Secondary Containment Regulations

ENVIROSCHOOL

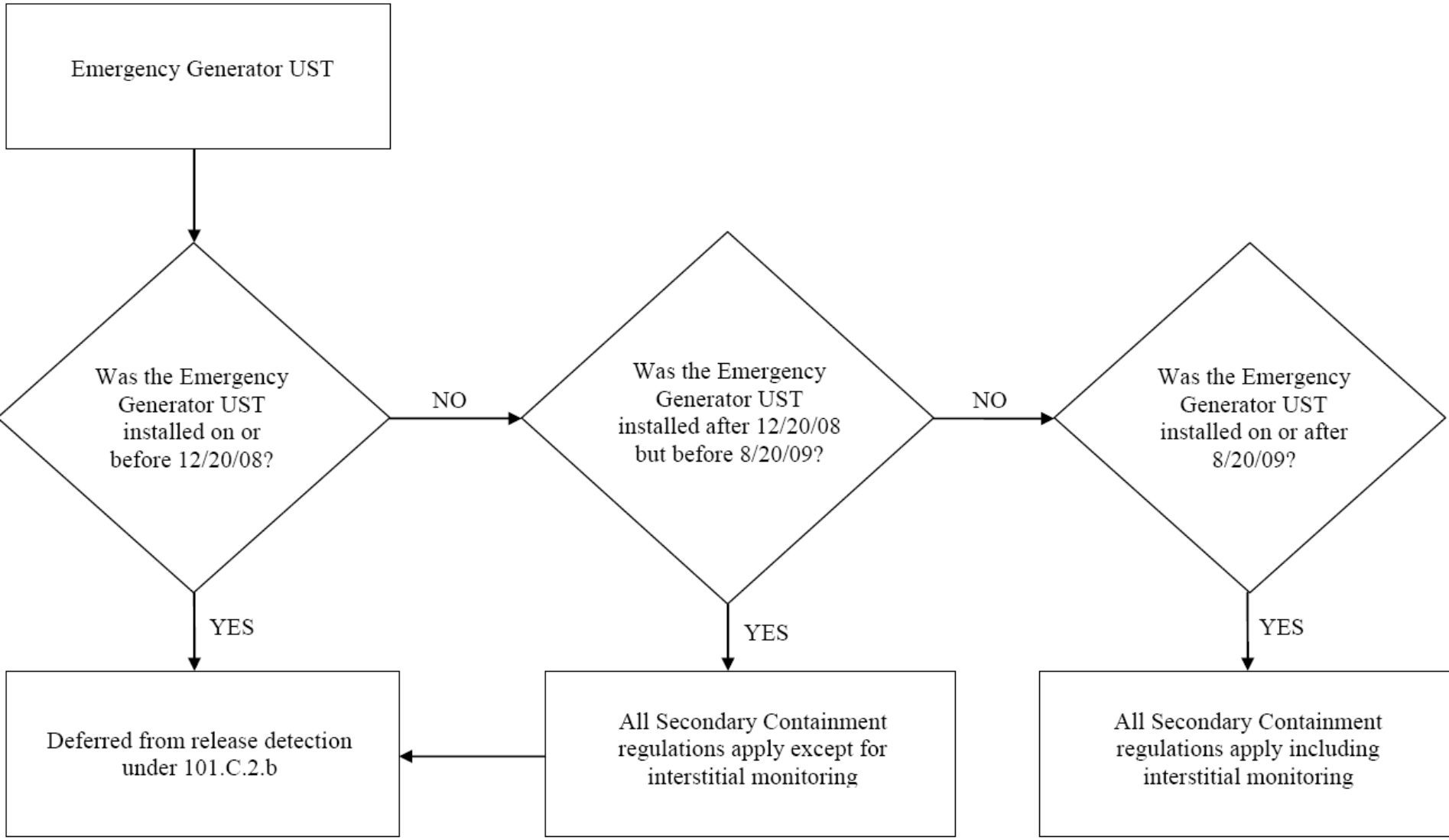
March 2010

Secondary Containment Regulations

- Secondary Containment and Interstitial Monitoring is required for **all** UST systems installed after December 20, 2008
- Secondary Containment regulations became final on October 20, 2008
  - UT014 - Secondary Containment for UST Systems [LAC 33:XI.103, 301, 303, 403, 507, 509, 701, 703, and 903]
  - http://www.deq.louisiana.gov/portal/tabid/2823/Default.aspx
  - http://www.deq.louisiana.gov/portal/tabid/1674/Default.aspx

Interstitial Monitoring for Emergency Generator Tanks (UT016)

- Interstitial monitoring is required on all emergency generator tanks that are installed after 8/20/09 (UT016 became final on 8/20/09)
- Final Secondary Containment provision of the Energy Act
- Emergency generator tanks already required to be secondarily contained if installed after 12/20/08
- Emergency generator tanks installed prior 8/20/09 are still deferred from release detection (101.C.2.b)


Emergency Generator UST
Was the Emergency Generator UST installed on or before 12/20/08?
NO
Was the Emergency Generator UST installed after 12/20/08 but before 8/20/09?
NO
Was the Emergency Generator UST installed on or after 8/20/09?
YES
YES
YES
Deferred from release detection under 101.C.2.b
All Secondary Containment regulations apply except for interstitial monitoring
All Secondary Containment regulations apply including interstitial monitoring

Tank Secondary Containment

- Tanks installed after 12/20/08
  - Secondarily-contained (double-walled, jacketed, etc.) with monthly interstitial monitoring
    - LAC 33:XI.303.D.1.f

Follow Manufacturer Requirements

Follow Manufacturer Requirements

Follow Manufacturer Requirements

Tank Secondary Containment

- Applies to any new tank installed
- Also applies to any existing tank that is removed from the ground and re-installed

Tank Interstitial Monitoring Requirements (LAC 33:XI.701.A.6)

- Continuous Monitoring (interstitial space probe, vapor monitoring) or
- Manual Monitoring every 30 days
- Recordkeeping is required

UST Interstitial Monitoring (Double-Walled Tank)

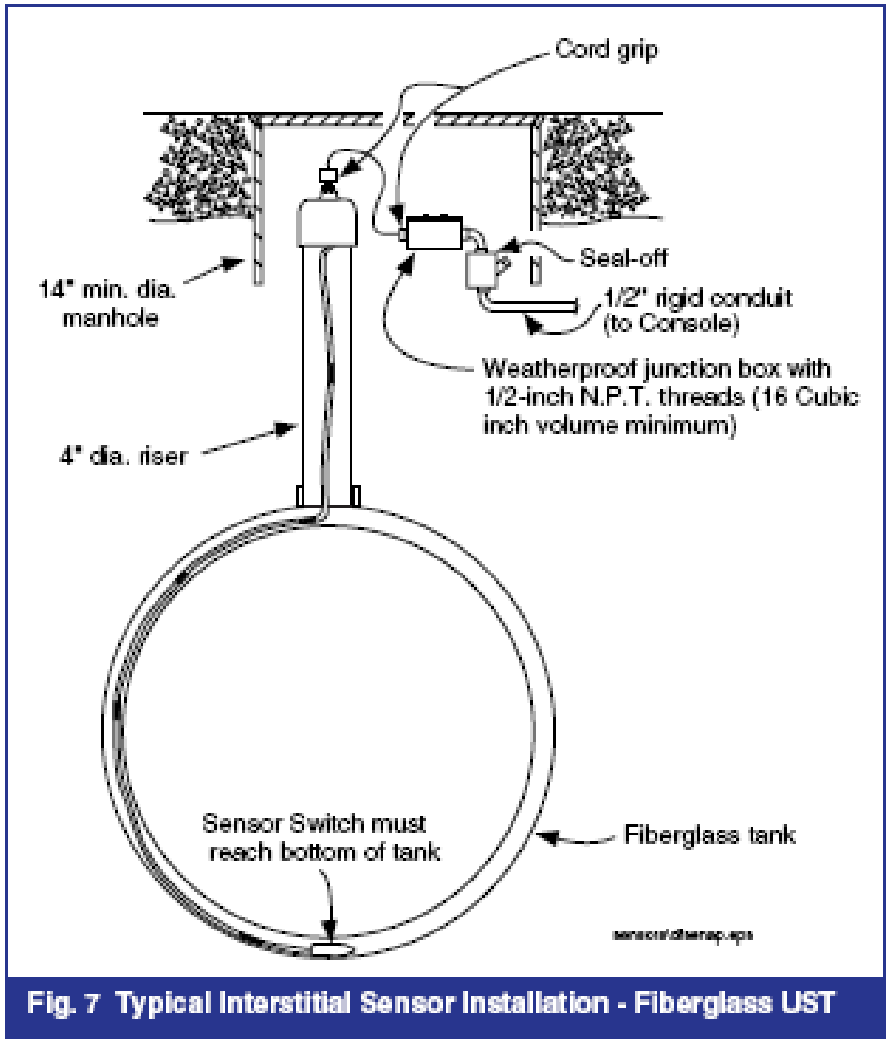
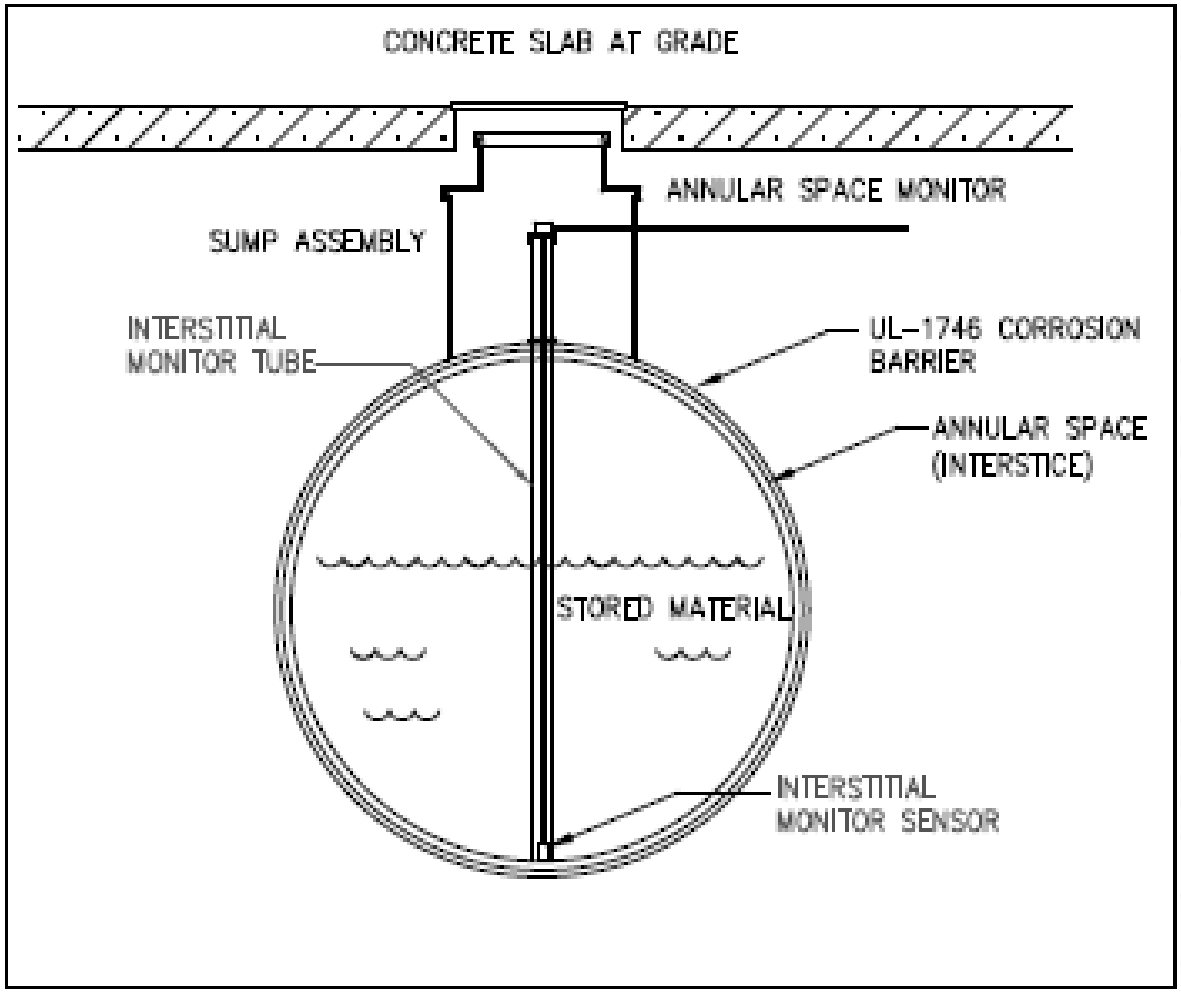


Fig. 7 Typical Interstitial Sensor Installation - Fiberglass UST

UST Interstitial Monitoring (Jacketed Tank)



UST Interstitial Monitoring (Brine-filled FRP)

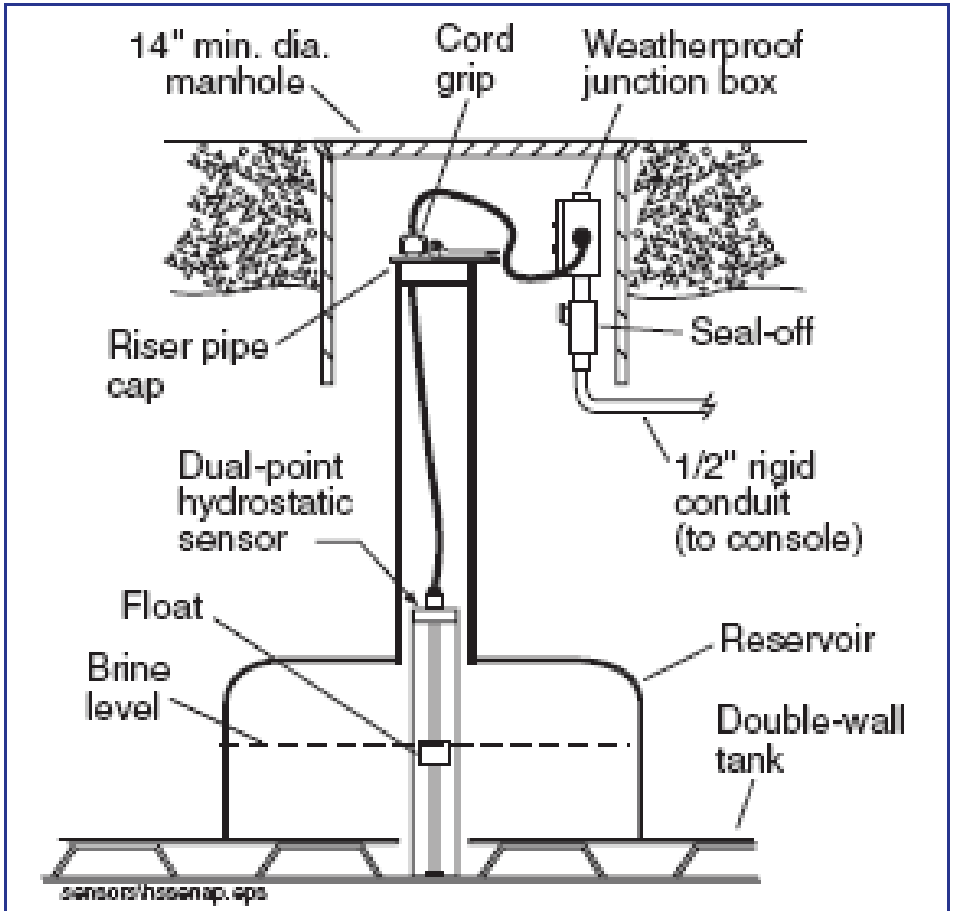


Fig. 12 Typical Hydrostatic Dual-Point Sensor Installation

What type of tests records must you keep?

- Alarm history that lists all failures
- Status report from console showing communication between console and sensor at least every 30 days ("Sensor Normal" or "All Functions Normal" Report)
- If no printer, a visual inspection of console with handwritten record or log is acceptable (initial of who checked the console, date, alarms, etc)

- **Must keep leak test records for 36 months**

Refresh

Liquid Sensor Summary Report

Start Date

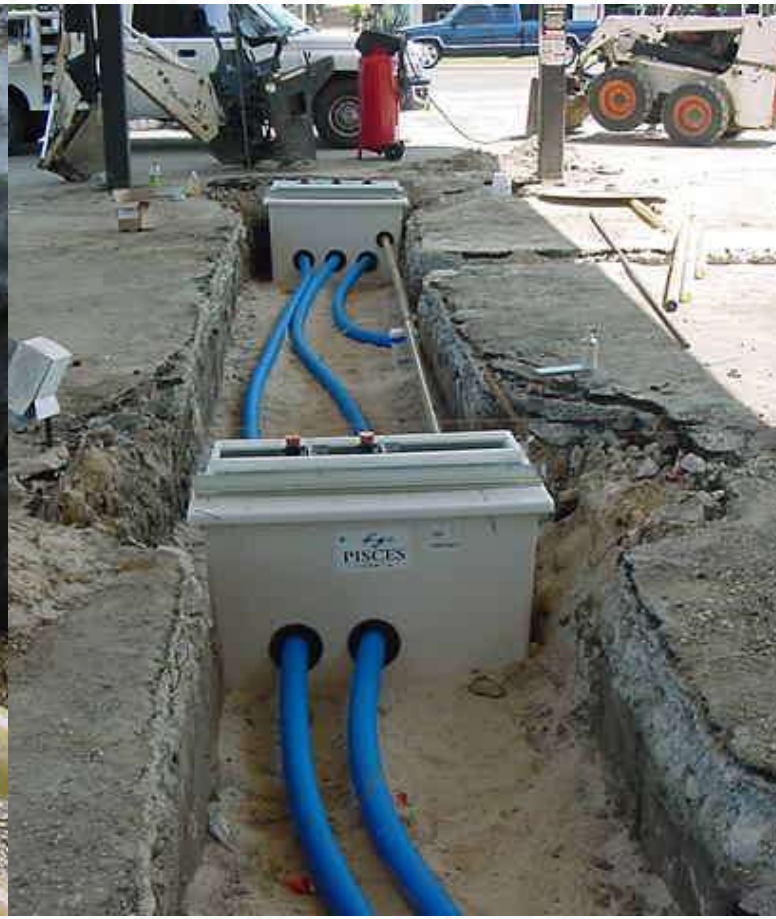
End Date

Station	Location	State	Input	Label	Sensor Code	Sensor Status	Start Date	Time
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	05/01/2006	12:02 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	06/01/2006	12:17 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	07/01/2006	12:17 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	08/07/2006	08:02 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	09/01/2006	12:27 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	10/01/2006	12:27 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	11/01/2006	12:27 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	12/01/2006	01:27 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	01/01/2007	12:27 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	02/01/2007	12:02 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	03/01/2007	12:12 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	04/01/2007	12:12 AM (CT)
			01	REG-1 INTERSTITIAL	0000	Sensor Normal	05/01/2007	12:12 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	05/01/2006	12:02 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	06/01/2006	12:17 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	07/01/2006	12:17 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	08/07/2006	08:02 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	09/01/2006	12:27 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	10/01/2006	12:27 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	11/01/2006	12:27 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	12/01/2006	01:27 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	01/01/2007	12:27 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	02/01/2007	12:02 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	03/01/2007	12:12 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	04/01/2007	12:12 AM (CT)
			02	REG-2 INTERSTITAL	0000	Sensor Normal	05/01/2007	12:12 AM (CT)
			03	REG-1 15K STP SUMP	0000	Sensor Normal	05/01/2006	12:02 AM (CT)
			03	REG-1 15K STP SUMP	0000	Sensor Normal	06/01/2006	12:17 AM (CT)
			03	REG-1 15K STP SUMP	0000	Sensor Normal	07/01/2006	12:17 AM (CT)


TLS-
09/23/2009

Interstitial Monitoring is **mandatory** for tanks and piping installed after 12/20/08

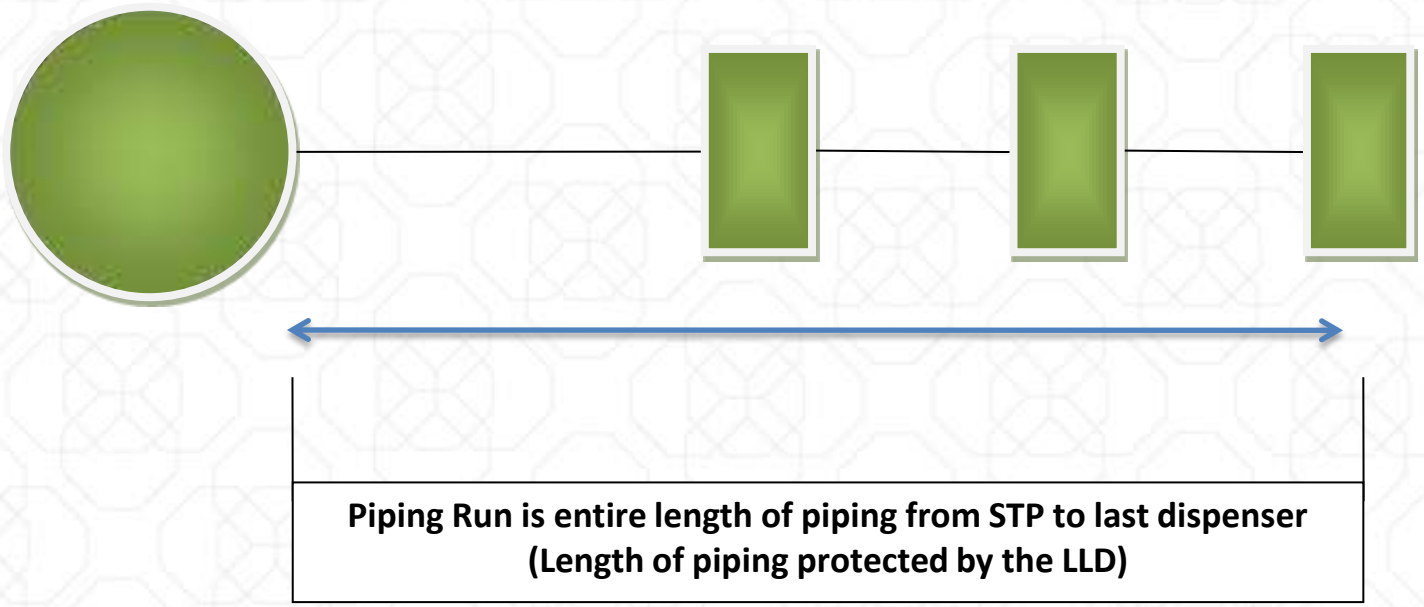
Piping Secondary Containment



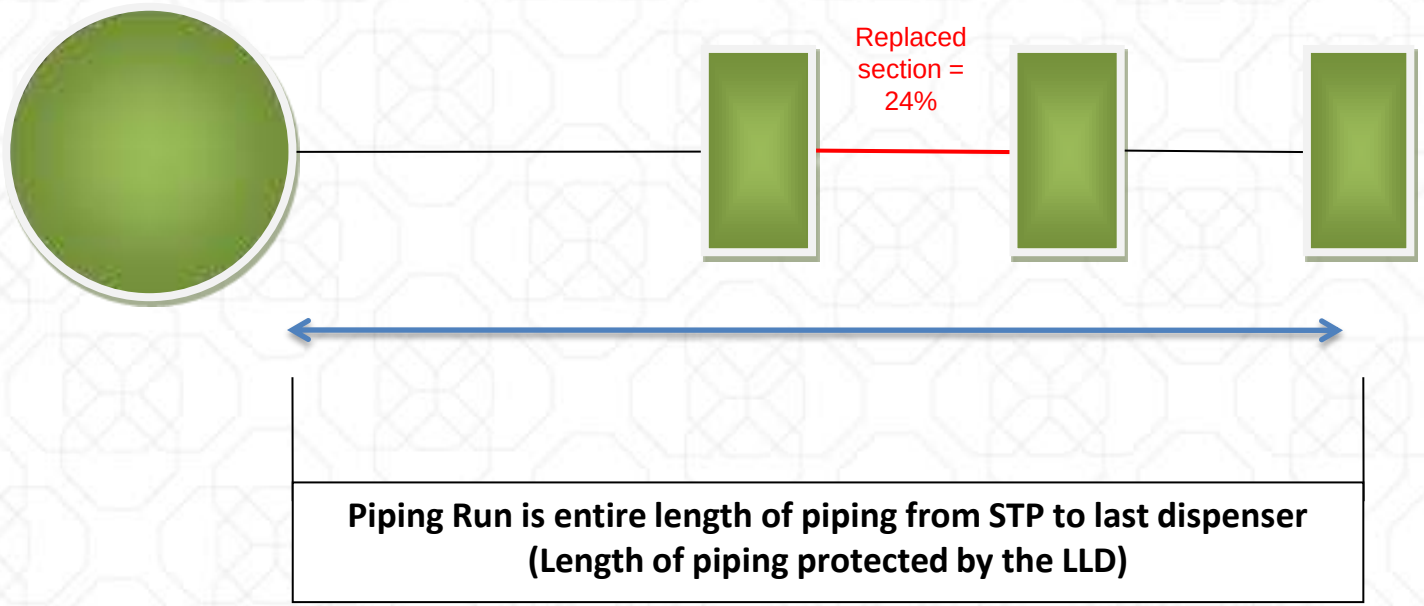
Piping Secondary Containment

- Secondary containment and interstitial monitoring for piping is required after 12/20/08 in the following instances:
  - New piping installed at a new installation
    - LAC 33:XI.303.D.2.f
  - >25% of an existing piping run associated with a single UST is replaced at existing facility
    - LAC 33:XI.303.D.2.g and 507.A.7
  - Install a new dispenser at existing facility that requires any new piping
    - LAC 33:XI.303.D.2.g

Single-Walled Piping Repair / Replacement

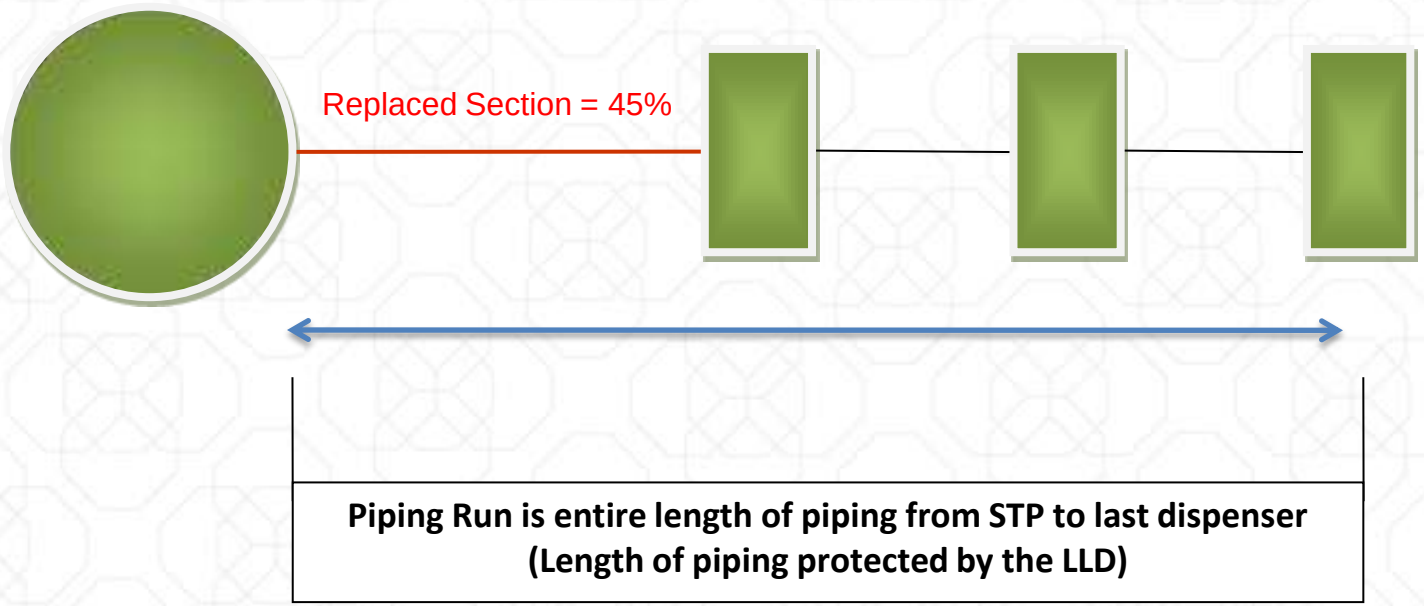


Single-Walled Piping Repair / Replacement



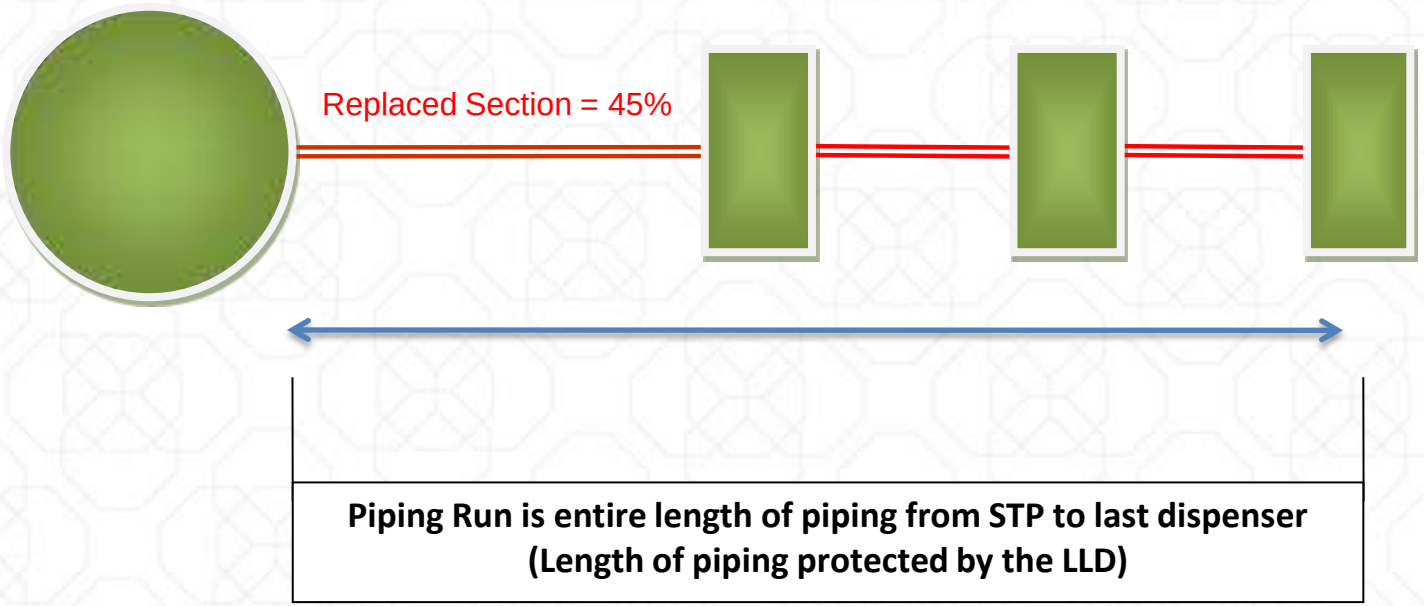
If <25% of a piping run is replaced, secondary containment and interstitial monitoring is not required.

Single-Walled Piping Repair / Replacement



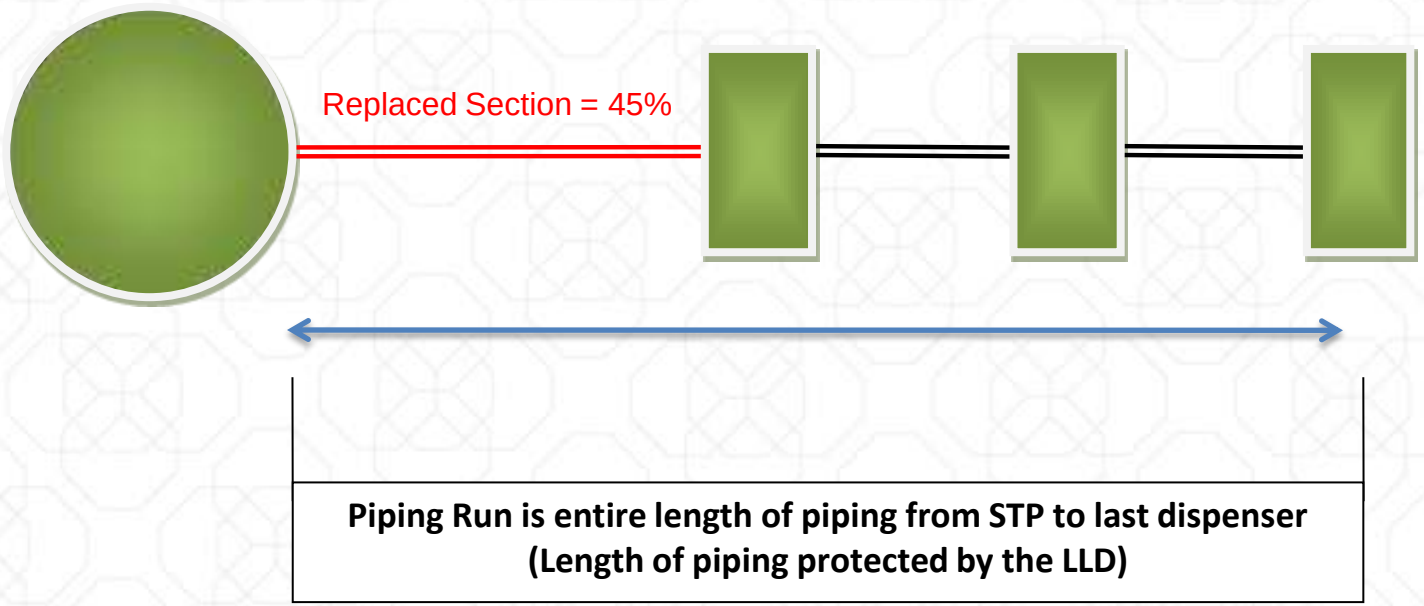
If >25% of a single-walled piping run is replaced…

Single-Walled Piping Repair / Replacement



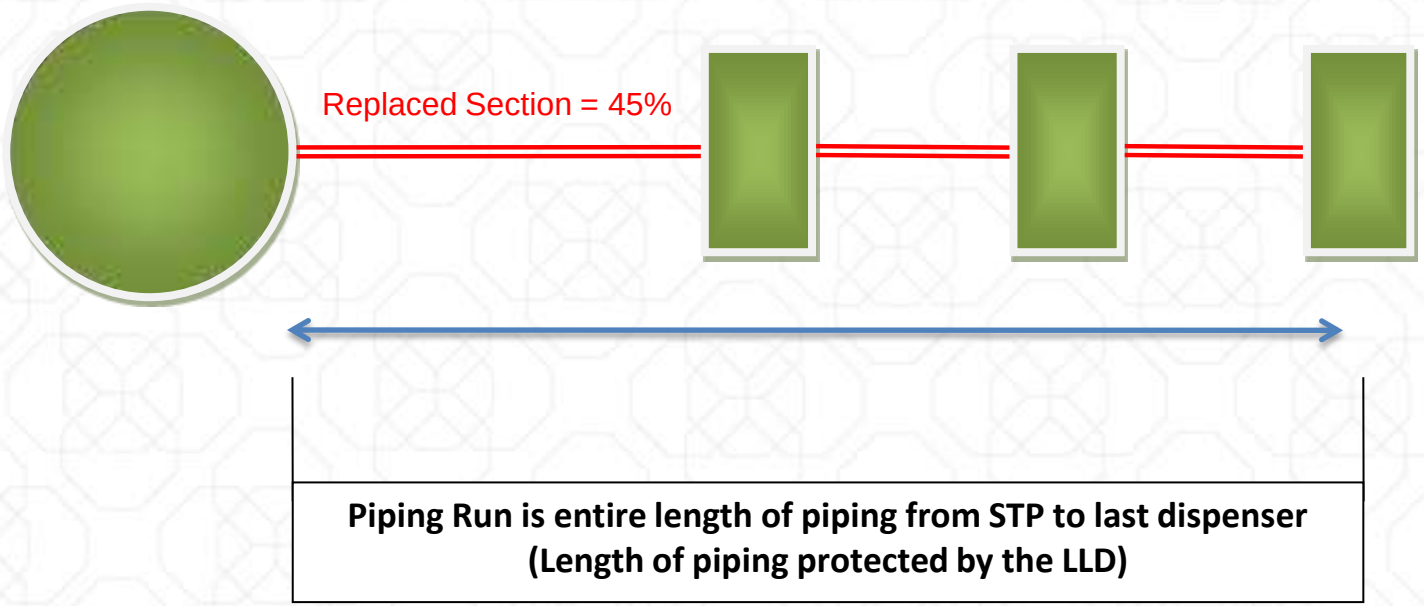
If >25% of a single-walled piping run is replaced, the entire piping run needs secondary containment and interstitial monitoring (LAC 33:XI.507.A.7).

Double-Walled Piping Repair / Replacement



If >25% of a double-walled piping run is replaced, the entire piping run already has secondary containment…

Double-Walled Piping Repair / Replacement



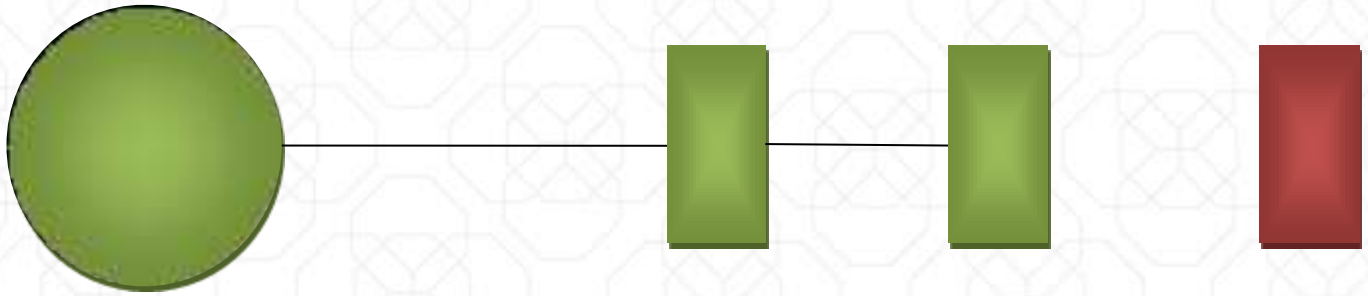
If >25% of a double-walled piping run is replaced, the entire piping run already has secondary containment so the entire run does not need replacement but interstitial monitoring is now required on the entire piping run (LAC 33:XI.507.A.7).

