



# POLLUTANT STORAGE CONTRACTORS GENERAL TRADE KNOWLEDGE EXAMINATION CONTENT INFORMATION

*Revised September 14*

The General Trade Knowledge portion of the examination is administered daily in Computer Based Testing (CBT) format. It will consist of 80 equally weighted questions.

The examination will have questions relating to the following content areas and necessary knowledge for each area includes:

- reading and interpreting plans and specifications
- reading and interpreting codes
- basic mathematics (addition, subtraction, multiplication, division, calculations of area and volume, fractions, decimals, percentages, calculating the sides of triangles, square roots, powers of numbers, and solving simple algebraic equations for unknown variables)

You should be prepared to respond to examination questions on any of the content areas listed. Questions asked and content areas tested on previous examinations should not be assumed to be the only possible questions to be asked or content areas to be tested on this examination.

The percentage of questions shown for each content area may vary by as much as plus or minus three (3) percent. Please refer to the Candidate Information Brochure and the Reference List for additional information.

## **Content Area A** **7%** **Pre-Installation and Site Preparation**

- 1. Drawing plans**
  - knowledge of symbols
  - knowledge of abbreviations
  - knowledge of terminology
  - knowledge of site dimensions
  - knowledge of scale dimensions
  - knowledge of soil types

- 2. Performing a pre-installation inspection and test of all tanks**
  - knowledge of checking for required parts of tank
  - ability to check for holes, dents, and scrapes on tanks
  - knowledge of low pressure air-testing
- 3. Determining location of excavations**
  - knowledge of invert elevations
  - knowledge of basic surveying and layout
  - knowledge of site utility locates (811)
- 4. Determining burial depths and slopes**
  - knowledge of excavation
  - knowledge of surveying/leveling techniques
  - ability to determine the need for shoring based on soil type
- 5. Determining ground water conditions**
  - knowledge of procedures for high water (dewatering)
- 6. Obtaining required permits**
  - Knowledge of local permitting requirements
  - Knowledge of DEP requirements
  - Knowledge of local fire department/fire marshal requirements

## **Content Area B** **5%** **Material Handling**

- 1. Handling and filling tanks with various forms of petroleum products**
  - knowledge of spillage
  - knowledge of cleanup
  - knowledge of safety precautions
  - knowledge of State and Federal transportation laws relating to dangerous substances
  - knowledge of filling attachments
- 2. Handling and filling tanks with pesticides**
  - knowledge of spillage
  - knowledge of cleanup
  - knowledge of safety requirements
  - knowledge of attachments
  - knowledge of meters

**3. Handling and filling tanks with ammonia**

- knowledge of spillage
- knowledge of cleanup
- knowledge of safety requirements
- knowledge of attachments
- knowledge of meters

**4. Handling and filling tanks with chlorine**

- knowledge of spillage
- knowledge of cleanup
- knowledge of safety requirements

**5. Handling and filling tanks with other industrial chemicals**

- knowledge of spillage
- knowledge of cleanup
- knowledge of safety precautions
- knowledge of attachments
- knowledge of meters

**6. Identifying contents and labeling tanks**

- Knowledge of labeling requirements
- Knowledge of placards and symbols
- Knowledge of MSDS

**Content Area C  
Excavating**

**10%**

**1. Coordinating and directing soil preparation and testing soil and ground water for petroleum products**

- knowledge of surveying requirements
- knowledge of backhoes
- knowledge of trenchers
- knowledge of cranes and rigging
- knowledge of soils
- knowledge of identifying polluted soils
- knowledge of where to take soil samples
- knowledge of compaction tests
- knowledge of leveling requirements
- knowledge of removal of debris from excavation
- knowledge of bedding
- knowledge of backfill materials
- knowledge of chocks
- knowledge of foreign materials left in tank and piping excavations

**2. Performing dewatering**

- knowledge of pump requirements
- knowledge of soils
- knowledge of permeation
- knowledge of supports and anchorage

- knowledge of discharge requirements
- knowledge of treatment requirements for contaminated water

**3. Installing sheet pilings**

- knowledge of proper materials
- knowledge of supports and placements
- knowledge of soils
- knowledge of layout (tank dimensions, distances from cofferdam walls for safe tank installation)
- knowledge of "wet hole" tank installation method
- knowledge of trenching and excavations
- knowledge of requirements to have an engineer approve plans for sites beyond certain depths

