New Mexico Environment Department Surface Water Quality Bureau

Standard Operating Procedure for

FIELD SAMPLING PLAN DEVELOPMENT AND EXECUTION

Approval Signatures

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1.0 Purpose and Scope

The purpose of this Standard Operating Procedure ("SOP") is to describe the process for preparing and implementing a Field Sampling Plan ("FSP") for specific activities the New Mexico Environment Department ("NMED") Surface Water Quality Bureau ("SWQB") performs. The current SWQB Quality Assurance Project Plan for Water Quality Management Programs ("SWQB QAPP") describes the sampling activities that require an approved FSPs prior to data collection. The FSP serves as the comprehensive record for each individual project. The FSP incorporates and documents the results of systematic planning, also known as the "Planning Process" (EPA CIO 2105-P-01.2) for environmental data collection activities. The Planning Process provides sufficient information so that the planned environmental data collection activities can be effectively executed to meet project objectives and goals.

2.0 Personnel Responsibilities

The SWQB Monitoring, Assessment, and Standards Section ("MASS") Program Manager is required to review this SOP in coordination with the Quality Assurance Officer ("QAO") and Subject Matter Expert ("SME") every two (2) years in accordance with SOP 1.1 for the Creation and Maintenance of SOPs (NMED/SWQB 2020 or most current version).

A draft FSP is reviewed by the Project Manager's Program Manager prior to data collection for conformance with grant workplan requirements, applicable regulatory and contractual requirements, and technical accuracy prior to approval. The Program Manager responsibilities noted for development and execution of a FSP are completed in coordination with the respective Team Supervisor. For Effectiveness Monitoring the Program Manager responsibilities for development and execution of a FSP are completed directly with Project Manager.

The QAO is involved in the development and revision of this SOP to ensure the SOP meets the requirements of the SWQB QAPP (NMED/SWQB 2021 or most current version). Pending the review and approval of this SOP, the QAO will ensure the SOP is accessible through the SWQB's website. The QAO will save the signed acknowledgement forms of SWQB staff working under the SOP. The signed forms will be saved in the QAQC folder on the NMED network server.

The QAO's review of draft FSP is for conformance to the most recent SWQB QAPP and the requirements prescribed in this SOP. A FSP becomes final after approval by the applicable Program Manager and QAO. The QAO will maintain the original approved FSP in accordance with applicable sections of New Mexico's Disposition of Public Records and Non-Records regulation, codified at 1.13.30 New Mexico Administrative Code (NMAC) and Retention and Disposition of Public Records regulations, codified at 1.21.2 NMAC.

All SWQB personnel responsible for the development and implementation of a FSP are responsible for procedures detailed in this SOP. SWQB staff working under this SOP are required to sign an acknowledgment form that states they have read, understand, and will follow the most recent SOP for Field Sampling Plan Development and Execution, associated documents (field sheets, etc.) and subsequent revisions.

Team Supervisor is responsible for coordinating with Program Manager and Project Manager during development and execution of FSP. The Team Supervisor will establish milestones for projects so that project personnel can stay on schedule. The Team Supervisor will be manage project personnel and resources throughout the project in coordination with Project Manager(s) and Program Manager to ensure

environmental data collection activities are conducted in accordance with the most current FSP, SOPs, and QAPP.

The Project Manager(s) is responsible for preparing the FSP in coordination with applicable Team Supervisor and submitting to their Program Manager and QAO for approval prior to data collection; however specific tasks relating to the development of the FSP may be assigned to other project team members as appropriate. A copy of the approved FSP is maintained by the Project Manager(s) through the completion of the project. Coordination with Team Supervisor is not applicable for Effectiveness Monitoring due to SWQB personnel organization structure.

Please refer to Section 6 of this SOP for additional information pertaining to specific responsibilities for project staff in development and execution of a FSP.

3.0 Background and Precautions

3.1 Background

The Sampling Design section of the SWQB QAPP details the types of water quality monitoring activities which require a FSP. The FSP will consist of seven sections that include narrative portions documenting Planning Process activities, project description, sampling plan, and resource requirements. The FSP will also contain a series of tables that document sampling sites, rational for choosing sampling sites, types of data collection, and resource requirements for the project. The tables will specifically identify sampling site locations and chemical, physical, and biological sampling to be performed at each sampling location along with the calculated resources needed to complete the planned sampling. A template has been developed to aid in drafting a FSP and is available on the SWQB SOP webpage (https:/www.env.nm.gov/surface-water-quality/sop/).

