

## **Appendix E – Regulatory Issues, Transportation Requirements and Inspection Checklists**

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## Aerial Ignition Standards and Guidelines

	<b>Barrels or Tanks Less than 119 gallons</b>	<b>Tanks 119 gallons or greater</b>
<b>Markings</b>	Tested and marked with DOT Performance Orientated Packaging Rating (POP) that usually starts with a UN1A1 or UN1A2 designation or has appropriate DOT designation.	Bulk Tank specification plate (MC306 or DOT406) or IBC.
<b>Label</b>	Labeled as “FLAMMABLE LIQUID” and marked “ UN1203 – GASOLINE”.	Placarded as “FLAMMABLE LIQUID” and Marked “UN1203”
<b>Color</b>	Painted RED.	No color requirement.
<b>Sealed</b>	<p>Designed so that there is no leakage in case of rollover or accident.</p> <p>Not filled over 90% of volume.</p> <p>DOT approved Vacuum / Pressure Bypass valve <u>NOT PERMITTED</u> during transport (unless approved to POP standards).</p> <p>DOT approved Vacuum / Pressure Bypass valve <u>REQUIRED</u> during use and storage.</p> <p>Shut off valves that protected and not protruding from the vehicle.</p>	<p>Designed so that there is no leakage in case of rollover or accident.</p> <p>Shut-off valves that are protected and not protruding from the vehicle.</p> <p>Have appropriate fittings to accommodate bypass for vacuum and pressure (must meet DOT and NFPA Tank Standards).</p> <p>Have appropriate fittings to accommodate vapor removal or recovery.</p>
<b>Filling</b>	<p>Vapor control required either by removal or recovery.</p> <p>For tanks over 60 gallons, fill spout extends within 6 inches of bottom. Splash filling not permitted.</p>	<p>Vapor control required either by removal or recovery.</p> <p>Fill spout within extends within 6 inches of bottom. Splash filling not permitted. Bottom filling configuration is the preferred method.</p>
<b>Delivery And Static Control</b>	Have approved (DOT, NFPA and within the scope of OSHA 29CFR 1910.106) petroleum fuel dispensing and vapor recovery / removal hoses and static bonding wire.	Have approved (DOT, NFPA and within the scope of OSHA 29CFR 1910.106) petroleum fuel dispensing and vapor recovery / removal hoses and static bonding wire.
<b>Thickening Agents</b>	A written procedure for dispensing thickening agent to comply with OSHA general requirements for minimizing inhalation / exposure as listed on the chemical’s Material Data Safety Sheet. Dumping powder through manhole is not acceptable, use appropriate dispensing mechanism for dispensing power.	A written procedure for dispensing thickening agent to comply with OSHA general requirements for minimizing inhalation / exposure as listed on the chemical’s Material Data Safety Sheet. Dumping powder through manhole is not acceptable, use appropriate dispensing mechanism for dispensing power.

## Compliance Criteria

	<b>Barrels or Tanks Less than 119 gallons</b>	<b>Tanks 119 gallons or greater</b>
<b>By March 1, 2001 and Annually Thereafter</b>	Visually inspect tanks yearly for degradation and compliance.	Visual Leak Inspection (VK) performed by DOT registered vendor.
<b>By March 1, 2001 and Every 5 Years Thereafter</b>	None.	Internal Pressure Test (IP) performed by DOT registered vendor.
<b>Post Inspection Labeling</b>	None.	Inspector will apply label with VK and IP expiration dates.
<b>Tank Modification Criteria</b>	None.	Alteration of the (tank) original design specification (MC306 or DOT406) must be accomplished at DOT registered vendor.
<b>Tank Modification Inspections</b>	If required, re-inspected by local Highway Patrol Hazmat enforcement officer.	Inspected by local Highway Patrol Hazmat enforcement officer.
<b>General</b>	Compliance with STANDARDS and GUIDELINES.	Permanent 2" cam lock fitting with recovery removal hose at least 50 feet in length and 2" in diameter.  Compliance with STANDARDS and GUIDELINES.
<b>Compliance</b>	Tanks and Barrels that do not comply with the STANDARDS and GUIDELINES and the COMPLIANCE CRITERIA, and which cannot be modified by a registered vendor to meet those requirements, shall be taken out of service no later than March 1, 2001.	Tanks that do not comply with the STANDARDS and GUIDELINES and the COMPLIANCE CRITERIA, and which cannot be modified by a registered vendor to meet those requirements, shall be taken out of service no later than March 1, 2001.