**4. Securing excavation sites**

- knowledge of OSHA
- knowledge of barrier fencing
- knowledge of pollutant runoff
- knowledge of sediment control

**Content Area D**

**7%**

**Supports and Anchorage**

**1. Installing deadmen anchors**

- knowledge of concrete form work
- knowledge of reinforcing steel
- knowledge of form work
- knowledge of cables and hold-down straps

**2. Installing hold-down pads**

- knowledge of concrete form work
- knowledge of reinforcing steel
- knowledge of properties of concrete including proper mixing
- knowledge of placement
- knowledge of drying time
- knowledge of cables and hold-down straps

**3. Installing reinforcing concrete**

- knowledge of concrete
- knowledge of rebar
- knowledge of requirements for slabs given anticipated load and use

**4. Performing backfill compaction**

- knowledge of moisture tests
- knowledge of tampers and compactors
- knowledge of levels and surveying equipment

**5. Checking for required surface elevation**  
knowledge of surveying equipment and levels

**6. Installing concrete isolation and contraction joints**  
knowledge of properties of concrete  
knowledge of when joints are needed  
knowledge of form work

**Content Area E** **10%**  
**Backfill**

- 1. Adding ballast**  
knowledge of when to add ballast  
knowledge of level of ballast  
knowledge of partial filling
- 2. Installing backfill materials for tanks**  
knowledge of appropriate backfill material  
knowledge of removal of debris  
knowledge of ballasting  
knowledge of backfill material  
knowledge of backfill for nonmetallic tanks  
knowledge of pea gravel  
knowledge of crushed rock or gravel  
knowledge of compaction
- 3. Measuring tank deflection**  
knowledge of determining deflection  
knowledge of causes of deflection  
knowledge of limit of acceptable maximum deflection
- 4. Installing filter fabric and other backfill migration preventers**  
knowledge of installation requirements  
knowledge of determining unstable soils  
knowledge of determining appropriate fabrics

**Content Area F** **12%**  
**Tank Installation**

- 1. Unloading, lifting and lowering tanks**  
knowledge of lining requirements  
knowledge of cables and chains  
knowledge of spreader bars  
knowledge of hoisting equipment and sufficient capacity  
knowledge of proper storage

**2. Installing cathodically protected steel tanks**  
knowledge of corrosion (dissimilar metals)  
knowledge of pressure testing requirements  
knowledge of pressure relief devices  
knowledge of gauges  
knowledge of potential damage to tank  
knowledge of thread protectors  
knowledge of plugs

**3. Installing fiber-reinforced plastic tanks**  
knowledge of hazards and potential damage  
knowledge of inspections  
knowledge of appropriate backfill materials  
knowledge of appropriate placement for multiple tanks in one excavation

**4. Installing fiberglass-clad steel tanks**  
knowledge of hazards and potential damage  
knowledge of inspections  
knowledge of appropriate backfill materials

**5. Installing double wall steel tanks**  
knowledge of hazards and potential damage  
knowledge of inspections  
knowledge of appropriate backfill materials

**6. Installing double wall fiberglass tanks**  
knowledge of hazards and potential damage  
knowledge of inspections  
knowledge of appropriate backfill materials

**7. Pressure testing tanks**  
knowledge of air pressure requirements  
knowledge of leak detection  
knowledge of plugs  
knowledge of removing and disposing of thread protectors  
knowledge of hazards and potential damage to tank while testing  
knowledge of pressure gauges  
knowledge of pressure relief devices  
knowledge of results of over-pressurization  
knowledge of compressors

**8. Pressurizing interstice (annular space between tank walls)**  
knowledge of compressors  
knowledge of using two gauges  
knowledge of leak detection  
knowledge of result of pressurizing  
knowledge of vacuum gauges

- 9. Installing emergency generator tanks**  
knowledge of piping  
knowledge of valves  
knowledge of transfer pumps  
knowledge of day tanks  
knowledge of float switches

**Content Area G** **14%**  
**Piping, Valves and Fittings**

**1. Laying out and constructing trenches**

- knowledge of trenches  
knowledge of backhoes  
knowledge of pipe layout  
knowledge of appropriate widths for different pipes  
knowledge of surveying techniques and requirements

**2. Laying out pipes, valves, fittings and related components**

- knowledge of types of equipment  
knowledge of when to use equipment  
knowledge of variation in equipment  
knowledge of swing joints  
knowledge of elbows  
knowledge of nipples  
knowledge of properties of equipment (corrosive resistance)

**3. Compacting soil around piping**

- knowledge of soil testing requirements  
knowledge of depth requirements  
knowledge of compaction equipment  
knowledge of correct moisture content  
knowledge of percent compaction

**4. Determining appropriate pipe sealant**

- knowledge of types of sealants  
knowledge of conditions for applications  
knowledge of preparation  
knowledge of application requirements  
knowledge of drying requirements

**5. Complying with piping plans and specs**

- knowledge of symbols  
knowledge of abbreviations  
knowledge of terminology  
knowledge of site dimensioning

**6. Installing submersible pumps and leak detectors**

- knowledge of types of pumps  
knowledge of capacity of pumps  
knowledge of installation requirements

**7. Performing a tightness test for pipes**

- knowledge of compressors  
knowledge of operating pressures systems  
knowledge of soaping  
knowledge of hydrostatic testing  
knowledge of reading pressure gauges  
knowledge of pipe fitting

**8. Determining product and vent pipe slopes**

- knowledge of vapor and liquid traps  
knowledge of surveying instruments and levels

**9. Installing double-walled and flexible piping**

- knowledge of sealant requirements  
knowledge of tightness testing  
knowledge of trenching  
knowledge of bedding requirements  
knowledge of sizing pipes  
knowledge of level and surveying requirements

**10. Installing fiberglass piping**

- knowledge of trenching  
knowledge of appropriate sizes of trenches  
knowledge of tightness testing bedding  
knowledge of sealants  
knowledge of backfilling  
knowledge of compaction  
knowledge of levels and surveying

**11. Installing dispensers and pumps**

- knowledge of fittings  
knowledge of valves  
knowledge of types of valves  
knowledge of dispenser sumps

**12. Installing shear and anchor valves and properly anchoring**

- knowledge of types of anchors and when to use  
knowledge of alignment of anchors  
knowledge of concrete  
knowledge of anchor bolts  
knowledge of reinforcing requirements  
knowledge of thrust blocks

- 13. Determining size and capacity of vents**  
knowledge of vent sizing  
knowledge of vent requirements  
knowledge of manifold tanks and siphon piping

- 14. Installing Stage 1 Vapor Recovery Systems**  
Knowledge of single point systems  
Knowledge of dual point systems

**Content Area H** **5%**  
**Above Tank Covering**

- 1. Covering tanks with asphalt or concrete**  
knowledge of site preparation  
knowledge of concrete mixture requirements  
knowledge of proper conditions for installing concrete  
knowledge of asphalt  
(properties, application, and site preparation)  
knowledge of finishing  
knowledge of reinforcing
- 2. Calculating support and buoyancy counteraction**  
knowledge of soil conditions  
knowledge of determining depth of burial - from top of tank to finished grade  
knowledge of weight of materials  
knowledge of calculating reflected tank area  
knowledge of determining space occupied by materials and tank

**Content Area I** **10%**  
**Leak Detection**

- 1. Installing continuous monitoring systems**  
knowledge of gauging systems  
knowledge of interstice monitoring  
knowledge of line pressure monitoring  
knowledge of observation venting  
knowledge of automatic line leak detectors
- 2. Maintaining tank and trench geotextile liners**  
knowledge of proper installation  
knowledge of penetration fittings  
knowledge of adhesive materials  
knowledge of backfill materials  
knowledge of sub-base requirements  
knowledge of layout  
knowledge of compacting  
knowledge of seaming liner pieces

- 3. Installing overflow protection devices**  
knowledge of fill pipe enclosure  
knowledge of vent float valve  
knowledge of inventory control procedures  
knowledge of "outage charts"  
knowledge of restricted venting
- 4. Installing interstitial monitoring systems**  
knowledge of types of sensors  
knowledge of monitoring liquid reservoir and riser  
knowledge of testing interstitial space
- 5. Installing line pressure monitoring systems**  
knowledge of submersible pumps  
knowledge of piping and corrosion control requirements
- 6. Understanding requirements for monitoring wells**  
knowledge of who can install them (well driller)  
knowledge of appropriate construction methods  
knowledge of proper abandonment of monitoring wells
- 7. Developing ground water monitoring plans**  
knowledge of D.E.P. plan approval process
- 8. Performing tank and line tests**  
knowledge of manufacturer's equipment  
knowledge of manufacturer's procedures  
knowledge of complete and partial full test  
knowledge of air in line and purging  
knowledge of isolation points, sub pumps, and shear valves  
knowledge of proper testing equipment

**Content Area J** **5%**  
**Cathodic Protection Systems**

- 1. Maintaining and repairing cathodic protection systems**  
knowledge of what is required  
knowledge of when it is required
- 2. Maintaining and repairing pre-engineered protection systems**  
knowledge of when it is needed  
knowledge of how to install it

- 3. Using dielectric fittings**  
knowledge of product compatibility  
knowledge of operating or test pressures
- 4. Using galvanic anodes**  
knowledge of when they are needed  
knowledge of how to install them
- 5. Maintaining and repairing impressed current systems**  
knowledge of when they are needed  
knowledge of how to install them
- 6. Using field-applied coatings**  
knowledge of when it is needed  
knowledge of how to apply them
- 7. Inspecting anodes and cathodic protection systems**  
knowledge of proper testing authority and methods  
knowledge of monthly and yearly inspections of monitors
- 8. Maintaining metal cathodic protected pipes**  
knowledge of trenching  
knowledge of bedding  
knowledge of tightness testing  
knowledge of sealants  
knowledge of appropriate sizes  
knowledge of levels and surveying equipment

**Content Area K** **10%**  
**Tank Removal and Abandonment**

- 1. Disconnecting equipment and piping**  
knowledge of safety requirements  
knowledge of excavation
- 2. Testing for adequate removal of pollutant materials in tanks and lines**  
knowledge of safety requirements  
knowledge of how and when to test  
knowledge of meters (e.g., LEL, O<sub>2</sub>)
- 3. Removing tanks**  
knowledge of excavation  
knowledge of cranes, hoists and rigging  
knowledge of transportation requirements
- 4. Filling tanks with an inert solid**  
knowledge of acceptable fill materials

knowledge of eliminating voids when filling

- 5. Disposing of pollutants**  
knowledge of local, State, and Federal laws and regulations relating to transportation and disposal  
knowledge of excavation and backfill  
knowledge of soil testing
- 6. Cutting and cleaning tanks**  
knowledge of testing equipment (how and when to use)  
knowledge of safety requirements  
knowledge of confined space entry  
knowledge of methods for cutting
- 7. Methods for disposing of tanks**  
knowledge of transporting tanks  
knowledge of cutting methods

**Content Area L** **5%**  
**Equipment**

- 1. Using personal protection equipment**  
knowledge of OSHA guidelines  
knowledge of when to use  
knowledge of type to use
- 2. Installing warning signs and barricades**  
knowledge of Florida Dept. of Transportation guidelines  
knowledge of Federal transportation guidelines  
knowledge of warning sign requirements  
knowledge of regulatory signs  
knowledge of warning sign requirements and requirements  
knowledge of marking requirements  
knowledge of lighting devices  
knowledge of control of traffic through work areas  
knowledge of expressways and limited access facilities
- 3. Wearing eye and face protection**  
knowledge of OSHA guidelines
- 4. Using respiratory protection**  
knowledge of toxic fumes  
knowledge of when and how to use

- 5. Digging with backhoes, trenchers and tractors**
  - knowledge of lifting capacities
  - knowledge of safety requirements
  - knowledge of road requirements
  
- 6. Using overhead hoists and cranes**
  - knowledge of lifting capacities
  - knowledge of rigging requirements
  
- 7. Ensuring adequate ventilation**
  - knowledge of safety requirements
  - knowledge of when necessary
  
- 8. Using chlorine and hydrocarbon gas leak detection devices**
  - knowledge of when and how to use
  
- 9. Consider grounding and combustibility**
  - knowledge of static electricity
  - knowledge of lower explosive limits (LEL)
  - knowledge of explosion proof equipment