

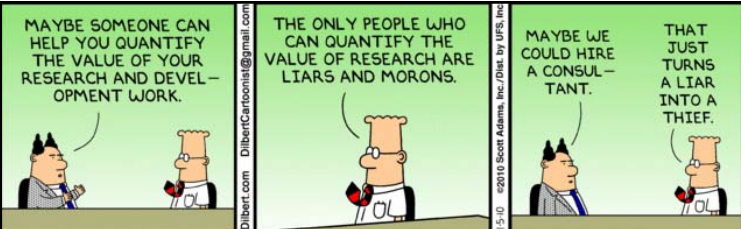


APSA: STRANGE BUT TRUE

February 29, 2024; TH-3
Steve Lichten

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26th Annual California CUPA Training Conference
February 26-29, 2024



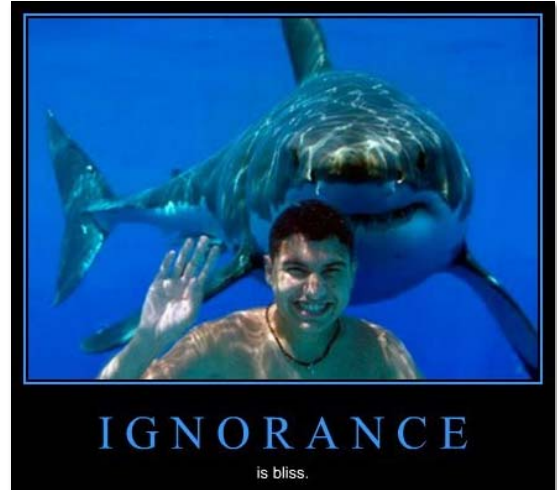
CONSULTING

IF YOU'RE NOT A PART OF THE SOLUTION,
THERE'S GOOD MONEY TO BE MADE IN PROLONGING THE PROBLEM.

What's this class? APSA – Strange but True

Class Objectives:

- Go through a bunch of topics that I think might be interesting
 - Assuming, of course, that YOU also may find this stuff interesting
 - Sometimes non-common sense stuff
 - Sometimes little known stuff
 - Sometimes interpretive stuff
 - Sometimes all of the above, but only to me (sorry)



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Five-Year Plan Reviews

- Is a PE required to perform the 5-year review of an SPCC Plan?
 - **A Qualified Facility (T-1 or T-2) SPCC Plan?**
 - **Nope.**
 - **A PE-certified SPCC Plan?**
 - **Nope.** But if there's any technical amendments needed, the PE must review and certify the amended Plan.



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SPCC Plan Required?

- A facility who **ONLY** has one 60-gallon stationary used oil tank in a maintenance pit?
 - Pit provides containment
 - Any piping meets fire code
 - **Yep.** The tank is a TIUGA and facility must have an SPCC Plan (can use the T-1 Template).

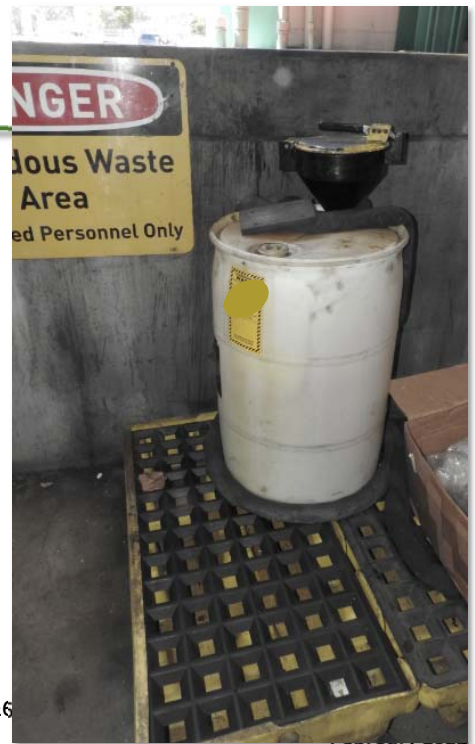


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SPCC Plan Required?

- A facility who **ONLY** has one 55-gallon drum of used oil tank in a maintenance pit?
 - Pit and pallet provides containment
 - **Nope.** Portable containers are not considered TIUGAs.



26



That Same Drum...

- At a facility that is otherwise covered under APSA (they have > 1,320 gal. of petroleum in containers ≥ 55-gal)?
 - Pit and pallet provides containment
 - **Yep.** If the facility is already APSA or SPCC-regulated, all petroleum containers must be included in the Plan.



SPCC Plan Required?

- A facility who **ONLY** has one 65-gallon stationary hydraulic fluid tank containing petroleum-based hyd. fluid in a basement?
 - **Nope.** The tank may be a TIUGA, but this type of TIUGA is exempt/excluded from APSA.



That Same Tank...

- At a facility that is otherwise covered under APSA (they have > 1,320 gal. of petroleum in containers \geq 55-gal)?
 - **Yep.** If the facility is already APSA or SPCC-regulated, all petroleum tanks must be included in the Plan.
 - This is oil-filled operational equipment



Plan Type and Rule Requirements May Not Be Intuitive under APSA

- That's true!!
 - e.g.: A California facility with:
 - 4 x 3,500-gal. & 5 x 6,000-gal. vegetable oil ASTs
 - But only 1 x 2,000-gal. petroleum AST
- For that Calif. Facility to comply with APSA... what type of SPCC Plan is required?
 - Full federally compliant PE-certified Plan



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APSA Capture for < 1,320 gal. Petroleum and NO TIUGAs if Fed. Regulated?

➤ Yup!