3.2 Procedural Precautions

A FSP is required for most environmental data collection activities identified in the SWQB QAPP. A FSP describes the sampling plan and a QAPP assures the quality of the data. The FSP and QAPP may be combined into one document (i.e., Sampling and Analysis Plan), if the document includes details about sampling type, locations, frequency and resources needed to conduct planned environmental data collection activities and meets all requirements of EPA QA/R5 (USEPA 2001). The major difference between the QAPP and the FSP is that the FSP includes information about resource requirements. In any case, the resources required for the environmental data collection activities described by either the QAPP or the FSP should conform to those available and described in the grant workplan or other applicable project documents.

3.3 Safety Precautions

This SOP does not cover actions or procedures that may pose specific safety issues beyond those found in a typical office environment when drafting an FSP. For FSP implementation, field staff should follow applicable safety guidance documents including the SWQB Field Safety Manual and the appropriate Job Hazard Analysis. Staff should also exercise their professional judgement regarding all sampling conditions including but not limited to deciding whether to begin or continue traveling to a field site or conduct sampling if conditions are deemed unsafe.

4.0 Definitions

Assessment Units (AU) – River or stream reaches defined by various factors such as hydrologic or watershed boundaries, geology, topography, incoming tributaries, surrounding land use/land management, water quality

standards, etc. AUs are designed to represent waters with assumed homogeneous water quality. Stream or river AUs in New Mexico are typically no more than 25 miles in length unless there are no tributaries or land use changes to consider along the reach.

Environmental data – any measurements or information that describe environmental processes, location, or conditions; ecological or health effects and consequences; or the performance of environmental technology. For EPA, environmental data include information collected directly from measurements, produced from models, and compiled from other sources such as databases or the literature.

Field Sampling Plan (FSP) – A document that provides guidance for all fieldwork by defining in detail the sampling and field data-gathering methods as well as resource requirements for the project.

Publication – means any information published as an individual document at government expense or as required by law that is intended for public distribution, 1.25.10 NMAC.

Program Manager – An individual within the SWQB that manages a program such as the MASS, Watershed Protection Section (WPS), or Point Source Regulation Section.

Project Manager – An individual responsible for a specific project. This individual, in most cases, holds a different title within the organization. The Program Manager and Project Manager are not necessarily synonymous.

Project Team – A group of individuals taking part in the Planning Process of the FSP or SAP and implementing the plan as defined in the FSP or SAP.

Quality Assurance (QA) – An integrated system of management activities involving planning, implementation, documentation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed and expected by the SWQB.

Quality Control (QC) – The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the SWQB; operational techniques and activities that are used to fulfill requirements for quality.

Quality Assurance Officer (QAO) – An individual within the SWQB that is responsible for overseeing the development and implementation of all quality assurance procedures and processes within the SWQB including those projects that receive support or funding from the SWQB. The QAO is also responsible for validating and verifying data sets for potential use in assessment of surface waters.

Quality Assurance Project Plan (QAPP) – A formal planning document for environmental data collection activities that describes the data collection procedures and the quality assurance and quality control activities that must be implemented to ensure that the results are sufficient and adequate to satisfy the stated performance criteria.

Quality Management Plan (QMP) – Establishes the principles, requirements, and practices necessary to implement the quality system for the SWQB's environmental data operations.

Sampling and Analysis Plan (SAP) – A document that details the procedural and analytical requirements for a one-time or time-limited project. A SAP contains all the elements of a QAPP and a FSP that must be provided to meet the requirements for any project funded by the EPA under which environmental measurements are to be taken.

Standard Operating Procedure (SOP) – A document that lists the steps that should be completed when performing a task.

Subject Matter Expert (SME) – A person who is familiar with the purpose and procedure for accomplishing a task. The SME may hold another title within the organization.

Surface Water Quality Information Database (SQUID) – The SWQB database for storing, retrieving and reporting laboratory results, field observations, biologic assemblage data, LTD data, and stream habitat/geomorphic data.

5.0 Equipment and Tools

Access to SQUID, ArcMap (or equivalent), SWQB Mapper, and Microsoft Office (or equivalent).

