



**Statement of Work**  
**Clean, Inspect, and Repair Storage Tanks**

**Project Title:**

**Location:**

**Date:**

**Submitted By:**

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## Statement of Work

### Clean, Inspect, and Repair Storage Tanks

#### 1. GENERAL

##### 1.1. Scope

This Statement of Work (SOW) defines the scope for cleaning, inspecting and repairing military storage tanks worldwide. Depending on tank type and/or history, a complete out-of-service American Petroleum Institute (API) 653 inspection, an in-service API 653 inspection, a modified API 653, or Steel Tank Institute (STI) inspection will be performed. Tank repairs under this scope shall include installation of tank gauging tubes (stilling wells) for all tanks with a capacity of over 30,000 gallons.

The repairs of deficiencies found during the inspection shall be an option to the task order and shall only be exercised by direction of the Contracting Officer. Site specific information including the type of inspection, the need for stilling wells and other applicable information is located in Section 2.

##### 1.2. Requirements

The following are requirements that shall be followed unless stated otherwise in Section 2. Latest editions of all codes shall be used.

1.2.1. All work shall be performed in a professional, safe, and environmentally responsible manner in accordance to applicable federal, state and local regulations.

1.2.2. Inspections and repairs shall be carried out in accordance to American Petroleum Institute Standard 653, *Tank Inspection, Repair, Alteration And Reconstruction*, Steel Tank Institute SP001-00 *Standard for the Inspection of Aboveground Storage Tanks SP001* and all amendments as supplemented by this statement of work.

1.2.3. All coating work shall be performed by Society for Protective Coatings (SPCC) QP-1 certified contractors in accordance to Unified Facilities Guide Specifications (UFGS) 09 97 13.15, *Epoxy/Fluoropolyurethane Interior Coating of Welded Steel Petroleum Fuel Tanks*, UFGS 09 97 13.17, *Three Coat Epoxy Interior Coating of Welded Steel Petroleum Fuel Tanks*, UFGS 09 97 13.27, *Exterior Coating of Steel Structures*, and UFGS 09 97 23.13, *Interior Lining for Concrete Storage Tanks (for Petroleum Fuels)*. A QP-5 certified inspector will be required on all significant coating work. Determination of significant coating work and requirement for QP-5 inspector shall be determine by the Government and stated in section 2 of this SOW.

1.2.4. The tank inspections shall be performed by a certified API 653 inspector. The inspection report(s) shall be signed by the API 653 inspector as well as evaluated, stamped and signed by a registered professional engineer familiar with the provisions of the API Standard 653, experienced in tank design, fabrication, repair, construction, inspection, and operation.

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## 2. SITE SPECIFIC INFORMATION

The following section is created for this specific location(s) for this proposal request. The rest of the scope of work shall be followed unless Section 2 states otherwise.

### 2.1. Description

The Naval Facilities Engineering Command (NAVFAC) Engineering Service Center (ESC) is requesting [internal tank cleanings], [in-service API 653 inspection(s), out-of-service API 653 inspection(s), STI inspection(s)], [gauge tube installation], and associated repairs from the inspections for [xxx aboveground storage tank(s), xxx underground storage tank(s)] at [Facility, STATE.] Repairs are to include deficiencies found from the inspection and shall be evaluated by NAVFAC ESC. Changes to the contract will be made at the discretion of the Contracting Officer.

### 2.2. Tank Information and History

The facilities identified above require services for [xxx tanks.] More detailed information for each tank can be found in Table 2.1 in Appendix A.

TANK	[A]
Capacity	[xxx, xxx gal]
Product	[JP-8, JP-5, Diesel, etc]
Diameter	[xx feet]
Height	[xx feet]
Construction	[Welded Steel throughout, Welded Floor, Riveted Shell, AST or UST, etc]
Roof Type	[Fixed roof with floating honeycomb pan, high legs stay installed at all times at eight feet, fixed roof only, floating steel pan only, etc]
Significant Modifications	[double bottom, new floor, new roof, etc]

TANK	[B]
Capacity	[xxx, xxx gal]
Product	[JP-8, JP-5, Diesel, etc]
Diameter	[xx feet]
Height	[xx feet]
Construction	[Welded Steel throughout, Welded Floor, Riveted Shell, AST or UST, etc]
Roof Type	[Fixed roof with floating honeycomb pan, high legs stay installed at all times at eight feet, fixed roof only, floating steel pan only, etc]
Significant Modifications	[double bottom, new floor, new roof, etc]

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### 2.3. Inspections Due

[Tank XX - API 653 [In]/[Out]-of-Service Inspection, in accordance with [reference appropriate section of this SOW]

[Tank XX - API 653 [In]/[Out]-of-Service Inspection, in accordance with [reference appropriate section of this SOW]

### 2.4. Repairs to Tanks

Repairs will be determined based on inspection report.

Other repairs include: [Insert known repairs to be made for each tank. Examples are new coatings, piping modifications associated with tank, new skin valve, stairway modifications, etc.]

### 2.5. Gauge Tubes

Gauge tubes (stilling wells) [are, are not] required for tanks [XX and XX]. Unless otherwise specified stilling well installations shall be in accordance with the Automated Tank Gauge (ATG) Installation Policy memorandum dated December 16, 2009. See Section 4.4 for more information on stilling well requirements and SK-1, SK-2, and SK-3 in Appendix B for standard design drawings.

### 2.6. Anticipated Problems

[Examples are: None known at this time, water intrusion, possible coating failure, etc.]

### 2.7. Government Furnished Information

Information is located in Appendix C.

2.7.1. [for example Tank Construction Drawings - Five pages]

### 2.8. Government Services Available to the Contractor

Table 2.2, below, lists the services, if any, the facility can provide to the contractor for purposes of completing the required tasks stated in this SOW.

Table 2.2 Government Services Available to the Contractor

	Yes/No	If Yes, limits on what the government can provide or accept.
Government will provide water for tank cleaning	Yes	Government will not provide the back flow preventer, Fire Hydrants are in close proximity to the tanks
Government will accept residual fuel/ wash rinsates /sludge	No/No/No	
Government to provide electricity	No	
Government will provide compressed air	No	
Government will provide lock out and tag out on product lines	Yes	Government and Contractor will jointly lock and tag out. Contractor to "blank" product lines.

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Government will provide lock out and tag out on electrical power	Yes	Government and Contractor will jointly lock and tag out.
Restroom services	No	

## 2.9. Base Access

In order for the contractor to gain access to the facility in a timely manner the following needs to be submitted.

### 2.9.1. Contractor Information

The information below is required to obtain base access and shall be submitted to the [NTR 14 calendar days] prior to arrival. Use template in Appendix D of this SOW to insert information. When at all possible submit all personnel and subcontractor information together. If a rental car is used, the rental agreement shall be presented to Pass and Decal when access is required. A valid picture ID will need to be presented at the time of arrival.

- 2.9.1.1. Full Name with Middle Initial
- 2.9.1.2. SSN
- 2.9.1.3. Date of Birth
- 2.9.1.4. Citizenship
- 2.9.1.5. Driver's License with State of Issuance
- 2.9.1.6. Employer's Name, address, phone number
- 2.9.1.7. Planned arrival date and planned finish date for site personnel
- 2.9.1.8. Vehicle/Equipment make, model and year
- 2.9.1.9. Vehicle/Equipment type
- 2.9.1.10. Vehicle/Equipment tag number

### 2.9.2. Facilities Hours / Work Days

Contractor shall observe all Government holidays. [Work hours shall be between xxxx and xxxx]. Work on weekends [is/is not] allowed, but only after permission is granted by [xxxx with xx] days notice prior. [Insert other site specific details.]

## 2.10. Scheduling

[Only one tank at a time may be taken out of service. The first tank will be given to the Contractor on 5 November 2007. This date should be confirmed with the government prior to mobilizing. The Contractor will be given the next tank after the first tank is completed. The Contractor shall give the government 3 days to transfer fuel from one tank to the other tank. Contractor shall make an effort to perform all work in November, December, and first couple weeks in January. This is when flight operations are low.]

## 2.11. Other

This section includes other items not address in the Site Specific Section or the remaining of the SOW.

- 2.11.1. All materials and equipment shall be new and free of defects. All materials shall be manufactured in the United States conforming to applicable standards.

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2.11.2. Waste Disposal: The Contractor shall thoroughly clean the tank. All sludge, sediment, wash water and other deleterious material from the tank shall be removed and properly disposed of by the Contractor. [For the bidding purposes, the Contractor shall estimate 16,340 gallons of residual fuel to be present in each tank. Contractor shall pump this fuel out and transfer to other tank using their equipment. No sludge is anticipated, however assume up to one 55-gallon drum of sludge or unacceptable fuel the contractor will have to dispose of.]

2.11.3. The Contractor shall notify the Government no less than three (3) days in advance delivery of equipment and materials. All loading, unloading and securing of material shall be the Contractor's responsibility. Contractor retains responsibility for all items through project completion. (This includes the security of all equipment.)

2.11.4. Abrasive blasting [is, is not] considered Hot Work.

2.11.5. Tank calibration shall be performed in accordance with Section 4.3 for tanks [A, B, C].

2.11.6. Tank Access: [Other information such as access point over berms/dikes, difficulties access tanks, etc.]

## **2.12. Government Points of Contact (POC)**

### **2.12.1. Contracting Officer**

The Contracting Officer is:

Ms. XXXXXXXXXXXX

Specialty Center Acquisitions NAVFAC

Naval Base Ventura County

1100 23<sup>rd</sup> Avenue

Port Hueneme, CA 93043-4347

Telephone (805) 982-XXXX

### **2.12.2. Contracts Officer Representative**

The Contracts Officer Representative for this contract is:

(b) (6)

NAVFAC ESC, PW 54

1100 23<sup>rd</sup> Avenue Port Hueneme, CA 93043

Telephone (805) 982-3597

### **2.12.3. Naval Technical Representative (NTR)**

The NTR for this contract is:



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[XXXXXX]

NAVFAC ESC, PW 54

1100 23<sup>rd</sup> Avenue Port Hueneme, CA 93043

Telephone (805) [982-xxxx]

[\[xxxxxxx@navy.mil\]](mailto:xxxxxxx@navy.mil)

### 3. REFERENCES

The work performed shall comply with all federal, state, and local regulations. In addition applicable, but not limited to, codes for this work include:

#### 3.1. American Petroleum Institute (API)

- 3.1.1. API Recommended Practice 574, *Inspection Practices for Piping System Components*, Latest Edition.
- 3.1.2. API Recommended Practice 575, *Inspection of Atmospheric and Low-Pressure Storage Tanks*, Latest Edition.
- 3.1.3. API Standard 650, *Welded Steel Tanks for Oil Storage*, Latest Edition.
- 3.1.4. API Recommended Practice 651, *Cathodic Protection of Aboveground Petroleum Storage Tanks*, Latest Edition.
- 3.1.5. API Recommended Practice 652, *Lining of Aboveground Petroleum Storage Tanks*, Latest Edition.
- 3.1.6. API Standard 653, *Tank Inspection, Repair, Alteration and Reconstruction*, Latest Edition.
- 3.1.7. API/ANSI Standard 2015, *Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks*
- 3.1.8. API/ANSI RP 2016 *Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks*
- 3.1.9. API Standard 2550, *Measurement and Calibration of Upright Cylindrical Tanks*

#### 3.2. American Society of Mechanical Engineers (ASME)

- 3.2.1. ASME B31.3, *Process Piping*, Latest Edition.
- 3.2.2. ASME B31.4, *Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids*, Latest Edition.
- 3.2.3. ASME V, *Nondestructive Examination*
- 3.2.4. ASME IX, *Welding and Brazing Qualifications*

#### 3.3. Code of Federal Regulations (CFR)

- 3.3.1. 29 CFR 1910, *Permit-Required Confined Spaces for General Industry*.
- 3.3.2. 40 CFR 112, *Oil Pollution Prevention*.

#### 3.4. National Association of Corrosion Engineers (NACE)

- 3.4.1. NACE Recommended Practice, RP0184-97, *Repair of Lining Systems*.
  - 3.4.2. NACE Recommended Practice, RP0193, *External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms*.
  - 3.4.3. NACE Recommended Practice, RP0288-94, *Inspection of Linings on Steel and Concrete*.
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### **3.5. National Fire Protection Association (NFPA)**

3.5.1. NFPA-30, *Flammable and Combustible Liquids Code*.

### **3.6. Steel Tank Institute (STI)**

3.6.1. STI SP001, *Standard for the Inspection of Aboveground Storage Tanks*.

### **3.7. Safety**

3.7.1. EM 385-1-1, *U.S. Army Corps of Engineers Safety and Health Requirement, Appendix A Minimum Basic Outline for Accident Prevention, and paragraph 6*.

### **3.8. Unified Facilities Criteria (UFC)**

3.8.1. UFC 3-460-01, *Petroleum Fuel Facilities*.

### **3.9. Unified Facilities Guide Specification (UFGS)**

3.9.1. UFGS-01 35 29, *Safety And Occupational Health Requirements*

3.9.2. UFGS-01 35 30, *Safety, Health, and Emergency Response(HTRW/UST)*

3.9.3. UFGS-09 97 13.15 (09970), *Epoxy/Fluoropolyurethane Interior Coating Of Welded Steel Petroleum Fuel Tank*

3.9.4. UFGS-09 97 13.17 (09973), *Three Coat Epoxy Interior Coating of Welded Steel Petroleum Fuel Tanks*

3.9.5. UFGS-09 97 13.27 (09971), *Exterior Coating of Steel Structures*

3.9.6. UFGS-09 97 23.13, *Interior Lining for Concrete Storage Tanks (for Petroleum Fuels)*

3.9.7. UFGS-33 52 90.00 20, *Welding for POL Service Piping*

3.9.8. UFGS-33 56 13.13 (13205), *Steel Tanks with Fixed Roofs*

3.9.9. UFGS-33 65 00 (13219) *Cleaning Petroleum Storage Tanks*

## **4. WORK REQUIREMENTS**

Work shall be performed in compliance with applicable federal, state and local codes and regulations. This includes adherence to all military service regulations concerning safety, work quality and security.

### **4.1. Tank Cleaning**

The tank(s) shall be professionally cleaned for personnel entry to the extent necessary to perform the required inspection. The tank cleaning contractor shall coordinate all site work with the base point of contact (POC) and the designated Navy Technical Representative (NTR). The Contractor shall provide adequately trained personnel, necessary personal protective equipment (PPE) and conduct safety meetings in accordance to API 2015, API 2016 and UFGS 01 35 30.

#### **4.1.1. Tank Lockout/Tag-Out**

The contractor shall be responsible for properly locking and tagging out the tank(s) prior to commencing any work. Procedures to perform the lockout/tag-out shall be discussed

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with onsite personnel prior to arriving onsite and shall be included in the Work Plan and Health and Safety Plans.

Items for lockout/tag-out include: valves, pumps, motor starters, etc. Lockout/tag-out shall also consist of installing skillets or temporarily replacing valves with blinds to prevent unauthorized fuel transfer into the tank.

The Contractor shall be responsible for opening the tanks to perform the tasked work as well as installing blanks on all product lines prior to performing the inspection. In preparation for the tank to be returned to service the Contractor shall provide and install new manway and valve flange gaskets along with new bolting hardware for all manway and flanged connections that were opened during the inspection.

#### **4.1.2. Residual Fuel, Sludge and Wash Rinsates**

Unless otherwise stated in Section 2.8, the contractor shall be responsible for proper removal and disposal of any residual fuel, sludge and/or wash rinsates, encountered during the tank cleaning.

#### **4.1.3. Floating Roofs**

For tanks with floating roofs, unless otherwise stated in Section 2 of this SOW, the Contractor shall be responsible for installing the high level legs on tanks with floating roofs prior to performing the inspection. The Contractor shall make their best attempt to clean the interface between the floating roof and the tank shell and remove all fuel from floating roof seals.

#### **4.1.4. Safe for Entry/Inspection Certification**

A certified Marine Chemist or a certified Industrial Hygienist is to issue a Safe for Entry Permit after cleaning and before inspection and repairs. Proper confine space safety practices shall be followed at ALL times while working inside the tank or any other confined space.

### **4.2. Inspections**

The type of inspection to be performed is identified in Section 2.3 for each tank. The inspector shall coordinate all site work with the designated Navy Technical Representative and the base POC. The inspector shall arrive at the site with all the necessary testing equipment to perform a thorough inspection. The inspector shall verify that all testing equipment is calibrated, in good working order and shall include proof of calibration in the inspection report. Facility personnel shall be briefed on all inspection results before the inspector(s) demobilize.

#### **4.2.1. In-Service API 653 Inspection of Aboveground Storage Tanks**

This inspection shall be performed while the tank is still in service. The following shall be performed:

##### **4.2.1.1. Non-Destructive Examination**

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#### 4.2.1.1.1. **Visual Inspection (VT)**

Visually inspect the overall condition of the tank. This includes plates, corrosion, coating, welds, appurtenances, gauging, presence of cathodic protection, foundation, secondary containment, stairways, nozzles, grounding, anchor bolts, wind girder, etc. API 575 provides recommended practices for performing an external in-service tank inspection.

#### 4.2.1.1.2. **Ultrasonic Thickness (UT) Measurements and Recording**

Perform UT measurements of the tank shell, roof, and nozzles. UT measurements shall be taken around the first course and on the upper courses accessible by stairways. The UT reading will be used for documentation, shell/roof thickness acceptability, and if applicable, remaining life calculations.

#### 4.2.1.2. **Color Photographs**

Include color photographs of adequate resolution to display the area of interest with a descriptive caption. Include photographs to document the general condition and vicinity of the tank, field identifications/markings of the tank, access points, secondary containment, general overall construction, and discrepancies found.

#### 4.2.1.3. **API 653 Appendix C Checklist**

The appropriate API 653 Appendix C Checklist of reference code shall be performed.

#### 4.2.1.4. **Mapping**

As-built mapping shall be performed of shell and roof plate orientation. Stairways, appurtenances, manways, vents and other significant tank details shall also be included.

#### 4.2.1.5. **Settlement Survey and Evaluation**

A shell and floor edge settlement survey shall be performed to identify edge settlement, differential settlement, and/or planar tilt. The results of the evaluation shall be discussed in the body of the report and the acceptability of these results shall also be made. A graphical representation of the settlement shall be included in the report. The tank shall be assessed for out-of-roundness as well.

#### 4.2.1.6. **Coating**

A coating assessment shall be made by the inspectors. The inspectors shall be familiar with military coatings; however, if significant or complex coating issues are present the contractor shall provide a NACE certified coating inspector. The NACE inspector shall only be included at the request of the Contracting Officer. Dry Film Thickness (DFT) reading shall be taken at assessable tank locations (as applicable) to determine the average thickness readings of the internal/external shell, and roof.

#### 4.2.1.7. **Secondary Containment**

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Visually inspect containment and assess the general secondary containment condition including direction of water run off drainage. Note the presence of cracks, settlement, and deterioration. Record condition and need for repairs, if needed.

**4.2.1.8. Tank Appurtenances**

The tank nozzles, manways and other appurtenances shall be examined for adequacy and compliance to applicable standards of wall thickness, reinforcement, weld spacing, and corrosion allowance. Tank accessories such as relief valves and level gauges shall be examined for general condition. Shell nozzles and reinforcements shall be ultrasonic thickness tested for determination of minimum required thicknesses, corrosion rates, and remaining life. Visually inspect the tank skin valves for any signs of leakage and document the manufacturer, class rating, type of valve and if motor operated valve (MOV) include manufacture model and serial numbers of actuators.

**4.2.1.9. Level Alarms/Water Draw-Off/ATG Systems/Vents/Product Recovery**

Identify methods/systems for level alarms, water draw-off, ATG, venting systems, and product recovery systems. Gather operability information from onsite personnel. General condition and system functionality shall be included in the report.

**4.2.2. Out-of-Service API 653 Inspection of Aboveground Storage Tanks**

This inspection shall be performed while the tank is out-of-service. The following shall be performed:

**4.2.2.1. Non-Destructive Examination**

**4.2.2.1.1. Visual Inspection (VT)**

Visually inspect the overall condition of the tank. This includes plates, roof underside, corrosion, coating, welds, appurtenances, gauging, presence of cathodic protection, foundation, secondary containment, stairways, nozzles, grounding, sumps, anchor bolts, wind girder, support columns, rafters, etc. In addition inspect and describe the tank's ability to remove water bottoms, i.e. pipe size and height from the floor. API 575 provides recommended practices for performing an external in-service tank inspection.

**4.2.2.1.2. Ultrasonic Thickness (UT) Measurements and Recording**

Perform UT measurements of the tank shell, floor, roof, and nozzles. UT measurements shall be taken around the first course and on the upper courses accessible by stairways. The UT reading will be used for documentation, shell/roof/floor thickness acceptability, and if applicable, remaining life calculations.

**4.2.2.1.3. Magnetic Flux Leakage (MFL)**

MFL floor scanning shall be performed on all accessible areas of the floor. Topside or bottom side corrosion indications shall be verified by VT and/or UT.

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In areas inaccessible by scanning, a sufficient number of UT readings shall be taken to gain a representation of the bottom underside condition.

**4.2.2.1.4. Vacuum Box Testing (VBT)**

On uncoated floors and shells, VBT all welds on the tank floor and internal shell to floor weld. Regardless of coatings present, the contactor should have the capability to perform VBT if needed (i.e. to investigate possible pinholes.)

**4.2.2.2. Color Photographs**

Include color photographs of adequate resolution to display the area of interest with a descriptive caption. Include photographs to document the general condition and vicinity of the tank, field identifications/markings of the tank, access points, secondary containment, general overall construction, and discrepancies found.

**4.2.2.3. API 653 Appendix C Checklist**

The appropriate API 653 Appendix C Checklist of reference code shall be performed.

**4.2.2.4. Mapping**

As-built mapping shall be performed of shell, floor, and roof plate orientation. Stairways, appurtenances, manways, vents and other significant tank details shall also be included.

**4.2.2.5. Settlement Survey and Evaluation**

A shell and floor edge settlement survey shall be performed to identify edge settlement, differential settlement, and/or planar tilt. The results of the evaluation shall be discussed in the body of the report and the acceptability of these results shall also be made. A graphical representation of the settlement shall be included in the report. The tank will be accessed for out-of-roundness as well.

**4.2.2.6. Coating**

A coating assessment shall be made by the inspector(s). The inspector(s) shall be familiar with military coatings, but if significant or complex coating issues are present the contractor shall provide a NACE certified coating inspector. The NACE inspector shall only be included at the request of the Contracting Officer. Dry Film Thickness (DFT) reading shall be taken at assessable tank locations (as applicable) to determine the average thickness readings of the internal/external shell, floor, and roof.

**4.2.2.7. Secondary Containment**

Visually inspect containment and assess the general secondary containment condition including direction of water run off drainage. Note the presence of cracks, settlement, and deterioration. Record condition and need for repairs, if needed.

**4.2.2.8. Tank Appurtenances**

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The tank nozzles, manways and other appurtenances shall be examined for adequacy and compliance to applicable standards of wall thickness, reinforcement, weld spacing, and corrosion allowance. Tank accessories such as relief valves and level gauges shall be examined for general condition. Shell nozzles and reinforcements shall be ultrasonic thickness tested for determination of minimum required thicknesses, corrosion rates, and remaining life. Visually inspect the tank skin valves for any signs of leakage and document the manufacturer, class rating, type of valve and if motor operated valve (MOV) include manufacture model and serial numbers of actuators.

**4.2.2.9. Level Alarms/Water Draw-Off/ATG Systems/Vents/Product Recovery**  
Identify methods/systems for level alarms, water draw-off, ATG, venting systems, and product recovery systems. Gather operability information from onsite personnel. General condition and system functionality shall be included in the report.

#### **4.2.3. Modified API 653 Inspection**

This section includes all other tanks that do not fall under the API 653 definition of an Aboveground Storage Tank.

##### **4.2.3.1. Field Erected Cut and Cover Tanks**

As applicable, use Section 4.2.2 “Out-of-Service Inspection of Aboveground Storage Tanks” for inspection of cut and cover tanks. In addition the following shall also be performed:

- 4.2.3.1.1. As built mapping of the tank floor and shell. Establish a numbering system on the columns and vertical shell stiffeners to assist with mapping of defects.
- 4.2.3.1.2. As built mapping of the tank piping and drain.
- 4.2.3.1.3. Visually inspect the tank interior. The inspection shall include, but not limited to all steel surfaces (floor, shell, roof, and columns) and appurtenances including nozzles, valves, sumps, vents, stairs/ladders, vent stacks, vacuum breakers and spark arrestors. Document general conditions along with applicable photographs and include deficiencies on the as built mapping.
- 4.2.3.1.4. Examine each column and cap plate for evidence of damage due to seismic activity. Provide recommendations for repairs as appropriate.
- 4.2.3.1.5. Note if stitch welding or full seam welding is present at the base plates and doubler plates attached to the floor. Provide recommendations for repairs as appropriate.
- 4.2.3.1.6. Examine the internal shell stiffeners. Particular attention should be paid to the drain holes, the stitch welds attaching the stiffeners to the

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shell plate and the heat affected zone of the shell. Measure depth of pits/corrosion, if present.

- 4.2.3.1.7. Provide a visual inspection and assessment of the tank coating system for integrity. Identify locations of coating failure, disbondment, laminations, pitting, fish eyes, pinholes, blisters, bubbles, etc. Identify type and extent of existing coating. Identify inspection results geographically within tanks. Perform dry film thickness measurements of the existing liner in accordance with SSPC PA2. On fully coated tanks the shell and column measurements shall include readings at 10%, 30%, 50%, 65% and 80% of the tank height. Organize the measured thicknesses into a tabular form and identify the minimum, maximum and average thickness obtained from the floor, shell, and columns. Identify the thickness locations on the as built mapping.
- 4.2.3.1.8. Measure UT thickness, through the coating, of the tank floor plates, shell plates, roof and nozzles.
- 4.2.3.1.9. Hand UT scan narrow vertical strips at four vertical drops on the tank shell from the floor-to-shell weld to roof. Note the thinnest UT reading. The results shall be used for general corrosion rate assessment and API calculations.
- 4.2.3.1.10. Magnetic Flux Leakage (MFL) floor scanning shall be performed on all accessible areas of the floor. Topside or bottom side corrosion indications shall be verified by VT and/or UT. In areas inaccessible by scanning, a sufficient number of UT readings shall be taken to gain a representation of the bottom underside condition.
- 4.2.3.1.11. Tank shell and floor edge survey to determine edge settlement and planar tilt.
- 4.2.3.1.12. Inspect welds at all penetrations in the floor and shell. Document general conditions and if discrepancies are identified include photographs along with size and location of cracks, pitting, porosity, etc.
- 4.2.3.1.13. Identify level alarms, means of water draw-off, automatic tank gauging (ATG) and venting systems. Gather operability information from onsite personnel. General condition and system functionality shall be included in the report. Include sizes and location of stilling wells, risers, etc.
- 4.2.3.1.14. Provide a list of deficiencies with respect to Section 5.6.2.



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#### 4.2.3.2. **Horizontal Cyclical Welded Steel Underground Tanks**

- 4.2.3.2.1. Perform a visual inspection for general condition of the tank. This includes corrosion, condition of coating or liner, appurtenances, gauging, foundation, stairways, nozzles, grounding, sumps, etc.
- 4.2.3.2.2. Perform UT measurements throughout the bottom and to the furthest extend possible up the walls without the aid of ladders or scaffolding to determine representative thickness.
- 4.2.3.2.3. Determine minimum thickness allowed per applicable standard and compare to minimum thickness recorded.
- 4.2.3.2.4. Provide color photographs to document the general condition of the tank, including general vicinity and deficiencies found.

#### 4.2.3.3. **Shop Fabricated Aboveground Tanks**

- 4.2.3.3.1. Perform a visual inspection for general condition of the tank. This includes corrosion, condition of coating or liner, appurtenances, gauging, foundation, stairways, nozzles, grounding, sumps, etc.
- 4.2.3.3.2. Perform UT measurements of accessible location and evaluated for corrosion rates, remaining life, and inspection intervals.
- 4.2.3.3.3. Document manufacturer, date of manufacturer, and as-built standard.
- 4.2.3.3.4. For double wall tanks, check the interstitial space for evidence of unauthorized releases.
- 4.2.3.3.5. Provide color photographs to document the general condition of the tank, including the general vicinity and deficiencies found.

#### 4.2.3.4. **Concrete Cut and Covers**

##### 4.2.3.4.1. **Visual Inspection**

Visually inspect the overall condition of the tank. The inspection shall include, but no limited to all concrete surfaces, metal components including piping and valves and requirements for tank gauging. Check the columns for plumbness. The inspection shall be performed from the floor and from scaffolding. Generalize location of cracks in concrete floor, wall and columns. Cracks, defects and similar problems may be identified in tabular form based on the numbering system provided on the as-built mapping.

Note the construction of the roof to shell joint at the top of the wall. Determine if the top joint has been sealed with an epoxy sealer or any other means.

Note the construction of the floor-to-shell joint at the bottom of the wall. Determine if cove sealant is present. Document cracks, pin holes, disbanding, etc.

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Examine the cold joints in the wall. Document whether the original iron dust mortar which was typical of original construction has been replaced with appropriate sealant.

Note all pipe penetrations in the floor/shell. Inspect sealant between piping and concrete shell/slab, specifically the joint at the tank's fill and suction lines. Perform and document UT thickness measurements on the tank nozzles.

**4.2.3.4.2. Mapping**

As-built mapping shall be performed of the tank floor and shell. Establish a numbering system on the columns and vertical construction joints to assist with mapping of defects. A floor level observation sketch of the roof shall be generated in the event that deleterious conditions are noted or repairs to the roof are necessary. As built mapping of the tank piping and drain. Include pipe sizes, lengths, penetration and appurtenances such as swing arms and related components.

**4.2.3.4.3. Settlement Survey and Evaluation**

A shell and floor edge settlement survey shall be performed to identify edge settlement, differential settlement, and/or planar tilt. The results of the evaluation shall be discussed in the body of the report and the acceptability of these results shall also be made. A graphical representation of the settlement shall be included in the report. The tank shall be assessed for out-of-roundness as well.

**4.2.3.4.4. Level Alarms/Water Draw-Off/ATG Systems/ Vents/ Product Recovery**

Identify methods/systems for level alarms, water draw-off, ATG, venting systems, and product recovery systems. Gather operability information from onsite personnel. General condition and system functionality shall be included in the report. Include sizes and location of stilling wells, risers, etc.

**4.2.3.4.5. Coating**

Provide a visual inspection and assessment of the tank coating system for integrity. Identify locations of coating failure, disbondment, laminations, etc. requiring repair.

Perform dry film thickness measurements of the existing liner in accordance with SSPC PA2. The shell and column measurements shall include readings at 10%, 30%, 50%, 65% and 80% of the tank height. Organize the measured thicknesses into a tabular form and identify the minimum, maximum and average thickness obtained from the floor, shell, and columns. Identify the thickness locations on the as built mapping.

**4.2.3.4.6. Other Items**

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Perform chain drag inspection on the tank floor. A chain drag inspection consists of dragging a segment of chain across a horizontal concrete surface. A hollow sound is produced if the concrete has delaminated from the reinforcing steel or if the coating system has separated from the concrete.

Perform hammer test inspection of the tank at each column, and at random location on the tank floor, including the sump, and at the walls, including cold joints. A hammer test inspection consists of striking a concrete surface with consistent force. A hollow sound is produced if the concrete has delaminated from the reinforcing steel or if the lining has separated from the concrete.

Color photographs shall be taken to document the tank condition, discrepancies and overall construction. Provide a list of deficiencies with respect to Section 5.6.2.

#### **4.2.4. Steel Tank Institute Inspection**

STI SP001 shall be used as guidance on all storage tanks not in contact with the ground. These tanks are typically smaller shop fabricated in a horizontal position. The purpose of the inspection shall be to document the tank and secondary containment condition, and ensure the tank is not leaking.

### **4.3. Tank Calibration**

Prepare two calibration tables (strapping charts) for each tank specified in Section 2, one in English units and one in metric units. Both tables shall show the volume of the fuel for all liquid levels in the tank starting at the shell to bottom joint and going up to the level of the overflow. Tank calibration shall be in accordance with API 2003 “Manual of Petroleum Measurements Standards” for “critical measurement,” API Standard 2550 “Measurement and Calibration of Upright Cylindrical Tanks” and in accordance with UFGS Specification 33 56 13.13, paragraph 3.4.1.d (Chapter 2.2D, Internal Electro-optical Distance Ranging Method (EODR) (using a theodolite with an electronic distance ranging device).)

The English units’ calibration table shall show the volume of the fuel in barrels of 42 gallon and the level in 1/16-inch increments. The metric unit calibration table shall show the volume of the fuel in cubic meters and the level of the fuel in 2.0 mm increments. The zero level shall be the bottom of the shell. The level of the bottom of the shell and the level of the overflows shall be identified on the calibration table (strapping chart). The table shall not include tank volume above the level of the overflows. Preparation of new calibration tables from API report information or by interpolation of existing tables shall not be permitted. The table shall be certified by a third party. The tables shall be included in the tank inspection report. In addition two laminated copies each of English and metric units along with electronic media data files shall be provided to the facility.

### **4.4. Tank Gauging Tubes**

All gauge tube installations shall be in accordance with the Automated Tank Gauge (ATG) Installation Policy dated December 16, 2009. Modification to any existing tubes shall be made if acceptable and feasible. All damaged coatings shall be repaired in accordance to UFGS 09 97 13.15 and UFGS 09 97 13.27.

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#### **4.4.1. Standard Design**

The standard details shall be used for each tank identified in Section 2 and the Contractor shall make site specific adjustments as appropriate for each tank. The Contractor shall develop applicable details to retrofit identified tanks. Tubes shall be constructed of schedule 40 aluminum. Special considerations shall be made for unusual circumstances such as geodesic domes, very large or uncommonly shaped tanks, etc. These special circumstances will be addressed in Section 2.

#### **4.5. Repairs**

The Government shall have the option to modify the contract to include repairs identified during the inspection. This section may include all repairs identified in the inspection, but shall not include tank gauge tubes that are in Section 4.4.

If significant repairs are needed, the Government will require an API 653 inspector to certify all repairs/NDE work. If repairs are deemed necessary, the Government will submit a scope of work for repairs and request a modification to the existing task order. Once the modification is awarded, the Contractor shall prepare the following:

##### **4.5.1. Repair Work Plan**

The Contractor shall prepare a Repair Work Plan that shall be reviewed and approved by the Government before performing repairs to the tank(s). The Contractor shall have the option to amend the existing Work Plan or create a new plan. The Repair Work Plan shall incorporate all federal, state, and local environmental regulations. In addition to the information requested in Section 5.2 of this SOW the Repair Work Plan shall also address the following, if applicable:

##### **4.5.1.1. Hydrostatic Testing Plan**

If significant repairs are made, especially in the tank's critical zone, the contractor may recommend that a hydrostatic test be performed. The hydrostatic test shall be performed in accordance to API Standard 653. Personnel performing the test shall be identified and documentation on qualifications shall be submitted. Contractor shall be responsible for performing and documenting the necessary calculations, per current applicable standards, to determine the hydrostatic testing fill level using actual thickness measurements.

##### **4.5.1.2. Non-Destructive Examination (NDE)**

The Contractor shall be responsible for performing all necessary NDE to prove the validity of repairs. NDE methods and technician qualification shall be selected and applied in accordance with API Standard 653.

##### **4.5.2. Health and Safety Plan**

The Health and Safety Plan for the repairs shall follow all the guidelines in Section 5.3.

## **5. SUBMITTALS**

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Prior to the start of repair work, all submittals shall be reviewed and approved in accordance to Appendix G.

### **5.1. Schedule**

After contract award, a projected schedule with dates of mobilization, major milestone and demobilization shall be submitted.

### **5.2. Work Plan**

Provide a written plan for cleaning, inspecting and stilling well repairs for the requested storage tanks in Section 2. The work plan shall include the following:

#### **5.2.1. Project Summary and Background**

#### **5.2.2. Detailed Schedule**

This schedule shall have more detail than the previous schedule required in Section 5.1.

#### **5.2.3. Methodology**

Provide details on the proposed methodology for completing the required work including coordination and logistics.

#### **5.2.4. Execution Strategy**

Provide strategy for execution. This should include incorporate the work methodology and schedule along with quality control, mobilization/demobilization, applicable permitting, etc.

#### **5.2.5. Key Personnel and Subcontractors**

Provide contact information for key personnel and subcontractors. Include brief description qualifications and responsibilities of all parties.

#### **5.2.6. Materials and Equipment to be Used**

Provide list of materials and major equipment to be used. These items will need to be review and approved by the NTR. Material specification sheets shall be submitted in accordance with Appendix G.

#### **5.2.7. Hazardous Waste Disposal**

Provide a plan for proper identification, handling, storage, transportation and disposal of any anticipated hazardous material.

### **5.3. Health and Safety Plan (H&SP)**

#### **5.3.1. General Work Safety**

The Contractor shall submit a Health & Safety Plan detailing such items as briefings, training, hazard control, general housekeeping, personal protective equipment, etc. Submit in accordance with EM 385-1-1, Appendix A *Minimum Basic Outline for Accident Prevention*. It is stressed the contractor shall perform all work in a safe manner

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and maintain all proper documentation. A complete hard copy of the H&SP shall be on-site at all times.

#### **5.3.2. Confined Space Plan**

Only a qualified person shall issue tank entry and confined space permits. Tank atmosphere shall be gas-freed and monitored in accordance with Occupation Safety and Health Administration (OSHA) guidelines for oxygen content, flammable, and toxic vapors. API standard 2015 and 29 CFR 1910.146 shall also be followed.

#### **5.3.3. Hazardous Materials Handling**

Hazardous material handling shall be performed according to the manufacturer's specifications and conform to all applicable federal, state, and local regulations. Personnel handling hazardous materials shall be properly trained and provided with any required personal protective equipment (PPE).

#### **5.3.4. Environmental Protection**

Preventative measures shall be addressed and followed to protect the environment from any work being performed. This section shall also discuss contingency plans to contain and clean up in the event of a spill.

#### **5.3.5. Hot Work**

Hot work permits shall be obtained prior to any hot work being performed. Hot work procedures for both above the floor work and on the floor work shall be included in the H&SP as well as the Work Plan. The Contractor shall obtain Hot Work permits from a Marine Chemist or Certified Industrial Hygienist as well as from the local base fire department. Hot work is defined as welding, cutting, etc. Abrasive blasting will be considered hot work unless stated otherwise in Section 2.12.

### **5.4. Personnel and Contractor Qualifications**

Provide information on experience, training and certification/licensing.

#### **5.4.1. Project Manager**

The Project Manager for this project shall have the technical and practical background in petroleum storage tank construction and inspection. This person shall be familiar with the applicable API, STI, and other Military standards and recommend practices. This person shall be knowledgeable of appropriate NDE techniques as well as quality assurance for such practices.

#### **5.4.2. Site Manager**

The Site Manager for this project shall have the technical and practical background in petroleum storage tank construction and inspection. This person shall be familiar with the applicable API, STI, and other Military standards and recommend practices. This person shall be knowledgeable of appropriate NDE techniques as well as quality assurance for such practices. The site manager will also ensure that all personnel onsite will adhere to all safety measures outlined in the Health and Safety Plan.

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#### **5.4.3. Tank Cleaning Personnel**

Tank cleaning personnel shall be trained in all safety equipment and procedures needed to perform work. This shall include, but not be limited to confine space, hazardous material handling, hazardous atmosphere monitoring, fall protection, etc. All appropriate safety regulations and guidelines shall be followed.

#### **5.4.4. API 653 Inspectors**

The inspectors shall be experienced with various types of storage tanks. Inspectors shall be certified in accordance with to API 653 Appendix D - Authorized Inspector Certification. Inspectors shall furnish proof of API certification.

#### **5.4.5. NDE Technicians**

All non-destructive examination (NDE) testing shall be conducted by personnel qualified to American Society for Nondestructive Testing (ASNT) Level II in accordance with the inspection company's procedures or by an ASNT Level I qualified individual under the direct supervision of an ASNT Level II or Level III. Technicians shall provide NDE qualifications.

#### **5.4.6. STI Inspectors**

Inspectors performing STI inspections shall be certified in accordance to STI SP001.

#### **5.4.7. Welders**

Welding Procedure Specification (WPS) and welders shall be qualified in accordance with Section IX of the ASME Code. A copy of the WPS and Procedure Qualification Records (PQR) used for production welds shall be available for review by the authorized inspector and/or the Government at the fabrication site. Personnel performing welds shall be experienced with construction and repairs of petroleum storage tanks and pipelines.

#### **5.4.8. Coating Applicators**

All contractors and subcontractors that perform surface preparation and coating application shall be certified by the Society for Protective Coatings (formerly Steel Structure Painting Council) (SSPC) to the requirement of SSPC QP 1 prior to contract award, and shall remain certified while accomplishing any surface preparation or coating application. Contractors shall be familiar with military coatings and experienced with their application.

#### **5.4.9. National Association of Corrosion Engineers (NACE) Inspector**

As an option, a tank coating inspection shall be performed by a certified NACE Level III Coatings Inspector in accordance with the National Association of Corrosion Engineers (NACE).

#### **5.4.10. Marine Chemist/Industrial Hygienist**

The Marine Chemist or Certified Industrial Hygienist shall be certified by the American Board of Industrial Hygiene.

#### **5.4.11. Tank Calibration Personnel**

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Contractor shall provide the services of a specialty calibration organization to provide tank field measurements in order to produce the tank calibration charts (strapping tables) and electronic data files for use by the automatic tank gauging (ATG) system.

### **5.5. Daily Reports**

Daily reports shall be generated by the contractor for each work day while on site. Daily reports shall be emailed by 0900 the following work day to the NTR and all agreed upon parties. A daily report format is included in Appendix E.

### **5.6. Inspection Reports**

#### **5.6.1. Preliminary Reports**

Upon completion of the field work, a preliminary report shall be communicated to the NTR. This information will be utilized in determining whether repairs need to be accomplished prior to returning the tank(s) into service. Preliminary reports shall be submitted within 48 hours of completing each inspection.

As a minimum, preliminary inspection reports shall include:

- 5.6.1.1.1. Tank ID, location, and inspection date
- 5.6.1.1.2. Suitability for service statement, identifying whether the tank is suitable for continued operation, reduce capacity or complete removal from service. If tank is unsuitable for service, a brief description of tank issue(s) shall be discussed.
- 5.6.1.1.3. Inspector(s) name, certification number, and date.

#### **5.6.2. Full Inspection Reports**

A separate report shall be provided for each tank inspected. Provide hardcopies of each report in plastic ring binding with a plastic sleeve inside to hold an electronic copy of each report. For sub contracted inspections the Prime Contractor shall provide their own cover sheet along with an independent inspection summary and recommendations based on the inspection report. NAVFAC ESC will provide a report cover with a report number for the final submission.

Inspection Reports shall include:

##### **5.6.2.1. Executive Summary**

Provide a one page summary of the condition of the tank and basic recommendations for repairs. Within the body make reference to and attached the Inspection/Repair Summary sheet from Appendix F of this SOW.

##### **5.6.2.2. Suitability for Service Statement**

This statement shall be a one page document with both the API 653 inspector's number and signature and the professional engineer's stamp and signature containing



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the due date for the next inspection. Provide a suitability for service statement for each tank inspected and/or repaired. Tanks require a suitability for service statement before returning to service. In the event that Suitability for Service statement cannot be made, document the reason(s) and suggest a corrective action measure.

#### **5.6.2.3. Tank History**

The inspector shall establish a complete historical record of the entire tank. The records shall include as much information as possible including:

- 5.6.2.3.1. Nameplate Information
- 5.6.2.3.2. Products previously and presently stored in the tank.
- 5.6.2.3.3. List of previous inspections
- 5.6.2.3.4. List and describe any significant environmental (earthquake, hurricane, etc) or operational (over-pressure, vacuum, foundation settlement, etc) events.
- 5.6.2.3.5. List and describe any repairs or alterations performed (include significant drawings, executive summaries from other repair reports, etc in the Report Appendix).
- 5.6.2.3.6. GPS Coordinates
- 5.6.2.3.7. Other pertinent information and details.

#### **5.6.2.4. Methodology**

Detailed discussion on the actual methodology of how each component was inspected. This section includes type of inspection, equipment, and methods.

#### **5.6.2.5. Findings**

Detailed description of each component including containment, foundation, bottom, shell, appurtenances, access ways, floating roof/pan, and fixed roof. Provide discussion on all findings.

#### **5.6.2.6. Recommendations**

Recommendations shall be included in the report and broken into three categories. These categories are Mandatory, Near Future, and Long Term repairs.

##### **5.6.2.6.1. Mandatory**

Provide mandatory actions that need to be completed before the tank can be returned to service. Classification of mandatory repairs consists of any failure/deficiency that has breached the hydraulic, and/or structural integrity of the tank, and/or presents an eminent danger to personnel and/or adjacent structures. Examples of mandatory repairs include, but not limited to: leaks, broken access ladders, missing anchor bolts, excessive settlement, etc.

##### **5.6.2.6.2. Near Future**

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Provide recommended actions that should be programmed for completion within 2-3 years. All recommendations shall be accompanied by a recommended completion date.

**5.6.2.6.3. Long Term**

Provide recommended actions that currently have no adverse affect on tank operability or integrity but should be monitored and/or performed to ensure long term continued service. All recommendations shall be accompanied by a recommended completion date.

**5.6.2.7. Report Appendices**

**5.6.2.7.1. Data (UT, MFL, Settlement, Safe Fill Heights, etc)**

Include all data collected during the inspection along with an interpretation and discussion of the data. Data shall be in tabular form with tank locations.

**5.6.2.7.2. API checklist in API 653 Appendix C**

Include actual notes and readings taken by the field inspector including: tank history, visual checklist and definitive inspection results.

**5.6.2.7.3. Drawings**

As a minimum, the following drawings, if applicable, shall be included in the report: shell, roof, and floor plate orientation with appurtenances and other significant tank details.

**5.6.2.7.4. Photographs**

Include color photographs of adequate resolution to display the area of interest with a descriptive caption. Include photographs to document the general condition and vicinity of the tank, field identifications/markings of the tank, access points, secondary containment, general overall construction, and discrepancies found.

**5.6.2.7.5. Calculations**

Provide calculations required by API 653. This includes determination of the minimum shell thickness, next inspection date, safe fill height, settlement, nozzle reinforcement requirements, and estimated remaining service life of shell, nozzles, roof and floor. Provide a sample calculation for each component along with any assumptions and references utilized.

**5.7. Project Certification Reports**

A separate report shall be provided for each tank on this task order. These reports shall include thorough documentation all work performed. This includes cleaning, inspection, repairs, stilling well installation, strapping charts, etc. Hard copies of each tank shall be bound in plastic ring binding with a plastic sleeve inside to hold electronic copy of each report. NAVFAC ESC will provide the cover and report number.

Project Certification Reports Shall Include:

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- 5.7.1.1. Executive Summary
  - 5.7.1.2. Suitability for Service Statement
  - 5.7.1.3. Work Performed (Include all subcontractors, with contact information)
  - 5.7.1.4. Timeline

Appendices:

- 5.7.1.5. Documenting Photographs
- 5.7.1.6. Personnel Certifications
- 5.7.1.7. NDE Documentation
- 5.7.1.8. Quality Control Documentation
- 5.7.1.9. Materials, Equipment Specifications, and Coating Data
- 5.7.1.10. As-built Drawings, if applicable
- 5.7.1.11. API 653 follow up inspection (if deemed necessary)
- 5.7.1.12. Hazardous Waste Manifest

## **5.8. Materials, Workmanship, Quality Control and Testing**

- 5.8.1. The contractor shall provide materials, workmanship, quality control and testing in accordance with the Work Plan. (Refer to paragraph 5.2 above).
- 5.8.2. The Contractor shall provide shop drawings and material specification sheets of all materials and major equipment to be used in accordance with the Submittal Register (refer to paragraph 5.5 above). Shop drawings and material specification sheets shall be submitted in accordance with Appendix H for Government Review and Approval.
- 5.8.3. The contractor shall provide reports from all quality control and testing in accordance with the Submittal Register. These reports shall be submitted in accordance with Appendix H for Government Review and Approval.

## **5.9. Submittal Register**

- 5.9.1. The Contractor shall prepare and submit the Submittal Register, "SUBMITTAL FORM, Jan 96", found in Appendix G of this SOW. Columns (a) thru (I) shall be completed by the Contractor for all submittals required.
  - 5.9.2. The Contractor shall prepare and maintain the submittal register as the work progresses. The submittal register is to be included with all submittals with the appropriate columns filled-in. Additional information concerning the Submittal Register is may be found in UFGS 01 33 00.
  - 5.9.3. The Submittal Register shall be submitted in accordance with Appendix H for Governmental Review and Approval.
  - 5.9.4. No work is to start on-site prior to review and approval by the Government.
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## **6. MEETINGS**

### **6.1. Work Kickoff Meeting**

A Work Kickoff meeting will be coordinated by NAVFAC ESC to establish the responsibilities of each party involved, discussion of the schedule, and to ensure a mutual understanding of the scope. After opening remarks by NTR, the Prime Contractor shall lead the discussion of specific project requirements, generate and submit meeting minutes for Government review and approval. Appendix I contains a templates the Contractor may use to prepare the agenda.

### **6.2. Repair Kickoff Meeting**

A Repair Kickoff Meeting shall be held if work outside the original scope is being performed. This does not apply stilling well installation. This meeting is to be conducted to establish each party's responsibilities and achieve consensus on the repairs scope.

### **6.3. Work Completion Walk Through**

Upon completion of the required tasks a Work Completion Walk Through is to be conducted. The purpose of this meeting is to ensure that all the government's requirements and expectations have been successfully completed and the government will accept all work performed.

## **7. BID PROPOSAL REQUIREMENTS**

The contractor bid proposals are to include the following:

### **7.1. Brief Work Plan**

A brief statement of how the contractor plans to complete the required tasks.

### **7.2. Schedule**

Provide a schedule which identifies major milestones along with projected start and end dates.

### **7.3. Project Personnel and Subcontractors**

Provide the names and contact information for the planned project personnel and subcontractors.

### **7.4. Costs Proposal**

Provide a cost proposal for the entire project with a breakdown of burdened cost per tank for cleaning, inspecting, and repairing. These broken out costs will be used for government information only and the project will not be de-scoped according to them.

## **8. INVOICING**

Invoicing shall be submitted and tracked per task, per tank, and percentage completed. In addition to the Contractor's regular invoicing practices, the contractor shall also include Prime Contractor costs for cleaning, inspection, stilling wells, and repairs for EACH tank.

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These should be “out the door” costs that include weighted amounts for administration, project management, bonds, etc. See the example below.

	Cleaning	Inspection	Stilling Well	Repairs	Total
Tank A					
Tank B					
Tank C					
Project Total					

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**APPENDIX A**  
TANK INFORMATION



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**APPENDIX B**  
GAUGE TUBE STANDARD DESIGN



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**APPENDIX C**

GOVERNMENT FURINISHED INFORMATION

Attached electronic files

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## **APPENDIX D**

### **PERSONNEL SECURITY LIST FOR BASE ACCESS**

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Facility Location:	
Project Location:	
Project Description:	
NAVFAC ESC POC:	
Prime Contractor:	
Contractor POC:	
Date Submitted:	

First, MI, Last Name	SSN	Date of Birth	Place of Birth	Citizenship	Driver's License, State of Issuance	Employer's Name, address, phone number	Planned arrival date	Planned departure date	Vehicle/ Equipment make, model and year	Vehicle/ Equipment type	Vehicle/Equipment tag number

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**APPENDIX E**  
DAILY REPORT FORMAT

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## DAILY PRODUCTION REPORTS

A Production Report is required for each day that work is performed on the tanks. Unless unusual circumstances arise, the Production Report should be limited to 1-2 pages. The report is informal and can consist of hand written notes on a standard form. The report shall account for each calendar day while on-site. The reporting of work shall be identified by terminology consistent with the statement of work. Contractor Production Reports are to be prepared, signed and dated by the contractor's on-site Project Supervisor and shall contain the following information:

- 1.0 Date of report, report number, name of contractor, Delivery Order Number, title and location of tasks, and Construction manager present.
- 2.0 Weather conditions in the morning and in the afternoon. Include temperature, wind, rain, fog, and humidity.
- 3.0 A list of contractor and subcontractor personnel on the work site, their trades, employer, work location, descriptions of work performed, and hours worked.
- 4.0 A list of contractor and subcontractor equipment on the work site, rented or owned, if rented-from who, location, description of work performed with equipment and hours the equipment was on-site, used, idle, and/or down for repair.
- 5.0 A list of job safety actions taken and safety inspection conducted. Indicate that safety requirements have been met including the results of the following:
  - 5.1. Was a job safety meeting held? (If YES, attach a copy of the meeting minutes.)
  - 5.2. Were there any lost time accidents? (If YES, attach a copy of the completed OSHA report.)
  - 5.3. Was crane/trenching/scaffold/high voltage electrical/ high work done? (If YES, attach a statements or checklist showing inspection performed.)
  - 5.4. Was hazardous material/waste released into the environment? (If YES, attach a description of what was released, how it was released, actions taken to contain/clean-up, people/organizations contacted, meetings held, and future actions to be taken.)
  - 5.5. A list of material received each day that is incorporated into the project.
  - 5.6. Include a "Remarks" Section in the report which will contain the following: pertinent information including problems encountered during work, delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given and corrective actions taken, minutes of QC meeting and/or other meetings, and a record of visitors to the work site.