- Recall APSA definition:

(n) "Tank facility" means one or more aboveground storage tanks, including any piping that is integral to the tanks, that contain petroleum and that are used by an owner or operator at a single location or site. For purposes of this chapter, a pipe is integrally related to an aboveground storage tank if the pipe is connected to the tank and meets any of the following:

- e.g. they have a 55-gal. drum of petroleum (non-TIUGA)

- And Tank Facility capture into APSA:

25270.3. A tank facility is subject to this chapter if any of the following apply:

(a) The tank facility is subject to the oil pollution prevention regulations specified in Part 112 (commencing with Section 112.1) of Subchapter D of Chapter I of Title 40 of the Code of Federal Regulations.

(b) The tank facility has a storage capacity of 1,320 gallons or more of petroleum.



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Is 100% Synthetic Oil a 'petroleum'?

➤ What do you need to make that determination?

- SDS! Maybe CAS # lookup

➤ How 'bout THIS?

- Nope.
No petroleum listed
- Fed. 'Oil'?

SAFETY DATA SHEET

Synthetic Compressor Oil - ISO 100

OSHA Hazard Communication Standard 29 CFR §1910.120
toxic Substances Act (TSCA, as amended) and the requirements of
the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)



3. Composition/information on ingredients

Mixtures

Polyisobutylene

10 - <30%

CAS number: 9003-27-4

Classification

Eye Irrit. 2B - H320



ice
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Is 100% Synthetic Oil a 'petroleum'?

SAFETY DATA SHEET

AMSOIL 100% Synthetic European Motor Oil LS SAE 5W-30

Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200 and WHMIS 2015, the Hazardous Product Act (HPA, as amended) and the requirements of the Hazardous Waste Regulations (HWR)

➤ How 'bout THIS?

- Yep. Petroleum-based oil listed

Hydrogenated base oil

15 - <40%

CAS number: 64742-54-7

Classification

Asp. Tox. 1 - H304

Distillates (petroleum), hydrotreated heavy
paraffinic; Baseoil - unspecified

64742-54-7 (CAS Number)

February 2024

Is 100% Synthetic Oil a 'petroleum'?

➤ How 'bout THIS?

- Yep. Petroleum-based oil listed (twice!!)

HEET

Full Synthetic Compressor Oil
ISO 100
Oct 06, 2014

SECTION 3) Composition / Information on Ingredients

CAS	Chemical Name	% by Weight
0064742-54-7	MINERAL OIL, PETROLEUM DISTILLATES, HYDROTREATED (MILD) HEAVY PARAFFINIC	62% - 100%
0064742-55-8	MINERAL OIL, PETROLEUM DISTILLATES, HYDROTREATED (MILD) LIGHT PARAFFINIC	62% - 100%

SECTION 4) First-aid Measures

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Are Loading/Unloading Areas APSA Regulated?

- If the facility is otherwise regulated by APSA?
 - Going from SPCC-exempt transportation unit loading into an SPCC-exempt UST.
 - **Yep.** Considered a loading/unloading – transfer area... and must be included in the SPCC Plan



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SPCC Plan Required if NO Nav. Water Nexus?

- Power plant in the middle of the freakin' desert
 - 35,050 gal. of petroleum in tanks
 - No navigable water within 80 miles
- Federal?: **Nope.** But APSA??
- APSA?: **Yep.** Not tied to threat to navigable water.



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Specific # of Portable Containers?

- SPCC Plans must include the type of oil in each portable container, and the specific location within the facility and the specific number of portable containers?



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Specific # of Portable Containers?

- SPCC Plans must include the type of oil in each portable container, the specific location(s) within the facility and the specific number of portable containers?
 - **Nope.** See 40CFR112.7(a)(3)(i):



- (i) The type of oil in each fixed container and its storage capacity. For mobile or portable containers, either provide the type of oil and storage capacity for each container or provide an estimate of the potential number of mobile or portable containers, the types of oil, and anticipated storage capacities;

- The specific number of penguins is required, however.



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Is this an APSA/SPCC-regulated container?

LMP Advanced – 54 Gallon Drum

Product Description

LMP Advanced delivers an upgrade in detonation protection and heat resistance compared to our highly successful Late Model+ fuel. We design this fuel to provide the best detonation protection for super late model and off-road endurance-style desert racing, with up to maximum compression ratios. It affords the same performance as Late Model+ and is a very stable fuel when high operating temperatures strain the engine.

This fuel is currently available in 54-gallon drums only.

Cylinder Volume Formula



Volume = Area of Circle (base) x height

$$V = \pi r^2 h$$



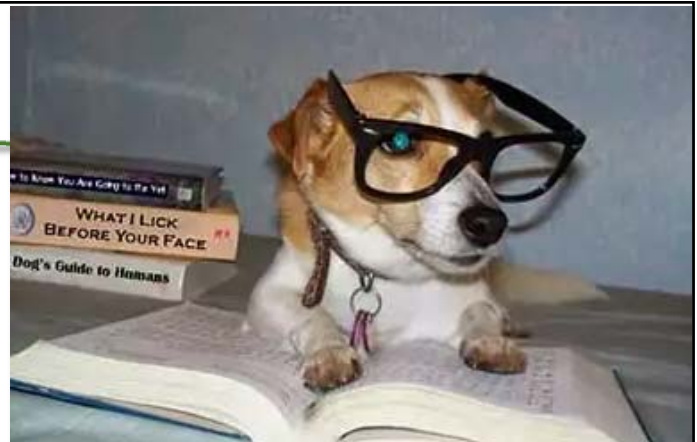
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Why 1,320? Why Not 1,000 gal?

➤ Research needed

- Had a choice between finding & going through a few old Federal Registers from back in the day
 - Actually... subcontracting to one of my dogs in exchange for snax...OR...
 - Calling Mark Howard over this past weekend...OR...



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Why > 1,320? Why Not > 1,000 gal?

➤ Use Microsoft® Copilot® AI:

You

What is the basis for the 1,320 gallon SPCC threshold

Copilot

The 1,320-gallon threshold in the Spill Prevention, Control, and Countermeasure (SPCC) rule is based on several factors related to environmental protection and practical considerations:

1. Risk Assessment:

- The EPA considers the risk posed by oil storage facilities to water bodies.
- Facilities with larger oil storage capacities have a higher potential for significant spills.
- The **1,320-gallon threshold** ensures that a wide range of facilities, including smaller ones, take necessary precautions.

2. Environmental Impact:

- Even relatively small oil spills can harm the environment, aquatic life, and water quality.
- By regulating facilities storing more than **1,320 gallons**, the EPA aims to prevent oil spills from reaching navigable waters.

3. Practicality and Feasibility:

- Setting a lower threshold would impose regulatory burdens on many small businesses and farms.
- The **1,320-gallon threshold** strikes a balance between environmental protection and practicality.

4. Consistency:

- The EPA aims for consistency across different types of facilities.
- The **1,320-gallon threshold** applies to various industries, including agriculture, manufacturing, and transportation.

In summary, the 1,320-gallon threshold is designed to protect the environment while considering practicality and feasibility for a wide range of facilities. If you have further questions, feel free to ask! 🌍

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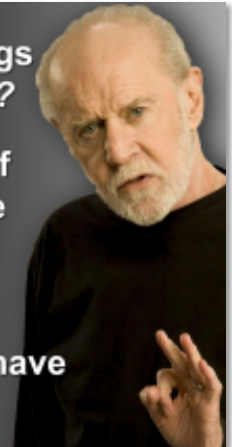
The APSA Gallon Threshold is NOT the Same as US EPA's. True or False?

- APSA (non-farm) facility capacity threshold:
 - 1,320 gal. or more (of petroleum)
- 40 CFR 112 facility (non-farm) capacity threshold:
 - Greater than 1,320 gal. (of oil)
- Why the difference???

Some people see things
that are and ask, *Why?*

Some people dream of
things that never were
and ask, *Why not?*

Some people have to
go to work and don't have
time for all that s**t.



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A DOT-Regulated Pipeline Breakout Facility *may be* APSA-regulated

- **Yup.** If there is over 1,320 gal. of petroleum being stored, used, etc. **that is NOT** directly involved in pipeline operations.
 - Oil drums for maintenance, diesel emergency or backup generators
 - Storage prior to cross-modal transfers (e.g. truck loading rack)
- A breakout tank is a container used to relieve surges in an oil pipeline system or to receive and store oil transported by a pipeline for reinjection and continued transportation by pipeline.



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A DOT-Regulated Pipeline Breakout Facility *may be* APSA-regulated

- A breakout tank that is also used to temporarily (or routinely) store that oil prior to cross-modal transfers (e.g. truck loading rack)... is likely SPCC-regulated storage
 - *The EPA will be looking for things at a site where there is static storage of oil that is not directly involved with the movement or pressurization of oil or gas to move product down a pipeline.*
 - Ref: Mark Howard comment at 12-2020 Witt O'Brien's 6th annual EPA FRP and SPCC Plan outreach workshop



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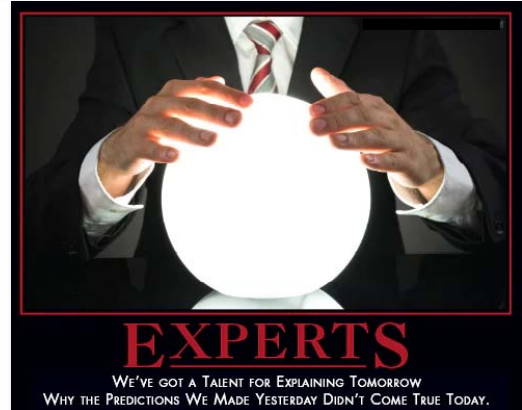
There are NO standards for Who is Allowed to Write an SPCC Plan? True or False?

➤ How about a Tier 1 or 2 QF Plan?

- Manager who has visited & is familiar?
- EHS Professional?
- **Nope!** ANYONE is allowed to write a QF template Plan, & needs NO qualifications

➤ How about a full, PE-certified Plan?

- Registered Professional Engineer?
- **Nope!** ANYONE is allowed to write a PE-certified Plan, & needs NO qualifications



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Are SP001 Inspection Checklists Required?

- **Yup!** If the Plan references following or using the STI standard
 - Monthly, annual & portable container checklists
- Though SP001 [7th Ed.] states the checklists are intended as a model, and locally-developed checklists are acceptable as long as they are equivalent:

- Per the SP001 Checklist Subcommittee:
 - Subcommittee comprised of fabricators, tank inspectors, tank owners, Federal and State regulators, and STI staff
 - Removal of applicable items from the checklists would require a PE to prepare Environmental Equivalence

STI SP001 Monthly Inspection Checklist

General Inspection Information:

Inspection Date: _____ Prior Inspection Date: _____ Retain until date: _____

Inspector Name (print): _____ Title: _____

Inspector's Signature: _____

Tank(s) inspected ID: _____

Regulatory facility name and ID number (if applicable): _____

* This checklist is intended as a model. Locally developed checklists are acceptable as long as they are equivalent and meet all applicable inspection checklist items. Inspections of multiple tanks may be captured on one form as long as the tanks are substantially the same.

