

# Overfill Valve Shutoff and Spill Containment Upgrades

TH-C4
Thursday, March 27, 2025
Elliott Gladden, OPW Product Manager



### DISCLAIMER

 The information in this presentation is a summary of requirements specified in California Underground Storage Tank (UST) Regulations and proposed manufacturer installation and confirmation revisions. It is not all-inclusive. There is no substitute for reading the full text of the regulations and other documents referenced. Proposed installation and confirmation revisions have not yet been approved by CARB.



### **OBJECTIVES**

### **Overfill Protection**

- Review California requirements for UST overfill protection.
- Provide updates on revision changes concerning OPW 71SO Installation Appendices.

### Spill Containment Upgrades

- 2026 proposed regulation changes
- OPW spill containment options for the pending regulation change

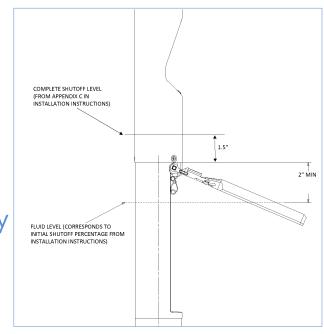


All USTs that do not meet 23 CCR §2635(c)(2) shall be equipped with overfill prevention equipment that does not allow for manual override and meets one of the following options. [23 CCR §2635(c)(1)]

The OPW 71SO can satisfy (3) of the (4) allowed options.



- 23 CCR §2635(c)(1)(A)
  - Alert the transfer operator when the tank is 90% full by restricting flow into the tank or triggering an audible and visual alarm.
    - OPW's 71SO can satisfy this option by providing physical feedback and restricting flow when initial shutoff (Stage 1) is reached.

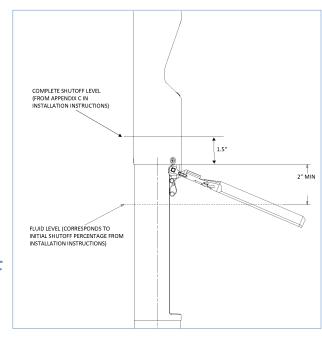




- 23 CCR §2635(c)(1)(B)
  - Restrict delivery of flow to the tank at least 30 minutes before the tank overfills, provided the restriction occurs when the tank is filled to no more than 95% of capacity; AND activate an audible alarm at least 5 minutes before the tank overfills.



- 23 CCR §2635(c)(1)(C)
  - Provide positive shutoff of flow to the tank when the tank is filled to no more than 95% of capacity.
    - OPW's 71SO can satisfy this option by providing a final shutoff (Stage 2) at any desired capacity.





- 23 CCR §2635(c)(1)(D)
  - Provide positive shutoff of flow to the tank so that none of the fittings located on the top of the tank are exposed to product due to overfilling.
    - ❖OPW's 71SO can satisfy this option by providing final shutoff (Stage 2) if the valve is placed 6 ½" from the top of the tank.



# **UST PROGRAM UPDATE – OCT 2024**

 Confusion between Appendix A Appendix B.

#### Appendix A 71SO Overfill Valve Upper Tube Calculation Worksheet Important: This is meant to be supplemental worksheet and not a substitute to following the installation manual instructions. All length measurements are in inches. Please contact the Authority Having Jurisdiction (AHJ) and review local, state, and national codes to determine the regulatory requirements governing shut-off capacity in your region, as well as take into account other considerations such as extreme tank tilt. Desired tank capacity for shut-off: Dipstick Number (Y) on Tank Chart that corresponds to 100% volume = Dipstick Number on Tank Chart that corresponds to SO% (X) = Upper Tube Reference Number Z=Y-X Upper Tube Depth Inside Tank C = Z-2" Distance from top sealing surface for 71SO Lip1 to inside the top of Storage Tank<sup>2</sup> For Non-Testable 71SO models only In all cases for non-testable 7150 models, the top of the valve body must protrude at least 6 1/2" into the tank to provide a minimal clearance for proper operation.3 Additionally the total Upper Tube Length must be at least 16" of length to include the protective bend in the tube. Is C less than 6 1/2" Yes / No If NO, Upper Tube Length (D) = C + AIf YES, Upper Tube Length (D)= 6 1/2 "+ A Upper Tube Length = For Testable 71SO models only In all cases for Testable 71SO models, the top of the valve body must protrude at least 6 1/2" into the tank to provide (X) = (B) - (D) - 2" =\_\_ a minimal clearance for proper operation.<sup>3</sup> Additionally the total Upper Tube Length must be at least 14 ½" of length to include the protective bend in the tube. Is C less than 6 1/2" Yes / No If NO, Upper Tube Length (D)= C + A - 1 1/2 "



Upper Tube Length = \_

- Some Underground Storage tanks utilize a manway system at the top. Make sure to use the top of the storage tank for measurement and not to top of the manway. Consult your underground tank manufacturer for height of the manway
- This measurement is taken from the seam where the upper tube is attached to the valve body to the inside of the tank top.

