# ATTACHMENT 8
# TANK SYSTEM ASSESSMENT

## 8.1 Tank System Assessment

The written assessment by an independent, qualified professional engineer registered in Arizona appears as Appendix E-32 ("Design Assessments Used Solvent Storage Tank, TERA, Inc. 91-159"). The assessment addresses the waste parts washer solvent tank, including the two drum washer units in the return and fill station; the aboveground storage tank; and all ancillary equipment, piping, and secondary containment systems. The design assessment contains information required by A.A.C. R18-8-264.A (40 CFR 264.192(a)(5)(1)), such as skirt or pad tank foundation load calculations, which are not included in the installation assessment.

Additionally, owner/operator and professional engineer certifications that the facility was constructed in compliance with the design requirements of the permit are contained in Appendix E-35 ("Construction Certifications"). It should be noted that not all design requirements (e.g., warehouse design) are certified "as-built" because a professional engineer was not present during all stages of construction.

## 8.2 Tank Dimensions and Capacity

### 8.2.1 12,000-Gallon Aboveground Storage Tank

The 12,000-gallon aboveground, vertical tank is 10' 6" in diameter and 19' high. It is constructed of carbon steel painted white. The tank walls are 3/16" thick and the lower third is1/4" thick. The tank is constructed in accordance with Underwriters Laboratory Standard 142.

### 8.2.2 Drum Washer Units

The drum washer units are also regulated as tank systems. Each drum washer unit has a total volume of 375 gallons but may hold only 162 gallons of waste parts washer solvent. The drum washer units are constructed of 14-gauge steel with a locking lid assembly and removable filter screens. Solvent is poured from the USDOT-specification containers into the drum washer unit and the container is then placed on the drum washer unit roller brushes with the open end facing a downward. As the machine is turned on, the container rotates on the brushes, cleaning the outside of the container. Concurrent with this, there is a nozzle located within the drum washer unit that directs a stream of spent solvent against the bottom of the container to clean any sludge from the inside of the container. The spent solvent goes to a sump in the bottom of the drum washer unit and is automatically pumped to the waste parts washer solvent tank. There is a basket in the sump that collects the sludge.

## 8.3 Tank Feeds, Cut-Offs, Bypass, and Pressure Control

Waste is pumped from the drum washer units at the return and fill station. The control power of the pumps is connected to a tank fill height monitoring system. The power to the pumps is disabled when the tank reaches 95 percent capacity.

The tank is equipped with a pressure relief vent that operates at two ounces of pressure and at two ounces of vacuum. Also, the 20-inch man-way is provided with long bolts, partially threaded, to allow for emergency venting of the tank in the event of an emergency as described by the NFPA. The bolts are shown in Appendix E-16 ("12,000 gallon 10' 6" Φ Flanged and Dished Bottom Vertical Storage Tank with Flanged Fittings Fabrication Details"). The specific gravity of the parts washer solvent is 0.88, and the vapor pressure at 68° F is 2mm Hg.

In addition, the following documents provide information about the tank installation: Appendix E-17 ("Used Solvent Vertical Tank Installation Details"), Appendix E18 ("Varec Tank Gauge Installation Details"), Appendix E-22 ("Milltronics Airanger DPL With 2 Transducers Outline Dimensions and External Connections Airinger DPL"), and Appendix E-24 ("Milltronic Operating Manual (Appendix E-24).

## 8.4 Process and Instrument and Flow Diagrams

The process flow diagrams are contained in Appendix B-1. All other design drawings and diagrams are contained in Appendix E-29 ("Parallel Steel Joint Pipe Bridge"), Appendix E-30 ("Pipe Bridge"), and Appendix E-31 ("Solvent Pump Piping Installation Details").

## 8.5 Corrosion Protection

The above ground storage tank and the drum washer units are not exposed to conditions that would result in external corrosion. Standing liquids in the diked area will be cleaned up using absorbents or pumped to the spent solvent storage tank. No severe atmospheric conditions are anticipated that would result in external corrosion.

## 8.6 Tank System Installation

The tank system installation assessment has been performed by an independent, professional engineer registered in Arizona, upon completion of the tank system. It is included as Appendix E-33 ("Installation Assessment Used Solvent Storage System, Tera, Inc. 93-409-089").

## 8.7 Tank Secondary Containment System

### 8.7.1 12,000-Gallon Aboveground Storage Tank

The tank is constructed in accordance with Underwriters Laboratories Standard 142 and is located not less than 25 feet from the property line.

The secondary containment for the 12,000-gallon tank consists of a slab, sump, and dike wall. The base and wall are made of steel reinforced concrete. The base, sump, and lower dike wall are

poured monolithically, and a key is installed to connect the upper wall to the lower base wall. A chemical resistant coating sealant (see Appendix E-11 ["Product Data Sheet for ICO GUARD 51 Epoxy Floor Coating"]) is applied to the tank farm storage pad, dike walls, and sump.

The tank dike containment calculations, allowing for the volume of the largest tank, the 25-year 24-hour storm volume, and tank displacement, appear in Appendix E-33 ("Installation Assessment Used Solvent Tank Storage System, Tera Inc. 93-409-089"). The tank dike will collect all accumulated liquids which can be handled as described in this section and in the Contingency Plan.

### 8.7.2 Drum Washer Units

The drum washer unit can hold 162 gallons of drum washer sediment, but the amount in the drum washer unit will never reach that capacity, as sediment is removed manually from the drum washer units each day. Approximately 8 gallons of drum washer sediment is removed per unit per day.

The return and fill station has secondary containment in the form of a concrete floor sloped to a 22' x 2' x 3.5' collection trench with a containment value of 844 gallons. The slab and trench were from one monolithic pour. A chemical resistant coating sealant (see Appendix E-11 ["Product Data Sheet For ICO Guard 51 Epoxy Floor coating"]) is applied to the return and fill station floor and up to 6 inches on the walls. Chemically-resistant grout and sealant was used to fill in the joint between the wall and floor.

### 8.7.3 Tank System Inspection

The tanks and their secondary containment shall be inspected each operating day. The containment structure shall be inspected for cracks, corrosion, and other signs of deterioration. Any signs of deterioration shall be noted and repaired immediately. Any leaks shall be noted and remediated immediately. If a leak cannot be immediately repaired, the tank contents shall be transferred to another tank or to a tank truck and the tank cannot be used again until its integrity is assured. Any tank that cannot be repaired shall be removed and destroyed. The procedures to remove spilled or leaked material from the secondary containment are described in Attachment 4, sections 4.3.1 and 4.3.2. Spilled or leaked wastes will be removed immediately upon detection.

## 8.8 Variance Information

A variance is from A.A.C. R18-8-264.A (40 CFR 264.193) is not sought for the Chandler service center.

## 8.9 Spill and Overflow Prevention Controls and Practices

The emergency waste feed cut-off valves, located adjacent to the drum washer units, will prevent the tank from being overfilled. The high level alarms will indicate when the tank is 95 percent full. The procedures described below will ensure the safe loading and unloading of the tanks:

1. Secure the tractor-trailer for unloading or loading in a location which has easy access to the pump or curb side of the unit. Set brakes, engage governor and connect grounding equipment.

2. Check available tank volumes via gauges or measure with a stick to verify that there is enough volume to transfer each load safely and prevent overfills. Leave all hatches open on the storage tank and on the tank truck.

3. Make hose connections between storage tank and tanker truck in proper sequence (i.e., to empty vessel first). Double check to ensure all connections are tight and locked.

4. Engage pump and move clean product to storage tank. Check for leaks along hose, piping, and at connections. If a leak is noted, stop the operation immediately and make repairs or make arrangements for repairs.

5. Check the available tank truck volume. Reverse hose connections and move dirty solvent from storage to tank truck. (Again, check for leaks and repair as needed.)

6. Drain all hoses before disconnecting to prevent spillage.

7. In the event of a spill, follow the emergency procedures outlined in the Contingency Plan.

8. Check all paperwork. Document proper quantities of material delivered and picked up. Ensure all manifests, bills of lading, and other related paperwork are in order.

In the event of a spill or leak, the procedures described in the Contingency Plan will be followed.

The daily material balance for the tanks is obtained in the following manner. The readings for the daily tank levels are entered into the computer in the Solvent Control Department in Safety-Kleen Corporate every Monday. These readings are entered per region and per branch and reflect solvent levels from the previous Friday. Using the amount of inventory, the calculated use per branch, and the branch recovery rate, the computer generates a report showing the estimated level of inventory (spent and clean solvent) per day per branch.

## 8.10 Ignitable, Reactive, and Incompatible

The ignitable parts washer solvent waste is received, pumped, and stored in such a way that it is protected from any material or conditions that may cause the waste to ignite. No hot work (i.e. welding) is done in the vicinity of the tank system.

The tanks (drum washer units, antifreeze tank, and waste solvent tank) are atmospheric and there is only passive temperature control. The temperature of the waste in the tank will depend on the temperature of the outside ambient air. The tanks are painted white to reduce the amount of energy absorbed from sunlight.

Additionally, as required by UL-142, the tank skirt is fire rated by the use of Albi-Clad coating (see Appendix E-34 [“Albi-Clad 800 Fireproofing Application Manual and Field Guide”]).

Permit Attachment 3, section 3.4.3 “Potential Fire Sources” contains additional information on ignitable precautions and procedures.