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**APPENDIX F**  
INSPECTION/REPAIR SUMMARY TEMPLATE

<b>Tank Inspection Summary Sheet</b>	
Tank Location	
Tank No. (plus previous identification)	
Facility Number	
Inspection Date(s)	
Tank Type	(AST, UST, Vertical, Horizontal, In Contact w/ground, etc)
Type of Inspection	(In-Service, Out of Service, Modified, API, STI, Other, etc)
Contract Number, Task Order	
Prime Contractor Name	
Inspector, Cert #, Inspection Company	
Manufacturer, Date, Design Standard	
Diameter	
Height/Safe Fill Height	
Product/Specific Gravity	
Design Pressure/Temperature	
Gross Capacity/Nominal Capacity	
Safe Fill Height	
GPS Latitude & Longitude	
Foundation Configuration	
Shell Configuration	(# of courses, heights of each, thickness, etc)
Floor Configuration	(annular ring, sketch plates, butt welded, lap welded, etc)
Roof (Fixed, Floating or both. Seal type)	
Cathodic Protection, if so what type	
Stilling Wells (Sizes, Applications)	
Last Inspection (type, date)	
Last Coated Internally (Product)	
Last Coated Externally (Product)	
<b>Inspection Results</b>	
Can tank be returned to service?	Yes / No (If No, explain)
Deficiencies identified as mandatory repairs	
Deficiencies identified as recommended repairs	
Deficiencies identified as long term repairs	
Next Scheduled Inspection (type, date)	
<b>Upgrades / Repairs Made at this Time</b>	Use second page if more space is needed
Tank Re-Calibration to 1/16 in	Yes / No (if Yes, when)
Stilling Wells	
Coating (specify system, location)	
Floor (including sump)	
Shell	
Vents / Appurtenances	
Secondary Containment	
Other:	

<b>General Comments</b>	
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**APPENDIX G**  
SUBMITTAL FORM

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## **APPENDIX H**

### **SUBMITTAL LIST, SCHEDULE, AND DISTRIBUTION**

## SUBMITTAL LIST, SCHEDULE, AND DISTRIBUTION

SUBMITTAL	SUBMITTAL SCHEDULE			DISTRIBUTION - NUMBER OF COPIES				
	DRAFT (WACA)	GOVT Review	FINAL (WAGR)	NAVFAC ESC	RK&K	DESC JR	NOLSC	SITE
<b>Schedule</b>	2	1		EC				
<b>Submittal Register</b>	2	1	1					
Draft				EC				
Final				EC				
As Required				EC				
<b>Work Plan</b>								
Draft	4	2	1	EC				
Final				EC				
<b>Quality Control, Testing Reports, etc</b>	In Accordance with Submittal Register			EC				
<b>Health And Safety Plan</b>								
Draft	4	2	1	EC				
Final				EC				
<b>Qualifications</b>	2	1	-	EC				
<b>Shop Drawings, Material Information, etc</b>	In Accordance with Submittal Register			EC				
	DRAFT (WACO)	GOVT Review	FINAL (WAGR)					
<b>API 653 Reports</b>								
Preliminary	48 hrs	-	-	EC				
Draft	4	2	2	EC				
Final				HC, EC, CD	EC	EC	EC	HC w/CD
<b>Work Certification Report</b>								
Draft	4	2	1	EC				
Final				HC, EC, CD	EC	EC	EC	HC w/CD
<b>Quality Control Daily Reports</b>				EC				EC

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Meeting Minutes <sup>③,④</sup>				EC	

- NOTES:
- WACA – Weeks after Contract Award, WACO – Weeks after Completion
  - GOVT Review – Number of weeks for Government review after receipt of submittal.
  - WAGR – Weeks after Government Review
  - EC = Electronic Copy, HC = Hard Copy
  - ③ - Daily reports shall be e-mailed daily, by 0900 local time, the following day.
  - ④ - Minutes of meetings shall be e-mailed no later than three (3) working days following each meeting.

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## **APPENDIX I**

### **PRE-CONSTRUCTION AGENDA**

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## **PRE-INSPECTION MEETING**

**[TANK XX]**

**[FACILITY, CITY, STATE]  
[DD MONTH YYYY]**

**[time hrs]**

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### **AGENDA**

- **NAVFAC ESC OPENING REMARKS/BRIEF TEAM INTRODUCTIONS**
- **ROLES & RESPONSIBILITIES – PROJECT ORGANIZATION**
- **INSTALLATION SUPPORT – [FACILITY] / COORDINATION**
- **EXECUTION PLAN**
  - Summary Project Scope
  - Meetings
  - Project Documentation - Submittals
  - Quality Control – Corrective Actions
- **HEALTH & SAFETY**
- **WASTE MANAGEMENT/DISPOSAL PROCEDURES**
- **ACTION ITEMS (Specific Project Issues – Logistics – Scheduling)**
- **SITE WALK (as necessary)**
- **OFF-LINE DISCUSSIONS – Subcontractor Invoicing Procedures, procurements, etc.**
- **- Adjourn - -**

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## TEAM INTRODUCTIONS

NAVFAC ESC – NTR (COTR and ROICC),  
[FACILITY Personnel - (Opening Comments/Introductions)]

Construction Team:

Prime: [Contractor's Name]

Tank Cleaning: [Name]

Tank Inspection: [Name]

Tank Repairs: [Name]

## ▪ ROLES & RESPONSIBILITIES – PROJECT ORGANIZATION

### [Prime Contractor]

Project Manager, Construction Site Manager, Superior Industrial Maintenance Foreman,  
Procurement Manager, Contract Manager

### [FACILITY]

Point(s) of Contact and Individual Roles

### NAVFAC ESC

COTR/ROICC, Assistant ROICC, CO

## LINES of COMMUNICATION

Subcontractors → [Prime] → ROICC/AROICC → [FACILITY] → NAVFAC ESC

## ▪ INSTALLATION SUPPORT- COORDINATION

- ☐ Security/Site Access (Base security force, escorts, contractor vehicle requirements, contractor personnel information requirements, material deliveries, etc.)
- ☐ [FACILITY] Fire Department
- ☐ [FACILITY] Environmental
- ☐ [FACILITY] Fuels Manager
- ☐ LB&B
- ☐ Hours of Operation (Monday – Friday 7am – 4 pm; Saturdays only with special permission/circumstances)
- ☐ Utility Coordination (Water, Fire hydrants, Electric, Telephone) with [FACILITY]
- ☐ Confined Space Entry Permits & Hot Work Permits (FACILITY and Fire Safety)
- ☐ Project Trailer/Facilities (break areas, portable toilets, restricted cell phone usage)
- ☐ Contractor Laydown Area(s)

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▪ **EXECUTION PLAN**

☐ **Summary Project Scope**

- Discuss Inspection/Repair work to be performed and general sequence
- Stilling Well installation
- Schedule

☐ **Meetings**

- Daily Safety Tailgate Meetings
- Weekly Construction Meetings w/FISC (if requested)
- 50% Project Completion Meeting (after ?)
- Pre-Final Completion Walk-Through Meeting (Develop punch list items)
- Final Inspection/As-built Review Meeting (if necessary)

☐ **Project Documentation**

- Construction Submittals (Material Approval Forms; Electronic review /Approval Process, Review and Approval Distribution)
- Daily Production Reports
- QC Inspection Checklists

☐ **Quality Control - Corrective Actions**

- QC Field Inspections/Reports – Response/Corrective Action
- Material Approval Submittal Process – [Prime/Sub] QC check of submittals
- H&S Audits/H&S non-conformance observations

▪ **HEALTH & SAFETY**

**Job-Specific Safety Topic:**

- ☐ Site Health & Safety Officer –[Prime Contractor]
- ☐ Daily Tailgate Safety Meetings
- ☐ [Prime] H&S Inspections - Subcontractor PPE & Subcontractor H&S Contacts
- ☐ Traffic Plan – Barricades, specific routing requirements
- ☐ Daily Housekeeping at jobsite
- ☐ Hurricane Preparedness Plan
- ☐ Emergency / Incident Notification and Procedures – Route to Hospital



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- **WASTE MANAGEMENT/DISPOSAL PROCEDURES**

- ☐ Wash water, PCW management / hydro test water management
- ☐ Coatings abatement: General waste manifest requirements, Notifications
- ☐ Material waste/general construction debris disposal

- **SPECIFIC PROJECT ISSUES – LOGISTICS – SCHEDULING**

- ☐ Tank Cleaning and API Inspections
- ☐ Initial hot work permit, subsequent hot work permits
- ☐ Finalize Design Repair package after API 653 Inspection
- ☐ Tank repair work – initial work and repairs mandated by specific design details

- **ACTION ITEMS**