MMRP Work Plan Including UFP-QAPP
For SAME Environmental Committee 23 April 2014

Presenter
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Course Objective

The objective of this course is to assist PDTs transitioning from use of the traditional workplan format to using the UFP-QAPP worksheets and templates.
Course Outline

- **Work Plan**
  - Intent
  - Contents
  - Limitations

- **UFP-QAPP**
  - Intent
  - Contents
  - Example Worksheets

- **Frequently Asked Questions**
Acronyms

- UFP-QAPP – Uniform Federal Policy – Quality Assurance Project Plan
- MMRP – Military Munitions Response Program
- FUDS – Formerly Used Defense Site
- RCWM – Recovered Chemical Weapons Materiel
- EM – Engineer Manual
- EP – Engineer Pamphlet
- ER – Engineer Regulation
- PM – Project Manager
- EM CX – Environmental and Munitions Center of Expertise
- WP – Workplan
- DQO – Data Quality Objective
- QC – Quality Control
- QA – Quality Assurance
- IDQTF – Intergovernmental Data Quality Task Force
- EPA – Environmental Protection Agency
- OSWER – Office of Solid Waste and Emergency Response
- ITRC – Interstate Technology and Regulatory Council
- USAF – U.S. Air Force
- MEC – Munitions and Explosives of Concern
- WS – Work Sheet
- CSM – Conceptual Site Model
- MC – Munitions Constituents
- MR – Munitions Response
- SOP – Standing Operating Procedure
- RESS – Required Explosives Safety Submission
- PDT – Project Delivery Team
- TPP – Technical Project Planning
MMRP Work Plans

- Intent:
  - Work plans developed to ensure project goals will be achieved in a safe, timely and cost-effective manner.
  - Assure adequate characterization to support decision making.
  - During remediation, assure remedial action objectives are met.
Contracting Conundrum

- Current Data Item Description for work plans states:
  - Work plans shall be organized by chapters containing the sub plans unless specifically excluded by the Task Order. When an issued Task Order does not require a specific sub plan, the chapter heading shall be retained with a declaration that the sub plan is not required by the task order. **EM 1110-1-4009, Chapter 4,** and EP 75-1-3 (for RCWM requirements) provide minimum description of chapter contents.
  - PM’s, in conjunction with the contracting officer, issue task orders requiring use of UFP-QAPP worksheets regardless of basic contract “work plan” requirements.
Current Work Plan Contents

- Ch. 1 – Introduction
- Ch. 2 – Technical Management Plan
- Ch. 3 – Field Investigation Plan
- Ch. 4 – QC Plan
- Ch. 5 – Explosives Management Plan
- Ch. 6 – Environmental Protection Plan
- Ch. 7 – Property Management Plan
- Ch. 8 – Interim Holding Facility Siting Plan for RCWM
- Ch. 9 – Physical Security Plan
- Ch. 10 References

- Appendix A – SOW
- Appendix B – Site Maps
- Appendix C – Points of Contact
- Appendix D – Accident Prevention Plan
- Appendix E – MC Sampling and Analysis Plan
- Appendix F – Contractor Forms (QC Log, Inspection log, Visitor Log, etc.)
- Appendix H – Personnel Qualifications Certification Letter
- Appendix I – TPP Work Sheets
Common Issues With Current Work Plans

- Based on CX and regulator audits:
  - WP not written by those who are going to implement it, and often, they don’t see it until they get to the field.
  - WP and QC Plan requirements not implemented, or, not documented as being done.
  - Field procedures changed without coordination/approval.
  - Not always a clear link between planning meetings, data quality objectives and WP procedures.

- Quality Assurance Surveillance Plan not available, or not shared with the PDT.

(Ok, this is not specifically a work plan issue, but it is closely related and quite relevant!)
Common Issues With Current Work Plans

- From EM CX technical reviews:
  - DQO’s not fully developed.
  - QC Plans comprehensive but a little generic.
    - Can lead to excessive requirements.
    - No direct link to project specific requirements.
  - Disconnects between workplan and field work.
And then came......!

