Chapter 10
Documentation

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10.1 Introduction

Appropriate field documentation (e.g., field notes, field logs, photo logs) is an important part of your field investigation process. It is critical as a basis for technical conclusions drawn from the data that will influence and justify remedial action selection. Documentation should be maintained to trace the possession and handling of samples from the time of collection through analysis and disposition.

Documentation, relative to sampling procedures, includes:

- Sample container labels
- Sample cooler custody seals
- Field data sheets/logs
- Field notes (i.e., soil boring logs, low flow log sheets, purge log)
- Chain of Custody logs (including forms specific to media, e.g., vapor intrusion chain of custody)
- Sample analysis request forms (i.e., Project Communication Form contained in the Analytical QA/QC documents of 2014)

The details of all activities, whether part of the site inspection or a sampling event, should be recorded in field notes. When samples are collected, documentation in the form of sample analysis request forms should be completed. Proper completion of these forms and the field notes are necessary to support potential enforcement actions that may occur from the results of sample analysis.

Information on documentation requirements relative to the Technical Requirements for Site Remediation N.J.A.C. 7:26E-1.6) can be found at https://dep.nj.gov/wp-content/uploads/rules/rules/njac7_26e.pdf Information on documentation requirements relative to the Site Remediation Program's Electronic Data Interchange (SRP-EDI) can be found on the Internet at https://www.nj.gov/dep/srp/guidance/srpedi/ .

The New Jersey Department of Environmental Protection (NJDEP) maintains a library of guidance manuals on its website at https://www.nj.gov/dep/srp/guidance/. It is recommended the reader access the website and review the guidance manuals pertinent to the respective task. Additional guidance may also be found at websites of the United States Environmental Protection Agency (USEPA) and the American Society for Testing and Materials (ASTM). Examples of some of the relevant guidance manuals pertaining to this chapter are:

Soil Investigation Technical Guidance:

https://www.nj.gov/dep/srp/guidance/#si_ri_ra_soils

Quality Assurance Project Plan Technical Guidance:

https://www.nj.gov/dep/srp/guidance/#analytic_methods

Geographic Information Systems:

NJDEP CSRR - GIS - (Guidance Documents)

NJDEP - New Jersey Geological and Water Survey

NJDEP Low Flow Purging and Sampling Guidance (2003) Forms:

https://www.nj.gov/dep/srp/guidance/lowflow/

https://www.nj.gov/dep/srp/guidance/lowflow/lfdatasheet.pdf

https://www.nj.gov/dep/srp/guidance/lowflow/lfcalibrate.pdf

Occupational Safety and Health Administration (OSHA): https://www.osha.gov

10.2 Field Data Sheets/Logs

Field data sheets/logs should be used while onsite doing any type of sampling. The field data sheets/logs should contain **all** information fields shown in the NJDEPs examples regarding the sample being collected. Please note that the NJDEP provides examples in Chapter 6 of the information that is requested (see list below). The recommended example data sheets/logs provided are not required to be used; however, the information requested should be recorded and submitted. The completed field data sheets/logs should be provided to the NJDEP during each document submittal.

An example "External Chain of Custody and Sample Analysis Request Form" is at the end of this chapter.

Chapter 6 Examples of Field Data sheets/logs (pages 147 to 150, 162)

- Daily Calibration Sheet for Field Analysis
- Low Flow Ground Water Sampling Log
- Monitoring Well Information in Support of Pump Intake Depth Placement
- Volume-Averaged Sampling Field Sheet
- Checklist for the Submission of Sampling Data for Passive Diffusion Bag Samplers (PDBs)

10.3 Field Notes

Field notes are notes taken in the field by the sampling technician for use when filling out the field data sheets/logs. Field notes can be logged in a paper logbook or in electronic format (i.e., PDF format). Field notes are not required to be submitted with each document submittal however should be available for NJDEP review if requested. Field data sheets/logs are required to be submitted with each document submittal. All pertinent information regarding the site and sampling procedures should be documented. Information recorded should include, but not be limited to the following:

- Notes should be factual and objective, not of personal opinion
- Name and exact location of site of investigation
- Date and time of arrival and departure
- Affiliation of persons contacted
- Name of person keeping log
- Chain of Custody logs (including forms specific to media, e.g., vapor intrusion chain of custody)
- Names of all persons on site
- Purpose of visit
- Composition and concentration of substance, if known; description of sampling plan
- Sketch showing the sample location (including north arrow, orienting features, scale in feet and reference distances)
- Field instrument calibration information (should be recorded in field notes or on a log sheet)
- Location of sampling points (including justification for additions to, or deviations from, the sampling plan)
- QA/QC sample locations (e.g., blind duplicate sample location information)
- Geographically referenced location of sample point and how determined, per requirements in Technical Requirements and SRP-EDI (see https://www.state.nj.us/dep/srp/hazsite/)
- Number of samples taken; volume of samples taken, sample media, analytical parameters requested
- Sample container and preservation (see Chapter 2 for details)

- Method of sample collection and any factors that may affect its quality (See Chapter 2 for sampling media and parameters, Chapter 5 for decontamination factors, and Chapter 6 for sampling collection factors)
- Document the date and time of sample collection
- Name of collector
- All sample identification numbers
- Description of samples (i.e., soil texture, color, saturation, organic material, evidence of fill, sheen, odor, etc.)
- Weather conditions during the day of sampling and recent conditions, if applicable that may influence sampling or analytical results (e.g., precipitation events, drought, flooding, snow depth).

Additional information is available at https://www.epa.gov/sites/default/files/2015-06/documents/Logbooks.pdf

10.4 Documenting Sampling Locations

Sampling location points must be documented for purposes of future sampling in accordance with N.J.A.C. 7:26E-1.6. It is also necessary to document sample locations in an approved geographically referenced format per the Tech Regs N.J.A.C. 7:26E-1.6 and requirements in the SRP-EDI when submitting analytical results for those samples. Guidance regarding the geographically referenced locations can be obtained from https://www.state.nj.us/dep/srp/hazsite/ and https://www.nj.gov/dep/srp/guidance/techgis/techgis01.htm.

A common method to document sample locations is the use of the Global Positioning System (GPS), however if this is not available it can be accomplished through the use of a fixed reference point. A fixed reference point should be chosen at each site to act as a stationary location from which all sampling points can be measured using a compass and measuring tape. Please be sure to adequately document sample locations and the fixed reference point so that the locations can be transferred to the appropriate reporting format.

Additional information can be found at NJDEP – New Jersey Geological and Water Survey and NJDEP CSRR – GIS – (Guidance Documents).

10.5 Photo-Documentation

All sampling points should be documented. A photographic record of a sampling event allows positive identification of the sampling point. Photographs are the most accurate and convenient demonstration of the field personnel's observations. To appropriately document the locations and facilitate relocation of the sampling points, at least two reference points should be photographed.

Keeping a record of photographs taken is crucial to their validity as a representation of an existing situation. Therefore, for each photograph taken several items should be noted in the field notes:

- Date
- Time
- Photographed by (signature)
- Name of site
- General direction faced and description of the subject taken (note GPS coordinates if collected)
- Important characteristics noted and photographed (e.g., presence of product, groundwater, or bedrock)

If no GPS is available, multiple photographs can be taken at different perspectives ensuring location can be established and also documenting proper sampling techniques. Photo-documentation is invaluable if the sampling and subsequent analytical data ends in litigation, enforcement, or cost recovery actions. Video coverage of a sampling event can be equally or even more valuable than photographs because it can be used not only to identify the location at which samples were collected, but also to prove that samples were collected and handled properly. Additionally, video coverage can be used as a record of site conditions.

10.6 Sample Collection Paperwork

10.6.1 Sample Labels

Sample labels are an important part of proper documentation as their use not only reduces the possibility of confusing sample containers, but also provides the information necessary during handling to complete chain-of-custody forms. Sample containers can be pre-labeled with the sample ID and the test parameter prior to sampling. Completed sample labels should include the well or sample number; parameter sampled; date; time sampled; sampler's initials; preservative; and site name or location. After sample collection, precautions (e.g., bagging the sampling container or taping the labels) should be made to protect the labels from the sample matrix (e.g., groundwater, soil, air, etc.), precipitation, or ice.

When naming sample locations, it is important to keep naming the convention consistent throughout the site and over time. This facilitates the tracking of trends at specific locations at the site (e.g., MW1, MW-1, MW01, MW 1 are not the same naming convention). If you are using pre-generated labels, be sure to provide in writing to the laboratory your sample ID naming convention.

10.6.2 Chain of Custody/Sample Analysis Request

When samples are collected for laboratory analysis, additional documentation procedures are required. The Sample Chain of Custody (COC) form (example below) is intended as a legal record of possession of the sample. The laboratory that will be doing the analysis may provide the COC form. The COC should remain with the sample(s) and bear the name of the person assuming responsibility for the sample(s). This person is tasked with ensuring secure and appropriate handling of the bottles and samples. The COC must be under control at all times which may include the investigator, laboratory courier/transport or until the COC is relinquished to others. When the form is completed by the laboratory, it should indicate that there were no lapses in COC accountability. Note the information on the COC should be the same as the information presented on the sample labels unless otherwise noted.

To assure that the proper analysis is performed on the samples, the lab performing the analysis may require additional information and/or the regulatory agency involved. Information may include identification of samples by number, location and time collected, sample preservative, and desired analysis. This information should act as a confirmation to lab contacts made prior to the sample event initiation.

Please see Appendix A of the *Data of Known Quality Protocols Technical Guidance* for an example of a Project Communication Form at: https://www.state.nj.us/dep/srp/guidance/#analytic_methods. The COC should act as a confirmation of information provided to the laboratory prior to the initiation of the sample event.

New Jersey Department of Environmental Protection
Sample Chain of Custody and Sample Analysis Request Form

Laboratory Information

Name of Laboratory: _____

Address: _____

_____

Time/Date Sample Shipping Container Sealed: _____

Individual Preparing Sample Bottles and Shipping Container(s)

Name: _____

Title: _____

Laboratory Affixed Seal Number: _____

NJDEP Information

Division: _____ Bureau: _____ Phone: _____ Job Number: _____

Requested Analysis

NJDEP Field Sample Number	Time/Date Sampling Start	Time/Date Sampling Stop	Parameter	Method	Preserv.	Container		Matrix
						Volume	Quantity	
Ex: MW1	14:00/ 9/25/23	14:05/ 9/25/23	TCL VOCs	8260D	HCL	40 ml	3	water

Preservative Added: (*Check One*) ☐ Laboratory ☐ Field ☐ Unpreserved

Contract Number: _____ Task Number: _____ Report Format: _____

Sample Chain of Custody

Relinquished	Received	Time/Date	Reason for Change of Custody
XXXXXXXXXXXXXXXX			Break Seal/Sample

Individual Resealing Shipping Container: Name: _____ Title: _____

Time/Date Sample Shipping Container Resealed: _____ NJDEP Affixed Seal Number: _____

Time/Date Sample Shipping Container Opened: _____

Time/Date Internal Chain of Custody Initiated on NJDEP Form 077 (Internal Chain of Custody): _____

Distribution: ☐ Original (*Sent with Report*) ☐ Contractor Spare, Retain with Report File

☐ Sample Custodian ☐ NJDEP Sampling Personnel

Cross out blank lines at the end of the COC, 24-hour clock should be used, preservative type listed, initial any corrections.