

TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 5 PETROLEUM STORAGE TANKS
PART 108 RELEASE DETECTION FOR UNDERGROUND STORAGE TANK SYSTEMS

20.5.108.1 ISSUING AGENCY: New Mexico Environmental Improvement Board.
[20.5.108.1 NMAC - N, 07/24/2018]

20.5.108.2 SCOPE: This part applies to owners and operators of underground storage tanks as provided in 20.5.101 NMAC. If the owner and operator of a storage tank are separate persons, only one person is required to comply with the requirements of this part, including any notice and reporting requirements; however, both parties are liable in the event of noncompliance.
[20.5.108.2 NMAC - N, 07/24/2018]

20.5.108.3 STATUTORY AUTHORITY: This part is promulgated pursuant to the provisions of the Hazardous Waste Act, Sections 74-4-1 through 74-4-14 NMSA 1978; and the general provisions of the Environmental Improvement Act, Sections 74-1-1 through 74-1-17 NMSA 1978.
[20.5.108.3 NMAC - N, 07/24/2018]

20.5.108.4 DURATION: Permanent.
[20.5.108.4 NMAC - N, 07/24/2018]

20.5.108.5 EFFECTIVE DATE: July 24, 2018, unless a later date is indicated in the bracketed history note at the end of a section.
[20.5.108.5 NMAC - N, 07/24/2018]

20.5.108.6 OBJECTIVE: The purpose of 20.5.108 NMAC is to ensure that releases from underground storage tanks are detected early to minimize potential harmful resulting effects, and to regulate underground storage tank systems in order to protect the public health, safety and welfare and the environment of the state.
[20.5.108.6 NMAC - N, 07/24/2018]

20.5.108.7 DEFINITIONS: The definitions in 20.5.101 NMAC apply to this part.
[20.5.108.7 NMAC - N, 07/24/2018]

20.5.108.8 to 20.5.108.799 [RESERVED]

20.5.108.800 GENERAL RELEASE DETECTION REQUIREMENTS FOR UST SYSTEMS: Owners and operators of all UST systems shall comply with the following:

- A.** Owners and operators of UST systems shall provide a method or combination of methods of release detection that:
- (1) can detect a release from any portion of the tank, connected piping and ancillary equipment that routinely contains a regulated substance;
 - (2) is installed and calibrated in accordance with the manufacturer's instructions;
 - (3) is operated and maintained in accordance with one of the following, beginning on the effective date of these regulations:
 - (a) manufacturer's instructions;
 - (b) the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department; or
 - (c) requirements determined by the implementing agency to be no less protective of human health and the environment than Paragraph (1) and (2) of this subsection.
 - (4) has electronic and mechanical components that are tested to ensure proper operation;
 - (5) with the exceptions of inventory control in 20.5.108.802 NMAC and manual tank gauging in 20.5.108.803 NMAC, meets the performance requirements in 20.5.108 NMAC in accordance with a third party certified method as listed by the national work group on leak detection evaluations; and
 - (6) is capable of detecting the leak rate or quantity specified for that method in 20.5.108 NMAC with a probability of detection of 0.95 and a probability of false alarm of 0.05.

B. Owners and operators shall maintain written confirmations of performance claims and their method of determination. These statements shall be written by the equipment manufacturer or installer and shall confirm that the equipment meets the applicable requirements of 20.5.108 NMAC.

C. Prior to implementing a new method or combination of methods of release detection, owners and operators shall have the UST system components tested to ensure the new method is capable of detecting a release.

D. When a release detection method indicates a release may have occurred, owners and operators shall notify the department in accordance with 20.5.102.204 and 20.5.118 NMAC.

E. Owners and operators of underground storage tank systems installed prior to April 4, 2008 that meet the performance standards in 20.5.106 NMAC shall provide release detection for storage tank systems by monitoring monthly for releases using one of the methods listed in Sections 20.5.108.805 NMAC through 20.5.108.809 NMAC with the following exceptions:

(1) Monthly inventory control may be used in accordance with the requirements in 20.5.108 NMAC, in conjunction with tank tightness testing conducted in accordance with this part at least every five years until 10 years after the tank was installed.

(2) UST systems that do not meet the performance standards in 20.5.106 NMAC shall upgrade under 20.5.106 NMAC or permanently close under 20.5.115 NMAC.

(3) Manual tank gauging may be used if conducted in accordance with 20.5.108.803 NMAC.

(4) Underground pressurized piping that was installed prior to April 4, 2008 may use annual line tightness testing in conjunction with automatic line leak detectors in accordance with 20.5.108.810 NMAC, and

(5) Underground suction piping that was installed prior to April 4, 2008 may use line tightness testing every three years in accordance with 20.5.108.812 NMAC.

F. Owners and operators of UST systems installed or replaced after April 4, 2008 shall monitor the UST system monthly for releases using interstitial monitoring in accordance with 20.5.108.808 NMAC and either 20.5.108.811 or 20.5.108.813 NMAC.

G. Owners and operators shall ensure that any person who performs a test on their UST system in order to meet the requirements of 20.5.108 NMAC shall comply with the requirements in 20.5.105 NMAC.

H. Owners and operators shall ensure that equipment used to perform a test on their storage tank system is calibrated and maintained according to the manufacturer's requirements.

I. Owners and operators of UST systems shall maintain and provide to the department all reports required in 20.5.108 NMAC in accordance with 20.5.108.815 NMAC and 20.5.108.816 NMAC.

[20.5.108.800 NMAC - N, 07/24/2018]

20.5.108.801 REQUIREMENTS FOR HAZARDOUS SUBSTANCE UST SYSTEMS:

A. Owners and operators of hazardous substance UST systems installed before April 4, 2008 shall provide containment that meets the requirements in Subsection C of 20.5.108.801 NMAC, and these UST systems shall be monitored every 30 days using one or more of the UST methods allowed in 20.5.108 NMAC. Owners and operators may request to use an alternate method in accordance with the requirements of 20.5.108.814 NMAC and shall provide the department with information in writing on effective corrective action technologies, health risks, and chemical and physical properties of the stored substance along with the characteristics of the UST site.

B. Owners and operators of hazardous substance UST systems installed on or after April 4, 2008 shall provide containment that meets the requirements in Subsection C of 20.5.108.801 NMAC, and shall monitor these UST systems at least every 30 days using interstitial monitoring in accordance with 20.5.108.808 NMAC and either 20.5.108.811 NMAC or 20.5.108.813 NMAC.

C. Release detection of hazardous substance UST systems shall meet the following requirements.

(1) Owners and operators shall design, construct and install secondary containment systems to:

(a) contain regulated substances that escape the primary containment until they are detected and removed;

(b) prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

(c) be checked for evidence of a release monthly; the provisions of 40 CFR 265.193, containment and detection of releases, may be used to comply with these requirements for storage tank systems installed on or before the effective date of these regulations.

(2) Double-walled tanks shall be designed, constructed, and installed to:

(a) contain a release from any portion of the inner tank within the outer wall; and

(b) detect the failure of the inner wall.

- (3) External liners (including vaults) shall be designed, constructed and installed to:
- (a) contain one hundred percent of the capacity of the largest tank within its boundary;
 - (b) prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances; and
 - (c) surround the tank completely, thereby preventing lateral as well as vertical migration of regulated substances.
- (4) Underground piping shall be equipped with secondary containment that satisfies the requirements of this section (for example: trench liners or double-walled pipe). In addition, underground piping that conveys regulated substances under pressure shall be equipped with an automatic line leak detector in accordance with Subsection A of 20.5.108.810 NMAC.
[20.5.108.801 NMAC - N, 07/24/2018]

20.5.108.802 INVENTORY CONTROL WITH TANK TIGHTNESS TESTING REQUIREMENTS FOR

USTS: Owners and operators of underground storage tanks installed on or before April 4, 2008 may use inventory control in conjunction with tank tightness testing every five years as release detection for 10 years after the storage tank system is installed. After the 10-year anniversary of the storage tank system installation, owners and operators shall use one of the methods in 20.5.108.805 NMAC through 20.5.108.809 NMAC. Inventory control with tank tightness testing shall meet the following requirements:

- A. Inventory control or another test of equivalent performance shall be conducted monthly to detect a release of at least one percent of flow-through plus 130 gallons on a monthly basis.
- B. Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the UST are recorded each operating day.
- C. The equipment used is capable of measuring the level of regulated substance over the full range of the UST's height to the nearest one-eighth of an inch.
- D. The regulated substance inputs are reconciled with delivery receipts by measurement of the UST inventory volume before and after delivery.
- E. Deliveries are made through a drop tube that extends to within one foot of the UST bottom.
- F. Regulated substance dispensing is metered and recorded within the state standards for meter calibration or an accuracy of six cubic inches for every five gallons of regulated substance withdrawn.
- G. The measurement of any water level in the bottom of the UST is made to the nearest one-eighth of an inch at least once a month.
- H. Practices described in the *American Petroleum Institute Publication RP 1621, "Bulk Liquid Stock Control at Retail Outlets"* may be used, where applicable, as guidance in meeting the requirements of 20.5.108.802 NMAC.
- I. Owners and operators shall meet all the requirements for tank tightness testing in 20.5.108.804 NMAC.
- J. At least annually, owners and operators shall check the operability and serviceability of any measuring device or equipment used for inventory control in accordance with Subsection A of 20.5.108.800 NMAC.
- K. Measurements and results of each monthly monitoring period shall be maintained in accordance with the recordkeeping requirements in 20.5.108.815 NMAC and shall be provided to the department upon request.
[20.5.108.802 NMAC - N, 07/24/2018]

20.5.108.803 MANUAL TANK GAUGING REQUIREMENTS FOR USTS:

- A. Manual tank gauging:
 - (1) may be used as the sole method of release detection for regulated underground tanks of 550 gallons or less nominal capacity and tanks with a nominal capacity of 551 to 1,000 gallons that meet the tank diameter of 48 inches or 64 inches for the life of these tanks;
 - (2) may be used as a method of release detection for regulated underground tanks with a nominal capacity of 551 to 1,000 gallons, with a diameter other than either 48 inches or 64 inches, for 10 years after installation in conjunction with periodic tank tightness testing in accordance with 20.5.108.802 NMAC and 20.5.108.804 NMAC;
 - (3) may be used as a method of release detection for regulated underground tanks with a nominal capacity of 1,001 to 2,000 gallons with any diameter for 10 years after installation in conjunction with periodic tank tightness testing in accordance with 20.5.108.802 NMAC and 20.5.108.804 NMAC;

(4) shall not be used after the 10th year of the installation for tanks described in Paragraphs (2) and (3) of this subsection; after the 10th year, owners and operators shall change to a method described in 20.5.108.805 NMAC through 20.5.108.809 NMAC; and

(5) shall not be used to meet the requirements of this part for tanks of greater than 2,000 gallons nominal capacity.

B. Owners and operators of underground storage tanks who use manual tank gauging as release detection shall ensure the following:

(1) tank liquid level measurements are taken at the beginning and ending of a period of at least 36 hours during which no liquid is added to or removed from the tank;

(2) level measurements are based on an average of two consecutive stick readings at both the beginning and ending of the period;

(3) the equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch;

(4) a suspected release is reported in accordance with the requirements of 20.5.118 NMAC if the variation between beginning and ending measurements exceeds any of the weekly or monthly standards as follows:

(a) underground storage tank with a nominal capacity of 550 gallons or less, with a minimum test duration of 36 hours, where the weekly standard for one test exceeds 10 gallons, or the monthly standard for a four-test average exceeds five gallons;

(b) underground storage tank with a nominal capacity of 551 gallons through 1,000 gallons with a tank diameter of 64 inches and a minimum test duration of 44 hours, where the weekly standard for one test exceeds nine gallons or the monthly standard for a four-test average exceeds four gallons;

(c) underground storage tank with a nominal capacity of 551 gallons through 1,000 gallons with a tank diameter of 48 inches and a minimum test duration of 58 hours, where the weekly standard for one test exceeds 12 gallons or the monthly standard for a four-test average exceeds six gallons;

(d) underground storage tank with a nominal capacity of 551 gallons through 1,000 gallons, with a minimum test duration of 36 hours, where the weekly standard for one test exceeds 13 gallons or the monthly standard for a four-test average exceeds seven gallons;

(e) underground storage tank with a nominal capacity of 1,001 gallons through 2,000 gallons, with a minimum test duration of 36 hours, where the weekly standard for one test exceeds 26 gallons or the monthly standard for a four-test average exceeds 13 gallons.

C. At least annually, owners and operators shall check the operability and serviceability of any measuring device or equipment used for manual tank gauging in accordance with Subsection A of 20.5.108.800 NMAC.

D. Measurements and results of each monthly monitoring period shall be maintained in accordance with the recordkeeping requirements in 20.5.108.815 NMAC and shall be provided to the department upon request. [20.5.108.803 NMAC - N, 07/24/2018]

20.5.108.804 TANK TIGHTNESS TESTING FOR USTS:

A. Tank tightness testing (or another test of equivalent performance) shall be capable of detecting a one-tenth gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table. Owners and operators may not use tank tightness testing alone as a method of release detection.

B. Owners and operators shall ensure any person conducting this testing shall meet the tester requirements in 20.5.105 NMAC.

C. Owners and operators of UST systems shall maintain and provide the department with reports for all tank tightness testing conducted on their storage tank systems in accordance with 20.5.108.815 NMAC and 20.5.8.816 NMAC.

D. An automatic tank gauge system conducting a one-tenth gallon per hour leak test does not meet the requirements for tank tightness testing in this section. [20.5.108.804 NMAC - N, 07/24/2018]

20.5.108.805 AUTOMATIC TANK GAUGING REQUIREMENTS FOR USTS:

A. Owners and operators of underground storage tanks may use automatic tank gauging as a method of release detection if the automatic tank gauging system:

(1) tests for the loss of product and can detect a two-tenths gallon per hour leak rate from any portion of the storage tank system that routinely contains regulated substances;

(2) meets inventory control or another test of equivalent performance requirements in accordance with 20.5.108.802 NMAC; and

(3) tests the storage tank system using one of the following modes:

(a) in-tank static testing conducted at least once every 30 days;

(b) continuous in-tank leak detection operating on an uninterrupted basis to determine the leak status of the tank at least once every 30 days; or

(c) continuous in-tank leak detection operating within a process that allows the system to gather incremental measurements to determine the leak status of the tank at least once every 30 days.

B. Owners and operators shall at least annually test the automatic tank gauging system for proper operation beginning three years after the effective date of these regulations. Inspections and testing shall be conducted by a person who is certified as a technician by the manufacturer of the automatic tank gauging system and meets the tester requirements in 20.5.105 NMAC. The annual tests shall, at a minimum and as applicable, include the following:

(1) automatic tank gauge and other controllers: test alarm; verify system programming and configuration; test battery backup;

(2) probes and sensors: inspect for residual buildup; ensure floats move freely; ensure shaft is not damaged; ensure cables are free of kinks and breaks; test alarm operability and communication with controller; and

(3) vacuum pumps and pressure gauges: ensure proper communication with sensors and controller.

C. Owners and operators shall use one of the following to comply with Paragraph B of this section:

1) *Petroleum Equipment Institute Publication RP 1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"*; or

2) The manufacturer's testing or inspection instructions.

D. Owners and operators shall review the monitoring reports on a monthly basis and notify the department in accordance with 20.105.18 NMAC if there is a failed or inconclusive result.

E. Owners and operators shall maintain records for all inspections and testing required in this section in accordance with 20.5.108.815 NMAC. Owners and operators shall provide the department with a report of each annual test of the automatic tank gauge system in accordance with 20.5.108.816 NMAC.