## Helitorch Tanks/Barrel Compliance

	<b>Barrels or Tanks Less than 119 gallons</b>	<b>Tanks 119 gallons or greater</b>
<b>All Helitorch Barrels and Tanks by March 1, 2001</b>	Meet Standards and Guidelines, and the, Compliance Criteria or be taken out of service.	Meet Standards and Guidelines, and the, Compliance Criteria or be taken out of service.
<b>UN Designation</b>	Performance Orientated Packaging (POP) showing that testing was done in the "AS SUPPLIED" configuration. (Usually marked as 1A1 or 1A2).	Compliance with STANDARDS and GUIDELINES
<b>Labeling</b>	Compliance with STANDARDS and GUIDELINES.	Compliance with STANDARDS and GUIDELINES.
<b>Vapor Control</b>	<u>Removable</u> 2" cam lock fitting with recovery/removal hose at least 50 feet in length and 2" in diameter.  Compliance with STANDARDS and GUIDELINES.	<u>Permanent</u> 2" cam lock fitting with recovery/removal hose at least 50 feet in length and 2" in diameter.  Compliance with STANDARDS and GUIDELINES.
<b>Volume Control</b>	Site glass installed in barrel bungs or other method to control volume not to exceed 90% of capacity. (Use 2" site glass, 3 ea. in barrel bungs).	Compliance with STANDARDS and GUIDELINES.
<b>Bypass Valves</b>	Safety bypass valve to allow air to enter and exit during gelled fuel pumping operations to prevent container implosion/explosion. (Clay or Bailey type bypass valve).	Safety bypass valve to allow air to enter and exit during gelled fuel pumping operations to prevent container implosion/explosion.

## Helitorch Operational Criteria

	<b>Barrels or Tanks Less Than 199 Gallons</b>
<b>Helitorch Filling or Emptying</b>	Vapors shall be recovered or routed down wind from the operation a distance of 50 feet using petroleum rated hose. (Use 2-inch cam lock hose connected between the supply and receiving tanks. Place cam lock plugs in hose and tanks fittings when not in use.
<b>Transportation of Helitorch Barrels</b>	<p>Must be DOT approved and meet the STANDARDS and GUIDELINES.</p> <p>Must be located in a protected area on the vehicle and securely fastened to prevent moving within the vehicle in case of accident or rollover.</p> <p>Must contain less than 1 gallon of residual fuel.</p> <p>Must comply with local and state Highway Patrol Hazmat regulations.</p>
<b>Transportation of Non-Complying Helitorch Barrels</b>	<p><b>All non-complying tanks and barrels should be inspected by state authorities (in most states this will be the state police) for approval prior to transportation.</b></p> <p><b>Without prior approvals, any citations issued by state authorities for lack of compliance are the responsibility of the driver of the vehicle.</b></p> <p><b><u>All non-complying barrels and tanks must be disposed of by March 1, 2001, or taken out of service sooner if practical.</u></b></p> <p>Transportation of non-complying barrels may be accomplished by following GUIDELINES and STANDARDS for packaging, markings, securing and POP standards.</p> <p>Non-complying barrels MUST be triple rinsed to insure <b><u>no flammable residue or flammable vapors</u></b> are present. Rinse liquid must be captured into an approved DOT container and may be used in a batch of gel, or disposed at an EPA approved Hazwaste disposal site or by hazardous material removal contractor.</p>