➤ For equipment not included in this Standard, follow the manufacturer recommended inspection/testing schedules and procedures.

➤ The periodic ASIT inspection is intended for monitoring the external ASIT condition and its containment structure. This visual inspection does not require a Certified Inspector. It shall be performed by an owner's inspector per paragraph 4.1.2 of the standard.

➤ Upon discovery of water in the primary tank, secondary containment area, interstice, or spill container, remove promptly or take other corrective action. Inspect the liquid for regulated products or other contaminants and dispose of properly.

➤ * designates an item in a non-conformance status. This indicates that action is required to address a problem. Note that some non-conforming items (important to tank or containment integrity) require evaluation by an engineer experienced in ASIT design, a Certified Inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.

➤ If the inspection finds the integrity of the spill control system and/or the CIPOL, such as items 13 and 14, is compromised the tank category and inspection time table should be re-evaluated by someone knowledgeable about the SP001 standard.

➤ Retain the completed checklist for at least 30 months.

➤ After severe weather (snow, ice, wind storms) or maintenance (such as coating) that could affect the operation of critical components (normal and emergency vents, valves), an inspection of these components is required as soon as the equipment is safely accessible after the event.

ITEM	STATUS	COMMENTS / DATA CORRECTED
Tank and Piping		
1. Is the exterior (roof, shell, bands, bottom, connections, fittings, valves, etc.) free of visible leaks? Note: If "No", identify tank and describe leak and release volume.	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
2. Is the tank liquid level gauge legible and in good working condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
3. Is the area around the tank (concrete surfaces, ground, containment, etc.) free of visible signs of leakage?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	

Monthly Checklist Page 1 of 3



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Are SP001 Inspection Checklists Required?

- **Maybe not!** If the Plan states developed in consideration of the STI standard
- Can use a locally-developed checklist without a PE Environmental Equivalence as long as it is equivalent and:
 - All applicable inspection items from the checklists are included
 - Only NON-applicable items are removed/omitted
 - e.g. If no ladder on tank, no need to have ladders on a checklists, etc.
 - ME? I'd want my PE to at least review my custom checklists against the STI checklists

MONTHLY TANK INSPECTION CHECKLIST: Portable Diesel-fueled Equipment
(developed by certifying P.E. to be equivalent to STI SP-001 checklist)

INSTRUCTIONS: See inspection guidance on reverse. On this side, fill in ALL applicable data. A copy or electronic scan of this completed form shall be kept in the Department files, and made available for inspection by the Long Beach Fire Dept./CUPA upon request.

TANK INFORMATION		CA 90806					
PORTABLE EQUIPMENT TANK #s and capacities:	Diesel Refueling Trailer 180-gal.	Peerless Water Pump (#4888) 56-gal.	Prime Water Pump (#6348) 159-gal.	Godwin Dri-Prime Pump (#6344) 96-gal.	Pioneer Water Pump (#6334) 117-Gal.	Pioneer Water Pump (#6133) 125-Gal.	Premier Washdown Pump (#6143) 80-Gal.
INSPECT EACH OF THE ABOVE ASSETS FOR THE FOLLOWING INSPECTION ITEMS		Status		INSPECT EACH OF THE ABOVE ASSETS FOR THE FOLLOWING INSPECTION ITEMS		Status	
1.0	Open the equipment panels if needed to see the fuel tank and connections. Are the visible parts of the fuel tank exterior (top, sides, bottom, connections, fittings, valves, etc.) free of visible leaks and free of any fuel residues? If no - indicate the specific location of the leak.	<input type="checkbox"/> Yes <input type="checkbox"/> No*		9.0	Are all listed trailers/assets parked completely within the containment berm (and the lines (and other equipment) not resting on the berm side walls)?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
2.0	Is the tank exterior, all exposed fuel piping and all hoses free of damage, distortion, or corrosion?	<input type="checkbox"/> Yes <input type="checkbox"/> No*		10.0	Are any drain plugs in the containment berm tightly closed?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
3.0	Is the tank exterior free of visible signs of coating failures/degradation?	<input type="checkbox"/> Yes <input type="checkbox"/> No*		11.0	Look carefully under each trailer as well as in the overall inside-berm area. Is the secondary containment berm free of any diesel leaks or residues?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
4.0	Are the tank mounts, brackets, mounting bolts, support, trailer, axles and tires free of damage, cracking, corrosion and in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No*		12.0	If there is water in the berm, is only a small amount of water in the berm? If more than a small amount - drain the water per the SPCC drainage procedure.	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
5.0	If visible, look closely at the round emergency vents on top of the fuel tanks. Are they unobstructed and free of debris (such as bird nests, etc.)?	<input type="checkbox"/> Yes <input type="checkbox"/> No*		13.0	Is there a fire extinguisher in the immediate area, and is the inspection tag current (monthly check)?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
6.0	Are all tank openings properly sealed? Caps and covers have functional fittings, hardware and gaskets?	<input type="checkbox"/> Yes <input type="checkbox"/> No*		14.0	Are spill supplies (absorbent, PPE, etc.) nearby, labeled and properly stocked?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
7.0	Are the tank fill level gauges visibly/readable and undamaged?	<input type="checkbox"/> Yes <input type="checkbox"/> No*		15.0	Are there other conditions that should be addressed for continued safe operation or that may affect the site SPCC plan?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	
8.0	Are all tank and equipment labels and markings intact and readable?	<input type="checkbox"/> Yes <input type="checkbox"/> No*					

SEE BELOW FOR ANY (No *) STATUS - and indicate the specific asset # for any NO STATUS items
SEE REVERSE FOR INSPECTION GUIDANCE

Condition or Status Notes/Comments:

Item #	Asset #

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Daily HW Tank Inspection = STI SP001 Monthly?

- **Not necessarily!**
 - Depends on:
 - Whether the Plan states SP001 conformance &
 - What's on the daily checklist



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Daily HW Tank Inspection = STI SP001 Monthly?

- Many CUPA's have this form posted for use
 1. Containment free of liquids?
 2. System free of corrosion & damage?
 3. Pipes, valves, pumps free of leaks & in good condition?
 4. Open tanks have >2' freeboard?
 5. Leak detection program/ equipment working?

cal-cupa forum guidance												
HAZARDOUS WASTE TANK SYSTEM DAILY INSPECTION LOG												
(AS REQUIRED BY 22 CCR 60265.106)												
Business Name: _____ Month: _____												
Business Address: _____ Year: _____												
Tank System ID: _____												
DAY	Is 24hr containment free of waste and liquid?		Is the system free of corrosion and exterior damage?		Are pipes, valves and pumps free of leaks and in good condition?		Do open tanks have at least 2 ft. of free board?		Is leak detection program equipment working?		Inspected by	Comments/Corrective actions taken
	YES	NO	YES	NO	YES	NO	YES or N/A	NO	YES	NO		
1												
2												
3												
4												
5												
6												
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Daily HW Tank Inspection = STI SP001 Monthly?

- SP001 is far more detailed
 - Recall: Alternate checklists must include all relevant items
- Could the facility use the 'CUPA' daily checklist but also do the SP001 once monthly?
 - Sure! But may be tricky for facility folks to remember
 - So they should pay attention to that

4	Is tank shell or supports free of soil, vegetation, water, or foreign material collected or covering the grade line (tank chime or bottom projection)?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
5	Is the primary tank free of water or has another preventative measure been taken? NOTE: Refer to paragraphs 6.10 and 6.11 of the standard for alternatives for Category 1 tanks. N/A is only appropriate for these alternatives.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
6	For double-wall or double-bottom tanks or CE-ASTs, is interstitial monitoring equipment (where applicable) in good working condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
7	For double-wall tanks or double-bottom tanks or CE-ASTs, is interstice free of liquid? Remove the liquid if it is found. If tank product is found, investigate possible leak.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Equipment on tank		
8	If overfill equipment has a "test" button, does it activate the audible horn or light to confirm operation? If battery operated, replace battery if needed.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
9	Is overfill prevention equipment in good working condition? If it is equipped with a mechanical test mechanism, actuate the mechanism to confirm operation.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
10	Is the spill container (spill bucket) empty, free of visible leaks and in good working condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
11	Are piping connections to the tank (valves, fittings, pumps, etc.) free of visible leaks? <i>Note: If "Yes", identify location and describe leak.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No*
12	Do the ladders/platforms/walkways appear to be secure with no sign of severe corrosion or damage?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Containment (Diking/Impounding)		
13	Is the containment free of excess liquid, debris, cracks, corrosion, erosion, fire hazards and other integrity issues?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
14	Are dike drain valves closed and in good working condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
15	Are containment egress pathways clear and any gates/doors operable?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Concrete Exterior AST (CE-AST)		
16	Inspect all sides for cracks in concrete. Are there any cracks in the concrete exterior larger than 1/16"?	<input type="checkbox"/> Yes* <input type="checkbox"/> No <input type="checkbox"/> N/A
17	Inspect concrete exterior body of the tank for cleanliness, need of coating, or rusting where applicable. Tank exterior in acceptable condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
18	Visual inspect all tank top openings including nipples, manways, tank top spill containers, and leak detection tubes. Is the sealant between all tank top openings and concrete intact and in good condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A
Other Conditions		
19	Is the system free of any other conditions that need to be addressed for continued safe operation?	<input type="checkbox"/> Yes <input type="checkbox"/> No*

Monthly Checklist

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5-Year PE Assessment/Cert. of HW Tank = SP001 Annual Inspection?

- Not necessarily! But could serve as one every 5 years
 - Depends on:
 - Whether the Plan states SP001 conformance &
 - If the 22 CCR 192-193 assessment/certification covers all the SP001 items
 - A good PE assessment would...but best to verify



rence
2024

Any Requirement for Facility Inspectors to Identify Non-Conformances?

- Yup! Strongly implied... 'required' by all interpretations. Recall:
 - Part of the PE certification is that procedures for required inspections and testing have been established
 - Rule also states certification shall in no way relieve the owner or operator of a facility of his duty to prepare and fully implement such Plan
 - Part of the Tier 1 mgt certification: You have established procedures for required inspections and testing in accordance with industry inspection and testing standards or recommended practices and you will fully implement the Plan;
 - Part of the Tier 2 mgt cert: Procedures for required inspections and testing have been established; and you will fully implement the Plan
 - New SP001 7th Ed. increases emphasis for inspector to identify findings that require action to repair
 - Recall: Must include all applicable inspection items regardless of checklists used

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Requirement to Identify Non-Conformances

➤ SP001 Monthly Checklist (7th Ed.) instructions:

- * designates an item in a non-conformance status. This indicates that action is required to address a problem. Per the Checklist instructions:
- “* designates an item in a non-conformance status. This indicates that action is required to address a problem.”
- “Note that some non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a Certified Inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.”

ITEM		STATUS	COMMENTS / DATE COR
Tank and Piping			
1	Is tank exterior (roof, shell, heads, bottom, connections, fittings, valves, etc.) free of visible leaks? Note: If "No", identify tank and describe leak and actions taken.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No*	
2	Is the tank liquid level gauge legible and in good working condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> N/A	
3	Is the area around the tank (concrete surfaces, ground, containment, etc.) free of visible signs of leakage?	<input type="checkbox"/> Yes <input type="checkbox"/> No*	

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Any Requirement for Tank Owners to Respond to Inspection Non-Conformances?

➤ Yup! Recall:

- 40 CFR 112.8(c)(8): Engineer or update each container installation in accordance with good engineering practice to avoid discharges
- SP001 Monthly Checklist instructions:
 - * designates an item in a non-conformance status. This indicates that action is required to address a problem. ... Note the non-conformance and corresponding corrective action in the comment section.
 - Per Craig Fletcher (on the Subcommittee):
 - This change was made to emphasize that actions are required when nonconforming conditions are encountered. The 6th Edition had removed this from the checklist, but has since been returned in order to emphasize the need for corrective actions by owners.



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Just Removing Liquids in Containment May Not Be Sufficient

➤ Yup! That's true!

3	Is the area around the tank (concrete surfaces, ground, containment, etc.) free of leakage?
---	---

- Are there any STI standards for repairing ASTs?
 - Yup! SP031 AST Repair Standard
 - e.g. May need to pressure test or otherwise test a tank (such as if the source of the liquid can't be determined)
 - See STI Rg12 for a testing procedure



Shop Fabricated Stationary
Aboveground Storage Tanks
For Flammable, Combustible Liquids
INSTALLATION INSTRUCTIONS
R912

July 2022

1

TANK SITE EVALUATION AND PREPARATION PRIOR TO INSTALLATION

1.1 The foundation for the tank must be designed to support the weight of the tank plus 100% of the weight of the tank's contents when full. The design shall also take into account the type of support that is being used and the point load associated with that support. The foundation may be constructed using concrete, asphalt, gravel, or other stable material and must include provisions in its design to prevent tank movement. The foundation design should include any provisions necessary for seismic considerations, applicable local building codes, potential flooding considerations and considerations for exposure to winds. The foundation design must also include provision for draining surface water away from the tank.

1.2 For tank installations without cathodic corrosion protection, the tank should be grounded in accordance with applicable electrical and fire code standards.

1.3 Where the tank body is in contact with the earth or foundation, it should be protected from external corrosion. For external corrosion protection using cathodic corrosion protection, consult applicable standards (e.g., NACE/AMPP) to provide the tank with appropriate protection from lightning without interfering with the corrosion protection. Steel tanks in contact with the earth should not use copper grounding. Refer to STI R893-89, "Recommended Practice for External Corrosion Protection of Shop Fabricated Aboveground Storage Tank Floors."

1.4 Tanks located in areas subject to flooding must be protected against flotation. Aboveground tanks should not be located above underground utilities or directly beneath overhead power lines. The tank shall be protected from vandalism and accidental damage in accordance with all applicable codes.

2

TANK HANDLING

2.1 Do not handle or install tank without having knowledge and experience in procedures involved with proper and safe installation of an aboveground tank used for storage of stable, flammable, and combustible liquids. To avoid tank damage, use skilled, professional installers.

2.2 Equipment for handling the tank shall be of adequate size to lift and position the tank. DO NOT DROP OR DRAG THE TANK.

2.3 Tanks shall be carefully handled. Use cables or chains of adequate length (with spreader bars, if necessary) and size. Attach to the tank using the lifting lugs provided. Care should be taken that the angle between the two cables, at the lift point, shall be no greater than 60 degrees.

2.4 DO NOT HANDLE OR MOVE THE TANK UNLESS IT IS EMPTY OF LIQUID AND FREE OF VAPORS.


2.5 This is a stationary tank. Do not use this tank for transport of any product.

3

TESTING OF TANK INTEGRITY AT THE TIME OF INSTALLATION, AFTER REPAIRS, OR TO CONFIRM TANK INTEGRITY AS PART OF TANK MAINTENANCE GENERAL REQUIREMENTS

3.1.1 An on-site integrity test of the tank may be required by local authorities after the tank is placed to ensure no damage has occurred in shipping and handling, after a tank repair or as part of tank maintenance to confirm the integrity of the tank system. A pressure test or vacuum test may be used to evaluate integrity. However, the Authority Having Jurisdiction (AHJ) or a responsible party overseeing the work should establish the appropriate method. All testing shall be performed as described in paragraph 3.2 below.

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3.2 AIR PRESSURE TEST PROCEDURE FOR TANKS

3.2.1 Manways must be secured with bolts and/or C-


3 TESTING OF TANK INTEGRITY AT THE TIME OF INSTALLATION, AFTER REPAIRS, OR TO CONFIRM TANK INTEGRITY AS PART OF TANK MAINTENANCE

3.1 GENERAL REQUIREMENTS

3.1.1 An on-site integrity test of the tank may be required by local authorities after the tank is placed to ensure no damage has occurred in shipping and handling, after a tank repair or as part of tank maintenance to confirm the integrity of the tank system. A pressure test or vacuum test may be used to evaluate integrity. However, the Authority Having Jurisdiction (AHJ) or a responsible party overseeing the work should establish the appropriate method. All testing shall be performed as described in paragraph 3.2 below.

tank. Set the pressure relief valve in the air supply line at 2 ½ psig (17 kPa).

deformation appear severe, immediately relieve the pressure. Aboveground vertical tanks may have a "weak shell to roof" seam. Do not air pressure test a



SINGLE-WALL TANK

2.2.2 Connect regulated test air supply line to test piping

Tanks Need to be Checked for Water?

