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**TITLE 329 SOLID WASTE MANAGEMENT  
BOARD**

LSA Document #01-161(F)

**DIGEST**

Amends 329 IAC 9 concerning underground storage tanks to clarify language and requirements, to add new definitions, to repeal some definitions and renumber to alphabetize additional definitions, to add appropriate changes to make the rule consistent with IC 13-12-3-2 and 328 IAC 1, the excess liability trust fund rules, to reorganize and clarify Rule 6, the closure of UST systems, to delete "modified closure" and the accompanying requirements, to relocate several sections to be consistent with the federal regulations and appropriate procedures, and to update incorporation by reference documents. *NOTE: Under IC 4-22-2-40, LSA Document #01-161, printed at 26 IR 1201, was recalled by the Solid Waste Management Board, resubmitted for publication, and reprinted at 27 IR 3171.* Effective 30 days after filing with the secretary of state.

**HISTORY**

First Notice of Comment Period: June 1, 2001, Indiana Register (24 IR 2917).

Second Notice of Comment Period: June 1, 2002, Indiana Register (25 IR 2900).

Notice of First Hearing: June 1, 2002, Indiana Register (25 IR 2926).

Date of First Hearing: October 15, 2003.

Proposed Rule: January 1, 2003, Indiana Register (26 IR 1201).

Notice of Second Hearing and Third Comment Period: January 1, 2003, Indiana Register (26 IR 1201).

Change in Notice of Public Hearing: August 1, 2003 (26 IR 3671), hearing continued to October 21, 2003.

Date of Second Hearing: October 21, 2003.

Notice of Recall: May 1, 2004, Indiana Register (27 IR 2500).

Notice of First Hearing: April 1, 2004, Indiana Register (27 IR 2299).

Date of First Hearing: April 20, 2004.

Proposed Rule: July 1, 2004, Indiana Register (27 IR 3171)

Notice of Second Hearing: July 1, 2004, Indiana Register (27 IR 3209).

Date of Second Hearing: July 20, 2004.

329 IAC 9-1-1	329 IAC 9-1-41.5
329 IAC 9-1-4	329 IAC 9-1-42.1
329 IAC 9-1-10.1	329 IAC 9-1-47
329 IAC 9-1-10.2	329 IAC 9-1-47.1
329 IAC 9-1-10.4	329 IAC 9-2-1
329 IAC 9-1-10.6	329 IAC 9-2-2
329 IAC 9-1-10.8	329 IAC 9-2.1-1
329 IAC 9-1-14	329 IAC 9-3-1
329 IAC 9-1-14.1	329 IAC 9-3-2
329 IAC 9-1-14.3	329 IAC 9-3.1-1
329 IAC 9-1-14.5	329 IAC 9-3.1-2
329 IAC 9-1-14.7	329 IAC 9-3.1-3
329 IAC 9-1-25	329 IAC 9-3.1-4
329 IAC 9-1-27	329 IAC 9-4-3
329 IAC 9-1-29.1	329 IAC 9-4-4
329 IAC 9-1-36	329 IAC 9-5-1
329 IAC 9-1-36.5	329 IAC 9-5-2
329 IAC 9-1-39.5	329 IAC 9-5-3.1
329 IAC 9-1-41	329 IAC 9-5-3.2
329 IAC 9-1-41.1	329 IAC 9-5-4.1
329 IAC 9-5-4.2	329 IAC 9-6-4
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329 IAC 9-6-1	329 IAC 9-7-4
329 IAC 9-6-2	329 IAC 9-7-5
329 IAC 9-6-2.5	329 IAC 9-7-6
329 IAC 9-6-3	

SECTION 1. 329 IAC 9-1-1 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-1-1 Applicability**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-12-3-2; IC 13-23

Sec. 1. (a) ~~The requirements of~~ This article ~~apply~~ **applies** to all owners and operators of ~~a~~ **an** UST system as defined in section 49 of this rule, except as otherwise provided in subsections (b) ~~(c)~~, **and through** (d). Any UST system listed in subsection (c) shall meet the requirements of section 1.1 of this rule. Nothing in this article shall be construed to conflict with, circumvent, rescind, or repeal any authority, power, or duty possessed by the office of the state fire marshal under Indiana law.

(b) The following UST systems are excluded from the requirements of this article:

(1) Any UST system holding:

(A) hazardous wastes regulated under Subtitle C (42 U.S.C. 6921 through 42 U.S.C. 6939b) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, et seq., in effect on September 30, 1996; or

(B) a mixture of such hazardous waste and other regulated substances.

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 (33 U.S.C. 1342) or 307(b) (33 U.S.C. 1317(b)) of the Clean Water Act, as amended, 33 U.S.C. 1251 et seq., in effect on October 31, 1994.

(3) Equipment or machinery that contains regulated substances for operational purposes and that may include any of the following:

(A) Hydraulic lift tanks.

(B) Electrical equipment tanks.

(4) Any UST system whose capacity is one hundred ten (110) gallons or less, except an owner and operator with two (2) or more UST systems on-site whose individual capacities are one hundred ten (110) gallons or less are not excluded if the total capacity of all tanks on-site containing the same product exceeds one hundred ten (110) gallons.

- (5) Any UST system that contains a de minimis concentration of regulated substances.
- (6) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(c) 329 IAC 9-2 through 329 IAC 9-4, 329 IAC 9-6, and 329 IAC 9-7 do not apply to any of the following types of UST systems:

- (1) Wastewater treatment tank systems.
- (2) Any UST system containing radioactive material that is regulated under the Atomic Energy Act of 1954, 42 U.S.C. 2011, et seq., as amended, in effect on April 26, 1996.
- (3) Any UST system that is part of an emergency generator system at a nuclear power generation facility regulated by the Nuclear Regulatory Commission under 10 CFR 50, Appendix A.
- (4) Airport hydrant fuel distribution systems.
- (5) UST systems with field-constructed tanks.

(d) 329 IAC 9-7 does not apply to any UST system that stores fuel solely for use by emergency power generators.

(e) Unless specified in the incorporated by reference documents incorporated by reference in this article, the version of documents referenced in the incorporated by reference documents is the latest version that is in effect on the date of final adoption of the incorporated by reference documents into a section of this article.

**(f) Owners or operators:**

- (1) performing a task or measure before the effective date of the 2004 amendments to this article; or**
- (2) taking an action, such as submitting reports, plans, or notifications received by the agency on a date before the effective date of the 2004 amendments to this article;**

**will be governed by this article before it was amended in 2004.**

**(g) Owners or operators completing any requirement of this article, including:**

- (1) performing a task or measure on or after the effective date of the 2004 amendments to this article; or**
- (2) taking an action, such as submitting reports, plans, or notifications received by the agency on a date on or after the effective date of the 2004 amendments to this article;**

**will be governed by this article as amended in 2004.** (*Solid Waste Management Board; 329 IAC 9-1-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1062; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3683; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 145*)

SECTION 2. 329 IAC 9-1-4 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-1-4 “Agency” defined**

**Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2**

**Affected: IC 13-23**

Sec. 4. “Agency” means the department of environmental management. ~~underground storage tank branch.~~ This definition is not applicable under 329 IAC 9-8. (*Solid Waste Management Board; 329 IAC 9-1-4; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1063; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3685; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 145*)

SECTION 3. 329 IAC 9-1-10.4 IS ADDED TO READ AS FOLLOWS:

**329 IAC 9-1-10.4 “Change-in-service” defined**

**Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2**

**Affected: IC 13-23**

**Sec. 10.4. “Change-in-service” means continued use of the UST or UST system to store a nonregulated substance.** (*Solid Waste Management Board; 329 IAC 9-1-10.4; filed Aug 30, 2004, 9:35 a.m.: 28 IR 146*)

SECTION 4. 329 IAC 9-1-10.6 IS ADDED TO READ AS FOLLOWS:

**329 IAC 9-1-10.6 “Chemical of concern” or “COC” defined**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

**Sec. 10.6. “Chemical of concern” or “COC” means the parameter to be analyzed as a possible contaminant.** *(Solid Waste Management Board; 329 IAC 9-1-10.6; filed Aug 30, 2004, 9:35 a.m.: 28 IR 146)*

SECTION 5. 329 IAC 9-1-10.8 IS ADDED TO READ AS FOLLOWS:

**329 IAC 9-1-10.8 “Closure” defined**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-13-1-1; IC 13-23

**Sec. 10.8. “Closure” means the owner or operator has met all the program requirements of 329 IAC 9-6. The term does not imply that the site is completely free of contaminants. Some acceptable level of contaminants may still be on-site.** *(Solid Waste Management Board; 329 IAC 9-1-10.8; filed Aug 30, 2004, 9:35 a.m.: 28 IR 146)*

SECTION 6. 329 IAC 9-1-14 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-1-14 “Consumptive use” defined**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-11-2-241; IC 13-13-1-1; IC 13-23

**Sec. 14. “Consumptive use”, with respect to heating oil, means consumed on the premises on which the tank is stored. The heating oil exclusion under IC 13-11-2-241(b)(2) does not apply to the storage of heating oil for resale, marketing, or distribution.** *(Solid Waste Management Board; 329 IAC 9-1-14; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1064; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 146)*

SECTION 7. 329 IAC 9-1-14.3 IS ADDED TO READ AS FOLLOWS:

**329 IAC 9-1-14.3 “Contaminant” defined**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-11-2-42; IC 13-13-1-1; IC 13-23

**Sec. 14.3. “Contaminant” has the meaning set forth at IC 13-11-2-42. However, for purposes of this article, the term does not include hazardous waste regulated under 329 IAC 3.1.** *(Solid Waste Management Board; 329 IAC 9-1-14.3; filed Aug 30, 2004, 9:35 a.m.: 28 IR 146)*

SECTION 8. 329 IAC 9-1-14.5 IS ADDED TO READ AS FOLLOWS:

**329 IAC 9-1-14.5 “Corrective action” defined**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

**Sec. 14.5. “Corrective action” means action taken to minimize, contain, eliminate, remediate, mitigate, or clean up a release, including emergency measures taken as part of an initial response to the release under 329 IAC 9-5-2.** *(Solid Waste Management Board; 329 IAC 9-1-14.5; filed Aug 30, 2004, 9:35 a.m.: 28 IR 146)*

SECTION 9. 329 IAC 9-1-14.7 IS ADDED TO READ AS FOLLOWS:

**329 IAC 9-1-14.7 “Corrective action plan” or “CAP” defined**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

**Sec. 14.7. “Corrective action plan” or “CAP” means the corrective action plan described under 329 IAC 9-5-7(a) through 329 IAC 9-5-7(b).** *(Solid Waste Management Board; 329 IAC 9-1-14.7; filed Aug 30, 2004, 9:35 a.m.: 28 IR 146)*

SECTION 10. 329 IAC 9-1-25 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-1-25 “Hazardous substance UST system” defined**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 25. “Hazardous substance UST system” means ~~a~~ **an** UST system that contains any of the following:

(1) A hazardous substance that is:

(A) defined in Section 101(14) of CERCLA (42 U.S.C. 9601(14)); and

(B) not regulated as a hazardous waste under 329 IAC 3.1.

(2) Any mixture of ~~such~~ substances **specified in subdivision (1)(A) or (1)(B)** and petroleum and ~~which that~~ is not a petroleum UST system.

*(Solid Waste Management Board; 329 IAC 9-1-25; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1065; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3690; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 146)*

SECTION 11. 329 IAC 9-1-27 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-1-27 “Hydraulic lift tank” defined**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 27. “Hydraulic lift tank” means a tank that holds hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate any of the following:

(1) Lifts.

(2) Elevators.

(3) ~~Other similar~~ Devices **similar to those in subdivision (1) or (2).**

*(Solid Waste Management Board; 329 IAC 9-1-27; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1066; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3691; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 147)*

SECTION 12. 329 IAC 9-1-36 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-1-36 “Petroleum UST system” defined**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 36. “Petroleum UST system” means ~~a~~ **an** UST system that contains petroleum or a mixture of petroleum with de minimis quantities of other regulated substances. Such systems include those containing any of the following:

(1) Motor fuels.

(2) Jet fuels.

(3) Distillate fuel oils.

(4) Residual fuel oils.

(5) Lubricants.

(6) Petroleum solvents.

(7) Used oils.

*(Solid Waste Management Board; 329 IAC 9-1-36; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1066; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3692; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 147)*

SECTION 13. 329 IAC 9-1-36.5 IS ADDED TO READ AS FOLLOWS:

**329 IAC 9-1-36.5 “Piezometer” defined**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected: IC 13-23**

**Sec. 36.5. “Piezometer” means a type of monitoring well or other device that is constructed for the purpose of measuring hydraulic head in the ground water.** *(Solid Waste Management Board; 329 IAC 9-1-36.5; filed Aug 30, 2004, 9:35 a.m.: 28 IR 147)*

SECTION 14. 329 IAC 9-1-39.5 IS ADDED TO READ AS FOLLOWS:

**329 IAC 9-1-39.5 “Removal closure” defined**

**Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2**

**Affected: IC 13-23**

**Sec. 39.5. “Removal closure” means a closure where an UST system is completely extracted.** *(Solid Waste Management Board; 329 IAC 9-1-39.5; filed Aug 30, 2004, 9:35 a.m.: 28 IR 147)*

SECTION 15. 329 IAC 9-1-41.5 IS ADDED TO READ AS FOLLOWS:

**329 IAC 9-1-41.5 “SARA” defined**

**Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2**

**Affected: IC 13-23**

**Sec. 41.5. “SARA” means the Superfund Amendments and Reauthorization Act of 1986, as amended, 42 U.S.C. 9601, et seq., in effect on September 30, 1996, that amends the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.** *(Solid Waste Management Board; 329 IAC 9-1-41.5; filed Aug 30, 2004, 9:35 a.m.: 28 IR 147)*

SECTION 16. 329 IAC 9-1-47 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-1-47 “Underground release” defined**

**Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2**

**Affected: IC 13-23**

**Sec. 47. “Underground release” means any belowground release beneath the ground surface.** *(Solid Waste Management Board; 329 IAC 9-1-47; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1068; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 147)*

SECTION 17. 329 IAC 9-1-47.1 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-1-47.1 “Underground storage tank” or “UST” defined**

**Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2**

**Affected: IC 13-11-2-241**

**Sec. 47.1. “Underground storage tank” or “UST” has the meaning as set forth in IC 13-11-2-241.** *(Solid Waste Management Board; 329 IAC 9-1-47.1; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3694; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 147)*

SECTION 18. 329 IAC 9-2-1 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-2-1 New UST systems**

**Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2**

**Affected: IC 13-23; IC 25-31-1**

**Sec. 1. In order to prevent releases due to structural failure, corrosion, or spills and overfills for as long as the UST system is used to store regulated substances, all owners and operators of new UST systems shall meet the following requirements:**

**(1) Each tank must be properly designed and constructed, and any portion underground that routinely contains product must be**

protected from corrosion as specified under one (1) of the following:

(A) The tank is constructed of fiberglass-reinforced plastic and meets one (1) of the following:

(i) Underwriters Laboratories Standard 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohol, and Alcohol-Gasoline Mixtures", ~~1994~~, **revised 1996**, Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(ii) Underwriters Laboratories of Canada ~~CAN4-S615-M83~~, **CAN/ULC-S615-1998**, "Standard for Reinforced Plastic Underground Tanks for ~~Petroleum Products~~", ~~1983~~, **Flammable and Combustible Liquids**", **1998**, Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(iii) ASTM D4021-86, "Standard Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks", revised 1992, American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959.

(B) The tank is constructed of steel and cathodically protected in the following manner:

(i) The tank is coated with a suitable dielectric material and is cathodically protected.

(ii) Field-installed impressed current systems are designed by a corrosion expert to allow determination of current operating status under 329 IAC 9-3.1-2(3).

(iii) Cathodic protection systems are operated and maintained under 329 IAC 9-3.1-2.

(iv) The tank complies with one (1) or more of the following:

(AA) Steel Tank Institute "sti-P<sub>3</sub>® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks", STI-P3-98, revised 1998, Steel Tank Association, 570 Oakwood Road, Lake Zurich, Illinois 60047.

(BB) Underwriter Laboratories Standard 1746, "External Corrosion Protection Systems for Steel Underground Storage Tanks", ~~1993~~, **2000**, Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(CC) Underwriters Laboratories of Canada ~~CAN4-S603-M85~~, **CAN/ULC-S603-92**, "Standards for Steel Underground Tanks for Flammable and Combustible Liquids", **1992**, Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(DD) Underwriter Laboratories of Canada ~~CAN4-603.1-M85~~, **CAN/ULC-S603.1-92**, "Standard for Galvanic Corrosion Protection Systems for **Steel** Underground Tanks for Flammable and Combustible Liquids", **1992**, Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(EE) Underwriters Laboratories of Canada CAN4-S631-M84, "Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems", **1992**, Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(FF) NACE International (formerly the National Association of Corrosion Engineers) Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(GG) Underwriters Laboratories Standard 58, "Steel Underground Tanks for Flammable and Combustible Liquids", ~~1986~~, **1998**, Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(C) The tank is constructed of a steel-fiberglass-reinforced-plastic composite and complies with one (1) or more of the following:

(i) Underwriters Laboratories Standard 1746, "External Corrosion Protection Systems for Steel Underground Storage Tanks", ~~1993~~, **2000**, Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(ii) Association for Composite Tanks ACT-100®, "Specification for External Corrosion Protection of FRP Composite Steel USTs, F894-98", revised 1998, Steel Tank Association, 570 Oakwood Road, Lake Zurich, Illinois 60047.

