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(4)

GUIDE FOR QUALITY ASSURANCE INSPECTION OF COMMERCIAL ACTIVITIES CONTRACTS FOR REAL PROPERTY MAINTENANCE ACTIVITIES

by
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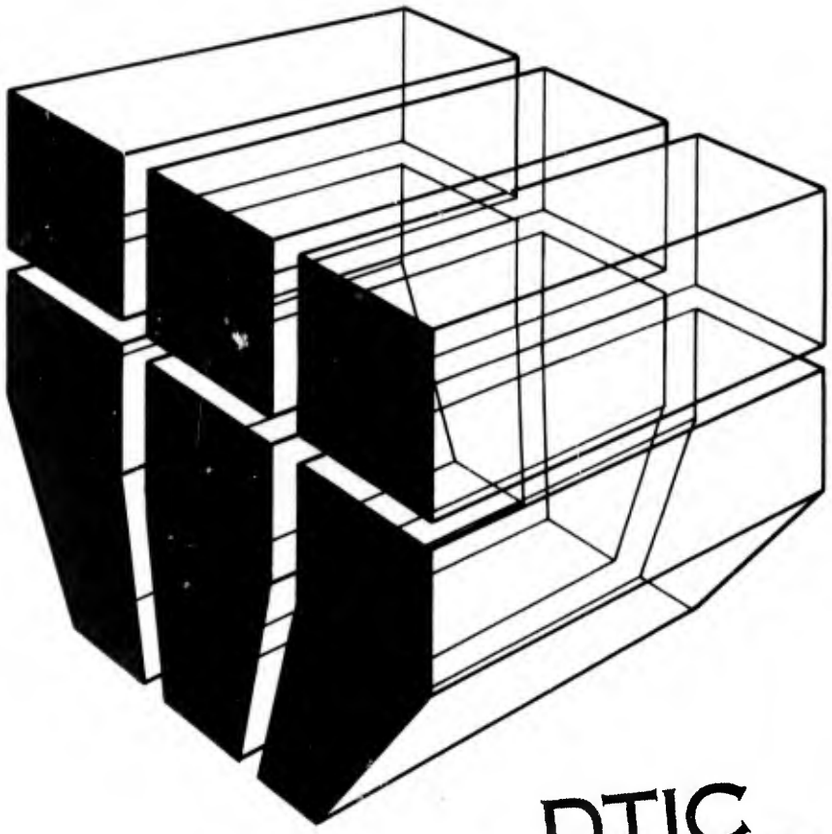

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This guide provides information on how to do Quality Assurance (QA) surveillance of work performed by contractors on government property. Emphasis is placed on inspecting a small percentage (about 10 percent) of the total work performed. The sampling method used varies with the type of work being evaluated and the contractor's performance.

(Continued)

BLOCK 20. (Cont'd)

Inspection guidance is presented for three of the major groups of Real Property Maintenance Activities (RPMA) services that are commonly contracted out: utilities operation and maintenance, maintenance of other real property, and engineering support. Each of these groups is further broken down into more specific task units, such as water supply or refuse handling. Each task unit contains guidance for inspecting individual jobs within that task unit. The guidance provided includes performance indicators, quality assurance evaluation methods, detailed procedures, and example worksheets and checklists.

As other major areas of RPMA are contracted out, additional guidance will be written for these tasks and may be inserted into this document.

FOREWORD

This research was conducted for the Office of the Assistant Chief of Engineers (ACE) by the Facility Systems (FS) Division, U.S. Army Construction Engineering Research Laboratory (USA-CERL). The work was performed under Project 4A162731AT41, "Military Facilities Engineering Technology"; Technical Area C, "Operations and Maintenance"; Work Unit 051, "QA on Commercial Activities Contracts." Mr. George Cromwell, DAEN-ZCF-M, was the ACE Technical Monitor.

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COL Paul J. Theuer is Commander and Director of USA-CERL, and Dr. L. R. Shaffer is Technical Director.

LIST OF ACRONYMS

AQL:	acceptable quality level
COR:	Contracting Officer's Representative
GFE:	government-furnished equipment
IJO:	individual job order
NPDES:	National Pollutant Discharge Elimination System
O&M:	operations and maintenance
PM:	preventive maintenance
PMI:	preventive maintenance inspection
QA:	quality assurance
QAE:	Quality Assurance Evaluator
QC:	quality control
SO:	service order

BACKGROUND

OMB Circular A-76 and DA Circular 235-1[1] require the Army to evaluate whether a contractor can perform many of the various tasks of running a facility at less cost to the government than can in-house employees. Among the tasks which may be contracted out under this Commercial Activities program are real property maintenance activities (RPMA), which include operations such as painting, water treatment, and roofing repairs.

When the Army purchases such services, there must be some way to ensure that the quantity and quality of contracted services received match the specified requirements. The contractor is responsible for Quality Control (QC). The QC Plan contains guidance for contractor personnel on scheduling, methods, and inspection so that the completed work will conform to the contract.

Quality Assurance (QA) surveillance enables the Army to evaluate and document a contractor's performance. The QA Surveillance Plan prepared by the contracting agency discusses the purpose of QA, provides methods for checking contractor performance, and explains how to implement the plan. Each activity that the contractor must perform is listed, along with information about the surveillance method, the approximate number of items to be surveyed, and the acceptable quality level (AQL). In most cases, samples of surveillance checklists are included.

An essential element of QA is complete documentation of work not performed. The necessary documents for recording work progress and completion are usually provided as part of the QA surveillance plan; although the plan is not a part of the contract, it is based on the performance work statement provided to the contractor.

A common problem with the current QC/QA arrangement is that the Army's QA surveillance can duplicate the contractor's QC program unless the surveillance plan is carefully designed to inspect only selected portions of the completed work. This technique, called sampling, can be carried out in several ways depending on the type of work being evaluated.

[1] OMB Circular A-76 (Revised), Performance of Commercial Activities (Office of Management and Budget, 4 August 1983); CIR 235-1, Commercial Industrial-Type Activities (CITA) (Department of the Army, 1 February 1980; Exp. September 1984).

Another problem is that different tasks performed by contractors require different surveillance techniques. So far, the Army has not had a surveillance program that their personnel at different installations who must inspect a variety of jobs could exercise consistently and that would ensure the best possible value of the job performed for the Army's money. Thus, there is a need for an effective method to sample contract work that would be efficient, easy to use, and ensure optimal job quality.

PURPOSE

This guide describes how to do QA surveillance on operations and maintenance (O&M) work performed by contractors on Army property. This surveillance is intended to evaluate the quality, quantity, and timeliness of the services provided, not the procedures used to perform the work.

APPROACH

Existing O&M contracts at five Army installations were reviewed, and personnel who manage and inspect the contracted work were interviewed. Based on this information, QA methods that have been proven in the field were recommended for Army-wide implementation; where these evaluations indicated a need, improvements were also recommended.

SCOPE

This guide describes how to perform QA inspections on only the most commonly contracted services. Other areas may be added if they become contracted frequently enough to require it.

MODE OF TECHNOLOGY TRANSFER

It is recommended that the information in this guide be used to develop a Training Manual for QA evaluators and be used during daily QA activities. It is also recommended that this information eventually be transferred as a DA Pamphlet.

USE OF THIS GUIDE

This guide includes information on scheduling, sampling, special equipment, measurement techniques, and critical aspects of the contracted service, which the QA evaluator can use to evaluate the contractor's performance.

Five methods which the inspector can use to determine contractor performance are explained. Appendix A provides information useful for implementing these methods.

The information provided in this guide covers the three major areas of RPMA work most often contracted out: utilities operation and maintenance, maintenance of other real property, and engineering support. Each of these areas has been divided into more detailed task units, such as water services or refuse handling.

The information that describes the task units has been broken into several sections that take the inspector through an easy-to-use, step-by-step progression of what to look for, the inspection standards, inspection methods, and examples of documentation. Each task is broken down into sections on performance indicators (what is required of the contractor); a list of documenting forms that the inspector should use; quality assurance evaluation methods (type of inspection to be used); detailed procedures (how to conduct the inspection); and example completed forms. For future use, Appendix B provides the inspector with blank copies of the forms illustrated in the text.

In the future, as more types of work are contracted out, additional inspection guidance and documentation forms will be developed for these areas. Therefore, this guide has been set up to accommodate the addition of new material. Information for each task unit is a self-contained item; material may therefore be inserted in front or in back of each unit. This format will also be handy for using the current guide, since the inspector can remove the section or sections he/she needs for use at one specific time.

QA surveillance uses five methods to determine contractor performance: random sampling, planned sampling, 100 percent inspection, validated complaints, and unscheduled inspection. These inspection methods are based on statistical criteria provided in MIL-STD-105D, Sampling Procedures and Tables for Inspection by Attributes (29 April 1963).

RANDOM SAMPLING (SYSTEMATIC)

In this method, portions of the total work performed are selected randomly for inspection. Evaluation of units not scheduled for inspection is based on samples taken from the accomplished work. The systematized random sampling technique described in this guide spreads the selected samples evenly throughout the evaluation time. Following are the steps used by the Quality Assurance Evaluator (QAE) in random sampling.

1. Table A1 of Appendix A can be used to locate how many times the work item occurs (population size) and the level of surveillance and acceptable quality level (AQL) recommended by the QA Supervisor; the number of samples to be selected and the number of allowable rejects can then be determined. For example, assume that the contractor's total scheduled output for a particular work item is 125 units and that the normal surveillance level with an AQL of 5 percent has been selected. According to the table, 18 of the 125 units of work will be selected for inspection.

2. The listing of the total population of the work to be performed should be sorted by date so that the sample selection technique (described below) will spread the inspection throughout the work time.

3. Any method of collecting random numbers can be used to determine the first sample to be inspected. Table A2 of Appendix A gives a listing of random numbers. For example, open a telephone book at random, having previously decided which column and page to use. The last three digits of the seventeeth telephone number may be the first to fall between the numbers 1 and 125 (for example, 092). In this case, the 92nd unit of work would be the first one selected for inspection.

4. To spread the selected samples evenly throughout the total work, the total number of units is divided by the sample size to determine sample spacing. In the example above, dividing 125 by 18 gives an interval of 7. Thus, beginning with the 92nd unit, the QAE will identify for inspection every seventh work item until 18 have been selected.

PLANNED SAMPLING

Evaluation by planned sampling also inspects some part, but not all, of the work activities. Specific contract requirements are selected for evaluation before their scheduled completion. Planned sampling differs from random sampling in how samples are selected. Samples are selected subjectively by the Contracting Officer's Representative (COR), and sample size is usually determined arbitrarily. The COR will use planned sampling when the contractor's performance at selected locations or tasks is poor. With this type of evaluation, the contractor knows that work performed in these areas is more likely to be monitored, and the QAE can direct efforts to areas where sampling is most needed. Unlike random sampling, planned sampling does not provide a means to compare observed overall performance, so the contractor's overall performance level cannot be determined. It rather provides a systematic way of taking a biased look at output and forming conclusions about the contractor's performance level.

ONE HUNDRED PERCENT INSPECTION

One hundred percent inspection requires total inspection of a contract requirement. It is used to monitor those infrequently identified scheduled contract requirements and highly critical work items whose nonperformance could seriously damage Army-furnished equipment.

VALIDATED COMPLAINTS

The validated complaints method is based on customer awareness of contract requirements. Customers monitor contractor services and, when performance is poor or nonexistent, notify the QAE. If investigation reveals that the complaint is valid, the QAE documents the deficiency. Since QA inspections based on validated customer complaints cannot be scheduled before work is completed, this method is normally supplemented with other surveillance methods.

UNSCHEDULED INSPECTION

Unscheduled inspection consists of impromptu evaluation of contract requirements whenever the QAE feels there is a need. This method is similar to planned sampling except there is no preplanned schedule.

WATER SERVICES

A. WATER SUPPLY

B. WATER TREATMENT

C. WATER DISTRIBUTION

D. SWIMMING POOLS

This section provides information needed to inspect operations and maintenance (O&M) of the following parts of a complete water system: water supply, water treatment, water distribution, and swimming pools.

Evaluation of the contractor's performance in providing these services should be scheduled by (1) determining when the contractor intends to complete his/her documentation of the previous month's O&M activities and (2) when regulatory agency reports will be received. The QA Evaluation should be scheduled within 3 days of report receipt. Proper coordination will allow the QAE to inspect all water system services at one time. Recommended methods and detailed procedures for the evaluations are described separately in the following sections.

A. WATER SUPPLY

PERFORMANCE INDICATORS

1. The contractor's approved checklist for O&M of the water supply system must show when the listed tasks were performed and must be initialed by the operator.

2. The operating logs for all wells must include records of measured static and drawdown water levels, measured pump flow rates, chemicals fed into the wells, and lubrication.

3. Oil reservoir levels must be more than half full and show evidence of oil use since the last inspection. The motor bearings must show signs of recent lubrication.

INSPECTION FORMS

1. QA Worksheet (Water Supply)

2. QA Checklist (Water Supply)

The sample forms provided in this section show how to use the blank forms provided in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

Performance indicators 1 and 2 should be evaluated monthly, using a 100 percent inspection of the contractor's documentation of performance. Performance indicator 3 should be evaluated by unscheduled inspection. Evaluation of water supply services should be coordinated with evaluation of the other water system components.

DETAILED PROCEDURES

Using the QA Checklist and following the procedures on the QA Worksheet, the QAE should schedule an inspection of the contractor's documentation and do the following:

1. Review the contractor's O&M checklist. All items must be dated and initialed by the person who performed the work.

2. Review the operating logs for the well(s). Information must include measurements of static levels, drawdown levels, pump flow rates, and chemical feeds. Note and report changes of more than 5 percent of average levels and rates. Logs must also include a record of pump/motor lubrication.

3. Visually check the oil reservoirs and grease fittings to verify lubrication. The oil reservoir should be more than half full, and the sight glass should allow observation of actual lubricant feed while the pump is running. Grease fittings should be clean and bright, indicating regular use, and have a small amount of residual grease on their surfaces from the lubrication.

EXAMPLE QA WORKSHEET

WATER SERVICES

QUALITY ASSURANCE WORKSHEET (WATER SUPPLY)

CONTRACT REQUIREMENT: Operate wells and perform preventive maintenance on the water supply system.

PERFORMANCE INDICATORS: Use QA Checklist (Water Supply) to record performance.

1. Preventive maintenance is performed in accordance with Technical Exhibits and Contractor's QC Checklist.

2. Operating logs for wells are complete.

3. Oil reservoirs and crankcases are at required fluid levels. Pump and motor bearings have been lubricated.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use 100 percent monthly inspection of the contractor's documentation of performance indicators 1 and 2. Performance indicator 3 should be field-verified by unscheduled inspection.

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (WATER SUPPLY)

REQUIREMENT: Contractor's approved checklist for water supply system O&Ms is complete and includes dates performed and operator's initials.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Operating logs for wells are complete.

(CIRCLE ONE) (S) U N
QAE REMARKS:
Draw-down well #2 is 2' below east month

REQUIREMENT: Equipment shows visible signs of lubrication.

(CIRCLE ONE) (S) U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

J R Robertson
Quality Assurance Evaluator
Date 11 July 1984

B. WATER TREATMENT

PERFORMANCE INDICATORS

1. Operating logs for the water treatment equipment must include records of water analyses, pressure readings, meter readings, chemical feeds, backwash operations, lubrication, equipment failure, repairs, and preventive maintenance, as applicable. The preventive maintenance schedule must reflect the current manufacturer's recommendations.

2. The chemical and biological content of the water produced must conform with the Contracting Officer's requirements as stated in the contract and to requirements of the appropriate regulatory agencies.

3. Pumps, motors, valves, and chemical feeders must show evidence of proper lubrication.

INSPECTION FORMS

1. QA Worksheet (Water Treatment)

2. QA Checklist (Water Treatment)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

Performance indicators 1 and 2 for this task unit should be evaluated monthly, using a 100 percent inspection of the contractor's documentation of performance. Performance indicator 3 should be evaluated by unscheduled inspection. Evaluation of water treatment services should be coordinated with the evaluation of the other water system components.

DETAILED PROCEDURES

Using the QA Checklist and following the procedures on the QA Worksheet, the QAE should schedule an inspection of the contractor's documentation and do the following:

1. Review the contractor's O&M checklist. All listed items must be dated and initialed by the person who performed the work.

2. Review the operating logs for the water treatment plant. Information must include pH readings, residual free available chlorine, raw water turbidity, finished water turbidity, pressure readings, chemical dosages, chlorine feed rates, filter backwash frequencies and flow rates, meter readings, motor power usages, and other requirements specific to the facility. Compare the logs to the required performance standards and report any significant deviations. Definition of a significant deviation will depend on the item being evaluated; this information may be obtained from the Contracting Officer's Representative. The contractor's report should report deviations, measures taken to correct the deviations, and results of the corrections.

3. Visually check the oil reservoirs and grease fittings to verify lubrication. The oil reservoirs should be more than half full, and the sight glass should allow observation of actual lubricant feed while the pump is running. Grease fittings should be clean and bright, indicating regular use, and have a small amount of residual grease on their surfaces from the lubrication.

EXAMPLE QA WORKSHEET

WATER SERVICES

QUALITY ASSURANCE WORKSHEET (WATER TREATMENT)

CONTRACT REQUIREMENT: Operate water treatment plant and perform preventive maintenance on the water treatment equipment.

PERFORMANCE INDICATORS: Use QA Checklist (Water Treatment) to record performance.

1. Preventive maintenance is performed in accordance with Technical Exhibits and Contractor's QC Checklist.

2. Operating logs for the water treatment plant are complete.

3. Oil reservoirs and crankcases are at required fluid levels. Pump and motor bearings have been lubricated.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use 100 percent inspection of the contractor's documentation of performance indicators 1 and 2 on a monthly basis. Performance indicator 3 should be field-verified by unscheduled inspection.

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (WATER TREATMENT)

REQUIREMENT: Contractor's approved checklist for water treatment system O&M is complete and includes dates performed and operator's initials.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Operating logs for water treatment plant are complete.

(CIRCLE ONE) (S) U N
QAE REMARKS:
Filter #2 is temporarily out of service for cleaning

REQUIREMENT: Equipment shows visible signs of lubrication.

(CIRCLE ONE) (S) U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

J R Robertson
Quality Assurance Evaluator

Date 11 July 1984

C. WATER DISTRIBUTION

PERFORMANCE INDICATORS

1. Water samples must be collected and submitted as required by the contract and by regulatory agencies. The contractor must provide test results for review by the QAE.

2. All water control valves must be exercised annually; records of the date, turns to close, and turns to open must be kept. The month of this exercising should be specified by the Contracting Officer.

3. Fire hydrants and deadends should be flushed and flow-tested once each year and a report submitted.

4. Water storage tanks must be cleaned and sanitized once each year at a time specified by the Contracting Officer and a report submitted.

5. Besides the regularly scheduled tasks listed above, the contractor's records should include indications of water main flushing, location and disposition of water leaks, handling of miscellaneous water problems, and locations of potential cross-connections discovered during normal operations and repairs.

6. The contractor must perform emergency repairs of the water distribution system. Response to needed repairs should be scheduled so as to restore service as soon as practical. Repairs must include disinfection of affected sections of the distribution system.

INSPECTION FORMS

1. QA Worksheet (Water Distribution System)

2. QA Checklist (Water Distribution System)

The sample forms at the end of this section show how to use the blank forms provided in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

All performance indicators for this task unit should be evaluated monthly, using 100 percent inspection of the contractor's documentation of performance. The QAE should also use the following methods to field-check the contractor's documentation:

1. Each month, randomly collect one water sample for independent analysis of its chemical and biological content.

2. Perform two unscheduled inspections of the valve-exercising operation.

3. Observe two of the fire hydrant/deadend flushing and flow measurement procedures.

4. Periodically observe the annual cleaning and sanitizing of all water storage tanks.

5. Visit the site of major water leaks and reported cross-connections.

6. Monitor emergency repairs to the water distribution system to verify efficient restoration of service and proper sanitization of depressurized sections.

Evaluation of water distribution services should be coordinated with evaluation of the other water system components.

DETAILED PROCEDURES

Using the QA Checklist and following the procedures on the QA Worksheet, the QAE should schedule an inspection of the contractor's documentation of work performed and of water quality reports from the testing agencies. Reports and logs should be checked for completeness and compared with previous reports for changes, especially in the area of water quality. In addition, the other critical, measurable independent indicators which are described below should be evaluated.

1. Monthly, after reviewing the test results of water samples collected by the contractor and comparing them to the desired standards, the QAE should randomly select a location on the installation and collect an independent water sample using a bottle and the procedures described by the testing laboratory. The sample should be tested for both chemical and biological content, including turbidity, fluorine, and available chlorine. Results must verify the contractor's reports.

2. During the month specified by the Contracting Officer for exercising the water control valves, two regular working days and a backup day should be randomly selected. Without notifying the contractor, the work crew performing this task should be located and their operations observed. Each valve should be operated to the fully closed position and then returned to the fully open position. The number of revolutions required for full travel of the valve mechanism must be appropriate for the valve's size. Consult the water distribution map for the water main size in which the valve is located. Normally, the valve size will be the same. (The number of revolutions to operate a gate valve are as follows: 4-in. valve, 14 turns; 6-in. valve, 20 turns; 8-in. valve, 26-1/2 turns. Operating characteristics for larger or smaller valves are available from any waterworks supply organization.) Deviations from normal revolutions may show a need for valve repair or replacement, but this does NOT reflect adversely on the contractor's performance of this task. The COR should be notified of possible valve malfunction.

3. To ensure that fire hydrants will provide an adequate water flow and that deadend water mains do not contain stagnant water, both must be flushed at least annually. The contract requirements will provide the specified frequency. When this task is scheduled, the contractor's procedure should be observed at two or more locations. Hydrants and deadend flushing devices should be flushed until 10 minutes after the water is visibly free of rust or other turbidity. A rate-of-flow measuring device should be attached to the largest connection on each hydrant, and the measured flow rate must be within 10 percent of the standard for that size hydrant. For example, the flow rate for a new standard 6-in. fire hydrant with the standard 5-1/4-in. valve opening is as follows through the 4-1/2-in. pumper nozzle:

Pressure:	20 psi	50 psi	75 psi	100 psi
Flow Rate:	1450 gpm	2250 gpm	2800 gpm	3200 gpm

4. When the Contracting Officer requests the annual cleaning and sanitizing of the water storage tanks, periodic visits should be set up to observe the isolation, draining, cleaning, disinfection, and restoration to service of all scheduled tanks.

5. When reviewing the contractor's monthly reports of water distribution system operations and maintenance, the QAE should check whether normal activities have been performed and initialed by the operator. He/she should discuss with the contractor the probable causes of major water main leaks and be sure the contractor records the method and materials used for repair. Potential cross-connections which could contaminate the water distribution system should not be backfilled until the Contracting Officer has set up the proper evaluation and correction.

6. The record of emergency repair work should be reviewed to verify that the contractor has responded to the need in a timely manner and has worked diligently to restore service. All water mains which have been depressurized during repair work must be disinfected according to American Water Works Association Standard C601-68 before being returned to service. The repair site must be clear of construction debris, and excavated areas must be graded to match the surrounding area. An unscheduled return visit should show that excavated areas which have settled have been reshaped.

EXAMPLE QA WORKSHEET

WATER SERVICES

QUALITY ASSURANCE WORKSHEET (WATER DISTRIBUTION)

CONTRACT REQUIREMENT: Operate and maintain the water distribution system.

PERFORMANCE INDICATORS: Use QA Checklist (Water Distribution) to record performance.

1. Water sample testing results are recorded on the contractor's report, and water quality meets or exceeds the minimum standards. The sample collected by the QAE verifies the contractor's test results.

2. The contractor's water control valve exercising checklist is completed at the end of the month specified by the Contracting Officer. Randomly select two opportunities to observe the contractor's performance before approving it.

3. The contractor's fire hydrant and deadend flushing checklist is complete. Randomly select two opportunities to observe the contractor's performance before approving it.

4. The contractor has been observed during the annual cleaning and sanitization of the water storage tanks.

5. The contractor's records include water main flushing, location and disposition of water leaks, handling of miscellaneous water problems, and location of any potential cross-connections. The QAE has visited the sites of major leaks and cross-connections and reported the findings to the Contracting Officer's Representative.

6. The contractor has efficiently restored service to areas of the water distribution system affected by repair and has sanitized affected sections before restoring service.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use 100 percent inspection of the contractor's documentation of performance on a monthly basis. The contractor's performance should also be field-verified as described above and in the "Quality Assurance Evaluation Method" section.

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (WATER DISTRIBUTION)

REQUIREMENT: Contractor's approved checklist for verifying water quality has been completed. Required water samples have been submitted for testing and found satisfactory.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: The water sample collected and submitted for analysis by the QAE verifies acceptable water quality.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: The contractor's annual control valve exercising checklist is complete, and the QAE has observed and approved the procedure.

(CIRCLE ONE) S U (N)
QAE REMARKS:

Completion is scheduled for September 1984.

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (WATER DISTRIBUTION)

REQUIREMENT: The contractor's fire hydrant and deadend flushing checklist is complete, and the QAE has observed and approved the procedure.

(CIRCLE ONE) (S) U N
QAE REMARKS:

Hydrant at building 327 produced 1830 gpm (2250 is normal)

REQUIREMENT: The contractor has cleaned and sanitized the water storage tanks.

(CIRCLE ONE) S U (N)
QAE REMARKS:

REQUIREMENT: The contractor's records of water distribution system operations are complete. Major water leaks and potential cross-connections have been reported.

(CIRCLE ONE) (S) U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

J R Robertson
Quality Assurance Evaluator
Date 11 July 1984

D. SWIMMING POOLS

PERFORMANCE INDICATORS

1. During normal operating hours, the contractor should respond within 1 hour to a lifeguard request for pool maintenance.

2. Wading pools must be drained, cleaned, and refilled each day the pool is in operation.

3. Pool chlorination levels must be inspected and adjusted between 0700 and 0900 hours each day the pool is in operation.

4. Swimming pool filters, pumps, and related equipment should be operated, maintained, backwashed, and recharged as required.

5. Once each week, three pool water samples should be collected, tested by an approved laboratory for bacteriological content, and the results submitted to the Contracting Officer.

6. In the fall and spring, the pools, equipment, and associated bathhouse facilities must be winterized or dewinterized.

INSPECTION FORMS

1. QA Worksheet (Swimming Pools)

2. QA Checklist (Swimming Pools)

3. Swimming Pool Questionnaire

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

Performance indicators 1, 2, and 3 should be evaluated monthly, using the swimming pool questionnaire. Performance indicators 4, 5, and 6 should be evaluated by unscheduled inspection and the procedures described below.

DETAILED PROCEDURES

1. Once each month, the lifeguard supervisor should be interviewed or a copy of the swimming pool questionnaire furnished to him/her. The questionnaire should be used to conduct an interview; results should be recorded on the QA Checklist.

2. Once each month, the contractor's performance log for O&M of the swimming pools should be reviewed. In addition to normal O&M items, the logs must include a record of backwashing, recharging, water sampling results, and repairs.

3. At least monthly, or when the lifeguard questionnaire or user complaints indicate the need, a field inspection of the pools and equipment should be performed. Using the QA Checklist, the contractor's performance should be evaluated as follows:

a. The wading pools and swimming pools should contain water which allows a clear, almost unobscured view of the bottom. The bottom should be free of sand, leaves, or other debris.

b. A sample of water from each pool should be analyzed for chlorine and bacteriological content according to the local public health agency requirements.

c. The pool filter room should be inspected as follows: check that the area is clean and neatly arranged; while the filter pump is running, listen for an unpleasant whining or grinding sound, indicating damage or lack of lubrication; while the filter pump is running, record the inlet and outlet pressures on the gauges (a difference between the two pressure readings of greater than 25 psi is unsatisfactory and indicates that the contractor should have backwashed the filters more often); visually inspect lubrication points for a clean, bright appearance that indicates regular attention.

4. The pools should be visited with the contractor's operator after Labor Day (or whenever the swimming season ends) to verify that the pools and equipment have been completely winterized. This work requirement is <u>especially important</u> in cold climates where winter freezing will seriously damage the equipment. The pools should be visited with the contractor and the pool supervisor just before Memorial Day (or whenever the swimming season begins) to verify that the pools and equipment have been dewinterized and are ready for use.

EXAMPLE QA WORKSHEET

WATER SERVICES

QUALITY ASSURANCE WORKSHEET (SWIMMING POOLS)

CONTRACT REQUIREMENT: Operate and maintain the swimming pools and related equipment.

PERFORMANCE INDICATORS: Use QA Checklist (Swimming Pools) to record performance.

1. An interview with or questionnaire completed by the lifeguard supervisor indicates satisfactory operation and response to repair requests.

2. Water sample testing results are recorded on the contractor's report, and water quality meets or exceeds minimum standards. The sample collected by the QAE verifies the contractor's test results.

3. Wading and swimming pools are clean.

4. Water samples from the pools meet specified requirements.

5. Swimming pool mechanical equipment is properly operated and maintained.

6. Swimming pools have been properly winterized/dewinterized when specified.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use 100 percent inspection to verify the contractor's documentation of performance each month. The contractor's performance should also be field-verified.

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (SWIMMING POOLS)

REQUIREMENT: Swimming pool questionnaire indicates satisfactory operation and maintenance of the pool facilities.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Contractor's logs of operation are complete.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: The wading and swimming pools are free of debris and the water is clear.

(CIRCLE ONE) (S) U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (SWIMMING POOLS)

REQUIREMENT: The contractor's water sample reports are satisfactory, and the QAE sample verifies them.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: The pool filter inspection finds that:

A. The area is clean and neat.

(CIRCLE ONE) (S) U N

B. The equipment is operating smoothly and shows evidence of lubrication and preventive maintenance.

(CIRCLE ONE) (S) U N

C. The pressure readings on the filter equipment indicate less than 25 psi difference between inlet and outlet pressures.

(CIRCLE ONE) (S) U N
QAE REMARKS:
pressure difference = 11 psi

REQUIREMENT: Seasonal winterization/dewinterization has been performed properly.

(CIRCLE ONE) S U (N)
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

James Coffin
Quality Assurance Evaluator
Date 13 July 1984

SWIMMING POOL QUESTIONNAIRE

NOTE: This questionnaire is to be completed monthly by the pool supervisor, lifeguard, or the QAE during an interview with the pool supervisor or lifeguard. Please circle the most appropriate answer to the question. Remarks, especially when the activity being evaluated is unsatisfactory, will be helpful in correcting the deficiencies.

1. How often does a pool maintenance person visit the pool area?

(DAILY) SELDOM NEVER

2. Are the workmen neatly dressed and courteous?

(YES) NO

3. Do you experience difficulty receiving repair service during normal operating hours?

YES (NO)

4. Is repair work performed efficiently, and is the area cleaned up before the workmen leave?

(YES) NO

5. Are you satisfied with the swimming pool water clarity and chlorine content?

(YES) NO

6. Is the pool area, including mechanical rooms, kept clean and neat?

(YES) NO

7. Please furnish any remarks about the swimming pool operation and maintenance which you feel would result in improvements.

Signature [signature]
Title SUPERVISOR
Date 6 JULY 1984

SEWAGE SERVICES

A. SEWAGE COLLECTION AND HANDLING

B. SEWAGE TREATMENT

This section discusses the work required for O&M of the following parts of a complete sewage system: sewage collection and handling and sewage treatment and disposal.

Evaluation of the contractor's performance in providing these services should be scheduled by determining when the contractor intends to have completed documentation of the previous month's O&M activities and when the regulatory agency reports are received; the QA Evaluation should be scheduled within 3 days of report receipt. Proper coordination will allow the QAE to inspect all these services at one time. Following are the recommended methods and detailed procedures for the evaluations.

A. SEWAGE COLLECTION AND HANDLING

PERFORMANCE INDICATORS

1. The contractor's APPROVED preventive maintenance checklist must be complete with dates and be initialed by the persons performing the maintenance and inspection activities.

2. Planned sampling of the equipment and facilities maintenance should verify the contractor's performance.

3. Repair of broken or blocked sanitary sewer lines and repair of sewage-handling equipment should be done efficiently so that service interruptions are minimized.

INSPECTION FORMS

1. QA Worksheet (Sewage Collection)

2. QA Checklist (Sewage Collection)

The sample forms in this section show how to use the blank forms provided in Appendix B.

QUALITY ASSURANCE EVALUATION METHOD

Performance indicator 1 should be evaluated monthly, using 100 percent inspection. Performance indicator 2 should be evaluated monthly using planned sampling. Performance indicator 3 should be evaluated by unscheduled inspection during the contractor's repair effort.

DETAILED PROCEDURES

1. Documentation. Using the QA Checklist and following the procedures on the QA Worksheet, the QAE should schedule a monthly inspection of the contractor's documentation of work performed. Reports and logs should be checked for completeness against the contract requirements in the following areas:

a. Description of normal inspection and maintenance of the sewer mains, service lines, and lift stations.

b. Reports of corrective actions taken if stoppages, failures, or overloading occur.

c. Records indicating flushing and cleaning of mains, leaks, new service lines, and location of potential cross-connections.

d. Records of annual hydro-cleaning of sewage collection lines and sludge removal from septic tanks.

The contractor's reports should be furnished on forms approved by the Contracting Officer, and all entries must be initialed and dated by the person performing the work. If the reports are incomplete and the contractor does not justify the omissions (such as supporting schedules for infrequently required operations), the documentation should be considered unsatisfactory.

2. Maintenance Effectiveness. Using the installation map of sewage collection facilities, which include manholes, lift stations, and wet wells, locations should be selected where recent inspections have shown deficiencies, where there have been no inspections in the past 90 days, or where there have been reports of sewage backups or overflows. For safety reasons, it is important that the QAE be accompanied by an assistant when inspecting underground facilities.

When inspecting manholes, two lift bars should be used to remove the manhole cover. Care should be exercised when handling the cover because its weight and its tendency to flip over could be a safety hazard. The manhole frame should be tightly sealed to the masonry structure, and the masonry joints in the manhole structure should be sealed with mortar or bituminous material. The flow channel in the bottom of the manhole should allow smooth flow from all incoming lines into the receiving main. The flow channel should be free of accumulated material.

When inspecting lift stations, one member of the inspection team should remain aboveground in case of an accident. The pump chamber should be lighted, and steps, handrails, and gratings should be solidly in place. There should be no accumulation of litter or discarded repair parts. All exposed metal surfaces should be free of rust and peeling paint. Ventilating fans, if present, should be operating whenever the pump chamber is entered. If the wet well is part of the pump chamber, the water level should be normal, and the inspector should check for high-water marks that could indicate recent flooding.

Wet wells are holding chambers for sewage coming into a pumping station; they provide liquid storage and a collection point for grit and heavy solids that could damage pumps. Each lift station should have a probe to measure the depth of sludge accumulated in the bottom of the wet well. The top of the sludge accumulation should always be a minimum of 18 in. below the pump suction line.

The frequency and cost of required repairs of the sewage-handling equipment should be compared to historical records to further evaluate the contractor's effectiveness. For example, the QAE should try to find out how often sewage pumps have been replaced or rebuilt in the past, and then compare it with a current need for the same repair. If the interval between repairs has decreased, the COR should be notified. If historical data are not available, the QAE should begin a file on each lift station so that a repair record will be available for future reference.

3. Repairs. Repair work performed by work order should be evaluated by systematic random sampling of the individual work orders (see Chapter 2). The repair site should be visited to verify that the work is being performed diligently so as to minimize service interruption. When the repair work is finished, the construction area must be cleared of debris and the excavated areas graded to match the surrounding area. An unscheduled visit to the site later should show whether excavated areas that have settled have been reshaped.

EXAMPLE QA WORKSHEET

SEWAGE SERVICES

QUALITY ASSURANCE WORKSHEET (SEWAGE COLLECTION)

CONTRACT REQUIREMENT: Operate and maintain the sewage collection distribution system.

PERFORMANCE INDICATORS: Use QA Checklist (Sewage Collection) to record performance.

1. The contractor's preventive maintenance checklist is complete.

2. Planned sampling of equipment and facilities maintenance verifies the contractor's performance.

3. The contractor has efficiently restored service to damaged areas of the sewage collection system and has restored excavated areas.

QUALITY ASSURANCE EVALUATION METHOD:

Performance indicator 1 should be evaluated monthly by 100 percent inspection. Performance indicator 2 (verification of maintenance) should be evaluated monthly by planned sampling. Performance indicator 3 should be evaluated by unscheduled inspection during the contractor's repair effort.

EXAMPLE CHECKLIST

SEWAGE SERVICES

QUALITY ASSURANCE CHECKLIST (SEWAGE COLLECTION)

REQUIREMENT: Contractor's approved preventive maintenance checklist is complete with dates and includes the initials of persons who performed the maintenance and inspection activities.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Planned sampling of maintenance of the equipment and facilities verifies the contractor's performance.

(CIRCLE ONE) (S) U N LOCATION LIFT STATION #2
(CIRCLE ONE) (S) U N LOCATION SANITARY MANHOLE C43
(CIRCLE ONE) S (U) N LOCATION " " F12
(CIRCLE ONE) S U (N) LOCATION " " B6
(CIRCLE ONE) (S) U N LOCATION GREASE TRAP – BLDG 331

QAE REMARKS:

MH F12: MORTAR BROKEN & CHUNKS ARE OBSTRUCTING FLOW; 2 STEPS ARE LOOSE

MH B6: FRAME & LID BURIED – COULD NOT INSPECT

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

SEWAGE SERVICES

QUALITY ASSURANCE CHECKLIST (SEWAGE COLLECTION)

REQUIREMENT: Repair of broken or blocked sanitary sewer lines and/or repair of sewage-handling equipment has been done efficiently so as to minimize service interruptions.

(CIRCLE ONE) S U (N) LOCATION SEE REMARKS
(CIRCLE ONE) S U N LOCATION _____
(CIRCLE ONE) S U N LOCATION _____
(CIRCLE ONE) S U N LOCATION _____

QAE REMARKS:

NO REPAIRS OR BLOCKED LINES

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

James Coffin
Quality Assurance Evaluator

Date 12 OCTOBER 1984

B. SEWAGE TREATMENT AND DISPOSAL

PERFORMANCE INDICATORS

1. The contractor's logs and checklists for wastewater treatment plant operations must be complete with dates and include the initials of the person who did the work.

2. Effluent quality analysis reports must show that National Pollutant Discharge Elimination System (NPDES) permit requirements have been met. The QAE should collect an independent sample to verify the reports.

3. Repair and replacement of treatment plant components should have occurred at or beyond the time when historical data show them to be expected.

4. Repair or replacement of treatment plant equipment should have been done efficiently so as to minimize service interruptions.

5. An on-site inspection of the wastewater treatment facilities should show that processes and conditions at the site are in accordance with indicators described in the "Maintenance Effectiveness" section.

INSPECTION FORMS

1. QA Worksheet (Sewage Treatment)

2. QA Checklist (Sewage Treatment)

The sample forms in this section show how to use the blank forms provided in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

There are five levels of recommended methods for evaluating contractor performance in operating and performing preventive maintenance on a wastewater treatment system: (1) checking the contractor's work documentation against his/her approved quality control plan; (2) determining that the system's effluent quality meets regulatory agencies' requirements; (3) compiling and analyzing breakdown and repair history to determine the effectiveness of the preventive maintenance program; (4) observing the contractor's performance of needed repairs; and (5) listing observable results that indicate proper plant operation and evaluating those activities regularly.

Since level 5 will contain work items specific to each installation, the QAE must assemble the checklist for the type and configuration of wastewater system in use. The section on Operation and Maintenance Effectiveness describes the evaluation of a typical wastewater treatment system; this description can be used as an example and modified as required.

Performance indicator 1 should be evaluated monthly, using 100 percent inspection of the contractor's documentation and reports. Performance indicator 2 should be evaluated monthly by planned sampling of the treatment plant effluent. Performance indicators 3 and 4 should be evaluated by unscheduled inspection while the contractor is doing the repairs. Performance indicator 5 should be evaluated monthly by an unscheduled inspection of the treatment site.

DETAILED PROCEDURES

1. Documentation. Using the QA Checklist, the QAE should schedule a monthly inspection of the contractor's work documentation. Reports and logs should be checked for completeness against the contract requirements in the following areas:

a. Description of normal inspection, maintenance, and operation of the wastewater treatment plant, including copies of laboratory analyses of the effluent.

b. Reports of corrective actions taken in the event of equipment failure, overloading, or failure to meet NPDES permit requirements for effluent quality.

c. Recommended improvements to the treatment plant which will increase its performance or repairs to damaged or deteriorated components.

The contractor's reports should be furnished on forms approved by the Contracting Officer; all entries must be initialed and dated by the person doing the work. If the reports are incomplete and the contractor does not justify the omissions (such as supporting schedules for infrequently required operations), documentation should be considered unsatisfactory.

2. Effluent Quality. Besides checking the documentation for compliance with effluent standards, the QAE should collect an effluent sample each month and deliver it to the testing laboratory for analysis. The laboratory analysis must verify that the effluent meets NPDES requirements for this performance indicator to be satisfactory.

3. Repair Frequency. The frequency and cost of required repairs should be compared to historical records of the sewage treatment plant to further evaluate the contractor's effectiveness. For example, the QAE should try to find out how often equipment has been replaced or rebuilt in the past, and compare it with a current need for the same repair. If the interval between repairs has decreased, the COR should be notified. If historical data are not available, the QAE should start a file on each major component so there will be a repair record for future reference.

4. Repair Performance. Repair work performed by work order should be evaluated by systematic random sampling of the individual work orders (see Chapter 2). The site of the selected repair should be visited to verify that the work is being performed diligently so as to minimize service interruptions. After completion of repair work, the construction area must be cleared of debris and any excavated areas graded to match the surrounding area. An unscheduled visit to the site later should show whether excavated areas which have settled have been reshaped.

5. Operation and Maintenance Effectiveness. The QAE should visit the sewage treatment facilities monthly and evaluate the contractor's operation of the plant using the following general approach:

a. General. The overall appearance of the buildings and grounds should be attractive. Grassed areas around the buildings and plant components should be mowed and trimmed. Buildings and exposed piping should be painted and free of rust and peeling, deteriorated paint. Debris from repairs and the cleaning of treatment components should have been removed from the site.

b. Bar Screens. Material screened from the incoming sewage should be removed from bar screens and placed in a container for disposal.

c. Grit Removal. The amount of sediment collected in the grit removal channel since the last cleaning should be less than 1/4 in.

d. Comminutor. Lubrication fittings should be clean and bright, indicating frequent use, and their surfaces should show a film of lubricant. The comminutor should be operating smoothly and quietly, and the cutters should be clear of debris.

e. Primary Clarifiers. The water surface in the clarifiers should be reasonably clear of floating solids. Material removed from the surface should have been placed in containers for disposal. The water surface should show gas bubbles rising from the sludge digestion process in the bottom of the tanks. Accumulated sludge should be at least 12 in. below the bottom of the baffles.

f. Filters. The distribution system should spread the wastewater evenly across the filter bed. Movement of the distribution equipment should be smooth and quiet. Lubrication points should appear clean and bright, indicating frequent use. Large numbers of filter flies should not be present. The filter's surface should not contain ponded water.

g. Secondary Clarifiers. The water surface in the secondary clarifiers should be reasonably clear of floating solids. Material removed from the surface should be placed in containers for disposal. The water surface should not show gas bubbles rising from the bottom of the clarifier tanks, which would indicate an excess of settled sludge.

h. Pumping Equipment. Pumps, piping, brackets, handrails, and other metal surfaces should be painted and free of rust. The pump room should be free of accumulated debris and washed clean. Pumps and motors should be running smoothly and quietly without unusual grinding, scraping, or squealing noises. Lubrication reservoirs should be more than half full, and lubricant flow should be visible when the pumps are running. Grease fittings should be clean and bright, indicating frequent use, and should have a slight film of residual lubricant on their surfaces.

EXAMPLE QA WORKSHEET

SEWAGE SERVICES

QUALITY ASSURANCE WORKSHEET (SEWAGE TREATMENT)

CONTRACT REQUIREMENT: Operate and maintain the sewage treatment system.

PERFORMANCE INDICATORS: Use the QA Checklist (Sewage Treatment) to record performance.

1. The contractor's logs and checklists for wastewater treatment plant operation are complete with dates and include the initials of the person doing the work.

2. Effluent analysis reports show that NPDES permit requirements have been met. An independent sample collected by the QAE verifies the reports.

3. Component repairs and replacement have occurred at or beyond the time when historical data have shown them to be expected.

4. Repair or replacement of treatment plant equipment has been done efficiently so as to minimize service interruptions.

5. An on-site inspection of the wastewater treatment facilities shows that the site's processes and conditions comply with indicators described under "Maintenance Effectiveness."

QUALITY ASSURANCE EVALUATION METHODS:

Performance indicator 1 should be evaluated monthly by 100 percent inspection of the contractor's documentation and reports. Performance indicator 2 should be evaluated monthly by planned sampling of the treatment plant effluent. Performance indicators 3 and 4 should be evaluated using unscheduled inspection during the contractor's repair effort. Performance indicator 5 should be evaluated monthly by unscheduled inspection.

EXAMPLE QA CHECKLIST

SEWAGE SERVICES

QUALITY ASSURANCE CHECKLIST (SEWAGE TREATMENT)

REQUIREMENT: Contractor's logs and checklists for water treatment system operation and maintenance are complete.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Wastewater sample analysis reports furnished by the contractor show that NPDES permit requirements have been met. QAE sample verifies the results.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Necessary repair and replacement of treatment plant components occurred at or beyond the expected time.

(CIRCLE ONE) S U (N)
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

SEWAGE SERVICES

QUALITY ASSURANCE CHECKLIST (SEWAGE TREATMENT)

REQUIREMENT: Repairs have been done so as to minimize service interruptions.

(CIRCLE ONE) S U (N)

QAE REMARKS:

REQUIREMENT: The on-site inspection shows that the contractor's performance results in appropriate indicators of proper operation.

(CIRCLE ONE) (S) U N

QAE REMARKS: Some pooling on filter bed #2

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

James Coffing
Quality Assurance Evaluator

Date 12 October 1984

BUILDINGS

- A. UNSCHEDULED BUILDING SERVICES
  - A.1. ELECTRICAL WORK
  - A.2. PLUMBING
  - A.3. METAL WORKING
  - A.4. KEYS AND LOCKS
  - A.5. CARPENTRY AND MASONRY
  - A.6. PAINTING
- B. SCHEDULED BUILDING SERVICES
  - B.1. ROOFING
  - B.2. GUTTERS AND DOWNSPOUTS
  - B.3. CHANGE OF OCCUPANCY

A. UNSCHEDULED BUILDING SERVICES

As a rule, all unscheduled building services are done as a service order (SO) or individual job order (IJO). Therefore, the general method for inspecting unscheduled building services is the same for all the services. Thus, each task unit will be inspected by the general procedures used for SOs and IJOs along with the appropriate detailed procedures for the specific task. The inspection should follow the procedures as listed on the Unscheduled Building Services Worksheet. The results should be well documented using the Unscheduled Building Services Checklist.

QUALITY ASSURANCE EVALUATION METHODS

1. Service Orders. Initially, a systematic random sampling should be used to inspect the contractor's performance. Upon approval of the COR, a random survey can be conducted to solicit resident opinion of contractor performance, instead of the systematic random inspection. The survey questionnaire should be provided to and collected from each customer selected for surveying. Results should be tabulated and used to suggest any additional random inspections deemed necessary by the QAE or the Contracting Officer.

2. Individual Job Order. The 100 percent inspection method should be used to inspect the contractor's performance.

GENERAL PROCEDURES

1. Service Orders--Random Inspection. The contractor's report of work completed should be used to schedule the completed buildings for random sampling. The procedures outlined in Chapter 2 (normal surveillance, 4 percent AQL) should be used to select the units for inspection. Results should be well documented by using the Unscheduled Building Services SO/IJO Checklist and should be compared to the work request to detect discrepancies.

2. Service Orders--Random Survey. The contractor's report of work completed should be used to schedule the completed buildings for a random survey. Distribute the Service Order Questionnaire to customers using the buildings scheduled for inspection. All the returned questionnaires should be collected and the buildings where customer complaints indicate problems recorded on the Unscheduled Building Services SO/IJO Checklist. Buildings for which the QAE feels questionnaire results may be invalid for any reason should also be recorded.

3. Individual Job Orders--100 Percent Inspection. The contractor's report of work completed should be used to schedule all buildings for inspection. Results should be documented on the Unscheduled Building Services SO/IJO checklist and should be compared to the work request report to detect discrepancies.

The best way to determine whether the service is adequate is to ask the service requester. If a question arises about what constitutes "adequate," the QAE should document the question in the "Remarks" section of the checklist so that the COR may determine how to better evaluate the services. The COR may use an expert or some other means.

PERFORMANCE INDICATORS

The contractor should submit a report of the completed work so that the QAE can schedule the evaluation. The contractor's documentation and the inspection should show that the contractor has completed his/her work in a timely, effective, and workmanlike manner. Overall quality and appearance of the repair, including materials, should be comparable to the facility's original construction quality and appearance.

INSPECTION FORMS

1. QA Worksheet (Unsch. Bldg. Services Worksheet)

2. QA Checklist (Unsch. Bldg. Services Checklist)

The sample forms in each section show how to use the blank forms in Appendix B.

A.1. ELECTRICAL WORK

DETAILED PROCEDURES

The QAE should check that:

Generally:

1. Where possible, the replacement or repair matches the existing components in appearance and quality.

2. The replacement or repair performs its purpose.

3. The area of work was left as clean as before the workmen arrived.

Specifically:

1. Breaker Panels: All areas served by the repaired breakers must receive adequate power. If the equipment using the service works properly, the service is assumed to be acceptable.

2. Wall Switches: The switch must be operative and control the fixtures or receptacles connected to it.

3. Receptacles: The receptacle should be compatible with the type of equipment that will use it and should supply adequate power. If the equipment using the service works properly, the service is assumed to be acceptable.

4. Interior Light Fixtures: Interior light fixtures should produce light adequate for their intended use. The color and quality of exterior wiring (such as used in chain supports) must conform to the original wiring.

5. Main Grounding Systems: The grounding system must be in place.

A.2. PLUMBING

DETAILED PROCEDURES

For water systems, the QAE should ensure that:

1. Wastewater lines are free-flowing, and drains are not stopped.

2. Joints, faucets, and other outlets do not leak.

3. No bolts, pipe hangers, strainers, or drain covers are damaged or missing.

4. The commodes are firmly fixed and do not rock when shaken.

5. Sump pumps operate properly, and sump pits are free of debris and sand.

For gas systems, the QAE should note that:

1. There are no gas leaks. Testing for leaks can be done using a hand-held gas-sniffing device which is pointed at the repaired area. Any indication of gas is unsatisfactory.

2. There are no leaks at fuel valves, regulators, or fuel-burning equipment.

3. There are no leaks at fuel tanks. Valves should be lubricated and vents free from debris.

NOTE: Any plumbing that leaks is likely to be unsatisfactory.

A.3. METAL WORKING

DETAILED PROCEDURES

The QAE should check to see that:

1. The work was completed neatly (i.e., welds are neat and workmanlike).

2. No other surrounding surfaces or materials were damaged by the metal-working process (e.g., concrete or other material was not scorched by welding).

3. Metal surfaces exposed to weathering or humid conditions have been protected from rusting by painting or sealing.

4. The metals were not damaged or bent during installation (e.g., sheet metals have not been twisted or marred).

5. Structural metals to be fireproofed have a uniform fireproofing coating that has not been broken or chipped to expose the metal.

6. The repair is well anchored and is not flimsy or easily moved when touched.

7. The repaired equipment is operable.

A.4. KEYS AND LOCKS

DETAILED PROCEDURES

The QAE should ensure that:

1. The equipment repaired is operable (e.g., the locking mechanism works with the key provided).

2. The appearance of the work is neat and workmanlike.

3. The equipment effectively prohibits entry to persons not having the proper key.

4. The equipment operates according to its designed purpose.

A.5. CARPENTRY AND MASONRY

DETAILED PROCEDURES

1. Carpentry. The QAE should check that:

a. There is no evidence of fungus, mildew, termites, water absorption, or other harmful effects caused by the environment.

b. All installed wood that touches concrete or masonry is marked to indicate that it is preserved and treated by pressure in accordance with the American Wood Preservers Institute Standards.

c. All wood used in exposed locations with no protection from the weather is marked as treated according to industry standards.

d. All cuts in treated wood are brush-coated with a preservative.

e. All carpentry work performed is consistent with the construction of the existing facility or structure.

NOTE: For further information, see TM 5-615, TM 5-620, and TM 5-621.

2. Masonry. All masonry work completed should be consistent with the construction and appearance of existing facilities or structures.

NOTE: For further information, see TM 5-742.

A.6. PAINTING

DETAILED PROCEDURES

In the presence of the QAE, the contractor should randomly select a 1-quart sample of each batch from the sealed containers. The contractor should provide the cans. Adequate mixing prior to sampling should ensure a uniform, representative sample. A batch is defined as a quantity of material processed by the manufacturer at one time and identified by a number on the label. Samples should be clearly identified by designated name, specification number, batch number, project contract number, intended use, and quantity involved. The QAE should ship the samples to the proper testing authority.

The QAE should visually check that:

1. There is no dirt, rust, scale, splinters, loose particles, disintegrated paint, grease, soil, and other deleterious substances. Also check that there are no nail holes, alligations, or abrasions caused by removing picture hangers or contact paper.

2. There are no ridges caused by the paint having not been sanded at the edges of places where it had peeled.

3. There are no holes or imperfections on painted surfaces.

4. There is no discoloration on natural wood finishes.

5. There is no paper masking on the walls, ceilings, and wood trim.

6. There are no holes, cracks, loose plaster, or surface irregularities in the plaster.

7. The painted surfaces are free from paint runs, drops, ridges, waves, laps, brush marks, variations in color, and other visible defects.

8. The finishes are correct for the area in which they were used. This should be checked by running a clean hand over the surface. Surfaces painted with a flat paint should feel smooth but not slick; a surface painted with semi-gloss paint should feel slick. The following paint types should be used in the applicable situations:

a. Painted interior walls and ceilings other than kitchen, pantry, bath, utility, and laundry areas (Interior Flat).

b. Interior walls and ceilings of kitchen, pantry, bath, utility, and laundry areas (Interior-Semi-gloss).

c. Painted (other than factory finish) wood or metal, trim, doors, windows, risers, and shelving (Interior Semi-gloss).

Varnished surfaces should be slightly dulled in appearance, since the contractor is assumed to have rubbed them with steel wool or the equivalent. Varnish should be used in the following applications:

d. Natural finished wood trim, doors, windows, stair risers, shelving, and cabinets not required to be stripped.

e. Natural finished wood kitchen cabinets, doors, and trim specified to be stripped and refinished.

f. Natural finished closed stairs and handrails.

A properly waxed floor should be slightly dulled in appearance and smooth to the touch.

g. Wax should be used on interior resilient tile floors and on wood floors in unoccupied units.

The QAE should ensure that:

1. All contractor materials have been removed from the site.

2. All doors and windows are operative.

3. All paint has been removed from all glazing.

4. All floors have been cleaned, waxed, and buffed.

5. All sinks, lavatories, refrigerators, cabinets, water closets, bathtubs, showers, and telephones are clean and free of residue.

6. All protruding nails have been removed.

7. No paint wastes have been disposed of through the sanitary sewer system.

8. All units are locked when unoccupied.

9. There is no paint waste on lawns or paved areas.

EXAMPLE QA WORKSHEET

UNSCHEDULED BUILDING SERVICES

QUALITY ASSURANCE WORKSHEET

CONTRACT REQUIREMENT: Perform SO/IJO as contracted.

PERFORMANCE INDICATORS:

1. The contracted work was done in a timely, effective, and workmanlike manner.

2. The overall quality and appearance of the repair, including materials, are comparable to that of the original facility.

3. When compared to the contractor's report of work completed, the QAE inspection results show no deficiencies.

QUALITY ASSURANCE EVALUATION METHOD:

1. Service Orders. The QAE should use a systematic random sampling method to determine the number of buildings to be inspected for SOs and to determine questionnaire recipients. Using the population size _____, and referring to Table A1 of Appendix A gives _____ number of samples and _____ number of allowable rejects. Any collection of randomized numbers can be used to determine the first samples for inspection. The population size should be divided by the sample size to determine the interval _____.

2. Individual Job Orders. The QAE should use 100 percent inspection to inspect all buildings.

EXAMPLE QA CHECKLIST

UNSCHEDULED BUILDING SERVICES

QUALITY ASSURANCE CHECKLIST

Day/Date	Building	SO/IJO	ELECTRICAL WORK	PLUMBING	METAL WORKING	Remarks
7/17/84	#434	36		✓		
7/17/84	473	89			✓	
7/17/84	325	61	✓			
7/17/84	426	54	✓			
7/17/84	453	65	✓			
7/18/84	479	70			✓	
7/18/84	405	71	—	—	—	
7/18/84	601	49	—	—	—	
7/18/84	477	67		✓		
7/19/84	505	63		4		SINK STOPPED
7/19/84	454	56	✓			
7/19/84	399	73	—	—		
7/19/84	403	54	—	—		
7/19/84	462	57			✓	
7/19/84	449	83		✓		

Day/Date	Building	SO/IJO	KEYS AND LOCKS	CARPENTRY AND MASONRY	PAINTING	Remarks
7/17/84	# 434	36	—	—	—	
7/17/84	473	89	—	—	—	
7/17/84	325	61	—	—	—	
7/17/84	426	54	—	—	—	
7/17/84	453	65	—	—	—	
7/18/84	479	78	—	—	—	
7/18/84	485	71	S			
7/18/84	501	49		S		
7/18/84	477	67	—	—	—	
7/18/84	505	63	—	—	—	
7/19/84	454	56	—	—	—	
7/19/84	399	73		S		
7/19/84	403	54			S	
7/19/84	462	57	—	—	—	
7/19/84	449	83	—	—	—	

T. S. Gerber
Quality Assurance Evaluator

Jul. 20, 1984
Date

B. SCHEDULED BUILDING SERVICES

B.1. ROOFING:

PREVENTIVE MAINTENANCE INSPECTION (PMI)

PERFORMANCE INDICATORS

The contractor must submit a PMI report for the QAE to review. The QA inspection results, when compared to the contractor's PMI documentation, should show no deficiencies in terms of the inspection requirements listed in the Preventive Maintenance Inspection Requirements in Appendix C.

INSPECTION FORMS

1. QA Worksheet (Roofing PMI Worksheet)

2. QA Checklist (Roofing PMI Checklist)

3. Preventive Maintenance Inspection Requirements

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

A 100 percent inspection method should be used to inspect the completeness of the contractor's PMI report. Unscheduled field inspection should be used for poor past performance areas and areas specified by the Contracting Officer or his/her representative. Such action should be coordinated with the Contracting Officer or his/her representative.

1. General Procedure--100 Percent Inspection. The contractor's PMI report, should be used to check that all buildings scheduled for a PMI have been recorded. The results should be well documented on the Roofing PMI Checklist and should be compared to the contractor's report for discrepancies.

2. General Procedure--Unscheduled Inspection. The contractor's PMI records should be used to determine the units to be sampled, including poor past performance areas and areas specified by the Contracting Officer or his/her representative. The inspection should be scheduled so that the QAE may accompany the contractor during the inspection. The inspection results should be documented on the Roofing PMI Checklist and compared to the contractor's PMI report for discrepancies. If discrepancies are found, the contractor should include those repair items noted by the QAE on his/her PMI report. If the contractor refuses to include those discrepancies, the QAE should use normal surveillance and a 10 percent AQL to form the basis for determining the contractor's compliance.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (PMI ROOFING)

CONTRACT REQUIREMENT: PMI (roofing), all buildings and structures.

PERFORMANCE INDICATORS:

1. PMI has been performed in accordance with Technical Exhibit ____.

2. The QAE inspection matches the contractor's PMI report.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should inspect the contractor's PMI report by 100 percent inspection. He/she should inspect poor past performance areas specified by the Contracting Officer or his/her representative by unscheduled inspection.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (PMI ROOFING)

REQUIREMENT: PMI (roofing), all buildings and structures.

PERFORMANCE INDICATORS:

1. PMI has been performed in accordance with Technical Exhibit #12.

2. The QAE inspection matches the contractor's PMI report.

Day/Date	Building	PI 1	PI 2	Remarks
6/12/84	#221	S	S	
6/12/84	363	S	S	
6/12/84	167	S	S	
6/12/84	194	S	S	
6/12/84	303	S	S	

F. A. Gerber
Quality Assurance Evaluator

Jun. 12, 1984
Date

PREVENTIVE MAINTENANCE (PM)

PERFORMANCE INDICATORS

The contractor should have submitted a PM report for the QAE to review. The QA inspection results, when compared to the contractor's PM documentation, should show no deficiencies in terms of the Detailed Procedures.

INSPECTION FORMS

1. QA Worksheet (Roofing PM Worksheet)

2. QA Checklist (Roofing PM Checklist)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

Initially, a 100 percent inspection method should be used to inspect the completeness of the contractor's PM report and QC checklist. A random survey can also be used to solicit resident opinion of contractor performance. The survey questionnaire should be provided to and collected from each customer selected for surveying. Results should be tabulated and used to suggest any additional random inspections.

1. General Procedures--100 Percent Inspection. The contractor's PM report should be used to check that all buildings scheduled for PM have been recorded. Results should be documented using the Roofing PM Checklist and should be compared to the contractor's PM report for discrepancies.

2. General Procedure--Random Survey. The contractor's PM report should be used to schedule buildings for random survey. The Building Maintenance and Repair Questionnaire should be distributed to customers using those buildings. Collect all the returned questionnaires, and record on the Roofing PM Checklist buildings where customer complaints indicate problems. Also record buildings for which the QAE feels the questionnaire may be invalid.

3. General Procedure--Random Inspection. The record of problem buildings from the random survey and past inspection areas and the systematic random sampling procedures outlined in Chapter 2 (normal surveillance, 10 percent AQL), should be used to select the units for inspection. Results should be well documented, using the Roofing PM Checklist, and should be compared to the contractor's PM report for discrepancies.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (PM ROOFING)

CONTRACT REQUIREMENT: Perform roofing PM on all buildings and structures.

PERFORMANCE INDICATORS:

1. PM has been performed in accordance with Technical Exhibit _____.

2. The QAE inspection shows no deficiencies.

QUALITY ASSURANCE EVALUATION METHOD:

The QAE should use 100 percent inspection for performance indicator 1. He/she should use a systematic random inspection method to determine questionnaire recipients and other random building inspections. Using the population size 45, and referring to Table A1 of Appendix A gives a number of samples 15, and a number of allowable rejects 3. Using any collection of randomized numbers, determine the first samples to be inspected. Dividing the population size by the sample size determines the interval 3.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (ROOFING PM)

REQUIREMENT: Perform PM (roofing, guttering, and downspouts) for all buildings and structures.

PERFORMANCE INDICATORS:

1. PM has been performed in accordance with Technical Exhibit #13.

2. The QAE inspection shows no deficiencies.

Day/Date	Building	PI 1	PI 2	Remarks
7/24/84	#130	S	S	
7/24/84	133	S	S	
7/24/84	136	S	S	
7/24/84	139	S	S	
7/24/84	142	S	U	SHINGLES DON'T MATCH
7/24/84	145	S	S	
7/24/84	148	S	S	
7/25/84	151	S	S	
7/25/84	154	S	S	
7/25/84	157	S	S	
7/25/84	160	S	S	
7/25/84	163	S	S	
7/25/84	166	S	S	
7/25/84	169	S	S	
7/24/84	172	S	S	
7/24/84	175	S	S	
7/24/84	178	S	S	
7/24/84	181	S	S	

J A Gerber
Quality Assurance Evaluator

JULY 27, 1984
Date

SERVICE ORDERS (SOs) AND INDIVIDUAL JOB ORDERS (IJOs)

PERFORMANCE INDICATORS

The contractor should have submitted a report of the completed work so that the QAE may schedule the evaluation. The QAE inspection results of the facilities sampled, in comparison to the contractor's report of work completed should show no deficiencies in the following items. The contractor should have completed the work in a timely, effective, and workmanlike manner. The overall quality and appearance of the repair, including materials, should be comparable to that of the facility's original construction quality and appearance.

INSPECTION FORMS

1. QA Worksheet (Roofing SO/IJO Worksheet)

2. QA Checklist (Roofing SO/IJO Checklist)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHOD

1. Service Orders. Initially, a systematic random sampling should be used to inspect the contractor's performance. Upon approval of the COR, a random survey can be conducted to solicit resident opinion of contractor performance, instead of the systematic random inspection. The survey questionnaire should be provided to and collected from each customer selected for surveying. Results should be tabulated and used to suggest any additional random inspections deemed necessary by the QAE or the Contracting Officer.

2. Individual Job Orders. A 100 percent inspection method should be used to inspect the contractor's performance.

3. General Procedure--Service Orders, Random Inspection. The contractor's report of work completed should be used to schedule buildings for random sampling. The procedures outlined in Chapter 2 (normal surveillance, 4 percent AQL), should be used to select the units for inspection. Results should be well documented by using the Roofing SO/IJO Checklist and should be compared to the work request for discrepancies.

4. General Procedure--Service Orders, Random Survey. The contractor's report of work completed should be used to schedule buildings for random survey. The Service Order Questionnaire should be distributed to the customers using those buildings. All returned questionnaires should be collected and buildings where customer complaints indicate problems recorded on the Roofing SO/IJO Checklist. Buildings for which the QAE feels that the questionnaire results may be invalid should also be recorded.

5. General Procedure--Individual Job Orders, 100 Percent Inspection. The contractor's report of work completed should be used to schedule all buildings for inspection. Results should be documented on the Roofing SO/IJO Checklist and should be compared to the work request report for discrepancies.

DETAILED PROCEDURES

1. To inspect shingle roofing, the QAE should:

a. Visually check the repaired area to see that all damaged shingles have been removed and replaced with new ones.

b. Walk over the entire repair area. If the area is firm, it is assumed that the decking was repaired properly. If it feels soft, the work should be recorded as unsatisfactory.

c. If the repair is at an eave, visually check to see that there are felt and shingle starter courses under the first course of shingles. If the felt course is not observed, lift the shingles carefully so as not to damage them, and look under the shingles for the felt. If either starter course is missing, the work should be recorded as unsatisfactory.

d. Visually inspect all replacement shingles to ensure that they match the existing shingles in color, texture, and alignment.

e. If there is concern about the quality of nailing, lift the shingles for checking. Each shingle should have at least four nails that are not aligned with the cutouts. The shingles must be lifted with extreme caution, since it is easy to damage them in very warm or cold weather.

f. Inspect valleys for roll roofing as per parts a. and d. above. To prevent damage, the valley should never be stepped on. If the valley is constructed of sheet metal, no rust should be visible on it. All types of valleys should have at least 3 in. clear from the centerline to the shingles. Shingles should be cut true to the valley; those that overlap the valley material should be adhered to the material with bituminous cement (i.e., the corner of the shingles should not be able to be raised by lifting).

2. For built-up roofing inspection, the QAE should do the following:

a. Check that the base felts are in sound condition and not waterlogged, and that the insulation is sound and dry, with no leaks. If the roof's condition is questionable, the questionable area should be carefully walked over and should feel sound under foot.

b. Check to see if the repaired area matches the surrounding existing construction (i.e., gravel on a gravel roof and bare surfaces on a bare roof, etc.).

c. Ensure that there are no splits, blisters, buckles, or fishmouths in the roof membrane.

3. To inspect roof flashing, the QAE should:

a. Check that all repaired flashing is finished to match existing flashing. The flashing should be appropriately formed to the area.

b. Make sure that bituminous cement has been applied over the nail heads and the flashing edges.

EXAMPLE QA WORKSHEET

SERVICE ORDERS AND INDIVIDUAL JOB ORDERS (ROOFING)

QUALITY ASSURANCE WORKSHEET (SOs AND IJOs)

CONTRACT REQUIREMENT: Perform SO/IJO as contracted.

PERFORMANCE INDICATORS:

1. The contracted work has been accomplished in a timely, effective, and workmanlike manner.

2. The overall quality and appearance of the repair, including materials, are comparable to that of the original facility's construction quality and appearance.

3. When compared to the contractor's report of work completed, the QAE inspection results show no deficiencies.

QUALITY ASSURANCE EVALUATION METHOD:

1. Service Orders. The QAE should use a systematic random sampling method to determine the number of buildings to be inspected for SOs and to determine questionnaire recipients. Using the population size 45, and referring to Table A1 of Appendix A gives a number of samples 15, and a number of allowable rejects 3. Any collection of randomized numbers can be used to determine the first samples for inspection. Dividing the population size by the sample size gives the interval 3.

2. Individual Job Orders. The QAE should use a 100 percent inspection method for all buildings.

EXAMPLE QA CHECKLIST

SERVICE ORDERS AND INDIVIDUAL JOB ORDERS (ROOFING)

QUALITY ASSURANCE CHECKLIST (SOs AND IJOs)

CONTRACT REQUIREMENT: Perform SO/IJO as contracted.

PERFORMANCE INDICATORS:

1. The contracted work has been accomplished in a timely, effective, and workmanlike manner.

2. The overall quality and appearance of the repair, including materials, are comparable to that of the facility's original construction quality and appearance.

3. When compared to the contractor's report of work completed, the QAE inspection results show no deficiencies.

Day/Date	Building	SO/IJO #	PI 1	PI 2	PI 3	Remarks
8/1/84	#69	25	S	S	S	
8/1/84	231	36	S	S	S	
8/1/84	84	27	S	S	S	
8/1/84	103	29	S	S	S	
8/1/84	278	39	4	S	4	Work was late
8/1/84	331	43	S	S	S	
8/2/84	154	28	S	S	S	
8/2/84	131	33	S	S	S	
8/2/84	222	37	S	4	4	Poor quality
8/2/84	189	26	S	S	S	
8/2/84	326	40	S	S	S	
8/3/84	354	41	S	S	S	
8/3/84	144	38	S	S	S	
8/3/84	36	35	S	S	S	
8/3/84	96	42	S	S	S	

J. A. Jenkins
Quality Assurance Evaluator

Aug. 4, 1984
Date

B.2. GUTTERS AND DOWNSPOUTS

NOTE: For Preventive Maintenance Inspection and Preventive Maintenance of Gutters and Downspouts, see section B.1, Roofing.

PERFORMANCE INDICATOR

Gutters, downspouts, and roof drains must be free of debris.

INSPECTION FORMS

1. QA Worksheet (Gutters and Downspouts)

2. QA Checklist (Gutters and Downspouts)

The sample forms included in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

Systematic random sampling should be used semi-annually to inspect the contractor's performance. This inspection should occur during the month after the contractor's scheduled cleaning.

GENERAL PROCEDURES

The list of all buildings contracted to receive gutter and downspout cleaning and the systematic random sampling procedures outlined in Chapter 2 (normal surveillance, 10 percent AQL) should be used to select the units for inspection. The results should be well documented using the Gutters and Downspouts Checklist.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (GUTTERS AND DOWNSPOUTS)

CONTRACT REQUIREMENT: Clean gutters and downspouts.

PERFORMANCE INDICATOR: Gutters, downspouts, and roof drains are free of debris.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use a systematic random sampling method to determine the number of buildings to be inspected; after the contractor submits his/her invoice for services performed, the QAE should verify that the drainage system is clean. Using the population size 45, and referring to Table A1 of Appendix A, gives a number of samples 15, and a number of allowable rejects 3. Any collection of randomized numbers can be used to determine the first samples to be inspected. Dividing the population size by the sample size determines the interval 3.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (GUTTERS AND DOWNSPOUTS)

REQUIREMENT: Clean gutters and downspouts.

PERFORMANCE INDICATOR: Gutters, downspouts, and roof drains are free of debris.

Day/Date	Building	PI 1	Remarks
7/1/84	#327	S	Drain plugged
7/1/84	330	S	
7/1/84	333	S	
7/1/84	336	S	
7/1/84	339	U	
7/2/84	342	S	
7/2/84	345	S	
7/2/84	348	S	
7/2/84	351	S	
7/2/84	354	S	
7/3/84	357	S	
7/3/84	360	S	
7/3/84	363	S	
7/3/84	366	S	
7/3/84	369	U	Drain plugged

F. G. Gerber

Quality Assurance Evaluator

July 3, 1984

Date

B.3. CHANGE OF OCCUPANCY

PERFORMANCE INDICATORS

1. The contractor must complete all work according to the allowable time limits.

2. The contractor must maintain all items listed in the joint inspection.

3. The contractor should have repaired all items as identified in the joint inspection.

4. The contractor should have painted all areas as identified in the joint inspection.

5. The contractor must have provided insect control for all areas.

The QAE inspection results of the facilities sampled in reference to the Change of Occupancy report should show no deficiencies in:

1. Time limits: QAE inspection.

2. Maintenance: Preventive Maintenance Inspection Requirements (Change of Occupancy).

3. Repairs: QA Plan that applies to the specific repair work.

4. Painting: QA Plan (Painting).

5. Insect Control: Fewer than five roaches per sticky trap 24 hours after treatment.

INSPECTION FORMS

1. QA Worksheet (Change of Occupancy)

2. QA Checklist (Change of Occupancy)

3. Preventive Maintenance Inspection Requirements (Change of Occupancy)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHOD

A 100 percent inspection method should be used to inspect contractor performance.

GENERAL PROCEDURES

The QAE should schedule an inspection of all the following items, as they are required, that occur at the same building, during the same visit to the facility. It is very important that the inspection occur immediately after receiving the completed work forms. This will ensure that the contractor's performance is appraised fairly and that the building is available for occupancy as soon as possible. All inspection results from the following items should be documented by using the Change of Occupancy Checklist.

NOTE: A proven method of effectively inspecting the entire facility is to begin at the left wall and follow that wall through doors throughout the facility.

DETAILED PROCEDURES

Detailed inspection procedures should be used for each required work item and supplemented by the General Procedures listed above.

1. Time Limits. Using the completed work orders, the QAE should, by 100 percent inspection, inspect all work orders to determine if they were completed in the 72 hours allowed after work start.

2. Maintenance. Using the completed work orders for maintenance, the QAE should schedule a 100 percent field inspection for all maintenance work. The Preventive Maintenance Inspection Requirements (Change of Occupancy) should be used to perform a Preventive Maintenance Inspection of the entire building. If any requirements have not been performed satisfactorily, the work is considered deficient. Any other deficiencies should be brought to the attention of the Contracting Officer so that he/she may prepare a work order for that deficiency.

3. Repairs. Using the completed work orders for repairs, the QAE should schedule a 100 percent field inspection of all work completed. The QA Plan for the type of repair work completed should be used to determine contractor performance.

4. Painting. Using the completed work orders for painting, the QAE should schedule a 100 percent field inspection of all work completed. The Detailed Procedures (Painting) should be used to determine contractor performance.

5. Insect Control. Using the completed work orders for insect control, a 100 percent field inspection should be scheduled. The inspection should be done by placing a sticky trap where insects are likely to gather such as the kitchen or food storage area. Collect the sticky traps 24 hours later. More than five roaches or related pests means unsatisfactory performance of the contract requirements.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (CHANGE OF OCCUPANCY)

CONTRACT REQUIREMENT: Perform change of occupancy requirements.

PERFORMANCE INDICATORS:

1. The contractor has completed all work in 72 hours from start of work.

2. The contractor has maintained all items as identified in the joint inspection.

3. The contractor has repaired all items as identified in the joint inspection.

4. The contractor has painted all items as identified in the joint inspection.

5. The contractor has performed insect control as identified in the joint inspection.

6. The QAE inspections show no deficiencies.

QUALITY ASSURANCE EVALUATION METHOD:

The QAE should use a 100 percent inspection method to inspect all buildings listed for change of occupancy services.

EXAMPLE QA CHECKLIST Page 1 of 2

QUALITY ASSURANCE CHECKLIST (CHANGE OF OCCUPANCY)

REQUIREMENT: Perform change of occupancy requirements.

PERFORMANCE INDICATORS:

1. Work has been performed in 72 hours from work start.

2. Maintenance performed has been in accordance with Technical Exhibit #20.

3. Repairs performed have been in accordance with Technical Exhibit #21.

Day/Date	Building	PI 1	PI 2	PI 3	Remarks
8/15/84	#131	S	S	S	
8/15/84	274	S	S	S	
8/15/84	156	S	S	S	
8/15/84	73	S	S	S	
8/15/84	127	S	S	S	
8/15/84	256	S	S	S	
8/15/84	323	S	S	S	

EXAMPLE QA CHECKLIST Page 2 of 2

QUALITY ASSURANCE CHECKLIST (CHANGE OF OCCUPANCY)

REQUIREMENT: Perform change of occupancy requirements.

PERFORMANCE INDICATORS:

4. Painting has been done in accordance with Technical Exhibit #11.

5. Insect control has been done in accordance with Technical Exhibit #23

6. QAE inspections show no deficiencies.

Day/Date	Building	PI 4	PI 5	PI 6	Remarks
8/15/84	#131	S	S	S	
8/15/84	274	S	S	S	
8/15/84	156	S	S	S	
8/15/84	73	S	S	S	
8/15/84	127	S	S	S	
8/15/84	256	S	S	S	
8/15/84	323	S	S	S	
					OVERALL EXCELLENT PERFORMANCE

J. A. Gruber
Quality Assurance Evaluator

AUG 15, 1984
Date

FACILITY MAINTENANCE AND REPAIR QUESTIONNAIRE

This survey should be completed using information collected from the facility user who has had the most contact with maintenance personnel. Please circle the number for the answer selected or write in an appropriate answer where there are blanks.

1. How many maintenance service calls have you had during the past (three) months? (Circle one) (The number of months may vary based on local experience.)

None (skip to q. 22)....1
1 to 3 .....(2)
4 to 6 3
7 or more 4

2. How satisfied are you with the service provided by the maintenance personnel?

Very satisfied 1
Satisfied .....(2)
Dissatisfied 3
Very dissatisfied 4

3. Do you have difficulty reaching the work order clerk by telephone to request repair service?

No .....(1)
Yes, I usually must dial 2 to 5 times 2
Yes, I usually must dial 6 times or more 3

4. How many times must you usually call to have a repair crew come to your quarters for normal repair service? (Emergencies are covered in q. 6.)

One 1
Two .....(2)
Three 3
Four 4
Five 5

5. How long does it usually take for a repairman to show up after you telephone for normal repair service?

Less than 24 hours ....(1)
24-48 hours 2
49-72 hours 3
72-96 hours 4
97 or more hours 5

6. How many times must you usually call to have a repair crew come to your quarters for emergencies?

One .....(1)
Two 2
Three 3
Four 4
Five or more 5
Does not apply, I've never telephoned for an emergency (skip to q. 8) 6

7. How long does it usually take for a repairman to show up after you telephone for emergency repair service?

Less than 2 hours 1
2-4 hours .....(2)
5-8 hours 3
9-24 hours 4
More than 24 hours 5

8. When calling for repair service, do you normally find the person you talk to knowledgeable?

Yes .....(1)
No 2

9. When calling for repair service, do you normally find the person you talk to courteous?

Yes .....(1)
No 2

10. When calling for repair service, do you normally find the person you talk to helpful?

Yes .....(1)
No 2

11. Do you have significant problems arranging a time for the repairman to gain access to your quarters?

No 1
Yes, nobody is usually home during the maintenance personnel service hours .....(2)
Yes, but only when maintenance personnel tried to schedule routine maintenance I did not request 3

12. Do you feel maintenance personnel respond quickly enough to your requests?

Always 1
Usually .....(2)
Usually not 3
Never 4

13. Did you see any identification from the repairman? (Circle all that apply)

Yes, ID card .....(1)
Yes, uniform .....(2)
Yes, patch on shirt .....(3)
Yes, insignia on truck.....(4)
No 5

14. Do you feel that repairmen should wear something distinctive to help you identify them (e.g., patch, insignia, etc.)? (Circle One)

Yes, ID card .....(1)
Yes, patch .....(2)
Yes, uniform .....(3)
Yes, other 4
No, not necessary 5

15. The last time you needed repairs, how many repairmen arrived to do the work?

One .....(1)
Two 2
Three 3
Four 4
Five or more 5

16. Do the repairmen know what is to be repaired when they arrive?

Always 1
Usually .....(2)
Usually not 3
Never 4

17. Is the repairman usually able to complete the work in one visit?

Yes (skip to q. 20) .....(1)
No, lacks tools or materials 2
No, usually leaves for lunch, break, or quitting time 3
No, leaves for unknown reasons 4

18. Are you kept informed about the status of the repair job if it cannot be completed during the first visit?

Always 1
Usually 2
Seldom .....(3)
Never 4

19. If the work is not completed during the first visit, how long does it normally take before the repair work is completed?

1 day 1
2 days 2
3 days .....(3)
4-5 days 4
6 or more days 5

20. Are the repairmen courteous?

Always 1
Usually 2
Seldom .....(3)
Never 4

21. Do the repairmen leave a clean work site?

Always 1
Usually .....(2)
Usually not 3
Never 4

22. How often do you make your own repairs using the "self help" program?

Never 1
Once a month 2
Once every 2 months 3
Once every 3 months 4
Once every 6 months ...(5)
Once each year 6

23. How many times have maintenance personnel inspected or visited your quarters during the months since last October to perform preventive maintenance, i.e., maintenance you did not specifically request (oil motors, check furnace, check water heater, etc.)?

None 1
Once .....(2)
2 times 3
3 times 4
4 times 5
5 or more 6

24. Who provided the information for this questionnaire?

Sponsor .....(1)
Dependent 2
Both 3

25. Please make any comments on the maintenance/repair program in the space below.

Generally very good.

Thank you very much for your cooperation.

J. S. Gerber
Quality Assurance Evaluator

AUG 17, 1984
Date Questionnaire Completed

SERVICE ORDER QUESTIONNAIRE

This survey should be completed using information collected from the household member who has had the most contact with maintenance personnel. Please circle the number of the answer selected or write in an appropriate answer where there are blanks.

1. Response (in days) to repair requested work:

a) Excellent response (normal conditions - 7 days)
(emergency conditions - 1 day)

(b) Adequate response (within 2 weeks)

c) Too long

Approximately how long? _____ number of days.

2. Quality of work: (Are you satisfied that quality work was performed?)

Yes ✓ No _____

Defect was not fixed _____. Explain _____

_____

3. Cleanup of area after repair: (Was area left as clean as it was before workmen arrived?)

Yes _____ No ✓

Remarks They don't sweep up their messes.

_____

4. Efforts of workmen: (Are you satisfied that the work was performed in a professional, effective manner?)

Comments: Yes

_____

5. Attitude of workmen: (Were they helpful, friendly, courteous, cheerful?)

Comments: Friendly, but not courteous

_____

6. Do you think this type of repair could be accomplished as self help if material and instructions were supplied?

Yes _____ No _____ Maybe ✓

7. Remarks: _____

_____

Thank you for your time and effort.

J S Gruber
Quality Assurance Evaluator

AUG 21, 1984
Date Questionnaire Completed

GROUNDS

A. GRASS CUTTING

B. GRASS TRIMMING AND EDGING

C. TURF REPAIR

D. STORM DAMAGE CLEAN-UP

E. LEAF COLLECTION AND REMOVAL

F. DEBRIS DISPOSAL

G. TREE AND SHRUB MAINTENANCE

H. TREE AND STUMP REMOVAL

I. FERTILIZATION

J. POLICING GROUNDS

K. FENCING MAINTENANCE AND REPAIR

GROUNDS

1. SPECIAL GROUNDS

NOTE: "Special grounds" are those indicated by the Contracting Officer or his/her representative as special and therefore requiring a higher surveillance level.

INSPECTION FORMS

1. QA Worksheet (Special and Improved Grounds)

2. QA Checklist (Special and Improved Grounds)

QUALITY ASSURANCE EVALUATION METHOD

Performance indicators that apply to special grounds should be evaluated weekly using 100 percent inspection and the criteria listed under the Detailed Procedures for each task unit.

GENERAL PROCEDURES

The record of grounds designated as "special" should be used to schedule all such areas for inspection. The Special and Improved Grounds Worksheet should be used as a guide to determine the Performance Indicators and Detailed Procedures used in the evaluation. Each task unit should be inspected monthly or according to the frequency noted under its Detailed Procedures. Any deficiencies between the task being inspected and the Performance Indicators for that task should be well documented, using the Special and Improved Grounds Checklist.

NOTE: Nothing should be damaged by grounds maintenance operations (e.g., a pruned limb falling on a building's roof and damaging it).

2. IMPROVED GROUNDS

INSPECTION FORMS

1. QA Worksheet (Special and Improved Grounds)

2. QA Checklist (Special and Improved Grounds)

QUALITY ASSURANCE EVALUATION METHODS

Performance Indicators that apply to improved grounds should be evaluated by systematic random sampling and the criteria listed under the Detailed Procedures for each task unit. Using the same criteria, an unscheduled field inspection should also be used to evaluate specific areas for which performance has been poor in the past. This unscheduled field inspection should be coordinated with the COR.

GENERAL PROCEDURES--RANDOM INSPECTION

The listing of grounds designated as "improved," and the systematic random sampling procedures outlined in Chapter 2 (Normal Surveillance and a 4 percent AQL) should be used to select the areas for inspection. The Special and Improved Grounds Worksheet should be used as a guide to determine the Performance Indicators and Detailed Procedures used in the evaluation. Each task unit should be inspected monthly or according to the frequency noted under its Detailed Procedures. Any deficiencies between the task being inspected and its Detailed Procedures indicators should be well documented, using the Special and Improved Grounds Checklist.

GENERAL PROCEDURES--UNSCHEDULED INSPECTION

Past inspection records should be used to schedule areas with a history of poor performance for inspection. The Special and Improved Grounds Worksheet should be used as a guide to determine the Performance Indicators and Detailed Procedures used in the evaluation. Each task unit should be inspected monthly or according to its frequency noted under Detailed Procedures. Any deficiencies between the task being inspected and the Detailed Procedures indicators for that task should be well documented, using the Special and Improved Grounds Checklist.

3. SEMI-IMPROVED GROUNDS AND UNIMPROVED GROUNDS

INSPECTION FORMS

1. QA Worksheet (Semi-Improved and Unimproved Grounds)

2. QA Checklist (Semi-Improved and Unimproved Grounds)

QUALITY ASSURANCE EVALUATION METHOD

Performance indicators that apply to both semi-improved and unimproved grounds should be evaluated with an unscheduled method and the criteria listed under their corresponding Detailed Procedures.

GENERAL PROCEDURES

The record of grounds designated as "semi-improved" and/or "unimproved" should be used to schedule areas for inspection. The inspection should be done monthly or according to the frequency noted under the task's Detailed Procedures. The Semi-Improved and Unimproved Grounds Worksheet should be used as a guide to determine the Performance Indicators and Detailed Procedures used in the evaluation. Any deficiencies between the task being inspected and the Detailed Procedures should be well documented, using the Semi-Improved and Unimproved Grounds Checklist.

A. GRASS CUTTING

PERFORMANCE INDICATOR

Grass must be cut according to the requirements listed in the Detailed Procedures.

DETAILED PROCEDURES

a. Special Grounds: (inspect weekly).

(1) Grass must not be more than 3 in. high.

(2) Grass should not be cut less than 1-1/2 in. high.

(3) Grounds should show no accumulation of clippings left more than 24 hours.

(4) Grounds should show no scalping, uneven mowing, or rutting.

(5) Grounds should have a clean, uniform cut with cleanly cut blades of grass.

b. Improved Grounds: (4 percent AQL, inspect weekly). Same as special grounds.

c. Semi-Improved Grounds: (inspect weekly).

(1) Grass should not be more than 5 in. high.

(2) Grass should not be cut less than 2 in. high.

d. Unimproved Grounds: (inspect monthly).

(1) Grass should not be more than 4 in. high.

(2) In drainage ditches (inspected monthly), grass should not be more than 24 in. high.

B. GRASS TRIMMING AND EDGING

PERFORMANCE INDICATOR

Grass must be trimmed and/or edged according to requirements listed in the Detailed Procedures.

DETAILED PROCEDURES

a. Special Grounds: (inspect weekly).

(1) Grass must be edged (removed) from along sidewalks, driveways, and curbs.

(2) Grass should be trimmed around trees, shrubs, fences, buildings, structures, and parking lot bumpers so that grass height does not exceed 1.5 times the maximum height of adjacent grass.

(3) The task should be done in a workmanlike manner.

b. Improved Grounds: (4 percent AQL, inspect weekly). Same as special grounds.

c. Semi-Improved Grounds: (inspect monthly). Same as special grounds.

d. Unimproved Grounds: Not applicable.

C. TURF REPAIR

PERFORMANCE INDICATOR

The turf repair must be performed satisfactorily according to requirements listed in the Detailed Procedures.

DETAILED PROCEDURES

a. Special Grounds: (inspect weekly).

(1) The damaged area should be completely repaired.

(2) The area should be filled and leveled as needed.

(3) The damaged area should be seeded or sodded.

(4) The task must be done in a workmanlike manner.

b. Improved Grounds: (4 percent AQL, inspect weekly). Same as special grounds.

c. Semi-Improved Grounds: (inspect monthly). Same as special grounds.

d. Unimproved Grounds: Not applicable.

D. STORM DAMAGE CLEAN-UP

PERFORMANCE INDICATOR

Storm damage must be cleaned up satisfactorily according to requirements of the Detailed Procedures.

DETAILED PROCEDURES

a. Special Grounds: (inspect weekly). Fallen trees, limbs, debris, and silt must be removed within 8 working hours (improved and semi-improved grounds only).

b. Improved Grounds: (4 percent AQL, inspect weekly). Same as special grounds.

c. Semi-Improved Grounds: (inspect monthly). Same as special grounds.

d. Unimproved Grounds: Not applicable.

E. LEAF COLLECTION AND REMOVAL

PERFORMANCE INDICATOR

Leaf collection and removal should be done satisfactorily according to requirements of the Detailed Procedures.

DETAILED PROCEDURES

a. Special Grounds: (inspect weekly). Leaves should be removed from areas identified as special grounds.

b. Improved Grounds: (4 percent AQL, inspect weekly).

(1) Leaf piles should be collected and removed from the curbs, gutters, and drainage ditches in the family housing areas.

(2) Leaves should be removed from areas identified as improved grounds.

c. Semi-Improved Grounds: Not applicable.

d. Unimproved Grounds: Not applicable.

F. DEBRIS DISPOSAL

PERFORMANCE INDICATOR

Debris should be disposed of satisfactorily according to requirements of the Detailed Procedures.

DETAILED PROCEDURES

a. Special Grounds: Not applicable.

b. Improved Grounds: (4 percent AQL, inspect weekly).

(1) The compost pile should contain only organic debris, such as leaves, clippings, and pine straw.

(2) The mulch pile should contain only larger organic debris, such as trees, limbs, and branches that have been chipped.

c. Semi-Improved Grounds: Not applicable.

d. Unimproved Grounds: Not applicable.

G. TREE AND SHRUB MAINTENANCE

PERFORMANCE INDICATOR

Trees and shrubs should be maintained satisfactorily according to requirements of the Detailed Procedures.

DETAILED PROCEDURES

a. Special Grounds: (inspect weekly).

(1) Hedges should be trimmed and maintained in their natural shapes.

(2) Mulch should be at least 3 in. deep under shrubs and new trees.

(3) Trees should be pruned in a workmanlike manner.

(4) There should be no dead trees or shrubs.

NOTE: See Detailed Procedures for Pruning.

b. Improved Grounds: (4 percent AQL, inspect weekly). Same as special grounds.

c. Semi-Improved Grounds: (inspect monthly). Same as special grounds.

d. Unimproved Grounds: Not applicable.

DETAILED PROCEDURES FOR PRUNING

1. Pruning cuts should be close to the trunk or limb from which the branch is being removed. No stubs should be left.

2. Dead or damaged limbs must be removed.

3. There should be no branches with narrow-angled crotches.

4. Bark must not be stripped from below the branch that has been removed.

5. Wounds and pruning cuts larger than 2 in. must be covered with an antiseptic asphalt wound dressing.

6. Pruning should not be done during the fall or winter unless absolutely necessary.

7. Only dead, diseased, and damaged branches should be pruned from evergreen trees.

8. No trees should be topped or headed back.

9. Repair of extensively damaged trees must be done in a workmanlike manner. (Note: It may be advantageous to have a professional arborist inspect this work.)

H. TREE AND STUMP REMOVAL

PERFORMANCE INDICATOR

Trees and stumps must be removed satisfactorily according to requirements of the Detailed Procedures.

DETAILED PROCEDURES

a. Special Grounds: (inspect weekly).

(1) The tree must be removed.

(2) The area must be clean and free of debris.

(3) The stump must be removed.

(4) The hole must be filled, leveled, and seeded or sodded.

b. Improved Grounds: (4 percent AQL, inspect weekly). Same as special grounds.

c. Semi-Improved Grounds: (inspect monthly). Same as special grounds.

d. Unimproved Grounds: Same as special grounds.

I. FERTILIZATION

PERFORMANCE INDICATOR

The QAE soil sample analysis should verify the adequacy of the contractor's fertilization program.

DETAILED PROCEDURES

a. Special Grounds: (inspect weekly).

Five samples of earth should be obtained with a garden trowel: one from each of the area's four corners and one from the center. All the samples should be placed in one bag and the bag shaken to mix the samples. The date and location of the sampling should be noted on the bag and the sample submitted to the testing laboratory. Results should show that the soil contains adequate nutrients. If not, the work should be considered deficient.

b. Improved Grounds: (4 percent AQL, inspect weekly). Same as special grounds.

c. Semi-Improved Grounds: Not applicable.

d. Unimproved Grounds: Not applicable.

J. POLICING GROUNDS

PERFORMANCE INDICATOR

Grounds must be policed satisfactorily according to requirements of the Detailed Procedures.

DETAILED PROCEDURES

a. Special Grounds: (inspect weekly). Special grounds should be free of trash and litter (i.e., paper, plastic, bottles, cans, cardboard, rags, and other foreign material).

b. Improved Grounds: (4 percent AQL, inspect weekly). Same as special grounds.

c. Semi-Improved Grounds: Not applicable.

d. Unimproved Grounds: Not applicable.

K. FENCING MAINTENANCE AND REPAIR

PERFORMANCE INDICATOR

Fence maintenance and repair must be done satisfactorily according to requirements of the Detailed Procedures.

DETAILED PROCEDURES

a. Special Grounds: (inspect weekly).

(1) The fence should be maintained in good repair; i.e., posts should be plumb and solid, wire should be tight with no sags or holes, and all damage should be repaired.

(2) There must be no trash or debris within 10 ft of either side of the fence.

b. Improved Grounds: (4 percent AQL, inspect weekly). Same as special grounds.

c. Semi-Improved Grounds: Same as special grounds.

d. Unimproved Grounds: Same as special grounds.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (SPECIAL AND IMPROVED GROUNDS)

CONTRACT REQUIREMENT: The contractor must perform the necessary services to maintain those grounds designated as special or improved grounds.

PERFORMANCE INDICATORS:

In reference to the applicable Detailed Procedures:

1. Grass has been cut.
2. Grass has been trimmed and/or edged.
3. Turf has been repaired.
4. Storm damage has been cleaned up.
5. Leaves have been collected and removed.
6. Debris has been disposed of.
7. Tree and shrub maintenance has been done.
8. Trees and stumps have been removed.
9. The QAE soil sample analysis confirms the adequacy of the contractor's fertilization process.
10. Grounds have been policed.
11. Fencing maintenance and repair has been done.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use 100 percent inspection for special grounds. He/she should use systematic random sampling to determine the number of areas to be sampled. Using the population size 100, and referring to Table A1 of Appendix A, gives a number of samples 17, and allowable rejects 3. The first samples to be inspected should be determined using any collection of randomized numbers. Dividing the population size by the sample size determines the interval 6. The QAE should also use an unscheduled field inspection to evaluate past poor performance areas and those areas specified by the Contracting Officer or his/her representative.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (SPECIAL AND IMPROVED GROUNDS)

Day/ Date	Area	GRASS CUTTING	GRASS TRIMMING AND EDGING	TURF REPAIR	STORM DAMAGE	Remarks
8/4/84	#12	S	S	S	S	
8/4/84	18	S	S	S	S	
8/4/84	24	S	S	S	S	
8/4/84	30	S	S	S	S	
8/4/84	36	S	S	S	S	
8/4/84	42	S	S	S	S	
8/4/84	48	S	S	S	S	
8/4/84	54	S	S	S	S	
8/6/84	60	S	S	S	U	Fallen limbs not removed
8/6/84	66	S	S	S	S	
8/6/84	72	S	S	S	S	
8/6/84	78	S	S	S	S	
8/6/84	84	S	S	S	S	
8/6/84	90	S	S	S	S	
8/6/84	96	S	S	S	S	
8/6/84	102	S	S	S	S	
8/6/84	108	S	S	S	S	
8/6/84	114	S	S	S	S	

P. J. Gerlach
Quality Assurance Evaluator

AUG 8, 1984
Date

Day/Date	Area	LEAF COLLECTION AND REMOVAL	DEBRIS DISPOSAL	TREE AND SHRUB MAINTENANCE	TREE AND STUMP REMOVAL	Remarks
8/4/84	#12	S	S	S	S	
8/4/84	18	S	S	S	S	
8/4/84	24	S	S	S	S	
8/4/84	30	S	S	S	S	
8/4/84	36	S	S	S	S	
8/4/84	42	S	S	S	S	
8/4/84	48	S	S	S	S	
8/4/84	54	S	S	S	S	
8/4/84	60	S	S	S	U	STUMP NOT REMOVED
8/6/84	66	S	S	S	S	
8/6/84	72	S	S	S	S	
8/6/84	78	S	S	S	S	
8/6/84	84	S	S	S	S	
8/6/84	90	U	S	S	S	LEAVES NOT COLLECTED
8/6/84	96	S	S	S	S	
8/6/84	102	S	S	S	S	
8/6/84	100	S	S	S	S	
8/6/84	114	S	S	S	S	

P. F. Gerlach
Quality Assurance Evaluator

AUG 8, 1984
Date

Day/Date	Area	FERTILIZATION	POLICING GROUNDS	FENCING MAINT. AND REPAIR	Remarks
8/4/84	#12	S	S	S	
8/4/84	18	S	S	S	
8/4/84	24	S	S	S	
8/4/84	30	S	S	S	
8/4/84	36	S	S	S	
8/4/84	42	S	S	S	
8/4/84	48	S	S	S	
8/4/84	54	S	S	S	
8/6/84	60	S	S	S	
8/6/84	66	S	S	S	
8/6/84	72	S	U	S	TRASH NOT COLLECTED
8/6/84	78	S	S	S	
8/6/84	84	S	S	S	
8/6/84	90	S	S	S	
8/6/84	96	S	S	S	
8/6/84	102	S	S	S	
8/6/84	108	S	S	S	
8/6/84	114	S	S	S	

P. F. Gerlach
Quality Assurance Evaluator

AUG 8, 1984
Date

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (SEMI-IMPROVED AND UNIMPROVED GROUNDS)

CONTRACT REQUIREMENT: The contractor should perform the services needed to maintain semi-improved and unimproved grounds.

PERFORMANCE INDICATORS:

In reference to the applicable Detailed Procedures:

1. Grass has been cut.
2. Grass has been trimmed and/or edged.
3. Turf has been repaired.
4. Storm damage has been cleaned up.
5. Tree and shrub maintenance has been done.
6. Trees and stumps have been removed.
7. Fencing maintenance and repair have been done.

QUALITY ASSURANCE EVALUATION METHOD:

The QAE should use an unscheduled field inspection to evaluate past poor performance areas and areas specified by the Contracting Officer or his/her representative.

EXAMPLE QA CHECKLIST

Page 1 of 2

QUALITY ASSURANCE CHECKLIST (SEMI-IMPROVED AND UNIMPROVED GROUNDS)

Day/ Date	Area	GRASS CUTTING	GRASS TRIMMING AND EDGING*	TURF REPAIR*	STORM DAMAGE*	Remarks
8/7/84	#154	S	S	S	S	
8/7/84	#173	S	S	S	S	
8/7/84	137	S	S	S	S	
8/7/84	201	S	N/A	N/A	N/A	
8/7/84	183	S	N/A	N/A	N/A	
8/7/84	168	S	S	S	S	

*Not applicable to unimproved

Quality Assurance Evaluator

Date

Day/Date	Area	TREE AND SHRUB MAINTENANCE*	TREE AND STUMP REMOVAL	FENCING MAINT AND REPAIR	Remarks
8/7/84	#154	S	S	S	
8/7/84	173	S	S	S	
8/7/84	137	S	S	U	LARGE HOLES IN FENCE
8/7/84	201	N/A	S	S	
8/7/84	183	N/A	S	S	
8/7/84	168	S	S	S	

* Not applicable to unimproved

G R J. Gerlach
Quality Assurance Evaluator

AUG 7, 1984
Date

SURFACED AREAS

A. PAVED SURFACES

A.1. PREVENTIVE MAINTENANCE

A.2. SWEEPING

A.3. REPAIRS

B. STORM DRAINAGE SYSTEMS

C. TRAFFIC SERVICES

D. SAND/SNOW REMOVAL AND ICE CONTROL

E. RECREATIONAL AREAS

A. PAVED SURFACES

A. PAVED SURFACES

A.1. PREVENTIVE MAINTENANCE (PM)

PERFORMANCE INDICATORS

1. Potholes, upheavals, and alligator-cracked areas must be repaired.

2. Cracks should be sealed.

3. Road shoulders must be maintained properly.

4. Repairs should be done in a workmanlike manner.

INSPECTION FORMS

1. QA Worksheet (Paved Surfaces PM)

2. QA Checklist (Paved Surfaces PM)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

1. Random Inspection. Initially, a systematic random sampling technique should be used to inspect the contractor's performance. However, if the contractor's performance record has been excellent for the previous 3 months, the QAE may coordinate with the COR to substitute an unscheduled field inspection. Using the contractor's report of areas having received maintenance and the systematic random sampling procedures outlined in Chapter 2 (normal surveillance, 10 percent AQL), the QAE should select the areas to be inspected. The inspection should be done monthly. Results should be well documented, using the Paved Surfaces PM Checklist, and deficiencies should be noted.

2. Unscheduled Inspection. An unscheduled inspection method should be used for areas with a past history of unsatisfactory performance. Using past inspection records, the QAE should identify with the COR the past unsatisfactory performance areas and other areas to be inspected. Results should be well documented, using the Paved Surfaces PM Checklist, and deficiencies should be noted.

DETAILED PROCEDURES

The QAE should check to see that:

1. Any observed potholes are less than 6 in. in diameter.

2. Any observed upheavals are less than 1 in. above the plane of surrounding pavement and show no evidence of cracking (pieces of pavement loose, missing, or crushed).

3. Any observed alligator-cracked areas show no evidence of pieces of pavement that are loose, missing, or crushed.

4. No cracks larger than 1-1/2 in. have been repaired with prepared joint sealer.

5. Road shoulders protect the road edge (i.e., the edge will not deteriorate rapidly because it is abutted with a substantial fill).

6. Road shoulders are protected from erosion (i.e., steps have been taken to ensure that erosion will not become a problem).

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (PAVED SURFACES: PM)

CONTRACT REQUIREMENT: The contractor should maintain and repair paved surfaces.

PERFORMANCE INDICATORS:

1. All potholes, upheavals, and alligator-cracked areas are repaired.

2. All cracks are sealed.

3. Road shoulders are properly maintained.

4. Repairs are performed in a workmanlike manner.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine areas for inspection. The QAE should also use an unscheduled field inspection to evaluate both past unsatisfactory performance areas and areas specified by the COR.

Using the population size 50, and referring to Table A1 of Appendix A gives a number of samples 15, and a number of allowable rejects 3. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size gives the increment 3.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (PAVED SURFACES: PM)

REQUIREMENT: The contractor must maintain and repair paved surfaces.

PERFORMANCE INDICATORS:

1. All potholes, upheavals, and alligator-cracked areas are repaired.

2. All cracks are sealed.

3. Road shoulders are properly maintained.

4. Repairs are done in a workmanlike manner.

Day/Date	Area	PI 1	PI 2	PI 3	PI 4	Remarks
7/6/84	#63	S	S	S	S	
7/6/84	66	S	S	S	S	
7/6/84	69	S	S	S	S	
7/6/84	72	S	S	S	S	
7/6/84	75	S	S	S	S	
7/6/84	78	S	S	S	S	
7/6/84	81	S	S	S	S	
7/7/84	84	S	S	S	S	
7/7/84	87	S	S	S	S	
7/7/84	90	S	S	S	S	
7/7/84	93	S	S	S	S	
7/7/84	96	S	S	S	S	
7/7/84	99	S	S	S	S	
7/7/84	102	U	S	S	S	2 POTHOLES
7/7/84	105	U	S	S	S	1 POTHOLE

Jerry Jones
Quality Assurance Evaluator

JULY 8, 1984
Date

A.2. SWEEPING

PERFORMANCE INDICATOR

Paved surfaces, sidewalks, and parking areas should be swept.

INSPECTION FORMS

1. QA Worksheet (Paved Surfaces: Sweeping)

2. QA Checklist (Paved Surfaces: Sweeping)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

1. Random Inspection. Initially, a systematic random sampling technique should be used to inspect the contractor's performance. However, if the contractor's performance record has been excellent for the previous 3 months, the QAE may coordinate with the COR to substitute an unscheduled field inspection. Using the contractor's report of areas that have received maintenance, and the systematic random sampling procedures outlined in Chapter 2 (normal surveillance, 10 percent AQL), the QAE should select the areas for inspection. The inspection should be performed monthly. Results should be well documented, using the Paved Surfaces: Sweeping Checklist, and deficiencies should be noted.

2. Unscheduled Inspection. An unscheduled inspection method should be used for areas with a past history of unsatisfactory performance. Using past inspection records, the QAE should identify with the COR areas of past unsatisfactory performance and other areas to be inspected. Results should be well documented, using the Paved Surfaces: Sweeping Checklist, and deficiencies should be noted.

DETAILED PROCEDURES

The QAE should perform a "windshield" inspection of areas to be sampled. If this visual inspection yields doubts about the contractor's performance level, a more detailed inspection can be performed. To do this, the QAE should first sweep together debris from a section of street about 10 ft square. An acceptable accumulation of debris is less than one handful. If the QAE feels that abnormal weather conditions are causing a high level of debris accumulation, he/she should note this in the "Remarks" section so that the COR may take any necessary action.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (PAVED SURFACES: SWEEPING)

CONTRACT REQUIREMENT: The contractor must sweep paved surfaces, sidewalks, and parking areas.

PERFORMANCE INDICATOR:

Paved surfaces, sidewalks, and parking areas are swept.

QUALITY ASSURANCE EVALUATION METHODS

The QAE should use a systematic random sampling method to determine areas for inspection. He/she should also use an unscheduled field inspection to evaluate past unsatisfactory performance areas as well as areas specified by the Contracting Officer or his/her representative.

Using the population size 50, and referring to Table A1 of Appendix A gives a number of samples 15, and a number of allowable rejects 3. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment 3.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (PAVED SURFACES: SWEEPING)

REQUIREMENT: The contractor must sweep all paved surfaces, sidewalks, and parking areas.

PERFORMANCE INDICATOR:

Paved surfaces, sidewalks, and parking areas are swept.

Day/Date	Area	PI 1	Remarks
7/11/84	#136	S	
7/11/84	139	S	
7/11/84	142	S	
7/11/84	145	S	
7/11/84	148	S	
7/11/84	151	S	
7/11/84	154	S	
7/11/84	157	S	
7/11/84	160	S	
7/11/84	163	U	LEAVES COLLECTED AROUND DRAINS
7/11/84	166	S	
7/11/84	169	S	
7/11/84	172	S	
7/11/84	175	S	
7/11/84	178	S	

Danny Jones
Quality Assurance Evaluator

July 17, 1984
Date

A.3. REPAIRS

PERFORMANCE INDICATORS

The contractor should have submitted a report of the completed work so that the QAE may schedule the evaluation. The QAE inspection results of the area sampled in reference to the contractor's report of work completed show no deficiencies in the following areas: the contractor should have completed his/her work in a timely, effective, and workmanlike manner; the overall quality and appearance of the repair, including materials, should be comparable to that of the facility's original construction quality and appearance.

INSPECTION FORMS

1. QA Worksheet (Paved Surfaces: Repairs)

2. QA Checklist (Paved Surfaces: Repairs)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

1. Service Orders. Initially, a systematic random sampling technique should be used to inspect the contractor's performance. However, if the contractor's performance record has been excellent for the previous 3 months, the QAE may coordinate with the COR to use an unscheduled field inspection. An unscheduled field inspection should also be used for areas specified by the Contracting Officer and coordinated with the COR.

2. Individual Job Orders. A 100 percent inspection method should be used to inspect the contractor's performance.

GENERAL PROCEDURES

1. Service Orders. The contractor's report of work completed should be used to schedule areas for random sampling. The procedures outlined in Chapter 2 (normal surveillance, 4 percent AQL) should be used to select the units for inspection. Results should be documented, using the Paved Surfaces: Repairs Checklist, and should be compared to the work request to detect discrepancies.

2. Individual Job Orders. The contractor's report of work completed should be used to schedule all areas to be inspected. Results should be documented using the Paved Surfaces: Repairs Checklist, and should be compared to the work request to detect discrepancies.

DETAILED PROCEDURES

1. Utility cuts in pavements should be in straight lines with the task done in a workmanlike manner. An AQL of 10 percent should be used for utility cuts.

2. If water flows off the road, the drainage is smooth-flowing. There should be no evidence of erosion, and steps should have been taken to ensure that erosion will not occur in the future (e.g., grass should be planted along the shoulder, etc.).

3. Road shoulders must protect the road edge (i.e., the edge will not deteriorate rapidly because it is abutted with earth fill).

4. Gravel-stabilized surfaces should contain no ruts or holes and should permit proper drainage.

5. Repair of curbs, gutters, swales, dikes, etc., should allow adequate drainage and should control road shoulder erosion.

6. The headwall must prevent erosion.

7. Traffic signs should not be damaged or missing.

8. Guardrails, guardrail posts, and other physical traffic barriers should not be damaged or missing.

9. Within 2 hours of clearing accident debris, when requested by the Contracting Officer, there should be no debris at the accident site. Note: This does not include disabled or wrecked vehicles.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (PAVED SURFACES: REPAIRS)

CONTRACT REQUIREMENT: The contractor should perform repairs as contracted.

PERFORMANCE INDICATORS:

1. The contracted work was accomplished in a timely, effective, and workmanlike manner.

2. The overall quality and appearance of the repair, including materials, are comparable to that of the facility's original construction quality and appearance.

3. Comparison of the QAE inspection results of the facilities sampled with the contractor's report of work completed shows no deficiencies.

QUALITY ASSURANCE EVALUATION METHODS:

1. Service Orders. The QAE should use a systematic random sampling method to determine areas to be sampled. Using the population size 50, and referring to Table A1 of Appendix A gives a number of samples 15, and a number of allowable rejects 3. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment 3.

2. Individual Job Orders. The QAE should use 100 percent inspection for all areas.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (PAVED SURFACES: REPAIRS)

REQUIREMENT: The contractor should perform repairs as contracted.

PERFORMANCE INDICATORS:

1. The contracted work has been done in a timely, effective, and workmanlike manner.

2. The overall quality and appearance of the repair, including materials, is comparable to that of the facility's original construction quality and appearance.

3. Comparison of the QAE inspection results of the facilities sampled with the contractor's report of work completed shows no deficiencies.

Day/Date	Area	SO/IJO #	PI 1	PI 2	PI 3	Remarks
7/21/84	# 12	21	S	S	S	
7/21/84	56	16	S	S	S	
7/21/84	32	13	S	S	S	
7/21/84	72	12	S	S	S	
7/21/84	45	9	S	S	S	
7/21/84	21	31	S	S	S	
7/21/84	17	25	S	S	S	
7/21/84	13	27	S	S	S	
7/22/84	38	14	S	S	S	
7/22/84	46	26	S	S	S	
7/22/84	63	19	S	S	S	
7/22/84	71	28	S	S	S	
7/22/84	65	29	S	S	S	
7/22/84	93	15	S	S	S	
7/22/84	19	11	S	S	S	
7/22/84	23	10	S	S	S	

Larry Jones

Quality Assurance Evaluator

JUL 23, 1984

Date

B. STORM DRAINAGE SYSTEMS

PERFORMANCE INDICATOR

Catch basins, manholes, drainage swales, ditches, and storm drainage systems must be able to drain the amount of stormwater for which they were designed.

INSPECTION FORMS

1. QA Worksheet (Storm Drainage)

2. QA Checklist (Storm Drainage)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

1. Random Inspection. Initially, systematic random sampling should be used to inspect the contractor's performance. However, if the contractor's performance record has been excellent for the previous 3 months, the QAE may coordinate with the COR to substitute an unscheduled field inspection. Using the contractor's report of areas that have received maintenance and the systematic random sampling procedures outlined in Chapter 2 (normal surveillance, 10 percent AQL), the QAE should select the areas for inspection. The inspection should be done 12 working hours after the end of each rain of 1 in. or more since the contractor should have begun cleanup immediately after the rains. Results should be well documented, using the Storm Drainage Checklist, and deficiencies should be noted.

2. Unscheduled Inspection. Unscheduled inspection should be used for areas with a history of unsatisfactory performance. Using past inspection records, the QAE should identify with the COR past unsatisfactory performance areas and other areas for inspection. The inspection should be done 12 working hours after the end of each rain of 1 in. or more since the contractor should have begun cleanup immediately after the rains. Results should be well documented, using the Storm Drainage Checklist, and deficiencies should be noted.

DETAILED PROCEDURES

To perform the inspection, the QAE should first visually inspect the gratings of catch basins and curb inlets for accumulated debris. Any accumulation is unsatisfactory. Second, he/she should insert a pole until it reaches the bottom of the catch basin and move it around. If it moves freely, the cleaning process is considered satisfactory; however, if sluggish movement of the pole indicates the presence of debris, the cleaning is considered unsatisfactory. When the pole is removed, if the level of debris marking it is lower than 2 in., the cleaning is also considered satisfactory; if it is higher than 2 in., the cleaning is considered unsatisfactory.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (STORM DRAINAGE)

CONTRACT REQUIREMENT: The contractor should remove all debris from the storm drainage system.

PERFORMANCE INDICATOR:

Catch basins, manholes, drainage swales, ditches, and storm drainage systems are able to drain the amount of stormwater for which they were designed.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine areas for inspection. Also, he/she should use an unscheduled field inspection to evaluate past unsatisfactory performance areas and areas specified by the Contracting Officer or his/her representative.

To perform systematic random sampling using the population size 50, and referring to Table A1 of Appendix A gives a number of samples 15, and a number of allowable rejects 3. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment 3.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (STORM DRAINAGE)

REQUIREMENT: The contractor should remove all debris from the storm drainage system.

PERFORMANCE INDICATOR:

Catch basins, manholes, drainage swales, ditches, and storm drainage systems can drain the amount of stormwater for which they were designed.

Day/Date	Area	PI 1	Remarks
9/3/84	#21	S	
9/3/84	24	S	
9/3/84	27	U	CATCH BASIN LOCKED
9/3/84	30	S	
9/3/84	33	S	
9/3/84	36	U	CATCH BASIN BLOCKED
9/3/84	39	S	
9/3/84	42	S	
9/3/84	45	S	
9/3/84	48	U	CATCH BASIN BLOCKED
9/3/84	52	S	
9/3/84	55	S	
9/3/84	58	S	
9/3/84	61	S	
9/3/84	64	U	DITCH FULL OF LEAVES
			VERY POOR PERFORMANCE

Larry Jones
Quality Assurance Evaluator

Sept 3, 1984
Date

C. TRAFFIC SERVICES

PERFORMANCE INDICATORS

1. Traffic regulatory, warning, and guidance markings, lane markings, and islands should be in good repair and proper working order.

2. Parking area and helipad markings must be clearly visible.

INSPECTION FORMS

1. QA Worksheet (Traffic Services)

2. QA Checklist (Traffic Services)

The sample forms in this section show how to use the blank forms in the Appendix.

QUALITY ASSURANCE EVALUATION METHODS

1. Random Inspection. Initially, systematic random sampling should be used for inspection. However, if the contractor's performance record has been excellent for the previous 3 months, the QAE may coordinate with the COR to substitute an unscheduled field inspection. Using the record of all areas to have received maintenance and the systematic random sampling procedures outlined in Chapter 2 (normal surveillance, 10 percent AQL), the QAE should select the areas for inspection. The inspection should be done monthly. Results should be well documented, using the Traffic Services Checklist, and deficiencies should be noted.

2. Unscheduled Inspection. Unscheduled inspection should be used for areas with a past history of unsatisfactory performance. Using past inspection records, the QAE should identify with the COR the past unsatisfactory performance areas and other areas for inspection. The inspection should be done monthly. Results should be well documented, using the Traffic Services Checklist, and deficiencies should be noted.

DETAILED PROCEDURES

The QAE should check to see that:

1. Traffic control signals are operating and are: not missing, square to oncoming traffic, at the proper height, plumb, and undamaged.

2. Traffic control signs are: not missing, clearly visible to oncoming traffic, square to oncoming traffic, at the proper height, plumb, and undamaged (i.e., twisted, bent, or marred).

3. Islands are in good repair with no areas of crushed or missing concrete or asphalt.

4. Guidance markings, lane markings, and other traffic markings are clearly visible, with more than 90 percent of their surfaces clean and free of defects. (This can be checked by marking off a 5-ft length of lane marking and inspecting it for defects.)

5. Parking area and helipad markings are clearly visible, with more than 90 percent of their surfaces clean and free of defects.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (TRAFFIC SERVICES)

CONTRACT REQUIREMENT: The contractor must maintain and repair traffic regulatory devices.

PERFORMANCE INDICATORS:

1. Traffic regulatory, warning, and guidance markings, lane markings, and islands must be in good repair and proper working order.

2. Parking area and helipad markings must be clearly visible.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use a systematic random sampling method to determine the areas for inspection. He/she should also use an unscheduled field inspection to evaluate past unsatisfactory performance areas and areas specified by the Contracting Officer or his/her representative.

To perform systematic random sampling using the population size 45, and referring to Table A1 of Appendix A gives a number of samples 15, and a number of allowable rejects 3. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment 3.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (TRAFFIC SERVICES)

REQUIREMENT: The contractor must maintain and repair traffic regulatory devices.

PERFORMANCE INDICATORS:

1. Traffic regulatory, warning, and guidance markings, lane markings, and islands are in good repair and proper working order.

2. Parking area and helipad markings are clearly visible.

Day/Date	Area	PI 1	PI 2	Remarks
9/6/84	#236			
9/6/84	239			
9/6/84	242			
9/6/84	245			
9/6/84	248			
9/6/84	251			
9/6/84	254			
9/6/84	259			
9/6/84	260			
9/6/84	263			
9/7/84	266			
9/7/84	269			
9/7/84	272			
9/7/84	275			
9/7/84	278			
				EXCELLENT PERFORMANCE

Larry Jones
Quality Assurance Evaluator

SEPT. 7, 1984
Date

D. SAND/SNOW REMOVAL AND ICE CONTROL

PERFORMANCE INDICATORS

1. Snow must be removed to bare pavement from designated roads and parking areas.

2. Abrasives used for ice control must be removed within 1 day after the ice has melted.

3. Clear access must be available to crosswalks from sidewalks, fire hydrants, building entrances and exits, and refuse containers.

INSPECTION FORMS

1. QA Worksheet (Sand/Snow Removal and Ice Control)

2. QA Checklist (Sand/Snow Removal and Ice Control)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

1. Random Inspection. Initially, systematic random sampling should be used for inspection. However, if the contractor's performance record has been excellent for the previous 3 months, the QAE may coordinate with the COR to substitute an unscheduled field inspection. Using the record of all areas to have received sand/snow removal and ice control and the systematic random sampling procedures outlined in Chapter 2 (normal surveillance, 10 percent AQL), the QAE should select the areas for inspection. The inspection should be done at least 12 hours after the snow stops falling or the Contracting Officer's request for service. Results should be well documented, using the Sand/Snow Removal and Ice Control Checklist, and deficiencies should be noted.

2. Unscheduled Inspection. Unscheduled inspection should be used for areas with a history of unsatisfactory performance. Using past inspection records, the QAE should identify with the COR past unsatisfactory performance areas and other areas for inspection. The inspection should be done at least 12 hours after the snow stops falling or the Contracting Officer's request for service. Results should be well documented, using the Sand/Snow Removal and Ice Control Checklist, and deficiencies should be noted.

DETAILED PROCEDURES

All sand/snow should be removed to bare pavement, and clear access must be available to crosswalks, fire hydrants, building entrances and exits, and refuse containers. Clear access means that anything which would normally have access to an area when there is no snow has access to that area after sand/snow removal. Abrasives must be removed at least 8 working hours after all ice in the vicinity has melted. (The same criteria as used for sweeping of paved surfaces will apply.)

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (SAND/SNOW REMOVAL AND ICE CONTROL)

CONTRACT REQUIREMENT: The contractor must perform sand/snow removal and ice control services.

PERFORMANCE INDICATORS:

1. Sand/snow has been removed to bare pavement from designated roads and parking areas.

2. Abrasives used for ice control have been removed within 1 day after the ice has melted.

3. Clear access has been made available to crosswalks from sidewalks, fire hydrants, building entrances and exits, and refuse containers.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine the areas for inspection. He/she should also use an unscheduled field inspection to evaluate past unsatisfactory performance areas and areas specified by the Contracting Officer or his/her representative.

To perform systematic random sampling using the population size 45, and referring to Table A1 of Appendix A gives a number of samples 15, and a number of allowable rejects 3. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment 3

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (SAND/SNOW REMOVAL AND ICE CONTROL)

REQUIREMENT: The contractor must perform sand/snow removal and ice control services.

PERFORMANCE INDICATORS:

1. Sand/snow has been removed to bare pavement from designated roads and parking areas.

2. Abrasives used for ice control have been removed within 1 day after the ice has melted.

3. Clear access has been made available to crosswalks from sidewalks, fire hydrants, building entrances and exits, and refuse containers.

Day/Date	Area	PI 1	PI 2	PI 3	Remarks
2/6/84	#181	S	S	S	
2/6/84	184	S	S	S	
2/6/84	187	S	S	S	
2/6/84	190	S	S	U	REFUSE CONTAINER BLOCKED
2/6/84	193	S	S	S	
2/6/84	196	S	S	S	
2/6/84	199	S	S	S	
2/6/84	202	S	S	S	
2/7/84	205	S	S	S	
2/7/84	208	S	S	S	
2/7/84	211	S	S	S	
2/7/84	214	S	S	S	
2/7/84	217	S	S	S	
2/7/84	220	S	S	S	
2/7/84	223	S	S	S	

Larry Jones
Quality Assurance Evaluator

FEB 7, 1984
Date

E. RECREATIONAL AREAS GENERAL

PERFORMANCE INDICATOR

Playground equipment must be repaired as needed and maintained in good condition.

INSPECTION FORMS

1. QA Worksheet (Recreational Areas)

2. QA Checklist (Recreational Areas)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

1. Random Inspection. Initially, systematic random sampling should be used for inspection. However, if the contractor's performance record has been excellent for the previous 3 months, the QAE may coordinate with the COR to substitute an unscheduled field inspection. Using the record of all recreational areas to have received maintenance and the systematic random sampling procedures outlined in Chapter 2 (normal surveillance, 10 percent AQL), the QAE should select the areas for inspection. The inspection should be done monthly, with results well documented, using the Recreational Areas Checklist, and deficiencies noted.

2. Unscheduled Inspection. Unscheduled inspection should be used for areas with a history of unsatisfactory performance. Using past inspection records, the QAE should identify with the COR the past unsatisfactory performance areas and other areas for inspection. The inspection should be performed monthly, with results well documented, using the Recreational Areas Checklist, and deficiencies noted.

DETAILED PROCEDURES

1. No pieces of equipment should be missing or broken.

2. Painted surfaces should be free of defects. (Check by inspecting a 1-sq-ft or 1-lin-ft area of a painted surface. More than 90 percent of the surface should be free of defects such as paint chipping, rust, or dents.)

3. Except for normal wear, the equipment should be as free from damage as if it were newly installed; i.e., bent, broken, missing, rusted, rotten, or nonusable equipment is unsatisfactory.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (RECREATIONAL AREAS)

CONTRACT REQUIREMENT: The contractor should perform repair and maintenance services for recreational areas.

PERFORMANCE INDICATOR:

Playground equipment should be repaired as needed and maintained in good condition.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine the area for inspection. He/she should also use an unscheduled field inspection to evaluate areas specified by the Contracting Officer or his/her representative.

To perform systematic random sampling using the population size 60, and referring to Table A1 of Appendix A gives a number of samples 15, and a number of allowable rejects 3. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment 4.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (RECREATIONAL AREAS)

CONTRACT REQUIREMENT: The contractor must perform repair and maintenance services for recreational areas.

PERFORMANCE INDICATOR:

Playground equipment has been repaired as needed and maintained in good condition.

Day/Date	Area	PI 1	Remarks
7/3/84	#51	S	
7/3/84	55	S	
7/3/84	59	S	
7/3/84	63	S	
7/3/84	67	S	
7/3/84	71	S	
7/3/84	75	S	
7/3/84	79	S	
7/4/84	83	S	
7/4/84	87	S	
7/5/84	91	S	
7/5/84	95	U	
7/5/84	99	S	
7/5/84	103	S	
7/5/84	107	S	

Quality Assurance Evaluator

JULY 5, 1984

Date

REFUSE HANDLING

A. FURNISHING CONTAINERS

B. REFUSE COLLECTION

C. REPAINTING MULTIPLE-USE CONTAINERS

D. MAINTENANCE AND REPAIR OF EQUIPMENT

QUALITY ASSURANCE EVALUATION METHODS

The contractor's performance in furnishing approved trash containers for all family housing units should be evaluated by 100 percent inspection. Refuse collection should be evaluated by unscheduled inspection and/or solicited, validated complaints obtained through customer questionnaires; repainting of multiple-use containers should be inspected by planned sampling.

Maintenance and repair of Government-furnished equipment (GFE) damaged by the contractor is incidental to the furnishing of refuse collection services. When GFE is damaged by others or becomes unusable through normal wear, the contractor should repair it only when ordered by the Contracting Officer. This work should be evaluated by systematic random sampling.

A. FURNISHING CONTAINERS

INSPECTION FORMS

QA Checklist (Furnishing Containers)

The sample forms in this section show how to use the blank forms in Appendix B.

DETAILED PROCEDURES

When the contractor reports that family housing refuse containers have been delivered to the installation, the checklist should be used to verify that they conform to specifications. The contractor should be instructed to hold delivery of the containers if they do not appear to conform. The checklist should be submitted with any observed discrepancies to the Contracting Officer or his/her representative. If the furnished containers do conform to specifications, the contractor should be instructed to distribute them to their respective locations; using the checklist, the QAE should confirm that they are in place. Each family housing occupant should be contacted for verification of delivery; if a housing unit is unoccupied, delivery should be verified by inspection.

EXAMPLE QA CHECKLIST

Page 1 of 2

REFUSE HANDLING

QUALITY ASSURANCE CHECKLIST (FURNISHING CONTAINERS)

REQUIREMENT: 160 trash containers are provided.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Containers provided conform to the contract requirements.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Containers have been delivered to each family housing unit. (Use the housing checklist to record completion of this item.)

(CIRCLE ONE) (S) U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

QUALITY ASSURANCE EVALUATION METHODS:

The contractor's performance in furnishing approved trash containers for family housing should be evaluated by 100 percent inspection. Containers should be counted; if the batch is uniform, one container may be inspected to ensure conformance with performance indicator 2. Each family housing unit occupant should verify that a container was received. The QAE should verify receipt at unoccupied units. Performance can be recorded on the following portion of this checklist.

EXAMPLE QA CHECKLIST

Page 2 of 2

REFUSE HANDLING

QUALITY ASSURANCE CHECKLIST (FURNISHING CONTAINERS)

REQUIREMENT: Deliver an approved trash container to each of _____ family housing units.

Family Housing Unit	Container Rcvd (✓)	Family Housing Unit	Container Rcvd (✓)	Family Housing Unit	Container Rcvd (✓)
A 11	✓				
A 12	✓				
A 13	✓				
A 14	✓				

SAMPLE

B. REFUSE COLLECTION

INSPECTION FORMS

1. QA Checklist (Refuse Collection)
2. Questionnaire (Refuse Collection)
3. Questionnaire Tabulation Form

The sample forms in this section show how to use the blank forms in Appendix B.

DETAILED PROCEDURES

The QA Checklist for evaluating the contractor's performance in providing refuse collection services lists the performance indicators for this item. The suggested QA method is unscheduled inspection; however, an unscheduled inspection may be prompted by customer complaints or directed by the COR. The QAE should follow the selected collection route and observe the collection procedures. The checklist should be used to report the performance level.

Included at the end of this section is a customer questionnaire which can be sent to all recipients of refuse collection services. Its use is highly recommended because it gives a more comprehensive evaluation of the contractor's performance, while requiring about the same time and effort. After receiving the completed questionnaires, the QAE should tabulate the results and provide the COR with a summary of the findings.

EXAMPLE QA CHECKLIST

Page 1 of 2

REFUSE COLLECTION

QUALITY ASSURANCE CHECKLIST (REFUSE COLLECTION)

QUALITY ASSURANCE EVALUATION METHOD

The QAE should occasionally select and follow a refuse collection vehicle during one collection cycle (unscheduled inspection). All building representatives and family housing residents should be encouraged to report any observed discrepancies to the Contracting Officer.

One or more of the requirements listed below may not apply to a specific collection task.

An unscheduled inspection of Vehicle No. 23 was conducted on 10 JULY 1984 while engaged in normal collection duties.

REQUIREMENT: Trash is collected on the scheduled day on the assigned route between 0630 and 1530 hours.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Trash was collected from locations requiring daily service (Buildings 42,51,74) prior to 0900 (see contract for time requirement).

(CIRCLE ONE) (S) U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

REFUSE COLLECTION

QUALITY ASSURANCE CHECKLIST (REFUSE COLLECTION)

REQUIREMENT: The garbage vehicle was fully enclosed, clean, and not leaking.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: The refuse collection vehicle is covered, and no debris was falling off.

(CIRCLE ONE) S U (N)
QAE REMARKS:

REQUIREMENT: There was no refuse within 20 ft of the collection point after collection has been completed.

(CIRCLE ONE) (S) U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

Larry Davis
Quality Assurance Evaluator
Date 11 JULY 1984

REFUSE COLLECTION QUESTIONNAIRE

Building Number 281
Date 2 JULY 1984
Occupant C. FOX
Interviewer L. DAVIS

This questionnaire should be completed by the person most knowledgeable about the quality of the refuse collection service provided. Please circle the number for the answer selected or write in an appropriate answer where there are blanks.

If this questionnaire is completed by telephone, the QAE should sign it where provided.

1. How many times per week is refuse collected from your location?

Once 1
Twice . . . . . (2)
More than twice 3
Unknown 4

2. How satisfied are you with the refuse collection service being provided?

Very satisfied 1
Satisfied . . . . . (2)
Dissatisfied 3
Very dissatisfied 4

3. Is refuse collected at about the same time each collection day?

Yes . . . . . (1)
No 2

4. Does the collection crew leave the area clear of refuse?

Yes, all of the time 1
Yes, most of the time . . . (2)
No 3

5. Has the collection crew damaged the refuse containers?

No 1
Not usually . . . . . (2)
Yes 3

REFUSE COLLECTION QUESTIONNAIRE

6. Are the empty containers placed in an orderly fashion with all lids in place?

Yes 1
Usually 2
Almost never 3
No 4

7. Has the collection crew ever refused to remove refuse properly placed for removal?

No 1
Yes 2

8. Have you ever complained about the quality of refuse collection services being provided?

No (go to Q. 12) 1
Yes (go to Q. 9) 2

9. When calling about the quality of service, do you normally find the person you talk to knowledgeable?

Yes 1
No 2

10. When calling about the quality of service, do you normally find the person you talk to courteous?

Yes 1
No 2

11. When calling about the quality of service, do you normally find the person you talk to helpful?

Yes 1
No 2

12. Have you ever talked to members of the collection crew?

No (go to Q. 15) 1
Yes (go to Q. 13) 2

REFUSE COLLECTION QUESTIONNAIRE

13. Were the collection crew members courteous?

Yes 1
No 2

14. Were the collection crew members helpful?

Yes 1
No 2

15. Who provided the information for this questionnaire?

Sponsor 1
Dependent 2
Both 3

16. Please make any comments on the refuse collection service in the space below.

No Comments

TABULATION FORM
REFUSE COLLECTION QUESTIONNAIRE

INSTRUCTIONS: Average the scores for each question unless marked as not applicable (NA). Enter the averages in the blanks below, and follow the individual instructions for evaluation.

Question No.	Ave. Score	Question No.	Ave. Score
1	(NA)	9	1.2
2	1.2	10	1.3
3	1.1	11	1.1
4	1.4	12	(NA)
5	1.2	13	1.2
6	1.3	14	1.3
7	1.2	15	(NA)
8	(NA)	16	(NA)

FREQUENCY: Separate locations requiring special service, and verify that their requirements are being met. Do the reported frequencies from the rest of the locations match the contract requirements? (Y) N

QUALITY OF SERVICE: Total the average scores for questions 2 through 7 and divide the total by 6. The result is 1.23. (A result of 1.0 through 1.5 is excellent; 1.6 through 2.5 is poor, and the contractor should be notified; 2.6 or greater is unsatisfactory, and the COR should be notified.) (E) P U

COMPLAINTS: Validate complaints by contacting the customer; after determining the nature of the complaint, verify that the issue has been resolved. If the complaint is valid, not isolated, and is unresolved, include the affected route in a future unscheduled inspection.

COMPLAINT RESPONSE: Total the average scores for questions 9 through 11 and divide the total by 6. The result is 1.20. (A result of 1.0 through 1.5 is satisfactory; 1.6 through 2.0 is unsatisfactory, and the COR should be notified.) (S) U

COURTESY: Total the average scores for questions 13 and 14 and divide the total by 2. Answer is 1.25. (An answer of 1.0 through 1.5 is satisfactory; over 1.6 is unsatisfactory and the COR should be notified.) (S) U

REMARKS: (Attach a separate page if required.)

Larry Davis
Quality Assurance Evaluator

Date 11 JULY 1984

C. REPAINTING MULTIPLE-USE CONTAINERS

INSPECTION FORMS

1. QA Worksheet (Refuse Container Repainting)

2. QA Checklist (Refuse Container Repainting)

The sample forms in this section show how to use the blank forms in Appendix B.

DETAILED PROCEDURES

The contractor's schedule for painting multiple-use refuse containers should be obtained. Planned sampling can be used to select three containers that are scheduled for painting early in the contract period. The QAE should be present during the scheduled painting to observe the complete operation.

Using the QA Checklist for this item (see example), the QAE should verify that the container is free from all foreign matter such as dirt, dust, or refuse residue, and that rusted areas have been cleaned to bright metal. The container should be fully operational before painting is started.

The QAE should observe and record under "Remarks" whether paints and thinners meet specifications. He/she should ensure that the primer is compatible with the Fed. Spec. TT-E-529 finish coat specified for the container's exterior. The recommended material is a zinc-chromate primer, Fed. Spec. TT-P-666B.

Paint application should completely cover the surfaces without visible skips, thin spots, runs, or sags.

Re-stenciling must use Fed. Std. 595 yellow paint and match the information originally on the containers. Lettering must be accurately aligned and present a crisp appearance.

If the container has been removed to another location for cleaning and painting, it should be returned to its original location.

EXAMPLE QA WORKSHEET

REFUSE CONTAINER REPAINTING

QUALITY ASSURANCE WORKSHEET

CONTRACT REQUIREMENT: Paint about 50 multiple-use refuse containers.

PERFORMANCE INDICATORS

The QA Checklist should be used to record performance of the following:

1. The contractor has scheduled the painting.

2. Prior to painting, the container has been cleaned to remove all foreign matter and rust has been removed to bright metal.

3. The container's interior and exterior have been painted with a zinc-chromate primer, Fed. Spec. TT-P-666B.

4. After 24 hours, an olive drab semigloss alkyd enamel, Fed. Spec. TT-E-529, has been applied to the exterior.

5. The container has been re-stenciled with yellow paint, Fed. Std. 595, and returned to its original location (if moved).

QUALITY ASSURANCE EVALUATION METHOD

The QAE should use planned sampling for inspection by selecting two or three examples early in the contract period and observe a complete painting operation.

RECORD OF OCCURRENCES TO BE SAMPLED

Date	Location	Remarks
6 July 84	Bldg. 321	
"	Admin	
"	Laundry	

EXAMPLE QA CHECKLIST

REFUSE CONTAINER REPAINTING

QUALITY ASSURANCE CHECKLIST

QA REQUIREMENT: Sample repainting of container located at Building 321 and scheduled for repainting on 6 July 1984.

REQUIREMENT: The refuse container has been cleaned of all foreign matter, rust has been removed to bright metal, and container is fully operational.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: The container's interior and exterior have been prime-painted with uniform coverage.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: The container's exterior has been painted with uniform coverage.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: The container has been crisply re-stenciled and returned to its original location.

(CIRCLE ONE) (S) U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

Larry Davis
Quality Assurance Evaluator

Date 13 July 1984

D. MAINTENANCE AND REPAIR OF EQUIPMENT

Maintenance and repair of GFE damaged by the contractor should be incidental to the furnishing of refuse collection services. However, the contractor should repair GFE that has been damaged by others or that becomes unusable through normal wear when ordered by the Contracting Officer or his/her representative through a work request.

INSPECTION FORMS

QA Checklist (Refuse Container Repair)

The sample form in this section shows how to use the blank forms in Appendix B.

DETAILED PROCEDURES

The contractor's report of repairs completed should be used to schedule containers for random inspection. The inspections should use the procedures outlined in Chapter 2 (normal surveillance, 10 percent AQL). Results should be documented, using the QA Checklist, and compared with the work request.

An inspection of a repair should verify that the unit operates as intended; that the repair was done with parts intended for the unit and similar to others already in use; that welds are neat and continuous; and that the repaired area has been cleaned, primed, and finish-painted to match. Broken parts should be removed from the site and the area cleared of debris from the repair work.

EXAMPLE QA CHECKLIST

REFUSE CONTAINER REPAIR

QUALITY ASSURANCE CHECKLIST

QA REQUIREMENT: Sample repair of container located at BUILDING 42.

REQUIREMENT: The repaired portion of the refuse container operates as intended.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: The materials and parts used are similar to others already in use and are those intended for the unit.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Welds are neat and continuous.

(CIRCLE ONE) S U (N)
QAE REMARKS:

REQUIREMENT: The repaired area has been repainted to match the original.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: The work site has been cleared of debris.

(CIRCLE ONE) (S) U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

Larry Davis
Quality Assurance Evaluator

Date 26 July 1984

PEST CONTROL SERVICES

A. SCHEDULED PEST CONTROL SERVICES

A.1. HOUSEHOLD PEST PREVENTION

A.2. REFUSE CONTAINER SPRAYING

A.3. VEGETATION CONTROL

A.4. WOOD INFESTATION INSPECTION

A.5. MOSQUITO CONTROL

B. UNSCHEDULED PEST CONTROL SERVICES

A. SCHEDULED PEST CONTROL SERVICES

A.1. HOUSEHOLD PEST PREVENTION

The contractor should inspect for pest infestation and spot treat affected areas according to specifications. He/she should also ask residents about possible infestation problems and provide them with insect/ rodent prevention as specified in the contract documents.

PERFORMANCE INDICATORS

1. Contractor should adhere to a weekly schedule.

2. There should be fewer than five roaches per sticky trap 24 hours after treatment.

INSPECTION FORMS

1. QA Worksheet (Household Pest Prevention)

2. QA Checklist (Household Pest Prevention)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

Initially, the QAE should use systematic random sampling to ensure adequate contractor performance. The systematic random sampling procedures outlined in Chapter 2 (normal surveillance, 10 percent AQL) should be used to select units for inspection in a certain month. If performance remains satisfactory after 6 months, the Contracting Officer may approve unscheduled inspection, based on validated customer complaints.

DETAILED PROCEDURES

Using the contractor's approved weekly schedule, the QAE should determine the locations of pest inspections. All buildings scheduled for inspection must have either been signed off by the resident or marked "not accessible" (NA) if the contractor's agent has not been able to gain entry after three attempts.

A sticky trap should be placed in areas where customers have reported insects, or in random sampling, where insects are likely to congregate, such as the kitchen or food storage area. These traps should be collected 24 hours later; more than five roaches or related pests in the trap show unsatisfactory performance.

Table A1 of Appendix A gives the allowable number of unsatisfactory samples for the population size/sample size of this work unit. If the number of unsatisfactory samples exceeds the allowable amount, the QAE should complete a Contract Discrepancy Report to notify the Contracting Officer of inadequate performance.

The QAE should use a monthly performance summary to provide the QA Supervisor with an overview of the contractor's performance.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (HOUSEHOLD PEST PREVENTION)

CONTRACT REQUIREMENT: The contractor should inspect for pest infestations, spot treat affected areas, interview residents for possible pest problems, and provide pest control services as specified.

PERFORMANCE INDICATORS:

1. The contractor has adhered to the weekly schedule of household pest inspections and prevention.

2. Fewer than five roaches have been found in a sticky trap 24 hours after it has been set.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine the areas for inspection. He/she should also use an unscheduled field inspection to evaluate past unsatisfactory performance areas and areas specified by the COR.

Systematic random sampling should be done using the population size 94, and referring to Table A1 of Appendix A to obtain a number of samples 71, and a number of allowable rejects 5. Any collection of randomized numbers can be used to determine the first sample for inspection. Dividing the population size by the sample size determines the increment 4.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE (HOUSEHOLD PEST PREVENTION)

CONTRACT REQUIREMENT: The contractor should inspect for pest infestations, spot treat affected areas, interview residents about possible pest problems, and provide pest control services as specified.

PERFORMANCE INDICATORS:

1. The contractor has adhered to the weekly schedule of household pest inspections and prevention.

2. Fewer than five roaches have been found in a sticky trap 24 hours after it was set.

DATE	HOUSING UNIT	PI 1	PI 2	REMARKS
7/20/84	431	✓	✓	
	432	✓	✓	
	433	✓	✓	
	434	✓	✓	
	435	✓	✓	
	436	✓	✓	2 roaches
	437	✓	✓	
	438	✓	✓	
	514	✓	✓	
	515	✓	✓	
	516	✓	✓	
	517	✓	✓	
	518	✓	✓	
	519	✓	✓	
	520	✓	✓	
	710	✓	✓	
	711	✓	✓	
	712			no access
	713	✓	✓	
	714	✓	✓	
	715	✓	✓	

Carl Lewis
Quality Assurance Evaluator

20 July 1984
Date

A.2. REFUSE CONTAINER SPRAYING

The contractor should clean with fresh water and spray for insect/rodent control those refuse containers specified by the Contracting Officer or selected in accordance with the contract.

PERFORMANCE INDICATORS

1. Designated disposals should be removed and cleaned when scheduled.

2. Cleaned disposals must be returned to their former location.

3. Disposals must be sprayed for insect/rodent control at permanent location.

INSPECTION FORMS

1. Task Schedule (Refuse Container Spraying)

2. QA Worksheet (Refuse Container Spraying)

3. QA Checklist (Refuse Container Spraying)

The sample forms in this section show how to use the blank forms in Appendix B.

DETAILED PROCEDURES

The QAE should obtain the list of refuse containers scheduled for cleaning for the month (see Task Schedule) and note how many units are to be cleaned. (The Task Schedule lists the locations of the refuse containers for cleaning and spraying. The order of the list is not significant.)

The example QA Worksheet shows that 50 containers have been selected for this illustration. Using Table A1 of Appendix A, the QAE should determine the number of samples for inspection and the allowable number of rejects for the desired surveillance level and AQL. (Normal surveillance of 50 work items requires inspection of 17 items, with no more than four of them unsatisfactory, to meet an AQL of 10 percent.)

The QAE should inspect by systematic random sampling, following the procedures given in Chapter 2.

The three-unit interval between selected samples and the first unit to be selected for inspection were both determined using the procedures described in Chapter 2. (See circled items on the example Task Schedule for an illustration of the results.)

The QAE should schedule inspections of the preselected work according to the contractor's schedule for completion. He/she should schedule the inspection as soon as possible after each sample is completed. The QA Checklist should be used to verify that the disposal unit is free of accumulated dirt and waste residue. The unit should be located in its permanent location and ready for use, and there should be no visible evidence of insects or rodents. Any "Unsatisfactory" evaluations must be described under "Remarks." The QAE should also inspect the mechanical condition and appearance of the disposal unit and recommend necessary maintenance. If there is reason to suspect that the contractor is not using a pesticide, the QAE can collect a sample for outside testing, using the following procedure:

1. Wipe a 1-sq ft area of the surface with a cotton swab dipped in xylene.

2. Place the swab in a closed container and refrigerate.

3. Have a toxicology testing laboratory analyze the sample for the presence of the approved pesticide (usually a diazinon formulation).

The QAE should use the Contract Discrepancy Report (see FESA Guide P-10, Guide for the Preparation of the Facilities Engineering Acquisition Package Including Performance Work Statements) to notify the Contracting Officer if the work is unsatisfactory. He/she should use a monthly performance summary to provide the QA supervisor with an overview of the contractor's performance.

TASK SCHEDULE (REFUSE CONTAINER SPRAYING)

CONTRACT REQUIREMENT: The contractor should (1) fresh-water clean and (2) spray for insect/rodent control refuse containers specified by the Contracting Officer or selected in accordance with the contract.

TASK SCHEDULE (REFUSE CONTAINER SPRAYING)

CONTRACT REQUIREMENT: The Contractor shall (1) fresh-water clean and (2) spray for insect/rodent control those refuse containers specified by the Contracting Officer or selected in accordance with the contract.

TASK SCHEDULE

Random Number	Containers to be Cleaned		Random Number	Containers to be Cleaned		Random Number	Containers to be Cleaned	
	Location	Date Scheduled*		Location	Date Scheduled*		Location	Date Scheduled
1	Bldg. A1		21	Bldg. C16		41	Bldg. E41	
2	" A7		22	" C19		42	" E44	
3	" A12		23	" C46		43	" F12	
4	" A20		24	" C62		44	" F27	
5	" A33		25	" C90		45	" F36	
6	" A62		26	" C95		46	" H17	
7	" A74		27	" C129		47	" H29	
8	" A87		28	" D12		48	" J11	
9	" A121		29	" D29		49	" J26	
10	" B6		30	" D90		50	" J46	
11	" B11		31	" D198		51		
12	" B12		32	" D279		52		
13	" B15		33	" D340		53		
14	" B43		34	" E9		54		
15	" B61		35	" E19		55		
16	" B96		36	" E24		56		
17	" B98		37	" E27		57		
18	" C10		38	" E31		58		
19	" C11		39	" E37		59		
20	" C15		40	" E38		60		

*Schedule set by Contractor

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (REFUSE CONTAINER SPRAYING)

CONTRACT REQUIREMENT: The contractor should clean with fresh water and spray for insect/rodent control those refuse containers specified by the Contracting Officer or selected in accordance with the contract.

PERFORMANCE INDICATORS:

1. Designated disposals have been removed and cleaned when scheduled.

2. Cleaned disposals have been returned to their former locations.

3. Disposals have been sprayed for insect/rodent control at their permanent locations.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine the areas for inspection. He/she should also use an unscheduled field inspection to evaluate past unsatisfactory performance areas and areas specified by the COR.

Systematic random sampling should be done using the population size 50, and referring to Table A1 of Appendix A to determine a number of samples 17, and a number of allowable rejects 4. Any collection of randomized numbers can be used to determine the first sample for inspection. Dividing the population size by the sample size determines the increment _____.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (PM)

REQUIREMENT: The contractor should (1) fresh-water clean and (2) spray for insect/rodent control refuse containers specified by the Contracting Officer or selected in accordance with the contract.

PERFORMANCE INDICATORS:

1. Designated refuse containers should be removed and cleaned when scheduled.

2. Cleaned refuse containers should be returned to their former location.

3. Refuse containers should be sprayed for insect/rodent control at their permanent location.

REMARKS: Describe unsatisfactory performance and/or need for repair or repainting.

DATE	LOCATION	PI 1	PI 2	PI 3	REMARKS
	A7	✓	✓	✓	
	A20	✓	✓	✓	
	A74	✓	✓	✓	broken hinge
	B6	✓	✓	✓	
	B15	✓	✓	✓	
	B96	✓	✓	✓	
	C11	✓	✓	✓	
	C19	✓	✓	✓	
	C20	✓	✓	✓	
	D12	✓	✓	✓	
	D193	✓	✓	✓	
	E9	✓	✓	✓	
	E27	✓	✓	✓	
	E~~38~~	✓	✓	✓	
	E12	✓	✓	✓	
	H17	✓	✓	✓	

REMARKS: Describe unsatisfactory performance and/or need for repair or repainting.

Carl Lewis
Quality Assurance Evaluator

24 JULY 1984
Date

A.3. VEGETATION CONTROL

The contractor should use chemicals approved by the U.S. Environmental Protection Agency in strict accordance with label directions to: (1) keep improved grounds free of vines, brush, dandelions, and other broadleaf weeds; (2) keep specified special areas free of weeds; (3) keep vegetation cleared to 6 in. from both the inner and outer sides of perimeter fencing; and (4) remove vegetation from cracks and joints in paved surfaces.

PERFORMANCE INDICATORS

1. Broadleaf weeds should not exceed 10 weeds per 20-sq yd area.

2. Specified special areas should be essentially weed-free.

3. There should be less than 5 percent vegetation within 6 in. of the fencing.

4. Vegetation in paved surfaces should not exceed 1 in. per foot of joint or crack.

INSPECTION FORMS

1. QA Worksheet (Vegetation Control)

2. QA Checklist (Vegetation Control)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

All performance indicators should be evaluated by unscheduled inspection or by validating complaints. If the contractor's performance appears to be unsatisfactory, the areas involved should be divided into zones and systematic random sampling used to monitor them.

DETAILED PROCEDURES

1. Improved Grounds. Lawns should be visually inspected for broadleaf weeds. If the presence of weeds is obvious, the QAE should pace off a square of 24 normal steps on each side, marking the corners, and count the number of broadleaf weeds within the square. If the number exceeds 10, the contract requirements have not been met. The QAE should then report to the QA Supervisor that there is evidence that the work may not be satisfactory. If the nonperformance persists, a systematic random sampling procedure should be started to formally evaluate the contractor's performance in order to adjust payment.

To sample the work, the improved areas should be divided into approximately equal sections and each section numbered. The number of sections identified becomes the population size for random sampling purposes.

2. Special Areas. If the contract includes vegetation control in specified special areas, the QAE should identify those areas and visually inspect them regularly. Usually, the special areas are decorative planting areas at entrances to the installation and surrounding headquarters buildings and therefore require close attention due to their high visibility. Unless there is a large number of these areas, the QAE should use unscheduled inspection; otherwise, he/she should list the special areas and number them consecutively. This list can then be used to select areas for inspection by systematic random sampling.

3. Fencing. The intent of vegetation control along fencing is to eliminate all vegetation growth within 6 in. of the fenceline. Any reasonable method of accomplishing this task can result in occasional growth at any given time of inspection. Thus, the QAE should perform an initial general evaluation of the contractor's performance by visual drive-by inspections of the fencelines while enroute to other locations around the installation. If these inspections show that vegetation is often present near the fencelines, a more systematic evaluation would be needed to determine the actual performance level.

If these initial inspections show that the contractor's work may not be conforming to contract requirements, the QAE should begin a systematic random sampling inspection procedure by first determining how much fencing the contractor is responsible for and dividing it into sections of about 100 ft each. Each section should be numbered for identification on an installation map. These sections become the population size for purposes of using Table A1 of Appendix A to select sections for inspection.

4. Paved Surfaces. The QAE should visually observe all paved areas for which the contractor is responsible to determine if vegetation growth is present. Special attention should be given to low-traffic areas where abrasion will not inhibit growth. If these inspections show that the performance standards are not being met, the QAE should begin systematic random sampling by dividing the paved areas into sections. Streets can be identified by blocks; special areas, such as parking lots, tennis courts, and helicopter landing areas, can be identified separately. The sections, which are identified and numbered on an installation map, become the population from which samples for inspection will be selected.

EXAMPLE QA WORKSHEET

QUALITY ASSURANCE WORKSHEET (VEGETATION CONTROL)

CONTRACT REQUIREMENT: The contractor should use EPA-approved chemicals in strict accordance with label directions to: (1) maintain improved grounds free of vines, brush, dandelions and other broadleaf weeds; (2) maintain specified special areas weed free; (3) maintain fencing clear of vegetation 6 in. from both the inner and outer sides of perimeter fencing; and (4) remove vegetation from cracks and joints in paved surfaces.

PERFORMANCE INDICATORS

1. Broadleaf weeds do not exceed 10 weeds per 20-sq yd area.

2. Specified special areas are essentially weed-free.

3. Fencing has less than 5 percent vegetation within 6 in. of the fence.

4. Vegetation in paved surfaces does not exceed 1 in. per foot of joint or crack.

QUALITY ASSURANCE EVALUATION METHODS:

All performance indicators should be evaluated by unscheduled inspection or by validating complaints. If the the contractor's performance appears to be unsatisfactory, the areas involved should be divided into zones and systematic random sampling techniques used to monitor the performance level.

SYSTEMATIC RANDOM SAMPLING

Using the population size NA, and referring to Table A1 of Appendix A gives a number of samples NA, and a number of allowable rejects NA. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size gives the increment NA.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (VEGETATION CONTROL)

CONTRACT REQUIREMENT: The contractor should provide vegetation control services.

PERFORMANCE INDICATORS

1. Broadleaf weeds do not exceed 10 weeds per 20-sq yd area.

2. Specified special areas are essentially weed-free.

3. Fencing has less than 5 percent vegetation within 6 in. of the fence.

4. Vegetation in paved surfaces does not exceed 1 in. per foot of joint or crack.

DATE	LOCATION	PI 1	PI 2	PI 3	PI 4	REMARKS
17 JULY 84	MAIN GATE	✓	✓	✓	✓	
"	pk. lot C	NA	NA	✓	✓	

Carl Lewis
Quality Assurance Evaluator

18 JULY 1984
Date

A.4. WOOD INFESTATION INSPECTION

The contractor should inspect all facilities annually for termites, wood-destroying beetles, and fungi. An inspection report should be submitted to the Contracting Officer within 5 working days after completion of the inspection, noting any areas where treatment is required and the extent of the damage.

PERFORMANCE INDICATORS

1. The contractor should schedule annual inspections of all facilities.

2. Inspections must be conducted as scheduled.

3. Reports of infestation/damage should be received within 5 days of the inspection.

INSPECTION FORMS

1. Sample Report (Wood Infestation Inspection)

2. QA Checklist (Wood Infestation Inspection)

3. Facilities Checklist

The sample forms included within this task unit show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

Performance indicator 1 should be evaluated by unscheduled inspection of the contractor's facility inspection schedule. Performance indicator 2 should be evaluated by unscheduled inspection of selected facilities to determine whether conditions match those reported. Performance indicator 3 should be evaluated by 100 percent inspection of the reports of damage or infestation.

DETAILED PROCEDURES

The contractor's annual inspection schedule must include all buildings and facilities listed in the contract.

Using the contractor's approved schedule, the locations of this month's wood infestation inspections should be determined. All buildings scheduled for inspection must have been signed off by the resident as having been inspected. One or more buildings should be selected for visits to confirm that the actual condition corresponds to that stated in the inspection report. (A sample of a typical report is included.) The QAE should interview the facility resident and look for the presence of dead or live insects, termite tunnels on foundation surfaces, and deterioration of wood joists, sill plates, porches, steps, and any other wood components located near soil, concrete slabs, foundations, or footings. For the selected inspection report to be satisfactory, the QAE should not find any discrepancies from conditions stated in the contractor's report. If the QAE is uncertain of observed conditions, the Contracting Officer should be notified that a suspected deficiency exists so that confirmation may be made.

If a wood infestation inspection has found the presence of active wood-destroying vectors or recent damage to the facility, the contractor should have notified the Contracting Officer within 5 days of the inspection so that appropriate corrective action can be taken. Control of wood infestations and repair of damage should be performed separately from this contract requirement.

The contractor reports of completed annual wood infestation inspections should be recorded on the Facilities Checklist. All units listed must have been inspected by the end of the contract year.

SAMPLE WOOD INFESTATION INSPECTION REPORT

Branch Name ___ _____ Date _____

Address ___ _____ Property Address _____

_____ _____

City State Zip City State Zip

Phone Number AC __ / _____ Customer's Phone AC __ / _____

PCO License No. _____ _____ Case Number _____

SCOPE OF EXAMINATION
THIS EXAMINATION AND REPORT IS MADE AND ACCEPTED BY CUSTOMER WITHOUT WARRANTY OR GUARANTEE OF ANY KIND, EITHER EXPRESSED OR IMPLIED.

Pest control operator has, at the request of the customer, caused the building at the above-stated address to be inspected. The observations of the inspector and the date of this inspection are indicated below. Said inspection was limited to a visual inspection of accessible areas and/or sounding of accessible areas and of accessible structural members. No inspection has been made for infestation in areas concealed by dirt fills, siding, rugs, insulation, etc., or that requires the removal thereof. Because of the characteristics and behavior of various termites and other wood-destroying organisms, it is not always possible to determine the presence of infestation without extensive probing, and in some cases the actual dismantling of parts of the structure being inspected. Previous damage to trim, wall surface, etc., is frequently repaired with putty, spackling, tape or other decorative devices and this concealment or repair of damage would not be discovered except by probing which would mar the surface appearance. This has not been done. The inspection set forth below has been made on the basis strictly of visual evidence and is issued without expressed or implied warranty or guaranty. The pest control operator has made such inspection as an accommodation to customer and in consideration thereof it is agreed by and between the parties hereto, those parties being the customer and the pest control operator, that pest control operator is not an insurer against wood-infesting termites and other wood-destroying organisms; that the report fee is a very nominal fee and is not an insuring fee; and that from the nature of the inspection services to be rendered, it is impracticable and extremely difficult to fix the actual damages, if any, which might proximately result from a failure on the part of the inspector to perform the services that would be involved in inspecting areas that would not be readily accessible; pulling up carpets, extensive probing, etc. Therefore, in the event it should subsequently turn out that there might have been termites or other wood-destroying organisms at the time of the inspection and there is resulting loss or damage to the party for whom this inspection is being made and who is paying the report fee, the liability of the pest control operator shall be limited to and fixed as a sum equal to the amount of the report fee. Said amount shall be the only damages that can be claimed or obtained by the person to whom this report is being made, or by any person or persons in privity thereto and shall constitute liquidated damages.

The parties hereto do covenant and agree that there are no verbal understandings, representations, or statements changing or modifying any of the terms or provisions of this inspection report and that all terms, conditions and provisions thereof are contained herein in writing.

"A wood-destroying organism inspector is not ordinarily a construction or building trade expert and therefore is not expected to possess any special qualifications which would enable him to detect the extent of structural damage. If damage or other evidence of wood-destroying organisms is noted in this report, further investigation by qualified experts of the building trade should be made to determine structural soundness of the property."

A qualified representative of this Company has inspected the property located at the above address and reports the following:

A. Areas Inspected: Crawl Space __ Attic __ Tub Trap __
Building Interior __ Building Exterior __

REMARKS: _____

	CHECK ONE YES	NO
B. INFESTATION or CONDITION (as of inspection date)		
1. There is visible evidence of active infestation of:		
A. Termites	__	__
B. Other wood destroying organisms (Describe) _____	__	__
2. There is visible evidence of previous infestation of:		
A. Termites	__	__
B. Other wood destroying organisms (Describe) _____	__	__
3. There is visible evidence of conditions or construction conductive to infestation (earth-wood contact, faulty grades, insufficient ventilation, etc.) If yes, describe on graph attached	__	__
C. DAMAGE		
1. There is visible evidence of damage to structural items (columns, girders, sills, joists, plates, headers, stairs, porch supports, rafters, etc.) If yes, describe on graph attached	__	__
2. There is visible evidence of damage to other construction (exterior porch floors and steps, door and window sills, jambs, siding, subflooring, etc.) If yes, describe on graph attached	__	__

This report does not include detached garages, sheds, lean-tos, fences, or other buildings on the property unless specifically noted here:

_____

I hereby certify that neither I, nor the Company for whom I am acting, have had, presently have, or contemplate having any interest in the property involved.

Inspector _____ Date _____

Branch Manager _____ Date _____

We have read the above and foregoing report and understand all of the terms and conditions thereof, including the scope thereof and limitations thereof and do accept the same and agree to pay the report charge and agree to all terms and conditions thereof.

Accepted By: _____ Date _____

"This report is null and void unless signed and agreed to by the purchaser.

_____
Purchaser's Signature Date

EXAMPLE QA CHECKLIST

PEST CONTROL SERVICES Sheet 1 of 1

QUALITY ASSURANCE CHECKLIST (WOOD INFESTATION INSPECTION)

CONTRACT REQUIREMENT: The contractor should inspect for wood infestations and furnish an inspection report to the Contracting Officer.

PERFORMANCE INDICATORS:

1. The contractor has scheduled annual inspections of all facilities.

2. Inspections have been conducted as scheduled.

3. Reports of infestation/damage have been received within 5 days of the inspection.

REQUIREMENT: The contractor has scheduled all facilities for annual inspection . . . . . YES (circled) NO

BLDG.	DATE INSPECTION SCHEDULED	INSPECTION REPORT ON TIME	VERIFIED	REMARKS
413	17-JULY 1984	✓	✓	No Damage
521	16 JULY 1984	✓	✓	"

Earl Lewis
Quality Assurance Evaluator

19 JULY 1984
Date

NOTE: 0 sheets are attached as part of this report.

EXAMPLE QA CHECKLIST

PEST CONTROL SERVICES Sheet ___ of ___

QUALITY ASSURANCE CHECKLIST (WOOD INFESTATION INSPECTION)

NOTE: This form is to be used to continue Sheet 1.

BLDG.	DATE INSPECTION SCHEDULED	INSPECTION REPORT ON TIME	VERIFIED	REMARKS

A.5. MOSQUITO CONTROL

Annually during the month of April or May, the contractor should provide and distribute a slow-release pellet product impregnated with insecticide in the density recommended by the manufacturer.

PERFORMANCE INDICATORS

1. The product provided by the contractor should be specifically designed for mosquito control.

2. Enough material must be on hand to treat the areas specified at the recommended application rate.

3. The product should be distributed in the areas and at the rate specified.

INSPECTION FORMS

QA Checklist (Mosquito Control)

The sample form included within this task unit shows how to use the blank form in Appendix B.

QUALITY ASSURANCE EVALUATION METHOD

Using planned sampling, performance indicators 1 and 2 should be evaluated by inspecting the product at the contractor's storage facility. Performance indicator 3 should be evaluated by observing the contractor's performance and verifying that the areas specified in the contract have been treated and that the density of application is in accordance with the manufacturer's recommendations.

DETAILED PROCEDURES

When the contractor reports that the mosquito abatement material has been delivered to the installation, the QAE should verify that the product is specifically intended for this purpose. The product should be in original, unopened containers and clearly labeled. The contractor should be told to hold distribution if the product does not appear correct.

If the product is acceptable, the manufacturer's recommended application rate in number of pellets per 100 sq ft should be determined. Sufficient material must be present to cover the specified area at the recommended rate. The sample checklist provides typical calculations.

Immediately following application of the pellets, a portion of the grounds to have been treated should be randomly selected and the number of pellets within a square measuring 10 ft on a side counted. The number should equal or exceed that recommended by the manufacturer.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST (MOSQUITO CONTROL)

REQUIREMENT: The mosquito control product is specifically formulated for this purpose.

(CIRCLE ONE) (S) U N
QAE REMARKS:

REQUIREMENT: Sufficient material is on hand to treat all areas specified.

(CIRCLE ONE) (S) U N
QAE REMARKS: 1. AMOUNT IN STOCK = 26001b (unit)
2. AREA = 15 acres (unit)
3. APPLICATION RATE = 3#/1000 sq FT
4. AMOUNT REQUIRED = 19601b

15 AC X 43,560 = 653,400 SQ FT.

NOTE: 1 Acre = 43,560 Sq Ft

REQUIREMENT: Distribution of pellets meets or exceeds the rate recommended by the manufacturer.

(CIRCLE ONE) (S) U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

Carl Lewis
Quality Assurance Evaluator

4 May 1984
Date

B. UNSCHEDULED PEST CONTROL SERVICES

The contractor should respond to work requests from the Contracting Officer for pest control services.

PERFORMANCE INDICATOR

The contractor should respond and complete his/her work in a timely, effective, and workmanlike manner.

INSPECTION FORMS

1. QA Worksheet (Pest Control Work Requests)

2. QA Checklist (Pest Control Work Requests)

The sample forms included within this task unit show how to use the blank forms in Appendix B.

DETAILED PROCEDURES

As a rule, all unscheduled pest control services are performed as a service order (SO). Therefore, the general method for inspecting unscheduled pest control services is the same as for all other service orders. The inspection should be done by following the procedure listed on the worksheet, using the checklist to record the results.

The contractor should have submitted a report of the completed work so that the QAE may schedule the evaluation. The QAE inspection of the completed work samples should show that the contractor has completed his/her work in a timely, effective, and workmanlike manner.

The QAE should visit the site of the pest control work and confirm that the requested service has been performed. Interviews with the person who requested the service may be used to evaluate the timeliness and effectiveness of the service when its effect is not visibly obvious or when the results are not expected to be immediate.

EXAMPLE QA WORKSHEET

UNSCHEDULED PEST CONTROL SERVICES

QUALITY ASSURANCE WORKSHEET

PERFORMANCE INDICATOR:

The contractor has responded and completed his/her work in a timely, effective, and workmanlike manner.

QUALITY ASSURANCE EVALUATION PROCEDURE

The QAE should use a systematic random sampling method to determine the number of work orders for inspection. Using the population size 7, and referring to Table A1 of Appendix A (normal - surveillance, 5 percent AQL), gives a number of samples 2 and a number of allowable rejects 0. Any collection of randomized numbers may be used to determine the first samples for inspection. Dividing the population size by the sample size determines the interval 3.

LISTING OF WORK ORDERS COMPLETED THIS PERIOD:

0521 ____ ____ ____ ____ ____

0579 ____ ____ ____ ____ ____

(0624) ____ ____ ____ ____ ____

0814 ____ ____ ____ ____ ____

0947 ____ ____ ____ ____ ____

(0972) ____ ____ ____ ____ ____

1021 ____ ____ ____ ____ ____

EXAMPLE QA CHECKLIST

UNSCHEDULED PEST CONTROL SERVICES

QUALITY ASSURANCE CHECKLIST

PERFORMANCE INDICATOR:

The contractor has responded and completed his/her work in a timely, effective, and workmanlike manner.

REMARKS:

WORK ORDER #	DESCRIPTION	ON-TIME	COMPLETED	CUSTOMER SATISFIED
0624	dead cat	V	V	V
0972	snake removed	V	V	V

REMARKS: SNAKE NOT POISONOUS

Carl Lewis
Quality Assurance Evaluator

27 JULY 1984
Date

CUSTODIAL SERVICES

A. TRASH REMOVAL

B. CARPETED SURFACES

C. HARD-FLOOR SURFACES

D. DUSTING

E. SPOT CLEANING

F. GLAZING

G. RESTROOMS

H. SAND/SNOW/ICE ON SIDEWALKS AND STAIRS

The contractor's responsibilities for performing custodial services should include scheduling and performing all work needed to maintain and clean the specified areas.

INSPECTION FORMS

1. QA Worksheet (Custodial Services)

2. QA Checklist (Custodial Services)

The sample forms in this section show how to use the blank forms in Appendix B.

QUALITY ASSURANCE EVALUATION METHODS

Performance indicators should be evaluated by systematic random sampling and the criteria listed under the Detailed Procedures for each appropriate task unit. Using the same criteria, an unscheduled field inspection should also be used to evaluate specific areas for which there has been a history of unsatisfactory performance. The latter inspection should be coordinated with the COR.

GENERAL PROCEDURES

1. Random Inspection. The QAE should use the record of buildings that are to receive custodial services, the systematic random sampling procedures, normal surveillance, and a 10 percent AQL to select areas for inspection. The Custodial Services Worksheet should be used as a guide to identify the Performance Indicators and Detailed Procedures for the evaluation. Each task unit should be inspected weekly or according to the frequency noted under its Detailed Procedures. Any deficiencies between the task being inspected and the Detailed Procedures indicators for that task should be documented by using the Custodial Services Checklist.

2. Unscheduled Inspection. Using past inspection records, the QAE should schedule for inspection those areas with a history of unsatisfactory performance. The Custodial Services Worksheet should be used as a guide for determining the Performance Indicators and Detailed Procedures to be used in the evaluation. Each task unit should be inspected weekly or according to the frequency noted under its Detailed Procedures. Any deficiencies between the task being inspected and the Detailed Procedures should be documented on the Custodial Services Checklist.

A. TRASH REMOVAL

PERFORMANCE INDICATOR

Trash removal services should be performed satisfactorily according to the requirements listed in the Detailed Procedures.

DETAILED PROCEDURES

1. All waste receptacles must be less than half full.
2. Plastic liners must be provided for each trashcan.
3. Plastic liners should not be torn or soiled.

B. CARPETED SURFACES

PERFORMANCE INDICATOR

Carpeted surfaces must be maintained satisfactorily according to the requirements listed in the detailed procedures.

DETAILED PROCEDURES

1. Rugs and carpets should be free of all removable visible litter and soil.

2. All tears, burns, and ravels should be reported to the COR.

3. Carpets that have been shampooed should meet the criteria specified in the contract.

Using the contractor's report of carpets shampooed during the past month, the QAE should randomly select areas for inspection each month. Initially, a visual inspection should be performed to check that the nap of the carpet has been raised and that the carpet has a clean appearance and a clean smell. If the effectiveness of the shampooing is questionable, the areas in doubt should be inspected by using a steam rug cleaner to better determine contractor performance. The steam cleaner should be filled with 1 gal of water and the proper cleaning solution. The rug to be inspected should be shampooed until the water supply runs out. The wastewater should then be collected and stirred to attain suspension of all particles. A one-cup sample of the water should be allowed to settle overnight. The performance level is satisfactory if the level of sediment in the sample is less than 1/4 in. high. The sampling process should not discolor the carpet by making that area cleaner than the rest of the surface. If discoloring occurs, it may be assumed that the contractor's cleaning process was unsatisfactory.

C. HARD FLOOR SURFACES

PERFORMANCE INDICATOR

Hard-floor surfaces should be maintained satisfactorily according to requirements listed in the Detailed Procedures.

DETAILED PROCEDURES

1. Mopping:

a. Wood floors should not be wet-mopped.

b. Mopped areas must have a uniformly clean surface.

c. Hard floors must be free of accumulated dust, litter, and debris.

d. Hard floors should be free of swirl marks, detergent residue, or evidence of soil, stains, film, or water.

e. There should be no splash marks on furniture, walls, baseboards, equipment, or other items.

2. Sweeping:

All swept floors must be free of accumulated dust, litter, and debris.

3. Waxing:

a. All waxed floors, including the floor underneath easily tilted or movable objects, should have a uniform nonskid surface with a glossy appearance.

b. Waxed floors should be free of scuff marks, heel marks, stains, and discolorations.

c. All waxed floors should be free of built-up wax. They should not have a dull, hazy appearance.

d. Baseboards, furniture, and equipment should be free of floor maintenance solutions.

D. DUSTING

PERFORMANCE INDICATOR

Dusting should be done satisfactorily according to the requirements in the Detailed Procedures.

DETAILED PROCEDURES

1. Unless specifically excepted, all desks, furniture, walls, blinds, radiators, and office equipment should be virtually free of all dust, litter, lint, and soil.

2. Venetian blinds (inspect quarterly) should be:

a. Virtually free of all dust, stains, soil, and smudges.

b. Properly replaced in the correct location.

c. Show no evidence of staining on tapes and cords.

E. SPOT CLEANING

PERFORMANCE INDICATOR

Spot cleaning should be done satisfactorily according to the requirements listed in the Detailed Procedures.

DETAILED PROCEDURES

1. Mats and rugs:

a. Walk-off mats must be provided at all exterior entranceways.

b. Walk-off mats should be clean; i.e., they are free of all removable debris and stains.

c. All rug stains smaller than 2 ft square should be cleaned and meet the requirements listed for carpeted surfaces.

d. All washable surfaces must be free of smudges, finger prints, marks, and streaks.

2. Drinking fountains:

a. Fountains should be free of streaks, stains, spots, smudges, scale, soil, and foreign matter.

b. Fountains must be disinfected. (The QAE should determine that a disinfecting cleaner is part of the custodian's supplies.)

3. Vending machines: The area surrounding vending machines should be free of all removable litter, dust, soil, and debris.

Empty bottles or containers must be placed in the proper storage space.

4. Upholstered furniture: Upholstered furniture should be vacuumed or damp-wiped as appropriate and should be free of dust and streaks on all surfaces, including under and between cushions.

F. GLAZING

PERFORMANCE INDICATOR

Glazing should be cleaned satisfactorily according to requirements listed in the Detailed Procedures.

DETAILED PROCEDURES

1. Interior window frames, sills, casings, and transparent surfaces must be free of film, dirt, smudges, water, streaks, or any foreign matter.

2. Exterior windowframes, sills, casings and transparent surfaces should be free of film, dirt, smudges, water, streaks, or any foreign matter. (Inspect semi-annually in April and October.)

3. Glass partitions, shelving, glass doors (interior and exterior), display cases, directory boards, draft shields on windows, mirrors, frames, sills, casings, and transparent surfaces should be free of film, dirt, smudges, water, streaks, or any foreign matter.

G. REST ROOMS

PERFORMANCE INDICATOR

Rest room services should be done satisfactorily according to requirements listed under the Detailed Procedures.

DETAILED PROCEDURES

1. Rest room supplies, including toilet tissue, paper hand towels, hand soap, and paper inserts for sanitary napkin disposal should be provided in the quality required and in a quantity that will not be depleted before restocking.

2. Bowls, urinals, commodes, etc., should be free of streaks, stains, scale, scum, urine deposits, and rust stains.

3. All walls, fixtures, and surfaces should be disinfected. (The QAE should determine that a disinfecting cleaner is part of the custodian's supplies. A residual disinfectant odor should be apparent when entering the restroom.)

H. SAND/SNOW/ICE REMOVAL ON SIDEWALKS AND STAIRS

PERFORMANCE INDICATOR

Snow/sand/ice should be satisfactorily removed from sidewalks and stairs according to requirements listed in the Detailed Procedures.

DETAILED PROCEDURES

All sand/snow/ice should be removed to bare pavement, with clear access to sidewalks, stairs, fire hydrants, building entrances and exits, and refuse containers. (Clear access means that anyone or anything that would normally be able to access that area can access it after sand/snow/ice removal.) The QAE should check that abrasives were removed at least 8 working hours after all ice/snow in the vicinity has melted. If the area appears to have been swept clean, the work is considered satisfactory. However, if the QAE has doubts about the contractor's performance, he/she should sweep together a section of sidewalk or stair about 10 ft square. Debris accumulation of less than one handful is acceptable.

EXAMPLE QA WORKSHEET

CUSTODIAL SERVICES

QUALITY ASSURANCE WORKSHEET

CONTRACT REQUIREMENT: The contractor should perform custodial services.

PERFORMANCE INDICATORS:

The following services have been completed satisfactorily according to requirements listed in the applicable Detailed Procedures:

1. Trash removal services have been performed.
2. Carpeted surfaces have been maintained.
3. Hard floor surfaces have been maintained.
4. Dusting has been done.
5. Spot cleaning has been performed.
6. Glazing has been cleaned.
7. Rest room services have been performed.
8. Sand/snow/ice removal has been done.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine the number of areas to be sampled. Using the population size 45, and referring to Table A1 of Appendix A gives a number of samples 15, and a number of allowable rejects 3. Any collection of randomized numbers can be used to determine the first sample for inspection. Dividing the population size by the sample size determines the interval 3. The QAE should also use an unscheduled field inspection to evaluate unsatisfactory poor performance areas and areas specified by the Contracting Officer or his/her representative.

EXAMPLE QA CHECKLIST

QUALITY ASSURANCE CHECKLIST

Day/Date	BUILDING	TRASH REMOVAL	CARPETED SURFACES	HARD FLOOR SURFACES	DUSTING	Remarks
8/13/84	#67	S	S	S	S	
8/13/84	70	S	S	S	S	
8/13/84	73	S	S	S	S	
8/13/84	76	S	S	S	S	
8/13/84	79	U	S	S	S	3 Full Cans
8/13/84	82	S	S	S	S	
8/13/84	85	S	S	S	S	
8/13/84	88	S	S	S	S	
8/13/84	91	S	S	S	S	
8/14/84	94	S	S	S	S	
8/14/84	97	S	S	S	S	
8/14/84	100	S	S	S	S	
8/14/84	103	S	S	S	S	
8/14/84	106	S	S	S	S	
8/14/84	109	S	S	S	U	Poor Quality

W. A. Johns
Quality Assurance Evaluator

Aug. 14, 1984
Date

Day/Date	Building	SPOT CLEANING	GLAZING	REST ROOMS	SAND/SNOW/ICE REMOVAL	Remarks
8/13/84	#67	S	S	S	S	
8/13/84	70	S	S	S	S	
8/13/84	73	S	S	S	S	
8/13/84	76	S	S	S	S	
8/13/84	79	S	S	U	S	TRASH ON FLOOR
8/13/84	82	S	S	S	S	
8/13/84	85	S	S	S	S	
8/13/84	88	S	S	S	S	
8/13/84	91	S	S	S	S	
8/14/84	94	S	S	S	S	
8/14/84	97	S	S	S	S	
8/14/84	100	S	S	S	S	
8/14/84	103	S	S	S	S	
8/14/84	106	S	S	S	S	
8/14/84	109	S	S	S	S	

W. A. Johns
Quality Assurance Evaluator

Aug. 14, 1984
Date

Table A1

Sample Sizes and Reject Levels

Population Size	Normal Surveillance				Tightened Surveillance				Reduced Surveillance			
	AQL 5%		AQL 10%		AQL 5%		AQL 10%		AQL 5%		AQL 10%	
	Sample Size	Reject Level	Sample Size	Reject Level	Sample Size	Reject Level	Sample Size	Reject Level	Sample Size	Reject Level	Sample Size	Reject Level
50	15	3	17	4	33	4	37	6	7	3	9	4
75	16	3	19	4	42	5	49	8	7	3	10	4
100	17	3	21	5	49	5	58	9	8	3	10	5
125	18	3	22	5	55	6	66	10	8	3	10	5
150	18	3	22	5	59	6	72	11	8	3	10	5
175	19	3	23	5	63	7	78	12	8	3	11	5
200	19	3	23	5	66	7	82	13	9	3	11	5
225	19	3	24	5	68	7	86	13	9	3	11	5
250	19	3	24	5	70	7	89	14	9	3	11	5
275	19	3	24	5	72	8	92	14	9	3	11	5
300	20	3	24	5	74	8	95	15	9	3	11	5
325	20	3	24	5	75	8	97	15	9	3	11	5
350	20	3	24	5	76	8	99	15	9	3	11	5
375	20	3	25	5	77	8	101	16	9	3	11	5
400	20	3	25	5	78	8	103	16	10	3	11	5
450	20	3	25	5	80	8	106	16	10	3	11	5
500	20	3	25	5	82	9	109	17	10	3	12	5
550	20	3	25	5	83	9	111	17	10	3	12	5
600	20	3	25	5	84	9	113	17	10	3	12	5
650	20	3	25	5	85	9	114	18	10	3	12	5
700	20	3	25	5	86	9	116	18	10	3	12	5
750	20	3	25	5	86	9	117	18	10	3	12	5
800	20	3	25	5	87	9	118	8	10	3	12	5
900	20	3	26	6	88	9	120	18	10	3	12	6
1,000	21	4	26	6	89	9	122	19	10	4	12	6
1,200	21	4	26	6	90	9	124	19	10	4	12	6
1,400	21	4	26	6	91	10	126	19	10	4	12	6
1,600	21	4	26	6	92	10	128	20	10	4	12	6
1,800	21	4	26	6	*92	10	129	20	10	4	12	6
2,000	21	4	26	6	93	10	130	20	10	4	12	6

Table A2

Example Table of Random Digits
(Reprinted with permission from pp 322 and 323 of A Million Random Digits with 100,000 Normal Deviates, 5th ed. [The Rand Corporation, 1955]).

16050	10403	27575	95942	86331	45467	75467	42377	47681	51359	10661
16051	42659	01465	52781	74868	78248	36132	58608	85014	26686	30093
16052	01609	50876	62834	60854	50982	19878	85217	92668	40249	78383
16053	71265	29519	29984	19679	70367	07378	14898	39769	26339	57802
16054	05210	62636	56594	49111	56304	64661	51919	12365	32140	86644
16055	07312	76139	60830	54323	56999	73873	47502	33133	58930	80832
16056	83758	56481	71805	22197	95783	90609	20252	19033	80394	80907
16057	13158	89250	62136	59112	75952	81274	68091	01037	80092	47549
16058	62409	19510	69944	72256	67289	96282	78840	74259	69611	32908
16059	09242	35921	24821	26672	26522	93525	42940	89639	82601	68715
16060	58799	13773	48335	54707	58523	42850	12290	61096	91463	97194
16061	51706	48119	81148	71723	50664	59713	35270	80854	59408	98620
16062	20846	59830	71736	65940	46168	30652	01328	87715	16299	05923
16063	26955	29628	47565	67821	66364	38749	91131	04356	22252	07867
16064	63741	19438	93347	96268	25439	61141	70828	31881	93127	42948
16065	66431	85747	05957	73537	62215	72660	70646	33417	89779	36594
16066	42707	74985	93881	90773	72363	55800	77032	63533	39246	78621
16067	67341	95314	31112	93376	80949	49967	84883	19195	72425	05015
16068	04438	13271	06839	27662	67594	89708	79976	02516	23163	65506
16069	51470	20840	53793	75802	92768	80492	59412	19784	56548	46909
16070	38810	92141	53119	20189	78804	83664	49426	78506	58870	05976
16071	13000	12880	57041	67144	91020	96265	56301	93577	31102	22200
16072	85037	88111	29846	11092	19285	63704	06755	63126	11184	42583
16073	07821	92439	95046	99592	60811	05152	14317	94565	84399	00023
16074	81832	37286	12437	95170	21638	83612	32601	01666	88949	75470
16075	32619	13169	00593	19656	63020	90633	24359	51752	55613	92162
16076	45948	76734	62790	24783	35799	88319	52897	51559	89724	95755
16077	80412	38551	35253	09402	27756	37534	08723	23262	31990	02256
16078	58275	82236	99722	55933	75550	47439	38238	56942	91589	39460
16079	98550	00553	00861	67886	51485	78332	29648	81787	14919	99666
16080	62899	35448	82527	90150	13442	08014	06076	69002	62840	60647
16081	48110	34582	95908	26257	04627	49109	41892	87814	47143	72092
16082	35624	19485	55949	00724	94248	73657	34017	76928	93478	81555
16083	73501	42903	68782	07061	85636	39281	25669	27494	01693	46672
16084	60929	29173	40903	73971	22335	66363	90772	87770	82489	49099
16085	05858	54026	05776	68874	50012	67469	11128	34812	75552	54564
16086	65312	01678	29698	09264	33363	51893	23244	42602	44629	75921
16087	06093	18711	91311	08024	34364	61134	26804	89333	64545	56477
16088	51186	80062	56544	89913	33410	84630	41850	51996	99414	85887
16089	20498	88328	11503	66393	03182	27644	84190	68610	16507	19035
16090	47412	33007	20840	19152	06323	01935	55356	30788	65669	14474
16091	61025	90691	91628	57068	46661	73256	83160	25523	69918	52499
16092	51617	91715	76206	26080	59034	59791	11117	54613	75377	27788
16093	07583	65782	99368	58175	29352	84632	02203	48507	08434	17411
16094	14464	42464	81453	00897	00441	28907	33157	46003	16263	29174
16095	99487	46079	50501	51832	78469	12616	82557	24245	67368	16349
16096	84183	90800	69999	50786	00801	55390	59039	10324	47812	22472
16097	05403	00216	63786	07159	77820	78846	63248	88015	40260	58553
16098	74742	72603	36564	62416	07098	53965	97502	02593	49416	90250
16099	50266	91738	56031	78413	94709	22854	74606	93043	89404	99138

16100	73191	34676	69204	96176	12388	47894	96139	54069	61066	99319
16101	83159	36890	71634	46278	62969	50342	92433	97464	03531	18034
16102	96858	96504	97810	09134	63941	40836	12295	11068	62846	30709
16103	62184	55022	26304	23299	32556	27885	91359	34794	58123	66001
16104	99467	36445	70472	88181	48221	68309	91702	11936	15759	05963
16105	55931	69749	30461	85028	77286	35164	35280	99032	65326	94790
16106	46024	03118	63117	36572	29611	30647	94913	51586	51641	52909
16107	85216	35247	80590	02177	03651	87271	08454	82288	88505	68043
16108	85776	71306	98649	24915	17691	30819	54545	11988	50732	66960
16109	33482	20498	19517	64169	40603	72222	87507	02979	87186	71791
16110	98263	23221	32182	22815	30019	88245	84433	58791	41050	97632
16111	20000	28300	98761	79501	47176	65794	63051	86945	50010	51109
16112	42561	13442	62014	66104	56781	87873	27892	07300	47388	74078
16113	12990	72063	46359	69619	54444	46542	90397	17181	29804	05664
16114	91151	34289	22422	98955	50222	25245	79364	98226	08142	23263
16115	64474	65842	15981	91532	43182	45237	28991	64053	07962	34559
16116	43009	61029	08061	81657	50370	26205	45484	83818	65927	83072
16117	31253	52900	60591	55178	29753	94789	48744	58410	38786	58303
16118	36370	32375	34538	12931	21942	31227	06506	59284	07548	44942
16119	05015	81525	73906	88367	73454	95258	15560	14863	56935	97011
16120	93936	36504	79776	33080	07457	34042	77903	44187	57341	60931
16121	58366	88873	74765	14280	31688	19211	19140	09371	57225	46263
16122	98079	47146	57539	38604	96581	99224	65946	11016	19729	03520
16123	71076	47998	29735	74854	02470	08785	13003	64638	96072	82644
16124	32484	87411	42423	46896	98662	50270	36242	06378	09827	14931
16125	17283	21654	64520	95875	18109	51944	35170	94214	19886	29992
16126	85376	40456	18184	13865	39424	86908	21639	19822	98507	40774
16127	55892	68296	96440	57247	68897	76258	23989	50838	25285	23325
16128	13517	08329	18379	60548	64218	49645	43109	61296	09553	50616
16129	90543	90321	48161	62736	18402	82831	37862	57318	14227	00541
16130	32611	94151	12991	91717	01641	80511	06294	85791	90929	65763
16131	90701	44359	41156	89710	75597	35980	38686	43486	52376	59602
16132	89156	23799	79802	11531	33448	63118	04198	94160	58100	76597
16133	22287	51291	52446	07728	20335	39242	19844	25925	71440	79546
16134	47402	16784	00248	75937	41191	98879	82393	64066	99404	25704
16135	97222	84469	42296	24327	91423	95220	33964	08934	35096	57086
16136	03493	00474	02727	76986	05064	54962	67449	46003	03872	12542
16137	90365	54183	44142	41822	71546	83687	79883	04986	95228	19982
16138	18244	11787	59896	60107	26707	94869	73911	27598	05971	00642
16139	01912	29051	64504	29341	74127	22563	93503	03923	68372	38825
16140	60255	35577	59709	03142	81974	87287	79435	66863	54394	44334
16141	35114	96535	78205	69791	09640	78325	03205	44979	07431	61109
16142	43090	31017	87939	58590	11233	70751	28589	26953	71809	36956
16143	19114	49888	08576	76692	11648	26309	58241	37231	16342	61226
16144	92014	63570	63382	94603	04429	34017	87659	82094	07840	13596
16145	24075	42357	57976	49224	57411	09807	32403	82892	71027	18434
16146	19548	37421	55061	22493	33003	75552	09279	20640	40699	11138
16147	47279	11109	35825	48856	20843	44898	20914	70404	10775	59545
16148	32123	05256	00531	55490	23581	01412	75322	50759	69539	84799
16149	55311	79987	36432	56710	09541	23928	91588	26032	57381	98777

WATER SERVICES

QUALITY ASSURANCE WORKSHEET (WATER SUPPLY)

CONTRACT REQUIREMENT: Operate wells and perform preventive maintenance on the water supply system.

PERFORMANCE INDICATORS: Use QA Checklist (Water Supply) to record performance.

1. Preventive maintenance is performed in accordance with Technical Exhibits and Contractor's QC Checklist.

2. Operating logs for wells are complete.

3. Oil reservoirs and crankcases are at required fluid levels. Pump and motor bearings have been lubricated.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use 100 percent monthly inspection of the contractor's documentation of performance indicators 1 and 2. Performance indicator 3 should be field-verified by unscheduled inspection.

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (WATER SUPPLY)

REQUIREMENT: Contractor's approved checklist for water supply system O&Ms is complete and includes dates performed and operator's initials.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Operating logs for wells are complete.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Equipment shows visible signs of lubrication.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

_____
Quality Assurance Evaluator

Date_____

WATER SERVICES

QUALITY ASSURANCE WORKSHEET (WATER TREATMENT)

CONTRACT REQUIREMENT: Operate water treatment plant and perform preventive maintenance on the water treatment equipment.

PERFORMANCE INDICATORS: Use QA Checklist (Water Treatment) to record performance.

1. Preventive maintenance is performed in accordance with Technical Exhibits and Contractor's QC Checklist.

2. Operating logs for the water treatment plant are complete.

3. Oil reservoirs and crankcases are at required fluid levels. Pump and motor bearings have been lubricated.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use 100 percent inspection of the contractor's documentation of performance indicators 1 and 2 on a monthly basis. Performance indicator 3 should be field-verified by unscheduled inspection.

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (WATER TREATMENT)

REQUIREMENT: Contractor's approved checklist for water treatment system O&M is complete and includes dates performed and operator's initials.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Operating logs for water treatment plant are complete.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Equipment shows visible signs of lubrication.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

_____
Quality Assurance Evaluator

Date_____

WATER SERVICES

QUALITY ASSURANCE WORKSHEET (WATER DISTRIBUTION)

CONTRACT REQUIREMENT: Operate and maintain the water distribution system.

PERFORMANCE INDICATORS: Use QA Checklist (Water Distribution) to record performance.

1. Water sample testing results are recorded on the contractor's report, and water quality meets or exceeds the minimum standards. The sample collected by the QAE verifies the contractor's test results.

2. The contractor's water control valve exercising checklist is completed at the end of the month specified by the Contracting Officer. Randomly select two opportunities to observe the contractor's performance before approving it.

3. The contractor's fire hydrant and deadend flushing checklist is complete. Randomly select two opportunities to observe the contractor's performance before approving it.

4. The contractor has been observed during the annual cleaning and sanitization of the water storage tanks.

5. The contractor's records include water main flushing, location and disposition of water leaks, handling of miscellaneous water problems, and location of any potential cross-connections. The QAE has visited the sites of major leaks and cross-connections and reported the findings to the Contracting Officer's Representative.

6. The contractor has efficiently restored service to areas of the water distribution system affected by repair and has sanitized affected sections before restoring service.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use 100 percent inspection of the contractor's documentation of performance on a monthly basis. The contractor's performance should also be field-verified as described above and in the "Quality Assurance Evaluation Method" section.

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (WATER DISTRIBUTION)

REQUIREMENT: Contractor's approved checklist for verifying water quality has been completed. Required water samples have been submitted for testing and found satisfactory.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The water sample collected and submitted for analysis by the QAE verifies acceptable water quality.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The contractor's annual control valve exercising checklist is complete, and the QAE has observed and approved the procedure.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (WATER DISTRIBUTION)

REQUIREMENT: The contractor's fire hydrant and deadend flushing checklist is complete, and the QAE has observed and approved the procedure.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The contractor has cleaned and sanitized the water storage tanks.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The contractor's records of water distribution system operations are complete. Major water leaks and potential cross-connections have been reported.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

_____
Quality Assurance Evaluator

Date_____

WATER SERVICES

QUALITY ASSURANCE WORKSHEET (SWIMMING POOLS)

CONTRACT REQUIREMENT: Operate and maintain the swimming pools and related equipment.

PERFORMANCE INDICATORS: Use QA Checklist (Swimming Pools) to record performance.

1. An interview with or questionnaire completed by the lifeguard supervisor indicates satisfactory operation and response to repair requests.

2. Water sample testing results are recorded on the contractor's report, and water quality meets or exceeds minimum standards. The sample collected by the QAE verifies the contractor's test results.

3. Wading and swimming pools are clean.

4. Water samples from the pools meet specified requirements.

5. Swimming pool mechanical equipment is properly operated and maintained.

6. Swimming pools have been properly winterized/dewinterized when specified.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use 100 percent inspection to verify the contractor's documentation of performance each month. The contractor's performance should also be field-verified.

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (SWIMMING POOLS)

REQUIREMENT: Swimming pool questionnaire indicates satisfactory operation and maintenance of the pool facilities.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Contractor's logs of operation are complete.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The wading and swimming pools are free of debris and the water is clear.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

WATER SERVICES

QUALITY ASSURANCE CHECKLIST (SWIMMING POOLS)

REQUIREMENT: The contractor's water sample reports are satisfactory, and the QAE sample verifies them.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The pool filter inspection finds that:

A. The area is clean and neat.

(CIRCLE ONE) S U N

B. The equipment is operating smoothly and shows evidence of lubrication and preventive maintenance.

(CIRCLE ONE) S U N

C. The pressure readings on the filter equipment indicate less than 25 psi difference between inlet and outlet pressures.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Seasonal winterization/dewinterization has been performed properly.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

_____
Quality Assurance Evaluator

Date_____

SWIMMING POOL QUESTIONNAIRE

NOTE: This questionnaire is to be completed monthly by the pool supervisor, lifeguard, or the QAE during an interview with the pool supervisor or lifeguard. Please circle the most appropriate answer to the question. Remarks, especially when the activity being evaluated is unsatisfactory, will be helpful in correcting the deficiencies.

1. How often does a pool maintenance person visit the pool area?

DAILY SELDOM NEVER

2. Are the workmen neatly dressed and courteous?

YES NO

3. Do you experience difficulty receiving repair service during normal operating hours?

YES NO

4. Is repair work performed efficiently, and is the area cleaned up before the workmen leave?

YES NO

5. Are you satisfied with the swimming pool water clarity and chlorine content?

YES NO

6. Is the pool area, including mechanical rooms, kept clean and neat?

YES NO

7. Please furnish any remarks about the swimming pool operation and maintenance which you feel would result in improvements.

Signature_____

Title_____

Date_____

SEWAGE SERVICES

QUALITY ASSURANCE WORKSHEET (SEWAGE COLLECTION)

CONTRACT REQUIREMENT: Operate and maintain the sewage collection distribution system.

PERFORMANCE INDICATORS: Use QA Checklist (Sewage Collection) to record performance.

1. The contractor's preventive maintenance checklist is complete.

2. Planned sampling of equipment and facilities maintenance verifies the contractor's performance.

3. The contractor has efficiently restored service to damaged areas of the sewage collection system and has restored excavated areas.

QUALITY ASSURANCE EVALUATION METHOD:

Performance indicator 1 should be evaluated monthly by 100 percent inspection. Performance indicator 2 (verification of maintenance) should be evaluated monthly by planned sampling. Performance indicator 3 should be evaluated by unscheduled inspection during the contractor's repair effort.

SEWAGE SERVICES

QUALITY ASSURANCE CHECKLIST (SEWAGE COLLECTION)

REQUIREMENT: Contractor's approved preventive maintenance checklist is complete with dates and includes the initials of persons who performed the maintenance and inspection activities.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Planned sampling of maintenance of the equipment and facilities verifies the contractor's performance.

(CIRCLE ONE) S U N LOCATION_____

(CIRCLE ONE) S U N LOCATION_____

(CIRCLE ONE) S U N LOCATION_____

(CIRCLE ONE) S U N LOCATION_____

(CIRCLE ONE) S U N LOCATION_____

QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

SEWAGE SERVICES

QUALITY ASSURANCE CHECKLIST (SEWAGE COLLECTION)

REQUIREMENT: Repair of broken or blocked sanitary sewer lines and/or repair of sewage-handling equipment has been done efficiently so as to minimize service interruptions.

(CIRCLE ONE) S U N LOCATION_____

(CIRCLE ONE) S U N LOCATION_____

(CIRCLE ONE) S U N LOCATION_____

(CIRCLE ONE) S U N LOCATION_____

QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

_____
Quality Assurance Evaluator

Date_____

SEWAGE SERVICES

QUALITY ASSURANCE WORKSHEET (SEWAGE TREATMENT)

CONTRACT REQUIREMENT: Operate and maintain the sewage treatment system.

PERFORMANCE INDICATORS: Use the QA Checklist (Sewage Treatment) to record performance.

1. The contractor's logs and checklists for wastewater treatment plant operation are complete with dates and include the initials of the person doing the work.

2. Effluent analysis reports show that NPDES permit requirements have been met. An independent sample collected by the QAE verifies the reports.

3. Component repairs and replacement have occurred at or beyond the time when historical data have shown them to be expected.

4. Repair or replacement of treatment plant equipment has been done efficiently so as to minimize service interruptions.

5. An on-site inspection of the wastewater treatment facilities shows that the site's processes and conditions comply with indicators described under "Maintenance Effectiveness."

QUALITY ASSURANCE EVALUATION METHODS:

Performance indicator 1 should be evaluated monthly by 100 percent inspection of the contractor's documentation and reports. Performance indicator 2 should be evaluated monthly by planned sampling of the treatment plant effluent. Performance indicators 3 and 4 should be evaluated using unscheduled inspection during the contractor's repair effort. Performance indicator 5 should be evaluated monthly by unscheduled inspection.

SEWAGE SERVICES

QUALITY ASSURANCE CHECKLIST (SEWAGE TREATMENT)

REQUIREMENT: Contractor's logs and checklists for water treatment system operation and maintenance are complete.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Wastewater sample analysis reports furnished by the contractor show that NPDES permit requirements have been met. QAE sample verifies the results.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Necessary repair and replacement of treatment plant components occurred at or beyond the expected time.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

SEWAGE SERVICES

QUALITY ASSURANCE CHECKLIST (SEWAGE TREATMENT)

REQUIREMENT: Repairs have been done so as to minimize service interruptions.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The on-site inspection shows that the contractor's performance results in appropriate indicators of proper operation.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

_____
Quality Assurance Evaluator

Date_____

UNSCHEDULED BUILDING SERVICES

QUALITY ASSURANCE CHECKLIST

Day/Date	Building	SO/IJO	ELECTRICAL WORK	PLUMBING	METAL WORKING	Remarks

Day/Date	Building	SO/IJO	KEYS AND LOCKS	CARPENTRY AND MASONRY	PAINTING	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (PMI ROOFING)

CONTRACT REQUIREMENT: PMI (roofing), all buildings and structures.

PERFORMANCE INDICATORS:

1. PMI has been performed in accordance with Technical Exhibit ____.

2. The QAE inspection matches the contractor's PMI report.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should inspect the contractor's PMI report by 100 percent inspection. He/she should inspect poor past performance areas specified by the Contracting Officer or his/her representative by unscheduled inspection.

QUALITY ASSURANCE CHECKLIST (PMI ROOFING)

REQUIREMENT: PMI (roofing), all buildings and structures.

PERFORMANCE INDICATORS:

1. PMI has been performed in accordance with Technical Exhibit _____.

2. The QAE inspection matches the contractor's PMI report.

Day/Date	Building	PI 1	PI 2	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (PM ROOFING)

CONTRACT REQUIREMENT: Perform roofing PM on all buildings and structures.

PERFORMANCE INDICATORS:

1. PM has been performed in accordance with Technical Exhibit _____.

2. The QAE inspection shows no deficiencies.

QUALITY ASSURANCE EVALUATION METHOD:

The QAE should use 100 percent inspection for performance indicator 1. He/she should use a systematic random inspection method to determine questionnaire recipients and other random building inspections. Using the population size _____, and referring to Table A1 of Appendix A gives a number of samples _____, and a number of allowable rejects _____. Using any collection of randomized numbers, determine the first samples to be inspected. Dividing the population size by the sample size determines the interval _____.

QUALITY ASSURANCE CHECKLIST (ROOFING PM)

REQUIREMENT: Perform PM (roofing, guttering, and downspouts) for all buildings and structures.

PERFORMANCE INDICATORS:

1. PM has been performed in accordance with Technical Exhibit _____.

2. The QAE inspection shows no deficiencies.

Day/Date	Building	PI 1	PI 2	Remarks

Quality Assurance Evaluator

Date

SERVICE ORDERS AND INDIVIDUAL JOB ORDERS (ROOFING)

QUALITY ASSURANCE WORKSHEET (SOs AND IJOs)

CONTRACT REQUIREMENT: Perform SO/IJO as contracted.

PERFORMANCE INDICATORS:

1. The contracted work has been accomplished in a timely, effective, and workmanlike manner.

2. The overall quality and appearance of the repair, including materials, are comparable to that of the original facility's construction quality and appearance.

3. When compared to the contractor's report of work completed, the QAE inspection results show no deficiencies.

QUALITY ASSURANCE EVALUATION METHOD:

1. Service Orders. The QAE should use a systematic random sampling method to determine the number of buildings to be inspected for SOs and to determine questionnaire recipients. Using the population size _____, and referring to Table A1 of Appendix A gives a number of samples _____, and a number of allowable rejects _____. Any collection of randomized numbers can be used to determine the first samples for inspection. Dividing the population size by the sample size gives the interval _____.

2. Individual Job Orders. The QAE should use a 100 percent inspection method for all buildings.

SERVICE ORDERS AND INDIVIDUAL JOB ORDERS (ROOFING)

QUALITY ASSURANCE CHECKLIST (SOs AND IJOs)

CONTRACT REQUIREMENT: Perform SO/IJO as contracted.

PERFORMANCE INDICATORS:

1. The contracted work has been accomplished in a timely, effective, and workmanlike manner.

2. The overall quality and appearance of the repair, including materials, are comparable to that of the facility's original construction quality and appearance.

3. When compared to the contractor's report of work completed, the QAE inspection results show no deficiencies.

Day/Date	Area	SO/IJO #	PI 1	PI 2	PI 3	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (GUTTERS AND DOWNSPOUTS)

CONTRACT REQUIREMENT: Clean gutters and downspouts.

PERFORMANCE INDICATOR: Gutters, downspouts, and roof drains are free of debris.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use a systematic random sampling method to determine the number of buildings to be inspected; after the contractor submits his/her invoice for services performed, the QAE should verify that the drainage system is clean. Using the population size _____, and referring to Table A1 of Appendix A, gives a number of samples _____, and a number of allowable rejects _____. Any collection of randomized numbers can be used to determine the first samples to be inspected. Dividing the population size by the sample size determines the interval _____.

QUALITY ASSURANCE CHECKLIST (GUTTERS AND DOWNSPOUTS)

REQUIREMENT: Clean gutters and downspouts.

PERFORMANCE INDICATOR: Gutters, downspouts, and roof drains are free of debris.

Day/Date	Building	PI 1	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (CHANGE OF OCCUPANCY)

CONTRACT REQUIREMENT: Perform change of occupancy requirements.

PERFORMANCE INDICATORS:

1. The contractor has completed all work in 72 hours from start of work.

2. The contractor has maintained all items as identified in the joint inspection.

3. The contractor has repaired all items as identified in the joint inspection.

4. The contractor has painted all items as identified in the joint inspection.

5. The contractor has performed insect control as identified in the joint inspection.

6. The QAE inspections show no deficiencies.

QUALITY ASSURANCE EVALUATION METHOD:

The QAE should use a 100 percent inspection method to inspect all buildings listed for change of occupancy services.

QUALITY ASSURANCE CHECKLIST (CHANGE OF OCCUPANCY)

REQUIREMENT: Perform change of occupancy requirements.

PERFORMANCE INDICATORS:

1. Work has been performed in 72 hours from work start.

2. Maintenance performed has been in accordance with Technical Exhibit _____.

3. Repairs performed have been in accordance with Technical Exhibit _____.

Day/Date	Building	PI 1	PI 2	PI 3	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE CHECKLIST (CHANGE OF OCCUPANCY)

REQUIREMENT: Perform change of occupancy requirements.

PERFORMANCE INDICATORS:

4. Painting has been done in accordance with Technical Exhibit _____.

5. Insect control has been done in accordance with Technical Exhibit _____.

6. QAE inspections show no deficiencies.

Day/Date	Building	PI 4	PI 5	PI 6	Remarks

Quality Assurance Evaluator

Date

FACILITY MAINTENANCE AND REPAIR QUESTIONNAIRE

This survey should be completed using information collected from the facility user who has had the most contact with maintenance personnel. Please circle the number for the answer selected or write in an appropriate answer where there are blanks.

1. How many maintenance service calls have you had during the past (three) months? (Circle one) (The number of months may vary based on local experience.)

None (skip to q. 22)....1
1 to 3 2
4 to 6 3
7 or more 4

2. How satisfied are you with the service provided by the maintenance personnel?

Very satisfied 1
Satisfied 2
Dissatisfied 3
Very dissatisfied 4

3. Do you have difficulty reaching the work order clerk by telephone to request repair service?

No 1
Yes, I usually must dial
2 to 5 times 2
Yes, I usually must dial
6 times or more 3

4. How many times must you usually call to have a repair crew come to your quarters for normal repair service? (Emergencies are covered in q. 6.)

One 1
Two 2
Three 3
Four 4
Five 5

5. How long does it usually take for a repairman to show up after you telephone for normal repair service?

Less than 24 hours 1
24-48 hours 2
49-72 hours 3
72-96 hours 4
97 or more hours 5

6. How many times must you usually call to have a repair crew come to your quarters for emergencies?

One 1
Two 2
Three 3
Four 4
Five or more 5
Does not apply, I've never telephoned for an emergency (skip to q. 8) 6

7. How long does it usually take for a repairman to show up after you telephone for emergency repair service?

Less than 2 hours 1
2-4 hours 2
5-8 hours 3
9-24 hours 4
More than 24 hours 5

8. When calling for repair service, do you normally find the person you talk to knowledgeable?

Yes 1
No 2

9. When calling for repair service, do you normally find the person you talk to courteous?

Yes 1
No 2

10. When calling for repair service, do you normally find the person you talk to helpful?

Yes 1
No 2

11. Do you have significant problems arranging a time for the repairman to gain access to your quarters?

No 1
Yes, nobody is usually home during the maintenance personnel service hours 2
Yes, but only when maintenance personnel tried to schedule routine maintenance I did not request 3

12. Do you feel maintenance personnel respond quickly enough to your requests?

Always 1
Usually 2
Usually not 3
Never 4

13. Did you see any identification from the repairman? (Circle all that apply)

Yes, ID card 1
Yes, uniform 2
Yes, patch on shirt 3
Yes, insignia on truck..4
No 5

14. Do you feel that repairmen should wear something distinctive to help you identify them (e.g., patch, insignia, etc.)? (Circle One)

Yes, ID card 1
Yes, patch 2
Yes, uniform 3
Yes, other 4
No, not necessary 5

15. The last time you needed repairs, how many repairmen arrived to do the work?

One 1
Two 2
Three 3
Four 4
Five or more 5

16. Do the repairmen know what is to be repaired when they arrive?

Always 1
Usually 2
Usually not 3
Never 4

17. Is the repairman usually able to complete the work in one visit?

Yes (skip to q. 20) 1
No, lacks tools or materials 2
No, usually leaves for lunch, break, or quitting time 3
No, leaves for unknown reasons 4

18. Are you kept informed about the status of the repair job if it cannot be completed during the first visit?

Always 1
Usually 2
Seldom 3
Never 4

19. If the work is not completed during the first visit, how long does it normally take before the repair work is completed?

1 day 1
2 days 2
3 days 3
4-5 days 4
6 or more days 5

20. Are the repairmen courteous?

Always 1
Usually 2
Seldom 3
Never 4

21. Do the repairmen leave a clean work site?

Always 1
Usually 2
Usually not 3
Never 4

22. How often do you make your own repairs using the "self help" program?

Never 1
Once a month 2
Once every 2 months 3
Once every 3 months 4
Once every 6 months 5
Once each year 6

23. How many times have maintenance personnel inspected or visited your quarters during the months since last October to perform preventive maintenance, i.e., maintenance you did not specifically request (oil motors, check furnace, check water heater, etc.)?

None 1
Once 2
2 times 3
3 times 4
4 times 5
5 or more 6

24. Who provided the information for this questionnaire?

Sponsor 1
Dependent 2
Both 3

25. Please make any comments on the maintenance/repair program in the space below.

_____

_____

_____

Thank you very much for your cooperation.

_____
Quality Assurance Evaluator

_____
Date Questionnaire Completed

SERVICE ORDER QUESTIONNAIRE

This survey should be completed using information collected from the household member who has had the most contact with maintenance personnel. Please circle the number of the answer selected or write in an appropriate answer where there are blanks.

1. Response (in days) to repair requested work:

   a) Excellent response (normal conditions - 7 days)
      (emergency conditions - 1 day)

   b) Adequate response (within 2 weeks)

   c) Too long

      Approximately how long? _____ number of days.

2. Quality of work: (Are you satisfied that quality work was performed?)

Yes _____ No _____

Defect was not fixed _____. Explain _____

_____

3. Cleanup of area after repair: (Was area left as clean as it was before workmen arrived?)

Yes _____ No _____

Remarks _____

_____

4. Efforts of workmen: (Are you satisfied that the work was performed in a professional, effective manner?)

Comments: _____

_____

5. Attitude of workmen: (Were they helpful, friendly, courteous, cheerful?)

Comments: _____

_____

6. Do you think this type of repair could be accomplished as self help if material and instructions were supplied?

Yes _____ No _____ Maybe _____

7. Remarks: _____

_____

Thank you for your time and effort.

_____
Quality Assurance Evaluator

_____
Date Questionnaire Completed

QUALITY ASSURANCE WORKSHEET (SPECIAL AND IMPROVED GROUNDS)

CONTRACT REQUIREMENT: The contractor must perform the necessary services to maintain those grounds designated as special or improved grounds.

PERFORMANCE INDICATORS:

In reference to the applicable Detailed Procedures:

1. Grass has been cut.

2. Grass has been trimmed and/or edged.

3. Turf has been repaired.

4. Storm damage has been cleaned up.

5. Leaves have been collected and removed.

6. Debris has been disposed of.

7. Tree and shrub maintenance has been done.

8. Trees and stumps have been removed.

9. The QAE soil sample analysis confirms the adequacy of the contractor's fertilization process.

10. Grounds have been policed.

11. Fencing maintenance and repair has been done.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use 100 percent inspection for special grounds. He/she should use systematic random sampling to determine the number of areas to be sampled. Using the population size _____, and referring to Table A1 of Appendix A, gives a number of samples _____, and allowable rejects _____. The first samples to be inspected should be determined using any collection of randomized numbers. Dividing the population size by the sample size determines the interval _____. The QAE should also use an unscheduled field inspection to evaluate past poor performance areas and those areas specified by the Contracting Officer or his/her representative.

QUALITY ASSURANCE CHECKLIST (SPECIAL AND IMPROVED GROUNDS)

Day/ Date	Area	GRASS CUTTING	GRASS TRIMMING AND EDGING	TURF REPAIR	STORM DAMAGE	Remarks

Quality Assurance Evaluator

Date

Day/Date	Area	LEAF COLLECTION AND REMOVAL	DEBRIS DISPOSAL	TREE AND SHRUB MAINTENANCE	TREE AND STUMP REMOVAL	Remarks

Quality Assurance Evaluator

Date

Day/Date	Area	FERTILIZATION	POLICING GROUNDS	FENCING MAINT. AND REPAIR	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (SEMI-IMPROVED AND UNIMPROVED GROUNDS)

CONTRACT REQUIREMENT: The contractor should perform the services needed to maintain semi-improved and unimproved grounds.

PERFORMANCE INDICATORS:

In reference to the applicable Detailed Procedures:

1. Grass has been cut.
2. Grass has been trimmed and/or edged.
3. Turf has been repaired.
4. Storm damage has been cleaned up.
5. Tree and shrub maintenance has been done.
6. Trees and stumps have been removed.
7. Fencing maintenance and repair have been done.

QUALITY ASSURANCE EVALUATION METHOD:

The QAE should use an unscheduled field inspection to evaluate past poor performance areas and areas specified by the Contracting Officer or his/her representative.

QUALITY ASSURANCE CHECKLIST (SEMI-IMPROVED AND UNIMPROVED GROUNDS)

Day/ Date	Area	GRASS CUTTING*	GRASS TRIMMING AND EDGING*	TURF REPAIR*	STORM DAMAGE	Remarks

* Not applicable to unimproved

Quality Assurance Evaluator

Date

Day/Date	Area	TREE AND SHRUB MAINTENANCE*	TREE AND STUMP REMOVAL	FENCING MAINT. AND REPAIR	Remarks

* Not applicable to unimproved

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (PAVED SURFACES: PM)

CONTRACT REQUIREMENT: The contractor should maintain and repair paved surfaces.

PERFORMANCE INDICATORS:

1. All potholes, upheavals, and alligator-cracked areas are repaired.

2. All cracks are sealed.

3. Road shoulders are properly maintained.

4. Repairs are performed in a workmanlike manner.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine areas for inspection. The QAE should also use an unscheduled field inspection to evaluate both past unsatisfactory performance areas and areas specified by the COR.

Using the population size _____, and referring to Table A1 of Appendix A gives a number of samples _____, and a number of allowable rejects _____. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size gives the increment _____.

QUALITY ASSURANCE CHECKLIST (PAVED SURFACES: PM)

REQUIREMENT: The contractor must maintain and repair paved surfaces.

PERFORMANCE INDICATORS:

1. All potholes, upheavals, and alligator-cracked areas are repaired.

2. All cracks are sealed.

3. Road shoulders are properly maintained.

4. Repairs are done in a workmanlike manner.

Day/Date	Area	PI 1	PI 2	PI 3	PI 4	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (PAVED SURFACES: SWEEPING)

CONTRACT REQUIREMENT: The contractor must sweep paved surfaces, sidewalks, and parking areas.

PERFORMANCE INDICATOR:

Paved surfaces, sidewalks, and parking areas are swept.

QUALITY ASSURANCE EVALUATION METHODS

The QAE should use a systematic random sampling method to 9etermine areas for inspection. He/she should also use an unscheduled field inspection to evaluate past unsatisfactory performance areas as well as areas specified by the Contracting Officer or his/her representative.

Using the population size _____, and referring to Table A1 of Appendix A gives a number of samples _____, and a number of allowable rejects _____. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment _____.

QUALITY ASSURANCE CHECKLIST (PAVED SURFACES: SWEEPING)

REQUIREMENT: The contractor must sweep all paved surfaces, sidewalks, and parking areas.

PERFORMANCE INDICATOR:

Paved surfaces, sidewalks, and parking areas are swept.

Day/Date	Area	PI 1	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (PAVED SURFACES: REPAIRS)

CONTRACT REQUIREMENT: The contractor should perform repairs as contracted.

PERFORMANCE INDICATORS:

1. The contracted work was accomplished in a timely, effective, and workmanlike manner.

2. The overall quality and appearance of the repair, including materials, are comparable to that of the facility's original construction quality and appearance.

3. Comparison of the QAE inspection results of the facilities sampled with the contractor's report of work completed shows no deficiencies.

QUALITY ASSURANCE EVALUATION METHODS:

1. Service Orders. The QAE should use a systematic random sampling method to determine areas to be sampled. Using the population size _____, and referring to Table A1 of Appendix A gives a number of samples _____, and a number of allowable rejects _____. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment _____.

2. Individual Job Orders. The QAE should use 100 percent inspection for all areas.

QUALITY ASSURANCE CHECKLIST (PAVED SURFACES: REPAIRS)

REQUIREMENT: The contractor should perform repairs as contracted.

PERFORMANCE INDICATORS:

1. The contracted work has been done in a timely, effective, and workmanlike manner.

2. The overall quality and appearance of the repair, including materials, is comparable to that of the facility's original construction quality and appearance.

3. Comparison of the QAE inspection results of the facilities sampled with the contractor's report of work completed shows no deficiencies.

DATE	LOCATION	PI 1	PI 2	PI 3	REMARKS

REMARKS: Describe unsatisfactory performance and/or need for repair or repainting.

_____

Quality Assurance Evaluator

_____

Date

QUALITY ASSURANCE WORKSHEET (STORM DRAINAGE)

CONTRACT REQUIREMENT: The contractor should remove all debris from the storm drainage system.

PERFORMANCE INDICATOR:

Catch basins, manholes, drainage swales, ditches, and storm drainage systems are able to drain the amount of stormwater for which they were designed.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine areas for inspection. Also, he/she should use an unscheduled field inspection to evaluate past unsatisfactory performance areas and areas specified by the Contracting Officer or his/her representative.

To perform systematic random sampling using the population size _____, and referring to Table A1 of Appendix A gives a number of samples _____, and a number of allowable rejects____.
Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment _____.

QUALITY ASSURANCE CHECKLIST (STORM DRAINAGE)

REQUIREMENT: The contractor should remove all debris from the storm drainage system.

PERFORMANCE INDICATOR:

Catch basins, manholes, drainage swales, ditches, and storm drainage systems can drain the amount of stormwater for which they were designed.

Day/Date	Area	PI 1	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (TRAFFIC SERVICES)

CONTRACT REQUIREMENT: The contractor must maintain and repair traffic regulatory devices.

PERFORMANCE INDICATORS:

1. Traffic regulatory, warning, and guidance markings, lane markings, and islands must be in good repair and proper working order.

2. Parking area and helipad markings must be clearly visible.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use a systematic random sampling method to determine the areas for inspection. He/she should also use an unscheduled field inspection to evaluate past unsatisfactory performance areas and areas specified by the Contracting Officer or his/her representative.

To perform systematic random sampling using the population size _____, and referring to Table A1 of Appendix A gives a number of samples _____, and a number of allowable rejects_____. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment _____.

QUALITY ASSURANCE CHECKLIST (TRAFFIC SERVICES)

REQUIREMENT: The contractor must maintain and repair traffic regulatory devices.

PERFORMANCE INDICATORS:

1. Traffic regulatory, warning, and guidance markings, lane markings, and islands are in good repair and proper working order.

2. Parking area and helipad markings are clearly visible.

Day/Date	Area	PI 1	PI 2	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (SAND/SNOW REMOVAL AND ICE CONTROL)

CONTRACT REQUIREMENT: The contractor must perform sand/snow removal and ice control services.

PERFORMANCE INDICATORS:

1. Sand/snow has been removed to bare pavement from designated roads and parking areas.

2. Abrasives used for ice control have been removed within 1 day after the ice has melted.

3. Clear access has been made available to crosswalks from sidewalks, fire hydrants, building entrances and exits, and refuse containers.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine the areas for inspection. He/she should also use an unscheduled field inspection to evaluate past unsatisfactory performance areas and areas specified by the Contracting Officer or his/her representative.

To perform systematic random sampling using the population size _____, and referring to Table A1 of Appendix A gives a number of samples _____, and a number of allowable rejects_____. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment _____.

QUALITY ASSURANCE CHECKLIST (SAND/SNOW REMOVAL AND ICE CONTROL)

REQUIREMENT: The contractor must perform sand/snow removal and ice control services.

PERFORMANCE INDICATORS:

1. Sand/snow has been removed to bare pavement from designated roads and parking areas.

2. Abrasives used for ice control have been removed within 1 day after the ice has melted.

3. Clear access has been made available to crosswalks from sidewalks, fire hydrants, building entrances and exits, and refuse containers.

Day/Date	Area	PI 1	PI 2	PI 3	Remarks

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (RECREATIONAL AREAS)

CONTRACT REQUIREMENT: The contractor should perform repair and maintenance services for recreational areas.

PERFORMANCE INDICATOR:

Playground equipment should be repaired as needed and maintained in good condition.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine the area for inspection. He/she should also use an unscheduled field inspection to evaluate areas specified by the Contracting Officer or his/her representative.

To perform systematic random sampling using the population size _____, and referring to Table A1 of Appendix A gives a number of samples _____, and a number of allowable rejects_____. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size determines the increment _____.

QUALITY ASSURANCE CHECKLIST (RECREATIONAL AREAS)

CONTRACT REQUIREMENT: The contractor must perform repair and maintenance services for recreational areas.

PERFORMANCE INDICATOR:

Playground equipment has been repaired as needed and maintained in good condition.

Day/Date	Area	PI 1	Remarks

Quality Assurance Evaluator

Date

REFUSE HANDLING

QUALITY ASSURANCE CHECKLIST (FURNISHING CONTAINERS)

REQUIREMENT: _____ trash containers are provided.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Containers provided conform to the contract requirements.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Containers have been delivered to each family housing unit. (Use the housing checklist to record completion of this item.)

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

QUALITY ASSURANCE EVALUATION METHODS:

The contractor's performance in furnishing approved trash containers for family housing should be evaluated by 100 percent inspection. Containers should be counted; if the batch is uniform, one container may be inspected to ensure conformance with performance indicator 2. Each family housing unit occupant should verify that a container was received. The QAE should verify receipt at unoccupied units. Performance can be recorded on the following portion of this checklist.

REFUSE HANDLING

QUALITY ASSURANCE CHECKLIST (FURNISHING CONTAINERS)

REQUIREMENT: Deliver an approved trash container to each of ________ family housing units.

Family Housing Unit	Container Rcvd ( )	Family Housing Unit	Container Rcvd ( )	Family Housing Unit	Container Rcvd ( )

REFUSE COLLECTION

QUALITY ASSURANCE CHECKLIST (REFUSE COLLECTION)

QUALITY ASSURANCE EVALUATION METHOD

The QAE should occasionally select and follow a refuse collection vehicle during one collection cycle (unscheduled inspection). All building representatives and family housing residents should be encouraged to report any observed discrepancies to the Contracting Officer.

One or more of the requirements listed below may not apply to a specific collection task.

An unscheduled inspection of Vehicle No. _____ was conducted on _____ while engaged in normal collection duties.

REQUIREMENT: Trash is collected on the scheduled day on the assigned route between 0630 and 1530 hours.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Trash was collected from locations requiring daily service (Buildings _____) prior to _____ (see contract for time requirement).

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

REFUSE COLLECTION

QUALITY ASSURANCE CHECKLIST (REFUSE COLLECTION)

REQUIREMENT: The garbage vehicle was fully enclosed, clean, and not leaking.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The refuse collection vehicle is covered, and no debris was falling off.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: There was no refuse within 20 ft of the collection point after collection has been completed.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

_____
Quality Assurance Evaluator

Date_____

REFUSE COLLECTION QUESTIONNAIRE

Building Number_____
Date_____
Occupant_____
Interviewer_____

This questionnaire should be completed by the person most knowledgeable about the quality of the refuse collection service provided. Please circle the number for the answer selected or write in an appropriate answer where there are blanks.

If this questionnaire is completed by telephone, the QAE should sign it where provided.

1. How many times per week is refuse collected from your location?

Once 1
Twice 2
More than twice 3
Unknown 4

2. How satisfied are you with the refuse collection service being provided?

Very satisfied 1
Satisfied 2
Dissatisfied 3
Very dissatisfied 4

3. Is refuse collected at about the same time each collection day?

Yes 1
No 2

4. Does the collection crew leave the area clear of refuse?

Yes, all of the time 1
Yes, most of the time . . . 2
No 3

5. Has the collection crew damaged the refuse containers?

No 1
Not usually 2
Yes 3

6. Are the empty containers placed in an orderly fashion with all lids in place?

Yes 1
Usually 2
Almost never 3
No 4

7. Has the collection crew ever refused to remove refuse properly placed for removal?

No 1
Yes 2

8. Have you ever complained about the quality of refuse collection services being provided?

No (go to Q. 12) 1
Yes (go to Q. 9) 2

9. When calling about the quality of service, do you normally find the person you talk to knowledgeable?

Yes 1
No 2

10. When calling about the quality of service, do you normally find the person you talk to courteous?

Yes 1
No 2

11. When calling about the quality of service, do you normally find the person you talk to helpful?

Yes 1
No 2

12. Have you ever talked to members of the collection crew?

No (go to Q. 15) 1
Yes (go to Q. 13) 2

13. Were the collection crew members courteous?

Yes 1
No 2

14. Were the collection crew members helpful?

Yes 1
No 2

15. Who provided the information for this questionnaire?

Sponsor 1
Dependent 2
Both 3

16. Please make any comments on the refuse collection service in the space below.

_____

_____

_____

_____

TABULATION FORM
REFUSE COLLECTION QUESTIONNAIRE

INSTRUCTIONS: Average the scores for each question unless marked as not applicable (NA). Enter the averages in the blanks below, and follow the individual instructions for evaluation.

Question No.	Ave. Score	Question No.	Ave. Score
1	___(NA)___	9	_____
2	_____	10	_____
3	_____	11	_____
4	_____	12	___(NA)___
5	_____	13	_____
6	_____	14	_____
7	_____	15	_____
8	___(NA)___	16	___(NA)___

FREQUENCY: Separate locations requiring special service, and verify that their requirements are being met. Do the reported frequencies from the rest of the locations match the contract requirements? Y N

QUALITY OF SERVICE: Total the average scores for questions 2 through 7 and divide the total by 6. The result is _____. (A result of 1.0 through 1.5 is excellent; 1.6 through 2.5 is poor, and the contractor should be notified; 2.6 or greater is unsatisfactory, and the COR should be notified.) E P U

COMPLAINTS: Validate complaints by contacting the customer; after determining the nature of the complaint, verify that the issue has been resolved. If the complaint is valid, not isolated, and is unresolved, include the affected route in a future unscheduled inspection.

COMPLAINT RESPONSE: Total the average scores for questions 9 through 11 and divide the total by 6. The result is _____. (A result of 1.0 through 1.5 is satisfactory; 1.6 through 2.0 is unsatisfactory, and the COR should be notified.) S U

COURTESY: Total the average scores for questions 13 and 14 and divide the total by 2. Answer is _____.. (An answer of 1.0 through 1.5 is satisfactory; over 1.6 is unsatisfactory and the COR should be notified.) S U

REMARKS: (Attach a separate page if required.)

_____
Quality Assurance Evaluator

Date_____

REFUSE CONTAINER REPAINTING

QUALITY ASSURANCE WORKSHEET

CONTRACT REQUIREMENT: Paint about _____ multiple-use refuse containers.

PERFORMANCE INDICATORS

The QA Checklist should be used to record performance of the following:

1. The contractor has scheduled the painting.

2. Prior to painting, the container has been cleaned to remove all foreign matter and rust has been removed to bright metal.

3. The container's interior and exterior have been painted with a zinc-chromate primer, Fed. Spec. TT-P-666B.

4. After 24 hours, an olive drab semigloss alkyd enamel, Fed. Spec. TT-E-529, has been applied to the exterior.

5. The container has been re-stenciled with yellow paint, Fed. Std. 595, and returned to its original location (if moved).

QUALITY ASSURANCE EVALUATION METHOD

The QAE should use planned sampling for inspection by selecting two or three examples early in the contract period and observe a complete painting operation.

RECORD OF OCCURRENCES TO BE SAMPLED

Date	Location	Remarks
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

REFUSE CONTAINER REPAINTING

QUALITY ASSURANCE CHECKLIST

QA REQUIREMENT: Sample repainting of container located at _____ and scheduled for repainting on _____.

REQUIREMENT: The refuse container has been cleaned of all foreign matter, rust has been removed to bright metal, and container is fully operational.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The container's interior and exterior have been prime-painted with uniform coverage.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The container's exterior has been painted with uniform coverage.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The container has been crisply re-stenciled and returned to its original location.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

_____
Quality Assurance Evaluator

Date_____

REFUSE CONTAINER REPAIR

QUALITY ASSURANCE CHECKLIST

QA REQUIREMENT: Sample repair of container located at _____.

REQUIREMENT: The repaired portion of the refuse container operates as intended.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The materials and parts used are similar to others already in use and are those intended for the unit.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Welds are neat and continuous.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The repaired area has been repainted to match the original.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: The work site has been cleared of debris.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

_____
Quality Assurance Evaluator

Date_____

QUALITY ASSURANCE WORKSHEET (HOUSEHOLD PEST PREVENTION)

CONTRACT REQUIREMENT: The contractor should inspect for pest infestations, spot treat affected areas, interview residents for possible pest problems, and provide pest control services as specified.

PERFORMANCE INDICATORS:

1. The contractor has adhered to the weekly schedule of household pest inspections and prevention.

2. Fewer than five roaches have been found in a sticky trap 24 hours after it has been set.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine the areas for inspection. He/she should also use an unscheduled field inspection to evaluate past unsatisfactory performance areas and areas specified by the COR.

Systematic random sampling should be done using the population size _____, and referring to Table A1 of Appendix A to obtain a number of samples _____, and a number of allowable rejects _____. Any collection of randomized numbers can be used to determine the first sample for inspection. Dividing the population size by the sample size determines the increment _____.

QUALITY ASSURANCE CHECKLIST (HOUSEHOLD PEST PREVENTION)

CONTRACT REQUIREMENT: The contractor should inspect for pest infestations, spot treat affected areas, interview residents about possible pest problems, and provide pest control services as specified.

PERFORMANCE INDICATORS:

1. The contractor has adhered to the weekly schedule of household pest inspections and prevention.

2. Fewer than five roaches have been found in a sticky trap 24 hours after it was set.

DATE	HOUSING UNIT	PI 1	PI 2	REMARKS

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (REFUSE CONTAINER SPRAYING)

CONTRACT REQUIREMENT: The contractor should clean with fresh water and spray for insect/rodent control those refuse containers specified by the Contracting Officer or selected in accordance with the contract.

PERFORMANCE INDICATORS:

1. Designated disposals have been removed and cleaned when scheduled.

2. Cleaned disposals have been returned to their former locations.

3. Disposals have been sprayed for insect/rodent control at their permanent locations.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine the areas for inspection. He/she should also use an unscheduled field inspection to evaluate past unsatisfactory performance areas and areas specified by the COR.

Systematic random sampling should be done using the population size _____, and referring to Table A1 of Appendix A to determine a number of samples _____, and a number of allowable rejects _____. Any collection of randomized numbers can be used to determine the first sample for inspection. Dividing the population size by the sample size determines the increment _____.

QUALITY ASSURANCE CHECKLIST (REFUSE CONTAINER SPRAYING)

REQUIREMENT: The contractor should (1) fresh-water clean and (2) spray for insect/rodent control refuse containers specified by the Contracting Officer or selected in accordance with the contract.

PERFORMANCE INDICATORS:

1. Designated refuse containers should be removed and cleaned when scheduled.

2. Cleaned refuse containers should be returned to their former location.

3. Refuse containers should be sprayed for insect/rodent control at their permanent location.

REMARKS: Describe unsatisfactory performance and/or need for repair or repainting.

DATE	LOCATION	PI 1	PI 2	PI 3	REMARKS

REMARKS: Describe unsatisfactory performance and/or need for repair or repainting.

Quality Assurance Evaluator

Date

QUALITY ASSURANCE WORKSHEET (VEGETATION CONTROL)

CONTRACT REQUIREMENT: The contractor should use EPA-approved chemicals in strict accordance with label directions to: (1) maintain improved grounds free of vines, brush, dandelions and other broadleaf weeds; (2) maintain specified special areas weed free; (3) maintain fencing clear of vegetation 6 in. from both the inner and outer sides of perimeter fencing; and (4) remove vegetation from cracks and joints in paved surfaces.

PERFORMANCE INDICATORS

1. Broadleaf weeds do not exceed 10 weeds per 20-sq yd area.

2. Specified special areas are essentially weed-free.

3. Fencing has less than 5 percent vegetation within 6 in. of the fence.

4. Vegetation in paved surfaces does not exceed 1 in. per foot of joint or crack.

QUALITY ASSURANCE EVALUATION METHODS:

All performance indicators should be evaluated by unscheduled inspection or by validating complaints. If the the contractor's performance appears to be unsatisfactory, the areas involved should be divided into zones and systematic random sampling techniques used to monitor the performance level.

SYSTEMATIC RANDOM SAMPLING

Using the population size _____, and referring to Table A1 of Appendix A gives a number of samples ____, and a number of allowable rejects _____. Any collection of randomized numbers can be used to determine the first sample to be inspected. Dividing the population size by the sample size gives the increment _____.

QUALITY ASSURANCE CHECKLIST (VEGETATION CONTROL)

CONTRACT REQUIREMENT: The contractor should provide vegetation control services.

PERFORMANCE INDICATORS

1. Broadleaf weeds do not exceed 10 weeds per 20-sq yd area.

2. Specified special areas are essentially weed-free.

3. Fencing has less than 5 percent vegetation within 6 in. of the fence.

4. Vegetation in paved surfaces does not exceed 1 in. per foot of joint or crack.

DATE	LOCATION	PI 1	PI 2	PI 3	PI 4	REMARKS

Quality Assurance Evaluator

Date

PEST CONTROL SERVICES Sheet ___ of ___

QUALITY ASSURANCE CHECKLIST (WOOD INFESTATION INSPECTION)

CONTRACT REQUIREMENT: The contractor should inspect for wood infestations and furnish an inspection report to the Contracting Officer.

PERFORMANCE INDICATORS:

1. The contractor has scheduled annual inspections of all facilities.

2. Inspections have been conducted as scheduled.

3. Reports of infestation/damage have been received within 5 days of the inspection.

REQUIREMENT: The contractor has scheduled all facilities for annual inspection . . . . . .YES NO

BLDG.	DATE INSPECTION SCHEDULED	INSPECTION REPORT ON TIME VERIFIED	REMARKS

Quality Assurance Evaluator

Date

NOTE:____sheets are attached as part of this report.

PEST CONTROL SERVICES Sheet ___ of ___

QUALITY ASSURANCE CHECKLIST (WOOD INFESTATION INSPECTION)

NOTE: This form is to be used to continue Sheet 1.

BLDG.	DATE INSPECTION SCHEDULED	INSPECTION REPORT ON TIME VERIFIED	REMARKS

QUALITY ASSURANCE CHECKLIST (MOSQUITO CONTROL)

REQUIREMENT: The mosquito control product is specifically formulated for this purpose.

(CIRCLE ONE) S U N
QAE REMARKS:

REQUIREMENT: Sufficient material is on hand to treat all areas specified.

(CIRCLE ONE) S U N
QAE REMARKS:
1. AMOUNT IN STOCK = _____ (unit)
2. AREA = _____ (unit)
3. APPLICATION RATE = _____
4. AMOUNT REQUIRED = _____

NOTE: 1 Acre = 43,560 Sq Ft

REQUIREMENT: Distribution of pellets meets or exceeds the rate recommended by the manufacturer.

(CIRCLE ONE) S U N
QAE REMARKS:

NOTE: "S" = Satisfactory
"U" = Unsatisfactory
"N" = Not applicable

_____
Quality Assurance Evaluator

_____
Date

UNSCHEDULED PEST CONTROL SERVICES

QUALITY ASSURANCE WORKSHEET

PERFORMANCE INDICATOR:

The contractor has responded and completed his/her work in a timely, effective, and workmanlike manner.

QUALITY ASSURANCE EVALUATION PROCEDURE

The QAE should use a systematic random sampling method to determine the number of work orders for inspection. Using the population size _____, and referring to Table A1 of Appendix A (normal surveillance, 5 percent AQL), gives a number of samples _____ and a number of allowable rejects _____. Any collection of randomized numbers may be used to determine the first samples for inspection. Dividing the population size by the sample size determines the interval ___.

LISTING OF WORK ORDERS COMPLETED THIS PERIOD:

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

UNSCHEDULED PEST CONTROL SERVICES

QUALITY ASSURANCE CHECKLIST

PERFORMANCE INDICATOR:

The contractor has responded and completed his/her work in a timely, effective, and workmanlike manner.

REMARKS:

WORK ORDER #	DESCRIPTION	ON-TIME	COMPLETED	CUSTOMER SATISFIED

REMARKS:

Quality Assurance Evaluator

Date

CUSTODIAL SERVICES

QUALITY ASSURANCE WORKSHEET

CONTRACT REQUIREMENT: The contractor should perform custodial services.

PERFORMANCE INDICATORS:

The following services have been completed satisfactorily according to requirements listed in the applicable Detailed Procedures:

1. Trash removal services have been performed.

2. Carpeted surfaces have been maintained.

3. Hard floor surfaces have been maintained.

4. Dusting has been done.

5. Spot cleaning has been performed.

6. Glazing has been cleaned.

7. Rest room services have been performed.

8. Sand/snow/ice removal has been done.

QUALITY ASSURANCE EVALUATION METHODS:

The QAE should use systematic random sampling to determine the number of areas to be sampled. Using the population size _____, and referring to Table A1 of Appendix A gives a number of samples _____, and a number of allowable rejects _____. Any collection of randomized numbers can be used to determine the first sample for inspection. Dividing the population size by the sample size determines the interval _____. The QAE should also use an unscheduled field inspection to evaluate unsatisfactory poor performance areas and areas specified by the Contracting Officer or his/her representative.

QUALITY ASSURANCE CHECKLIST

Day/Date	BUILDING	TRASH REMOVAL	CARPETED SURFACES	HARD FLOOR SURFACES	DUSTING	Remarks

Quality Assurance Evaluator

Date

Day/Date	Building	SPOT CLEANING	GLAZING	REST ROOMS	SAND/SNOW/ICE REMOVAL	Remarks

Quality Assurance Evaluator

Date

ROOFING INSPECTION

BUILT UP BITUMINOUS ROOFS

1. Check for and remove debris.

2. Surface Condition: check for proper drainage, gravel, general condition, physical damage, bare spots in gravel, alligatoring, cracking, and slippage.

3. Membrane Condition: check for blistering, splitting, ridging, fishmouthing, loose felt laps, punctures, securement to substrate, fasteners, membrane slippage.

4. Base Flashing: check for punctures, deterioration, blistering, open laps, attachment, ridging, wrinkling.

5. Counter Flashing: check for open laps, punctures, attachment, rusting, fasteners, caulking.

6. Coping: check for open fractures, punctures, attachment, rusting, drainage, fasteners, caulking.

7. Wall: check mortar joints, spalling, movement cracks.

8. Roof Edging/Fascia: check for splitting, securement, rusting, felt deterioration, fasteners, punctures.

9. Equipment Base Flashing: check for open laps, punctures, attachment.

10. Equipment Housing: check counter flashing, open seams, physical damage, caulking, drainage.

11. Expansion Joint Covers: check for open joints, punctures, splits, securement, rusting, fasteners.

12. Pitch Pans: check for material shrinkage, attachment.

13. Check gutters and downspouts for proper slope, damage, rust, and corrosion.

SLATE AND TILE ROOFS

1. Inspect for missing, broken, or loose tiles.

2. Check for flashing failures.

3. Check for deteriorated fasteners.

ROOFING INSPECTION

SLATE AND TILE ROOFS

4. Check gutters and downspouts for proper slope, damage, rust, and corrosion.

METAL ROOFS

1. Check for holes, looseness, punctures, broken seams.
2. Check for rust and corrosion.
3. Check for inadequate or improper fastening.
4. Inspect condition of paint.
5. Check gutters and downspouts for proper slope, damage, rust, and corrosion.

ASPHALT, FIBERGLASS, SHINGLES, STRIP, AND ROLL ROOFING

1. Check for loss of granules and coating asphalt.
2. Check for bare areas with exposed or deteriorating felt.
3. Check for brittle shingles or roll roofing.
4. Check for adequate cementing of roll roofing.
5. Check for curled, clawed, or missing tabs.
6. Check gutters and downspouts for proper slopes, damage, rust, and corrosion.

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