- **Pretty much!** Causes corrosion (chemical & microbial)
 - Again... SP001 (bullets below courtesy of Joe Mentzer (STI))

5	Is the primary tank free of water or has another preventative measure been taken? NOTE: Refer to paragraphs 6.10 and 6.11 of the standard for alternatives for Category 1 tanks. N/A is only appropriate for these alternatives.	<input type="checkbox"/> Yes <input type="checkbox"/> No*
---	--	---

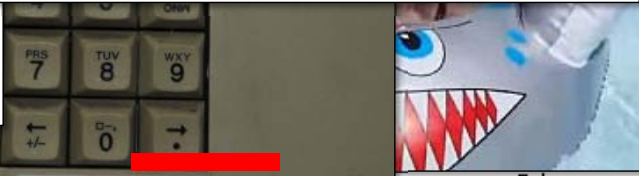
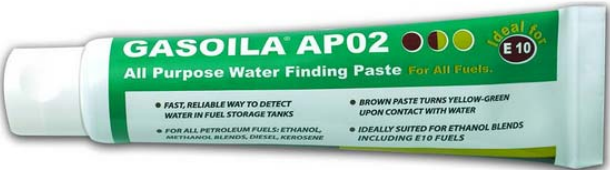
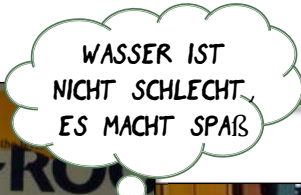
- Many Category 1 tanks can go to annual testing after 4 months of testing with no water found
- Some Category 1 tanks that see significant throughput do not need to be checked for water
- Other tanks which contains waste material that often contains water (think waste oil) can forgo water testing if the tank is emptied completely every 180 days



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Wasser ist Schlecht

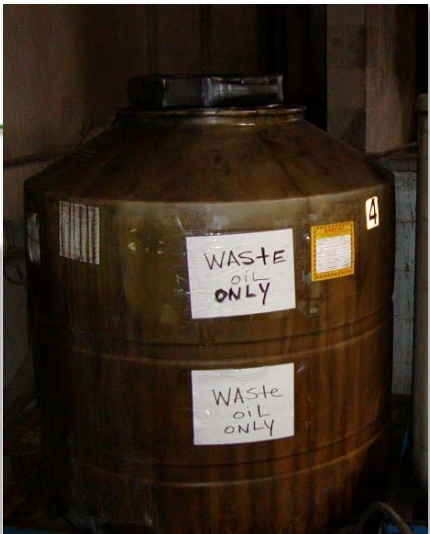
Inspection Item (Tanks 1 – 4 Veeder Root Monitoring Panel in Vehicle Wash Building)		Status
23.0	Is the containment/interstitial monitoring equipment in good working condition, and is the secondary containment free of any liquid? <ul style="list-style-type: none">• On the tank Veeder-Root panel inside the Vehicle Wash Bldg., press the 'Function' button until display shows 'Liquid Status', then press 'Print' button. If printout shows 'Fuel Alarm' or 'Sensor Out':<ul style="list-style-type: none">◦ FUEL ALARM means there is a leak detected and must be immediately responded to!◦ SENSOR OUT means there is a problem with the sensor and must be investigated and repaired!	<input type="checkbox"/> Yes <input type="checkbox"/> No*
24.0	Are the primary tanks free of water? <ul style="list-style-type: none">• Press the 'Print' button. Look at the printout, the printout will show inches of water at the bottom of the tank. If any reading other than 'Water = 0.00 inches', check the No box. If a water check has not been conducted this month – check that box. – NOTE: Water can be a corrosion hazard over time.	<input type="checkbox"/> Yes <input type="checkbox"/> No* <input type="checkbox"/> Water check not conducted



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Plastic/Poly Tanks are Subject to Inspections

➤ Yup! They're oil or petroleum containers & tanks, right?



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DER-16 / Five-Year Inspection of Plastic Tanks

New York State Department of Environmental Conservation

Appendix B

VISUAL INSPECTION CHECKLIST

Visual Inspection Checklist

Tank Shell

Are there any cracks?

Note the location and size of cracks (comments)

Are there any worn areas? (comments)

Is there any damage or defects?

Are the connections tight and aligned?

Is the coating in good condition?

Is there any delamination?

Note location of delamination (comments)

Are there any stains or releases?

Is there any discoloration?

Is there any chemical degradation?

Containment Walls and Floor

Are there any releases?

Is the secondary containment volume adequate?



a. Visual

The inspect visually in system's in

Even relatively new polyethylene tanks should receive routine and careful visual inspections. These inspection guidelines should be followed at least annually to ensure the safety of personnel and the preservation of the chemical stored. The tank should be replaced if it displays stress cracking, crazing, or embrittlement.

- Empty the tank. Neutralize any chemical remaining. Thoroughly clean the exterior and interior of the tank. A dirty tank cannot be properly inspected.
- Examine the exterior and the interior of the tank for cracking, crazing and brittle appearance.
- Pay particular attention to areas around fittings and where different portions of the tank converge into one another. In other words, give special attention to "corners" where sidewall and dome meet and where sidewall and bottom meet.
- If a confined space entry is not feasible, use a bright light source to inspect the tank interior from the manway opening. An interior inspection is essential because stress cracks normally show up on the inside of a tank before appearing on the outside.
- Don't forget to inspect areas of the tank that never actually come in contact with the chemical stored. With fume-emitting chemicals, oxidation and resulting embrittlement of the dome can occur without any actual contact with the chemical stored.
- Inspect fittings, flexible connection hoses, and gaskets for leaks and signs of general corrosion or deterioration.
- Inspect vents and fume scrubbers to ensure adequate venting for pressure and vacuum. Ensure end of scrubber piping is never submerged in more than 6-in of liquid.
- Confirm that filling of the tank from tanker trucks is not causing over pressurization and not ending with a line purge that "balloons" the tank. See "VENTING" on page 4.
- Confirm secondary containment is appropriate for chemical stored, adequate in size, and in good repair.