F. A one tenth gallon per hour leak test conducted by an automatic tank gauge system does not meet the requirements for tank tightness testing in 20.5.108.804 NMAC.
[20.5.108.805 NMAC - N, 07/24/2018]

20.5.108.806 VAPOR MONITORING REQUIREMENTS FOR USTS: Owners and operators of underground storage tanks may use vapor monitoring or testing as a method of release detection as long as the testing or monitoring for vapors within the soil gas of the excavation zone meets all of the following requirements:

A. The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area.

B. The stored regulated substance, or a tracer compound placed in the UST system, is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the UST.

C. The measurement of vapors by the monitoring device is not rendered inoperative by groundwater, rainfall, soil moisture or other known interferences so that a release could go undetected for more than 30 days.

D. The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the UST, and

E. The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the UST system, a component or components of that substance, or a tracer compound placed in the UST system.

F. In the UST excavation zone, the site is assessed:

(1) to ensure compliance with the requirements in Subsections A through D of this section; and

(2) to establish the number and positioning of monitoring wells that will detect releases within the excavation zone from any portion of the tank that routinely contains a regulated substance.

G. Site assessments conducted after the effective date of these regulations are signed by a professional engineer or professional geologist, or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the department and approved in advance by the department.

H. Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

I. Hand-held electronic sampling equipment that is used for vapor monitoring is:

- (1) annually checked to ensure that the equipment is functioning properly; and
- (2) calibrated prior to each sampling event in accordance with the manufacturer's

instructions.

J. All records of the site assessment and vapor monitoring system are maintained in accordance with 20.5.108.815 NMAC, and

K. Monthly reports of vapor monitoring and annual reports of functionality checks of electronic sampling equipment are maintained and provided to the department in accordance with 20.5.108.815 NMAC and 20.5.108.816 NMAC.

[20.5.108.806 NMAC - N, 07/24/2018]

20.5.108.807 GROUNDWATER MONITORING REQUIREMENTS FOR USTS: Owners and operators of underground storage tanks may use groundwater monitoring as a method of release detection as long as the testing or monitoring for liquids on the groundwater meets all of the following requirements:

A. The regulated substance stored is immiscible in water and has a specific gravity of less than one.

B. Groundwater is never more than 20 feet from the ground surface and the hydraulic conductivity of the soil between the UST system and the monitoring wells or devices is not less than one one-hundredth centimeters per second (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials).

C. The slotted portion of the monitoring well casing shall be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions.

D. Monitoring wells shall be sealed from the ground surface to the top of the filter pack.

E. Monitoring wells or devices intercept the excavation zone or are as close to it as is technically feasible.

F. The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth of an inch of non-aqueous phase liquid on top of the groundwater in the monitoring wells.

G. Within and immediately below the UST system excavation zone, the site is assessed to:

- (1) ensure compliance with the requirements in Subsections A through E of this section; and
- (2) establish the number and positioning of monitoring wells or devices that will detect

releases from any portion of the tank that routinely contains product.

H. Site assessments conducted after the effective date of these regulations are signed by a qualified professional engineer or professional geologist, or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the department and approved in advance by the department.

I. Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering.

J. Owners and operators shall ensure that hand-held electronic and field equipment that is used for groundwater monitoring is:

- (1) annually checked to ensure that the equipment is functioning properly; and
- (2) calibrated prior to each sampling event in accordance with the manufacturer's

instructions.

K. All records of the site assessment and groundwater monitoring system are maintained in accordance with 20.5.108.815 NMAC.

L. Monthly reports of groundwater monitoring and annual reports of functionality checks of electronic sampling equipment are maintained and provided to the department in accordance with 20.5.108.815 NMAC and 20.5.108.816 NMAC.

[20.5.108.807 NMAC - N, 07/24/2018]

20.5.108.808 INTERSTITIAL MONITORING REQUIREMENTS FOR USTS:

A. Owners and operators of underground storage tanks may use interstitial monitoring between the UST and a secondary barrier immediately around and underneath the tank, but only if the system is designed,

constructed and installed to detect a leak from any portion of the storage tank system that routinely contains any regulated substance and also meets one of the following requirements:

(1) For double-walled UST systems, the sampling or testing method can detect a release through the inner wall in any portion of the tank that routinely contains a regulated substance, and the sampling or testing method complies with the requirements of the current edition of an industry code or standard approved in advance by the department; *Steel Tank Institute Standard F841, "Standard for Dual Wall Underground Storage Tanks"* may be used to meet this requirement.

(2) For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a release between the UST system and the secondary barrier; the monitoring system shall meet all of the following requirements:

(a) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least one X 10(-6)) centimeters per second for the regulated substance stored) to direct a release to the monitoring point and permit its detection.

(b) The barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected.

(c) For cathodically protected USTs, the secondary barrier shall be installed so that it does not interfere with the proper operation of the cathodic protection system.

(d) The groundwater, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than thirty days.

(e) The site is assessed to ensure that the secondary barrier is always above the groundwater and not in a 25-year flood plain, unless the barrier and monitoring designs are for use under such conditions.

(f) Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering, or

(3) For USTs with an internally fitted liner, an automated device can detect a release between the inner wall of the UST and the liner, and the liner is compatible with the regulated substance stored.