Installing New Dispensers at Existing Facilities

Existing UST

Existing Dispensers

Installing New Dispensers at Existing Facilities

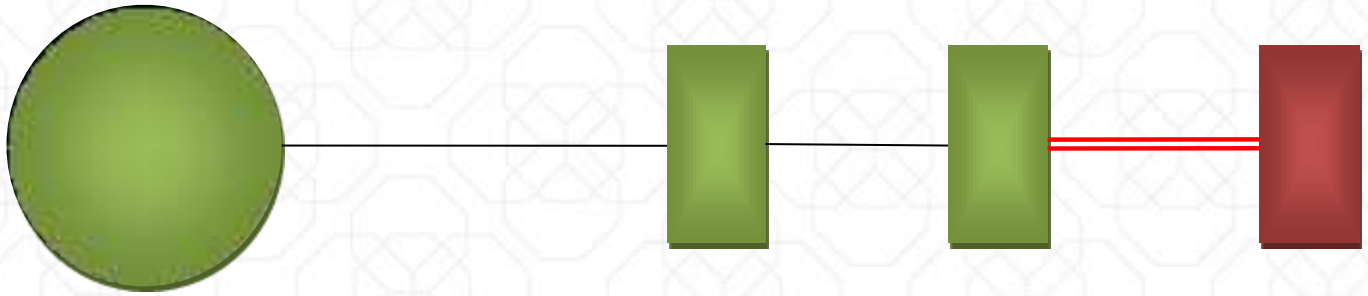


Existing UST

Existing Dispensers

New Dispenser

Installing New Dispensers at Existing Facilities



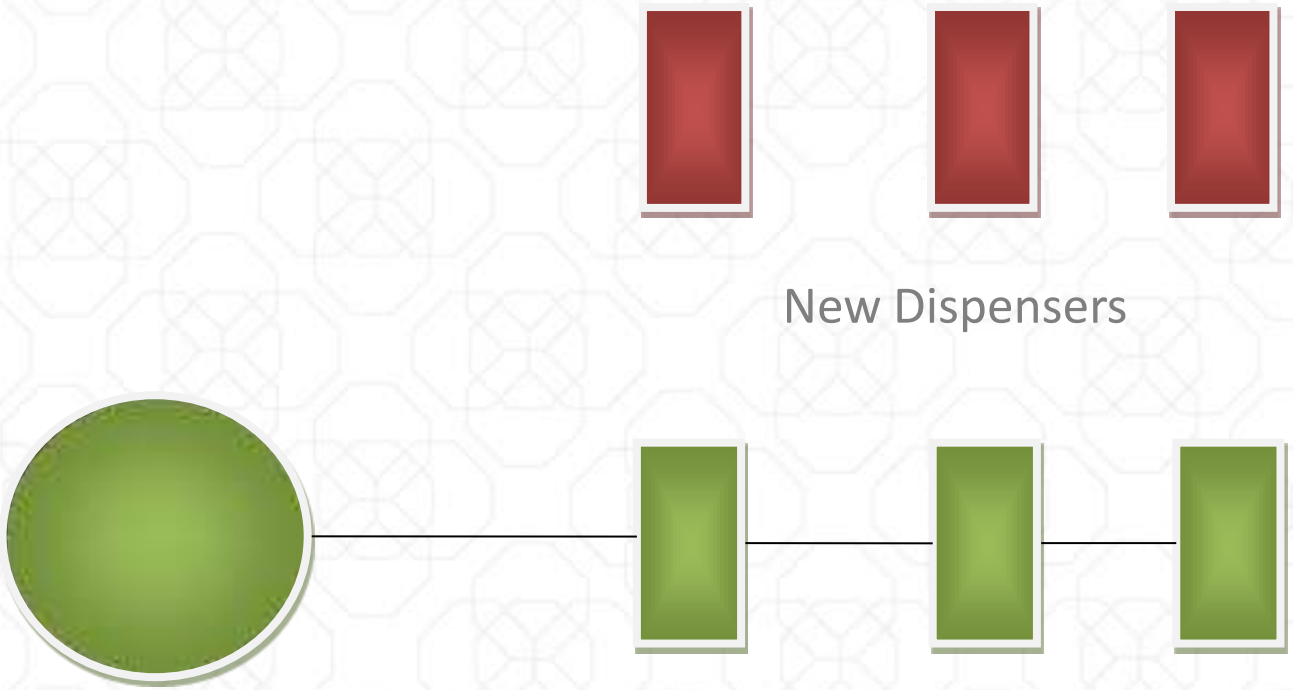
Existing UST

Existing Dispensers

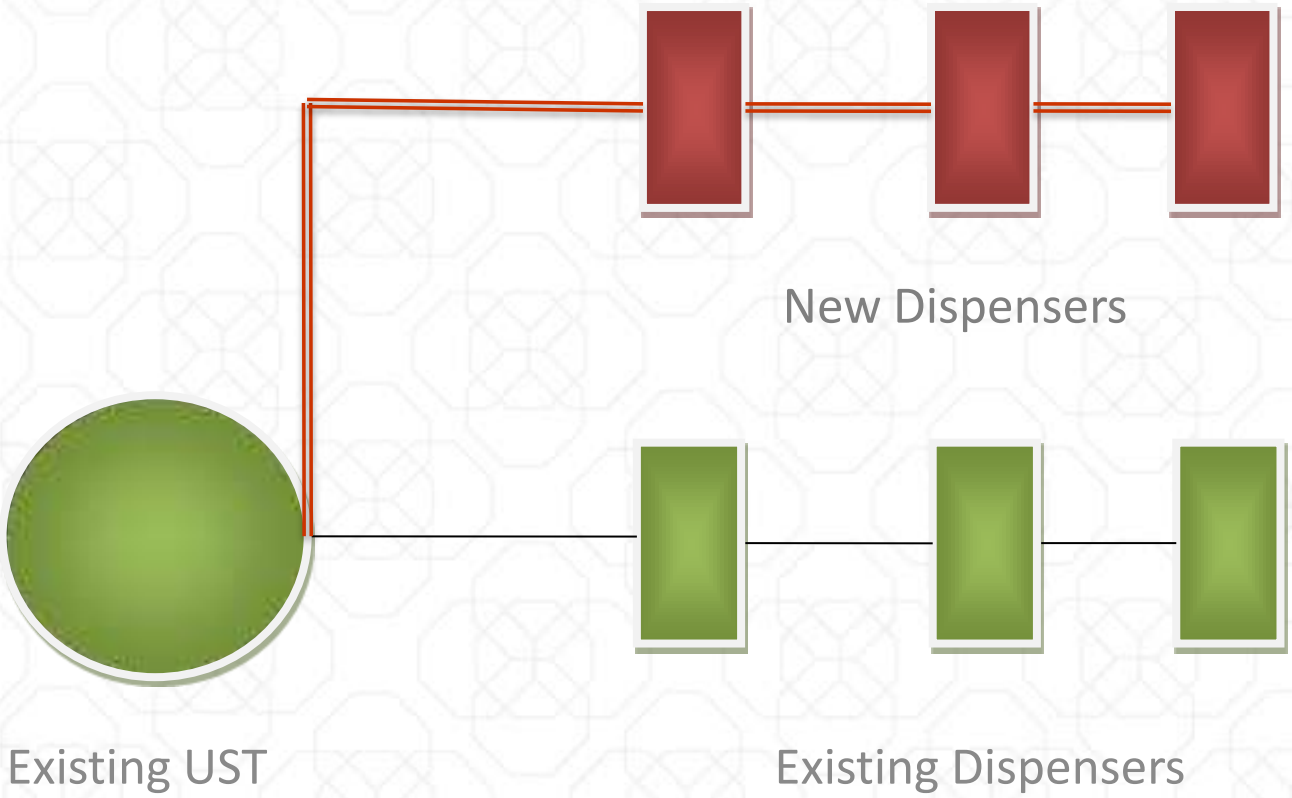
New Dispenser

Only the newly installed piping is required to have secondary containment and interstitial monitoring (LAC 33:XI.303.D.2.g), and the new dispenser must have an under-dispenser containment sump (LAC 33:XI.303.D.4.a.ii).

Installing New Dispensers at Existing Facilities



Installing New Dispensers at Existing Facilities



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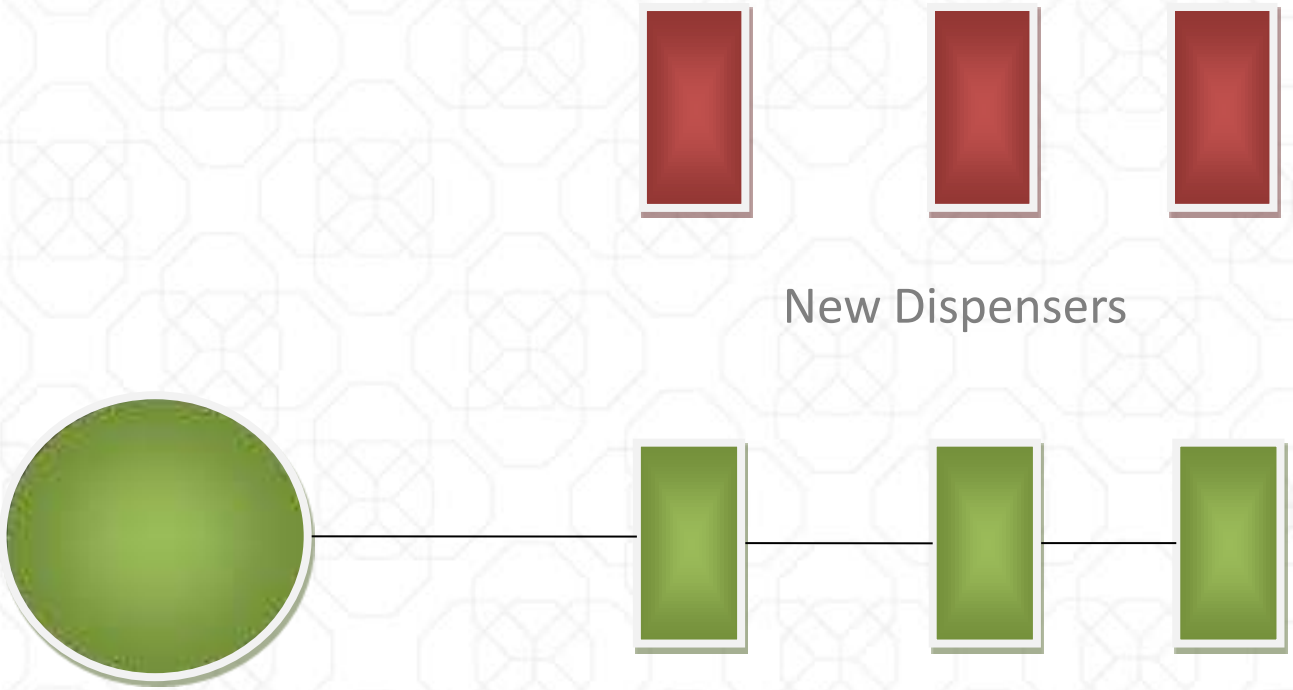
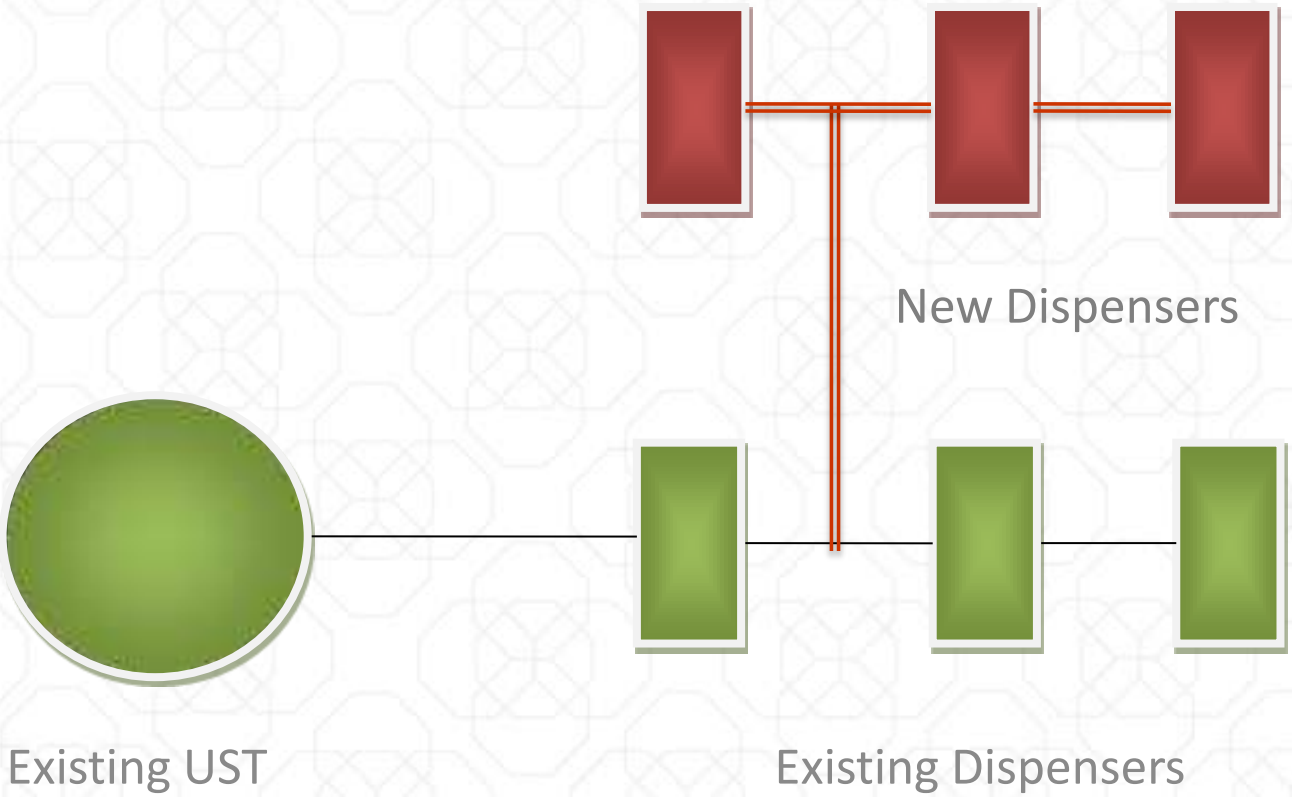