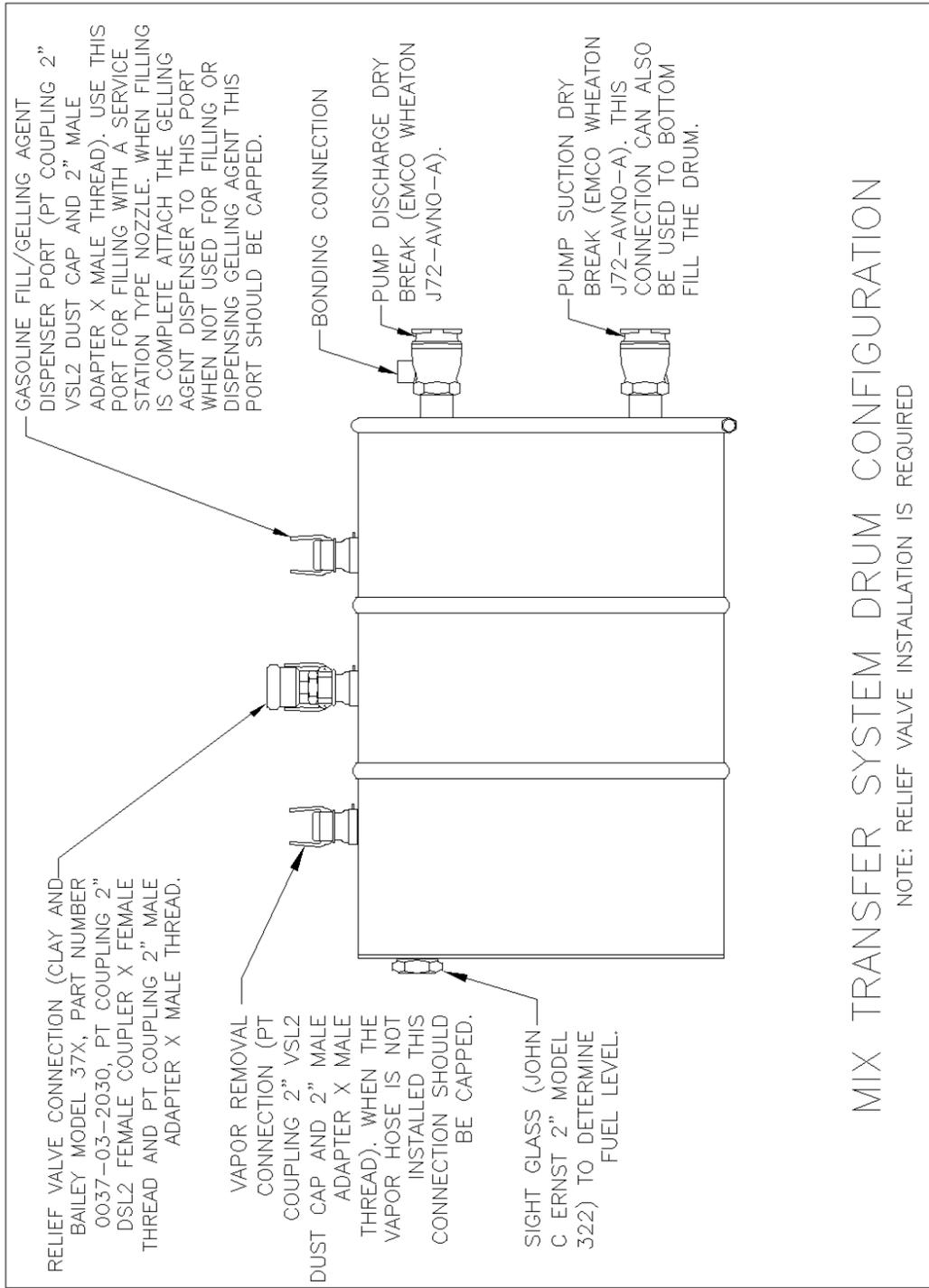
## Helitorch Operational Training Criteria