B. For all interstitially monitored USTs, owners and operators shall have all sensors tested by a qualified tester at least annually to ensure proper operation and functionality, including for alarm operability and communication with controller or monitoring equipment, and sensors shall be verified as set to the proper height, placement, and location in accordance with Subsection A of 20.5.108.800 NMAC and 20.5.107 NMAC. At a minimum, these tests shall follow either:

(1) liquid sensor functionality testing procedures described in *Petroleum Equipment Institute Publication RP 1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"*; or

(2) the equipment manufacturer's published testing procedures.

C. Owners and operators shall ensure the requirements in 20.5.108.800 NMAC are met prior to implementing interstitial monitoring.

D. Owners and operators shall maintain and provide the department reports relating to the requirements of this section in accordance with 20.5.108.815 NMAC and 20.5.108.816 NMAC.

[20.5.108.808 NMAC - N, 07/24/2018]

20.5.108.809 STATISTICAL INVENTORY RECONCILIATION (SIR) FOR UST SYSTEMS:

A. Owners and operators of underground storage tanks may use release detection methods based on the application of statistical principles to inventory data similar to those described in 20.5.108.802 NMAC. Owners and operators who use SIR shall:

(1) comply with the requirements in Subsections B through G of 20.5.108.802 NMAC;

(2) use a third-party certified quantitative method;

(3) use a third-party vendor to analyze the data and include the name of the SIR provider and the name and version of the SIR method used for analysis;

(4) use a method that is capable of detecting a leak rate of two-tenths gallon per hour or a release of 150 gallons within 30 days;

(5) use a method with a threshold that does not exceed one-half the minimum detectible leak rate; and

(6) use a method that reports a quantitative result with a calculated leak rate.

B. Owners and operators shall ensure that the data is collected, analyzed, and reported within the same 30-day period in order to check for releases at least monthly.

- C. Owners and operators shall:
- (1) notify the department within 24 hours of discovery of an inconclusive or fail result;
 - (2) provide the department all data collected for the statistical analysis where the results are either inconclusive or fail and identify any further investigation necessary to determine whether there is a suspected release as part of the seven-day report required in 20.5.118 NMAC;
 - (3) perform an investigation within 14 days of receiving an inconclusive result, or another time frame approved in advance by the department to determine whether a suspected release should be investigated under 20.5.118 NMAC; and
 - (4) report a suspected release to the department within 24 hours in accordance with 20.5.118 NMAC if the investigation indicates a fail result.
- D. Owners and operators shall inspect all mechanical equipment and test all electronic equipment annually to ensure proper operation and calibration.
- E. Qualitative SIR methods are no longer accepted as meeting the requirements for monthly monitoring.
- F. Owners and operators shall maintain results and records of monthly monitoring in accordance with 20.5.108.815 NMAC and 20.5.108.816 NMAC, and shall provide them to the department upon request.
[20.5.108.809 NMAC - N, 07/24/2018]

20.5.108.810 REQUIREMENTS FOR UST UNDERGROUND PRESSURIZED PIPING INSTALLED PRIOR TO APRIL 4, 2008: Owners and operators of underground storage tank systems with piping installed prior to April 4, 2008, except those used for emergency power generation, shall provide release detection for underground pressurized piping that routinely contains regulated substances by following the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department.

- A. Owners and operators of UST systems shall:
- (1) use automatic line leak detectors (including mechanical or electronic detectors) that alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping when a leak is detected at three gallons per hour at 10 pounds per square inch line pressure within one hour;
 - (2) perform an annual test of the operation of the leak detector which includes a simulated leak, is conducted in accordance with the manufacturer's testing protocol, and confirms the automatic line leak detector detects a leak at three gallons per hour at 10 pounds per square inch line pressure within one hour; and
 - (3) use a method, or combination of methods, for monitoring the piping for releases that complies with one of the following:
 - (a) A precision line tightness test is conducted every 12 months that is capable of detecting a leak of 0.1 gallons per hour at one and one-half times the operating pressure.
 - (b) The method is capable of detecting a two-tenths gallon per hour leak and is used every 30 days.
 - (c) One of the methods in 20.5.108.805 NMAC through 20.5.108.809 NMAC is used, if it is capable of detecting a release from any portion of the underground piping that routinely contains a regulated substance.
 - (d) Interstitial monitoring is used in accordance with all of the requirements in 20.5.108.808 NMAC and 20.5.108.811 NMAC.
- B. Owners and operators who use statistical inventory reconciliation for monthly monitoring of underground pressurized piping shall conduct annual line tightness testing in accordance with Subparagraph (a) of Paragraph (3) of Subsection A of 20.5.108.810 NMAC.
- C. Automatic line leak detectors and sensors required in this section that either fail a test or are found to be damaged shall be repaired or replaced and tested in accordance with 20.5.108.800 NMAC and Paragraph (1) of Subsection A of 20.5.108.810 NMAC. A line tightness test shall be conducted in accordance with Subsection A of this section after an automatic line leak detector has been replaced.
- D. Equipment and methods used to monitor the piping shall be appropriate for the type and length of piping.
- E. Owners and operators shall use one or more of the following to comply with the requirements of this section:
- (1) *Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"*; or

(2) *American Petroleum Institute Publication RP 1615, "Installation of Underground Petroleum Storage Systems"*.