(D) The tank is constructed of metal without additional corrosion protection measures provided that the following requirements are completed:

(i) The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life.

(ii) The owner and operator shall demonstrate that soil resistivity in an installation location is twelve thousand (12,000) ohms per centimeter or greater by using one (1) of the following:

(AA) ASTM Standard ~~G57-78~~, **G57-95a**, "Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method", revised ~~1978~~, **1995**, reapproved ~~1984~~, **2001**. American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959.

(BB) A standard approved by the commissioner that exhibits the same or greater degree of reliability and accuracy as ASTM Standard ~~G57-78~~ **G57-95a** cited in subitem (AA).

(iii) The owner and operator shall maintain records that demonstrate compliance with items (i) and (ii) for the remaining life of the tank.

(E) The tank construction and corrosion protection are determined by the commissioner to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than clauses (A) through (D).

(2) The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, and protected from corrosion. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed, and protected from corrosion as specified under one (1) of the following:

(A) The piping is constructed of fiberglass-reinforced plastic and complies with one (1) or more of the following:

(i) Underwriters Laboratories Standard 971, "Nonmetallic Underground Piping for Flammable Liquids", 1995, Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(ii) Underwriters Laboratories Standard 567, **revised 2001**, "Pipe Connectors for Petroleum Products and LP Gas", Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(iii) Underwriters Laboratories of Canada Subject ~~EN107C-M1984~~ **"Guide for CAN/ORD-C 107.7-1993 "Glass Fibre Reinforced Plastic Pipe and Fittings for Flammable and Combustible Liquids", 1993 First Edition**, Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(iv) Underwriters Laboratories of Canada Standard ~~CAN4-S633-M84~~, **CAN/ULC-S633-99**, "Flexible Underground Hose Connectors **for Flammable and Combustible Liquids**", 1999, Underwriters Laboratories of Canada, 7 Crouse Road, Scarborough, Ontario, M1R 3A9 Canada.

(B) The piping is constructed of steel and cathodically protected in the following manner:

(i) The piping is coated with a suitable dielectric material and is cathodically protected.

(ii) Field-installed impressed current systems are designed by a corrosion expert to allow determination of current operating status under 329 IAC 9-3.1-2(3).

(iii) Cathodic protection systems are operated and maintained under 329 IAC 9-3.1-2.

(iv) The piping system meets one (1) or more of the following:

(AA) ~~Article 79~~, "Flammable and Combustible Liquids", of the ~~1998~~ Indiana Fire Code under rules of the fire prevention and building safety commission at ~~675 IAC 22-2.2~~: **675 IAC 22**.

(BB) American Petroleum Institute Recommended Practice 1615, "Installation of Underground Petroleum Storage Systems", Fifth Edition, March 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(CC) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", Third Edition, May 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(DD) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0169-96, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems", ~~1992~~ **1996** Edition, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(C) The piping is constructed of metal without additional corrosion protection measures provided that the following requirements are completed:

(i) The piping is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life.

(ii) The owner and operator shall demonstrate that soil resistivity in an installation location is twelve thousand (12,000) ohms per centimeter or greater by using one (1) of the following:

(AA) ASTM Standard ~~G57-78~~, **G57-95a**, "Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method", revised ~~1978~~, **1995**, reapproved ~~1984~~. **2001**. American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959.

(BB) A standard approved by the commissioner that exhibits the same or greater degree of reliability and accuracy as ASTM Standard ~~G57-78~~ **G57-95a** cited in subitem (AA).

(iii) The piping complies with one (1) or more of the following:

(AA) ~~Article 79~~, "Flammable and Combustible Liquids", of the ~~1998~~ Indiana Fire Code under rules of the fire prevention and building safety commission at ~~675 IAC 22-2.2~~: **675 IAC 22**.

(BB) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0169-96, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems", ~~1992~~ **1996** Edition, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(iv) The owner and operator shall maintain records that demonstrate compliance with items (i) and (ii) for the remaining life of the piping.

(D) The piping is equipped with secondary containment that includes one (1) of the following:

(i) Double-walled piping that consists of an outer wall constructed of a dielectric material.



(ii) Vaulted piping.

(E) The piping construction and corrosion protection are determined by the commissioner to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than clauses (A) through (D).

(3) The following spill and overfill requirements must be completed:

(A) Except as provided in clause (B), the owner and operator shall use the following spill and overfill prevention equipment to prevent spilling and overfilling associated with product transfer to the UST system:

(i) Spill prevention equipment that prevents the release of product to the environment when the transfer hose is detached from the fill pipe as one (1) of the following:

(AA) Minimum five (5) gallon spill catchment basin with drain to tank.

(BB) Minimum twenty-five (25) gallon spill catchment basin without drain to tank.

(ii) Overfill prevention equipment that completes one (1) of the following:

(AA) Automatically shuts off flow into the tank when the tank is no more than ninety-five percent (95%) full.

(BB) Alerts the transfer operator when the tank is no more than ninety percent (90%) full by restricting the flow into the tank or triggering a high level alarm.

(CC) Restricts flow thirty (30) minutes prior to overfilling, alerts the transfer operator with a high level alarm one (1) minute before overfilling, or automatically shuts off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

(B) The owner and operator are not required to use the spill and overfill prevention equipment specified in clause (A) if one (1) of the following is completed:

(i) Alternative equipment is used that is determined by the commissioner to be no less protective of human health and the environment than the equipment specified in clause (A).

(ii) The UST system is filled by transfers of no more than twenty-five (25) gallons at one (1) time.

(C) A drop tube for deliveries must extend to within one (1) foot of the tank bottom.

(4) All tanks and piping must be installed properly in accordance with one (1) or more of the following:

(A) American Petroleum Institute Recommended Practice 1615, "Installation of Underground Petroleum Storage Systems", Fifth Edition, March 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(B) Petroleum Equipment Institute Publication ~~PEI/RP100-97~~, **PEI/RP100-2000**, "Recommended Practices for Installation of Underground Liquid Storage Systems", ~~revised 1997~~, **2000**, Petroleum Equipment Institute, P.O. Box 2380, Tulsa, Oklahoma 74101-2380.

(C) American National Standards Institute Standard ~~ANSI/ASME B31.3-1996~~, **ANSI/ASME B31.3-1999**, "Process Piping", ~~1996, 1999~~, American National Standards Institute, 11 West 42<sup>nd</sup> Street, New York, New York 10036. ~~ASME B31.3a-1996, addenda to ASME B31.3-1996 Edition; Process Piping; An American National Standard; The American Society of Mechanical Engineers; United Engineering Center, 345 East 47<sup>th</sup> Street, New York, NY 10017. ASME B31.3b-1997, addenda to ASME B31.3-1996 Edition; Process Piping; An American National Standard; the American Society of Mechanical Engineers; United Engineering Center, 345 East 47<sup>th</sup> Street, New York, NY 10017.~~

(D) American National Standards Institute Standard ~~ANSI/ASME B31.4-1992~~, **Liquid ANSI/ASME B31.4-1998 Edition, "Pipeline Transportation Systems for Liquid Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols"**, ~~1992, and Other Liquids~~, **1998**, American National Standards Institute, 11 West 42<sup>nd</sup> Street, New York, New York 10036. ~~ASME B31.4a, addenda to ASME B31.4-1992 Edition; Pipeline Transportation Systems For Liquid Hydrocarbons and Other Liquids; An American National Standard; The American Society of Mechanical Engineers; United Engineering Center, 345 East 47<sup>th</sup> Street, New York, NY 10017.~~

(5) The owner and operator shall ensure the following:

(A) The installer has been certified by the office of the state fire marshal under rules of the fire prevention and building safety commission at 675 IAC 12-12.

(B) One (1) or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with subdivision (4):

(i) The installer has been certified by the tank and piping manufacturers.

(ii) The installation has been inspected and certified by a registered professional engineer under IC 25-31-1 with education and experience in UST system installation.

(iii) The installation has been inspected and approved by one (1) of the following:

(AA) The agency.

(BB) The office of the state fire marshal.

(iv) The owner and operator have complied with another method for ensuring compliance with subdivision (4) that is

determined by the commissioner to be no less protective of human health and the environment.

(C) The owner and operator shall provide a certification of compliance on the ~~underground storage tank~~ notification form under section 2 of this rule.

*(Solid Waste Management Board; 329 IAC 9-2-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1068; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3695; errata filed Sep 10, 1999, 9:08 a.m.: 23 IR 26; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 148)*

SECTION 19. 329 IAC 9-2-2 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-2-2 Notification requirements**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23-3

Sec. 2. **(a) All notifications required to be submitted under this section must be submitted on a form and in a format prescribed by the commissioner.**

~~(a)~~ **(b)** Any ~~owner person who brings a~~ **owns an** UST system ~~into use or tank~~ shall, within thirty (30) days of **owning such an UST system or tank or bringing such tank or UST system into use**, submit notice to the agency to register the tank **or UST system using a form provided by the agency for this notification. Bringing a tank or UST system “into use” means the tank or UST system contains or has contained a regulated substance and has not been closed under 329 IAC 9-6.**

~~(b)~~ **(c)** An owner required to submit notice under ~~subsection (a)~~ **this section** shall provide notice for each tank the owner owns. The owner may provide notice for several tanks at one (1) location using one (1) form. An owner with tanks located in more than one (1) place of operation shall submit a separate notification form for each separate place of operation.

~~(c)~~ **(d)** An owner required to submit notice under ~~subsection (a)~~ **the [sic., this] section** shall provide all the information required by the form provided by the agency for each tank for which notice is submitted.

~~(d)~~ **(e)** All owners and operators of new UST systems shall certify, on each notification form submitted, with original signature in ink, compliance with the following requirements:

- (1) Installation of all tanks and piping under section 1(5) of this rule.
- (2) Cathodic protection of steel tanks and piping under section 1(1) ~~of this rule~~ and ~~section 1(2)~~ of this rule.
- (3) Release detection under 329 IAC 9-7-2 and 329 IAC 9-7-3.
- (4) Financial responsibility under 329 IAC 9-8.

~~(e)~~ **(f)** All owners and operators of UST systems shall ensure that whoever performs tank system:

- (1)** installations;
- (2)** testing;
- (3)** upgrades;
- (4)** closures;
- (5)** removals; and
- (6)** change-in-service;

is certified by the office of the state fire marshal. The certified person who performs the work shall certify, by original signature in ink on the notification form provided by the agency, that the work performed complies with methods specified by section 1(4) of this rule.

~~(f)~~ **(g)** All owners and operators of UST systems who upgrade the tank system to meet upgrade requirements under 329 IAC 9-2.1 shall, within thirty (30) days of completing the upgrade, submit notice of the upgrade to the agency. ~~as required by subsection (a).~~

~~(g)~~ **(h)** All owners and operators of UST systems who:

- (1) temporarily close a tank system under 329 IAC 9-6-5; or
- (2) ~~permanently close or perform a change-in-service on~~ a tank system under 329 IAC 9-6-1;

shall, within thirty (30) days of completing such action, submit notice of this action to the agency. ~~as required by subsection (a).~~

~~(h)~~ (i) All owners and operators of UST systems who install a method of release detection under 329 IAC 9-7-2 and 329 IAC 9-7-3 shall, within thirty (30) days of completing such action, submit notice of this action to the agency. ~~as required by subsection (a):~~

~~(j)~~ (j) Any person who sells a facility with a regulated underground storage tank that:

- (1) is being used as ~~a~~ **an** UST system; or
- (2) will be used as ~~a~~ **an** UST system;

shall notify the purchaser of such tank of the owner's obligation to submit notice under subsection ~~(a):~~ **(b)**.

~~(k)~~ (k) An owner and operator of ~~a~~ **an** UST system that is:

- (1) in the ground on or after May 8, 1986; and
- (2) not taken out of operational life on or before January 1, 1974;

shall notify the agency of the service status of the UST system under 42 U.S.C. 6991a of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, et seq., in effect on September 30, 1996, on a form provided by the agency for this notification. (*Solid Waste Management Board; 329 IAC 9-2-2; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1068; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3699; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 150*)

SECTION 20. 329 IAC 9-2.1-1 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-2.1-1 Upgrading of existing UST systems**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23-3

Sec. 1. (a) All existing UST systems shall comply with one (1) of the following requirements no later than December 22, 1998:

- (1) New UST system performance standards under 329 IAC 9-2-1.
- (2) The upgrading requirements under subsections (b) through (d).
- (3) Closure requirements under 329 IAC 9-6, including applicable requirements for corrective action under 329 IAC 9-5.

(b) A steel tank must be upgraded to meet one (1) of the following requirements:

(1) A tank is upgraded by cathodic protection and the cathodic protection system meets the requirements of 329 IAC 9-2-1(1)(B)(ii) and 329 IAC 9-2-1(1)(B)(iii), and the integrity of the tank is ensured using one (1) of the following methods:

(A) The tank is internally inspected and assessed to ensure that the tank is structurally sound and free of corrosion holes prior to installing the cathodic protection system.

(B) The tank has been installed for less than ten (10) years and is monitored monthly for releases under 329 IAC 9-7-4(4) through 329 IAC 9-7-4(8).

(C) The tank has been installed for less than ten (10) years and is assessed for corrosion holes by conducting two (2) tightness tests under 329 IAC 9-7-4(3) **as follows:**

(i) The first tightness test must be conducted prior to installing the cathodic protection system. ~~and~~

(ii) The second tightness test must be conducted between three (3) months and six (6) months following the first operation of the cathodic protection system.

(D) The tank is assessed for corrosion holes by a method that is determined by the commissioner to prevent releases in a manner that is no less protective of human health and the environment than established in clauses (A) through (C).

(2) A tank is upgraded by internal lining and the following requirements are completed:

(A) The lining is installed under 329 IAC 9-3.1-4.

(B) Within one (1) year after lining and every five (5) years thereafter, the ~~lined lining and tank is~~ **are** internally inspected and found to be structurally sound with the lining ~~and tank~~ still performing in accordance with ~~original design specifications~~ **requirements under 329 IAC 9-3.1-4.**

(C) The tank may be lined one (1) time during the service life to meet the upgrading requirements of this subsection.

**(D) If the lined tank cannot meet the performance standards under clause (B), closure of the tank according to 329 IAC 9-6 is required.**

(3) A tank is upgraded by both internal lining and cathodic protection, and the following requirements are completed:

(A) The lining is installed under 329 IAC 9-3.1-4.

(B) The cathodic protection system meets the requirements of 329 IAC 9-2-1(1)(B)(ii) and 329 IAC 9-2-1(1)(B)(iii).

(4) A tank is upgraded by a method that is determined by the commissioner to be no less protective of human health and the

environment than the methods specified in subdivisions (1) through (3).

(5) The tank must comply with one (1) or more of the following:

(A) American Petroleum Institute Recommended Practice 1631, "Interior Lining **and Periodic Inspections** of Underground Storage Tanks", ~~Fourth~~ **Fifth** Edition, ~~October 1997~~, **June 2001**, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(B) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(C) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", Third Edition, May 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(D) National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life ~~Extension~~ of Existing Steel Underground **Storage** Tanks by Lining Without the Addition of Cathodic Protection", revised ~~1991~~, **1992**, National Leak Prevention Association, Route 2, Box 106A, Falmouth, Kentucky 41040.

(c) Metal piping that routinely contains regulated substances and is in contact with the ground must meet the following:

(1) Be cathodically protected in accordance with one (1) or more of the following:

(A) ~~Article 79~~, "Flammable and Combustible Liquids", of the ~~1998~~ Indiana Fire Code, ~~675 IAC 22-2.2~~: **675 IAC 22**.

(B) American Petroleum Institute Recommended Practice 1615, "Installation of Underground Petroleum Storage Systems", Fifth Edition, March 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(C) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", Third Edition, May 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(D) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0169-96, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems", ~~1992~~ **1996** Edition, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(2) Meet the requirements of 329 IAC 9-2-1(2)(B)(ii) and 329 IAC 9-2-1(2)(B)(iii).

(d) All existing UST systems shall comply with the new UST system spill and overfill prevention equipment requirements under 329 IAC 9-2-1(3) and 329 IAC 9-3.1-1 to prevent spilling and overfilling associated with product transfer to the UST system.

(e) The owner and operator shall demonstrate compliance with this section by providing a certification of compliance on the ~~underground storage tank~~ notification form under 329 IAC 9-2-2. The certification must demonstrate that the person that performs the work has been certified by the office of the state fire marshal. (*Solid Waste Management Board; 329 IAC 9-2.1-1; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3700; filed Aug 30, 2004, 9:35 a.m.: 28 IR 151*)

SECTION 21. 329 IAC 9-3-1 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-3-1 Reporting and record keeping**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 1. (a) The owner and operator of ~~a~~ **an** UST system shall cooperate fully with inspections, monitoring, and testing conducted by the agency, as well as requests for document submission, testing, and monitoring by the owner or operator under Section 9005 (42 U.S.C. 6991d) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, et seq., in effect on September 30, 1996.