Uniform Federal Policy – Quality Assurance Project Plan (UFP-QAPP)
Historical Overview

- Inspectors General 1997
- Cited data quality issues
- Task force formed
Uniform Federal Policy

- Intergovernmental Data Quality Task Force (IDQTF)
  - Consensus workgroup
  - Representatives from EPA Headquarters and Regions, DoD services, and DOE
    - EPA-HQ + Navy Co-chairs DoD Environmental Data Quality Workgroup
Information Quality Guidelines

- Required by the Data Quality Act - PL106-554 (2001)
- …for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information…
- In essence, requires that data have a pedigree that permits users and potential users to assess usability of data for specific purposes
- A good, implemented QAPP is the foundation of data pedigree
UFP-QAPP Implementation

- UFP-QAPP is voluntary consensus policy
  - Once adopted by Federal department, agency, or program, use is mandatory within that organization
- OSWER Directive 9272.0-17. June 7, 2005
- OSWER Guidance 9272.0-20. Dec 21, 2005
- Office of the Under Secretary of Defense Memorandum of April 11, 2006
- DoD Instruction 4715.15 with Change 1, May 10, 2011
UFP-QAPP Implementation

- USACE Memo January 2007
- ITRC Quality Considerations for Munitions Response Project October 2008
- USAF Memo July 9, 2009
- USACE Data Item Description MMRP-09-009 for Munitions Constituents, Aug 19, 2009
- ASTSWMO Letter Nov 16, 2009
- ER 200-1-7, USACE Chemical Data Quality Management (currently in draft final form, will represent primary rqmt for USACE to use the UFP-QAPP for cleanup program projects)
UFP-QAPP Process Elements

Scoping Sessions

Assessment/Oversight

Project Management and Objectives

QAPP Approval

QAPP Implementation

Data Review

Measurement/Data Acquisition

Worksheets 1-16

Worksheets 17-30

Worksheets 31-33

Worksheets 34-36
### UFP-QAPP/EM Crosswalk

**WS #s from IDQTF document on Optimized UFP-QAPP Worksheets March 2012**

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*Review and revision completed, but no release date known. Current version of the G-5 still in effect.*
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# UFP-QAPP/EM Crosswalk

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QAPP Templates

- **IDQTF**
  - 2012 Streamlined Worksheets.
  - Instructions embedded in worksheets.

- **Navy**
  - RPM MEC specific instructions embedded in worksheets.
  - Note: Navy QA is different than USACE.

- **USACE**
  - Combining these 2 approaches.
  - Pursuing IDQTF endorsement of USACE MEC Template.
Key Worksheets

- 9 – Project Planning Session Summary
- 10 – Conceptual Site Model
- 11 – Project /Data Quality Objectives
- 12 – Measurement Performance Criteria
- 17/18 – Sampling Design, Rationale, Locations and Methods

NOTE: These require full stakeholder and project technical team participation and buy in!
Worksheet # 9

**Project Planning Session Summary**

- Complete for each project planning session
- Provides a concise record of key decisions & agreement
- Record of action items, responsible parties & due dates
- Planning session minutes can be attached to UFP QAPP as an appendix
Fort Sill WS 9 Example

Worksheet #9—Project Planning Session Summary

9.1 Overview

This worksheet records the Technical Project Planning (TPP) meeting held on December 10, 2010 to discuss the Fort Sill Rocket Prod Area WP79. This technical approach was developed using the collaborative experience of USACE and Parsons technical experts in conjunction with available site information. The TPP team discussed and refined the initial technical approach during the course of the TPP meeting using the final approved or Fort Sill as documented in this USACE-WP79. The TPP team members listed below indicate their concurrence with the technical approach. The details of the TPP meeting are documented in the TPP minutes, dated January 13, 2011, which includes the meeting minutes, site maps and figures, the CSM, SD&V, and other pertinent information.

The meeting was attended by TPP team members from the USACE Tulsa District, USACE Sacramento District, USACE, Fort Sill and Parsons. A list of attendees included below. During the meeting, a presentation was given concerning the TPP process, history and characteristics of the site, and proposed RJP5 activities.