F. Owners and operators shall maintain all records of release detection and testing in accordance with 20.5.108.815 NMAC and provide to the department reports for all leak detector testing, line tightness testing, and sensor testing in accordance with 20.5.108.816 NMAC.
[20.5.108.810 NMAC - N, 07/24/2018]

20.5.108.811 REQUIREMENTS FOR UST UNDERGROUND PRESSURIZED PIPING INSTALLED ON OR AFTER APRIL 4, 2008: Owners and operators of underground storage tank systems with piping installed on or after April 4, 2008 shall use interstitial monitoring as release detection for underground pressurized piping that routinely contains regulated substances by following the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory approved in advance by the department.

A. Owners and operators of UST systems shall:

(1) use automatic line leak detectors (including mechanical or electronic detectors) that alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping when a leak is detected at three gallons per hour at 10 pounds per square inch line pressure within one hour; and

(2) perform an annual test of the operation of the leak detector which includes a simulated leak, is conducted in accordance with the manufacturer's testing protocol, and confirms the automatic line leak detector detects a leak at three gallons per hour at 10 pounds per square inch line pressure within one hour.

B. Owners and operators shall use interstitial monitoring that complies with all of the requirements in 20.5.108.808 NMAC and the following:

(1) Sensors shall be installed in all containment sumps associated with the piping, including under-dispenser containment, transition sumps, and submersible turbine pump containment sumps used to monitor the interstice.

(2) Sensors shall:

(a) monitor the interstice;

(b) monitor all containment sumps associated with the piping;

(c) sound an alarm and automatically shut off the submersible turbine pump when a regulated substance or water is detected;

(d) be positioned in the lowest point of the containment sump; and

(e) be tested annually in accordance with Subsection B of 20.5.108.805 NMAC.

(3) Containment sumps used for interstitial monitoring shall be tested every three years starting three years after the effective date of the regulations. The testing of the containment sumps shall comply with one of the following:

(a) the testing procedures as described in *Petroleum Equipment Institute Publication RP 1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"*; or

(b) the equipment manufacturer's published testing procedures.

C. Automatic line leak detectors and sensors required in this section that either fail a test or are found to be damaged shall be repaired or replaced and tested in accordance with 20.5.108.800 NMAC and Paragraph (1) of Subsection A of 20.5.108.811 NMAC. A line tightness test shall be conducted in accordance with Subparagraph (a) of Paragraph (3) of Subsection A of 20.5.108.810 NMAC after an automatic line leak detector has been repaired or replaced.

D. Equipment and methods used to monitor the piping shall be appropriate for the type and length of piping.

E. Owners and operators shall use one or more of the following to comply with the requirements of this section:

(1) *Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"*;

(2) *American Petroleum Institute Publication RP 1615, "Installation of Underground Petroleum Storage Systems"*; or

(3) *Petroleum Equipment Institute Publication RP 1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"*.

F. Owners and operators shall maintain all records of release detection and testing in accordance with 20.5.108.815 NMAC and provide to the department reports for all release detector testing, line tightness testing, containment sump testing, and sensor testing in accordance with 20.5.108.816 NMAC.
[20.5.108.811 NMAC - N, 07/24/2018]

20.5.108.812 REQUIREMENTS FOR UST UNDERGROUND SUCTION PIPING INSTALLED PRIOR TO APRIL 4, 2008:

A. Owners and operators of underground storage tank systems with piping installed prior to April 4, 2008 that conveys regulated substances under suction where the piping system does not meet the requirements in Subsection B of 20.5.108.812 NMAC shall use one of the following methods. These methods shall be designed to detect a release from any portion of underground piping.

- (1) A line tightness test shall be conducted every three years and the tightness test shall be capable of detecting a one-tenth gallon per hour leak rate.
- (2) Interstitial monitoring shall be used in accordance with all of the requirements in 20.5.108.808 NMAC and 20.5.108.813 NMAC.
- (3) Statistical inventory reconciliation shall be used in accordance with 20.5.108.809 NMAC for monthly monitoring of underground suction piping in conjunction with line tightness testing in accordance with Paragraph (1) of Subsection A of this section.
- (4) Vapor monitoring shall be used in accordance with 20.5.108.806 NMAC.
- (5) Groundwater monitoring shall be used in accordance with 20.5.108.807 NMAC.

B. Release detection is not required for suction piping that is designed and constructed to meet all of the following standards:

- (1) The below-grade piping operates at less than atmospheric pressure.
- (2) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released.
- (3) Only one check valve is included in each suction line.
- (4) The check valve is located directly below and as close as practical to the suction pump.
- (5) Compliance with Paragraphs (2) through (4) of Subsection B of this section is demonstrated.

C. Owners and operators shall use one or more of the following to comply with the requirements of this section:

- (1) *Petroleum Equipment Institute Publication RP100, "Recommended Practices for Installation of Underground Liquid Storage Systems"*; or
- (2) *American Petroleum Institute Publication RP 1615, "Installation of Underground Petroleum Storage Systems"*.

D. Owners and operators shall maintain all records of release detection and testing in accordance with 20.5.108.15 NMAC and provide to the department reports for all release detector testing, line tightness testing, and sensor testing in accordance with 20.5.108.816 NMAC.
[20.5.108.812 NMAC - N, 07/24/2018]

20.5.108.813 REQUIREMENTS FOR UST UNDERGROUND SUCTION PIPING INSTALLED ON OR AFTER APRIL 4, 2008:

A. Owners and operators of underground storage tank systems with piping installed on or after April 4, 2008 where the piping conveys regulated substances under suction shall meet the requirements for interstitial monitoring in 20.5.108.808 NMAC and the following:

- (1) Sensors shall be installed in all containment sumps associated with the piping, including under-dispenser containment, transition sumps, and secondary containment sumps used to monitor the interstice.
- (2) Sensors shall:
 - (a) monitor the interstice;
 - (b) monitor all containment sumps associated with the piping;
 - (c) sound an alarm and automatically shut off the pump when a regulated substance or water is detected;
 - (d) be positioned in the lowest point of the containment sump; and
 - (e) be tested annually in accordance with Subsection B of 20.5.108.805 NMAC.

(3) Containment sumps used for interstitial monitoring shall be tested every three years beginning three years after the effective date of the regulations. The testing of the containment sumps shall comply with one of the following:

(a) the testing procedures as described in *Petroleum Equipment Institute Publication RP 1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"*; or

(b) the equipment manufacturer's published testing procedures.

B. Release detection is not required for suction piping that is designed and constructed to meet all of the following standards:

(1) The below-grade piping operates at less than atmospheric pressure.

(2) The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released.

(3) Only one check valve is included in each suction line.

(4) The check valve is located directly below and as close as practical to the suction pump.

(5) Compliance with Paragraphs (2) through (4) of Subsection B of this section is

demonstrated.

C. Owners and operators shall use one or more of the following to comply with the requirements of this section:

(1) *Petroleum Equipment Institute Publication RP 100, "Recommended Practices for Installation of Underground Liquid Storage Systems"*;

(2) *American Petroleum Institute Publication RP 1615, "Installation of Underground Petroleum Storage Systems"*; or

(3) *Petroleum Equipment Institute Publication RP 1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"*.

D. Owners and operators shall maintain all records of release detection and testing in accordance with 20.5.108.815 NMAC and provide to the department reports for all containment sump testing, line tightness testing, and sensor testing in accordance with 20.5.108.816 NMAC.

[20.5.108.813 NMAC - N, 07/24/2018]

20.5.108.814 ALTERNATE METHODS:

A. If owners and operators want to install materials or methods of release detection equipment for tanks or piping required in 20.5.108 NMAC that are not in accordance with the current edition of an industry standard or code of practice developed by a nationally recognized association or independent testing laboratory, owners and operators shall apply in writing to the department, shall provide supporting documentation, and shall not begin the installation unless and until the department approves the request in writing. At a minimum, the request for an alternate method shall contain the following:

(1) date the form is completed;

(2) facility name, facility ID number, address (with county) and telephone number;

(3) owner name, owner ID number, address and telephone number;

(4) citation to regulation for which alternate method or material (such as type of piping) is

requested;

(5) brief description of the proposed alternate method or material;

(6) justification of proposed alternate method or material, including citation to a standard or code supporting its use, if available; and

(7) demonstration of its equivalent protection of public health, safety and welfare and the environment.

B. Another type of release detection method, or combination of methods, may be used if approved pursuant to this section, and if it can detect a two-tenths gallon per hour leak rate monthly or a release of 150 gallons within a month from a tank with a probability of detection of 0.95 and a probability of false alarm of 0.05.

C. The department may approve another method if owners and operators can demonstrate that the method can detect a release as effectively as any of the applicable methods allowed in 20.5.108 NMAC. In comparing methods, the department shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is approved, the owner and operator shall comply with any conditions imposed by the department on its use to ensure the protection of public health, safety and welfare and the environment. The department shall not grant the request unless owners and operators demonstrate that the

request will provide protection of public health, safety and welfare and the environment equivalent to the protection provided by the methods in this part.

D. In addition to the requirements in Subsections B and C of this section, any request for an alternate method of release detection for hazardous substance UST systems shall also include information on effective corrective action technologies, health risks and chemical and physical properties of the stored substance, and the characteristics of the UST site.

[20.5.108.814 NMAC - N, 07/24/2018]

[The department provides an optional form that may be used to request approval of an alternate method. The form is available on the Petroleum Storage Tank Bureau's pages on the department's website or by contacting the Petroleum Storage Tank Bureau at 505-476-4397 or 2905 Rodeo Park Drive East, Building 1, Santa Fe, New Mexico 87505.]

20.5.108.815 RELEASE DETECTION RECORDKEEPING:

A. All storage tank system owners and operators shall maintain records in accordance with 20.5.107 NMAC demonstrating compliance with all applicable requirements of 20.5.108 NMAC. If the owner and operator of a storage tank are separate persons, only one person is required to maintain the records required by this section; however, both parties are liable in the event of noncompliance.

B. Records to be maintained shall include, but not be limited to:

(1) all written performance claims pertaining to any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer;

(2) the results of any sampling, testing, or monitoring;

(3) written documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site and any schedules of calibration and maintenance required by the release detection equipment manufacturer;

(4) no later than three years after the effective date of these rule, records of site assessments required under 20.5.108.806 NMAC and 20.5.108.807 NMAC. Records of site assessments developed after the effective date of these rules must be signed by a professional engineer, professional geologist, or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the department; and

(5) the results of annual operational tests of release detection equipment. At a minimum, the results must list each component tested, indicate whether each component tested meets criteria for the specified equipment or needs to have action taken, and describe any action taken to correct an issue.

[20.5.108.815 NMAC - N, 07/24/2018]

20.5.108.816 REPORTING:

A. Owners and operators shall provide to the department all reports as required in 20.5.108 NMAC within 60 days of completion of the tests.