(b) The owner and operator shall submit the following information to the agency:

(1) Notification for all UST systems under 329 IAC 9-2-2 that includes **the following**:

(A) Certification of installation for new UST systems under 329 IAC 9-2-1(5). ~~and~~

(B) Locational information within an accuracy of 1:24,000, plus or minus forty (40) feet, or plus or minus twelve and two-tenths (12.2) meters in any of the following formats, if known:

(i) Universal transverse mercator (UTM) coordinates.

(ii) Latitude and longitude coordinates.

- (iii) UTM coordinates and latitude and longitude coordinates.
- (2) Reports of all releases, including **the following**:
  - (A) Suspected releases under 329 IAC 9-4-1.
  - (B) Spills and overfills under 329 IAC 9-4-4. ~~and~~
  - (C) Confirmed releases under 329 IAC 9-5-2.
- (3) Corrective actions planned or taken, including **the following**:
  - (A) Free product removal under ~~329 IAC 9-5-3.1~~; **329 IAC 9-5-4.2**.
  - (B) Initial abatement measures under ~~329 IAC 9-5-4.1~~; **329 IAC 9-5-3.2**.
  - (C) Initial site characterization under 329 IAC 9-5-5.1.
  - (D) Investigation of soil and ground water cleanup under 329 IAC 9-5-6. ~~and~~
  - (E) Corrective action plan under 329 IAC 9-5-7.
- (4) A notification upon completion of all upgrade activities under 329 IAC 9-2.1.
- (5) A notification before ~~permanent~~ closure or change-in-service under 329 IAC 9-6-1.
- (6) A notification upon completion of:
  - (A) temporary closure under 329 IAC 9-6-5; or
  - (B) ~~permanent~~ closure or change-in-service under 329 IAC 9-6-1 and ~~329 IAC 9-6-2~~; **329 IAC 9-6-2.5**.
- (7) A notification upon completion of the installation of a method of release detection under 329 IAC 9-7-2 and 329 IAC 9-7-3.
- (8) Results of the site investigation conducted at ~~permanent~~ closure or change-in-service under 329 IAC 9-6-4.
- (9) Documentation supporting the suitability of the underground storage tank to be upgraded with cathodic protection. The documentation must be submitted within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(1). The documentation must include a signed affidavit from the corrosion expert who designed the field-installed cathodic protection system.
- (10) Documentation supporting the suitability of the underground storage tank to be upgraded with an internal lining. The documentation must be submitted within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(2).
- (11) Documentation supporting the suitability of the underground storage tank to be upgraded with an internal lining combined with cathodic protection. The documentation must be submitted within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(3). The documentation also must include the following:
  - (A) A report of the condition of the underground storage tank prior to lining that includes the following:
    - (i) A diagram showing the location and size of any repair necessary to the interior of the underground storage tank prior to lining.
    - (ii) A diagram showing the location and size of any repair necessary to the exterior of the underground storage tank prior to cathodic protection.
    - (iii) Documentation showing the tank has met both thickness and tank deflection criteria specified in the publications for upgrades under clause (B).
  - (B) The suitability of the tank for lining must meet the following requirements:
    - (i) American Petroleum Institute Recommended Practice 1631, "Interior Lining **and Periodic Inspections** of Underground Storage Tanks", ~~Fourth Fifth~~ Edition, ~~October 1997~~, **June 2001**, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.
    - (ii) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.
    - (iii) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", Third Edition, May 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.
- (12) Documentation of operation and maintenance of corrosion protection equipment under 329 IAC 9-3.1-2. The results of the postinstallation cathodic protection:
  - (A) test for a galvanic cathodic protection system; and
  - (B) inspection for an impressed current cathodic protection system;
 must be submitted within thirty (30) days after the test or inspection is completed for a new UST system and an upgraded UST system.
- (13) Documentation supporting the suitability of the excavation zone for the proper function of:
  - (A) vapor observation wells under 329 IAC 9-7-4(5); and
  - (B) ground water observation wells under 329 IAC 9-7-4(6);
 as a method of release detection. The documentation must be submitted within thirty (30) days after the observation wells

installation is completed for a new UST system and an upgraded UST system.

(14) Documentation supporting the suitability of the excavation zone to support a secondary barrier in the excavation zone as a method of release detection under 329 IAC 9-7-4(7)(B). The documentation must be submitted within thirty (30) days after the installation of the secondary barrier is completed for a new UST system and an upgraded UST system.

(15) Documentation supporting the suitability of the secondary barrier as a method of release detection under 329 IAC 9-7-4(7)(B). The documentation must be submitted within thirty (30) days after the installation of the secondary barrier is completed for a new UST system and an upgraded UST system.

(c) The owner and operator shall maintain the following information:

(1) Documentation of operation and maintenance of corrosion protection equipment under 329 IAC 9-3.1-2. The results of the postinstallation cathodic protection:

(A) test for a galvanic cathodic protection system; and

(B) inspection for an impressed current cathodic protection system;

must be maintained under ~~subsection~~ **subsections (d) and (e)** within thirty (30) days after the test or inspection is completed for a new UST system and an upgraded UST system.

(2) Documentation of UST system repairs under 329 IAC 9-3.1-4(b)(6).

(3) Documentation of compliance with release detection requirements under ~~329 IAC 9-7-6~~ **this section**.

(4) Results of the site investigation conducted at ~~permanent~~ closure under 329 IAC 9-6-4.

(5) Documentation supporting the suitability of the underground storage tank to be upgraded with cathodic protection. The documentation must be maintained under ~~subsection~~ **subsections (d) and (e)** within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(1). The documentation must include a signed affidavit from the corrosion expert who designed the field-installed cathodic protection system.

(6) Documentation supporting the suitability of the underground storage tank to be upgraded with an internal lining. The documentation must be maintained under ~~subsection~~ **subsections (d) and (e)** within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(2).

(7) Documentation supporting the suitability of the underground storage tank to be upgraded with an internal lining combined with cathodic protection. The documentation must be maintained under ~~subsection~~ **subsections (d) and (e)** within thirty (30) days after the determination is completed under 329 IAC 9-2.1-1(b)(3). The documentation also must include the following:

(A) A report of the condition of the underground storage tank prior to lining that includes the following:

(i) A diagram showing the location and size of any repair necessary to the interior of the underground storage tank prior to lining.

(ii) A diagram showing the location and size of any repair necessary to the exterior of the underground storage tank prior to cathodic protection.

(iii) Documentation showing the tank has met both thickness and tank deflection criteria specified in the publications for upgrades under clause (B).

(B) A signed certification by a corrosion expert indicating the suitability of the tank for lining under the following:

(i) American Petroleum Institute Recommended Practice 1631, "Interior Lining **and Periodic Inspections** of Underground Storage Tanks", ~~Fourth~~ **Fifth** Edition, ~~October 1997~~, **June 2001**, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(ii) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(iii) American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", Third Edition, May 1996, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(8) Documentation supporting the suitability of the excavation zone for the proper function of:

(A) vapor observation wells under 329 IAC 9-7-4(5); and

(B) ground water observation wells under 329 IAC 9-7-4(6);

as a method of release detection. The documentation must be maintained under ~~subsection~~ **subsections (d) and (e)** within thirty (30) days after the observation wells installation is completed for a new UST system and an upgraded UST system.

(9) Documentation supporting the suitability of the excavation zone to support a secondary barrier in the excavation zone as a method of release detection under 329 IAC 9-7-4(7)(B). The documentation must be maintained under ~~subsection~~ **subsections (d) and (e)** within thirty (30) days after the installation of the secondary barrier is completed for a new UST system and an upgraded UST system.

(10) Documentation supporting the suitability of the secondary barrier as a method of release detection under 329 IAC 9-7-4(7)(B). The documentation must be maintained under ~~subsection~~ **subsections (d) and (e)** within thirty (30) days after the installation of the secondary barrier is completed for a new UST system and an upgraded UST system.

(11) A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used under 329 IAC 9-2-1(1)(D) or 329 IAC 9-2-1(2)(C). The documentation must be maintained under ~~subsection~~ **subsections (d) and (e)** within thirty (30) days after the analysis is completed.

**(12) All written performance claims that pertain to any release detection system used and the manner in which the claim has been justified or tested by the equipment manufacturer or installer. All claims must be maintained for the longest of the following time periods:**

**(A) Five (5) years.**

**(B) The time period the release detection system is used.**

**(C) The time period of any unresolved litigation between the commissioner and the owner or operator of the UST system.**

**(13) The results of any sampling, testing, or monitoring relating to release detection systems must be maintained for at least one (1) year except that the results of tank tightness testing conducted under 329 IAC 9-7-4(3) must be maintained until the next test is conducted.**

**(14) Documentation of all calibration, maintenance, and repair of release detection equipment permanently located on-site must be maintained for at least one (1) year after the servicing work is completed.**

**(15) Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be maintained for the longest of the following time periods:**

**(A) Five (5) years from the date of installation.**

**(B) The time period the release detection system is used.**

(d) The owner and operator shall maintain the records required **at:**

(1) ~~at~~ the underground storage tank site and immediately available for inspection by the agency; **or**

(2) ~~at~~ a readily available alternative site and be provided for inspection to the agency upon request. ~~or~~

~~(3)~~ **(e)** In the case of ~~permanent~~ closure records required under 329 IAC 9-6-4, the owner and operator are also provided with the additional alternative of mailing closure records to the agency if they cannot be kept at the site or an alternative site as ~~indicated~~ **allowed in this subsection (d)(2).** *(Solid Waste Management Board; 329 IAC 9-3-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1069; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3701; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 152)*

SECTION 22. 329 IAC 9-3-2 IS ADDED TO READ AS FOLLOWS:

### **329 IAC 9-3-2 Electronic reporting and submittal**

**Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2**

**Affected: IC 13-23**

**Sec. 2. Documentation required to be submitted to the agency by this article, with the exception of reports required under 329 IAC 9-4-4, may be submitted in an electronic format as prescribed by the commissioner. Any documents submitted in an electronic format must also be submitted as a paper copy unless the commissioner makes a determination that only an electronic copy is needed.** *(Solid Waste Management Board; 329 IAC 9-3-2; filed Aug 30, 2004, 9:35 a.m.: 28 IR 155)*

SECTION 23. 329 IAC 9-3.1-1 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-3.1-1 Spill and overfill control**

**Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2**

**Affected: IC 13-23**

Sec. 1. (a) The owner and operator shall ensure the following:

(1) Releases due to spilling or overfilling do not occur.

(2) The volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made.

(3) The transfer operation is monitored constantly to prevent overfilling and spilling.

(4) The transfer operation complies with the following:

(A) ~~National Fire Protection Association Publication 385, "Standard for Tank Vehicles for Flammable and Combustible Liquids", 1990 Edition, as incorporated by reference under rules of the fire prevention and building safety commission at 675 IAC 22-2.2-21.~~

(B) ~~Article 79, "Flammable and Combustible Liquids", of the 1998 Indiana Fire Code under rules of the fire prevention and building safety commission at 675 IAC 22-2.2.~~ **675 IAC 22.**

(b) The owner and operator shall report, investigate, and clean up any spills and overfills under 329 IAC 9-4-4.

(c) Deliveries must be made through a drop tube that extends to within one (1) foot of the tank bottom. (*Solid Waste Management Board; 329 IAC 9-3.1-1; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3704; filed Aug 30, 2004, 9:35 a.m.: 28 IR 155*)

SECTION 24. 329 IAC 9-3.1-2 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-3.1-2 Operation and maintenance of corrosion protection**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 2. The owner and operator of a steel UST system with corrosion protection shall comply with the following requirements to ensure that releases due to corrosion are prevented for as long as the UST system is used to store regulated substances:

(1) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that:

(A) routinely contain regulated substances; and

(B) are in contact with the ground.

(2) All UST systems equipped with galvanic cathodic protection systems must be inspected for proper operation by a qualified cathodic protection tester under the following requirements:

(A) All galvanic cathodic protection systems must be tested within six (6) months of installation and at least every three (3) years thereafter.

(B) Nace International (formerly the National Association of Corrosion Engineers) Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, NACE International, P.O. Box 218340, Houston, Texas 77218-8340.

(3) All UST systems with impressed current cathodic protection systems must be:

(A) inspected every sixty (60) days to ensure the equipment is running according to manufacturer's specifications; **and**

(B) **tested within six (6) months of installation and at least every three (3) years thereafter.**

(4) Records of the operation of the cathodic protection must be maintained under 329 IAC 9-3 to demonstrate compliance with the performance standards in this section. These records must provide **the results of** the following:

(A) ~~The results of~~ The most recent three (3) inspections required in subdivision (3).

(B) ~~The results of~~ Testing from the last two (2) inspections required in subdivision (2).

(5) The owner and operator shall demonstrate compliance with this section by providing a certification of compliance on the ~~underground storage tank~~ notification form under 329 IAC 9-2-2. The certification must demonstrate that the person that performs the work has been certified by the office of the state fire marshal.

(*Solid Waste Management Board; 329 IAC 9-3.1-2; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3704; filed Aug 30, 2004, 9:35 a.m.: 28 IR 155*)

SECTION 25. 329 IAC 9-3.1-3 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-3.1-3 Compatibility**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 3. (a) The owner and operator shall use ~~a~~ **an** UST system made of or lined with materials that are compatible with the regulated substance stored in the UST system.

(b) For tanks that store alcohol blends, one (1) or more of the following codes must be used to comply with subsection (a):



(1) American Petroleum Institute Recommended Practice 1626, "Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations", First Edition, April 1985, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(2) American Petroleum Institute Recommended Practice 1627, "Storage and Handling of Gasoline-Methanol/Cosolvent Blends at Distribution Terminals and Service Stations", First Edition, August 1986, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

*(Solid Waste Management Board; 329 IAC 9-3.1-3; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3704; filed Aug 30, 2004, 9:35 a.m.: 28 IR 156)*

SECTION 26. 329 IAC 9-3.1-4 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-3.1-4 Repairs and maintenance allowed**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 4. (a) The owner and operator of ~~a~~ **an** UST system shall ensure that repairs **and maintenance** prevent releases due to:

(1) structural failure; ~~as long as the UST system is used to store regulated substances;~~ or

(2) corrosion;

as long as the UST system is used to store regulated substances.

(b) The repairs **and maintenance** must meet the following requirements:

(1) Repairs **and maintenance** to a steel UST system must be conducted in accordance with one (1) or more of the following:

(A) ~~Article 79~~; "Flammable and Combustible Liquids", of the ~~1998~~ Indiana Fire Code, ~~675 IAC 22-2-2~~. **675 IAC 22**.

(B) American Petroleum Institute Recommended Practice 2200, "Repairing Crude Oil, Liquefied Petroleum Gas, and Product Pipelines", Third Edition, May 1994, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(C) American Petroleum Institute Recommended Practice 1631, "Interior Lining **and Periodic Inspections** of Underground Storage Tanks", ~~Fourth Fifth~~ Edition, ~~October 1997~~, **June 2001**, American Petroleum Institute, 1220 L Street NW, Washington, D.C. 20005-4070.

(D) National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life ~~Extension~~ of Existing Steel Underground **Storage** Tanks by Lining Without the Addition of Cathodic Protection", revised ~~1991~~, **1992**, National Leak Prevention Association, Route 2, Box 106A, Falmouth, Kentucky 41040.

**(2) Maintenance to a steel tank lined under section 2 of this rule is not allowed if thirty percent (30%) or more of the original lined surface of the steel tank has had maintenance performed under subdivision (1). The tank must be closed according to 329 IAC 9-6.**

~~(2)~~ **(3) Repairs and maintenance** to a fiberglass-reinforced plastic tank may be made **by the:**

(A) ~~by the~~ manufacturer's authorized representative using the manufacturer's specifications; or

(B) ~~by the~~ owner or operator in accordance with one (1) or more of the following:

(i) Underwriters Laboratories Standard 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohol, and Alcohol-Gasoline Mixtures", ~~1994~~, revised **1996**, Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, Illinois 60062.

(ii) Codes listed in Class 6 of American Petroleum Institute Recommended Practice 1631, "Interior Lining **and Periodic Inspections** of Underground Storage Tanks", ~~Fourth Fifth~~ Edition, ~~October 1997~~, **June 2001**, American Petroleum Institute, 1220 L Street NW, Washington, D. C. 20005-4070.

(iii) National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10 Year Life ~~Extension~~ of Existing Steel Underground **Storage** Tanks by Lining Without the Addition of Cathodic Protection", revised ~~1991~~, **1992**, National Leak Prevention Association, Route 2, Box 106A, Falmouth, Kentucky 41040.

~~(3)~~ **(4) The requirements for repair and maintenance to pipes and fittings are as follows:**

(A) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced.

(B) Fiberglass pipes and fittings may be repaired **or have maintenance performed** in accordance with the manufacturer's specifications.