Installing New Dispensers at Existing Facilities



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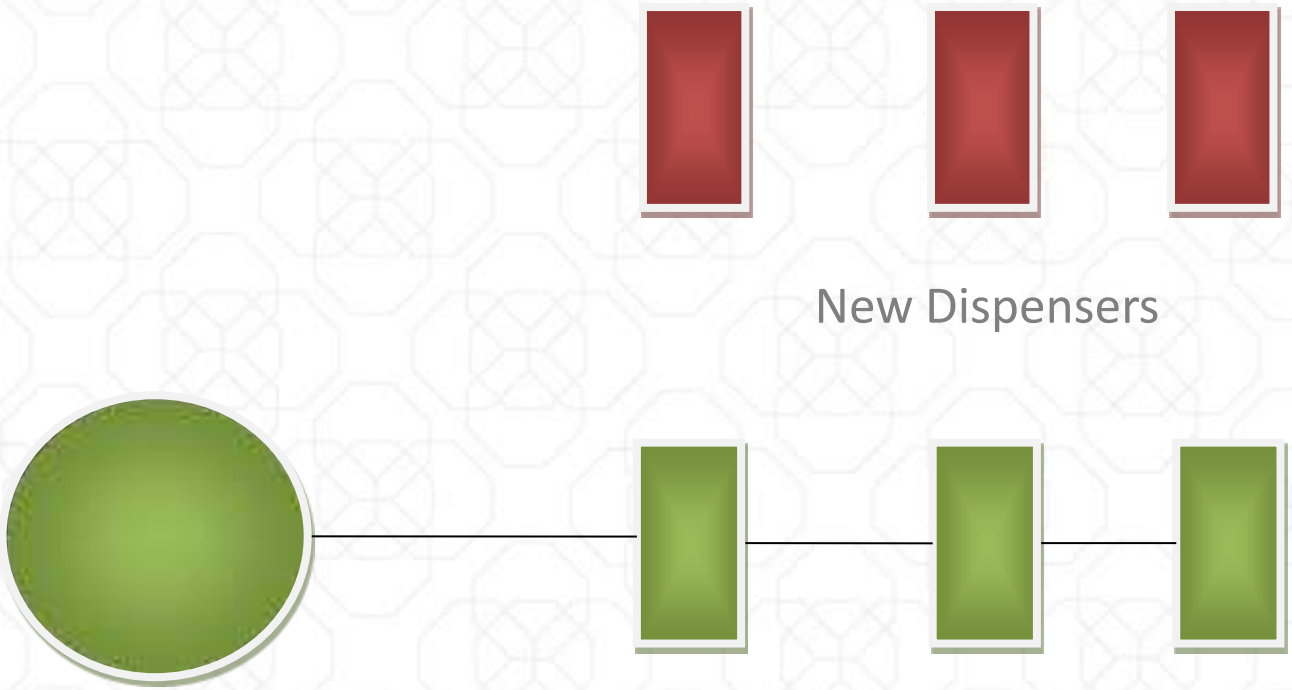
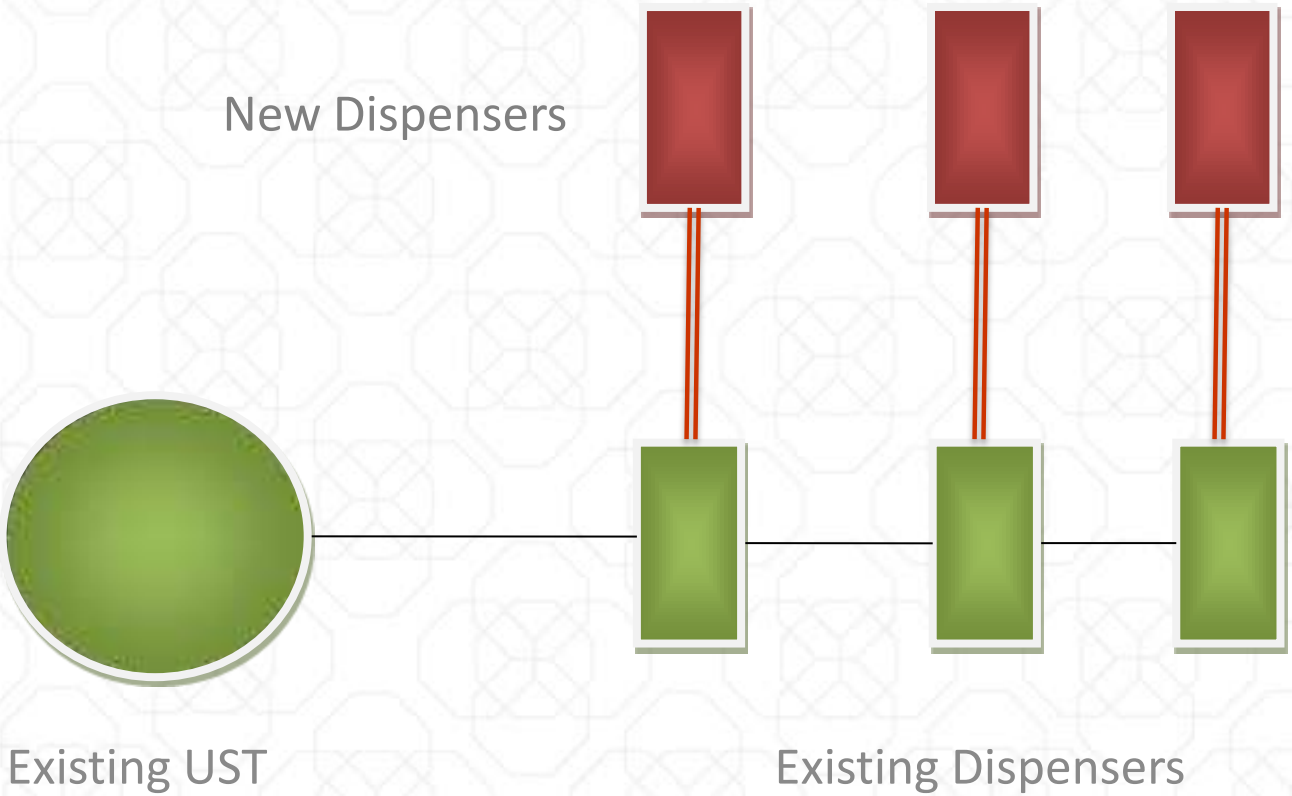
Installing New Dispensers at Existing Facilities



Installing New Dispensers at Existing Facilities



Only the newly installed piping is required to have secondary containment and interstitial monitoring (LAC 33:XI.303.D.2.g), and the new dispensers must have under-dispenser containment sumps (LAC 33:XI.303.D.4.a.ii).

Piping Secondary Containment

- Secondary containment piping must be UL listed for use as secondary containment piping

Piping Secondary Containment

- Secondary containment is not required for:
  - Safe suction system piping and gravity manifold piping (LAC 33:XI.303.D.2.g)
  - Vent, vapor recovery or fill lines

Piping Interstitial Monitoring Requirements (LAC 33:XI.701.B.4)

- Continuous Monitoring (sump sensors, vapor monitoring) or
- Manual Monitoring every 30 days
- Recordkeeping is required

03	REG-1 15K STP SUMP	0000	Sensor Normal	10/01/2006 12:27 AM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	10/19/2006 09:57 AM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	10/20/2006 01:47 PM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	10/21/2006 05:27 PM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	11/01/2006 12:27 AM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	11/01/2006 01:32 AM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	11/15/2006 09:37 PM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	11/15/2006 09:42 PM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	12/01/2006 01:27 AM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	12/21/2006 06:22 PM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	12/23/2006 05:52 AM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	12/24/2006 09:32 AM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	12/26/2006 04:07 AM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	12/30/2006 08:42 AM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	01/01/2007 12:27 AM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	01/03/2007 11:22 AM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	01/04/2007 10:57 AM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	01/11/2007 10:57 AM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	01/15/2007 03:17 PM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	01/17/2007 08:22 AM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	01/21/2007 11:27 AM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	01/21/2007 07:32 PM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	01/22/2007 11:22 AM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	01/26/2007 01:07 PM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	01/27/2007 08:42 AM (C
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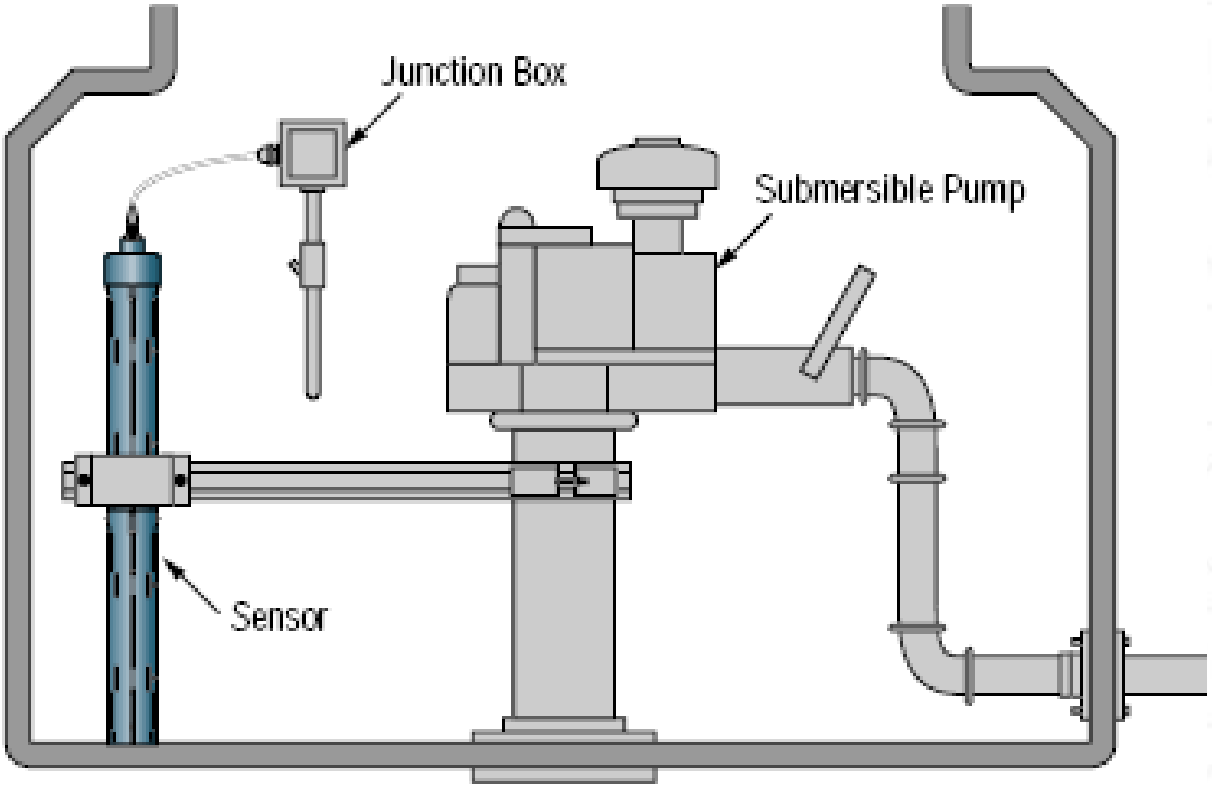
03	REG-1 15K STP SUMP	0000	Sensor Normal	01/30/2007 02:22 PM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	02/01/2007 12:02 AM (C
03	REG-1 15K STP SUMP	0002	Sensor Fuel Alarm	02/01/2007 10:42 AM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	02/01/2007 04:42 PM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	03/01/2007 12:12 AM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	04/01/2007 12:12 AM (C
03	REG-1 15K STP SUMP	0000	Sensor Normal	05/01/2007 12:12 AM (C
04	REG-2 15K STP SUMP	0000	Sensor Normal	05/01/2006 12:02 AM (C

