

# New Jersey Containment Sump Testing

New rules and amendments to the Underground Storage Tank (UST) Rule, N.J.A.C. 7:14B, were adopted in the New Jersey Register (50 N.J.R. 409), effective January 16, 2018. The new rule provisions, adopted pursuant to Federal requirements, establish standards for secondary containment and interstitial release detection monitoring of UST systems and expand the maintenance and testing requirements for UST systems.

Pursuant to N.J.A.C. 7:14B-5.11 Integrity testing of containment devices where interstitial monitoring of piping is performed requires that owners and operators performing interstitial monitoring of UST system piping shall prevent releases to the environment by ensuring the integrity of each containment device as follows:

1. Each containment device shall be tested at installation and at least **once every three years**, to ensure the equipment is liquid tight by using a vacuum, pressure, or liquid testing method, in accordance with one of the following:
  - i. Requirements developed by the manufacturer, if any;
  - ii. A code of practice developed by a nationally recognized association or independent testing laboratory, such as Petroleum Equipment Institute Recommended Practice RP1200, “Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection, and Secondary Containment Equipment at UST Facilities” (available at [www.pei.org](http://www.pei.org)); or
  - iii. A method that the owner and operator demonstrates is no less protective of human health and the environment.

## Acceptable Test Methods

The New Jersey Department of Environmental Protection (NJDEP) has developed a low level hydrostatic test method for testing secondary containment devices (aka sumps) as another method which is no less protective than the manufacturer requirements or the method listed in PEI Recommended Practice RP1200 for Containment Sump Integrity Testing. The NJDEP low level test must be conducted in accordance with the criteria and procedures described in this document and performed by a New Jersey certified contractor with either Tank Testing or Installation - Entire certification(s).

As provided in the regulations, NJDEP will accept testing conducted in accordance with PEI’s RP1200 for Containment Sump Integrity Testing or the *New Jersey Containment Sump Testing*, a low level hydrostatic test procedure, to comply with the three-year integrity test rules for piping sumps or under dispenser containment where interstitial monitoring of piping is performed. The certified contractor must use this *New Jersey Containment Sump Testing* guidance and complete a copy of the enclosed 2-page *Testing Form* in order for the low level test method to be accepted for compliance with N.J.A.C. 7:14B-5.11. A copy of all sump tests must be maintained by the UST owner and operator for 5 years from the date of the test.

Any new secondary containment device used for interstitial monitoring shall be tested, using the full integrity test standard, upon installation.

For questions regarding this document or the low level hydrostatic test procedures please call the Bureau of UST Compliance and Enforcement at 609-633-1205.

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The following NJDEP low level hydrostatic test procedure is based on PEI Recommended Practice RP1200-17, Section 6.5 “Containment Sump Integrity Testing.” This recommended practice publication is only available from the Petroleum Equipment Institute, and may be ordered from their website at [www.pei.org/recommended-practices](http://www.pei.org/recommended-practices).

## NJDEP low level hydrostatic test

Conditions necessary in order to use the NJDEP low level hydrostatic test method:

- Only containment sumps with liquid sensors configured to shut down the submersible turbine pump (STP) upon activation of the sensor can qualify for this testing option.
- Sumps must be free of debris and incidental moisture prior to testing.
- Individuals performing this test must be currently certified by the sensor manufacturer in the sensor activation testing procedure, in addition to a NJ certification for tank testing or installation - entire.
- Testing of sensor activation will be according to the sensor manufacturer’s instructions for testing non-discriminating or discriminating sensors.

Any **one** of the following conditions found prior to testing shall disqualify the sump from being tested using this method:

- The sump is found with liquid levels high enough to trigger a properly positioned sensor, whether or not sensor is found in alarm.
- The sump has failed a full hydrostatic test and not been repaired and fully retested.
- The sump is a new installation and has not yet been tested.
- A sensor is found pulled up or otherwise manipulated to prevent activation.
- Visual inspection shall ensure the sump is free of cracks, holes, and compromised boots (PEI Subsection 6.5.5 “Preparation” Paragraph 3). If any of these are present, the sump immediately fails the test (PEI Subsection 6.5.5 “Preparation” Paragraph 6).

## Instructions for the Form

### Site Information

Complete each box with the correct UST facility information. The owner, operator, and the Class A/B operators responsible for the UST facility must be made aware of the testing results.

### Submersible Turbine Pump (STP) Sumps

Each STP sump will be listed here along with the findings of the visual inspection. A sump that is not clean and dry cannot be properly visually inspected. A visual inspection must be performed, with passing results (see fifth condition above), prior to beginning any hydrostatic testing. If a sump is constructed with gaskets between components, and the gaskets are evidently ripped or missing, that would be considered a crack.

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## Dispenser Sumps / Under Dispenser Containment (UDC)

See STP sumps above, the same instructions and conditions apply together with the information below.

Some isolated secondary piping systems close the interstitial space on the pipe(s) leading towards the STP sump, and have a liquid sensor in the dispenser sump performing interstitial monitoring. In addition, secondary piping connecting to more dispensers may be left open to interstitially monitor other sections of piping. Other isolated secondary piping systems use jumper tubes to connect the secondary from the outlet pipe to the inlet pipe, and keeping all the piping secondary isolated from the dispenser sumps.

Open secondary piping systems leave all the secondary piping boots open, allowing any liquid to flow towards a lower sump (usually an STP sump) which has a liquid sensor.

## Common piping groups

The groups list is where the tester identifies which sumps are interconnected by piping, and therefore, which STPs to disable when liquid is detected. When liquid is detected at a sensor it is unknown where the leak is, but must **stop all possible sources**. For example, with multi-product dispensers, there are multiple fuel lines, and the sensor must stop all pumps connected to those lines. Sites which disable all STPs can just enter ALL in the table. This is typical of using the emergency stop circuit.

At a site with open secondary piping systems, the liquid detected at a premium fuel STP sump may be from a leak in the regular fuel piping, so both STPs need to be disabled. They would both be listed in the same group.

## Sensors

Identify the location of each sensor and the findings of the visual inspection before functional testing. Signs of damage or corrosion suggest that the sensor may soon deteriorate into an inoperable state.

Functional testing is conducted by adding water to activate the sensor, triggering an audible alarm and disabling each STP in the group. **Both sensor activation and positive shut down of the pump supplying the product line must be verified.** Document the functional testing results for each sensor by circling Y or N under the 'Audible Alarm' and 'Shutdown all STPs in Group' columns on the table.

Measure and record the water level at the sensor alarm position within the sump, add additional water to at least 4 inches above the sensor activation level, and record the water level at the start and end of 1 hour.

Circle a 'pass' or 'fail' result for each sensor based on whether the water level has dropped less than or more than 1/8" (inch) since the start of the test.

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## Test Procedures:

- 1) Place a measuring stick in the sump at the lowest level of the sump (PEI Subsection 6.5.6 “Test Procedure” Paragraph 2).
- 2) Add water to the sump until the liquid sensor is activated and shuts off the submersible pump.  
NOTE: If the sensor does not alarm prior to the water level reaching the lowest entry boot then the sensor is not functional. Refer to the REPAIRS section below.
- 3) Add additional water to at least 4 inches above the sensor activation level.
- 4) A sensor may be removed during the one-hour hydrostatic containment test, to allow for testing of other sumps and sensors.
- 5) Due to the potential for sump deflection, wait 5 minutes before beginning the test. Document the water level above the bottom of the sump and the test start time on the NJDEP testing form.
- 6) Avoid disturbing the water in the sump during the test (PEI Subsection 6.5.6 “Test Procedure” Paragraph 3).
- 7) After completion of the one-hour test, document the test end time and the water level above the bottom of the sump on the NJDEP test form (PEI Subsection 6.5.6 “Test Procedure” Paragraph 4).

## AFTER COMPLETION OF THE TEST, PROCEED AS FOLLOWS:

- 8) Document any drop in water level, accurate to 1/16<sup>th</sup> of an inch, on the NJDEP test form (PEI Subsection 6.5.6 “Test Procedure” Paragraph 2).
- 9) Indicate passing or failing results on the NJDEP test form (PEI Subsection 6.5.7 “Pass/Fail Criteria”):
  - Pass** - level drops less than 1/8<sup>th</sup> inch
  - Fail** - level drops 1/8<sup>th</sup> inch or more
- 10) Remove the measuring stick from the sump.
- 11) Remove water from the sump, wipe it clean and dry. Properly reposition the sensor if needed. Remove or open any test boots that would prevent flow of liquid from the piping interstitial space into the sump. Put the sump lid, cover, and/or manhole cover back in place (PEI Subsection 6.5.6 “Test Procedure” Paragraph 5).

## REPAIRS

- If equipment repairs are performed prior to or during the testing procedures, document the repairs at the bottom of the NJDEP test form.
- Repairs to containment sumps which failed testing, or for other deficient equipment, must be made within 30 days from the date of the testing/servicing. If additional time is needed, the owner/operator may, with Department approval, enter into a contract with a NJ certified installation contractor to complete the repairs within 6 months.
- Repaired secondary containment areas require testing within 30 days following the completion of the repair.