For a samp

b. Physic

It is import extensive t failure. Th

- **WARNING:** Failure to follow these inspection guidelines and take necessary corrective actions can result in unintended chemical release causing serious property damage, injury, or death.
- Chemical fumes may be present in the area of the manway opening.
- A tank is a **confined space**. Do not enter tank without a confined space entry and retrieval plan.
- Use lift equipment and/or fall protection to prevent fall into or away from tank.
- **DO NOT STAND OR WORK ON TOP OF TANK.** Dome surfaces are flexible and slippery. The dome may be embrittled. A dangerous fall could occur.

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Can Drums with Some Denting, but NO Leaks Continue to be Used?



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Can Drums with Some Denting, but NO Leaks Continue to be Used?

- **Nope!**
 - 7th Ed. SP001 Checklist now requires discontinued use



Note: If "No", discontinue use of container			
6	Is the container free of distortions, buckling, denting or bulging?	<input type="checkbox"/> Yes	<input type="checkbox"/> No*
Note: If "No", discontinue use of container			



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A SP001 Tank Category Can Change

➤ Yup!

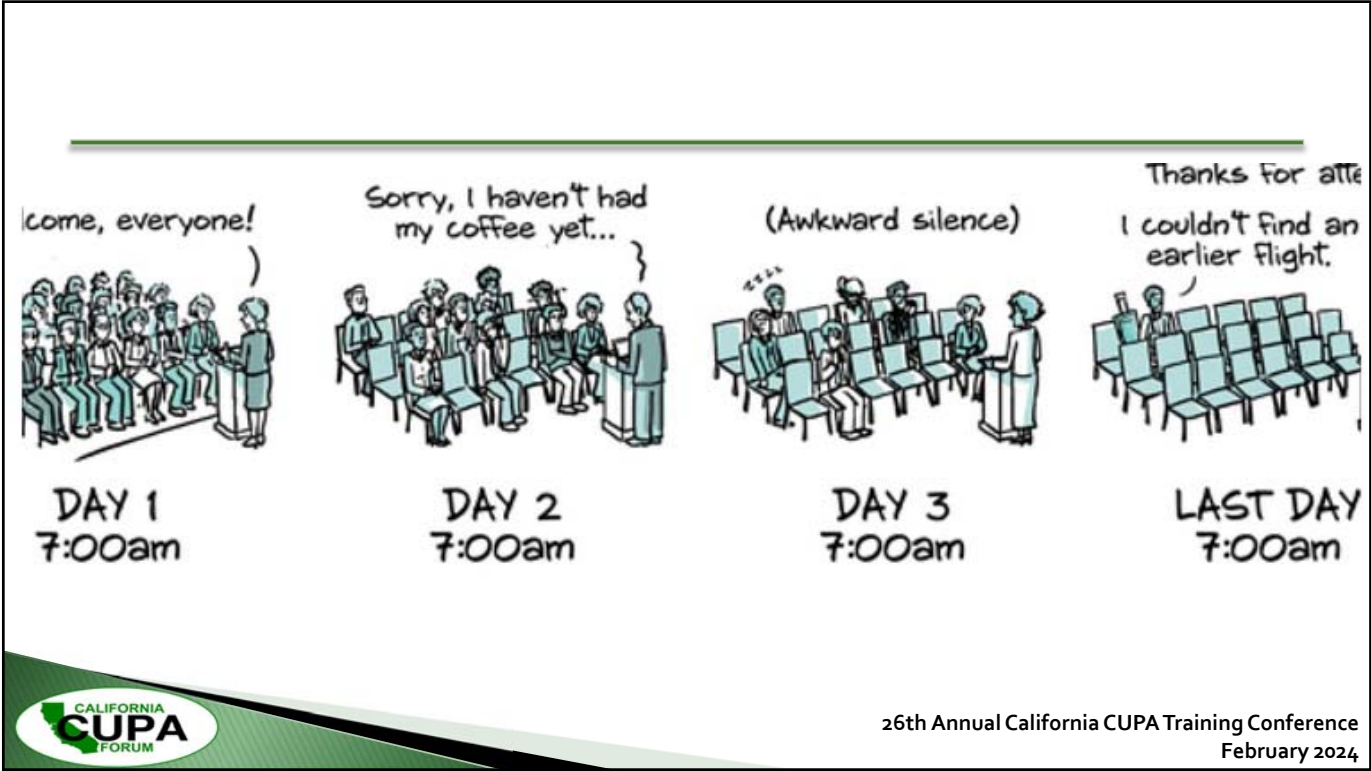
- Cat 1: Spill control and CRDM
 - ... such as concrete containment for a single wall tank
- But what if there's damage or deterioration to the containment?
 - Or valves are busted?

Containment (Diking/Impounding)		
13	Is the containment free of excess liquid, debris, cracks, corrosion, erosion, fire hazards and other integrity issues?	<input type="checkbox"/> Yes <input type="checkbox"/> No*
14	Are dike drain valves closed and in good working condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No*



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Any Questions?

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