Piping Interstitial Monitoring Requirements (LAC 33:XI.701.B.4)

- Interstitial space and sumps must be free of water and debris that would interfere with leak detection capabilities
  (LAC 33:XI.701.B.4.a)
- 701.B.4.a does not apply to sumps installed <12/20/08 that do not utilize interstitial monitoring

Piping Interstitial Monitoring Sump Sensors



Interstitial Monitoring Sensors

- Follow Manufacturers Requirements
  - Rest in lowest part of sump
  - Positioned as close to outer wall as possible
  - Mounted in true vertical position
  - Do not mount to flexible product line
  - Any calibration / maintenance and diagnostics as determined by the manufacturer
- Follow Third Party Certification

Piping Interstitial Monitoring
Sump Sensors

Piping Interstitial Monitoring Sump Sensors

Piping Interstitial Monitoring Sump Sensors

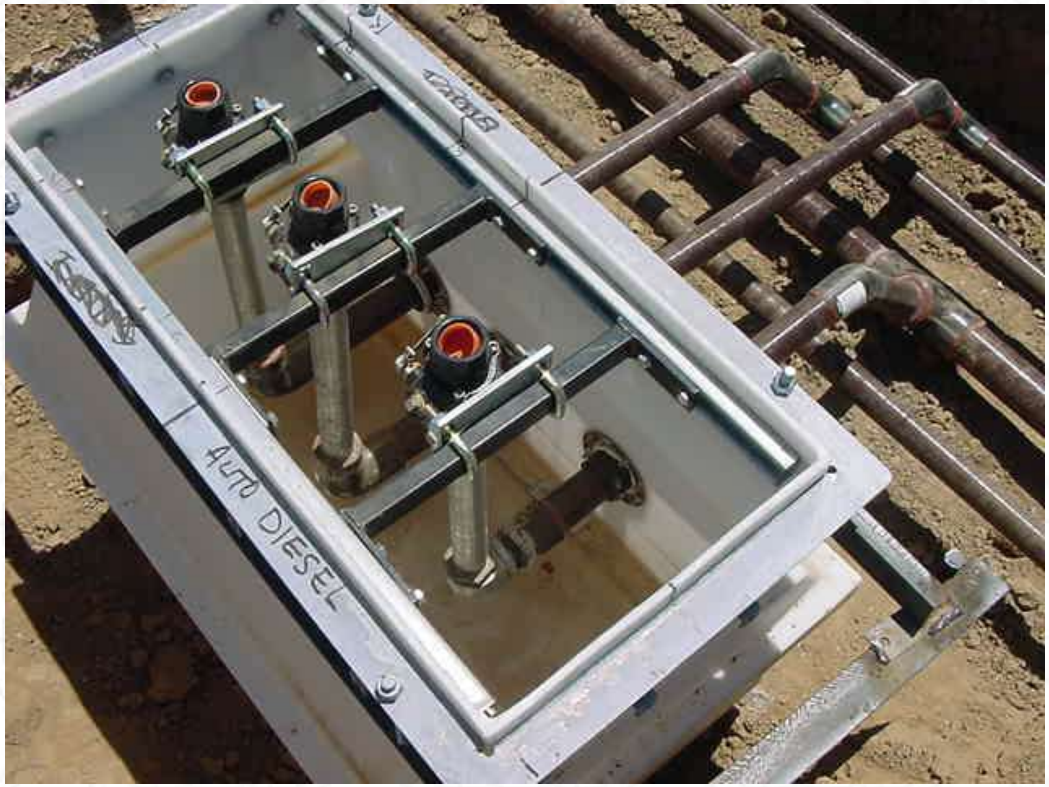
Piping Interstitial Monitoring Sump Sensors

Piping Interstitial Monitoring
Vacuum Monitoring

Piping Interstitial Monitoring Manually Every 30 Days

Under-Dispenser Containment

- Under-Dispenser Secondary Containment (UDC)
- (LAC 33:XI.303.D.4)



Under-Dispenser Containment

- Under-Dispenser Containment is required after 12/20/08 in the following instances:
  - All new dispensers at new installations
    - (LAC 33:XI.303.D.4.a.i)
  - Add new dispenser at existing facility where new piping is added
    - (LAC 33:XI.303.D.4.a.ii)
  - Replacement dispenser at existing facility where connectors are replaced with the dispensers
    - (LAC 33:XI.303.D.4.a.iii)

UDC Sumps required at all new dispensers at new installations

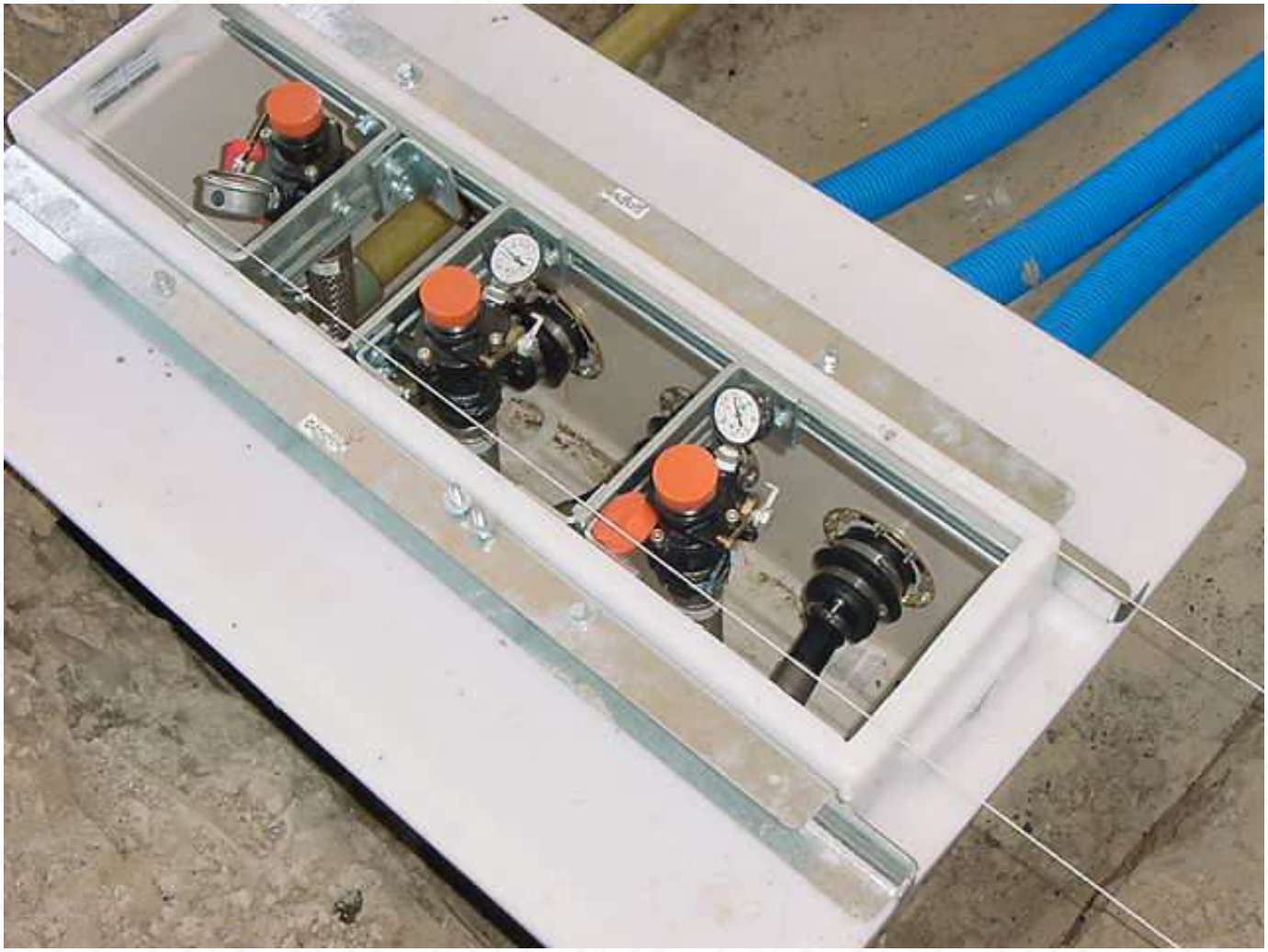
UDC Sumps required when installing new dispensers at existing facilities where new piping is added

UDC Sumps required when replacing dispenser where new piping or components below the shear valve are replaced