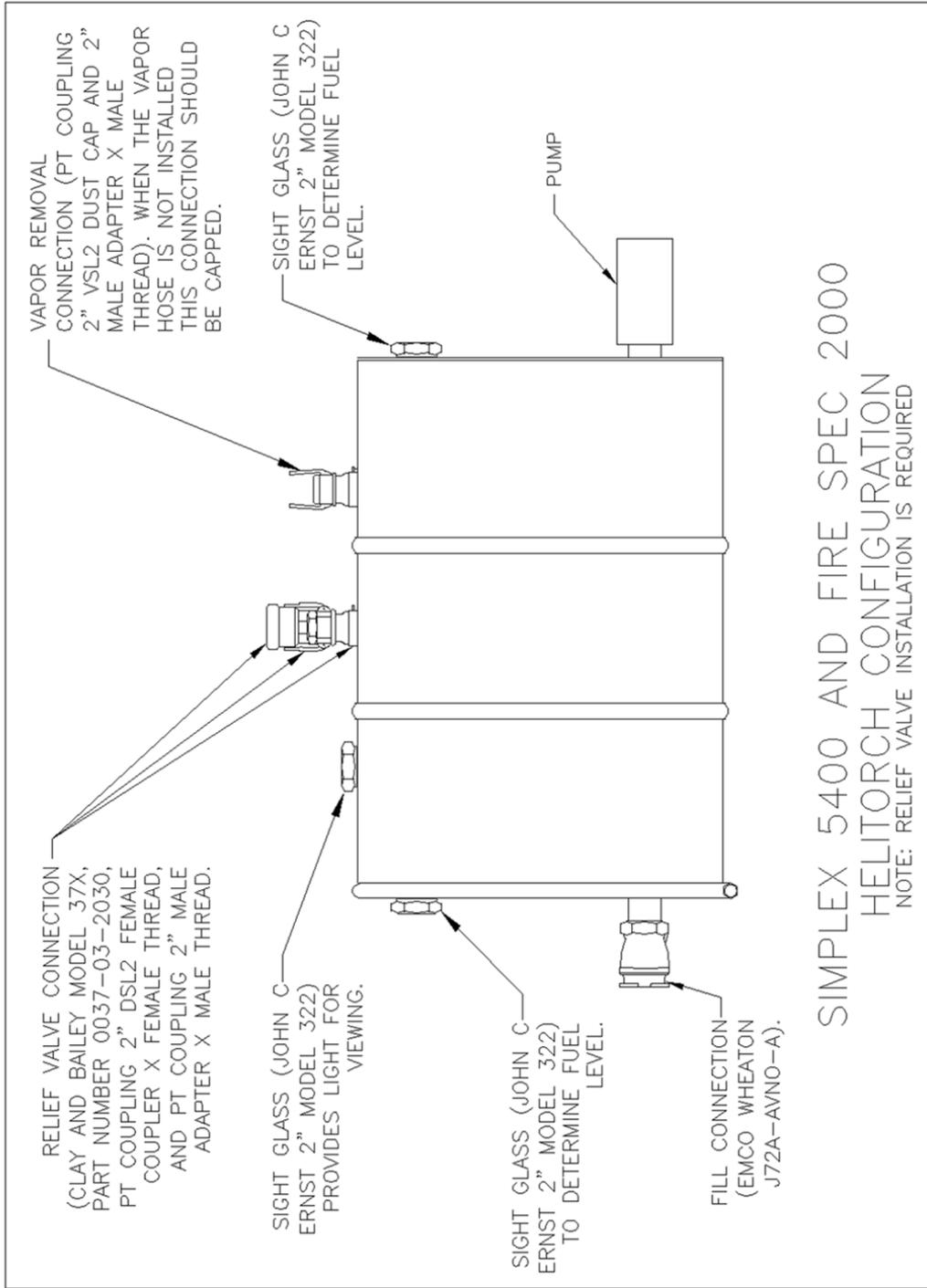
<b>Training</b>	<p><b>Written programs that apply and shall be in place under OSHA:</b></p> <p>Right To Know – Hazardous Materials Awareness (Hazardous Waste and Toxic Substances)</p> <p>Material Data Safety Sheet compliance with dry and wet chemicals in use</p> <p>Personal Protective Equipment (PPE) for the chemicals in use</p> <p>General Health and Safety Standards (1910)</p> <p>Hand and Power Tools Use</p> <p>Fire Safety (extinguishers, prevention and survival)</p> <p>Machine (moving pump shaft, belt and wheel) Guarding</p> <p>Confined Space (if entering tanks)</p> <p>Respiratory Protection (if required on MSDS) and Fitting Program</p> <p>Lock Out Tag Out Program (control of unexpected equipment movement and power sources during repair, use, modification or cleaning).</p> <p>Ergonomics (proper body position, equipment use and lifting)</p> <p><b><i>Remember!</i></b> All training must be documented with the trainers name, date of training, subjects covered, attendee's full name, signature and date. The key is "If the training was not documented, then it did not occur."</p> <p>Additional training is required for all employees that fall outside of the "Materials of Trade" exceptions delineated by the DOT.</p> <p>For flammable liquids, this includes any container larger than 8 gallons or any load larger than 440 pounds total aggregate weight including the containers. DOT has designated this training as "HM-126F" which includes four basic parts:</p> <ol style="list-style-type: none"> <li>1. General Awareness</li> <li>2. Safety Training</li> <li>3. Function Specific Training and</li> <li>4. Drivers Training.</li> </ol> <p>Loads greater than 119 gallons or 1000 pounds automatically require a commercial drivers license with a hazardous materials endorsement, and extensive drivers training which may include the requirement for a tank endorsement.</p>
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**TRANSPORTING CLASS 3 FLAMMABLE LIQUIDS**  
Requirements of the  
Department of Transportation

