



APPENDIX M

PROJECT DATA –

POTENTIAL FREE PRODUCT RECLAMATION PLAN



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RED HILL COMPLEX PROJECT

TANK 5 WARRANTY WORK

IDENTIFICATION / REMOVAL OF POTENTIAL FREE PRODUCT

1.0 IDENTIFICATION / REMOVAL OF POTENTIAL FREE PRODUCT SUMMARY

Willbros Government Services has prepared this procedure under Contract No. N62583-09-D-0132 / TO 003 for warranty work on Tank 5 located at Red Hill Pearl Harbor, HI. This procedure will be utilized to identify potential free product and provide guidance for the removal, storage, and disposal of any potential reclaimed free product thought to have been lost during Tank 5 filling activities.

Note – For any additional information not listed in this document see the WGS WP, specifically the Repair Procedure.

2.1 POTENTIAL FREE PRODUCT- IDENTIFICATION SUMMARY

Due to the underground construction of Tank 5, some of the exterior surfaces are inaccessible for gas free testing and permitting. Areas of the tank's internal steel liner appear to have separated from the concrete encasement surrounding the tank. This condition can allow water, fuel, liquid or vapor, to be trapped in a localized area between the two surfaces. WGS intends to identify potential trapped free product in these areas via Vacuum Box Testing (VBT). This will be conducted to verify the integrity of the repair plate seal welds made to the tanks interior surface, as well as, identifying the existence of free product trapped in that location. All previous repairs performed by WGS will be VBT'd during this process including the 17 failed locations previously identified in the initial inspection. Any area suspected of holding trapped free product, that does not have a repair location suitable for VBT, will be addressed using an alternate method requiring WGS to drill a new inspection port to conduct the test.

The tank is divided into 4 quadrants (A, B, C, D) which identify the tank left to right. The tank is also divided from bottom to top by Lower Dome, Shell or Barrel, Extension Rings, and Upper Dome. WGS intends to drill and/or expose a minimum of 12 inspection ports in the tank liner; 1 port per quadrant for the Extension Rings, Shell or Barrel, and Lower Dome. Due to initial tank filling procedures and gravity WGS does not expect free product to be located in the Upper Dome. Coating will be removed and replaced as-needed on the lower dome.

2.2 FREE PRODUCT IDENTIFICATION PROCEDURE

Free Product Identification – Steps & Sequence

- 2.2.1 Vacuum Box Testing- During VBT the presence of product being pulled from behind the repair plate or the odor of product after the Vacuum Box is removed from the test area will be recorded in the QC log by the NDE technicians performing the test.
- 2.2.2 Inspection Port Determination- WGS QC Manager will review the NDE data collected to determine locations for the minimum 12 additional inspection ports, distributed in the tank as described in Section 2.1, based on the NDE data and tank conditions. If the QC manager is unable to satisfy the criteria using existing repairs, he will determine locations for new inspection ports, using the alternate method described in Section 2.1, based on the NDE data and tank conditions e.g., liner separation, leak path, presence of product or odor etc.
- 2.2.3 Tracking Inspection Ports- WGS will use the QC Log to track the location of each plate removed and/or port drilled for the purpose of identifying potential free product.

2.3 FREE PRODUCT RECLAMATION PROCEDURE

Product Reclamation – Steps & Sequence

2.3.1 Repair Plate Location – If liquid is detected behind a repair plate, a port will be drilled in close proximity to drain any product found at the location.
(See 2.2.3.2 for draining procedure)

2.3.2 Alternate Method: New Inspection Port Location – New locations will be determined by the QC Manager based on Section 2.1, Section 2.2.2 and the NDE data and conditions found in the tank. A port, 1/4" in diameter, will be created in the designated location with a pneumatic drill.

2.3.3 Product Reclamation-

2.2.3.1- **If no liquid is present-** WGS will test the area through the port with a gas monitor and record the readings on the QC log to be reviewed by the QC Manager to determine if further action is required.

2.2.3.2- **Liquid present-** Inspection port will be drilled and tapped to install a threaded valve to allow WGS to perform controlled draining of liquids. During tapping and threading of inspection port WGS will place oil absorbent rags below inspection port to catch any seeping liquid. A 15 gallon DOT drum will be located inside of the man basket and will be the temporary storage container until personnel return to the catwalk and material can be relocated into a larger drum or container. Once gravity flow through the valve has stopped, WGS will attempt to extract any additional accessible liquid with a small vacuum pump (5-10 Hg psig). Liquids will be collected in containers or drums to be evacuated from the tank thru the access tunnel.

2.2.3.3- WGS will track and record the amount collected and disposed of in the QC log. Testing will be performed on any collected liquids to characterize and determine proper disposal procedures, e.g., fuel reclamation or waste. Disposal location and test results will be noted in the QC log. Photos and visual characterizations will be documented in the QC daily reports.

Note –This process will begin at the top of the tank and proceed downward to limit or control the amount of liquids drained from any location where they are encountered. Based on the construction methods and historical data relating to the tank WGS does not expect to find large quantities of product in any single location of the tank. During the process described above, if WGS encounters a quantity of product that is not feasible to drain in the described method, the test/drain port will be plugged and another procedure will be developed based on the location and condition of the area where the product is found.

2.4 Product Inspection Port Repairs

Product inspection port repairs will conform to WGS Work Plan Tank 5 Repair Procedure rev 1D and the following. An area will be marked or laid out a minimum of 1" beyond the inspection port peripheral edge. The entire surface of the marked area will be cleaned to remove all existing coating or debris from the weld area. A groove will be ground into the port in accordance with the WPS joint limits, and then filled with weld, back to base metal thickness. After cleaning the filled groove, a weld overlay will be performed on the repair location. All weld overlays should extend a minimum of 1" horizontally and 1/2" vertically on either side of the affected area designated for overlay.

2.5 Summary

Willbros will perform the above procedures to identify, reclaim, or dispose of any potential free product thought to have been lost during Tank 5 filling activities. Areas identified as inspection ports during the performance of this procedure will be tracked in the QC log, which will be submitted to EXWC with the Inspection Report prior to beginning any tank repairs.