Laboratory Manager Approval: Mary K. Bowman / 08/19/2021

QA Manager Approval: Jeffrey Moore / 08/19/2021

Field Sampling Equipment Cleanup Procedure

Access to this SOP shall be available within the laboratory for reference purposes; the official copy of this SOP resides on the official Georgia EPD website at https://epd.georgia.gov/about-us/epd-laboratory-operations. Printed copies of this SOP will contain a watermark indicating the copy is an uncontrolled copy.

1 Scope and Application

1.1 This is a procedure used to clean laboratory glassware. While this procedure describes a general cleanup technique, grossly contaminated equipment may require additional cleanup approaches to achieve interference-free status.

2 Definitions

2.1 Refer to Section 3 and Section 4 of the Georgia EPD Laboratory Quality Assurance Manual for quality control definitions.

3 Interferences

3.1 Interferences come from the samples obtained in the field. Field personnel remove solid residual in the field immediately after using the equipment. This procedure for further cleanup in the laboratory ensures that each piece of sampling equipment is interference-free for future use. Equipment that is known to have come in contact with high concentration samples is cleaned separately from the other pieces to avoid cross contamination. Only residue-free soaps and organic residue/pesticide grade solvents are used.

4 Safety

4.1 Refer to the Laboratory Chemical Hygiene Plan, online revision.

5 Apparatus and Equipment

5.1 Industrial Automatic Washer: Steris Reliance 400XLS or equivalent
5.2 Steel brushes and/or steel cleaning pads, one with long handle
5.3 Gloves: neoprene or nitrile cuff protection
5.4 Heavy duty bucket, 3 gallons or bigger
5.5 Pitcher or large cup

5.6 Aluminum foil, heavy duty
5.7 Teflon squirt bottles (2)

6 Reagents and Standards

6.1 Liquid Detergent
6.1.1 For manual cleaning with neutral pH: Contrad or equivalent
6.1.2 For automated cleaning with neutral pH: Steris Glass Klenz or equivalent
6.2 De-Ionized Water

7 Sample Collection

7.1 Not Applicable

8 Calibration

8.1 Not Applicable

9 Quality Control

9.1 Not Applicable

10 Procedure

10.1 Cleaning Geo-Probes
10.1.1 Fill sink with detergent and water per detergent manufacturer's instructions for manual washing.
10.1.2 Place a bucket on the floor, put the probe in the bucket and with a long handled brush clean the inside of the probe, soaking the brush often in the soapy water.
10.1.3 Clean the outside of the probe with a steel pad, soaking the pad often in the soapy water.
10.1.4 Dump the liquid residue from the bucket into the floor drain.
10.1.5 Rinse the inside and outside of the probe with clean hot or warm water using a pitcher or cup.
10.1.6 Using a Teflon squirt bottle, rinse the probe with de-ionized water both inside and outside.
10.1.7 Air dry for approximately 2 hours or overnight.
10.1.8 Wrap completely in aluminum foil for storage.
10.2 Cleaning Sampling Equipment
10.2.1 *Note: Segregate equipment known to have come in contact with high concentration samples and wash them separately, doing steps 10.2.2 through 10.2.5 twice before going to 10.2.6.*
10.2.2 Fill a large ice chest with detergent and water per detergent manufacturer's instructions for manual washing.
10.2.3 Soak equipment in soapy water for 2-24 hours.
10.2.4 Use a steel brush and/or pad to clean each piece.
10.2.5 Place equipment in an automatic washer and wash using a "heavy" cleaning cycle. (See SOP 1-015, Rev. 2 or later, Section 10.2.)
10.2.6 Remove from washer and using a Teflon squirt bottle, rinse each piece with de-ionized water, both inside and out.

10.2.7 Air dry for approximately 2 hours or overnight.
10.2.8 Wrap each piece completely in aluminum foil for storage.

11 Calculations

11.1 Not Applicable

12 Waste Management

12.1 See GA EPD Laboratory SOP – EPD Laboratory Waste Management Standard Operating Procedures, online revision

13 References

13.1 Chapter Four, Rev. 3, 1996, from SW-846 Methods, Third Edition, 1996
13.2 "Field Equipment Cleaning and Decontamination at the FEC," SESDRPROC-206-R1, November 1, 2007, EPA Region IV SESD Field Equipment Center Standard Operating Procedure

14 Reporting Limits (RLs), Precision and Accuracy Criteria and Quality Control Approach

14.1 Not Applicable

15 Associated LabWorks Test Codes

15.1 Not Applicable