ADEQ Arizona Department of Environmental Quality

Voluntary Remediation Program

Data Quality Plan for Work Plan/SAP Development

The following information regarding data quality should be included in a work plan/sampling and analysis plan (SAP) for characterization and/or remedial action, and submitted for Voluntary Remediation Program (VRP) review and approval. Individual sections may be expanded or limited as circumstances warrant based on the size, duration, and/or complexity of the project.

The Remedial Projects Section (RPS) Quality Assurance Program Plan (QAPrP) must also be followed when developing a project-specific work plan/SAP, and any deviations must be clarified in the work plan/SAP. The RPS QAPrP can be found in the "Templates & Resources" sidebar at azdeq.gov/VRP. A separate project-specific Quality Assurance Project Plan is not required.

Recommended Work Plan/SAP Contents

1. **Title and Approvals** - Define the individual(s) responsible for the following on the project:
    a. **Project Manager(s):** The Project Manager is responsible for comprehensive oversight and final decision making for the project.
    b. **Sampling Team Leader(s)/Field Scientist(s):**

        Sampling Team Leader/Field Scientist is responsible for:

        i. Assembling sampling team and briefing members on requirements of the project
        ii. Supervising preparation of equipment
        iii. Overall collection of samples, record keeping, and delivery of samples to laboratory
        iv. Safety of field personnel
        v. Overall coordination and documentation of field activities related to the project

    c. **Quality Assurance (QA) Coordinator(s):** QA Coordinator will facilitate with proper planning documents and is available to review and approve plans. Questions regarding validity and usability of data will be directed to the QA Coordinator.
    d. **Peer reviewer(s):** Peer reviewer is responsible for the internal peer review of technical data quality, and presentation of and usability of data used to meet the data quality objectives.
    e. List all other individuals and responsibilities not covered above as necessary.
2. **Project Technical Design** - Describe the following:
    a. **Data Quality Objectives (DQOs):** Address the seven steps of the DQO process in the work plan/SAP. Indicate how the data will be used and for what purpose. Include data use endpoints (e.g. statistical or risk-based analyses) and their specific relation to data collection.

b. **Sampling Points:** State the number of sampling points. If the project will utilize Decision Units, describe the basis and size. If sampling points will be identified in the field, describe how they will be selected.

c. **Sample Type(s):** Indicate whether samples will be grab or composite. If composite, indicate the compositing method. Indicate whether samples will be surface or subsurface (if applicable) and why.

d. **Parameters to be Measured:** Indicate the analytical parameters for the samples. Include parameters to be measured in the field (e.g. pH, temperature, etc.).

e. **Quality Control (QC) Activities:** Indicate what QC activities will occur. This includes field blanks, replicates, and QC samples, among others.

f. **Locational Information/Documentation:** Provide a map, or document in writing, the proposed locations of sampling points.

g. **Special Sample Requirements:** Describe any special requirements for the collection of samples, beyond those documented in any Standard Operating Procedures (SOPs) being used for the project. For example, indicate whether collection of samples is dependent on heat, wind direction, time of day, or any other event.

3. **Special Training Requirements** - Describe if field team members are required to have any special training to complete characterization or remediation work, in addition to the standard field training given to all field personnel. Identify any professional certifications needed to complete the work. Identify where training information is located or stored if not provided as documentation with the work plan/SAP document.

4. **Field Sampling Table** - Create and populate a similar table as below:

Matrix	Analyte	# of Samples	# of Duplicates	# of Field Blanks	# MS/MSD	Sample Volume[1]	Container	Preservation	Holding Time

Note: For incremental sampling a modified format should be used.

5. **Field Sampling Requirements** - List the organization's SOPs that will be used on the project.

   Cite SOPs for the details of sample collection, equipment cleaning, etc. Note any deviations of SOPs required for the project. If other procedures not covered by SOPs will be used, describe them in detail.