6.0 Step-by-step Process Description

SWQB personnel are responsible for conducting and documenting the Planning Process (#1-#8 below) for environmental data collection activities and preparing a FSP as required by the most recent EPA-Approved version of the SWQB QAPP. The Sampling Design section of the SWQB QAPP details the types of data acquisition performed by the bureau that require a FSP. If a FSP is required, SWQB staff will follow the procedure detailed in this SOP.

In development of the FSP, the Program Manager, Project Manager(s), and the Project Team are responsible for documenting the following Planning Process items:

1. Identification and involvement of the sponsoring organization (e.g., EPA) and responsible entity (e.g., SWQB) the FSP will be implemented under. The assigned project manager and project personnel. Any stakeholders, scientific experts, etc., that will be required to implement FSP;
2. Description of the project goal, objectives, and questions and issues to be addressed by the project;
3. Identification of project schedule, resources (including budget), milestones, and any applicable requirements;
4. Identification of the type of environmental data needed and how the information will be used to support the project's objectives;
5. Determination of the quantity of data needed and specification of performance criteria for measuring quality;
6. Description of how, when, and where the environmental data will be obtained (including existing information) and identification of any constraints on data collection;
7. Specification of needed QA and QC activities to assess the quality performance criteria (e.g., QC samples for both the field and laboratory, audits, technical assessments, performance evaluations, sensitivity analysis of models, etc.); and
8. Description of how the acquired information will be analyzed, evaluated (i.e., verification and validation of data), and assessed against its intended use and the quality performance criteria.

Planning Process activities were developed based Systematic Planning in EPA Environmental Information Quality Policy and Procedure (EPA CIO 2105.2 and 2105-P-01.2).

The Planning Process requirements detailed above must be addressed and documented in all FSPs developed by the SWQB. This SOP will explain the responsibilities and requirements of project staff for each of the Planning Process activities listed above.

6.1 Initial Planning Process Activities for Environmental Data Collection (#1 through #4)

The Project Team and Project Manager, with coordination from Program Manager, will ensure the objectives and decisions criteria listed in SWQB QAPP are consistent with the objectives of the current project.

The project-specific FSP incorporates and documents the results of activities associated with Planning Process and provides sufficient information so that the planned environmental data collection activities can be effectively implemented to meet project objectives and goals. Table 1 below provides information pertaining to responsible party and associated task for project staff during the development of a FSP.

Table 1. Individual Responsibilities for Development of a FSP (prior to approval)

Responsible Party	Task
Program Manager	• Assigning a person or persons to be Project Manager(s) responsible for preparing the FSP. • Identifying and involving sponsoring organization and responsible official, stakeholders, scientific experts, etc. • Assembling the Project Team with the coordination of the Project Manager(s). Besides the Project Manager(s), the project team may include appropriate technical staff members from within the SWQB, and contractors or their representatives if any of the environmental data collection activities will be contracted. • Providing the Project Manager(s) with a copy of the relevant workplan, estimate of available resources (e.g., general funds or WTUs), establishing the preliminary project objectives, goals, and monitoring strategy and the anticipated schedule goals for upcoming survey. • Addressing issues and questions the project intends to answer and any decisions to be resolved by the project. • Establishing milestones and any applicable requirements (e.g., regulatory and contractual)

Project Manager(s)	• Developing a sampling schedule and providing estimates resources requirements to the Project Team for development of sampling plan. • Leading the Project Team and assigning Project Team staff to gather preliminary data from internal or external sources, as needed to inform the project. • Leading the initial internal planning meetings to gather input from Project Team to begin development of the draft FSP. • Maintaining the project files and coordinating the development of the FSP to ensure the Planning Process activities are documented in the FSP. • Estimating the anticipated schedule and resource requirements. • Ensuring the progress is kept on track and complies with the requirements set forth in the Bureau's QAPP and this SOP. • Scheduling planning meetings with other technical staff and stakeholders (e.g., Tribes, USFS, BLM, State Parks, NMDGF, LANL, NWR, etc.) as requested or needed during the Planning Process. • If the project encompasses Pueblo or Tribal lands, preparing a formal letter from the Cabinet Secretary or other senior management to be sent to the Tribal Leaders and Environmental Directors (https://intranet.web.env.nm.gov/pip-tools/) informing them of the project and seeking their input in the Planning Process. • Inventorying needed supplies (e.g., sampling containers, calibration standards, tubing, filters, acids, and any other expendable supplies) to ensure availability, and working with the Project Team to prepare related purchase order requests for review and signature by the Program Manager. • Planning and conducting a pre-project public meeting in the project area or virtually (WQMP/CPP – Optional). • Presenting a draft FSP to the public that includes information on why the project is being conducted, details the project data collection efforts, and encourage discussion from the public on all aspects of the project (WQMP/CPP – Optional). • Reviewing all public input received and modifying the draft FSP as warranted. • Addressing any discrepancies in the FSP prior to submitting for approval. • Preparing and providing the final FSP to Program Manager and QAO for approval.