# New Jersey Containment Sump Testing Form

## Site Information

Facility Name:	Owner:
Address:	Operator:
City:	A/B Operator:
UST#	Date:

## Submersible Turbine Pump (STP) Sumps

Number	Product	Sump condition				Sump Walls		Entry boots		
		Clean/Dry/Water/Fuel				Good/Cracked		Good/Cracked/Missing		
STP1		C	D	W	F	G	C	G	C	M
STP2		C	D	W	F	G	C	G	C	M
STP3		C	D	W	F	G	C	G	C	M
STP4		C	D	W	F	G	C	G	C	M
STP5		C	D	W	F	G	C	G	C	M
STP6		C	D	W	F	G	C	G	C	M
STP7		C	D	W	F	G	C	G	C	M
STP8		C	D	W	F	G	C	G	C	M

## Dispenser Sumps / UDC

Other types of sumps (transition sumps, valve sumps) can be listed here too.

Number	Fuel point IDs	Fuel Products	Condition				Walls		Entry boots			Secondary	
									Good/Cracked/Missing			Isolated/Open	
Disp1			C	D	W	F	G	C	G	C	M	I	O
Disp2			C	D	W	F	G	C	G	C	M	I	O
Disp3			C	D	W	F	G	C	G	C	M	I	O
Disp4			C	D	W	F	G	C	G	C	M	I	O
Disp5			C	D	W	F	G	C	G	C	M	I	O
Disp6			C	D	W	F	G	C	G	C	M	I	O
Disp7			C	D	W	F	G	C	G	C	M	I	O
Disp8			C	D	W	F	G	C	G	C	M	I	O
Disp9			C	D	W	F	G	C	G	C	M	I	O
Disp10			C	D	W	F	G	C	G	C	M	I	O
Disp11			C	D	W	F	G	C	G	C	M	I	O
Disp12			C	D	W	F	G	C	G	C	M	I	O
Disp13			C	D	W	F	G	C	G	C	M	I	O
Disp14			C	D	W	F	G	C	G	C	M	I	O
Disp15			C	D	W	F	G	C	G	C	M	I	O
Disp16			C	D	W	F	G	C	G	C	M	I	O

## Common Piping Groups

Number	STPs	Dispensers	Sensors
Group1			
Group2			
Group3			
Group4			

# New Jersey Containment Sump Testing Form

## Sensors

Sensor Number	Location (STP# or Disp#)	Visual Condition Of Sensor			Audible Alarm		Shutdown all STPs in group		Hydrostatic Containment Test - water level must be at least 4 inches above sensor threshold - 1 hour test, minimum					
		Good	Damaged	Corroded	Yes	No	YES	NO	Start Time	Start Water Level	End Time	End Water Level	Pass<1/8" Fail >1/8"	
													PASS	FAIL
Sensor1		G	D	C	Y	N	Y	N					P	F
Sensor2		G	D	C	Y	N	Y	N					P	F
Sensor3		G	D	C	Y	N	Y	N					P	F
Sensor4		G	D	C	Y	N	Y	N					P	F
Sensor5		G	D	C	Y	N	Y	N					P	F
Sensor6		G	D	C	Y	N	Y	N					P	F
Sensor7		G	D	C	Y	N	Y	N					P	F
Sensor8		G	D	C	Y	N	Y	N					P	F
Sensor9		G	D	C	Y	N	Y	N					P	F
Sensor10		G	D	C	Y	N	Y	N					P	F
Sensor11		G	D	C	Y	N	Y	N					P	F
Sensor12		G	D	C	Y	N	Y	N					P	F
Sensor13		G	D	C	Y	N	Y	N					P	F
Sensor14		G	D	C	Y	N	Y	N					P	F
Sensor15		G	D	C	Y	N	Y	N					P	F
Sensor16		G	D	C	Y	N	Y	N					P	F

## Comments


**Certification: I certify that the equipment identified in this document was inspected/serviced in accordance with the manufacturers' guidelines. Attached to this report form is information (e.g. manufacturers' checklists) necessary to verify that this information is correct and a site plan showing the layout of monitoring equipment. For any equipment capable of generating such reports, I have also attached a copy of the report (*check all that apply*):**

System set-up  Alarm history report

Technician Name (print): \_\_\_\_\_ Signature: \_\_\_\_\_

Firm Certification No.: \_\_\_\_\_ Tech. License. No.: \_\_\_\_\_

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

Company Address: \_\_\_\_\_

Date of Testing/Servicing: \_\_\_\_ / \_\_\_\_ / \_\_\_\_\_