 7.3V lithium battery pack.	Extract the battery slide unit from the body of the AP2C.	Yearly	Follow equipment instruction	Replace batteries or replace unit if not working correctly	Equipment Vendor	
AP4C #1and #2								
APD 2000	(Self Calibrating)	Keep extra "C" batteries (6)	Check with "G" and "H" canisters provided	Yearly	NA	Replace batteries or replace unit if not working correctly	Equipment Vendor	
VultiRAE Plus Vultiple Gases	Calibrate with Zero Air; span gas of 58% LEL 15% O_2 10 ppm H_2S CH_4	Check/ replace battery/ Clean tip or bulb if necessary	Bump Test	Prior to day's activities, anytime anomaly suspected	LEL 52% - 64% (5%) O_2 13% - 17% (5%) H_2S 9 – 12 ppm (1ppm) CH_4 NA	Replace battery or Replace Unit	Equipment Vendor	
VultiRAE Plus PID	Calibrate with Zero air; span gas of 100 ppm Isobutylene	Check/ replace battery/ Clean tip or bulb if necessary	Bump Test	Prior to day's activities, anytime anomaly suspected	+/- 5 units	Replace battery, or Replace Unit	Equipment Vendor	
CDS KIT	No calibration is necessary	NA	Leak test on pump and reset pump counter to zero	Flush the pump with fresh air after each use to clear out remaining vapor.	See specific tubes for details	NA	Equipment Vendor	
CDS - 1	No calibration is necessary	NA	Leak test on pump and reset pump counter to zero	Flush the pump with fresh air after each use to clear out remaining vapor.	See specific tubes for details	NA	Equipment Vendor	

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QAPP Worksheet #28: QC Samples Table
Worksheet # 28C: Trace Volatile - Organics/CLP SOMO1.2 [cont'd]

(UFP-QAPP Manual Section 3.4)
Complete a separate worksheet for each sampling technique, analytical method/SOP, matrix, analytical group, and concentration level. If method/SOP QC acceptance limit exceed the measurement performance criteria, the data obtained may be unusable for making project decisions.

Matrix	Aqueous
Analytical Group	Target Compund List Trace Concentration Volatile Organics [cont'd]
Concentration Level	Trace (ug/L)
Sampling SOP(s)	
Analytical Method/SOP Reference	SOM01.2
Sampler's Name	
Field Sampling Organization	
Analytical Organization	EPA CLP RAS Laboratory
No. of Sample Locations	

Lab QC Sample:	Frequency/ Number	Method/SOP QC Acceptance Limits		Corrective Action	Person(s) Responsible for Corrective Action	Data Quality Indicator (DQI)	Measurement Performance Criteria	
Deuterated Monitoring Compounds [cont'd]	all samples	1,1-Dichloroethene-d2	55-104 %R	Check calculations and instruments, reanalyze affected samples; up to 3 DMCs per sample may fail to meet recovery limits	EPA CLP RAS Laboratory GC/MS Technician	Accuracy	1,1-Dichloroethene-d2	55-104 %R
		2-Butanone-d5	49-155 %R				2-Butanone-d5	49-155 %R
		Chloroform-d	78-121 %R				Chloroform-d	78-121 %R
		1,2-Dichloroethane-d4	78-129 %R				1,2-Dichloroethane-d4	78-129 %R
		Benzene-d6	77-124 %R				Benzene-d6	77-124 %R
		1,2-Dichloropropane-d6	79-124 %R				1,2-Dichloropropane-d6	79-124 %R
		Toluene-d8	77-121 %R				Toluene-d8	77-121 %R
		trans-1,3-Dichloropropene-d4	73-121 %R				trans-1,3-Dichloropropene-d4	73-121 %R
		2-Hexanone-d5	28-135 %R				2-Hexanone-d5	28-135 %R
		1,4-Dioxane-d8	50-150 %R				1,4-Dioxane-d8	50-150 %R
		1,1,2,2-Tetrachloroethane-d2	73-125 %R				1,1,2,2-Tetrachloroethane-d2	73-125 %R

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- To view a complete list of resources for this seminar, please visit the **Additional Resources**
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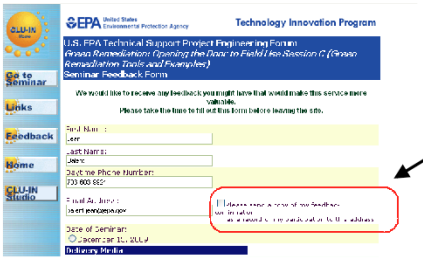

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