	REQUIRED TRAINING	REQUIRED DOCUMENTATION	LABEL	REMARKS						
					HAZCOM-GEN	IHA	ERG EMERGENC	RESPONSE	HM-126F	HAZMAT
<p><b>CLASS 3 FLAMMABLE LIQUID PG II OR III (GASOLINE, DRIP-TORCH FUEL, PAINT) CONTAINER SIZE AND CARGO WEIGHT THRESHOLDS</b></p> <p>Containers less than 8 gallons (30 liters) and total cargo weight is less than 440 lbs (200 kg)</p> <p><b>OR</b></p> <p>OSHA 5-gallon (max) containers and total cargo weight is less than 440 lbs.</p>	<p>Materials of trade exceptions: Performance oriented packaging (less than 8 gallons)</p> <p><b>OR</b></p> <p>OSHA approved (5-gallon max) containers.</p>	<p>X</p> <p>X</p>	<p>"Flammable Liquid" or "Gasoline"</p> <p>"Gasoline"</p>	<p>DOT performance-oriented packaging has United Nations I.D. system</p> <p>OSHA-approved container has "Gasoline" label and has laboratory approval (Underwriter's Lab oratory), and is stored in 5-gallon (max) containers.</p>						
<p>Containers less than 8 gallons (30 liters) and total cargo weight is more than 440 lbs (200 kg), but less than 1001 lbs (454 kg).</p>	<p>Performance oriented packaging (less than 8 gallons)</p>	<p>X</p>	<p>"Flammable Liquid" or "Gasoline"</p>	<p>DOT performance-oriented packaging has United Nations I.D. system</p>						
<p>Containers from 8 to 119 gallons (30 to 450 liters), and cargo weight is less than 1001 lbs (454 kg).</p>	<p>Non-bulk packages DOT designation: Performance-oriented packaging</p> <p><b>OR</b></p> <p>Portable DOT tanks up to 119 gallons.</p>	<p>X</p> <p>X</p> <p>X</p> <p>X</p>	<p>"Flammable Liquid" and "1203" gasoline labels</p> <p>(Same as above)</p>	<p>Containers over 8 gallons must be performance oriented packaging (DOT).</p> <p>(Same as above)</p>						
<p>More than 119 gallons (454 kg), or more than 1001 lbs (454 kg) cargo weight.</p>	<p>Bulk packaging requires DOT tank standards – MC406 or 119 to 660 gallons.</p>	<p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p>	<p>"Flammable Liquid" label and "1203" gasoline placard.</p>	<p>Bulk packaging must have relief valves, rollover protection, and automatic shutoff valves. Tanks over 119 gallons require regular inspection.</p>						

Abbreviations: DOT=Department of Transportation; OSHA=Occupational safety and Health Administration; ERG=Emergency Response Guide; CBI=Commercial Driver's License with HazMat and tank endorsements; X=Required; R=Recommended; HM-126F training: A=General awareness; B=Safety; C=Function specific; D=Driver; and PG=Packing group.