Project Team	• Considering possible options for collecting the data (i.e., what type and quantity of data are needed to most effectively answer the project questions). • Documenting data collection strategy (frequency and schedule of the data collection events) and the sampling rationale. • Collating information for Project Manager(s) and Program Manager for the preparation and generation of the FSP. • Reviewing and reporting any discrepancies of draft FSP to Project Manager(s) • Preparing a list of AUs that possibly require standards revision, if applicable. • Assisting and facilitating discussions during public presentations of a draft FSP, as needed.

6.2 Required Sections for a Field Sampling Plan (#5 through #8)

A FSP requires seven (7) sections and consists of narrative portions and a series of tables which are compiled into one text document and are used to describe: 1) the sampling plan for the project; 2) a summary of the chemical, physical, and biological sampling; and 3) an estimate of the analytical, travel, and other anticipated costs associated with the project. The seven (7) sections of an FSP and their requirements are listed below (6.2.1-6.2.7) and will also address planning activities #5 through #8:

6.2.1 Introduction (Section 1) –

This section of the FSP must provide a brief introduction to the project that describes the context of the project in relation to the overall goals and objectives stated in the Bureau's QAPP. The section should also identify the specific QAPP the project is being conducted under.

6.2.2 Responsible Parties and Organization for Executing FSP (Section 2) –

This section of the FSP must identify all project personnel (i.e., Program Manager, QAO, Project Manager(s), Project Team, etc.) and describes their associated roles and responsibilities.

Table 2 list and describes the roles and responsibility of project staff as required by this SOP. For development of a FSP, the table should be modified to include all staff participating in the project and their associated task. The table should include each project teams member's name, title, and associated task for the project. Additional rows should be added to the end of the table for other staff working on the project that are not identified below.

Table 2. Roles and Responsibilities of Project Staff

Responsible Party	Task
Program Manager	• Directing staff to publish the FSP according to program and/or grant requirements. • Managing project personnel and resources throughout the project in coordination with Project Manager(s) and respective Team Lead. • Providing oversight and coordinates with QAO, Team Supervisor, and Project Manager(s) for any data collection activities not conducted in accordance with the FSP, QAPP, or current SOPs. • Establishing milestones for project so that project personnel can stay on schedule. • Ensuring environmental data collection activities are conducted in accordance with the developed current FSP, SOPs, and QAPP.
Team Supervisor	• Managing project personnel and resources throughout the project in coordination with Project Manager(s) and applicable Program Manager. • Establishing milestones for project so that project personnel can stay on schedule • Providing oversight and coordinates with QAO and Project Manager(s) on any data collection activities not conducted in accordance with the FSP, QAPP, or current SOPs. • Ensuring environmental data collection activities are conducted in accordance with the most current FSP, SOPs, and QAPP.
Project Manager(s)	• Managing project personnel and resources throughout the project with coordination from Program Manager and respective Team Supervisor. • Conducting environmental data collection activities in accordance with the developed current FSP, SOPs, and QAPP. • Documenting any data collection activities not conducted in accordance with the current FSP, SOPs, and QAPPs in the project file and reporting these activities to the Program Manager and QAO. • Conducting a mid-project meeting with team to discuss any changes to the project plan. • Ensuring the project progress is on track by running SQUID reports and discussing on going data collection activities with Project Team. • Coordinating and conducting post-project meeting with the Bureau to discuss and document differences between planned and actual sampling and what data gaps, if any, exist. • Writing, coordinating, and assembling reports and other grant deliverables required for the project.

Project Team	• Conducting environmental data collection activities in accordance with the developed current FSP, SOPs, and QAPP. • Documenting any data collection activities not conducted in accordance with the current FSP, SOPs, and QAPP and reporting these activities to the Project Manager(s). • Maintaining project files in the dedicated survey folder. • Maintaining calibration worksheets and fields forms utilized for data collection according to SOPs. • Writing assigned sections of reports and other grant deliverables as required throughout the project.
QAO	• Retaining FSP in accordance with 1.21.2 NMAC, Retention and Disposition of Public Records. • Documenting approved changes of FSP in QA project files. • Conducting audits as needed to ensure compliance with SWQB QMP, QAPP, SOPs and FSP(s).
Added rows to the table for each additional Project staff	• Including a description of associated task relevant to FSP

A FSP Template is available on the SWQB's SOP webpage (https:/www.env.nm.gov/surface-water-quality/sop/).

6.2.3 Project Description (Section 3) –

This section of the FSP must provide background information including project goals and principle objectives, monitoring strategy, a schedule identifying general timelines for project tasks and milestones, a project description that details the region encompassed by the project along with any additional pertinent information regarding the watershed and survey. The section will also need to include all sample station names, associated assessment unit, water quality segment, and rational for sample station selection. This section must also include map(s) that clearly identify sampling station locations. Typically, a map is developed for each survey area.

This section should include the following tables:

A. Assessment Unit (AU) List – Must include AU name of each sampling station, associated water quality standard segment, IR Category, impairments, and current TMDL(s).

B. Stations Lists – Must include the station name, station ID, associated assessment unit, and station selection rationale.

The information detailed in Table 3 provides a step-by-step process for determining the sampling design for a project. The table provides the rational for selecting monitoring sites, information for determining the type of analytes and parameters needed, and the frequency and timing for different types of sampling designs implemented by the SWQB. The sampling designs detailed below are provided for convenience and are not limited to those listed.

Table 3. Step-by-step Process for Sample Site Selection and Establishment of Data Collection

Select the monitoring sites based on sampling design	• For targeted monitoring, typically only one sampling station is located within each AU, generally at the downstream end; however, if there are questions regarding the homogeneity of an AU, multiple sampling locations may be warranted to identify potential transition point(s) and accurately characterize the AU(s)[1]. • For probabilistic monitoring, see SOP 13.1 (NMED/SWQB 2022 or most current version). • For fixed-station monitoring, existing or historic stations should be reviewed to determine their relevance or to enable the examination of waterbody characteristics and temporal trends. For example, project personnel may choose not to select stations that are no longer at active discharges, are located within ephemeral waters, or that bracket minor point sources. In addition, if an active USGS gaging station is located in the reach, it should be considered for selection based on of the availability of flow, additional water quality data, and accessibility. • For effectiveness monitoring, sample locations are selected to monitor and model changes in physical, chemical, and biological data associated with nonpoint source pollution control projects for the purpose of assessing the projects overall effectiveness in reducing nonpoint sources and improving water quality.
Select the analytes for sampling location based on project objectives and goals	• The analytes of interest may vary but should account for historic or current impairments, suspected or confirmed sources of pollutants, and related programmatic and grant deliverable needs such as collection of core parameters needed to complete applicable CWA 303(d) assessment protocols (generally n=> 4 chemistry, DO logger or sonde deployment, thermograph deployment, and habitat survey all at the most downstream station in each applicable AU), water quality standards revision efforts, effectiveness monitoring, or protocol development.
Determine timing and frequency of sampling based on project objectives and goals	• The SWQB uses targeted monitoring for chemical sampling which typically involves multiple sampling and on-site measurements of water quality variables over three-seasons to capture a variety of environmental conditions related to water quality. Depending on the objectives of the project, sampling may also target periods where exceedances are expected or where designated use attainment is critical, such as sampling for metals analysis during spring runoff or for primary contact use during May through September. • Probabilistic monitoring involves a single visit to a monitoring station timed to meet biological and physical habitat index period requirements. • Fixed-station monitoring typically involves multiple visits to existing or historic

[1] There are several factors to evaluate when determining the homogeneity of the AU, including but not limited to, significant tributaries entering the reach, changes in geology, dramatic shifts in land use, dramatic change in slope, changes in riparian vegetation type and amount, traversing an ecoregion or sediment site class boundary, and any point source discharges or irrigation return flows discharging into the reach.