6. **Sample Handling and Custody Requirements** - Indicate where samples will be delivered for analysis. Make comments on chains-of-custody, sample handling, and note any other special requirements.

[1] *For volume, give QA sample volume followed by a slash and the regular sample volume (i.e. 500ml/100ml)*

7. **Analytical Method Requirements** - Analytical methods should be referenced and verified as Arizona Department of Health Services approved and certified with applicable Arizona qualifiers. Create and populate a similar table as below:

Analyte	Matrix	Analytical Method	Laboratory Name	Screening Criteria or Regulatory Level (i.e. required laboratory reporting limit)	Laboratory Reporting Limit	Units of Reporting Limit

8. **Field Instrument, Equipment and Supplies; Testing and Maintenance Requirements** - Indicate the following:
   - **a.** Describe field instrumentation to be used on the project (this may be included in item #3 Project Technical Design).
   - **b.** Instruments used for field collection will be calibrated and maintained in accordance with manufacturer instructions and the procedures outlined in appropriate SOPs.
   - **c.** Sample containers will be new, certified, pre-cleaned containers.
   - **d.** The process for field instrument calibration shall be documented in field notes daily.
9. **Assessments/Oversight** - Identification of problems related to technical performance will be the responsibility of the Volunteer and technical staff working on the project. The Sampling Team Leader will assess any problems that arise in the field and make modifications to technical procedures, if needed, and will communicate with the Project Manager and any technical staff. Any changes in technical procedures will be documented in field notes and highlighted in reports related to the project.
10. **Data Review, Validation, and Usability** - Indicate who will review and verify the data. Please state whether a third-party data validation[2] will be performed. Any questions regarding the verification, validation, and usability of the data should be discussed with your VRP Project Manager and decisions made appropriately.
11. **Documentation and Records** - Appropriate documentation including field notes and measurements will be recorded in a field notebook or equivalent preprinted field forms, which will be maintained by the Volunteers' designated Sampling Team Leader. Original copies of Chain of Custody, raw data, and analytical results will be maintained by the respective laboratories performing the analyses. The Volunteer's designated Sampling Team Leader will be responsible for summarizing daily activities and made available to VRP upon request. The summary should include the following:
    - **a.** Name of Sampling Team Leader and Team Members
    - **b.** Number of samples collected by matrix
    - **c.** Locations samples

[2] *The VRP recommends third-party data validation. Site specific need for validation should be discussed with your VRP Project Manager.*

d. On-site measurements made and results obtained at each location (including times)

e. Disposition of all samples (where they were delivered for analysis)

f. Air bill numbers for all shipped samples

g. Photocopies of Chain of Custody

h. Noteworthy observations at each sampling location

i. Field instrument calibration

12. **Data Management** - All groundwater data must be submitted to ADEQ's Groundwater Quality Database. Guidance, which includes directions and instructions, is available at: azdeq.gov/GWData.

13. **Data Certification** - The Volunteer and/or their consultant will be required to sign a certification statement and must ensure that data quality meets project objectives. A final report stamped by a registered professional does not constitute certification.

    The following statement certifying data representativeness, comparability, completeness, and usability must be signed in the final report where the data are presented.

Certification: I, [name and professional registration] do certify:

a. Data are appropriate to address study objectives (methods, MDLs, parameters).

b. Data were collected in accordance with [name of company that conducted sampling] quality management program.

c. Sample design (i.e. representativeness) was developed and executed according to professional standards for environmental work.

d. Field and laboratory QC meet objectives (duplicate reproducibility, spike recoveries, field and lab blanks), appropriate data flags used in data tables, and unusable or rejected data are flagged appropriately.

e. Deviations or exceptions of any of the above are specifically noted in the body of the report.

Note: VRP approval of the work plan, sampling plan, or other documents does not constitute a QA/QC audit of the methods and procedures. The VRP review relies on the qualified environmental professional to conduct all work according to guidance, acceptable best environmental practices, and professional standards.