U3 – UST TANK TIGHTNESS TESTING
JOB TASK ANALYSIS & EXAMINATION OUTLINE

1 Hour, Closed Book *Approximate % of 50 Questions*

01 RECORDS AND REPORTING REQUIREMENTS (Content Area) **8%**

0101 Line and Tank Tightness Test Records (Task) 4%
Review past tightness test records when available. Complete and submit tightness test results for current test to state UST agency on appropriate forms. Provide the tank owner/operator with written test results which indicate whether test is "passed" or "failed".

0102 Reporting of Failed Results and Releases (Task) 4%
Notify the tank owner/operator that a "failed" test must be reported as a suspected release to the appropriate state agency within the appropriate time. Report system leaks as required.

02 SITE PREPARATION AND LAYOUT (Content Area) **6%**

0201 UST System Layout (Task) 6%
Determine site layout for tanks, piping, and equipment before beginning tests. Verify access to set up test equipment.

03 PLACEMENT OF EQUIPMENT (Content Area) **4%**

0301 Tank Fill Lines, Devices, Connections, and Tank Caps (Task) 2%
Verify correct installation of tank fill lines, connectors and other devices. Verify that pipes slope toward tank(s). Verify that fittings and joints are properly tightened. Verify correct identification and installation of fill and monitoring well caps

0302 Automatic Leak Detection Systems (Task) 2%
Verify compliance with regulations requiring installation and proper operation of line leak detection and automatic leak detection systems and devices for product piping and tanks.

04 SECONDARY CONTAINMENT (Content Area) **4%**

0401 Tank and Overfill Protection (Task) 2%
Verify correct installation of tank overfill protection.

0402 Tank and Pipe Secondary Containment (Task) 2%
Verify proper installation of tank and pipe secondary containment and release detection methods.

05 VAPOR RECOVERY SYSTEMS (Content Area) **2%**

0501 Stage I and Stage II Vapor Recovery Systems (Task) 2%
Verify correct installation of Stage I and Stage II vapor recovery systems when required.

06 TEST VARIABLES & LEAK DETECTION REQUIREMENTS (Content Area) **22%**

0601 Release Detection Requirements (Task) 6%
Determine compliance with regulations requiring installation and proper operation of leak detection systems and devices for product piping and tanks.

0602 Test Methods (Task) 4%
Determine which test methods to use which meet federal and state requirements.

0603 Periodic Tests at Required Intervals (Task) 2%
Correctly inform tank owner/operator when a tightness test is required and schedule the test date with the owner/operator to be sure that necessary arrangements are made. Perform tightness tests at required time intervals (1 yr, 5 yrs, etc.) according to EPA regulations applicable to each situation.

0604 Water Table (Task) 2%
Determine the height of the water table and the groundwater elevation relative to the bottom of the tank. Use methods to compensate for the effects of the water table on the tightness tests.

0605 Interpretation of Test Results (Task) 8%
Determine whether or not the tightness test results are conclusive and whether additional testing is required to obtain valid results.

07 VOLUMETRIC TIGHTNESS TESTING (Content Area) **14%**

0701 Preparation for Tank Tightness Testing (Task) 8%
Verify that fittings and joints are properly tightened and that gaskets are installed and in good condition. Isolate piping from the tank to be tightness tested. Disconnect or isolate manifolded tanks from each other. Remove drop tube if removable. Fill tank with product to appropriate testing level required for tightness testing. Wait until thermal effects and structural deformation resulting from filling the tank have stabilized before commencing tightness testing. Calibrate and install instrumentation equipment on the tank according to the test equipment manufacturer's instructions.

0702 Conducting Volumetric Tank Tightness Tests (Task) 6%
Identify and remove vapor pockets in the tank. Determine height-to-volume conversion factor for tightness test. Measure changes in product level and temperature and analyze test data to determine volume changes and volumetric flow rate during tightness test. Make fine adjustments to product level if required to achieve final level for tightness test. Measure and evaluate changes in product level and temperature during tightness testing. Determine coefficient of thermal expansion for tank tightness test.

08 NONVOLUMETRIC TIGHTNESS TESTING (Content Area) **8%**

0801 Nonvolumetric Tightness Testing (Task) 8%
Use various methods of nonvolumetric tank tightness testing such as tracer chemical, gas sampling acoustical and calibrating liquid flow through simulators.

09 HEALTH AND SAFETY FOR UST WORKERS (Content Area) **12%**

0901 Control of Vapors and Sources of Ignition (Task) 8%
Identify and control concentrations of flammable or combustible vapors before repairing, decommissioning or tank and pipe tightness testing. Use breathing support devices when necessary. Remove sources of ignition within distances required.

0902 Grounding and Bonding of Equipment (Task) 2%
Verify grounding of electrical equipment to minimize the possibility of sparks from static electricity or other differences in electrical potential.

0903 Personal Safety Equipment (Task) 2%
Observe safety precautions and use personal safety equipment necessary for the work involved in, including the use of protective clothing, safety line and other recommended equipment.

10 TESTING OF PIPING SYSTEMS (Content Area) **20%**

1001 Preparation for Pipe Tightness Testing (Task) 10%
Determine if the piping is flexible or rigid. Verify that fittings and joints are properly tightened and that gaskets are installed and in good condition. Isolate piping to be tightness tested. Determine the volume of piping to be tested. Determine if the system contains any abandoned piping. When necessary, remove or isolate the line leak detector and test its operation. Determine the appropriate test pressure based on whether the piping system is a suction system or a pressurized system. Wait until thermal effects and structural deformation have stabilized before commencing tightness testing. Calibrate and install instrumentation equipment according to the test equipment manufacturer's instructions.

1002 Conduct Line Tightness Tests (Task) 6%
Identify and remove air and vapor pockets in the piping. Measure and record pressure and volume loss or gain during tightness testing.

1003 Compare Data to Threshold Values (Task) 4%
Compare measured leak rate to the acceptable threshold values to determine if there are leaks in the system.