	stations to capture a variety of environmental conditions related to water quality that can be used to determine the waterbody's water characteristics and temporal trends. Fixed-station monitoring may be done over a specified location for a particular period of time or be conducted on a rotating basin schedule. • Biological sampling is conducted during SWQB's defined biological index period (August 15th – November 15th), see SOP 11.1 (NMED/SWQB 2020). During biological and physical habitat sample planning, the Project Manager(s) should consult with staff regarding suitable macroinvertebrate reference sites for all biological stations not in ecoregions 21 or 23 (Southern Rockies or AZ/NM Mountains). Reference sites should be documented in the FSP and must be sampled during the same project year to reduce the influence of non-water quality environmental variables such as drought. • Physical habitat sampling is timed to coincide with periods of reduced snowmelt runoff and lower chance of storm events, typically May-June and September-November.
Conduct field reconnaissance, if needed, to locate sampling stations and obtain physical and legal access	• Obtain latitude, longitude, and elevation based on GPS readings (or estimate from SWQB Mapper or other computer programs) for generating maps and creating new sampling stations in SQUID. • Confirm and update sampling station coordinates as necessary. • If needed, request new station IDs (from Project Manager) and enter station information into SQUID prior to any sampling. • If needed, request new AUs (from Assessment Coordinator).

6.2.4 Documentation (Section 4) –

This section of the FSP must describe how the environmental data collection activities and results of the project will be documented, including any deviations from the original plan and any issues that arise with any associated corrective actions. The Documentation section of a FSP must identify the specific location where project files will be saved on the SWQB network. Project files include the field sampling plan, field sheets (including but not limited to stream electronic field form, flow, biological and habitat, probable source observations, data logger deployment and retrieval sheets), electronic data logger downloads, calibration records, lab submittal forms, records of analytical data in hard copy or in electronic form, any other data collected under FSP, data validation and verification records, and the final report.

6.2.5 Sampling Plan (Section 5) –

This section of the FSP must provide a narrative and a series of tables detailing the specific data collection efforts undertaken as part of the project. This section will include sites to be sampled, the type of sampling at each site, and sampling frequency. Specifically the section should address chemistry sampling, datalogger deployment, biology/habitat sampling and includes QA sampling as required by the SWQB QAPP, SOPs, or project-specific QAPP. The section should also reference specific SOPs that will be used for the different types of data collection identified by FSP.

This section should include the following tables:

A. Chemistry Sampling – Identify parameters that will be sampled, where they will be sampled, and how frequently they will be sampled, including QA sampling as required by the Bureau's QAPP, SOPs, or project-specific QAPP.
B. Datalogger/Biology/Habitat Sampling – Detail location where dataloggers will be deployed and where biological and physical habitat data will be collected, including any QA sampling as required by the Bureau's QAPP, SOPs, or project-specific QAPP.

6.2.6 Resource Requirements (Section 6) –

This section of the FSP must address the resources necessary to complete the project through a narrative and a series of tables.

This section should include the following tables (as applicable):

A. Budget Estimates – Collates budget information from Chemistry Sampling and Datalogger/Biology/Habitat Sampling spreadsheets to provide estimates pertaining to analytical costs.
B. Travel Costs – Summarizes fuel and per diem costs, staff time estimates, and any other anticipated costs necessary to complete the planned sampling.

6.2.7 Reporting (Section 7) –

This section of the FSP must provide detailed information stating type of report(s) and other grant deliverables required upon completion of the project and must also address verification and validation of data and the expected completion date of the verification and validation package.

All approved FSPs at a minimum must include a final report and its expected completion date. The report should be completed though a series of tables which documents deviations from the original FSP. The tables must include stations names, analytes and parameters, the number of planned samples for each analyte and parameter, and the number of samples collected at each station. It is recommended that a table be developed specifically for water chemistry sampling and another table be developed for long-term deployment, biological, and physical habitat sampling. The tables should include a brief narrative describing deviations from FSP. Once reports/tables are completed they should be converted to a portable document format (pdf.) and protected so that the pdf. cannot be revised. The original word document and/or excel file(s) used to develop the final report/tables must be saved with project files on the SWQB network. According to 1.25.10 NMAC, the final report is considered a publication and must be submitted to the SWQB Publication and Records Liaison through email within 3 months of completion.

