

DOCUMENT REVIEW: STANDARD OPERATING PROCEDURES
VOLUME I OF V (FIELD OPERATIONS)
ROCKY FLATS PLANT

CRITICAL ISSUES:

1. It is not clear how this document relates to the other four volumes of Standard Operating Procedures (SOPs). This first volume should present an overview of the Environmental Assessment and Monitoring Division's (EAMD) mission and specific responsibilities. It should present an organization chart that identifies the individual areas or responsibility. The relationship between these SOPs and the EG&G Quality Assurance and Quality Control requirements should be addressed. The requirements for implementation of EG&G Health and Safety considerations should be presented. The role of staff and potential contractors in performance of the SOPs should be clearly identified. These and other elements will be necessary to clearly define the scope and purpose of the EAMD procedures.
2. The quality of SOPs in this document is quite variable. The best SOPs identify the areas of application, describe responsibilities of all personnel, indicate necessary prerequisites, make liberal use of references, and are written in a succinct style.
3. The structure of this document may represent a major impediment to its effectiveness as a Field Operations guide. The lack of integration among SOPs indicates multiple authorship. The authors appear to have received different instructions and have varying levels of knowledge concerning the subject areas and Rocky Flats Plant (RFP) operations. For this document to become an effective guide, it is recommended that an introduction be created, the approach to creation of SOPs be unified, that all authors receive a comprehensive set of written instructions, and that rigorous technical editing be applied to assure that Field Operations SOPs are applicable throughout the remaining volumes.
4. SOP 1.7, Sect. 6.0 indicates the disjunct nature of this document. It is not until approximately 80 pages into the document that Site Characterization is presented as a requirement. Until that point, the reader is not made aware of the necessity for each project work area to be characterized by EG&G prior to any field activity. General information of this type should be presented at the beginning of the document.
5. The document would benefit from maps of the RFP, a list of acronyms, and use of flow charts as aids to the text descriptions.

DOCUMENT REVIEW: STANDARD OPERATING PROCEDURES
VOLUME II OF V (GROUNDWATER)
ROCKY FLATS PLANT.

CRITICAL ISSUES:

1. All of the SOPs in these volumes appear to be technically correct and describe appropriate methods for gathering the data in question.
2. General "background" information is included in several of the SOPs. This information is not necessary in an SOP, and could be deleted.
3. Several general procedures should be included as references in each of SOPs, SOP 1.14, Field Data Management, the Site Safety and Health Plan, and the Site Quality Assurance Project Plan. These procedures should be generally applicable to all field work completed at RFP.
4. Personnel qualifications are commonly described as having an "appropriate" amount of experience. If possible, this should be more precisely defined. Also, it would appear that personnel engaged in these activities should have the OSHA 40-hour training in hazardous materials handling and this should be stated, if it is not already included in the qualification section.
5. The format used in SOP 2.5, Field Measurement of Groundwater Field Parameters is very easy to follow. When possible, the other SOPs should also be broken down into this step-by-step approach. The use of narrative discussion to describe procedures is difficult for a person who has never conducted the operation, or who does it on an intermittent basis, to readily understand and implement, leading to the collection of incorrect information.
6. The field activity log should be used when conducting all field work, not just groundwater sampling.
7. When various alternative methods of data collection are provided, the pros and cons of each method should also be discussed. This is to aid the user in determining the appropriate sampling method.
8. The purpose of these SOPs should be to provide to a person who has not conducted the activity or a person who conducts the activity on an intermittent basis, an easy-to-use reference guide to assist them in conducting the various activities. Many of these procedures are presented in narrative form which is occasionally difficult to follow. When possible procedures should be presented in a step-by-step fashion, and/or as flow charts. Exceptions to the SOPs are occasionally included, these exceptions should be set-apart from the SOP for ready identification. Usually the exception is included in the main text, interrupting the flow of the SOP, and increasing the chance that the exception would be "lost" and not taken into account when necessary.

DOCUMENT REVIEW: STANDARD OPERATING PROCEDURES
VOLUME III OF V (GEOTECHNICAL)
ROCKY FLATS PLANT

CRITICAL ISSUES:

1. All of the SOPs in these volumes appear to be technically correct and describe appropriate methods for gathering the data in question.
2. General "background" information is included in several of the SOPs. This information is not necessary in an SOP, and could be deleted.
3. Several general procedures should be included as references in each of SOPs, SOP 1.14, Field Data Management, the Site Safety and Health Plan, and the Site Quality Assurance Project Plan. These procedures should be generally applicable to all field work completed at RFP.
4. Personnel qualifications are commonly described as having an "appropriate" amount of experience. If possible, this should be more precisely defined. Also, it would appear that personnel engaged in these activities should have the OSHA 40-hour training in hazardous materials handling and this should be stated, if it is not already included in the qualification section.
5. The format used in SOP 3.8 Surface Soil Sampling is very easy to follow. When possible, the other SOPs should also be broken down into this step-by-step approach. The use of narrative discussion to describe procedures is difficult for a person who has never conducted the operation, or who does it on an intermittent basis, to readily understand and implement, leading to the collection of incorrect information.
6. The field activity log should be used when conducting all field work, not just groundwater sampling.
7. When various alternative methods of data collection are provided, the pros and cons of each method should also be discussed. This is to aid the user in determining the appropriate sampling method.
8. The purpose of these SOPs should be to provide to a person who has not conducted the activity or a person who conducts the activity on an intermittent basis, an easy-to-use reference guide to assist them in conducting the various activities. Many of these procedures are presented in narrative form which is occasionally difficult to follow. When possible procedures should be presented in a step-by-step fashion, and/or as flow charts. Exceptions to the SOPs are occasionally included, these exceptions should be set-apart from the SOP for ready identification. Usually the exception is included in the main text, interrupting the flow of the SOP, and increasing the chance that the exception would be "lost" and not taken into account when necessary.

DOCUMENT REVIEW: STANDARD OPERATING PROCEDURES
VOLUME IV OF V (SURFACE WATER)
ROCKY FLATS PLANT

CRITICAL ISSUES:

1. The document could use an introductory chapter that defines the scope of the surface water sampling activities. The first SOP, 4.1 Surface Water Data Collection Activities, could be restructured and expanded to serve as an introduction for this volume. The introduction should contain at a minimum the following elements: 1) Scope of all surface water activities; 2) Definition of the type and locations of these activities; 3) Relationship among the sampling activities; 4) Personnel requirements; and 5) Compliance with Health and Safety, Health Physics, and other EG&G requirements.
2. An Environmental Restoration Program was mentioned in the document but not defined. It is unclear that this is in reference to DOE's ER Program or a program at RFP. If the ER program effort at RFP is responding to a unique set of regulatory or compliance requirements, such as a Federal Facilities Agreement, it would be appropriate to incorporate this information in the text. This information would be required to fully define the scope of some or all of the SOPs.
3. Consistency among the surface water SOPs is lacking. Some SOPs incorporate EPA and industry sampling procedures while other SOPs appear to develop Rock Flats Plant (RFP)-specific procedures. It would be appropriate to have all SOPs employ federal, state, or national organization sampling and testing procedures when even possible. Use of these procedures for routine environmental measurements, sampling collection, transport, and analysis increases the acceptability of RFP SOPs. If regulatory issues arise, RFP may be required to verify that RFP SOPs are comparable to other federal, state, or national organization procedures. It is not apparent from this document that the RFP SOPs have been performance tested against other procedures. Many potential conflicts could be avoided if RFP SOPs adopted recognized procedures and did not attempt to develop requirements that are too finely detailed.
4. It is unclear if the term, chain-of-custody, is comparable to EPA usage for RCRA and CERCLA activities. If surface water samples are being collected for NPDES or other permits, it would be consistent if EPA chain-of-custody requirements were imposed on RFP SOPs.
5. Procedure writers should recognize that RFP is a nuclear facility with the potential for radiological contamination. All sampling sites should be surveyed for radiological contamination prior to sample collection. Sample technicians should wear dosimetry equipment appropriate for the media being collected. Lists of Personnel Protective Equipment (PPE) should include items for working in both chemical and radiological environments.
6. Qualifications for technicians should be more specific. The types of training that these personnel receive should be documented and their ability to perform sample collection and management satisfactorily demonstrated. The current descriptions do not indicate that certifications are required for performance of the surface water program.

Requirements such as OSHA 40-hr. training, Chemical Hazardous Material Management certification for managers and technicians, certificates for nuclear site orientation should be included in the description of Sect. 3.0 Responsibilities and Requirements.

7. The concept of project work plans as a lower order document has been presented. If contractors are required to develop these plans under a SOP, it would seem appropriate to have the same requirement placed on internal RFP activities.
8. The procedure for determination of sample location has not been described. It is unclear if locations are preselected, such as drain pipes, or determined by the individual sample team. It was also not specified if periodic sampling was performed at exactly the same locations and that these location were identified with markers.
9. Disposition of data has not been addressed. Sample collection and analysis information should be in a form for incorporation into RFP Environmental Information Data Bases. The SOPs do not indicate if, when, or how this might be accomplished. If special procedures are required to convey surface water information into the data bases, it is recommended that another SOP might be necessary.

DOCUMENT REVIEW: STANDARD OPERATING PROCEDURES
VOLUME V OF V : ECOLOGY
ROCKY FLATS PLANT

CRITICAL ISSUES:

1. The document lacks a central focus or purpose. As currently constructed, it represents an aggregation of Standard Operating Procedures (SOPs) that are only related by a biological theme. The document needs a general introduction chapter that addresses the scope and purpose of these SOPs, relationship to other Rocky Flats Facility (RFF) requirements, standards employed in development and verification of these SOPs, and procedures for modifying SOPs.
2. The SOPs do not include Personnel Protective Equipment (PPE) as a portion or subset to Sect. 5.0 Equipment. The RFF contains hazardous chemical, nuclear, and mixed waste contaminants. It would appear appropriate for all SOPs to recognize that any environmental sampling performed on RFF could result in the collection, transport, and disposal of contaminants in concentrations that could adversely affect human health and safety.
3. The SOPs do not address performance of work in a secure area. As part of the normal complement of requirements and equipment. Personnel responsible for performance of each SOP should be required to have site orientation training, site identification (security badge), and appropriate dosimetry equipment.
4. The concept of "chain-of-custody" for environmental samples appears to be borrowed from RCRA and CERCLA requirements. However, the standards for sample collection, packaging, transport, analysis, and disposal are not RCRA or CERCLA and are not referenced in these SOPs. Text descriptions do not indicate that the Ecology chain-of-custody approach addresses the concept of cradle-to-grave accountability for environmental samples.
5. The SOPs do not indicate what will be done with the data. It is unclear if the data collected for these SOPs conform to the Rocky Flats Data Base requirements. Quality or levels of statistical confidence have not been established for the data sets.
6. The SOPs would benefit from use of flow charts to identify the major operational and decision points.
7. The personnel training requirements are very subjective and should be formalized. The tutorial approach identified in these SOPs is susceptible to interruption if instructors are changed. Loss of the instructor may cause a major disruption in the sampling program and a reduction in data quality.
8. Performance requirements have not been identified for the personnel and equipment. Without these requirements, it is unclear how data quality can be assured.
9. Minimum criteria have not been proposed for sample locations. Sample locations appear to conform to a subjective appraisal system established by the project leader.

10. The SOPs generally do not employ their internal references when describing the execution of protocols. The purpose of having an internal reference section for each SOP is to permit ease of description and to demonstrate that generally recognized practices are being employed in the sampling program.
11. The document lacks an organization chart that identifies the relationship amount the various entities involved in the Ecology 5.0 SOPs.
12. The survey forms lack descriptions of the acronyms that are presented on the sheets. A list of acceptable options should be provided for environmental characterization element.