Under-Dispenser Containment

- UDC sumps not required if replacing dispenser only (when no piping or flexes are replaced)
  - LAC 33:XI.303.D.4.a.iii
- UDC sumps after 12/20/08 must have liquid-tight sides and bottoms and maintained free of storm water and debris
  - LAC 33:XI.303.D.4.b
- Regulated substances have to be removed as soon as practicable from sumps
  - LAC 33:XI.303.D.4.b

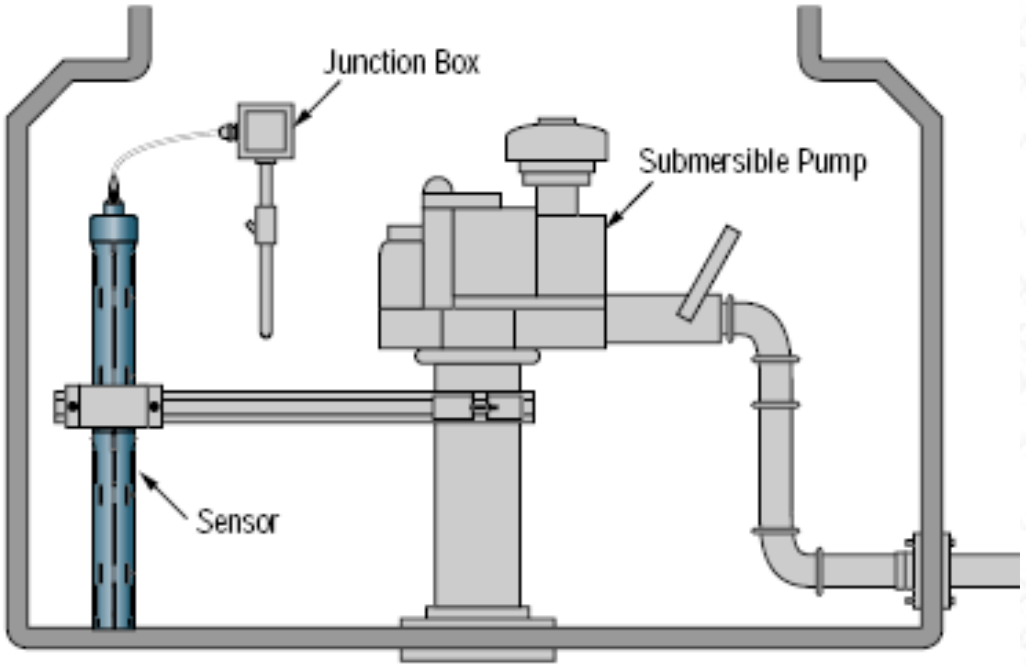
UDC Sumps not required when replacing dispenser only when nothing below the shear valve is replaced

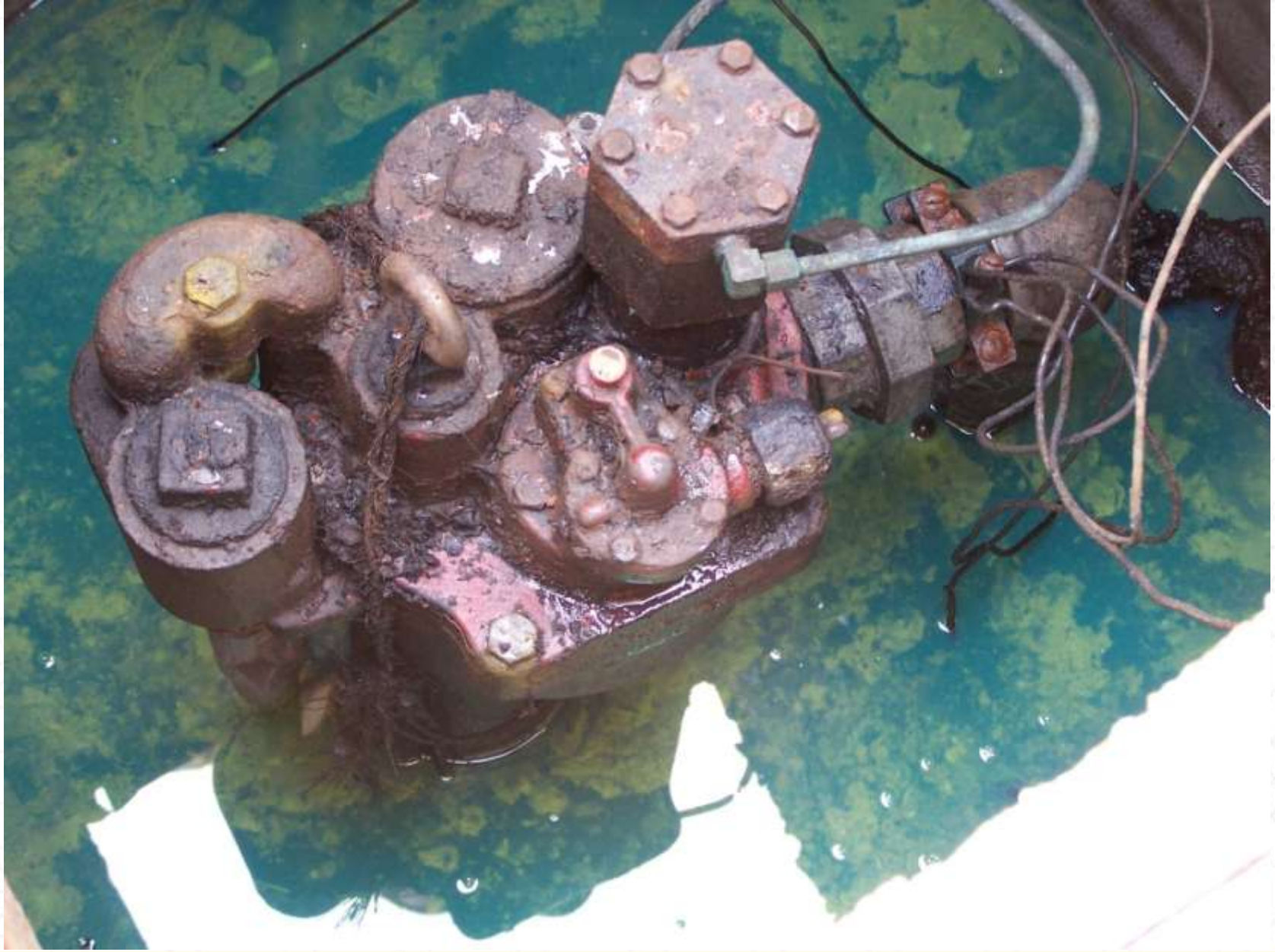


UDC Sumps must have liquid tight sides and bottoms and be maintained free of storm water and debris

STP Secondary Containment

- Submersible Turbine Pump (STP) Secondary Containment
- LAC 33:XI.303.D.5



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STP Secondary Containment

- Submersible Turbine Pump (STP) Secondary Containment is required after 12/20/08 in the following instances:
  - New STP at new facility
    - LAC 33:XI.303.D.5.a.i
  - New STP (entire STP, STP housing, riser pipe) at existing facility where new piping is added
    - LAC 33:XI.303.D.5.a.ii

STP Sumps required at all STPs at new installations

STP Sumps required when installing new STP (STP, housing and riser) at existing facilities where new piping is added

STP Secondary Containment

- Replacement STP (entire STP, STP housing, riser pipe) at existing facility where piping that connects the STP to the existing piping is replaced

  (LAC 33:XI.303.D.5.a.iii)

  - DW flex connector requires no STP containment if STP has built-in containment

- STP Containment can either be a built-in secondary containment system or a STP Sump

STP Sumps required when installing new STP (STP, housing and riser) at existing facilities where piping that connects STP to the existing piping is replaced

STP Sumps required when installing new STP (STP, housing and riser) at existing facilities where piping that connects STP to the existing piping is replaced

Installing built-in secondary containment (DW STP housing and DW flex connector) would not require a containment sump

STP Secondary Containment

- Replacing STP where no piping is replaced does not require STP containment
  - LAC 33:XI.303.D.5.a.iii
- STP containment sumps installed after 12/20/08 must have liquid-tight sides and bottoms and maintained free of storm water and debris
  - LAC 33:XI.303.D.5.b
- Regulated substances must be removed from sumps as soon as practicable
  - LAC 33:XI.303.D.5.b

STP Sumps not required when installing new STP (STP, housing and riser) at existing facilities where no piping is replaced

STP Sumps must have liquid tight sides and bottoms and be maintained free of storm water and debris

STP Sumps must have liquid tight sides and bottoms and be maintained free of storm water and debris

California Secondary Containment System Test Survey

- In 2001 California started requiring testing of secondary containment systems
  - At installation
  - Six months after installation
  - Every 36 months thereafter
- Tested tanks, piping, spill containment sumps, UDC and STP sumps
- 50% of facilities tested had at least one secondary containment component failure

Most Common Failure Point and Reason for Failure

Component (listed below in order of highest to lowest failure rate)	Most Common Failure Point	Second Most Common Failure Point	Most Common Reason	Second Most Common Reason
STP Sump	Penetration/Side Wall Fitting	Electrical Conduit	Improper Installation	Material Degradation
UDC Sump	Penetration/Side Wall Fitting	Electrical Conduit	Improper Installation	Material Degradation
Piping	Termination Point/Boot	Breach in Secondary & Pipe Connection	Improper Installation	Poor Design
Tank	Interstitial Sensor Riser	Tank Top Fitting	Poor Design	Improper Installation
Spill Containment	Drain Valve	Containment Breach	Improper Installation	Material Degradation

California Survey Conclusion

- The use of a secondary containment to reduce the likelihood of a release is extremely dependent on the structural integrity of the secondary containment system
- Secondary containment is viable only when secondary structures are capable of containing releases from the primary system until the time at which the release can be detected and removed

Spill Containment

- Spill buckets
  - Liquid tight sides and bottoms
    - LAC 33:XI.303.D.3.a

Spill Containment

- Spill buckets
  - Free of regulated substances
    - Violation to UST owner and fuel deliverer if >1” product is in spill bucket
    - LAC 33:XI.303.D.3.a

Installation and Repair Notifications

- Installation Notification (LAC 33:XI.303.D.6.c)
  - 30 days prior to installation (UST-ENF-04 form)
  - Notify UST Division Regional Office 7 days prior to each installation-critical juncture
- Repair Notification (LAC 33:XI.507.A.1)
  - 30 days prior to repair except in emergencies
  - Submit the form after the work is completed
- New Revised UST-ENF-04 form on website
- Working on option to e-file UST-ENF-04 form

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