9.2 List of TPP Team Members

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Name</th>
<th>E-mail Address</th>
<th>Project Title</th>
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<tbody>
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<td>James Sullivan</td>
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<td>Red Team</td>
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<td>Terry Wells</td>
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<td>John Baudino</td>
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Worksheet #9—Project Planning Session Summary

PARSONS
Worksheet # 10

Conceptual Site Model (CSM)

- The CSM should include the following information:
- Background information, i.e. site history
- Sources of known or suspected MEC/MC
- Types of known/suspected MEC/MC
- Primary release mechanisms for MEC/MC
- Secondary contaminant migration
Worksheet # 10 Cont’d

- Fate and transport considerations
- Potential receptors and exposure pathways
- Land use considerations
- Key physical aspects of the site
- Identify data gaps (note data gap does not = data need)
- Can be graphical, diagram, or narrative
Fort Sill WS 10 Example

Worksheet #10—Conceptual Site Model

10.1 Overview
The primary purpose of this worksheet is to describe the CSM for the project site. In order to provide
the basis for this, this worksheet also summarizes observations from previous investigations, secondary
data, information from site reports, details of the possible classes of contaminants and the affected
areas, and other relevant supporting information.

10.2 Site Description and Background

10.2.1 Site Location
Fort Sill, located in Comanche County, Oklahoma, occupies approximately 94,000 acres. (Figure 10-1).
Fort Sill is home to the I Corps Center of Excellence that trains Soldiers and Marines, deploys Field
Artillery and Air Defense Artillery (ADA) leaders, and designs and develops Air Support and ADA. The
installation also supports two US Army Forces Command Forces Brigades. Base Redevelopment and Shifts (BRACS)
mission growth has resulted in the need for infrastructure upgrades. The R/FS for the Rocket Area
will facilitate anticipated construction at this site.

10.2.2 Physiography, Topography, and Vegetation
Fort Sill is located in Comanche County in southwestern Oklahoma, adjacent to the City of Lawton, Okla-
oma. The land surrounding Fort Sill is rolling prairie and also partially includes the Wichita Mountains.
The Wichita Mountains National Wildlife Refuge is contiguous with Fort Sill’s northwestern border. The
Wichita Mountains reach an elevation of 2,108 feet above mean sea level (msl). Fort Sill is characterized
as approximately 30 percent river to sloping prairie and 30 percent rough terrain with a 3 to 20-per-
cent slope. In areas with intermittent stream bed, the banks are moderately sloping. Elevations range
from 1,602 feet to 2,026 feet. Fort Sill lies within prairie land and contains predominantly prairie grass.
Some areas may contain some scrub shads on the ruins of and dens vegetation (FIM, 2006).

10.2.3 Site Geology
Fort Sill lies in the Rolling Red Plains and rolling Red Plains Land Resource Areas. The Wichita uplift
consists of a central mass of igneous rocks, which is partially surrounded uncontrollably by a thick loca-
tion of Cambrian and Devonian sandstone and limestone. The Precambrian conglomerate underlies the
entire portion of the installation west of Cache Creek. It consists of quartzite and granite porphyry
conglomerates of Precambrian. The granite boulders compose in the west. The Cache Creek consists of
the Cache Creek Sandstone. Sand, gravel, and cobble of red sandstone occur in the uplands of the
Wichita Mountains, which drains the west to northwestern area of Fort Sill (FIM, 2005).
Worksheet #11

Project Data Quality Objectives

- This work sheet presents statements that define the quantity and quality of data needed to support future decision-making. This can be accomplished by using the 7-step DQO process, or other systematic processes that achieve this result. The 7 steps of the DQO process are:
  - State the problem
  - Identify the goals of the study & decisions to be made
  - Identify information inputs
  - Define the boundaries of the study
  - Develop the geophysical sampling approach
  - Specify performance and acceptance criteria
  - Develop the plan for obtaining data
Title: QAPP Worksheet #19
Field: Environmental Protection Agency (EPA)
Date: June 2, 2008
Page: 1 of 4

QAPP Worksheet #19
Problem Definition
OU B-2 MEC Data Quality Objectives

The U.S. Environmental Protection Agency (EPA) developed a quality assurance (QA) program for environmental data, including a process for developing Data Quality Objectives (DQOs) as outlined in the Guidance for the Data Quality Objective Process EPA QA/G-4 (EPA 402-R-99-021) (EPA, 2009). The DQO process is a series of seven planning steps that are designed to ensure that the type, quantity, and quality of the environmental data used in the decision making are appropriate for their intended application. Each DQO process outlined in the EPA guidance document was used to support development of site-specific DQOs. Each of the seven planning steps is addressed in this section.

1.1 STATE THE PROBLEM

Problem Statement: Past land uses related to munitions use, storage, handling, transportation, and disposal have resulted in explosives safety hazards that may engage in activities on Operable Unit (OU) B-2 sites consistent with their potential future use as a wildlife refuge. To assess the degree of explosives safety hazards associated with these sites, and support decisions on the possible need for remedial actions, it is necessary to obtain data concerning the nature and extent of munitions and explosives of concern (MEC) incidents at these sites. Inadequately characterized explosives safety hazards may result in an unacceptable degree of uncertainty concerning the explosives safety hazards associated with these sites.

Background: The OU B-2 area, like other ordnance areas at Adak, were used primarily during and just after WWII for military training purposes (firing ranges, target areas, etc.). Some areas designated for small arms training and waste decontamination disposal were used until the late 1980s; others were not used for any documented munitions-related purpose after the war.

The completed Preliminary Assessment (PA) for OU B sites reported MEC or related debris finds at 19 of the 24 areas of concern (AOCs) currently located in OU B-2. Following the PA, additional field work was performed that supported No Further Action (NFA) at 7 of the 34 OU B-2 AOCs. Seventeen sites remain within OU B-2 that have not been approved for NFA. Long term, these sites will be transferred to the U.S. Fish and Wildlife Service (USFWS) via the U.S. Department of Interior for use as a wildlife refuge when the remediation is complete. After the land transfer occurs, all of the land use controls (LUCs) presently in place at the site, with the exception of the existing ordnance education and awareness program, will be removed to allow...
MR Classification Example WS 11

DQOs

Data Quality Objectives for MR Advanced Classification

The project data quality objectives (DQOs) for an MR classification project are developed in this worksheet. DQOs are developed during the systematic planning process (TTP) as implemented by the DoD component performing the project. In the case of the USACE, the format for implementing the TTP is the technical project planning (TPP) process as described in the Army RTOI Guidance document (November 2009). USACE TTP is fully compatible with EPA's 7-step DDO process.

According to the guidance document TTP is implemented during a series of four planning meetings with the regulators and stakeholders with the purpose of achieving consensus on the DQOs. This worksheet documents the results of this process and documents the agreed-upon DQOs that define the quantity and quality of data needed to support anticipated future decision-making requirements. Worksheets following this one use the DQOs developed in this worksheet and build upon them to develop the following project planning information:

- Worksheet 9 presents the Measurement Performance Criteria (MPC) for the project. The MPC is the detailed specifications for data collection.
- Worksheet 10 presents the detailed format of work (DFW) and the project sampling design. The DFWs and the sampling design are developed by the contractor and the DoD contracting authority. The DFWs describe the project elements that can be implemented, managed and controlled through QC processes. The project design is the contractor's plan for performance of the DFW.
- Worksheet 11 presents the Field Standard Operating Procedures that will be used to perform the DFW.

Through this series of worksheets the field activities for the project are developed in a sequential process designed to first determine the data needs and then develop and implement the detailed procedures designed to acquire the needed data. This worksheet begins the development of project planning by documenting the decisions that need to be made and the quantity and quality of data needed to ensure that those decisions are based on sound scientific data. The following are example DQOs for an MR classification project developed using the EPA Seven-Step Process. It should be noted that the specific process used to develop the DQOs is less important than achieving an acceptable result developing statements that define the quantity and quality of data needed to support future decision-making. These DQO statements will also be used as the basis for developing the data acquisition program to collect the needed data and as a baseline for data quality to demonstrate that the collected geophysical data meets the standards for data quantity and quality that are established here.
Fort Sill WS 11 Example
Worksheet #12

Measurement Performance Criteria

- This worksheet documents the quantitative measurement performance criteria. Typically presented in table format for the following activities.
  - General measurement performance criteria
  - Geophysical Instrument functionality
  - Positioning instrument functionality
  - Data collection
  - Data processing
  - Auditing procedures
  - Other project requirements
MR Classification WS 12 Example

Measurement Performance Criteria

### Measurement Performance Criteria

Measurement performance criteria (MPCs) are the detailed specifications that will be implemented on the project and, where appropriate, include specifications for allowable variance in data quality. This worksheet documents the quantitative MPC for this project that are intended to be universally applied to all MR used classification projects. Other MPCs that are less critical may change from project to project at the discretion of the DDO managers and the contractor are stated in the individual SOP for each DFW in Worksheet 1L.

### MPC 1 for DFW 1: Assemble the MetalMapper System and Verify Correct Operation

<table>
<thead>
<tr>
<th>Measurement Quality Objective</th>
<th>Measurement Performance Criteria</th>
<th>Verification Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly data</td>
<td>Correct assembly of MetalMapper</td>
<td>Verified assembly as described in SOP L.</td>
</tr>
<tr>
<td></td>
<td>System: checking correct assembly (Assembly SOP)</td>
<td></td>
</tr>
<tr>
<td>Inserted Polarizations of Each of Five Measurements over a Small NWP Target:</td>
<td></td>
<td>Process of field geophysical sign assembly (as per SOP L) or completion of assembly operation. Checklists are reviewed and verified by QC Geoprocessor.</td>
</tr>
<tr>
<td></td>
<td>Each of the five sets of inserted polarizations will match the expected library response within a match window of ±18 degrees.</td>
<td></td>
</tr>
<tr>
<td>Data Handling</td>
<td>Inserted polarizations for each measurement are compared to the library using the QC Analyst classification tool and recorded in the project database.</td>
<td></td>
</tr>
</tbody>
</table>

Data must be delivered in a timely manner and in a standard format.
Worksheet #17/18

Sampling Design, Rationale Locations, and Methods

- This worksheet documents the rationale for the sampling approach and describes the details of the sampling design. This typically includes the following information:

  - MRS physical boundaries (maps, acreage)
  - Basis for number and spacing of transects, grids
  - Sample locations
  - Process for in the field changes and contingencies
  - Description of geophysical and position equipment
  - Geophysical workflow from field to processing to dig list
  - Explanation of target threshold
  - Other project requirements
## ADAK WS 17 Example
### Sampling Design and Rationale

<table>
<thead>
<tr>
<th>AOC Type</th>
<th>Site Inspection/Reconnaissance</th>
<th>Site Assessment</th>
<th>Site Characterization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixing Points</td>
<td>N/A for current RI</td>
<td>Instrument-aided inspection of the site and intrusive investigation of target anomalies identified.</td>
<td>100% geophysical mapping of 30 m x 30 m grids covering the site.</td>
</tr>
<tr>
<td>Large-Scale Burial/Disposal Areas</td>
<td>N/A for current RI</td>
<td>100% geophysical mapping using a max. transect spacing based on the smallest munition of interest for the area (if known).</td>
<td>Intrusive investigation of all potential munitions-related anomalies</td>
</tr>
<tr>
<td>Open Burn/Open Detonation Areas</td>
<td>N/A for current RI</td>
<td>GridBased mag &amp; dig investigation or mapping of transects spaced at 34.5 m in all areas.</td>
<td>Characterization is complete when no MEC or MPFPH is found within 15 m of the boundary (based on expansion grid process: 3X mile).</td>
</tr>
<tr>
<td>Storage Magazines</td>
<td>Instrument-aided using 5 m max. transect spacing, spacing will be decreased where visibility is reduced</td>
<td>Geophysical mapping using transects spaced at 34.5 m in all areas.</td>
<td>Sampling if evidence of burn pad or exposed ordnance filler is found.</td>
</tr>
<tr>
<td>Target Impact Areas</td>
<td>N/A for current RI</td>
<td>Geophysical mapping using a max. transect spacing based on the smallest munition of interest for the area.</td>
<td>100% geophysical mapping of 30 m x 30 m grids covering the site.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Intrusive investigation of potential munitions-related anomalies</td>
<td>Characterization is complete when no MEC or MPFPH is found within 15 m of the boundary (based on expansion grid process: 3X mile).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100% geophysical mapping of 30 m x 30 m grids placed where more detailed anomaly or MEC characteristics are desired.</td>
<td>Sampling if evidence of burn pad or exposed ordnance filler is found.</td>
</tr>
</tbody>
</table>
Sampling Locations and Methods

Worksheet #18: Sampling Locations and Methods/SOP Requirements Table

The following table lists the site locations that will be sampled, matrix, analytes, and associated QA/QC samples. The samples collected from the site will be given a sample identification (ID) number as detailed in Worksheet #27.

<table>
<thead>
<tr>
<th>Sample Types</th>
<th>Soil Increment Samples</th>
<th>Sediment (Discrete Samples)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Replicate</td>
</tr>
<tr>
<td>Range Samples</td>
<td>TBD</td>
<td>TBD</td>
</tr>
<tr>
<td>Background Samples</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sampling Location</th>
<th>Matrix</th>
<th>Depth (inches below ground surface)</th>
<th>Analytical Group</th>
<th>Deliverable</th>
<th>Deliverable Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Background Samples</td>
<td>Soil</td>
<td>0-6</td>
<td>Metals</td>
<td>SEDD v5.2</td>
<td>14 days after sample receipt</td>
</tr>
<tr>
<td>QC Background Samples</td>
<td>Soil</td>
<td>0-6</td>
<td>Metals</td>
<td>SEDD v5.2</td>
<td>14 days after sample receipt</td>
</tr>
<tr>
<td>Primary Soil Samples</td>
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<tr>
<td>QC Soil Samples</td>
<td>Soil</td>
<td>0-6</td>
<td>Metals</td>
<td>SEDD v5.2</td>
<td>14 days after sample receipt</td>
</tr>
<tr>
<td>Background Sediment Samples</td>
<td>Sediment</td>
<td>0-6</td>
<td>Metals</td>
<td>SEDD v5.2</td>
<td>14 days after sample receipt</td>
</tr>
<tr>
<td>QC Background Sediment Samples</td>
<td>Sediment</td>
<td>0-6</td>
<td>Metals</td>
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</tr>
<tr>
<td>Primary Background Samples</td>
<td>Soil</td>
<td>0-6</td>
<td>Explosives</td>
<td>SEDD v5.2</td>
<td>14 days after sample receipt</td>
</tr>
<tr>
<td>QC Background Samples</td>
<td>Soil</td>
<td>0-6</td>
<td>Explosives</td>
<td>SEDD v5.2</td>
<td>14 days after sample receipt</td>
</tr>
<tr>
<td>Primary Soil Samples</td>
<td>Soil</td>
<td>0-6</td>
<td>Explosives</td>
<td>SEDD v5.2</td>
<td>14 days after sample receipt</td>
</tr>
</tbody>
</table>
Use of Standing Operating Procedures (SOPs)

- Used to document typical processes that are generally the same from project to project.
- Must be reviewed and made applicable to site-specific conditions.
- Included in the QAPP as appendices.
Typical SOPs

- Anomaly avoidance
- Brush clearance
- Civil surveying
- Geospatial data management
- Geophysical data collection
- DGM data processing and interpretation
- Target reacquisition
- Intrusive operations
- Explosives management (not same as the RESS)
- Geophysics QC
- MPPEH disposition
- MC sample collection
- Chemistry data management
- MC data review
- Lab SOPs
Frequently Asked Questions

Why is use of the UFP-QAPP Worksheets recommended/required?

- Several reasons:
  - They are tools to guide project teams through a systematic planning process and ensure that the document addresses all required elements of ANSI-ASQ E4.
  - Use of the worksheets promotes consistent organization of information so users, reviewers, and stakeholders know where they can find it.
  - The worksheet format can be easily updated when there are changes in procedures or specifications.
Frequently Asked Questions

If there are no sampling activities associated with my project and we are using only existing data, do we still need a QAPP?

► Yes.
► The QAPP presents the steps that will be taken to ensure that environmental data are the appropriate type, quality, and quantity for a specific decision or use, and this applies whether collecting new data or using existing data.
► If using only existing data, all worksheets will not be necessary.
Frequently Asked Questions

- May worksheets be modified or deleted?
- May I complete only the required ones?
  - Yes
  - The worksheets are a tool, and they may be modified, deleted or supplemented to suit project-specific requirements.
  - The worksheets were designed to make it easier to develop, review and implement QAPPs, and to ensure all requirements are addressed.

Note: This is also referred to as the “graded approach”
# Table of Contents and Crosswalk

<table>
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<tr>
<th>Organized GAPP Worksheets</th>
<th>MR Classification GAPP Worksheets</th>
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<td>1 Tally and Approval Page</td>
</tr>
<tr>
<td>1.6.5 Impact Organization and GAPP Distribution</td>
<td>2 Impact Organization and GAPP Distribution</td>
</tr>
<tr>
<td>4.7.6.1 Personal Qualifications and Sign-off Sheet</td>
<td>3 Personal Qualifications and Sign-off Sheet</td>
</tr>
<tr>
<td>6.4 Communication Plan</td>
<td>4 Communication Plan</td>
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<tr>
<td>9.4 Project Planning Session Summary</td>
<td>5 Project Planning Session Summary</td>
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<tr>
<td>10 Conceptual Site Model</td>
<td>6 Conceptual Site Model</td>
</tr>
<tr>
<td>11.3 Project Cost Objectives</td>
<td>7 Project Cost Objectives</td>
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<tr>
<td>12 Measurement Plan</td>
<td>8 Measurement Plan</td>
</tr>
<tr>
<td>13 Secondary Data Use and Limitations</td>
<td>9 Secondary Data Use and Limitations</td>
</tr>
<tr>
<td>14.8.10 Project Tasks and Schedule</td>
<td>10 Project Tasks and Schedule</td>
</tr>
<tr>
<td>15 Project Action Items and Laboratory-Specific/Worksheet</td>
<td>N/A Worksheet not applicable to this GAPP</td>
</tr>
<tr>
<td>17 Sampling, Design, and Protocol</td>
<td>N/A Sampling, Design, and Protocol</td>
</tr>
<tr>
<td>18 Sampling Locations and Methods</td>
<td>N/A Sampling Locations and Methods</td>
</tr>
<tr>
<td>19.6.10 Sample Containers, Preservation, and Hold Times</td>
<td>N/A Worksheet not applicable to this GAPP</td>
</tr>
<tr>
<td>20 Field QC</td>
<td>11 Field QC</td>
</tr>
<tr>
<td>21 Field Cal</td>
<td>N/A Field Calibration and QC</td>
</tr>
<tr>
<td>22 Field Equipment Calibration, Maintenance, Testing, and Inspection</td>
<td>N/A Field Equipment Calibration, Maintenance, Testing, and Inspection</td>
</tr>
<tr>
<td>23 Analytical QC</td>
<td>N/A Analytical QC</td>
</tr>
<tr>
<td>24 Analytical Instrument Calibration</td>
<td>N/A Analytical Instrument Calibration</td>
</tr>
</tbody>
</table>
Frequently Asked Questions

- Who should attend project scoping meetings?
  - All organizations that have a stake in the project.
  - Scoping meetings (TPP meetings) define the problem, develop DQO’s and data collection activities. This is rarely done in a single meeting.
  - Typically, the USACE PDT will conduct one or more internal meetings with the contractor to define problems and develop recommendations, then present them to the larger group of stakeholders.
  - Important thing is to document consensus agreements, decisions and action items.
Frequently Asked Questions

- Which worksheets are most useful to the field team?

  - WS 10: Conceptual Site Model
  - WS 11: Project Data Quality Objectives
  - WS 12: Measurement Performance Criteria
  - WS 14/16: Project Tasks and Schedule
  - WS 17: Sampling Design and Rationale
  - WS 18: Sampling Locations and Methods
  - WS 19/30: Sample Containers, Preservation, and Hold Times
  - WS 20: Field QC
  - WS 21: Field SOPs
  - WS 22: Field Equipment Calibration, Maintenance, Testing, and Inspection
  - WS 23: Analytical SOPs
  - WS 26/27: Sample Handling, Custody, and Disposal
  - WS 29: Project Documents and Records
Questions?