B. Owners and operators shall report any test or inspection results that are anything other than a "pass" or "normal" result to the department within 24 hours of completion of the test or inspection in accordance with 20.5.118 NMAC.

C. Owners and operators shall ensure all reports required in 20.5.108 NMAC contain, at a minimum, the following:

(1) facility name and address;

(2) facility ID number;

(3) owner and operator name and address;

(4) owner ID number;

(5) date report was completed;

(6) date of the test;

(7) duration of the test;

(8) brand name and model number of equipment being tested or sufficient description to allow identification of the equipment;

(9) type of equipment being tested;

(10) type of test, including test procedures and methods;

(11) results of the test;

(12) name of the person who performed the inspection or test, and their qualifications as specified in 20.5.105 NMAC;

(13) brand name and model number of the testing equipment used during the test and the date the testing equipment was last calibrated (only applies to tests performed in accordance with 20.5.108.800 NMAC, 20.5.108.804 NMAC, 20.5.108.806 NMAC, 20.5.108.807 NMAC, 20.5.108.808 NMAC, 20.5.108.810 NMAC through 20.5.108.813 NMAC);

(14) monitoring well number and instrument reading in parts per million (only applies to tests performed in accordance with 20.5.108.807 NMAC);

(15) monitoring well number, depth to groundwater and confirmation that free product was observed or not (only applies to tests performed in accordance with 20.5.108.807 NMAC);

(16) a completed copy of the automatic tank gauge operation inspection form in *Petroleum Equipment Institute Publication RP 1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"* (only applies to tests performed in accordance with 20.5.108.805 NMAC);

(17) for testing of automatic line leak detectors:

(a) serial number of the leak detector;

(b) description of storage tank system;

(c) detected leak rate in gallons per hour;

(d) line pressure and functional element holding pressure in pounds per square inch;

(e) type, diameter and length of piping;

(f) test results, including the following:

(i) whether flow is restricted by a mechanical line leak detector when a leak is detected;

(ii) whether the turbine shuts down when a leak is detected by an electronic line leak detector;

(18) for testing of sensors used for monitoring secondary containment and interstitial spaces:

(a) the information in the liquid sensor functionality testing form in the *Petroleum Equipment Institute Publication RP 1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities"*; and

(b) information on whether each individual sensor meets automatic shutdown requirements in 20.5.108.811 NMAC and 20.5.108.813 NMAC; and

(19) for line tightness testing:

(a) leak rate;

(b) testing pressure;

(c) bleed back;

(d) piping type;

(e) piping diameter; and

(f) length of piping.

D. Owners and operators may use forms and checklist developed by the department, when available, to meet the reporting requirements in 20.5.108 NMAC.

[20.5.108.816 NMAC - N, 07/24/2018]

[Provide reports as required in Subsection A of this section as directed at the department's website. The forms or checklists referred to in Subsection D of this section are available on the Petroleum Storage Tank Bureau's pages on the department's website or by contacting the Petroleum Storage Tank Bureau at 505-476-4397 or 2905 Rodeo Park Drive East, Building 1, Santa Fe, New Mexico 87505.]

HISTORY OF 20.5.108 NMAC:

Pre-NMAC History: The material in this part was derived from that previously filed with the commission of public records - state records center and archives.

EIB/USTR-6, Underground Storage Tank Regulations - Part VI - Release Detection, 9/12/88.

EIB/USTR-6, Underground Storage Tank Regulations - Part VI - Release Detection, 2/14/89.

EIB/USTR-6, Underground Storage Tank Regulations - Part VI - Release Detection, 8/4/89.

EIB/USTR-6, Underground Storage Tank Regulations - Part VI - Release Detection, 6/12/90.

EIB/USTR-6, Underground Storage Tank Regulations - Part VI - Release Detection, 6/26/90.

History of Repealed Material:

20 NMAC 5.6, Underground Storage Tanks - Release Detection (filed 2/27/97) repealed 8/15/03.

20.5.6 NMAC, Petroleum Storage Tanks - Release Detection (filed 7/16/03) repealed 4/4/08.

20.5.6 NMAC, Petroleum Storage Tanks - Release Detection (filed 4/4/08) repealed 07/24/2018.

Other History:

EIB/USTR-6, Underground Storage Tank Regulations - Part VI - Release Detection (filed 6/26/90) renumbered, reformatted and replaced by 20 NMAC 5.6, Underground Storage Tanks - Release Detection, effective 11/5/95;

20 NMAC 5.6, Underground Storage Tanks - Release Detection (filed 10/6/95) replaced by 20 NMAC 5.6, Underground Storage Tanks - Release Detection, effective 4/1/97;

20 NMAC 5.6, Underground Storage Tanks - Release Detection (filed 2/27/97) was renumbered, reformatted and replaced by 20.5.6 NMAC, Petroleum Storage Tanks - Release Detection, effective 8/15/03.

20.5.6 NMAC, Petroleum Storage Tanks - Release Detection (filed 7/16/03) replaced by 20.5.6 NMAC, Petroleum Storage Tanks - Release Detection, effective 4/4/08.

20.5.6 NMAC, Petroleum Storage Tanks - Release Detection (filed 4/4/08) replaced by 20.5.108 NMAC, Petroleum Storage Tanks - Release Detection for Underground Storage Tank Systems, effective 7/24/2018.