~~(4)~~ **(5) The repaired tank and piping must be tightness tested under 329 IAC 9-7-4(3) and 329 IAC 9-7-5(2) within thirty (30) days following the date of the completion of the repair except as provided under one (1) of the following:**

(A) The repaired tank is internally inspected in accordance with one (1) or more of the standards listed in subdivision (1) or ~~(2)~~.

**(3).**

(B) The repaired portion of the UST system is monitored monthly for releases under a method specified in 329 IAC 9-7-4(4) through 329 IAC 9-7-4(8).

(C) Another test method is used that is determined by the commissioner to be no less protective of human health and the environment than those listed in clauses (A) and (B).

(5) (6) Following the repair of any cathodically protected UST system, the cathodic protection system must be tested under:

(A) section 2(2) of this rule within six (6) months following the repair for a galvanic cathodic protection system; ~~to ensure that it is operating properly;~~ and

(B) section 2(3) of this rule within sixty (60) days following the repair for an impressed current cathodic protection system; to ensure that it is operating properly.

(6) (7) The UST system owner and operator shall maintain records of each repair for the remaining operating life of the UST system that demonstrate compliance with this section. **Maintenance must be documented but is not required to be reported to the agency.**

(7) (8) The owner and operator shall demonstrate compliance with this section by providing a certification of compliance on the ~~underground storage tank~~ notification form under 329 IAC 9-2-2. The certification must demonstrate that the person that performs the work has been certified by the office of the state fire marshal.

*(Solid Waste Management Board; 329 IAC 9-3.1-4; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3705; filed Aug 30, 2004, 9:35 a.m.: 28 IR 156)*

SECTION 27. 329 IAC 9-4-3 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-4-3 Release investigations and confirmation steps**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 3. Unless corrective action is initiated in accordance with 329 IAC 9-5, the owner and operator shall immediately investigate and confirm all suspected releases of regulated substances requiring reporting under section 1 of this rule within seven (7) days using the following steps or another procedure approved by the commissioner:

(1) The owner and operator shall conduct tests according to the requirements for tightness testing in 329 IAC 9-7-4(3) and 329 IAC 9-7-5(2) to determine whether a leak exists in that portion of the tank that routinely contains product or the attached delivery piping, or both. The owner and operator shall complete one (1) of the following:

(A) The owner and operator shall repair, replace, or upgrade the UST system and begin corrective action in accordance with 329 IAC 9-5 if the test results for the system, tank, or delivery piping indicate that a leak exists.

(B) Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a leak exists and if ~~environmental contamination is~~ **contaminants are** not present.

(C) The owner and operator shall conduct a site check as described in subdivision (2) if the test results for the system, tank, and delivery piping do not indicate that a leak exists, but ~~environmental contamination is~~ **contaminants are** present.

(2) The owner and operator shall measure for the presence of a release where ~~contamination~~ **the contaminant** is most likely to be present at the underground storage tank site. In selecting sample types, sample locations, and measurement methods, the owner and operator shall consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence and source of the release. The owner and operator shall complete one (1) of the following:

(A) If the test results for the excavation zone or the underground storage tank site indicate that a release has occurred, the owner and operator shall begin corrective action in accordance with 329 IAC 9-5.

(B) If the test results for the excavation zone or the underground storage tank site do not indicate that a release has occurred, further investigation is not required.

*(Solid Waste Management Board; 329 IAC 9-4-3; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1070; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3706; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 157)*

SECTION 28. 329 IAC 9-4-4 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-4-4 Reporting and cleanup of spills and overfills**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 4. (a) The owner and operator of a ~~an~~ UST system shall contain and immediately clean up a spill or overfill, report **the incident** to the ~~agency~~ **emergency response twenty-four (24) hour spill hotline at (888) 233-7745 in Indiana or (317) 233-7745 as soon as possible but** within twenty-four (24) hours, and begin corrective action in accordance with 329 IAC 9-5 in the following cases:

- (1) Spill or overfill of petroleum that results in a release to the environment that:
  - (A) equals or exceeds twenty-five (25) gallons; or
  - (B) causes a sheen on nearby surface water.
- (2) Spill or overfill of a hazardous substance that results in a release to the environment that equals or exceeds its reportable quantity under 40 CFR 302.4, **revised 2000**. The Code of Federal Regulations is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

(b) The owner and operator of a ~~an~~ UST system shall contain and immediately remove any contaminated media when one (1) of the following occur:

- (1) Spill or overfill of petroleum that is less than twenty-five (25) gallons.
  - (2) Spill or overfill of a hazardous substance that is less than the reportable quantity under 40 CFR 302.4, **revised 2000**. The Code of Federal Regulations is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.
- If the removal of any contaminated media cannot be accomplished within twenty-four (24) hours, the owner and operator shall immediately notify the agency. (*Solid Waste Management Board; 329 IAC 9-4-4; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1070; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3707; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 158*)

SECTION 29. 329 IAC 9-5-1 IS AMENDED TO READ AS FOLLOWS:

#### **Rule 5. Initial Response, Site Investigation, and Corrective Action**

##### **329 IAC 9-5-1 Applicability for release response and corrective action**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-12-3-2; IC 13-23

Sec. 1. (a) An owner and operator of a petroleum or hazardous substance UST system shall, in response to a confirmed release from the UST system, comply with the requirements of this rule ~~except for~~ **unless the UST systems system is** excluded under 329 IAC 9-1-1(b) ~~and or the UST systems system is~~ subject to corrective action requirements under Section 3004(u) (42 U.S.C. 6924(u)) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, et seq., in effect on September 30, 1996.

(b) The owner and operator shall conduct corrective action that meets the following requirements:

(1) The corrective action plan is in the following format:

(A) Executive summary, including the following:

- (i) A briefing about the site in narrative form, highlighting events regarding the need for corrective action.
- (ii) Other information regarding the need for corrective action.

(B) A narrative concerning contaminant and site conditions, including the following:

- (i) Contaminant identification including chemical and physical properties.
- (ii) Contaminant toxicological data.
- (iii) Potential effects of residual contamination.
- (iv) Site specific soil and hydrogeologic characteristics.
- (v) Proximity of local surface waters and ground water and associated water quality data.
- (vi) Current and potential future uses of local water sources.

(vii) A summary of site specific water quality data generated during previously completed site investigations.

(viii) Other information necessary to describe site conditions.

(C) Health and safety plan, including the following:

- (i) Known hazards and risk evaluation associated with site activities.
- (ii) List of personnel, alternates to personnel, and areas of responsibilities of personnel.
- (iii) Levels of personal protection for personnel.
- (iv) Decontamination equipment and procedures.

- (v) Site access control measures.
  - (vi) Site emergency procedures; medical care availability; and a route by roadway to health care facilities.
  - (vii) List of emergency phone numbers that includes the fire department; the police department; a local ambulance; and the local hospital or medical facility.
  - (viii) List of personnel's training; qualifications; and certifications.
  - (ix) A description of how the plan will meet health and safety requirements.
- (D) An appropriately scaled regional map that can be reproduced from previously submitted and approved site investigation reports but must include the following:
- (i) Illustrated legends and compass directions.
  - (ii) A legible, topographic base with ten (10) foot contour intervals.
  - (iii) Location and depth of any wells that have a capacity greater than seventy (70) gallons per minute within a two (2) mile radius of the site.
  - (iv) Location and depth of any wells that have a capacity of less than seventy (70) gallons per minute within a one (1) mile radius of the site.
  - (v) Identification of facilities and land for agricultural; residential; commercial; and industrial use within a one (1) mile radius of the site.
  - (vi) Locations of surface water within a one (1) mile radius of the site.
  - (vii) Site location.
- (E) Appropriately scaled site maps that can be reproduced from previously submitted and approved site investigation reports but must include the following:
- (i) Illustrated legends and compass directions.
  - (ii) Topographic base with appropriate contour intervals to accurately describe the site.
  - (iii) Identified above ground features; including buildings; roadways; manways; pump islands; and property lines.
  - (iv) Identified subsurface features; including tanks; piping; and utility conduits.
  - (v) Soil boring and monitoring well locations surveyed to one-hundredth (.01) foot accuracy from an on-site temporary benchmark.
  - (vi) Both field and laboratory sampling locations; depth of sample taken; and the contaminant concentration results.
  - (vii) Contaminant plume delineation.
  - (viii) Ground water flow direction.
  - (ix) The location of remediation equipment shown; to scale.
- (F) Geologic and hydrogeologic maps that describe subsurface features and contaminant plume identification and include the following:
- (i) Cross sections.
  - (ii) Fence diagrams.
  - (iii) Geophysical profile or geophysical maps; or both; if available.
- (G) A narrative on selected remediation technology that includes the following:
- (i) Feasibility studies showing the effectiveness of the selected remediated technology.
  - (ii) A detailed description of the selected technology; design explanations; and illustrations.
  - (iii) Projected contaminant removal or treatment rates; or both.
  - (iv) Technical specifications of equipment and the process.
- (H) Sampling and analysis plan to evaluate the performance of the remediation technology that includes the following:
- (i) A minimum of quarterly samples taken and reported.
  - (ii) The following as applicable:
    - (AA) Field investigation procedures.
    - (BB) Field screen samples.
    - (CC) Laboratory procedures for checking sample validity; sample acquisition; container; preservation; shipping requirements; storage time; chain of custody; and decontamination of equipment between samples.
    - (DD) Provisions for retention of laboratory quality assurance and quality control information.
    - (EE) Documentation that the sampling and analysis will be conducted in accordance with "Test Methods for Evaluating Solid Waste; Physical/Chemical Methods"; United States Environmental Protection Agency Publication SW-846; Third Edition (November 1986) as amended by Updates I (July 1992); II (September 1994); III (August 1993); IV (January 1995); and V (December 1996). Publication SW-846 is available from the Superintendent of Documents; Government Printing Office; Washington, D.C. 20402.
    - (FF) Provisions for submission of reports that must include a signed laboratory certificate of analysis that lists analysis

method; method preparation; date of sample receipt; date of analysis; a statement that the method quality assurance and quality control procedures were followed; the chain of custody documentation; including laboratory receipts; decontamination procedures; and sampling procedures and techniques:

(f) Timetable that includes the following shown on a Gantt chart:

(i) Installation and implementation dates:

(ii) Sampling events:

(iii) Progress milestones:

(iv) Completion dates:

(j) Provisions for progress reports to be submitted that include the following:

(i) Brief narrative of the remediation process:

(ii) Documentation and data graphically demonstrating remediation effectiveness:

(iii) Quarterly sampling results:

(k) Provisions for a final report that includes:

(i) documentation that the clean-up goals and objectives have been achieved; and

(ii) a signature by either a professional engineer, professional geologist, hydrologist, or certified hazardous materials manager.

(2) The soil clean-up objectives must be determined and met by complying with IC 13-12-3-2.

(3) The ground water clean-up objectives must be determined and met by complying with IC 13-12-3-2.

(c) The owner and operator may conduct another method of corrective action that is:

(1) as protective of human health and the environment as that provided in subsection (b); and

(2) approved by the commissioner.

*(Solid Waste Management Board; 329 IAC 9-5-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1071; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3707; errata filed Sep 10, 1999, 9:08 a.m.: 23 IR 26; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 158)*

SECTION 30. 329 IAC 9-5-2 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-5-2 Initial response**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 2. Upon confirmation of a release in accordance with 329 IAC 9-4-3 or after a release from the UST system is identified in any other manner, the owner and operator shall perform the following initial response actions within twenty-four (24) hours of a release:

(1) Report the release to the agency:

**(A) by telephone at (317) 232-8900 or after hours or holidays at (317) 233-7745;**

**(B) by fax at (317) 234-0428; or**

**(C) at LeakingUST@dem.state.in.us for electronic mail.**

(2) Take immediate action to prevent any further release of the regulated substance into the environment.

(3) Identify and mitigate fire, explosion, and vapor hazards.

**(4) Mitigate to the extent practicable adverse effects to human health and the environment.**

*(Solid Waste Management Board; 329 IAC 9-5-2; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1071; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3709; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 160)*

SECTION 31. 329 IAC 9-5-3.2 IS ADDED TO READ AS FOLLOWS:

### **329 IAC 9-5-3.2 Initial abatement measures and site check**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 3.2. (a) The owner and operator shall perform the following abatement measures:

(1) Remove as much of the regulated substance from the UST system as necessary to prevent further release to the environment.

(2) Visually inspect any aboveground releases or exposed belowground releases and prevent further migration of the

released substance into surrounding soils and ground water.

(3) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the underground storage tank excavation zone and entered into subsurface structures, which may include:

- (A) storm sewers;
- (B) sanitary sewers;
- (C) utility lines;
- (D) inhabitable buildings with a basement or crawlspace; or
- (E) underground conduits.

(4) Remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement, or corrective action activities. If these remedies include treatment or disposal of soils, the owner and operator shall comply with applicable state and local requirements.

(5) Measure for the presence of a release where the contaminant is most likely to be present at the underground storage tank site unless the presence and source of the release have been confirmed in accordance with the site check required by 329 IAC 9-4-3(2) or the closure site assessment of 329 IAC 9-6-2.5. In selecting sample types, sample locations, and measurement methods, the owner and operator shall consider the nature of the stored substance, the type of backfill, depth to ground water, and other factors as appropriate for identifying the presence and source of the release.

(6) Investigate to determine the possible presence of free product, and begin free product removal as soon as practicable and in accordance with section 4.2 of this rule.

(b) If:

(1) drinking water is affected;

(2) free product is present; or

(3) vapors are present in:

- (A) storm sewers;
- (B) sanitary sewers;
- (C) utility lines;
- (D) inhabitable buildings with a basement or crawlspace; or
- (E) underground conduits;

within twenty (20) days after release confirmation, the owner and operator shall submit a report to the agency summarizing the initial abatement measures taken under subsection (a) and any resulting information or data. (*Solid Waste Management Board; 329 IAC 9-5-3.2; filed Aug 30, 2004, 9:35 a.m.: 28 IR 160*)

SECTION 32. 329 IAC 9-5-4.2 IS ADDED TO READ AS FOLLOWS:

#### 329 IAC 9-5-4.2 Free product removal

Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

Affected: IC 13-23

Sec. 4.2. At sites where investigations indicate the presence of free product, the owner and operator shall remove free product to the maximum extent practicable as determined by the commissioner based on free product removal technology and site conditions while continuing, as necessary, any actions initiated under sections 2, 3.2, and 5.1 of this rule, or preparation for actions required under sections 6 and 7 of this rule. In meeting the requirements of this section, the owner and operator shall do the following:

(1) Conduct free product removal in a manner that:

- (A) minimizes the spread of the contaminant into previously uncontaminated zones by using recovery and disposal techniques appropriate to the hydrogeologic conditions at the site; and
- (B) properly treats, discharges, or disposes of recovery products and byproducts in compliance with applicable local, state, and federal regulations.

(2) Use abatement of free product migration as a minimum objective for the design of the free product removal system.

(3) Handle any flammable products in a manner so as to prevent fires or explosions in accordance with the site health and safety plan as required by section 7(e) of this rule.

(4) Unless directed to do otherwise by the commissioner, prepare and submit to the agency, within forty-five (45) days after confirming a release, a free product removal report that provides at least the following information:

- (A) The name of the person responsible for directing the free product removal measures.

**(B) The estimated quantity, type, and thickness of free product observed or measured in wells, boreholes, and excavations.**

**(C) The type of free product recovery system used.**

**(D) Whether any discharge of free product will take place on-site or off-site during the recovery operation and where this discharge will be located.**

**(E) The type of treatment applied to, and the effluent quality expected from, any discharge.**

**(F) The steps that have been, or are being taken, to obtain necessary permits for any discharge.**

**(G) The disposition of the recovered free product.**

*(Solid Waste Management Board; 329 IAC 9-5-4.2; filed Aug 30, 2004, 9:35 a.m.: 28 IR 160)*

SECTION 33. 329 IAC 9-5-5.1 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-5-5.1 Initial site characterization**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-12-3-2; IC 13-23; IC 25-17.6; IC 25-31-1; IC 25-31.5-4

Sec. 5.1. (a) **In conformance with IC 13-12-3-2**, the owner and operator shall assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial **response and** abatement measures in sections 2 and ~~4-1~~ **3.2** of this rule. This information must include **a title page that identifies the consultant performing the work, the date the report was prepared, and** the following:

(1) Data on the nature, **site-specific location**, and estimated quantity of release.

(2) Data from available sources or site investigations, or both, concerning the following factors:

(A) Surrounding populations.

(B) **Surface and ground** water quality.

(C) Use and approximate locations of all wells ~~within:~~

(i) ~~a one (1) mile radius for ground water wells for background;~~

(ii) ~~a two (2) mile radius for municipal water supply wells for investigations;~~

(iii) ~~a two (2) mile radius for wells with a capacity greater than seventy (70) gallons per minute for investigation; and~~

(iv) ~~a one (1) mile radius for wells with a capacity less than seventy (70) gallons per minute for investigation.~~

**potentially affected by the release but at a minimum include those wells specified in subsection (b)(2)(E)(v)(CC) and (b)(2)(E)(v)(DD).**

(D) Subsurface soil conditions.

(E) Locations of

(i) ~~storm sewers;~~

(ii) ~~sanitary sewers;~~

(iii) ~~utility lines; and~~

(iv) ~~french drains.~~

**on-site and adjacent subsurface features.**

(F) Climatological conditions.

(G) Land use.

(3) Results of the site check required under section ~~4-1(a)(5)~~ **3.2(a)(5)** of this rule.

(4) Results of the free product investigations required under section ~~4-1(a)(6)~~ **3.2(a)(6)** of this rule, to be used by the owner and operator to determine whether free product must be recovered under section ~~3-1~~ **4.2** of this rule.

(5) Known or expected extent of ~~contamination:~~ **the contaminant or contaminants.**

(6) Information requested by the commissioner.

(b) Within ~~forty-five (45)~~ **sixty (60)** days of release confirmation, the owner and operator shall submit the information collected under subsection (a) to the agency as follows:

(1) In a manner that demonstrates the applicability and technical adequacy of the information.

(2) In a format as ~~follows:~~ **required by the agency that includes the following information:**

(A) Background, including the following:

(i) The owner's and operator's name and address.

(ii) Past owners' and operators' names and addresses.

(iii) The facility name, address, and telephone number.

- (iv) All prior and present operations of the facility.
- (v) Prior construction activities.
- (vi) List of prior spills at the facility.
- (vii) Site proximity to sensitive areas, such as:
  - (AA) residences;
  - (BB) schools; and
  - (CC) wells;
  - (DD) well fields; or
  - (EE) wellhead protection areas;**delineated under rules of the water pollution control board at 327 IAC 8-4.1.**
- (viii) Subsurface soil descriptions.
- (ix) ~~Location of~~ **Information known about** all ground water wells within a one (1) mile radius of the facility.
- (x) Description of all site work completed **and the date the site work was completed.**
- (xi) Number and volume of underground storage tank or tanks.
- (xii) Underground storage tank construction material and type of leak detection.
- (xiii) Past and present contents of each underground storage tank.
- (xiv) Records of most recent tightness test results, inventory records, and underground storage tank gaging records for the prior calendar year.
- (xv) Underground storage tank age and date of installation.
- (xvi) Underground storage tank system closure report submittal date, if applicable.
- (B) Release incident description, including the following:
  - (i) Date reported to the ~~department.~~ **agency.**
  - (ii) Release incident number given by the ~~department~~ **agency** at the initial report.
  - (iii) Assigned ~~departmental~~ **agency** site priority ranking obtained at the initial report.
  - (iv) List of material or materials released.
  - (v) List of volume lost.
  - (vi) List of areas affected, such as the:
    - (AA) soil;
    - (BB) ground water;
    - (CC) **surface water features;** or sewers;
    - (DD) **subsurface conduits.**
  - (vii) Health and environmental risks associated with the spill incident.
- (C) Initial response and abatement information, including the following:
  - (i) A detailed description of immediate actions **taken to prevent** any further release.
  - (ii) Measures taken to prevent further migration of the spill.
  - (iii) Actions taken to identify and mitigate fire and explosion hazards posed by vapors or free product.
  - (iv) Actions **taken** to investigate free product release.
- (D) Free product recovery information, including the following:
  - (i) **The** name of **the** person or persons responsible for product removal.
  - (ii) Estimated quantity, type, and thickness of product observed or discovered.
  - (iii) A description of the recovery system.
  - (iv) Copies of all permits from local, state, and federal agencies necessary for:
    - (AA) handling;
    - (BB) treating;
    - (CC) discharging; and
    - (DD) disposing of;
 the contaminants.
  - (v) Final disposition of the recovered free product **and associated documentation.**
- (E) Investigation information, including the following:
  - (i) Types of bedrock.
  - (ii) Soil series description.
  - (iii) List of regional soil and geologic references used.
  - (iv) Regional hydrogeological references used.
  - (v) Appropriately scaled regional maps with the following:



- (AA) Illustrated legends, **scale**, and compass direction.
  - (BB) Topographic base with ten (10) foot contour intervals.
  - (CC) Location, depth, and corresponding department of natural resources' well records ~~of for~~ wells **with located within a two (2) mile radius of the site that have a capacity of over seventy (70) gallons per minute and or that are municipal water supply wells. within a two (2) mile radius of the site.**
  - (DD) Location, depth, and corresponding department of natural resources' well records ~~of for~~ wells with a capacity of less **that than** seventy (70) gallons per minute within a one (1) mile radius of the site.
  - (EE) Identification of facilities and land for agricultural, industrial, and commercial use within one (1) mile radius of the site.
  - (FF) Locations of surface water **features** within a one (1) mile radius of the site.
- (vi) Site-specific geologic information as follows:
- (AA) A minimum of three (3) on-site, continuously sampled soil borings.
  - (BB) Soil ~~borings,~~ **boring locations**, accurately field surveyed with a horizontal closure of less than one (1) foot error. ~~placed as needed to confirm the extent of soil contamination.~~
  - (CC) Site soil stratigraphy identification, including cross sections.
  - (DD) **Soil** boring logs that ~~give lithologic descriptions, degree of sorting, sedimentary contacts, gas readings,~~ **include the method of drilling, total depth of boring, type and thickness of formations or materials encountered, including color, hardness, and a geological description, soil vapor readings, name and address of drilling company, name and license number of drilling operator, and signature of licensed driller or environmental professional who logged the boring.**
  - (EE) **Soil** boring logs with the same vertical scale and including surface elevations.
- (vii) Hydrogeologic information, including the following:
- (AA) Depth to ground water ~~with seasonal fluctuations determined by at least quarterly measured in a piezometer or monitoring events.~~ **well.**
  - (BB) **Ground water** flow directions and gradients.
  - ~~(CC) Hydraulic conductivity, transmissivity, storativity, confined or unconfined condition, porosity, and average linear velocity of the aquifer or aquifers involved.~~
  - ~~(DD) (CC) A minimum of three (3) monitoring wells screened across water table fluctuation and not placed in a straight line.~~ **ground water samples collected from locations most likely to be contaminated and a description of the method of sample collection.**
  - ~~(EE) (DD) A minimum of three (3) monitoring wells placed as needed to confirm extent of or piezometers must be screened across water table fluctuation and not placed in a straight line.~~ **Monitoring wells must be installed, when time series ground water contamination: quality monitoring is required.**
  - ~~(FF) (EE) Monitoring well and piezometer location surveyed to a temporary benchmark with a vertical accuracy of one-hundredth (.01) foot and with a horizontal closure of less than one (1) foot.~~
  - ~~(GG) (FF) Monitoring well or piezometer construction records submitted with the same scale that includes ground surface and the top of the well casing elevations,~~ **casing size and materials, well screen length, slot size, depth to the top and bottom of screen, method of drilling or well installation, borehole size, name and address of drilling company, name and license number of the equipment operator, type, depth, and thickness of grouting materials, method of installation, and signature of licensed driller.**
  - (GG) Monitoring well or piezometer stratigraphic logs that meet the requirements of rules of the natural resources commission at 312 IAC 13, and include method of drilling, total depth of boring, type and thickness of formations or materials encountered, including color, hardness, and a geological description, soil vapor readings, borehole diameter, well diameter, name and address of drilling company, name and license number of drilling operator, and signature of licensed driller or environmental professional who logged the well or piezometer boring.**
- (viii) Contamination plume identification and maps, appropriately scaled, that include the following:
- ~~(AA) The horizontal and vertical extent of contamination must be defined:~~
  - ~~(BB) (AA) Illustrated legends, scale, and compass directions.~~
  - ~~(CC) (BB) Topographic base with appropriate contour intervals to accurately describe the site.~~
  - ~~(DD) (CC) Identification of aboveground features, including buildings, roadways, manways, pump islands, and property lines.~~
  - ~~(EE) (DD) Identification of subsurface features, including tanks, piping, and utility conduits,~~ **storm sewers, sanitary sewers, utility lines, and french drains.**
  - ~~(FF) (EE) Soil borings and monitoring well locations surveyed to a temporary benchmark with an a horizontal closure accuracy of one (1) foot, and monitoring well locations surveyed with a vertical accuracy of one-hundredth (.01) foot.~~

~~(GG) Both field and laboratory (FF) Sampling locations, depth of sample taken, and the contaminant concentration results.~~  
~~(HH) (GG) Horizontal and vertical contaminant plume identification.~~  
~~(H) (HH) Geologic cross sections showing the water table and illustrating the vertical extent of the contaminant plume identification.~~

~~(J) (II) Ground water flow directions.~~

(F) Sampling information, including the following:

(i) Field investigation procedures.

(ii) Field screen samples.

(iii) Laboratory procedures that include:

(AA) checking sample validity;

(BB) sample acquisition;

(CC) container;

(DD) preservation;

(EE) shipping requirements;

(FF) storage time;

(GG) chain of custody; and

(HH) decontamination of equipment between samples.

(iv) Provisions for retention of laboratory quality assurance and quality control information, so that the information may be made available to representatives of the ~~department~~ **agency** upon request.

(v) Documentation, ~~that in a format prescribed by the commissioner,~~ of the sampling and analysis conducted. ~~was in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", United States Environmental Protection Agency Publication SW-846, Third Edition (November 1986) as amended by Updates I (July 1992), H (September 1994), HA (August 1993), HB (January 1995), and HH (December 1996). Publication SW-846 is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.~~

(vi) A report, **in a format prescribed by the commissioner**, that includes a signed laboratory certificate of analysis that lists:

(AA) analysis method;

(BB) method preparation;

(CC) date of sample receipt;

(DD) date of analysis;

(EE) a statement that the method quality assurance and quality control procedures were followed;

(FF) the chain of custody documentation, including laboratory receipts, decontamination procedures, and sampling procedures and techniques.

(vii) Analytical methods and corresponding detection limits. ~~in the tables at 329 IAC 9-1-10.2.~~

(G) Results and conclusions that include the following:

(i) A discussion of the results of the site investigation.

(ii) Field and laboratory sample results in a tabular format.

(H) Recommendations that include ~~the following~~:

~~(i) Feasibility studies.~~

~~(ii) a discussion of effective remediation alternatives, including the following for each alternative:~~

~~(AA) Overall effectiveness of technology.~~

~~(BB) Ability to achieve clean-up criteria.~~

~~(CC) Expected treatment duration.~~

~~(DD) Treatment reliability.~~

~~(EE) Permits that will be required.~~

**the need for further site investigations under section 6 of this rule to determine the nature and extent of the contaminants.**

(3) In a report that is signed by **an environmental professional that may include: a:**

(A) registered professional engineer under IC 25-31-1;

(B) **certified licensed** professional geologist under IC 25-17.6; ~~or~~

(C) certified hazardous materials manager (CHMM) **as certified by the Institute of Hazardous Material Management; or**

**(D) professional soil scientist registered under IC 25-31.5-4.**

(c) The commissioner may approve an alternative procedure for initial site characterization only if the procedure provides substantially equal protection for human health and the environment as the initial site characterization in subsections (a) and (b) **and**

is in the format as described in subsection (b)(2) and (b)(3). (Solid Waste Management Board; 329 IAC 9-5-5.1; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3710; errata filed Sep 10, 1999, 9:08 a.m.: 23 IR 26; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 161)

SECTION 34. 329 IAC 9-5-6 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-5-6 Further site investigations for soil and ground water cleanup**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-12-3-2; IC 13-23

Sec. 6. (a) In order to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product ~~contamination~~ **as a contaminant** of the ground water, the owner and operator shall conduct ~~investigations~~ **a further site investigation** of the release, the release site, and the surrounding area possibly affected by the release if any of the following conditions exist:

**(1) Information collected and submitted under section 5.1 of this rule is incomplete or fails to define the nature and extent of contamination in the soil and ground water.**

~~(1)~~ **(2)** There is evidence that ground water wells have been affected by the ~~release~~ **contaminant**. This evidence may include any ~~found~~ **information collected** during release confirmation or previous corrective action measures.

~~(2)~~ **(3)** Free product is found to need recovery in compliance with section ~~3-4~~ **4.2** of this rule.

~~(3)~~ **(4)** There is evidence that contaminated soils may be in contact with ground water. This evidence may include any ~~found~~ **information collected** while conducting the initial response measures or investigations required under sections 1, ~~through 2~~ **3.1, 4.1, and 5.1** of this rule.

~~(4)~~ **(5)** The commissioner requests ~~an~~ **a further site** investigation based on the potential effects of contaminated soil or ground water on nearby surface water and ground water resources.

**(b) During the further site investigation the owner or operator must do the following if evidence exists that a contaminant exceeds the cleanup objectives under IC 13-12-3-2:**

**(1) Install a minimum of three (3) ground water monitoring wells, if at least three (3) wells were not installed during the initial site investigation under section 5.1 of this rule. Additional monitoring wells may be required to fully define the extent of contamination.**

**(2) Take a ground water sample from each of the monitoring wells and report the analytical results to the agency.**

**(3) Provide a description of the method for collecting the ground water samples.**

**(4) Monitoring wells must be screened across water table fluctuation and not placed in a straight line.**

**(5) Monitoring wells must be installed as per the requirement of the rule of the natural resources commission at 312 IAC 13-8-3.**

~~(b)~~ **(c)** The owner and operator shall submit the information collected under subsection ~~(a)~~ **(b)** as soon as practicable or in accordance with a schedule established by the commissioner **in the format described in section 5.1(b)(2) and 5.1(b)(3) or 5.1(c) of this rule as well as a title page that identifies the consultant performing the work, the date the report was prepared, and the following information:**

**(1) Hydraulic conductivity.**

**(2) Transmissivity.**

**(3) Storativity.**

**(4) Confined or unconfined condition.**

**(5) Porosity of the aquifer or aquifers involved.**

**(6) The average linear velocity of the ground water in the aquifer or aquifers involved.**

**(d) Provide a complete discussion of effective remediation alternatives, including the following for each alternative:**

**(1) Overall effectiveness of technology.**

**(2) Ability to achieve cleanup criteria.**

**(3) Expected treatment duration.**

**(4) Treatment reliability.**

**(5) Permits that will be required.**

**(e) The approval of a further site investigation or initial site characterization under section 5.1 of this rule is not a determination that the actual costs incurred performing these site characterization activities are reimbursable costs under the rules of the underground storage tank financial assurance board at 328 IAC 1.** *(Solid Waste Management Board; 329 IAC 9-5-6; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1072; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3712; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 164)*

SECTION 35. 329 IAC 9-5-7 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-5-7 Corrective action plan**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-12-3-2; IC 13-23-8-4; IC 25-17.6; IC 25-31-1; IC 25-31.5-4

Sec. 7. (a) At any point after reviewing the information submitted in compliance with sections 1, 2, ~~4.1~~, **3.2**, and 5.1 of this rule, the commissioner may require the owner and operator to:

(1) submit additional information; or

(2) develop and submit a corrective action plan for responding to contaminated soils and ground water.

If a plan is required, the owner and operator shall submit the plan according to a schedule established by the commissioner and the format designated under ~~section 1(b)(1) of this rule~~. **subsection (f)**. Alternatively, the owner and operator may, after fulfilling the requirements of sections 2, ~~4.1~~, **3.2**, and 5.1 of this rule, choose to submit a corrective action plan for responding to contaminated soil and ground water. In either case, the owner and operator are responsible for submitting a plan that provides for adequate protection of human health and the environment, as determined by the commissioner, and shall modify their plan as necessary to meet this standard. ~~The corrective action plan may be automatically deemed approved under subsection (f).~~

(b) The commissioner will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety, and the environment. In making this determination, the commissioner shall consider the following factors, as appropriate:

(1) The physical and chemical characteristics of the regulated substance, including its toxicity, persistence, and potential for migration.

(2) The hydrogeologic characteristics of the facility and the surrounding area.

(3) The proximity, quality, and current and future uses of nearby surface water and ground water.

(4) The potential effects of ~~a residual contamination~~ **contaminant** on nearby surface water and ground water.

**(5) The proximity of potential contaminant receptors, including:**

**(A) adjacent residences;**

**(B) wells;**

**(C) well fields; or**

**(D) wellhead protection areas delineated under rules of the water pollution control board at 327 IAC 8-4.1.**

~~(5)~~ **(6)** An exposure assessment.

~~(6)~~ **(7)** Any information assembled in compliance with this rule.

~~(7)~~ **(8)** The suitability of the chosen remediation method for site conditions.

(c) Upon approval of the corrective action plan or as directed by the commissioner, the owner and operator shall implement the plan, including modifications to the plan made by the commissioner. The owner and operator shall monitor, evaluate, and report the results of implementing the plan in accordance with a schedule and in a format established by the commissioner. **During implementation of the corrective action plan the commissioner may find that the approved corrective action plan will not achieve or is not achieving the cleanup objectives. Upon making this finding:**

**(1) the commissioner will notify the owner and operator that approval of the corrective action plan is suspended pending modification;**

**(2) the basis of the finding shall also be provided to the owner or operator;**

**(3) the owner or operator shall submit a modified plan to the to the commissioner for approval under subsection (b) before corrective action plan approval is reinstated;**

**(4) a reinstated corrective action plan approval is subject to all the provisions of this subsection; and**

**(5) the approval of a corrective action plan under this subsection is not a determination that the actual costs incurred performing the corrective action plan are reimbursable costs under the rules of the underground storage tank financial assurance board at 328 IAC 1.**

(d) The owner and operator may, in the interest of minimizing ~~environmental contamination~~ **the effect of a contaminant** and promoting more effective cleanup, begin cleanup of soil and ground water before the corrective action plan is approved provided that the owner and operator:

- (1) notify the agency of their intention to begin cleanup;
- (2) comply with any conditions imposed by the commissioner, including halting cleanup or mitigating adverse consequences from cleanup activities; and
- (3) incorporate these self-initiated cleanup measures in the corrective action plan that is submitted to the commissioner for approval.

(e) During corrective action, the owner and operator and their designees shall adhere to a written health and safety plan that meets all applicable requirements of the occupational safety standards commission and the rules of the fire prevention and building safety commission ~~675 IAC 22-2-2~~: **at 675 IAC 22**.

(f) If requirements are satisfied under IC 13-23-8-4(a)(5)(A) and IC 13-23-8-4(a)(5)(B), the corrective action plan is automatically deemed approved under IC 13-23-8-4(a)(5).

**(f) The owner and operator shall conduct corrective action that meets the following requirements:**

**(1) The corrective action plan must be presented in a format prescribed by the commissioner and contain the following information:**

**(A) A title page that identifies the consultant performing the work and the date the report was prepared.**

**(B) An executive summary, including the following:**

- (i) A briefing about the site in narrative form, highlighting events leading to the need for corrective action.
- (ii) Other information regarding the need for corrective action.

**(C) A narrative concerning contaminant and site conditions, including the following:**

- (i) Contaminant identification including chemical and physical properties.
- (ii) Determination of chemical reference doses (RfDs), cancer slope factors (Sfs or CPFs), reference ingestion factors, and maximum contaminant levels.
- (iii) Potential effects of residual contaminants.
- (iv) Site-specific soil and hydrogeologic characteristics.
- (v) Proximity of local surface waters and ground water and associated water quality data.
- (vi) Current and potential future uses of local water sources.
- (vii) A summary of site-specific water quality data generated during previously completed site investigations.
- (viii) Other information necessary to describe site conditions.

**(D) Health and safety plan for corrective action activities, including the following:**

- (i) Known hazards and risk evaluation associated with site activities.
- (ii) A list of personnel, alternates to personnel, and areas of responsibilities of personnel.
- (iii) Levels of personal protection for personnel.
- (iv) Decontamination equipment and procedures.
- (v) Site access control measures.
- (vi) Site emergency procedures, medical care availability, and a route by roadway to at least one (1) health care facility.
- (vii) A list of emergency phone numbers that includes:
  - (AA) the fire department;
  - (BB) the police department;
  - (CC) a local ambulance; and
  - (DD) the local hospital or medical facility.
- (viii) A list of personnel training, qualifications, and certifications.
- (ix) A description of how the plan will meet health and safety requirements of the Indiana occupational health and safety standards and the rules of the fire prevention and building safety commission at 675 IAC 22.

**(E) An appropriately scaled regional map that can be reproduced from previously submitted and approved site investigation reports but that must include the following:**

- (i) Illustrated legends, scales, and compass directions.
- (ii) A legible, topographic base with ten (10) foot contour intervals.
- (iii) The location and depth of any wells that have a capacity:

- (AA) greater than seventy (70) gallons per minute within a two (2) mile radius of the site; or
- (BB) less than seventy (70) gallons per minute within a one (1) mile radius of the site.
- (iv) Identification of facilities and land for:
  - (AA) agricultural;
  - (BB) residential;
  - (CC) commercial; and
  - (DD) industrial;use within a one (1) mile radius of the site.
- (v) Locations of surface water features within a one (1) mile radius of the site.
- (vi) Site location.
- (F) Appropriately scaled site maps that can be reproduced from previously submitted and approved site investigation reports that must include the following:
  - (i) Illustrated legends, scales, and compass directions.
  - (ii) Topographic base with appropriate contour intervals to accurately describe the site.
  - (iii) Identified aboveground features, including:
    - (AA) buildings;
    - (BB) roadways;
    - (CC) manways;
    - (DD) pump islands; and
    - (EE) property lines.
  - (iv) Identified subsurface features, including tanks, piping, and utility conduits.
  - (v) Soil boring and monitoring well locations surveyed with a horizontal closure of less than one (1) foot error.
  - (vi) Sampling locations, depth of sample taken, and the contaminant concentration results.
  - (vii) Soil and ground water contaminant plume delineation.
  - (viii) Ground water elevation contours and ground water flow direction.
  - (ix) The location of remediation equipment shown to scale.
- (G) Geologic and hydrogeologic maps that describe subsurface features, identify the contaminant plume, and include the following:
  - (i) Cross sections.
  - (ii) Fence diagrams.
  - (iii) Geophysical profile or geophysical maps, or both, if available.
- (H) A narrative on selected remediation technology that includes the following:
  - (i) Feasibility studies showing the effectiveness of the selected remediated technology.
  - (ii) A detailed description of the selected technology, design explanations, and illustrations.
  - (iii) Projected contaminant removal or treatment rates, or both.
  - (iv) Technical specifications of equipment and the process.
  - (v) Discussion of disposal or fate of treated air, soil, and ground water, and permit or discharge requirements.
- (I) Sampling and analysis plan to evaluate the performance of the remediation technology that includes the following:
  - (i) A minimum of quarterly samples taken and reported.
  - (ii) The following as applicable:
    - (AA) Field investigation procedures.
    - (BB) Documentation, in a format prescribed by the commissioner, of the sampling, quality assurance measures, and analysis.
    - (CC) Field screen samples.
    - (DD) Sampling methods and laboratory procedures conducted in a manner that will generate scientifically valid data.
    - (EE) Provisions for retention of laboratory quality assurance and quality control information.
    - (FF) Provisions for submission of reports that must include a signed laboratory certificate of analysis that lists analysis method, method preparation, date of sample receipt, date of analysis, a statement that the method quality assurance and quality control procedures were followed, the chain of custody documentation, including laboratory receipts, and laboratory decontamination procedures.
- (J) A timetable that includes the following shown on a bar chart:
  - (i) Installation and implementation dates.
  - (ii) Sampling events.

(iii) Progress milestones.

(iv) Completion dates.

(K) The corrective action plan must be signed by an environmental professional that is one (1) of the following:

(i) A registered professional engineer under IC 25-31-1.

(ii) A licensed professional geologist under IC 25-17.6.

(iii) A certified hazardous materials manager (CHMM) as certified by the Institute of Hazardous Material Management.

(iv) A professional soil scientist registered under IC 25-31.5-4.

(L) Provisions for progress reports to be submitted quarterly in a format prescribed by the commissioner that include the following:

(i) A brief narrative of the remediation process.

(ii) Documentation and data graphically demonstrating remediation effectiveness.

(iii) Quarterly sampling results presented in a tabular format as prescribed by the commissioner with all previous sample data, if previous samples were taken.

(iv) Quarterly ground water elevation gauging results presented in a tabular format, as prescribed by the commissioner, showing the following:

(AA) Wellhead or measuring point elevation.

(BB) Depth to ground water.

(CC) Ground water elevation.

(v) Updated site maps showing the following:

(AA) Soil and ground water contaminant plume delineations.

(BB) Ground water elevation contours.

(CC) Ground water flow directions.

(vi) Signed by an environmental professional that is one (1) of the following:

(AA) A registered professional engineer under IC 25-31-1.

(BB) A licensed professional geologist under IC 25-17.6.

(CC) A certified hazardous materials manager (CHMM) as certified by the Institute of Hazardous Material Management.

(DD) A professional soil scientist registered under IC 25-31.5-4.

(vii) Discussion of remediation system function, days of operation, and explanation for any time periods remediation system does not operate, and repairs or maintenance performed or needed by the remediation system. This discussion must include volumes of air, soil, or ground water extracted and treated by the remediation system, and effluent stream sample results.

(M) Provisions for a final report that includes the following:

(i) Documentation that the cleanup goals and objectives have been achieved.

(ii) A signature by an environmental professional that is one (1) of the following:

(AA) A registered professional engineer under IC 25-31-1.

(BB) A licensed professional geologist under IC 25-17.6.

(CC) A certified hazardous materials manager (CHMM) as certified by the Institute of Hazardous Material Management.

(DD) A professional soil scientist registered under IC 25-31.5-4.

(2) The soil cleanup objectives must be determined and met by complying with IC 13-12-3-2.

(3) The ground water cleanup objectives must be determined and met by complying with IC 13-12-3-2.

*(Solid Waste Management Board; 329 IAC 9-5-7; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1072; errata, 16 IR 1955; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3713; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 165)*

SECTION 36. 329 IAC 9-6-1 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-6-1 Applicability**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 1. (a) At least thirty (30) days before beginning either permanent closure or a change-in-service, the owner and operator shall notify the agency of their intent to permanently close or make the change-in-service unless such action is in response to corrective

action. The required assessment of the excavation zone under section 2 of this rule must be performed:

- (1) after notifying the agency; and
- (2) before completion of the permanent closure or change-in-service.

(b) Continued use of a UST system to store a nonregulated substance is considered a change-in-service. Before a change-in-service, the owner and operator shall complete the following:

- (1) Empty and clean the tank by removing all liquid and accumulated sludge.
- (2) Conduct a site assessment in accordance with section 2 of this rule.

(c) To permanently close a tank, the owner and operator shall complete the following:

- (1) Empty and clean the tank by removing all liquids and accumulated sludges.
- (2) Complete either of the following:
  - (A) Remove the tank from the ground under section 2(a) or 2(b) of this rule.
  - (B) Fill the tank with an inert solid material under section 2(d) of this rule.

**Closure of an UST system must be completed by one (1) of the following methods and the applicable requirements in section 2.5 of this rule:**

- (1) In-place closure as defined at 329 IAC 9-1-27.3.**
- (2) Removal closure as defined at 329 IAC 9-1-39.5.**
- (3) Change-in-service as defined at 329 IAC 9-1-10.4.**

*(Solid Waste Management Board; 329 IAC 9-6-1; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1073; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3714; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 168)*

SECTION 37. 329 IAC 9-6-2.5 IS ADDED TO READ AS FOLLOWS:

### **329 IAC 9-6-2.5 Closure procedure**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-12-3-2; IC 13-23

**Sec. 2.5. (a) The procedure for closure is as follows:**

**(1) At least thirty (30) days before beginning closure, the owner and operator shall notify, using the notification form required by 329 IAC 9-2-2(a), the agency and the office of the state fire marshal of the intent to close as specified by one (1) of the methods in section 1 of this rule unless such action is a part of the response to corrective action.**

**(2) Closure sampling and laboratory analysis with the associated detection limits for the UST system closure are required as follows:**

**(A) Quantity and location of soil samples for each closure method are as follows:**

- (i) In-place closure soil samples must be taken as described in subsection (b).**
- (ii) Removal closure soil samples must be taken as described in subsection (c).**
- (iii) Change-in-service soil samples must be taken as described in subsection (d).**

**(B) Quantity and location of ground water samples for each closure method are as follows:**

- (i) In-place closure ground water samples must be taken as described in subsection (e).**
- (ii) Removal closure ground water samples must be taken as described in subsection (f).**
- (iii) Change-in-service ground water samples must be taken as described in subsection (g).**

**(C) Laboratory analyses and detection limits for soil samples and ground water samples for all closure methods are as required for the chemical of concern.**

**(3) If, at any time during the closure process for any method of closure, a release is either suspected or detected in the backfill, native soil, or ground water, the owner or operator shall contact the agency to report within twenty-four (24) hours after the release is suspected or detected.**

**(4) A confirmed release based on the soil and ground water samples taken at the UST removal requires the owner or operator to contact the agency to report within twenty-four (24) hours after the release is confirmed if a leaking underground storage tank (LUST) incident number was not obtained under subdivision (3).**

**(5) A closure report must be completed and submitted to the agency within thirty (30) days after the UST removal. The closure report must include the following:**

**(A) The notification form provided by the agency under 329 IAC 9-2-2.**

**(B) The underground storage tank closure report. The closure report must include the following information:**



- (i) For the responsible party, the following information:
    - (AA) The UST system facility owner or operator name, agency's owner identification number, address, and phone number.
    - (BB) The name of the UST system facility contact person, owner or operator affiliation, and phone number.
    - (CC) Owners or operators during the last twenty-five (25) years.
  - (ii) For the UST contractor, the following information:
    - (AA) UST closure contractor, company name, and address.
    - (BB) The name of the person on-site during closure that is certified by the office of the state fire marshal to perform UST closure and that person's certification number.
  - (iii) For the UST site information regarding the following:
    - (AA) Facility name, agency's facility identification number, address, and phone number.
    - (BB) Type of facility, past and current operation.
    - (CC) Coverage, stating if coverage is turf, concrete, asphalt, or other.
    - (DD) History of any spill reports listed by incident number.
    - (EE) Site proximity to both human and environmentally sensitive areas, such as residences, schools, wells, well fields, or wellhead protection areas delineated under rules of the water pollution control board at 327 IAC 8-4.1.
    - (FF) Backfill and site natural soil texture.
  - (iv) A site-specific map or maps with illustrated legends and compass directions and at appropriate scale to show site details described as follows:
    - (AA) Drainage features, surface slope, or surface water run-off direction.
    - (BB) Identified aboveground features, such as buildings, roadways, manways, pump islands, and utility and property lines.
    - (CC) Identified subsurface features, such as tanks and excavation pit, piping, and utility conduits.
    - (DD) Locations where samples were taken, soil borings made, and monitoring wells drilled.
    - (EE) Location of active and previously closed tanks, as applicable.
    - (FF) Site surroundings, such as adjacent buildings, businesses, or human and environmentally sensitive areas, such as residences, schools, wells, well fields, or wellhead protection areas delineated under rules of the water pollution control board at 327 IAC 8-4.1.
  - (v) Information for the underground storage tank being closed as follows:
    - (AA) The number and volume of tanks.
    - (BB) Past and present contents of the tank.
    - (CC) Construction material of tank.
    - (DD) Construction and material of piping.
    - (EE) Age and installation date of tank.
    - (FF) Leak detection methods used.
    - (GG) Records of the most current tank tightness test results.
    - (HH) Records of any other current leak detection method results including the inventory records, ground water, or vapor monitoring results.
    - (II) Information on any previously closed UST system, such as the date closed and the number, size, and product stored.
  - (vi) Physical and chemical results of the samples taken under subdivision (2) as follows:
    - (AA) Data from analysis of soil samples presented in a tabular format.
    - (BB) Data from analysis of water samples presented in a tabular format.
    - (CC) A signed laboratory certificate of analysis listing analysis method, preparation method, date of sample receipt, and date of analysis.
    - (DD) Proper sample identification numbers for cross-reference to UST site maps.
    - (EE) Chain of custody documentation.
    - (FF) Description of the sampling procedures, sampling equipment, and decontamination procedures.
    - (GG) Data from analyses of used oil sampling, as applicable.
  - (vii) Miscellaneous closure documentation, including manifests or receipts, or both, as follows:
    - (AA) Contaminated soil and contaminated water disposal documentation.
    - (BB) Remaining product and sludge disposal documentation.
    - (CC) Tank and piping disposal documentation.
- (6) If one (1) or more additional tanks are discovered during a closure, the owner and operator shall:

- (A) close each additional tank under this rule; and
  - (B) supply all known information on each additional tank in the closure report.
- (7) The commissioner shall require additional information if the closure report is deemed incomplete or incorrect. The commissioner shall provide in writing the reasons for requiring additional information and a list of the additional information required to be submitted. The owner and operator shall have forty-five (45) days to submit the additional information to the agency, after receipt of written notification from the commissioner that additional information is required.
- (8) The closure will not be considered complete until all closure report requirements are met.
- (9) If the underground storage tank contains hazardous substances, the owner and operator shall perform sampling and analyses as required for the chemical of concern.
- (10) The owner and operator shall demonstrate compliance with this section by providing a certification of compliance on the notification form under 329 IAC 9-2-2. The certification must demonstrate that the person that performs the work has been certified by the office of the state fire marshal under rules of the fire prevention and building safety commission at 675 IAC 12-12.

**(b) Soil sampling for in-place closure must be achieved as follows:**

- (1) The owner and operator shall submit a site plan with proposed boring locations to the agency with the notification form under 329 IAC 9-2-2 and to the office of the state fire marshal for approval to request in-place closure. The accompanying map must be to scale and include the entire site. Submission of an additional map of solely the underground storage area is recommended for large sites. The boring locations should be as follows:
- (A) One (1) boring every twenty (20) feet around the tank area, with a minimum of four (4) borings.
  - (B) Each boring must be within three (3) feet adjacent to the underground storage tank.
- (2) The commissioner may grant conditional approval to proceed with in-place closure of the UST system based on the following:
- (A) The location of the borings as required under subdivision (1).
  - (B) Approval from the office of the state fire marshal.
- (3) After approval is received under subdivision (2), the owner and operator may proceed with soil borings that must meet the following requirements:
- (A) Soil sampling must be performed continuously using a sampling device relevant to the drilling technology used.
  - (B) Borings must extend two (2) feet or greater below the elevation of the base of the underground storage tank.
  - (C) If the boring depth is fifteen (15) feet or less, a minimum of two (2) soil samples are required at the following locations:
    - (i) The point where a contaminant is detected.
    - (ii) One (1) soil sample must be taken at the:
      - (AA) midpoint; and
      - (BB) bottom;of the boring.
  - (D) If the boring depth is greater than fifteen (15) feet, a minimum of three (3) soil samples are required. The most shallow soil sample must be taken one (1) foot or greater below grade. Samples must be taken where the release is suspected or detected.
- (4) Piping and dispenser sampling and analysis must be completed under subsection (c)(3) or (c)(4).
- (5) The waiver of closure sampling requirements under subsection (h) will not be granted for in-place closure.

**(c) Soil sampling for removal closure must be achieved as follows:**

- (1) Soil removal is allowed as follows:
- (A) The backfill may be removed from the following to provide access to native soil for sampling:
    - (i) Tank cavity excavation.
    - (ii) Piping trenches.
    - (iii) Dispensing unit areas.
    - (iv) Remote fill pipe trenches.
  - (B) Closure soil samples must be taken from the following:
    - (i) Excavated backfill under subdivision (2)(B).
    - (ii) Undisturbed native soil under subdivision (2)(A).
- (2) Each underground storage tank excavation must be sampled separately. Composite samples are not acceptable for

closure. The samples must meet the following requirements:

(A) All samples must be discrete grab samples taken directly from the undisturbed native soil from the base and sidewalls of the excavation. The following requirements apply to samples:

(i) Bottom samples must meet the following requirements:

(AA) Soil sampling must consist of a minimum of two (2) soil samples taken within two (2) feet below both ends of each underground storage tank.

(BB) If the underground storage tank capacity is greater than ten thousand (10,000) gallons, one (1) additional sample must be taken within two (2) feet below the middle of the underground storage tank.

(ii) Sidewall samples must meet the following requirements:

(AA) The sidewalls must be sampled and analyzed at a rate of one (1) sample every twenty (20) feet of perimeter distance around the excavation zone.

(BB) If the perimeter dimension measures less than eighty (80) feet, a minimum of one (1) sample for each sidewall must be taken.

(CC) Sidewall samples must be taken at a point half the distance from the surface to the bottom of the underground storage tank excavation.

(B) Excavated materials must be staged in a separate area. Samples must be discrete grab samples taken directly from the excavated materials. Sampling of the excavated soil must occur for every fifty (50) cubic yards of material.

(3) Native soil under piping and dispenser islands, which routinely contains regulated substances, must be sampled. All samples must be discrete grab samples. The following requirements apply to the number and location of sampling for piping and dispensers:

(A) Soil sampling under piping must be completed as follows:

(i) Soil under piping must be sampled every twenty (20) feet, or fraction thereof, along the piping run. If the piping run is less than twenty (20) feet in length, one (1) soil sample must be taken half the distance between the underground storage tank excavation and the pump or dispenser island.

(ii) Piping must have soil sampled under piping elbows and connectors.

(B) Soils under the dispenser islands must be sampled and analyzed at a rate of one (1) soil sample per dispenser.

(C) If the UST system has a remote fill line, the following soil samples must be collected:

(i) Soils under the remote fill line must be sampled and analyzed at the origin or fill area and every twenty (20) feet, or fraction thereof, from the fill area to the underground storage tank connection.

(ii) If the remote fill line is less than twenty (20) feet, one (1) soil sample must be taken half the distance between the fill area and the underground storage tank.

(D) Composite samples are not acceptable for closure.

(4) Soil sampling under the piping and product dispenser islands are not required if the following requirements are complied with:

(A) All:

(i) piping that routinely contains product; and

(ii) dispensers;

are located directly above the UST system that is being closed.

(B) The requirements of clause (A) are documented in the closure report.

(5) During removal closure, native soil and backfill that is to be returned to the underground storage tank excavation must be sampled. The sampling must meet the following requirements:

(A) The exposure criteria in accordance with IC 13-12-3-2.

(B) One (1) discrete grab sample must be taken for every fifty (50) cubic yards of native soil or backfill.

(d) Soil sampling for change-in-service must be achieved as follows:

(1) The boring locations are as follows:

(A) One (1) soil boring every twenty (20) feet around the tank area, with a minimum of four (4) borings.

(B) Each soil boring must be within three (3) feet adjacent to the underground storage tank.

(C) Soil sampling must be performed continuously using a sampling device relevant to the drilling technology used.

(D) Each soil boring must extend two (2) feet or greater below the elevation of the base of the underground storage tank.

(E) If the soil boring depth is fifteen (15) feet or less, a minimum of two (2) soil samples are required at the following locations:

(i) The point where a contaminant is detected.

(ii) One (1) soil sample must be taken at the:

(AA) midpoint; and  
(BB) bottom;  
of the soil boring.

(F) If the soil boring depth is greater than fifteen (15) feet, a minimum of three (3) soil samples are required. The most shallow soil sample must be taken one (1) foot or greater below grade. Samples must be collected where the release is suspected or detected.

(2) Piping and dispenser sampling and analysis must be completed under subsection (c)(3) or (c)(4).

(3) The waiver of closure sampling requirements under subsection (h) will not be granted for change in service.

(e) Water samples for an in-place closure must be collected in the following quantities and locations:

(1) One (1) boring must be placed in each of the four (4) principal directions within ten (10) feet of the area most likely to have contaminated ground water.

(2) Each boring must extend to the first saturated ground water zone or to a total depth of thirty (30) feet below grade at the area of suspected or confirmed release. A water sample must be collected from each boring if ground water is present within a depth of thirty (30) feet or less.

(3) If ground water is not encountered within a depth of thirty (30) feet, an additional soil sample must be obtained at the base of the boring or a minimum depth of thirty (30) feet.

(4) A ground water sample must be collected within any area where a suspected contaminant release has occurred, or where a chemical of concern release has been substantiated through one (1) of the following:

(A) Visual staining of the soil or water.

(B) Field screening with the following:

(i) Flame ionization detector or FID.

(ii) Photo ionization detector or PID.

(iii) Field gas chromatograph or GC.

(C) Petroleum odors.

(D) Laboratory analytical results.

(5) If bedrock is encountered in a boring before a depth of thirty (30) feet is reached, and a saturated ground water zone is not encountered in the boring, an owner or operator may contact the agency for approval of alternative sampling or waiver of ground water sampling requirements. The agency may approve a waiver of ground water sampling within the bedrock if the owner or operator can demonstrate the following:

(A) A soil zone at least ten (10) feet thick existing immediately above the bedrock does not have a contaminant.

(B) A soil sample collected immediately above the bedrock does not have a contaminant.

(f) Water samples for a removal closure must be collected in the following quantities and locations:

(1) If any water is encountered in any excavation, a minimum of one (1) water sample must be appropriately collected from the water encountered.

(2) A ground water sample must be collected within any area where a suspected contaminant release has occurred, or where a chemical of concern release has been substantiated through one (1) of the following:

(A) Visual staining of the soil or water.

(B) Field screening with the following:

(i) Flame ionization detector or FID.

(ii) Photo ionization detector or PID.

(iii) Field gas chromatograph or GC.

(C) Petroleum odors.

(D) Laboratory analytical results.

(3) The sample collected in subdivision (2) must be collected from a continuously sampled boring that extends to the first saturated ground water zone or to a total depth of thirty (30) feet below grade at the area of suspected or confirmed release.

(4) If ground water is not encountered within a depth of thirty (30) feet, a soil sample must be obtained at the base of the boring.

(5) If bedrock is encountered in a boring before a depth of thirty (30) feet is reached, and a saturated ground water zone is not encountered in the boring, an owner or operator may contact the agency for approval of alternative sampling or waiver of ground water sampling requirements. The agency may approve a waiver of ground water sampling within the bedrock if the owner or operator can demonstrate the following:

- (A) A soil zone at least ten (10) feet thick existing immediately above the bedrock does not have a contaminant.
- (B) A soil sample collected immediately above the bedrock does not have a contaminant.

(g) Water samples for a change-in-service must be collected in the following quantities and locations:

- (1) One (1) boring must be placed in each of the four (4) principal directions within ten (10) feet of the area most likely to have contaminated ground water.
- (2) Each boring must extend to the first saturated ground water zone or to a total depth of thirty (30) feet below grade at the area of suspected or confirmed release. A water sample must be collected from each boring if ground water is present within a depth of thirty (30) feet depth or less.
- (3) If ground water is not encountered within a depth of thirty (30) feet, an additional soil sample must be obtained at the base of the boring or a minimum depth of thirty (30) feet.
- (4) A ground water sample must be collected within any area where a suspected contaminant release has occurred, or where a chemical of concern release has been substantiated through one (1) of the following:
  - (A) Visual staining of the soil or water.
  - (B) Field screening with the following:
    - (i) Flame ionization detector or FID.
    - (ii) Photo ionization detector or PID.
    - (iii) Field gas chromatograph or GC.
  - (C) Petroleum odors.
  - (D) Laboratory analytical results.
- (5) If bedrock is encountered in a boring before a depth of thirty (30) feet is reached, and a saturated ground water zone is not encountered in the boring, an owner or operator may contact the agency for approval of alternative sampling or waiver of ground water sampling requirements. The agency may approve a waiver of ground water sampling within the bedrock if the owner or operator can demonstrate the following:
  - (A) A soil zone at least ten (10) feet thick existing immediately above the bedrock does not have a contaminant.
  - (B) A soil sample collected immediately above the bedrock does not have a contaminant.

(h) Closure sampling waiver requirements must be completed as follows:

- (1) The commissioner may waive closure sampling based on the following:
  - (A) The LUST incident number is assigned and the following requirements are completed:
    - (i) Closure is conducted due to a confirmed release at the site.
    - (ii) The confirmed release occurred before the request for closure.
  - (B) The initial site characterization meets the requirements of 329 IAC 9-5-5.1.
  - (C) The corrective action plan meets the requirements of 329 IAC 9-5-7.
- (2) Sites that have previous releases and are not under remediation at the time of closure are not eligible for the closure sampling waiver.

*(Solid Waste Management Board; 329 IAC 9-6-2.5; filed Aug 30, 2004, 9:35 a.m.: 28 IR 168)*

SECTION 38. 329 IAC 9-6-3 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-6-3 Applicability to previously closed UST systems**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 3. When directed by the commissioner, the owner and operator of a an UST system permanently closed before December 22, 1988, shall assess the excavation zone and close the UST system in accordance with this rule, **and the closure must be performed by a person certified under the rules of the fire prevention and building safety commission at 675 IAC 12-12**, if releases from the underground storage tank may, in the judgment of the commissioner, pose a current or potential threat to human health and the environment. ~~under rules of the fire prevention and building safety commission at 675 IAC 12-12.~~ *(Solid Waste Management Board; 329 IAC 9-6-3; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1074; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3722; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 172)*

SECTION 39. 329 IAC 9-6-4 IS AMENDED TO READ AS FOLLOWS:

### 329 IAC 9-6-4 Closure records

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 4. The owner and operator shall maintain records in accordance with 329 IAC 9-3-1 that are capable of demonstrating compliance with closure requirements under this rule. The results of the excavation zone assessment required in section 2 of this rule must be submitted to the agency within thirty (30) days after completion of ~~permanent~~ closure or change-in-service of the UST system. Results of the excavation zone assessment must be maintained for at least three (3) years after completion of ~~permanent~~ closure or change-in-service in one (1) of the following ways:

- (1) By the owner and operator who took the UST system out of service.
- (2) By the current owner and operator of the UST system site.
- (3) By mailing these records to the agency if the records cannot be maintained at the closed facility.

*(Solid Waste Management Board; 329 IAC 9-6-4; filed Dec 1, 1992, 5:00 p.m.: 16 IR 1074; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3722; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 173)*

SECTION 40. 329 IAC 9-6-5 IS AMENDED TO READ AS FOLLOWS:

### 329 IAC 9-6-5 Temporary closure

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 5. (a) When ~~a~~ **an** UST system is temporarily closed, the owner and operator shall complete the following:

- (1) Continue operation and maintenance of corrosion protection under 329 IAC 9-3.1-2.
- (2) Continue operation and maintenance of any release detection under 329 IAC 9-7, except release detection is not required as long as the UST system is empty. The UST system is empty when all materials have been removed using commonly employed practices so that no more than:
  - (A) two and five-tenths (2.5) centimeters or one (1) inch of residue; or
  - (B) three-tenths percent (0.3%) by weight of the total capacity of the UST system; remains in the system.
- (3) Comply with 329 IAC 9-4 and 329 IAC 9-5 if a release is suspected or confirmed.

(b) When ~~a~~ **an** UST system is temporarily closed for three (3) months or ~~more~~; **longer**, the owner and operator also shall comply with the following requirements:

- (1) Leave vent lines open and functioning.
- (2) Cap and secure the following:
  - (A) All other lines.
  - (B) Pumps.
  - (C) Manways.
  - (D) Ancillary equipment.

(c) When ~~a~~ **an** UST system has been temporarily closed for twelve (12) months, the following requirements must be completed:

- (1) The owner and operator shall permanently close the UST system if it does not meet **the**:
  - (A) ~~the~~ performance standards in 329 IAC 9-2-1 for new UST systems; or
  - (B) ~~the~~ upgrading requirements in 329 IAC 9-2.1;except that the spill and overfill equipment requirements do not have to be met.
- (2) The owner and operator shall permanently close the substandard UST system at the end of the temporary twelve (12) month period under sections 1 through 4 of this rule.
- (3) The commissioner may grant an extension of the twelve (12) month temporary closure period based on the following:
  - (A) The owner and operator shall complete a site assessment under section 2 of this rule before the owner and operator may apply for an extension.
  - (B) The length of the extension is based on the following:
    - (i) The results of the site assessment under clause (A).
    - (ii) The owner and operator shall submit written proof that explains why permanent closure cannot take place within the twelve (12) month period of temporary closure.

(iii) The owner and operator shall submit information that explains when permanent closure will take place.

(d) The owner and operator shall demonstrate compliance with this section by providing a certification of compliance on the ~~underground storage tank~~ notification form under 329 IAC 9-2-2. The certification must demonstrate that the person that performs the work has been certified by the office of the state fire marshal under rules of the fire prevention and building safety commission at 675 IAC 12-12. (*Solid Waste Management Board; 329 IAC 9-6-5; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3722; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 173*)

SECTION 41. 329 IAC 9-7-1 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-7-1 General requirements for all UST systems**

**Authority: IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2**

**Affected: IC 13-23**

Sec. 1. (a) All owners and operators of new and existing UST systems shall provide a method, or combination of methods, of release detection that does the following:

- (1) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product.
- (2) Is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions, including routine maintenance and service checks for operability or running condition.
- (3) Meets the performance requirements in section 4 or 5 of this rule, with any performance claims and the manner of determination of the performance claims described in writing by the equipment manufacturer or installer. In addition, methods used after the date shown in the following table corresponding with the specified method, except for methods permanently installed prior to that date, must be capable of detecting the leak rate or quantity specified for that method in the corresponding citation of this rule shown in the table with a probability of detection (Pd) of ninety-five hundredths (0.95) and a probability of false alarm (Pfa) of five-hundredths (0.05):

Method	Citation	Date After Which Pd/Pfa Was Demonstrated
Manual tank gauging	section 4(2) of this rule	December 22, 1990
Tank tightness testing	section 4(3) of this rule	December 22, 1990
Automatic tank gauging	section 4(4) of this rule	December 22, 1990
Automatic line leak detectors	section 5(1) of this rule	September 22, 1991
Line tightness testing	section 5(2) of this rule	December 22, 1990

(b) When a release detection method that is operated under the performance standards in sections 4 and 5 of this rule indicates a release may have occurred, the owner and operator shall notify the agency under 329 IAC 9-4.

(c) Owners and operators of all UST systems shall comply with the release detection requirements of this rule by December 22 of the year listed in the following table:

SCHEDULE FOR PHASE-IN OF RELEASE DETECTION

Year System Was Installed	Year When Release Detection Was Required (By December 22 of the Year Indicated)				
	1989	1990	1991	1992	1993
Before 1965 or date unknown	RD	P			
1965-69		P/RD			
1970-74		P	RD		
1975-79		P		RD	
1980-88		P			RD

New tanks (after December 22, 1988) immediately upon installation. P = Shall have begun release detection for all pressurized piping under sections 2(2)(A) and 3(2)(D) of this rule. RD = Shall have begun release detection for tanks and suction piping under sections 2(1), 2(2)(B), and 3 of this rule.

(d) Any existing UST system that cannot apply a method of release detection that complies with this rule shall complete the closure procedures under ~~329 IAC 9-6~~ **329 IAC 9-6-2.5** by the date on which release detection is required for that UST system under subsection (c). (*Solid Waste Management Board; 329 IAC 9-7-1; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3723; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 173*)

SECTION 42. 329 IAC 9-7-2 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-7-2 Requirements for petroleum UST systems**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 2. The owner and operator of a petroleum UST system shall provide release detection for tanks and piping as follows:

(1) Tanks must be monitored at least every thirty (30) days for releases using one (1) of the methods listed in section 4(4) through 4(8) of this rule, except for the following:

(A) ~~A~~ **An** UST system that meets

(i) ~~the~~ the performance standards in 329 IAC 9-2-1 or 329 IAC 9-2.1 ~~and may use:~~

(ii) ~~(i)~~ **(i)** the monthly inventory control requirements in section 4(1) or 4(2) of this rule; ~~may use and~~

**(ii)** tank tightness testing conducted under section 4(3) of this rule at least every five (5) years until December 22, 1998, or until ten (10) years after the tank is installed or upgraded under 329 IAC 9-2.1-1(b), whichever is later.

(B) ~~A~~ **An** UST system that does not meet the performance standards in 329 IAC 9-2-1 or 329 IAC 9-2.1 may use:

(i) monthly inventory controls conducted under section 4(1) or 4(2) of this rule; and

(ii) annual tank tightness testing conducted under section 4(3) of this rule;

until December 22, 1998, when the tank must be upgraded under 329 IAC 9-2.1 or ~~permanently~~ closed under 329 IAC 9-6-1 **through 329 IAC 9-6-2.5.**

(C) Tanks with capacity of five hundred fifty (550) gallons or less may use weekly tank gauging conducted under section 4(2) of this rule.

(2) Underground piping that routinely contains regulated substances must be monitored for releases in a manner that meets one (1) of the following requirements:

(A) Underground piping that conveys regulated substances under pressure must:

(i) be equipped with an automatic line leak detector under section 5(1) of this rule; and

(ii) have an annual line tightness test conducted under section 5(2) of this rule or have monthly monitoring conducted under section 5(3) of this rule.

(B) Underground piping that conveys regulated substances under suction must either have a line tightness test conducted at least every three (3) years under section 5(2) of this rule or use a monthly monitoring method under section 5(3) of this rule. No release detection is required for suction piping that is designed and constructed to meet the following standards:

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

(ii) 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.

(iii) Only one (1) check valve is included in each suction line.

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

(v) A method is provided that allows compliance with items (ii) through (iv) to be readily determined.

(*Solid Waste Management Board; 329 IAC 9-7-2; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3724; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 174*)

SECTION 43. 329 IAC 9-7-4 IS AMENDED TO READ AS FOLLOWS:

**329 IAC 9-7-4 Methods of release detection for tanks**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 4. Each method of release detection for tanks used to meet section 2 of this rule must be conducted in accordance with the following:

(1) Product inventory control, or another test of equivalent performance, must be conducted monthly to detect a release of at least one percent (1.0%) of flow-through plus one hundred thirty (130) gallons on a monthly basis in the following manner:



- (A) Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day.
- (B) 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 ( $\frac{1}{8}$ ) of an inch.
- (C) The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery.
- (D) Product dispensing is metered and recorded within the local standards for meter calibration or an accuracy of six (6) cubic inches for every five (5) gallons of product withdrawn.
- (E) The measurement of any water level in the bottom of the tank is made to the nearest one-eighth ( $\frac{1}{8}$ ) of an inch at least once a month.
- (F) Deliveries must be made through a drop tube that extends to within one (1) foot of the tank bottom.

(2) Manual tank gauging must meet the following requirements:

- (A) Tank liquid level measurements are taken at the beginning and ending of a period of at least thirty-six (36) hours during which no liquid is added to or removed from the tank.
- (B) Level measurements are based on an average of two (2) consecutive stick readings at both the beginning and ending of the period in clause (A).
- (C) 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 ( $\frac{1}{8}$ ) of an inch.
- (D) A leak is suspected and subject to 329 IAC 9-4 if the variation between beginning and ending measurements exceeds the weekly or monthly standards in the following table:

Nominal Tank Capacity	Weekly Standard (1 Test)	Monthly Standard (Average of 4 Tests)
550 gallons or less	10 gallons	5 gallons
551–1,000 gallons	13 gallons	7 gallons
1,001–2,000 gallons	26 gallons	13 gallons

(E) The following requirements apply:

- (i) Only tanks of five hundred fifty (550) gallons or less nominal capacity may use manual tank gauging as the sole method of release detection.
- (ii) Tanks of five hundred fifty-one (551) to two thousand (2,000) gallons may use manual tank gauging in place of ~~manual~~ **product** inventory control in subdivision (1).
- (iii) Tanks of greater than two thousand (2,000) gallons nominal capacity must not use manual tank gauging to meet the requirements of this rule.

(3) Tank tightness testing, or another test of equivalent performance, must be capable of detecting a one-tenth (0.1) gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of the following:

- (A) Thermal expansion or contraction of the product.
- (B) Vapor pockets.
- (C) Tank deformation, evaporation, or condensation.
- (D) Location of the water table.

(4) Equipment for automatic tank gauging that tests for the loss of product and conducts inventory control must meet the following requirements:

- (A) The automatic product level monitor test can detect a two-tenths (0.2) gallon per hour leak rate from any portion of the tank that routinely contains product.
- (B) Inventory control, or another test of equivalent performance, is conducted under subdivision (1).

(5) Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

- (A) The materials used as backfill are sufficiently porous to readily allow diffusion of vapors from releases into the excavation area. The materials used as backfill may include any of the following:
  - (i) Gravel.
  - (ii) Sand.
  - (iii) Crushed rock.

(B) The stored regulated substance or a tracer compound placed in the tank system, which may include gasoline as an example, is sufficiently volatile 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 tank.

(C) The measurement of vapors by the monitoring device is not rendered inoperative by the:

- (i) ground water;

- (ii) rainfall;
- (iii) soil moisture; or
- (iv) other known interferences;

so that a release could go undetected for more than thirty (30) days.

(D) The **background level of background contamination for contaminants** in the excavation zone must not interfere with the method used to detect releases from the tank.

(E) The vapor monitors are designed and operated to detect any significant increase in concentration above background of any of the following:

- (i) The regulated substance stored in the tank system.
- (ii) A component or components of the regulated substance stored in the tank system.
- (iii) A tracer compound placed in the tank system.

(F) In the UST excavation zone, the site is assessed **to:**

- (i) ~~to~~ ensure compliance with clauses (A) through (D); and
- (ii) ~~to~~ establish the number and positioning of observation wells that will detect releases within the excavation zone from any portion of the tank that routinely contains product.

(G) Observation wells are clearly marked and secured to prevent damage and unauthorized access and tampering.

(6) Testing or monitoring for liquids on the ground water must meet the following requirements:

(A) The regulated substance stored is immiscible in water and has a specific gravity of less than one (1).

(B) Ground water is never more than twenty (20) feet from the ground surface. The hydraulic conductivity of the soil between the UST system and the observation wells, monitoring wells, or monitoring devices is not less than one-hundredth (0.01) centimeter per second. The soil may consist of any of the following:

- (i) Gravel.
- (ii) Coarse to medium sand.
- (iii) Coarse silt.
- (iv) Other permeable material.

(C) The slotted portion of the observation well casing must be designed **to:**

- (i) ~~to~~ prevent migration of natural soils or filter pack into the well; and
- (ii) ~~to~~ allow entry of regulated substance on the water table into the well under both high and low ground water conditions.

(D) Observation wells must be sealed from the ground surface to the top of the filter pack.

(E) Observation wells, monitoring wells, or monitoring devices must be located as follows:

- (i) An observation well intercepts the excavation zone.
- (ii) A monitoring well that meets the requirements of rules of the department of natural resources **commission** at ~~310 IAC 16~~ **312 IAC 13** is installed as close to the excavation zone as is technically feasible if an observation well cannot intercept the excavation zone.
- (iii) A monitoring device intercepts the excavation zone or is as close to the excavation zone as is technically feasible.

(F) The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth (1/8) of an inch of free product on top of the ground water in the observation wells or monitoring wells.

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

- (i) ~~to~~ ensure compliance with clauses (A) through (E); and
- (ii) ~~to~~ establish the number and positioning of observation wells, monitoring wells, or monitoring devices that will detect releases from any portion of the tank that routinely contains product.

(H) Observation wells and monitoring wells are clearly marked and secured to prevent damage and unauthorized access and tampering.

(7) Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed, and installed to detect a leak from any portion of the tank that routinely contains product and also meets one (1) of the following requirements:

(A) For a double-walled UST system, the sampling or testing method can detect a release through the inner wall in any portion of the tank that routinely contains product.

(B) For ~~a~~ **an** UST system 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 following must be completed:

- (i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (no more than  $1 \times 10^{-6}$  centimeters per second for water) to direct a release to an observation well and allow its detection.
- (ii) 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.

(iii) For cathodically protected tanks, the secondary barrier must be installed so that the secondary barrier does not interfere with the proper operation of the cathodic protection system.

(iv) The ground water, soil moisture, or rainfall must not render the testing or sampling method used inoperative so that a release could go undetected for more than thirty (30) days.

(v) The site is assessed to ensure that the secondary barrier is always above the ground water and not in a twenty-five (25) year flood plain unless the barrier and observation well designs are for use under such conditions.

(vi) Observation wells are clearly marked and secured to prevent damage and unauthorized access and tampering.

(C) For tanks with an internally fitted liner, the following must be completed:

(i) An automated device that can detect a release between the inner wall of the tank and the liner.

(ii) The liner is compatible with the substance stored.

(8) Any other type of release detection method, or combination of methods, may be used if one (1) of the following is completed:

(A) The release detection method or combination of methods must meet the following requirements:

(i) Capability to detect a two-tenths (0.2) gallon per hour leak rate or a release of one hundred fifty (150) gallons within a month.

(ii) Probability of detection of ninety-five hundredths (0.95) and a probability of false alarm of five-hundredths (0.05).

(iii) The method is third party certified.

(B) The commissioner may approve another method if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subdivisions (3) through (7) and clause (A). In comparing methods, the commissioner 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 commissioner on the method's use to ensure the protection of human health and the environment.

*(Solid Waste Management Board; 329 IAC 9-7-4; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3725; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 175)*

SECTION 44. 329 IAC 9-7-5 IS AMENDED TO READ AS FOLLOWS:

### **329 IAC 9-7-5 Methods of release detection for piping**

**Authority:** IC 13-14-8-1; IC 13-14-8-2; IC 13-23-1-1; IC 13-23-1-2

**Affected:** IC 13-23

Sec. 5. Each method of release detection for piping used to meet section 2 of this rule must be conducted in accordance with the following:

(1) ~~A method~~ **Automatic line leak detectors.** Methods that ~~alerts~~ **alert** the operator to the presence of a leak by:

(A) restricting or shutting off the flow of regulated substances through piping; or

(B) triggering an audible or visual alarm;

may be used only if it detects leaks of at least three (3) gallons per hour at ten (10) pounds per square inch line pressure within one (1) hour. An annual test of the operation of the automatic line leak detector must be conducted in accordance with the manufacturer's requirements.

(2) **Line tightness testing.** A periodic line tightness test of piping may be conducted only if it can detect a one-tenth (0.1) gallon per hour leak rate at one and one-half (1½) times the operating pressure.

(3) **Applicable tank methods.** Any of the methods in section 4(5) through 4(8) of this rule may be used if the methods are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

*(Solid Waste Management Board; 329 IAC 9-7-5; filed Jul 19, 1999, 12:00 p.m.: 22 IR 3727; readopted filed Jan 10, 2001, 3:25 p.m.: 24 IR 1535; filed Aug 30, 2004, 9:35 a.m.: 28 IR 177)*

SECTION 45. THE FOLLOWING ARE REPEALED: 329 IAC 9-1-10.1; 329 IAC 9-1-10.2; 329 IAC 9-1-14.1; 329 IAC 9-1-29.1; 329 IAC 9-1-41; 329 IAC 9-1-41.1; 329 IAC 9-1-42.1; 329 IAC 9-5-3.1; 329 IAC 9-5-4.1; 329 IAC 9-6-2; 329 IAC 9-7-6.

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IC 4-22-7-5(c) notice from Secretary of State regarding documents incorporated by reference: **Notice received by Publisher August 31, 2004:** "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," United States Environmental Protection Agency Publication SW-846, Third Edition (November 1986) as amended by Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), and III (December 1996); Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, previously filed with LSA Document #95-137 on March 14, 1996, and LSA Document #97-220 on January 9, 1998; Underwriters Laboratories Standard 971, "Nonmetallic Underground Piping for Flammable Liquids, 1995", previously filed with LSA Document #98-153 on July 19, 1999; ASTM Standard D4021-86, "Standard Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks," revised 1992, previously filed with LSA document #98-153 on July 19, 1999; Steel Tank Institute "STI-P3® Specification and Manual for External Corrosion Protection of Underground Steel Storage Tanks, STI-P3-98", revised 1998, previously filed with LSA Document #98-153 on July 19, 1999; NACE International Standard RP0285-95, "Corrosion Control of Underground Storage Tank Systems by Cathodic Protection", revised 1995, previously filed with LSA Document #98-153 on July 19, 1999; American Petroleum Institute Recommended Practice 1615, "Installation of Underground Petroleum Storage Systems," Fifth Edition, March 1996, previously filed with LSA Document #98-153 on July 19, 1999; American Petroleum Institute Recommended Practice 1626, "Storing and Handling of Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations," First Edition, April 1985, previously filed with LSA Document #98-153 on July 19, 1999; American Petroleum Institute Recommended Practice 1627, "Storing and Handling of Gasoline-Methanol/Cosolvent Blends at Distribution Terminals and Service Stations," First Edition, August 1986, previously filed with LSA Document #98-153 on July 19, 1999; American Petroleum Institute Recommended Practice 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," Third Edition, May 1996, previously filed with LSA Document #98-153 on July 19, 1999; American Petroleum Institute Recommended Practice 2200, "Repairing Crude Oil, Liquefied Petroleum Gas, and Product Pipelines," Third Edition, May 1994, previously filed with LSA Document #98-153 on July 19, 1999; Association for Composite Tanks ACT-100®, Specification for External Corrosion Protection of FRP Composite Steel Underground Storage Tanks, F894-98", revised 1998, previously filed with LSA Document #98-153 on July 19, 1999; Section 6991(a) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended 42 U.S.C. 6901, et seq., in effect on September 30, 1996, previously filed with LSA Document #98-153 on July 19, 1999; Section 3004(u) (42 U.S.C. 6924(u)) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901, et seq., in effect on September 30, 1996, previously filed with LSA Document #98-153 on July 19, 1999. **Second notice received by Publisher September 3, 2004:** American National Standards Institute/American Society of Mechanical Engineers Standard, ASME B31.3-1999 Edition, "Process Piping"; American National Standards Institute/American Society of Mechanical Engineers Standard, ASME B31.4-1998 Edition, "Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids"; American Petroleum Institute Recommended Practice 1631, Fifth Edition, "Interior Lining and Periodic Inspection of Underground Storage Tanks", June 2001; ASTM Standard G57-95a, "Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method", revised 1995, reapproved 2001; NACE International Standard RPO169-96, Standard Recommended Practice, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems"; National Leak Prevention Association Standard 631, "Spill Prevention, Minimum 10-Year Life of Existing Steel Underground Storage Tanks by Lining Without the Addition of Cathodic Protection", revised 1992; Petroleum Equipment Institute Publication PEI/RP100-2000, "Recommended Practices for Installation of Underground Liquid Storage Systems," PEI/RP 100-00; Underwriters Laboratories Standard 58, Ninth Edition, "Steel Underground Tanks for Flammable and Combustible Liquids", 1998; Underwriters Laboratories Standard UL 567, Eighth Edition, Revised 2001, "Pipe Connectors for Petroleum Products and LP Gas"; Underwriters Laboratories, Inc. Standard for Safety UL 1316, "Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohol, and Alcohol-Gasoline Mixtures", 1996; Underwriters Laboratories, Inc. Standard for Safety UL 1746, "External Corrosion Protection Systems for Steel Underground Storage Tanks", 2000; Underwriters Laboratories of Canada CAN/ULC 4-S603-92, Second Edition, "Standard for Steel Underground Tanks for Flammable and Combustible Liquids"; Underwriters Laboratories of Canada CAN/ULCS-603.1-92, Second Edition, "Standard for Galvanic Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids"; Underwriters Laboratories of Canada CAN/ULC 615-98, Second Edition, "Standard for Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids"; Underwriters Laboratories of Canada CAN/ULC 4-S631-M84, "Standard for Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic System", Amended 1992; Underwriters Laboratories of Canada ULC/ORD C107.7-1993, First Edition, "Glass-Fibre Reinforced Plastic Pipe and Fittings for Flammable and Combustible Liquids", 1993; Underwriters Laboratories of Canada Standard CAN/ULC S633-99, Third Edition, "Flexible Underground Hose Connectors for Flammable and Combustible Liquids", 1999; 40 CFR 302.4, Revised 2000.