## HELITORCH INSPECTION CHECKLIST

**Company Name:** \_\_\_\_\_

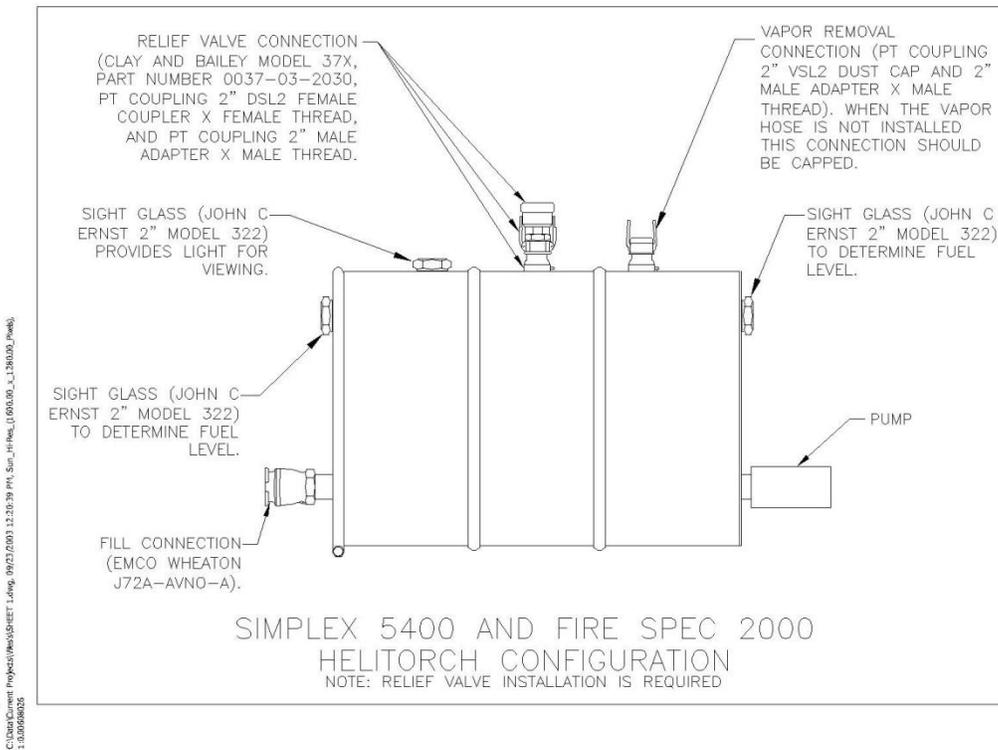
**Helitorch Identification:** \_\_\_\_\_

**Inspection Location:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Inspector:** \_\_\_\_\_

**Tank (55 to 70 Gallons)**



**HELITORCH INSPECTION CHECKLIST (Continued)**

DOT Specification Drum (UN1A1 or UN1A2) or Exemption for Non-DOT Fuel Tank  
(Drum Spec or Exemption Number \_\_\_\_\_)

Flammable Liquid” Label, “UN 1203” Marking, “Gasoline” Marking and Exemption  
Number (As Required) Applied to Drum or Tank

2” Male Cam & Groove Fitting Installed for Vapor Removal/Recovery (Per Sketch for Fire Spec &  
Simplex)

Relief Valve Installed and Mounted on Cam and Groove Fittings to Prevent Clogging of Valve by  
Gel (Per Sketch for Fire Spec & Simplex)

Cam and Groove Fitting Levers Secured With Safety Pins or Self Locking Levers Are Installed

2” Emco Wheaton Dry Break Adapter Installed for Fueling of Drum or Tank (Per Sketch for Fire  
Spec & Simplex)

Filling of Drum or Tank by Bottom Filling – Either by Installation of Dry Break at Bottom of  
Drum or by a Fill Spout That Extends to Within 6” of Tank Bottom – Splash Filling Not Permitted

Sight Glasses Installed to Determine Fuel Level in Drum or Tank

Drum or Tank is Not Damaged and No Leakage is Visually Detectable

Comments:

## HELITORCH INSPECTION CHECKLIST (Continued)

### Suspension

\_\_\_\_\_ Wire Ropes Have No Physical Damage (Broken Strands, Kinks, Etc)

\_\_\_\_\_ Aviation Grade Bolts Installed – The Bolt Shoulders are Long Enough So That the Cable Ends Contact Only The Shoulder of the Bolts and the Bolt Threads are not a Load Bearing Surface

\_\_\_\_\_ The Pear Link Adapter Spacer is Installed So That the Pear Link Contacts Only the Spacer and Not the Bolt

Comments:

### Electrical

\_\_\_\_\_ Power Cable in Good Condition – No Cuts or Gaps in Insulation

Comments:

### Misc

\_\_\_\_\_ Propane Hose - Hose is Compatible With Propane and Has a Braided Metal Cover

Comments:

## BATCH MIXER/ BATCH TRUCK INSPECTION CHECKLIST

Company Name: \_\_\_\_\_

Batch Mixer / Tank Identification: \_\_\_\_\_

Vehicle Identification Number (VIN) (if applicable): \_\_\_\_\_

Inspection Location: \_\_\_\_\_

Date: \_\_\_\_\_

Inspector: \_\_\_\_\_

### Trailer Mounting

\_\_\_\_\_ Tank Connected to Trailer Frame Not Expanded Metal Decking

\_\_\_\_\_ Trailer Equipped With Brakes if Trailer Rating is 1500 lbs or More

\_\_\_\_\_ Trailer Wiring Protected from Abrasion

Comments:

### Engine Installation

\_\_\_\_\_ Fuel Tank Located to Reduce Spillage of Gasoline on Hot Engine

\_\_\_\_\_ Shielding Installed Between Pump and Engine to Prevent Leaks From Contacting Hot Engine

\_\_\_\_\_ Shielding Installed Between Piping and Engine to Prevent Leaks From Contacting Hot Engine

Comments:

## BATCH MIXER/ BATCH TRUCK INSPECTION CHECKLIST (Continued)

### Tank (Greater Than 119 Gallons)

\_\_\_\_\_ MC 306 or DOT 406 Specification Cargo Tank or IBC (Type \_\_\_\_\_)

\_\_\_\_\_ Emergency Shutoff Lever Accessible and Remotely Actuated More Than 10 Feet Away From Shutoff Valve or At End of Tank Furthest From Valve

\_\_\_\_\_ Tank and/or Vehicle Placarded on 4 Sides as “Flammable Liquid” and Marked on 4 Sides as “UN 1203”

\_\_\_\_\_ Shut Off Valves are Protected and Do Not Protrude from Vehicle

\_\_\_\_\_ 2” Cam & Groove Fitting Installed for Vapor Removal/Recovery

\_\_\_\_\_ Fill Spout Extends to Within 6” of Tank Bottom – Splash Filling Not Permitted

\_\_\_\_\_ Visual Inspection (VK) Up To Date

\_\_\_\_\_ Internal Pressure Inspection (IP) Up to Date

Comments:

### Electrical

\_\_\_\_\_ Electrical Connections Near Pump and Piping Sealed to Prevent Connections Coming Loose and Sparking

\_\_\_\_\_ Switch Housings Covered to Reduce Sparking

\_\_\_\_\_ Battery Located Away From Piping Joints and Pump

Comments:

## BATCH MIXER/ BATCH TRUCK INSPECTION CHECKLIST (Continued)

### Hoses

\_\_\_\_\_ Hoses Designed for Use With Gasoline (Hose Make & Model \_\_\_\_\_)

\_\_\_\_\_ Vapor Recovery/Removal Hose Designed for Use With Gasoline Vapor  
(Hose Make & Model \_\_\_\_\_)

\_\_\_\_\_ Swaged Hose Ends

\_\_\_\_\_ Electrically Conductive

\_\_\_\_\_ Live Reel Installed

Comments:

### Pump

\_\_\_\_\_ Pump Internals are Non-Sparking

\_\_\_\_\_ Pump Seals are Compatible With Gasoline (Viton or Buna N)

Comments:

### Misc

\_\_\_\_\_ Safety Pins Installed on Camlok Fittings or Self Locking Camlok Fittings Installed

\_\_\_\_\_ Pressure Gage Isolated From Gel

\_\_\_\_\_ Valves Labeled As To Function and Flow Direction

\_\_\_\_\_ Fire Extinguisher Mounted in Accessible Location

Comments:

## MIX-TRANSFER SYSTEM INSPECTION CHECKLIST

Company Name: \_\_\_\_\_

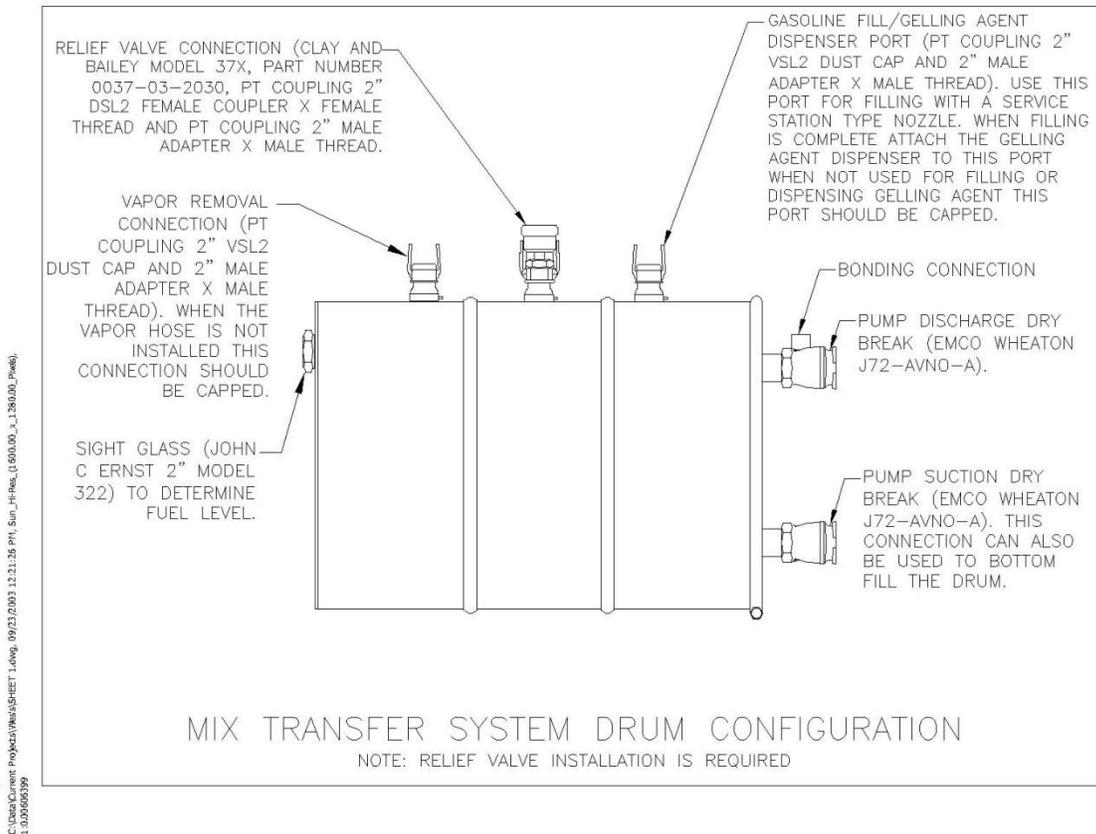
System Identification: \_\_\_\_\_

Inspection Location: \_\_\_\_\_

Date: \_\_\_\_\_

Inspector: \_\_\_\_\_

## Drums



**MIX-TRANSFER SYSTEM INSPECTION CHECKLIST (Continued)**

- \_\_\_\_\_ DOT Specification Drums
- \_\_\_\_\_ “Flammable Liquid” Label, “UN 1203” Marking, “Gasoline” marking and Exemption Number (As Required) Applied to Each Drum
- \_\_\_\_\_ 2” Male Cam & Groove Fitting Installed for Vapor Removal/Recovery (Per Sketch)
- \_\_\_\_\_ 2” Male Cam & Groove Fitting Installed for Gelling Agent Dispenser and Gasoline Fill Port (Per Sketch)
- \_\_\_\_\_ Relief Valve Installed and Mounted on Cam and Groove Fittings to Prevent Clogging of Valve by Gel (Per Sketch)
- \_\_\_\_\_ Cam and Groove Fitting Levers Secured With Safety Pins or Self Locking Levers Installed
- \_\_\_\_\_ 2” Emco Wheaton Dry Break Adapter Installed for Pump Discharge and Pump Suction Connections (Per Sketch)
- \_\_\_\_\_ Bonding Lugs Installed on Pump Discharge Dry Breaks
- \_\_\_\_\_ Sight Glass Installed to Determine Fuel Level in Drum Per Sketch
- \_\_\_\_\_ Drum is Not Damaged and No Leakage is Visually Detectable

Comments:

**Engine Installation**

- \_\_\_\_\_ Shielding Installed Between Pump and Engine to Prevent Leaks From Contacting Hot Engine

Comments:

## MIX-TRANSFER SYSTEM INSPECTION CHECKLIST (Continued)

### Hoses

\_\_\_\_\_ Hoses Designed for Use With Gasoline (Hose Make & Model \_\_\_\_\_)

\_\_\_\_\_ Vapor Recovery/Removal Hose Designed for Use With Gasoline  
Vapor (Hose Make & Model \_\_\_\_\_)

\_\_\_\_\_ Swaged Hose Ends

\_\_\_\_\_ Electrically Conductive

Comments:

### Pump

\_\_\_\_\_ Pump Internals are Non-Sparking (Pump Make and Model \_\_\_\_\_)

\_\_\_\_\_ Pump Seals are Compatible With Gasoline (Viton or Buna N)

Comments:

### Misc

\_\_\_\_\_ Pressure Gage Isolated From Gel

\_\_\_\_\_ Valves Labeled As To Function and Flow Direction

Comments: