

11.0 PREVENTIVE MAINTENANCE PROCEDURES

11.0.0.1. A preventive maintenance program is necessary to promote the timely and effective completion of a measurement effort for either field or laboratory programs. The preventive maintenance program is designed to minimize the downtime of crucial sampling and/or analytical equipment due to unexpected component failure. In implementing this program, efforts are focused on establishment of maintenance responsibilities, establishment of maintenance schedules for major and/or critical instrumentation and apparatus, and establishment of an adequate inventory of critical spare parts and equipment.

11.1 FIELD EQUIPMENT/INSTRUMENTS

11.1.0.1. The field equipment that shall be used for Hill AFB projects shall be maintained and used according to the manufacturers' directions. It is the responsibility of the field team leader to ensure that each piece of equipment is operational and is inspected on a regular basis. Any preventive maintenance or repair conducted in the field shall be recorded in the field log book or other appropriate field forms. Backup instruments and equipment shall be available on-site or within short turnaround time to avoid delays in the field schedule.

11.1.0.2. Field instruments shall be checked and calibrated before they are shipped or carried to the field, and shall be checked and calibrated daily before use as described in SOP 2.

11.1.0.3. Along with a schedule for maintenance activities, an adequate inventory of spare parts shall be maintained by the Prime Contractor to minimize equipment downtime. The inventory includes those parts (and supplies) that are subject to frequent failure, have limited useful lifetimes, or cannot be obtained in a timely manner should failure occur.

11.2 LABORATORY EQUIPMENT

11.2.0.1. Preventive maintenance of all laboratory equipment and instruments is essential to ensure the quality of the analytical data produced. The objective of preventive maintenance is to ensure instrument operation is appropriate for both project and method DQOs. Contract laboratories shall have a routine preventive maintenance program to minimize the occurrence of instrument failure and other system malfunctions. The Contract laboratory shall have designated individuals who perform routine scheduled maintenance for each instrument system and required support activity. The following paragraphs focus on: maintenance responsibilities, maintenance schedules, record keeping, and inventory of spare parts and equipment.

11.2.0.2. Maintenance Responsibilities. Maintenance responsibilities for laboratory equipment shall be assigned to designated personnel qualified to perform the particular task involved. These individuals shall establish maintenance procedures and schedules for each major equipment item. The instrument manufacturer service engineers shall perform instrument maintenance and repair, as needed. Other routine preventive maintenance tasks shall be performed by designated personnel.

11.2.0.3. Maintenance Schedules. Maintenance schedules shall be based on the manufacturers' recommendations and/or sample load. Maintenance activities for each instrument shall be documented in a maintenance logbook, as described below.

11.2.0.4. Record Keeping. All maintenance shall be documented in instrument-specific bound logbooks, which are to be kept with the instrument. The date, initials of the individual performing the maintenance, and the type of maintenance shall be recorded in this logbook. Receipts from routine maintenance performed by the manufacturer's representative shall be filed in the appropriate laboratory department (e.g., GC/MS maintenance receipts are stored in the organic section). This logbook shall serve as a

permanent record which documents any routine preventive maintenance performed, as well as any service performed by external individuals such as manufacturers' service representatives. In addition, all receipts from routine maintenance performed by manufacturers' representatives shall be maintained in the laboratory's file. These records shall be made available upon request during external audits.

11.2.0.5. Spare Parts. An adequate inventory of spare parts shall be maintained to minimize equipment down time. This inventory shall include those parts (and supplies) that are subject to frequent failure, have limited useful lifetimes, or cannot be obtained in a timely manner.

11.2.0.6. Contingency Plan. In the event of instrument failure, every effort shall be made to analyze samples by an equivalent alternate means within holding times. If the redundancy in equivalent instrumentation is insufficient to handle the affected samples, the Prime Contractor shall be immediately notified and the corrective action to be taken shall be determined by the laboratory, Hill AFB, and the Prime Contractor.