

Monroe, S. A., M. Dyer, S. Stumpf, C. Bliss, and C. Parker. 2016. Water quality monitoring protocol for streams and springs in the Southern Colorado Plateau Network. Natural Resource Report NPS/SCPN/NRR—2016/1298. National Park Service, Fort Collins, Colorado.

**Standard Operating Procedure #12: Post Field
Season Activities, Version SCPN_WATER_QUALITY_
SOP12_20160901**

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Standard Operating Procedure #12: Post Field Season Activities

Version SCPN_Water_Quality_SOP12_20160901				
Revision History Log				
Previous version number	Revision date	Section and paragraph	Change(s) made	Approved by

Only changes in this specific SOP will be logged here. Record the previous version number and date of revision; identify sections and paragraphs where changes were made, who approved the revision, and the new version number. More detailed descriptions of the changes made and the reason for the changes is provided at the end of this SOP.

This Standard Operating Procedure (SOP) describes activities conducted in wrapping up the water quality field season, and includes shipping of samples, maintenance of field equipment, updating of project documents, and data management.

Equipment

Please see Appendix F for the list of equipment needed for water quality monitoring in SCPN parks.

1 Ship and track samples

- As soon as possible after returning from the field, water samples should be shipped to the laboratory. See SOP #11 for shipping instructions.
- Sample shipments must be tracked to ensure that they arrive at the laboratory in a timely manner, to help track laboratory analysis costs, and to track shipping costs. These are tracked in the NWQL-FYXXXX spreadsheet, located on the

SCPN server.

2 Field equipment maintenance

- **Clean all equipment before storage.** Field crew members should ensure that equipment is clean and fully operational. Equipment should be decontaminated according to instructions in Appendix C. Any problems with equipment should be reported to the crew leader.
- **Inventory equipment.** All water quality equipment should be inventoried. If a piece of equipment routinely in use is borrowed, consider purchasing the equipment. Check periodically with the owner of borrowed equipment to make sure they are aware SCPN has the equipment and that they do not need it. In addition, account for all equipment that SCPN has loaned out.
- **Repair/ replace damaged equipment.** When possible, damaged equipment should be repaired. Otherwise, damaged

equipment should be replaced to ensure that all necessary equipment is functional and accounted for before the next field trip.

- **Store field equipment.** The crew leader should oversee storage of all gear. Any damaged equipment should be set aside to be repaired or replaced; all other equipment should be properly stored.
- **Replenish supply of consumables.** Evaluate the supply of all consumables and place orders as necessary for these items. Maintain records of purchased items from the laboratory contract in the NWQLFY2014 spreadsheet on the SCPN common drive (Each year a new spreadsheet will be created with the current year in the file name). For supplies purchased outside of the laboratory contract, use the Purchasing_Spreadsheet_2014.xlsx (This will also change each year). Purchase identical supplies from the same supplier to minimize bias that may result from variability in equipment manufacturer.

3 Review and update project documents

Conditions in the field and other circumstances may necessitate revising program documents, such as datasheets and SOPs in protocols. As these revisions come up, they must be documented, and updated protocol versions must be recorded in the Revision History Log that accompanies the protocol narrative and each SOP (See SOP # 18). A more detailed explanation of the changes and justifications will be provided at the end of each document.

In addition, site folders should be reviewed and updated. (See SOP #3 for contents of site folders). Include updates of site information and of annual ranges in parameter values for each site.

4 Evaluate data quality objectives

A number of quality control metrics used to assess the quality of data collected dur-

ing water quality monitoring are discussed in detail in SOP #10. At a minimum, each of the following need to be considered or calculated after each sampling trip and after results are received from the NWQL. Any quality control issues should be noted on the datasheets and in the database so they can be addressed when reporting.

- Representativeness
- Completeness
- Data comparability
- Measurement sensitivity and detection limits
- Measurement precision
- Measurement error/bias

5 Datasheets and data management

Upon returning from the field, electronic data files should be reviewed and uploaded to the SCPN server. Data should be entered into the SCPN database (SOP #14) and checked for errors. All original datasheets should be scanned and properly archived. Organize and file datasheets by sampling location. Paper datasheets are to be stored in files in SCPN offices. Electronic copies of these datasheets should be archived in the proper place on the SCPN common drive.

6 Revision history

Provide the following information for each revision made to SOP #12

New version:

SCPN_WATER_QUALITY_SOP12_YYYYMMDD

Date:

Author:

Sections affected:

Changes & reasons: