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EMD MANUAL OPERATION SOP		Procedure No.:	SW.16, Rev. 1
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Category 2		Organization:	Environmental Management

TITLE:
SAMPLING OF
INCIDENTAL WATERS

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1.0 TABLE OF CONTENTS

2.0 PURPOSE AND SCOPE

This standard operating procedure (SOP) describes procedures that will be used at the Rocky Flats Plant (RFP) for the collection of water samples from incidental sources. These would include waters collected as a result of: (1) construction activities that require excavation below the groundwater table and subsequent dewatering, (2) collection and dewatering of precipitation and storm water runoff in excavations, pits, trenches, ditches, or depressions that do not intercept the groundwater table, and (3) water that collects in secondary containments, process waste valve vaults, electrical vaults, or manholes that require pumping as described in the "Procedure for the Control and Disposition of Incidental Waters" (EG&G, May, 1990).

This SOP describes personnel responsibilities and qualifications, sample collection and preservation procedures, and quality assurance/quality control and documentation requirements that will be used for field data collection to attain acceptable standards of accuracy, precision, comparability, representativeness, and completeness.

The current RFP Health and Safety plan does not allow for sampling which requires entering confined spaces. Thus, vaults, manholes, and other similar enclosures may only be sampled by remote methods. Entry of these structures is not permitted. In addition, when sampling excavated areas, such as trenches, appropriate bracing and/or shoring of the excavation is required before entry will be permitted.

3.0 RESPONSIBILITIES AND QUALIFICATIONS

Only qualified personnel will be allowed to perform these procedures. Required qualifications may vary depending on the activity to be performed. Field technicians will have an appropriate amount of applicable field experience or on-the-job training under the supervision of another qualified person. Qualifications are to be based on education, previous experience, on-the-job training, and

supervision by qualified personnel.

4.0 REFERENCES

4.1 SOURCE REFERENCES

A Compendium of Superfund Field Operations Methods. EPA/540/p-87/001. December 1987.

Control and Disposition of Incidental Waters. EG&G May 1990.

Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA. Interim Final. October 1988.

RCRA Facility Investigation Guidance. Interim Final. May 1989.

Rocky Flats Environmental Restoration Program Quality Control Plan. January 1989.

The Environmental Survey Manual. DOE/EH-0053. Volumes 1-4. August 1987.

4.2 INTERNAL REFERENCES

Related SOPs cross-referenced by this SOP are:

- SOP FO.3, General Equipment Decontamination
- SOP FO.7, Handling of Decontamination Water and Wash Water
- SOP FO.10, Receiving, Labeling, and Handling Environmental Materials Containers
- SOP FO.13, Containerizing, Preserving, Handling, and Shipping of Soil and Water

Samples

- SOP SW.1, Surface Water Data Collection Activities
- SOP SW.3, Surface Water Sampling

5.0 METHODS

5.1 OVERVIEW

Incidental water sampling locations have not yet been specified, but recent surveys of RFP have identified 22 utility manholes and 10-14 building sumps and/or footing drains containing water. The report "Procedure for the Control and Disposition of Incidental Waters" also identifies various construction activities that will require collection and sampling of water. Locations will be designated by the RFP Clean Water Act Division representative as required.

5.2 SAMPLE ANALYSES AND COLLECTION FREQUENCY

Analytical parameters and frequency of sample collection for most incidental water sources are specified within the "Procedure for the Control and Disposition of Incidental Waters". Routinely, analytes are limited to radiological parameters (gross alpha and beta), pH, specific conductance, and nitrate. Samples are to be collected on an as needed basis and must meet applicable water quality criteria before being discharged to the ground or into storm drains. Building sumps and footing drains will routinely be sampled for the following parameters:

- Nitrate
- Total Dissolved Solids (TDS)
- HSL-Metals (Total)
- Gross Alpha and Beta
- Gamma isotopic

- Tritium (H_3)
- pH, specific conductance, and temperature

Depending on data needed, additional parameters may be collected occasionally.

5.3 SAMPLE CUSTODY, PRESERVATION, AND HANDLING

Whenever possible, laboratory-provided sample containers will be used to collect water quality samples. Alternatively, the containers may be purchased from a supplier who certifies that bottles have been pre-cleaned to EPA specifications. Records certifying pre-cleaning will be kept for these containers.

Samples will be handled and preserved in accordance with SOP FO.13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples.

5.4 PROCEDURES

The methods that will be used to collect water from various incidental water sources are described in this section. Methods vary from site to site but generally will involve manually collecting the sample by either container immersion, the "dip and transfer" method or by using a pump.

The preferred method for collecting a sample is to use the actual container which will be used to transport the sample to the laboratory. This eliminates the possibility of contaminating the sample with an intermediate collection container. The actual sample container will always be used for collection of samples for Oil and Grease (O&G). Procedures for sampling of O&G and volatile organic compounds (VOCs) are discussed in SOP SW.3, Surface Water Sampling.

Equipment and procedures for container immersion and for the use of sample transfer devices used

in the "dip and transfer" method are discussed in SOP SW.3, Surface Water Sampling.

Remote sampling procedures may be required for some incidental waters. Refer to Section 5.3.4, Remote Sampling, of SOP SW.3, Surface Water Sampling for a description of sampling using extension rods or cables. If a pump is used to collect a sample, all components of the pump that come in contact with the liquid must be properly decontaminated, prior to use, to ensure sample integrity.

5.4.1 Sampling with a Peristaltic Pump

The peristaltic pump is highly versatile and portable. The sample collection is conducted through essentially nonreactive material. It is practical for a wide range of applications including streams, ponds, sumps, and hard to sample areas. Samples for oil and grease and volatile organic compounds will not be collected with a peristaltic pump. This method is limited in use by the 8 meter lift capacity of the pump. Sampling is as follows:

- Select a length of suction-intake tubing necessary to reach the required sample depth, and attach it to the intake side of the pump.
- Decontaminate the tubing as described in SOP FO.3, General Equipment Decontamination.
- If possible, allow several liters of sample to pass through the tubing before actual sample collection.
- Fill the required bottles by allowing the pump discharge to flow gently down the inside of the bottle with minimal turbulence.

- Follow procedures set forth in SOP FO.13, Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples.

- Decontaminate the tubing according to SOP FO.3, General Equipment Decontamination and also follow procedures in SOP FO.7, Handling of Decontamination Water and Wash Water.

6.0 DECONTAMINATION

Procedures for decontamination are set forth in the site-specific health and safety plan and SOP FO.3, General Equipment Decontamination, SOP FO.7, Handling of Decontamination Water and Wash Water, and SOP FO.10, Receiving, Labeling, and Handling Environmental Materials Containers.

7.0 QUALITY ASSURANCE/QUALITY CONTROL

Quality assurance (QA) and quality control (QC) will be accomplished in accordance with SOP SW.3, Surface Water Sampling, Section 7.0, Quality Assurance/Quality Control. Additional QA/QC requirements may be added if it is determined that they are needed to ensure the quality of the data.

8.0 DOCUMENTATION

Information required by this SOP will be documented on the Surface Water Data Collection Field Notes form (Form SW.1A) included in SOP SW.1, Surface Water Data Collection Activities or in field logbooks.