71SO Overfill Valve in Tank Initial Shut off Level Worksheet

Important: This is meant to be supplemental worksheet and not a substitute to following the installation manual instructions. All length measurements are in inches. Please contact the Authority Having Jurisdiction (AHJ) and review local, state, and national codes to determine the regulatory requirements governing shut-off capacity in your region, as well as take into account other considerations such as extreme tank tilt.

Take the following measurements with the valve installed in the tank:

Distance from the 71SO inlet tube flange to the cast lug in the 71SO body (see figures), upper tube length. Note: the Upper Tube Length must be at least 16" to include the protective bend in the tube.

Distance from the 7150 inlet tube flange to the top and bottom of lower tube, valve length.

Distance from the 71SO inlet tube flange to the bottom of the tank. Note: If a tank bottom protector is present it may be necessary to add this thickness to dimension (OPW 6111 & 61TP models add 0.6")

From the tank calibration chart provided by tank manufacturer find the dipstick number (Y) which corresponds to the 100% volume.

1. To determine shut-off percentage:

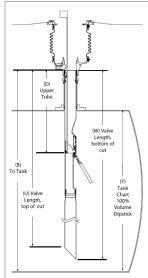
Subtract upper tube length (D) from distance to tank bottom (B)

Using the tank calibration chart provided by the tank manufacturer determine the tank capacity at the calculated (X) dimension and the 100% volume (Y) tank capacity.

(X) tank capacity in gallons =

(Y) tank capacity in gallons =

SO% = (X) capacity / (Y) capacity x100 =



Note: The overfill valve must be installed per AHJ requirements and all applicable local, state, and national codes. If the overfill valve is set above the allowable shut-off percentage the overfill valve must be removed and replaced. For reference 40 CFR part 280 Subpart B Section 280.20 overfill valves should be set to a maximum of 95%.

If YES, Upper Tube Length (D) = 6 1/2" + A - 1 1/2 1

### UST PROGRAM UPDATE - OCT 2024

 Appendix A did not include all the necessary steps to confirm SO% after assembly/installation.

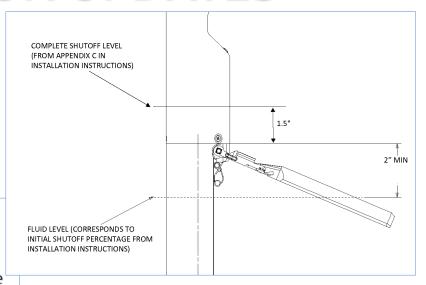
	Appendix A	_
71SO Ov	erfill Valve Upper Tube Calculation Work	sheet
manual instructions. All length me tion (AHJ) and review local, state, a	plemental worksheet and not a substitute asurements are in inches. Please contact nd national codes to determine the regul well as take into account other considera	the Authority Having Jurisdic- atory requirements governing
Desired tank capacity for shut-off:		SO%=
Dipstick Number (Y) on Tank Chart the	at corresponds to 100% volume =	(Y)
Dipstick Number on Tank Chart that o	corresponds to SO% (X) =	- (X)
Upper Tube Reference Number Z=Y->	(	(Z)
Upper Tube Depth Inside Tank C = Z-:	2"	<u> </u>
Distance from top sealing surface for top of Storage Tank <sup>2</sup>	71SO Lip¹ to inside the	A=
For Non-Testable 71SO models only	<u> </u>	
	dels, the top of the valve body must protrud er operation. <sup>3</sup> Additionally the total Upper and in the tube.	
Is C less than 6 1/2"	Yes / No	
If NO, Upper Tube Length (D)= C + A	4	
If YES, Upper Tube Length (D)= 6 1/2	"+ A	
	Upper Tube Length =	_
For Testable 71SO models only		
In all cases for <u>Testable</u> 71SO models,	the top of the valve body must protrude at $1 \times 10^{-3}$ Additionally the total Upper Tube Ler I in the tube.	
Is C less than 6 1/2"	Yes / No	
If NO, Upper Tube Length (D)= C + A	A = 1 ½ "	
If YES, Upper Tube Length (D) = 6 1/2		
	Upper Tube Length =	
Sealing surface may be the top of the Fa	ce Seal Adaptor, the built in sealing ledge inside so	me spill containers, or on non-vapor
tight applications the top of the pipe nip	pple	
<sup>2</sup> Some Underground Storage tanks utilize	e a manway system at the top. Make sure to use th	ne top of the storage tank for measure-

- ment and not to top of the manway. Consult your underground tank manufacturer for height of the manway
- This measurement is taken from the seam where the upper tube is attached to the valve body to the inside of the tank top



- Added context to the main body of the installation instructions to differentiate initial (Stage 1) vs final (Stage 2) shutoff.
  - 6) Subtract 2" from (Z) to find the upper tube depth (C) if initial shut-off at the specified percentage is desired. Add 1.5" to (Z) to find the upper tube depth (E) if final shut-off at the specified percentage is desired.

(Z) - 2" = C → AHJ Requires Initial Shut-Off
 (Z) + 1.5" = (E) → AHJ Requires Final Shut-Off
 (refer to Appendix C for subsequent steps)





# • Appendix Index added. Appendix Index

Important: This is meant to be a supplemental worksheet and not a substitute to following the installation instructions. Please contact the Authority Having Jurisdiction (AHJ) and review local, state, and national codes to determine the regulatory requirements governing shut-off capacity in your region, as well as take into account other considerations such as extreme tank tilt and tank flex.

Appendix	Description	Installation Page Number	Testing/AHJ Confirmation Page Number
А	Initial Shut-Off Upper Tube Calculation (Bung Mount)	21	22
В	Initial Shut-Off Level for in Tank Testing	28	23
C Final Shut-Off Upper Tube Calculation (Bung Mount)		25	27
D	Initial or Final Shut-Off Upper Tube Calculation (Universal Installation)	28	29

<sup>\*</sup>Appendix D can be used to calculate the 71SO upper tube length for Initial or Final Shut-Off percentage without riser or manway height dimensions.

### Important:

1. Testers and the AHJ should use the confirmation method designated with the original installation method used.



 Appendix A shutoff confirmation page added.

Appendix A (Continued)		
Initial Shut-Off Percentage (SO%) Confirmation:  Dipstick Number on the Tank Chart that corresponds to 100% volume  (Y) = (given value from tank chart)		
Upper Tube Length (D) = (measured value)		
Distance from top sealing surface for 7150 Lip¹ to inside the top of the Storage Tank² (A) = $\_$ (measured value)		
Upper Tube Depth Inside Tank $(C) = D - A$		
Upper Tube Reference Number $(Z) = C + 2$		
Dipstick Number on the Tank Chart that corresponds to 50% $(X) = Y - Z$		
Using the tank calibration chart provided by the tank manufacturer, determine the tank capacity at the cal- culated (X) dimension and the 100% volume (Y) tank capacity		
(X) tank capacity in gallons =(Y) tank capacity in gallons =		
Initial Shut-off % (SO%) = (X) capacity / (Y) capacity x100 =		
Sealing surface may be the top of the Face Seal Adaptor, the built in sealing ledge inside some spill containers, or on non-vapor tight applications the top of the pipe nipple.		
<sup>2</sup> Some Underground Storage Tanks utilize a manway system at the top. Make sure to use the top of the storage tank for measurement and not to the top of the manway. Consult your underground tank manufacturer for height of the manway.		
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 Appendix B note added to clarify that the appendix should only be used "...in Areas Where the AHJ Allows in Tank Testing".

#### Appendix B

71SO Overfill Valve in Tank Initial Shut off Level Worksheet
For Use in Areas Where the AJH Allows in Tank Testing

Important: This is meant to be supplemental worksheet and not a substitute to following the installation manual instructions. All length measurements are in inches. Please contact the Authority Having Jurisdiction (AHJ) and review local, state, and national codes to determine the regulatory requirements governing shutoff capacity in your region, as well as take into account other considerations such as extreme tank tilt.

Take the following measurements with the valve installed in the tank:

Distance from the 7150 inlet tube flange to the cast lug in the 7150 body (see figures), upper tube length. Note: the Upper Tube Length must be at least 16" to include the protective bend in the tube.

(D) =
Distance from the 71SO inlet tube flange to the top an bottom of lower tube, valve length.
(W) =
(U) =

Distance from the 71SO inlet tube flange to the bottom of the tank. Note: If a tank bottom protector is present it may be necessary to add this thickness to dimension (OPW 6111 & 61TP models add 0.6")

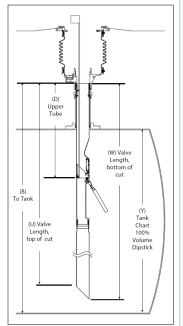
From the tank calibration chart provided by tank manufacturer find the dipstick number (Y) which corresponds to the 100% volume.

1.	l o determine shut-off	percentage:
Sub	tract upper tube length	(D) from distance to tank
bott	om (B)	

(X) = (B) - (D) - 2'' =

Using the tank calibration chart provided by the tank manufacturer determine the tank capacity at the calculated (X) dimension and the 100% volume (Y) tank capacity.

(X) tank capacity in gallons =
(Y) tank capacity in gallons =
SO% = (X) capacity / (Y) capacity x100 =

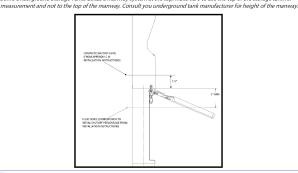


Note: The overfill valve must be installed per AHJ requirements and all applicable local, state, and national codes. If the overfill valve is set above the allowable shut-off percentage the overfill valve must be removed and replaced. For reference 40 CFR part 280 Subpart B Section 280.20 overfill valves should be set to a maximum of 95%.



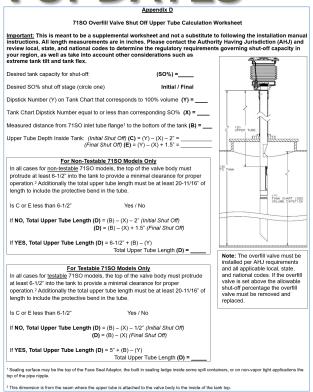
- Appendix C shutoff confirmation page added.
  - Appendix C is meant for calculating upper tube length for final shutoff %. This appendix was previously unavailable to those in CA.

Complete Shut-Off Percentage (SO%) Confirmation:
Dipstick Number on the Tank Chart that corresponds to 100% volume $(Y) = \underline{\hspace{1cm}}$ (given value from tank chart)
Upper Tube Length (D) =(measured value)
Distance from top sealing surface for 7150 Lip $^1$ to inside the top of the Storage Tank $^2$ (A) = (measured value)
Upper Tube Depth Inside Tank $(E) = D - A$
Upper Tube Reference Number $(Z) = E - 1.5$
Dipstick Number on the Tank Chart that corresponds to SO% $(X) = Y - Z \label{eq:def}$
Using the tank calibration chart provided by the tank manufacturer, determine the tank capacity at the caculated (X) dimension and the 100% volume (Y) tank capacity
(X) tank capacity in gallons =(Y) tank capacity in gallons =
Initial Shut-off % (SO%) = (X) capacity / (Y) capacity x100 =
Sealing surface may be the top of the Face Seal Adaptor, the built in sealing ledge inside some spill containers, or on nor vapor tight applications the top of the pipe nipple.
2 Some Underground Storage Tanks utilize a manuary system at the ton. Make sure to use the ton of the storage tank for



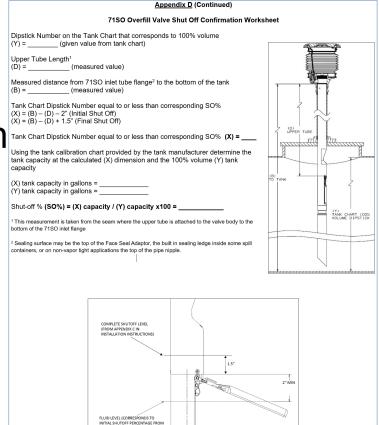


- NEW Appendix D!!
  - Universal installation method that takes a bottom-up approach to valve placement.
  - Can be used for initial (Stage 1) or final (Stage 2) shutoff. Nontestable or testable 71so models.
  - Eliminates the concern over valve placement due to a tank manway.





 Appendix D shutoff confirmation page.





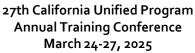
- Next Steps:
  - OPW to complete a thorough review of changes
  - Submit changes to CARB
    - Water Board (SWRCB)
    - Fire Marshal
    - CA OSHA
    - Division of Measurement Standards (DMS)
    - CUPA Reviews
  - New OPW Training for installers/testers



### **NEW SPILL BUCKET REGULATIONS**

- §2642(k) Installation and Repair Requirements
  - "Single-walled spill containment structures in direct contact with backfill which require replacement must be replaced with secondarily contained spill containment."
  - ❖ OPW single-wall direct bury 2100 series is the most installed OPW spill bucket in CA over the past 6 years.







### **NEW SPILL BUCKET REGULATIONS**

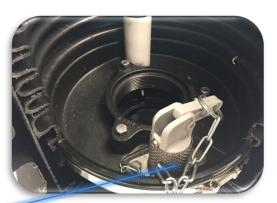
• OPW Double Wall EDGE™

 Static, Engineered Seals Throughout



 Permanent Interstitial Test Port

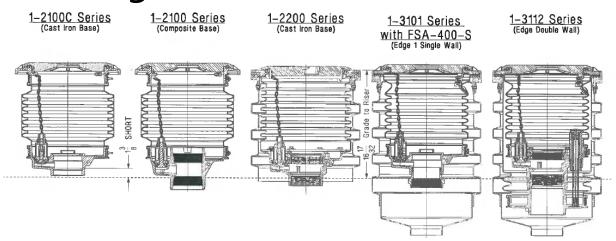




- Cup-like base to collect residual fuel below seals
- Single-wall EDGE 1™ buckets can be upgraded to double-wall EDGE™ by purchasing a new float gauge or sensor adaptor, secondary bucket, and primary bucket.

### **NEW SPILL BUCKET REGULATIONS**

Riser Height Consideration



❖ If upgrading from the OPW <u>cast iron base 1-2100 series</u> bucket new riser will need to be installed to account for the change in spill bucket height.



### **BEST SPILL BUCKET SOLUTION**

- OPW Multiport Packaged Kits (PK)
  - Phase I EVR, CARB-Approved Systems
  - Watertight
  - Provides full access from UST to grade
  - Conveniently packaged to include necessary system components (i.e. cover, spill buckets, shroud cover, swivel adaptors, caps, nipples, and more)
  - ❖ PK kits are offered in both composite fiberglass reinforced plastic (FRP) and metal configurations



27th California Unified Program Annual Training Conference March 24-27, 2025



### **BEST SPILL BUCKET SOLUTION**

Composite Packaged Kits

 Watertight FL100 multiport lid with sealable port covers (H20/HS20 rated).

 Wide access fiberglass skirt to allow for conduit to run into the sump space.

All necessary adaptors and caps included.

- OPW 723V Pressure Vacuum Vent standard

on PK10 kits (gasoline)

E85 options available

### Ordering specifications:

Part #	Description
PK10-FLMP-GSC	Gray/Gray Sealable Covers
PK10-FLMP-RSC	Red/Orange Sealable Covers
PK10-FLMP-WSC	White/Orange Sealable Covers
PK10-FLMP-BSC	Blu/Orange Sealable Covers
PK10-FLMP-E85-GSC	E85 Swivel Adaptors, Gray/Gray Sealable Covers

### **Ordering specifications:**

Part #	Description
PK11-FLDIESEL-GSC	Gray Sealable Cover
PK11-FLDIESEL-YSC	Yellow Sealable Cover





PK10-FLMP-WSC



### **BEST SPILL BUCKET SOLUTION**

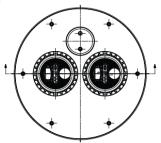
- Steel Packaged Kits
  - Rotolock Steel Manhole with Gauge Port and Raintight (RT) Port Covers.
  - 33" or 36" fiberglass shroud cover.
  - All necessary adaptors and caps included.
  - OPW 723V Pressure Vacuum Vent standard on PK2 kits (gasoline)
  - E85 options available

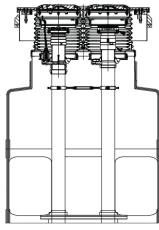
### **Ordering specifications:**

Part #	Description
PK2-42RTMP	RT Covers, 36" FRP Water Shroud
PK2-42RTMP-33	RT Covers, 33" FRP Water Shroud
PK2-42RTMP-E85	RT Covers, E85, 36" FRP Water Shroud
PK2-42RTMP-33-E85	RT Covers, E85, 33" FRP Water Shroud

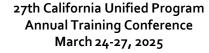
### **Ordering specifications:**

Part #	Description
PK3-42RTDIESEL	RT Cover, 36" FRP Water Shroud
PK3-42RTDIESEL-33	RT Cover, 33" FRP Water Shroud













# **Thank You**

Elliott Gladden, Product Manager, OPW Retail Fueling

