QUALITY ASSURANCE SURVEILLANCE PLAN

WARRANTY PHASE WORK
RE-INSPECT AND REPAIR RED HILL TANK 5
JBPHH, Pearl Harbor, HI
Contract Number N62583-09-D-0132/0003

Issued 13 Nov 2014

FOR CONSTRUCTION

Rev Number	Date	Comment
8	6 Nov 2014	Incorporated SME comments to draft matrix in Attachment 6; PAC and NFHI comments incorporated; QAI role added

TABLE OF CONTENTS

QUALITY ASSURANCE SURVEILLANCE PLAN

1 INTRODUCTION

This quality assurance surveillance plan (QASP) is pursuant to the requirements listed in the Task Order and modifications (TO) performance work statement (PWS). This QASP sets forth the procedures, guidelines, roles, and responsibilities. QASP implementation will be led by Naval Facilities Engineering and Expeditionary Warfare Center (EXWC) with support from NAVFAC Hawaii. The Government Technical team (GTT) will use this QASP to ensure the required performance standards are achieved by the contractor. The GTT consists of the PM, COR, CSE, CSET, and any technical specialist performing QA duties upon the request or on behalf of the KO or a GTT member.

1.1 Purpose

1.1.1 The purpose of the QASP is:

(a) Describe methods used to monitor performance

(b) Provide guidelines for systematic inspection and documentation of contractor activities

(c) Provide reasonable assurance that the completed work will meet or exceed the requirements of the contract

(d) Identify required documentation

(e) List roles and responsibilities for the resources to be employed.

This QASP provides guidance for evaluating whether or not the contractor is meeting the performance standards and quality levels identified in the TO requirements and the contractor's quality control plan (QCP). The primary objective of the warranty work addressed by this QASP is the reinspection, repair, and return to service of Red Hill Fuel Storage Tank 5. A secondary objective is to determine the existence and location of free product, if any, and to recover free product to the extent possible.

Aspects of the project require an enhanced level of effort which is above and beyond ordinary NAVFAC QA surveillance activity.

1.1.2 The Quality Assurance (QA) work identified in this QASP has aspects which require an increased level of effort (LOE). EXWC is responsible for the management of the project technical team for inspection, testing, and repair of fuel system facilities. The Project Manager (PM) role is defined in Section 2.3 of this QASP. ACO authority is at EXWC ACQ72. The COR has been appointed at NAVFAC Hawaii. The CSE and CSET are contract employees of NAVFAC Hawaii and act under authority from the COR. The warranty work will be subject to high visibility and will be performed as part of an ongoing warranty repair action by the Contractor.

1.1.3 This QASP defines the roles and responsibilities of members of the GTT, identifies the performance objectives, defines the methodologies used to monitor and evaluate the contractor's performance, describes QA documentation requirements, and describes the analysis of QA monitoring results.

1.2 Performance Management Approach

1.2.1 This QASP will define the performance management approach taken by the GTT to monitor and manage the contractor's warranty work performance to ensure the expected outcomes communicated in the PWS are achieved. Performance management rests on developing a capability to review and analyze information generated through QA performance assessment. The ability to make decisions based on the analysis of performance and QC data is the cornerstone of performance management; this QA analysis yields information that indicate whether or not expected outcomes for the warranty work are being achieved by the contractor.

1.2.2 The performance-based approach identified in this QASP enables the contractor to play a large role in how the warranty work is performed. The proposed QA processes are designed to monitor contractor's performance within the stated constraints and if necessary, to stop contractor's work progress if deemed unacceptable. The exceptions to QA process reviews are prescriptive reviews as required by applicable federal, state, and local laws, along with compelling business situations such as unacceptable environmental, safety and health risks. The "results" focus of this QASP provides the contractor with flexibility to continuously improve and innovate over the course of the warranty work, but all work performed by contractor must maintain the critical outcomes expected.

1.2.3 As an enhancement to the performance-based approach, the GTT will execute proactive measures to validate contractor QC program output quality and data. These enhanced measures execute an acceptance sampling plan of attributes (NDE results) at a statistically significant level. The acceptance sampling plan is a valid method by which the quality of the QC program output can be determined by inspecting a representative sample of the entire population (Juran, 1988). Additional technical specialist resources may be utilized by the GTT to execute the plan. Should the acceptance sampling results be found less than the Acceptable Quality Level, corrective action steps will be taken as described in Section 5.

1.3 Performance Management Strategy

1.3.1 The contractor is responsible for the workmanship and quality of all work performed. The contractor measures quality through the contractor's QC program. Contractor QC is work output. Therefore, QC includes all work performed, under this contract regardless of whether the work is performed by prime contractor's employees or by subcontractors. The contractor's QCP will set forth the staffing and procedures for self-inspecting the workmanship quality, timeliness, responsiveness, customer satisfaction, and other performance requirements in the PWS and warranty action. The contractor will develop and implement a performance management system with processes to assess its performance and contractor's PM will report its performance to the EXWC PM.

1.3.2 The NAVFAC Hawaii Facilities Engineering and Acquisitions Division (FEAD) Construction Surveillance Engineer (CSE) will monitor onsite performance and the EXWC PM will review performance reports furnished by the contractor to determine how the contractor is performing against communicated performance objectives. The EXWC PM will be the primary point of contact (POC) responsible for communicating corrective actions required to achieve critical outcomes and performance objectives. The contractor will be responsible for implementing corrective actions in QC processes and workmanship practices. The FEAD CSE will be the primary point of contact (POC) responsible for communicating the results of onsite QA assessments which verify contractor's QC personnel are effectively monitoring and documenting workmanship. Technical specialists such as third party QA technician(s) or government subject matter experts requested by the GTT will report to the contracting officer's representative (COR) or the onsite GTT member respectively.

2 ROLES AND RESPONSIBILITIES

2.1 The Contracting Officer

The EXWC Contracting Officer (KO), with support from the EXWC PM and the FEAD COR, is responsible for monitoring contract and warranty work compliance, including contract administration and cost control. The KO will resolve any differences between the observations documented by the GTT and the contractor. The KO has designated one FEAD COR as the government local authority for performance management of PWS and warranty action efforts. The FEAD COR has designated one FEAD CSE and one FEAD Construction Surveillance Engineering Technician (CSET) to support an increased LOE for field QA efforts.

2.2 The Contracting Officer's Representative

The FEAD COR has been designated in writing by the EXWC KO to act as his or her authorized representative to assist in administering the TO and warranty action. COR limitations are contained in the written appointment letter. The COR is responsible for technical administration of the project and ensures proper government surveillance of the contractor's performance. The COR is not empowered to make any contractual commitments or to authorize any contractual changes on behalf of the Government. Any changes that the contractor deems may affect TO price, terms, or conditions will be referred to the KO for action. The COR will have the responsibility for collecting and/or completing QA Reports used to document the inspection and evaluation of the contractor's workmanship and QC performance. CSE and CSET surveillance will occur under the inspection of services clause for the warranty action relating to the TO.

2.3 The Project Manager

The EXWC PM is responsible to EXWC for technical oversight of the fuel system inspection, testing, and repair as required to meet PWS objectives. The PM may engage technical specialists as-required to ensure objectives of this QASP are met. The PM is not empowered to make any contractual commitments or to authorize any contractual changes on behalf of the Government. Any changes that the contractor deems may affect contract price, terms, or conditions shall be referred to the KO for action. The PM, with field support from the CSE, will have the primary responsibility for (a) reviewing QA reports, (b) assessing Contractor inspection performance and results via periodic onsite surveillance, (c) assessing Contractor testing performance and results via periodic onsite surveillance, (d) and evaluating Contractor QC reports, as the basis for determining whether or not project objectives are being met. The PM is authorized to stop work in the event of a severe hazard exposure pursuant to 01 35 26.05 20. PM surveillance may occur under the inspection of services clause for any service relating to the TO. The PM will serve as the COR for a third party QA specialist utilized.

2.4 Construction Surveillance Engineer

The CSE supports the COR, PM, and KO. CSE limitations are managed by the FEAD. The CSE is responsible for (a) the field administration of safety and environmental compliance, (b) contractor's site access, (c) coordination with the NAVFAC customer's POC, and (d) field surveillance of TO and warranty work. The CSE will support the KO or PM upon request to obtain and provide more information on a particular QA matter. The CSE is not empowered to make any contractual commitments, authorize any contractual changes on behalf of the Government, or direct technical performance with regard to the warranty inspection, QC testing, or rework of repairs. Any changes that the CSE or the contractor deems may affect contract price, terms, or conditions will be referred to the KO for action. Within the noted area of responsibility, the CSE will be responsible for preparing QA Reports used to document the inspection and evaluation of contractor workmanship and QC performance. The CSE and CSET are authorized to stop work in the event of a severe safety, security, or environmental

hazard exposure. CSE surveillance will occur under the inspection of services clause for the warranty action relating to the TO.

2.5 Construction Surveillance Engineering Technician

The CSET will perform routine regular onsite surveillance of contractor activities on behalf of the KO. The CSET is responsible for observing and reporting contractor's progress in accomplishing the warranty inspection, QC testing, and rework of repairs. The CSET will assist the CSE in ensuring workmanship and QC performance objectives of the TO and warranty action are being met. The CSET will (a) review contractor's reports, testing personnel credentials, and equipment calibration certificates, and (b) attend contractor's field QC meetings. The CSET will provide exceptions or comment to the contractor's QC report in the QA Report portion as depicted in Attachment 4. The CSET will provide all findings to the CSE in daily QA reports, the format of which is in Attachment 2. The CSE is not empowered to make any contractual commitments or authorize any contractual changes on behalf of the Government. The CSET is authorized to stop work in the event of a severe safety, security, or environmental hazard exposure. Any changes that the CSET or contractor deems may affect contract price, terms, or conditions will be referred to the KO for action. QA surveillance by the CSET will occur under the inspection of services clause for the warranty action relating to the TO.

2.6 Quality Assurance Inspector

The Quality Assurance Inspector (QAI) is a third party A/E who will perform onsite surveillance of contractor activities and report to the GTT. The specific scope of the QAI activity and level of effort is described in a separate contract action task order statement of work. The QAI is responsible for observing and reporting contractor's progress in accomplishing the warranty inspection, QC testing, and rework of repairs. The QAI will assist the GTT in observing the workmanship and QC performance objectives of the TO and warranty action are being met. The QAI will review contractor's reports, testing personnel credentials, and equipment calibration certificates, review the API inspection, and witness leak testing and other ND examinations. The QAI will provide all findings in reports. The QAI is not empowered to direct contractor activity, make any contractual commitments, or authorize any contractual changes.

3 METHODOLOGIES TO MONITOR PERFORMANCE

Measures undertaken to provide an increased, overlapping, and redundant LOE of QA performance management include the following:

a) Daily frequency of routine and regular field surveillance activities will be used by the FEAD to evaluate contractor's workmanship and QC performance.
b) GTT access to regularly updated contractor QC Log.
c) Redundant scrutiny of QA and QC documentation.
d) Periodic field surveillance of inspection and testing results.
e) Non-periodic, comprehensive field surveillance of accomplished work.
f) Validation of the contractor QC Program results by execution of an acceptance sampling plan.

The warranty work to be performed is primarily rework which is critical to the viability of the customer's mission-essential Red Hill Fuel Storage Facility. The GTT will strive to assess QA requirements objectively but will verify acceptable contractor performance is actually being achieved. Pursuant to BMS 1.5.5.1.4 "Ongoing Quality Assurance Actions", specific QA surveillance activities will be conducted based on contractor's weekly QC meetings and the three-week look-ahead schedule. The primary methods of QA surveillance are both proactive and participatory.

3.1 Proactive Surveillance Techniques

The GTT will take an active role in verifying contractor inspection, testing, and repair results. The GTT will also validate the contractor QC Program results (QCP). Validation will take the form of randomly selecting completed repairs as-reported on the QC Log, and systematically verifying the result. Verification will take the form of requiring the contractor to repeat in the presence of the GTT, leak test and MT inspection which have been reported as "Passed" in the QC Log. Verification will take place by the GTT members in person from the suspended work platform. Validation will implement the acceptance sampling plan in Attachment 5.

3.1.1 Acceptance Sampling Plan – A method to provide evidence the QCP has met the performance goals required to return Tank 5 to service is to perform sampling inspection of completed repairs and make a decision prior to acceptance (Johnson, 1994) of the warranty work. The plan uses a single stage model with binomial probability distribution calculated no more than 5% chance of a Type II error (accepting an undetected defect). The model identifies the minimum number of random repairs (76) which will be acceptance tested at an AQL of 3. A failed test shall result in rework of the repair. If the number of test failures is below the AQL, the QC program output is validated. If the number of test failures is at or over the AQL, the QC program is rejected. Rejection of the QC program will trigger performance requirement corrective measures noted in Section 5.1 and Attachment 1. The acceptance sampling plan is in Attachment 5.

3.1.2 Periodic Onsite Verification – The PM will conduct periodic onsite verification of contractor's means, methods, and results of inspection and testing. Leak testing, MT inspections, and review of weldments (API_Standard_1104, 2014) from the inspection basket will take place. The results of the verification will be documented in QA reports per Attachment 2. To obtain accurate results, the planned locations and time of planned onsite surveillance activities might not be communicated to Contractor in advance. Frequency of the periodic surveillance is planned to be minimum five days per month.

3.1.3 Periodic Onsite Verification – The CSE will conduct periodic onsite verification of contractor's means, methods, and results of inspection and testing. Leak testing, MT inspections, and review of weldments (API_Standard_1104, 2014) from the inspection basket will take place. The results of the verification will be documented in QA reports per Attachment 2. To obtain accurate results, the planned locations and time of planned onsite surveillance activities might not be communicated to Contractor in advance. Frequency of the periodic surveillance is planned to be minimum two days per week.

3.2 Participatory Surveillance Techniques

The GTT will participate in contractor QC program three phases of control system activities. The intent will be to shape the progress and effectiveness of the contractor's quality control. Since the definable features of work are limited to a few, GTT participation will extend beyond Three Phase of Control meeting attendance. The primary daily GTT onsite member will be the CSET for minimum two hours.

3.2.1 Preparatory Phase – The GTT will participate in preparatory phase meetings prior to start of work of each definable feature of work. At the meeting the GTT will review the applicable specifications and references for the work. This will include welding specifications, NDE procedures, and testing protocol. The GTT will verify all materials and equipment have been brought onsite and have been tested and approved for use. An examination of the work area will take place to assure all required preliminary work has been completed. Review of the activity hazard analysis and discussion of the work procedures will also be performed.

3.2.2 Initial Phase – At the beginning of the work, the GTT will review preliminary QCP output, verify the adequacy of the QC controls, and assess workmanship. Corrective actions to address concerns shall be directed to the QCM and noted in the daily QA report.

3.2.3 Follow-Up Phase – The GTT will perform daily checks to assure continued compliance with contract requirements is taking place, including safety and control testing.

3.2.4 Daily Surveillance – The CSET will observe onsite contractor activity during various aspects of warranty work DFOW. This will include QA surveillance of contractor QC activities; review of contractor inspection activity to include operator credentials; review of contractor testing to include operator credentials; review of rework repair techniques, means, and methods; review of daily contractor reporting; preparation of a daily QA report. In an effort to obtain accurate results, the CSET observational activity will occur at intervals unknown to contractor and will not be readily predictable.

3.2.5 Daily Offsite Review – The PM will review Contractor daily QC and production reports, QC log, daily QA reports as necessary to monitor and assess contractor's workmanship and QC performance. The PM reviews will form the basis for an ongoing determination of performance with regard to workmanship and QC performance objectives. The determination shall be provided periodically to the GTT, KO, and EXWC management for use in reply to stakeholder inquiry.

3.2.6 Daily Offsite Review – The CSE will review Contractor daily QC and production reports, QC log, daily CSET reports as necessary to monitor and assess contractor's workmanship and QC performance. The CSE weekly assessments will form the basis for an ongoing determination of performance with regard to workmanship and QC performance objectives. The determination shall be provided periodically to the GTT, KO, and FEAD management for use in reply to stakeholder inquiry.

3.2.7 Non-Periodic Onsite Surveillance – The CSE will conduct non-periodic onsite surveillance of Contractor's accomplished work for each DFOW milestone to ensure successful completion of all inclusive work tasks and related activities. In an effort to ensure comprehensive results, specifics of planned onsite surveillance activities will be communicated to Contractor in advance.

3.2.8 Periodic QC Meetings – The CSE and CSET will attend contractor's weekly QC meetings. The CSE, with support from the CSET, will assess contractor's warranty work planning and onsite progress. Attention will be directed to the contractor's personnel assignments and individual performance capabilities in order to assess contractor's overall ability to accomplish proposed workmanship and QC results.

3.3 Customer Feedback

The contractor is expected to establish and maintain professional communication between its employees and Navy personnel. The primary objective of this communication is the Navy's customer satisfaction. Customer satisfaction is the most significant external indicator of the success and effectiveness of all services provided and can be measured through Navy and external stakeholders' complaints.

Performance management requires the contractor to be customer focused through initially and internally addressing customer complaints with the CSE and investigating the issues. The Navy and external stakeholders' retain the option to communicate complaints to the Navy POCs, as opposed to the contractor.

The COR will accept those customer complaints deemed valid after reviewing with contractor. The COR will investigate valid complaints to the extent necessary to resolve effectively and timely.

Customer feedback will be obtained by the CSE and CSET during weekly meetings with Navy stakeholders. Customer feedback summaries will be provided to contractor by the CSE and CSET during contractor's weekly QC meetings.

3.4 Acceptable Quality Levels

The acceptable quality levels (AQLs) are included in Attachment 1, "Performance Requirements Summary Table". The AQLs for contractor performance are structured to allow the contractor to manage how the work is performed, while providing negative incentives for performance shortfalls. For certain critical activities, e.g. those involving the submission and adherence to an Accident Prevention Plan (APP) as outlined in Specification 01 35 26.05 20 and 385-1-1, the desired performance level is established at 100 percent.

4 QUALITY ASSURANCE DOCUMENTATION

4.1 The Performance Management Feedback Loop

The performance management feedback loop begins with the communication of expected outcomes. Performance standards are expressed in the PWS and WP. Performance standards are assessed using the performance monitoring techniques provided in Attachment 1.

4.2 Quality Assurance Reports

The QA surveillance will be accomplished by the GTT and will be reported using the QA Report provided in Attachment 2 and the QA Report portion of the Contractor Quality Control Report provided in Attachment 3. The completed QA reports will document the GTT's assessment of the contractor's performance under the TO and warranty action to ensure the required workmanship and QC results are being achieved.

4.2.1 The COR and PM will retain a copy of all completed QA Reports from the CSE and CSET.

5 ANALYSIS OF QUALITY ASSURANCE ASSESSMENT

5.1 Determining Performance

5.1.1 The GTT will use the monitoring methods cited to determine whether the performance standards, service levels and AQLs have been met. If the contractor has not fully met the requirements, the contractor will be required to develop a corrective action plan to show how and when contractor's performance will be restored to the required levels.

5.1.2 Should the AQL prescribed in Acceptance Test Sampling Plan (Attachment 5) not be met, notification shall be provided to the contractor in the form of a notice of non-compliance. Should no extenuating circumstances be found by the Contracting Officer, the contractor QCM shall be determined to be incompetent, careless, or otherwise objectionable per FAR 52.236-5. The result of that determination shall be ineligibility from working on the project. The KO shall determine whether additional contractual steps as detailed in Attachment 1 are warranted.

5.2 Reporting

5.2.1 eProjects: Twice per month the PM will update the associated eProjects status notes summarizing contractor's progress. Once per month, the PM will update the eProjects status notes summarizing the overall results of the QA surveillance efforts. The summary will consider the contractor's progress reports and the quality assurance reports. This will become part of the QA documentation. This documentation process will enable the GTT to demonstrate whether or not the contractor is meeting the stated QA objectives and performance standards, including cost, technical and scheduling objectives.

5.2.2 eContracts: Once per week the CSE will update the associated eContracts record summarizing contractor progress. Once per month, the CSE will update the eContracts record summarizing the overall status of contractor's fieldwork progress.

5.2.3 Stakeholder: Updates provided to stakeholders will be coordinated within the GTT for content prior to release. Release shall only be made in accordance with the REDHILL Communications Plan Process.

5.3 Reviews and Resolution

5.3.1 The Contractor's PM, QC Manager and Project Engineer will meet in person or via teleconference with the PM, CSE and CSET on a weekly basis to discuss progress and performance. The GTT will conduct in-depth reviews with the contractor on a monthly basis, including self-assessments by the contractor. The CSE will meet with the contractor when required by the GTT or upon the Contractor's request. The agenda of the reviews will include:

5.3.1.1 Monthly performance assessment

5.3.1.2 Issue resolution and concerns

5.3.1.3 Three-week look-ahead review and project schedule progress review against the baseline, including corrective action plan review

5.3.1.4 Recommendations for lessons-learned and corrective actions

5.3.2 The GTT must coordinate and communicate with the contractor's onsite key personnel in a timely manner to resolve instances or concerns regarding marginal or unacceptable performance.

5.3.3 The PM and contractor's key personnel will jointly formulate long-term courses of action based on progress. Decisions regarding changes to metrics, thresholds, or service levels should be clearly documented in correspondences or meeting minutes. Changes to service levels, procedures, and metrics which will result in a contract modification shall be avoided.

6 Works Cited

API_Standard_1104. (2014). *Welding of Pipelines and Related Facilities.* Washington, DC: American Petroleum Institute.

Grant, E. L., & Leavenworth, R. S. (1988). *Statistical Quality Control Fifth Edition.* New York: McGraw-Hill Book Company.

Johnson, R. A. (1994). *Miller and Freund's Probability and Statistics for Engineers.* Englewood Cliffs: Prentice-Hall, Inc.

Juran, J. M. (1988). *Juran's Quality Control Handbook Fourth Edition.* New York: McGraw-Hill Book Company.

7 PLAN CONCURRENCE

Acceptance Satisfactory To the Participants – Sat-To

This QASP documents organizational coordination and quality assurance activities for the warranty phase repairs of Red Hill Tank 5, JBPHH. Component coordination is between NAVFAC Engineering and Expeditionary Warfare Center (EXWC), NAVFAC PAC, and NAVFAC Hawaii FEAD (NFHI). Concurrence is provided to ensure the QASP has been reviewed, meets organizational requirements, and is satisfactory to the participants.

Concurrence
EXWC PM
EXWC CIBL
NFHI COR
NFHI CIBL

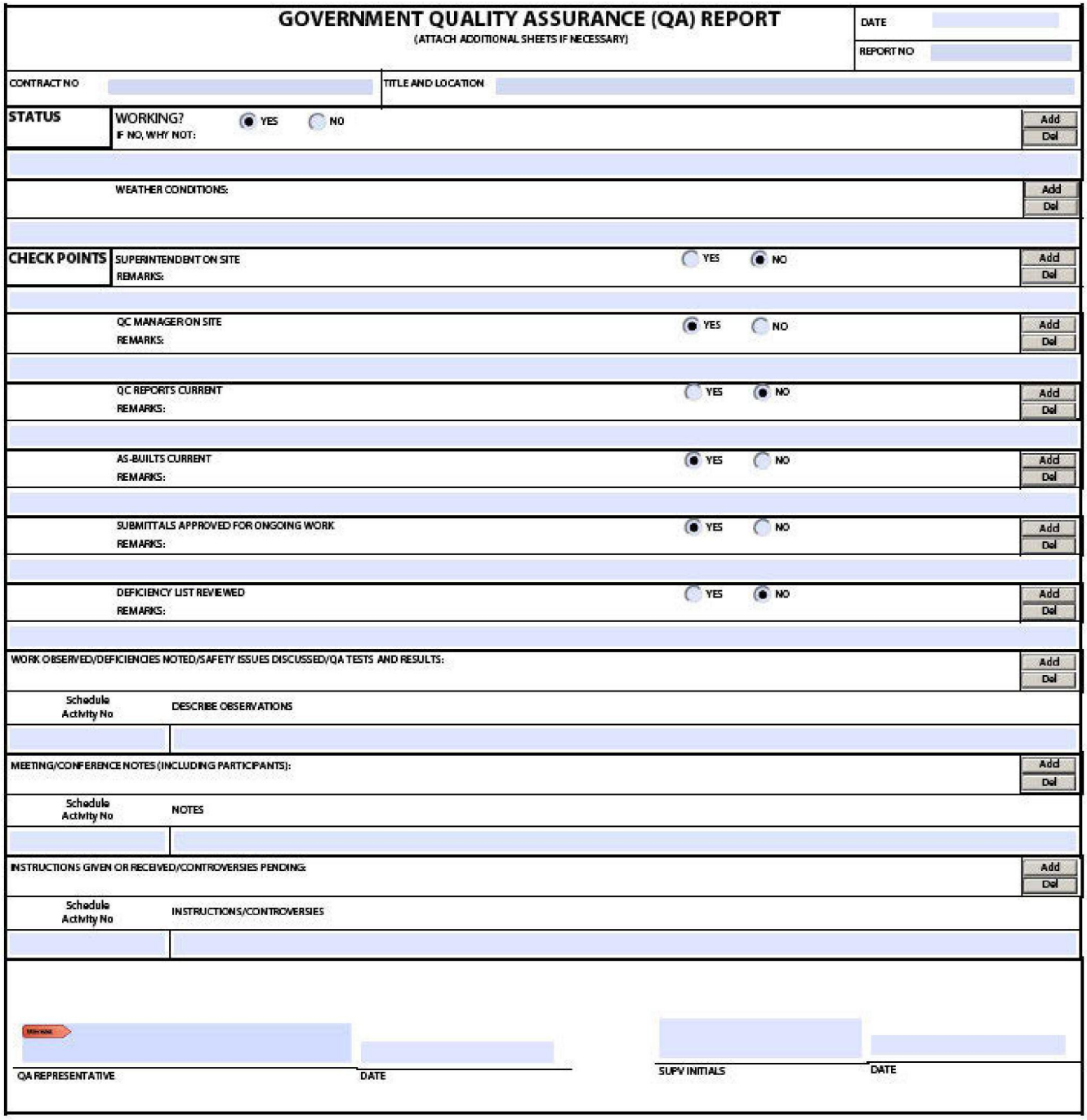
Concurrence provided on separate document.

ATTACHMENT 1: PERFORMANCE REQUIREMENTS SUMMARY

Required Services (Tasks)	Performance Standards	Acceptable Quality Levels	Methods of Surveillance	Performance Corrective Measures
Submittals in accordance with Task Order requirements	99% of submittals accurately depict current status	97%	File reviews, periodic inspections, random, observations,	Contractor Performance Assessment Reports System (CPARS) Review
Administer quality control program including subcontractor management in accordance with QCP	Contractor is in compliance with QCP 97% of the time	97%	File reports, periodic inspections, random, observations,	CPARS Review Notice of Non-Compliance Letter of Concern Cure Notice
Preparation of comprehensive list of weld inspection/NDE/repair locations for QC and QA tracking	All previous repair locations	100% of locations uniquely identified	Review/editing of draft versus existing documentation and actual conditions	Notice of Non-Compliance Letter of Concern
Documentation of NDE inspection results	Objective Pass-Fail	100% of locations on comprehensive list tested and passed	1. Ongoing visual surveillance of onsite activity by QAT 2. Review Daily QC Reports 3. Un-announced validation of inspection NDE results on random locations by QAT or PM	Notice of Non-Compliance Letter of Concern\ Cure Notice
Govt: Validation of QCP	Acceptance Sampling Plan	3	1. In-basket review of leak test, MT inspection, weldments 2. Determine Pass:Fail 3. Compare results to AQL	Remove QC Manager Notice of Non-Compliance Letter of Concern\ Cure Notice

Required Services (Tasks)	Performance Standards	Acceptable Quality Levels	Methods of Surveillance	Performance Corrective Measures
Material and Workmanship Submittals	Contractor in compliance with SOW	97%	Work Plan, Daily Reports, Draft Report and Final Report Review	CPARS Review
Material and Workmanship: Repair of locations with failed NDE and/or unacceptable weld quality	Work in compliance with SOW and submittals through QC program IAW 01 45 00 05.20	100%	1. Ongoing visual surveillance of onsite activity by QAT 2. Review Daily Reports 3. Un-announced validation of repair NDE results on random locations by QAT or PM	CPARS Review Notice of Non-Compliance Letter of Concern Cure Notice
Draft Completion Report	Contractor in compliance with SOW	95%	Report Review	CPARS Review
Final Completion Report	Comments implemented as noted by reviewer	99% of agreed upon comments	Report Review	CPARS Review

ATTACHMENT 2: GOVERNMENT QA REPORT FORMAT



GOVERNMENT QUALITY ASSURANCE (QA) REPORT
(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE
REPORT NO

CONTRACT NO
TITLE AND LOCATION

STATUS
WORKING? (•) YES ( ) NO
IF NO, WHY NOT:
Add Del

WEATHER CONDITIONS:
Add Del

CHECK POINTS
SUPERINTENDENT ON SITE ( ) YES (•) NO
REMARKS:
Add Del

QC MANAGER ON SITE (•) YES ( ) NO
REMARKS:
Add Del

QC REPORTS CURRENT ( ) YES (•) NO
REMARKS:
Add Del

AS-BUILTS CURRENT (•) YES ( ) NO
REMARKS:
Add Del

SUBMITTALS APPROVED FOR ONGOING WORK (•) YES ( ) NO
REMARKS:
Add Del

DEFICIENCY LIST REVIEWED ( ) YES (•) NO
REMARKS:
Add Del

WORK OBSERVED/DEFICIENCIES NOTED/SAFETY ISSUES DISCUSSED/QA TESTS AND RESULTS:
Add Del

Schedule Activity No	DESCRIBE OBSERVATIONS

MEETING/CONFERENCE NOTES (INCLUDING PARTICIPANTS):
Add Del

Schedule Activity No	NOTES

INSTRUCTIONS GIVEN OR RECEIVED/CONTROVERSIES PENDING:
Add Del

Schedule Activity No	INSTRUCTIONS/CONTROVERSIES

QA REPRESENTATIVE DATE SUPV INITIALS DATE

ATTACHMENT 3: CONTRACTOR QUALITY CONTROL REPORT FORMAT

CONTRACTOR QUALITY CONTROL REPORT
(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE
REPORT NO

PHASE	CONTRACT NO	CONTRACT TITLE

PREPARATORY — WAS PREPARATORY PHASE WORK PREFORMED TODAY? ◯ YES ◯ NO (Add / Del)
IF YES, FILL OUT AND ATTACH SUPPLEMENTAL PREPARATORY PHASE CHECKLIST.

Schedule Activity No	Definable Feature of Work (DFOW)	Index #

INITIAL — WAS INITIAL PHASE WORK PREFORMED TODAY? ◯ YES ◯ NO (Add / Del)
IF YES, FILL OUT AND ATTACH SUPPLEMENTAL INITIAL PHASE CHECKLIST.

Schedule Activity No	Definable Feature of Work (DFOW)	Index #

FOLLOW-UP — WORK COMPLIES WITH CONTRACT AS APPROVED DURING INITIAL PHASE? ◯ YES ◯ NO (Add / Del)
WORK COMPLIES WITH SAFETY REQUIREMENTS AND INSPECTION COMPLIES WITH EM385-1-1? ◯ YES ◯ NO

Schedule Activity No	Description of Work, Testing Performed & By Whom, Definable Feature of Work, Specification Section, Location and List of Personnel Present

REWORK ITEMS IDENTIFIED TODAY (NOT CORRECTED BY CLOSE OF BUSINESS) — REWORK ITEMS CORRECTED TODAY (FROM REWORK ITEMS LIST) (Add / Del)

Schedule Activity No	Description	Schedule Activity No	Description

REMARKS (Also Explain Any Follow-Up Phase checklist Item From Above That Was Answered "NO"; Work Deficiency, Safety Deficiency.) Manuf. Rep On-Site, etc. (Add / Del)

Schedule Activity No	Description

On behalf of the contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge except as noted in this report.

AUTHORIZED QC MANAGER AT SITE — DATE

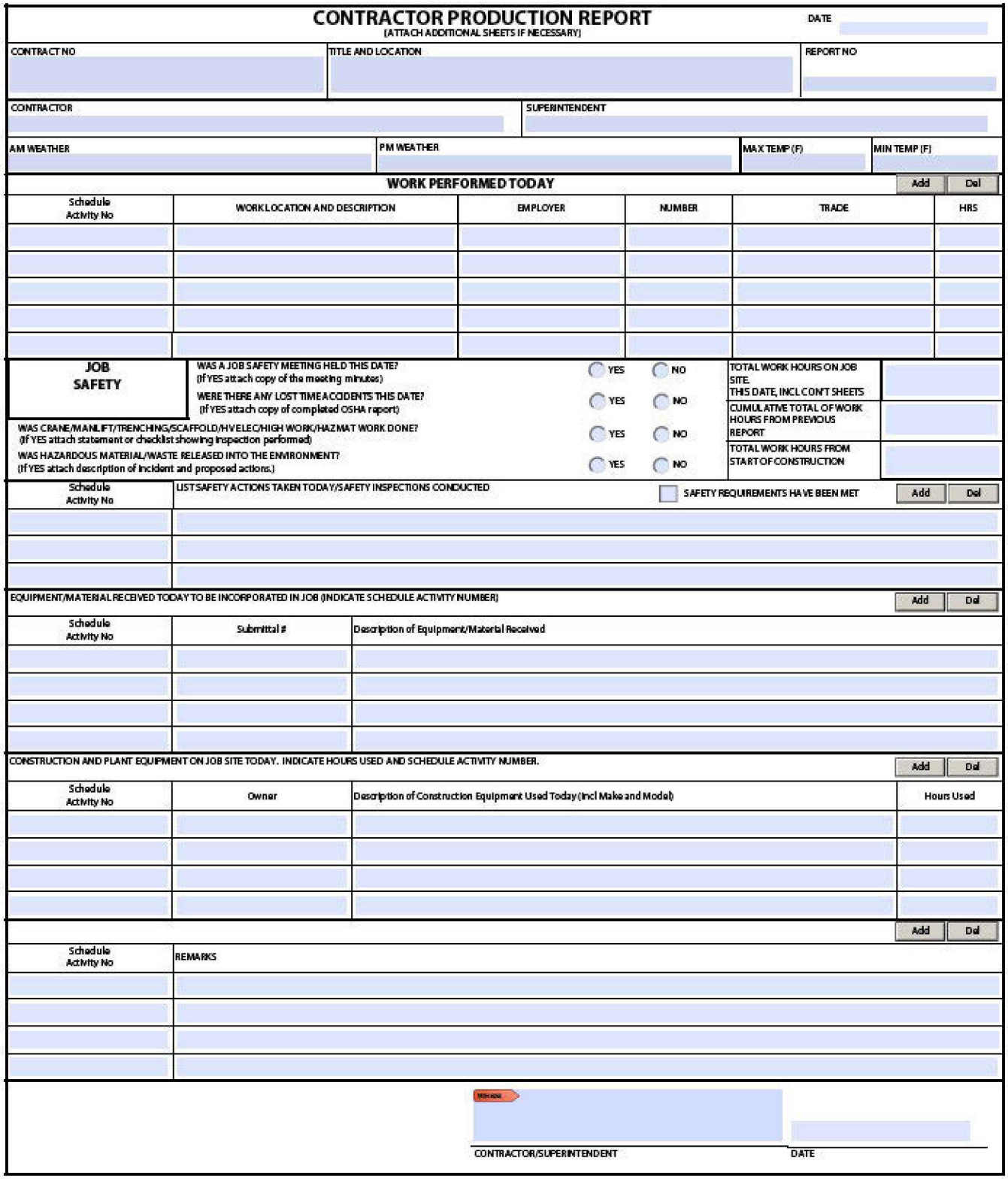
GOVERNMENT QUALITY ASSURANCE REPORT — DATE

QUALITY ASSURANCE REPRESENTATIVE'S REMARKS AND/OR EXCEPTIONS TO THE REPORT: FOR GOVERNMENT USE ONLY. (Add / Del)

Schedule Activity No	Description

GOVERNMENT QUALITY ASSURANCE MANAGER — DATE

ATTACHMENT 4: CONTRACTOR PRODUCTION REPORT FORMAT



CONTRACTOR PRODUCTION REPORT
(ATTACH ADDITIONAL SHEETS IF NECESSARY)

DATE

CONTRACT NO	TITLE AND LOCATION	REPORT NO

CONTRACTOR	SUPERINTENDENT

AM WEATHER	PM WEATHER	MAX TEMP (F)	MIN TEMP (F)

WORK PERFORMED TODAY Add Del

Schedule Activity No	WORK LOCATION AND DESCRIPTION	EMPLOYER	NUMBER	TRADE	HRS

JOB SAFETY

WAS A JOB SAFETY MEETING HELD THIS DATE? (If YES attach copy of the meeting minutes)	YES NO	TOTAL WORK HOURS ON JOB SITE THIS DATE, INCL CONT SHEETS
WERE THERE ANY LOST TIME ACCIDENTS THIS DATE? (If YES attach copy of completed OSHA report)	YES NO	CUMULATIVE TOTAL OF WORK HOURS FROM PREVIOUS REPORT
WAS CRANE/MANLIFT/TRENCHING/SCAFFOLD/HVELEC/HIGH WORK/HAZMAT WORK DONE? (If YES attach statement or checklist showing inspection performed)	YES NO	TOTAL WORK HOURS FROM START OF CONSTRUCTION
WAS HAZARDOUS MATERIAL/WASTE RELEASED INTO THE ENVIRONMENT? (If YES attach description of incident and proposed actions.)	YES NO	

Schedule Activity No	LIST SAFETY ACTIONS TAKEN TODAY/SAFETY INSPECTIONS CONDUCTED	SAFETY REQUIREMENTS HAVE BEEN MET	Add Del

EQUIPMENT/MATERIAL RECEIVED TODAY TO BE INCORPORATED IN JOB (INDICATE SCHEDULE ACTIVITY NUMBER) Add Del

Schedule Activity No	Submittal #	Description of Equipment/Material Received

CONSTRUCTION AND PLANT EQUIPMENT ON JOB SITE TODAY. INDICATE HOURS USED AND SCHEDULE ACTIVITY NUMBER. Add Del

Schedule Activity No	Owner	Description of Construction Equipment Used Today (Incl Make and Model)	Hours Used

Add Del

Schedule Activity No	REMARKS

CONTRACTOR/SUPERINTENDENT DATE

ATTACHMENT 5: ACCEPTANCE TEST SAMPLING PLAN

Acceptance Test Sampling Plan

Acceptance sampling is a valid method by which the quality of the QC program output can be obtained by inspecting a representative sample of the entire population. By examining a series of samples, information is obtained about the entire process (Juran, 1988).

Since information about the process, in this case the QC program output, is of interest, Type B sampling of attributes plan was selected. In the plan samples are chosen at random from all repairs reported as complete by the QC program. Witness testing will be performed to classify the repair as conforming or non-conforming. The number of non-conforming repairs will be compared to an acceptance number, c, identified in the plan and a decision made to accept or reject the entire lot (QC program output) if the acceptance number is exceeded.

The plan uses a single-stage model which will specify the quality level, lot tolerance percent defective (LTPD) of the QC program output at the specified risk of accepting an undetected defect, β. The model was optimized to reduce the sample size while maintaining no more than 5% risk of a Type II (β) error. The binomial was used as a good approximation of the probability distribution for an attributes sampling plan (Grant, 1988). The sampling plan and results are below.

	Variable	Definition	Value
Input	N	Population size	677
	LTPD	Lowest quality, or the highest proportion of defective results to total number of repairs, still acceptable	10%
	AQL	Acceptable quality level: Ideal percentage of defects	2%
Output	n	Sample size	76
	c	Maximum number of failures before entire QC program output is rejected	3
	β	Chance of accepting an undetected defect	4.7%

By acceptance sampling 76 repair locations reported to have passed QC program output, the GTT will have no more than a 5% chance of unknowingly accepting an undetected defect should no more than three defects be discovered. Should more than three defects be discovered, the entire QC program output is rejected.

ATTACHMENT 6: ROLES AND RESPONSIBILITIES MATRIX

	Phase		Element	QCM (Ktr)	FEAD	EXWC
Inspection	Leak Testing	Submittal Process	**Procedure** - Verify contractor provided complete NDE LTE-1 testing procedure including operator certifications as-required	A	QA	QA
		Field Visit	**Testing** - Perform leak testing on repairs per NDE-LT-1.	A	QA	QA
		Field Visit	**Quality Control Program Output** - Report specific leak testing status of each repair site in QC Log.	A	QA	QA
			Acceptance Testing - Verify QC Program output with random acceptance sampling. Verify leak testing procedure meets NDE-LT-1 and API 653 Section 12. Witness leak testing from the inspection basket.	—	V	V
	Weldments	Field Visit	**Visual inspection** - Verify weldments meet criteria of API 653 Section 12, API 1104.	A	QA	QA
			Testing - Perform MT on weldments per MT-3.	A	QA	QA
			Inspection - Perform liquid penetrant inspection per PT-1 on weldments.	A	QA	QA
			Quality Control Program Output - Report visual inspection, PT inspection, and MT testing results of each repair site in QC Log.	A	QA	QA
			Acceptance Testing - Verify QC Program output with random acceptance sampling. Witness MT inspections (MT-3 Yoke Technique, Wet Fluorescent Magnetic Particle Method), PT (PT-1 Liquid Penetrant Inspection by Visible Dye Method) and review of weldments (API Standard 1104) from the inspection basket.	—	V	V
Hold Point						

	Phase		Element	QCM(Ktr)	FEAD	EXWC
Repair	Welding	Submittal Process	**Welding Plan** - Provide appropriate WPS and PQR	A	QA	QA
		Submittal Process	**Welder Credentials** - Provide welder certifications. Verify meet requirements of API 653 Section 11 and WPS	A	QA	QA
		Field Visit	**Inspection** - Visual verification weldments meet criteria of API 653 Section 12, API 1104.	A	QA	QA
		Field Visit	**Testing** - Perform leak testing on repairs per NDE-LT-1.	A	QA	QA
		Field Visit	**Testing** - Perform MT on repairs per MT-3.	A	QA	QA
		Field Visit	**Inspection** - Perform liquid penetrant inspection per PT-1 on repairs.	A	QA	QA
		Field Visit	**Quality Control Program Output** - Report specific visual inspection and MT results of each repair site in QC Log.	A	QA	QA
		Field Visit	**Testing** - Verify QC Program output with random acceptance sampling. Witness MT inspections (MT-3 Yoke Technique, Wet Fluorescent Magnetic Particle Method), PT (PT-1 Liquid Penetrant Inspection by Visible Dye Method) and review of weldments (API Standard 1104) from the inspection basket.	—	V	V
	Coating	Submittal Process	**Coating** - Provide material submittals in accordance with 09 97 13.15 LOW VOC POLYSULFIDE INTERIOR COATING OF WELDED STEEL PETROLEUM FUEL TANKS	A	S	S
		Submittal Process	QP-5 Inspector qualifications	A	S	S
		Field Visit	**Inspection** - Verify surface preparation in accordance with 09 97 13.15 Part 3.	A	QA	QA
		Field Visit	**Testing** - Perform holiday testing	A	QA	QA
		Field Visit	**Testing** - Verify coating thickness	A	QA	QA
		Field Visit	**Quality Control Program Output** - Report specific visual inspection and MT results of each repair site in QC Log.	A	QA	QA

KEY = A - Approve, R - Review, W - Witness, RA - Receipt Acknowledge, S - Surveillance Review, V- Verification and Testing, C - Copy, QA - Quality Assurance

DEFINITIONS

Approve	(A)	Professional or quality control endorsement of the submittal or installed system meets the contract requirements
Review	(R)	To confirm accuracy of the submittal and that it meets contract requirements
Witness	(W)	Observe demonstration of system performance for acceptance
Receipt Acknowledge	(RA)	Confirm receipt of submittal with no review necessary
Surveillance Review	(S)	A quality assurance review based on risk, complexity, and workload
Performance Verification and Acceptance Testing	(V)	A demonstration of satisfactory construction and system performance
Receive Copy of Correspondence	(C)	Receive a copy of the transmittal sheet and/or correspondence letter
Quality Assurance Inspection	(QA)	Witnessing satisfactory performance without testing all devices or visual inspection of various parts of the system

END QUALITY ASSURANCE SURVEILLANCE PLAN