6.3 Review and approval of the Field Sampling Plan

After the planning and preparation portions of the FSP are finalized, the Project Manager(s) submits the FSP to their Program Manager and QAO for review and approval. The Program Manager's review of FSP is for conformance to grant requirements, technical accuracy, and resource availability. The QAO's review of FSP is for conformance with the Planning Process, FSP requirements according to this SOP, and the most recent SWQB QAPP. The FSP becomes final after approval by the Program Manager and QAO. The QAO will maintain the original approved FSP and will provide a copy to the Project Manager and associated Program Manager.

The Project Manager(s) will provide a copy of the approved FSP to all applicable project personnel. Project personnel implement the plan as defined in the approved FSP.

7.0 Data and Records Management

The FSP serves as the comprehensive planning document for each individual project. The FSP incorporates and documents the Planning Process, provides sufficient specific information so that the planned environmental data collection activities can be effectively implemented, and is used along with the final report to document all relevant activities and issues that arise throughout the course of the project. Project activities will be noted on the field forms and entered into SQUID to document progress throughout the course of the project. Once the sampling portion of the project has been completed and all data have been verified and validated, the FSP provides the basis for the final project report. All documentation associated with this process are stored on the SWQB network server (file depot) along with the approved FSP. The original approved FSP is kept by the QAO and stored in accordance with Disposition of Public Records and Non-Records (1.13.30 NMAC) and Retention and Disposition of Public Records (1.21.2 NMAC).

8.0 Quality Control and Quality Assurance (QAQC)

QAQC is implemented through adherence to the process outlined in this SOP for Field Sampling Plan Development and Execution. Conducting QAQC activities reduces the variability and uncertainty in the decision-making process. Additionally, following procedures described in this SOP may identify areas where variability can be reduced or eliminated in future data collection efforts, thereby improving the overall quality of the project being implemented. If, at any time, the QAO determines this process is not being adhered to, the QAO has the authority to cease activities specific to this SOP with prior support and approval by the SWQB Bureau Chief or Program Manager until such a time that the issue can be resolved.

All SWQB personnel responsible for the development and implementation of a FSP are responsible for procedures detailed in this SOP. SWQB staff working under this SOP are required to sign an acknowledgment form that states they have read, understand, and will follow the most recent SOP for Field Sampling Plan Development and Execution, associated documents (field sheets, etc.), and subsequent revisions.

9.0 Related Forms

FSP Template

10.0 Revision History

Original (December 15, 2011).

- **Revision 1. December 1, 2012.** Changed section name from *Monitoring and Assessment* (MAS) to *Monitoring, Assessment and Standards* (MASS) to reflect change in organizational structure; under *Execution of the FSP*, requested Level 1 and Level 2 sediment surveys to be conducted during same site visit; changed sampling timeframe of Level 1 nutrient screenings to allow time for stream to respond to warmer temperatures; required sonde deployment and chlorophyll-a data to be collected at all sites identified by preliminary nutrient assessment or previously listed for nutrients; clarified the “when/why” of benthic macroinvertebrate and fish data collections.
  Jodey Kougioulis, QAO; Shelly Lemon, SME/Program Manager

- **Revision 2. April 7, 2015.** Updated the name of the NMED SWQB water quality database from NMEDAS to SQUID; small editorial changes; and minor revisions/clarifications to staff responsibilities.
  Jodey Kougioulis, QAO; Scott Murray, SME, James Hogan, Program Manager

- **Revision 3. January 14, 2019.** Editorial changes; updates to depreciated procedures; removed procedures specified in other SOPs; removed specific planning information belonging within the FSP; and minor revisions/clarifications to staff responsibilities.
  Miguel Montoya, QAO; Kristopher Barrios, SME/Program Manager

- **Revision 4. February 16, 2023.** Editorial changes; clarity added to activities associated with the "Planning Process" and how they must be documented. Removed FSP "elements" and replaced with required FSP sections. Added details for FSP final report requirements.

11.0 References

United State Environmental Protection Agency (EPA). EPA Chief Information Officer (CIO). Directive Number: CIO 2105.2 *Environmental Information Quality Policy.* Available at: https://www.epa.gov/quality/agency-wide-quality-program-documents

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