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November 4, 2013

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STATE OF ILLINOIS
Pollution Control Board

POLLUTION CONTROL BOARD
JOHN THERRIALT ASSISTANT CLERK
100 W RANDOLPH ST, STE 11-500
CHICAGO, IL 60601

Dear JOHN THERRIALT ASSISTANT CLERK

Your rules Listed below met our codification standards and have been published in Volume 37, Issue 45 of the Illinois Register, dated 11/8/2013.

ADOPTED RULES

RCRA Permit Program	
35 Ill. Adm. Code 703	17659
Point of Contact: Mike McCambridge	
UIC Permit Program	
35 Ill. Adm. Code 704	17708
Point of Contact: Mike McCambridge	
Hazardous Waste Management System: General	
35 Ill. Adm. Code 720	17726
Point of Contact: Mike McCambridge	
Standards Applicable to Generators of Hazardous Waste	
35 Ill. Adm. Code 722	17763
Point of Contact: Mike McCambridge	
Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities	
35 Ill. Adm. Code 724	17773
Point of Contact: Mike McCambridge	
Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities	
35 Ill. Adm. Code 725	17811
Point of Contact: Mike McCambridge	
Standards for the Management of Specific Hazardous Waste and Specific Types of Hazardous Waste	

Index Department - Administrative Code Division - 111 East Monroe Springfield, IL 62756



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Management Facilities		
35 Ill. Adm. Code 726		17888
Point of Contact: Mike McCambridge		
Standards for Owners and Operators of Hazardous Waste Facilities Operating Under a RCRA Standardized Permit		
35 Ill. Adm. Code 727		17909
Point of Contact: Mike McCambridge		
Land Disposal Restrictions		
35 Ill. Adm. Code 728		17951
Point of Contact: Mike McCambridge		
Standards for the Management of Used Oil		
35 Ill. Adm. Code 739		17963
Point of Contact: Mike McCambridge		

If you have any questions, you may contact the Administrative Code Division at (217) 782 - 7017.

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- 1) Heading of the Part: RCRA Permit Program
- 2) Code citation: 35 Ill. Adm. Code 703
- 3)

<u>Section numbers:</u>	<u>Proposed action:</u>
703.141	Amend
703.181	Amend
703.183	Amend
703.241	Amend
703.280	Amend
703.302	Amend
703.306	Amend
703.Appendix A	Amend
- 4) Statutory authority: 415 ILCS 5/7.2, 22.4, and 27.
- 5) Effective date of amendments: OCT 24 2013
- 6) Does this rulemaking contain an automatic repeal date? No.
- 7) Do these amendments contain incorporations by reference? No.
- 8) Statement of availability: The adopted amendments, a copy of the Board's opinion and order adopted September 5, 2013 in docket R13-15, and all materials incorporated by reference are on file at the Board's principal office and are available for public inspection and copying.
- 9) Notice of proposal published in the Illinois Register: July 5, 2013, 37 Ill. Reg. 9138.
- 10) Has JCAR issued a statement of objections to these rules? No. Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).
- 11) Differences between the proposal and the final version: A table that appears in the Board's opinion and order of September 5, 2013 in docket R13-15 summarizes the differences between the amendments adopted in that order and those proposed by the Board in an opinion and order dated June 20, 2013, in docket R13-15.

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The differences are limited to minor corrections to the text. The changes are intended to have no substantive effect. The intent is to correct the rules without deviation from the substance of the federal amendments on which this proceeding is based.

- 12) Have all the changes agreed upon by the Board and JCAR been made as indicated in the agreements issued by JCAR? Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by JCAR.

Since the Notices of Proposed Amendments appeared in the July 5, 2013 issue of the *Illinois Register*, the Board received a number of suggestions for revisions from JCAR. The Board evaluated each suggestion and incorporated a number of changes into the text as a result, as detailed in the opinion and order of September 5, 2013 in docket R13-15, as indicated in item 11 above. See the September 5, 2013 opinion and order in docket R13-15 for additional details on the JCAR suggestions and the Board actions with regard to each. One table in that opinion itemizes the changes made in response to various suggestions. Another table indicates JCAR suggestions not incorporated into the text, with a brief explanation for each.

- 13) Will these amendments replace emergency amendments currently in effect? No.
- 14) Are there any other amendments pending on this Part? No.
- 15) Summary and purpose of amendments: The following briefly describes the subjects and issues involved in docket R13-15 rulemaking of which the amendments to Part 703 are a single segment. Also affected is 35 Ill. Adm. Code 704, 720, 722, 724, 725, 726, 727, 728, and 739, which is covered by separate notices in this issue of the *Illinois Register*. A comprehensive description is contained in the Board's opinion and order of June 20, 2013, proposing amendments in docket R13-15, which opinion and order is available from the address below.

This proceeding updates the Illinois Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste rules to incorporate corrections to various provisions that the United States Environmental Protection Agency (USEPA) suggested. The proceeding further updates the edition of the *Code of Federal Regulations* provisions that are incorporated by reference. The Board further makes a number of corrections to various provisions that the Board has determined are needed.

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Specifically, the amendments to Part 703 implement a correction suggested by USEPA and make corrections that the Board has determined are needed. The Board's opinion and order of September 5, 2013 in docket R13-15 discusses the more substantial corrections made in the text. Tables that appear in that opinion and order list all of the various corrections and amendments included in this proceeding. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Tables appear in the Board's opinion and order of September 5, 2013 in docket R13-15 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Section 22.4 of the Environmental Protection Act [415 ILCS 5/22.4] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

- 16) Information and questions regarding these adopted amendments shall be directed to:
Please reference consolidated docket R13-15 and direct inquiries to the following person:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago, IL 60601

312-814-6924

Request copies of the Board's opinion and order of September 5, 2013 at 312-814-3620. Alternatively, you may obtain a copy of the Board's opinion and order from the Internet at <http://www.ipcb.state.il.us>.

The full text of the adopted amendments begins on the next page:

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NOTICE OF ADOPTED AMENDMENTS

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER b: PERMITS

PART 703
RCRA PERMIT PROGRAM

SUBPART A: GENERAL PROVISIONS

Section	
703.100	Scope and Relation to Other Parts
703.101	Purpose
703.102	Electronic Reporting
703.110	References

SUBPART B: PROHIBITIONS

Section	
703.120	Prohibitions in General
703.121	RCRA Permits
703.122	Specific Inclusions in Permit Program
703.123	Specific Exclusions from Permit Program
703.124	Discharges of Hazardous Waste
703.125	Reapplying for a Permit
703.126	Initial Applications
703.127	Federal Permits (Repealed)

SUBPART C: AUTHORIZATION BY RULE AND INTERIM STATUS

Section	
703.140	Purpose and Scope
703.141	Permits by Rule
703.150	Application by Existing HWM Facilities and Interim Status Qualifications
703.151	Application by New HWM Facilities
703.152	Amended Part A Application
703.153	Qualifying for Interim Status
703.154	Prohibitions During Interim Status
703.155	Changes During Interim Status
703.156	Interim Status Standards
703.157	Grounds for Termination of Interim Status
703.158	Permits for Less Than an Entire Facility
703.159	Closure by Removal

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- 703.160 Procedures for Closure Determination
- 703.161 Enforceable Document for Post-Closure Care

SUBPART D: APPLICATIONS

- Section
- 703.180 Applications in General
- 703.181 Contents of Part A
- 703.182 Contents of Part B
- 703.183 General Information
- 703.184 Facility Location Information
- 703.185 Groundwater Protection Information
- 703.186 Exposure Information
- 703.187 Solid Waste Management Units
- 703.188 Other Information
- 703.189 Additional Information Required to Assure Compliance with MACT Standards
- 703.191 Public Participation: Pre-Application Public Notice and Meeting
- 703.192 Public Participation: Public Notice of Application
- 703.193 Public Participation: Information Repository
- 703.200 Specific Part B Application Information
- 703.201 Containers
- 703.202 Tank Systems
- 703.203 Surface Impoundments
- 703.204 Waste Piles
- 703.205 Incinerators that Burn Hazardous Waste
- 703.206 Land Treatment
- 703.207 Landfills
- 703.208 Boilers and Industrial Furnaces Burning Hazardous Waste
- 703.209 Miscellaneous Units
- 703.210 Process Vents
- 703.211 Equipment
- 703.212 Drip Pads
- 703.213 Air Emission Controls for Tanks, Surface Impoundments, and Containers
- 703.214 Post-Closure Care Permits

SUBPART E: SPECIAL FORMS OF PERMITS

- Section
- 703.220 Emergency Permits
- 703.221 Alternative Compliance with the Federal NESHAPS
- 703.222 Incinerator Conditions Prior to Trial Burn
- 703.223 Incinerator Conditions During Trial Burn

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- 703.224 Incinerator Conditions After Trial Burn
- 703.225 Trial Burns for Existing Incinerators
- 703.230 Land Treatment Demonstration
- 703.231 Research, Development and Demonstration Permits
- 703.232 Permits for Boilers and Industrial Furnaces Burning Hazardous Waste
- 703.234 Remedial Action Plans
- 703.238 RCRA Standardized Permits for Storage and Treatment Units

SUBPART F: PERMIT CONDITIONS OR DENIAL

Section

- 703.240 Permit Denial
- 703.241 Establishing Permit Conditions
- 703.242 Noncompliance Pursuant to Emergency Permit
- 703.243 Monitoring
- 703.244 Notice of Planned Changes (Repealed)
- 703.245 Twenty-four Hour Reporting
- 703.246 Reporting Requirements
- 703.247 Anticipated Noncompliance
- 703.248 Information Repository

SUBPART G: CHANGES TO PERMITS

Section

- 703.260 Transfer
- 703.270 Modification or Reissuance
- 703.271 Causes for Modification
- 703.272 Causes for Modification or Reissuance
- 703.273 Facility Siting
- 703.280 Permit Modification at the Request of the Permittee
- 703.281 Class 1 Modifications
- 703.282 Class 2 Modifications
- 703.283 Class 3 Modifications

SUBPART H: REMEDIAL ACTION PLANS

Section

- 703.300 Special Regulatory Format
- 703.301 General Information
- 703.302 Applying for a RAP
- 703.303 Getting a RAP Approved
- 703.304 How a RAP May Be Modified, Reissued, or Terminated
- 703.305 Operating Under A RAP

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703.306 Obtaining a RAP for an Off-Site Location

SUBPART I: INTEGRATION WITH MAXIMUM ACHIEVABLE CONTROL
TECHNOLOGY (MACT) STANDARDS

Section

703.320 Options for Incinerators and Cement and Lightweight Aggregate Kilns to
Minimize Emissions from Startup, Shutdown, and Malfunction Events

SUBPART J: RCRA STANDARDIZED PERMITS FOR STORAGE AND
TREATMENT UNITS

Section

703.350 General Information About RCRA Standardized Permits

703.351 Applying for a RCRA Standardized Permit

703.352 Information That Must Be Kept at the Facility

703.353 Modifying a RCRA Standardized Permit

703.APPENDIX A Classification of Permit Modifications

AUTHORITY: Implementing Sections 7.2 and 22.4 and authorized by Section 27 of the
Environmental Protection Act [415 ILCS 5/7.2, 22.4, and 27].

SOURCE: Adopted in R82-19 at 7 Ill. Reg. 14289, effective October 12, 1983; amended in
R83-24 at 8 Ill. Reg. 206, effective December 27, 1983; amended in R84-9 at 9 Ill. Reg. 11899,
effective July 24, 1985; amended in R85-22 at 10 Ill. Reg. 1110, effective January 2, 1986;
amended in R85-23 at 10 Ill. Reg. 13284, effective July 28, 1986; amended in R86-1 at 10 Ill.
Reg. 14093, effective August 12, 1986; amended in R86-19 at 10 Ill. Reg. 20702, effective
December 2, 1986; amended in R86-28 at 11 Ill. Reg. 6121, effective March 24, 1987; amended
in R86-46 at 11 Ill. Reg. 13543, effective August 4, 1987; amended in R87-5 at 11 Ill. Reg.
19383, effective November 12, 1987; amended in R87-26 at 12 Ill. Reg. 2584, effective January
15, 1988; amended in R87-39 at 12 Ill. Reg. 13069, effective July 29, 1988; amended in R88-16
at 13 Ill. Reg. 447, effective December 27, 1988; amended in R89-1 at 13 Ill. Reg. 18477,
effective November 13, 1989; amended in R89-9 at 14 Ill. Reg. 6278, effective April 16, 1990;
amended in R90-2 at 14 Ill. Reg. 14492, effective August 22, 1990; amended in R90-11 at 15 Ill.
Reg. 9616, effective June 17, 1991; amended in R91-1 at 15 Ill. Reg. 14554, effective September
30, 1991; amended in R91-13 at 16 Ill. Reg. 9767, effective June 9, 1992; amended in R92-10 at
17 Ill. Reg. 5774, effective March 26, 1993; amended in R93-4 at 17 Ill. Reg. 20794, effective
November 22, 1993; amended in R93-16 at 18 Ill. Reg. 6898, effective April 26, 1994; amended
in R94-7 at 18 Ill. Reg. 12392, effective July 29, 1994; amended in R94-5 at 18 Ill. Reg. 18316,
effective December 20, 1994; amended in R95-6 at 19 Ill. Reg. 9920, effective June 27, 1995;
amended in R95-20 at 20 Ill. Reg. 11225, effective August 1, 1996; amended in R96-10/R97-

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3/R97-5 at 22 Ill. Reg. 553, effective December 16, 1997; amended in R98-12 at 22 Ill. Reg. 7632, effective April 15, 1998; amended in R97-21/R98-3/R98-5 at 22 Ill. Reg. 17930, effective September 28, 1998; amended in R98-21/R99-2/R99-7 at 23 Ill. Reg. 2153, effective January 19, 1999; amended in R99-15 at 23 Ill. Reg. 9381, effective July 26, 1999; amended in R00-13 at 24 Ill. Reg. 9765, effective June 20, 2000; amended in R01-21/R01-23 at 25 Ill. Reg. 9313, effective July 9, 2001; amended in R02-1/R02-12/R02-17 at 26 Ill. Reg. 6539, effective April 22, 2002; amended in R03-7 at 27 Ill. Reg. 3496, effective February 14, 2003; amended in R03-18 at 27 Ill. Reg. 12683, effective July 17, 2003; amended in R05-8 at 29 Ill. Reg. 5966, effective April 13, 2005; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 2845, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 487, effective December 20, 2006; amended in R07-5/R07-14 at 32 Ill. Reg. 11672, effective July 14, 2008; amended in R09-16/R10-4 at 34 Ill. Reg. 18505, effective November 12, 2010; amended in R13-15 at 37 Ill. Reg. _____, effective _____.

SUBPART C: AUTHORIZATION BY RULE AND INTERIM STATUS

Section 703.141 Permits by Rule

Notwithstanding any other provision of this Part or 35 Ill. Adm. Code 705, the following must be deemed to have a RCRA permit if the conditions listed are met:

- a) Ocean disposal barges or vessels. The owner or operator of a barge or other vessel that accepts hazardous waste for ocean disposal, if the owner or operator does the following:
 - 1) It has a permit for ocean dumping issued by USEPA under 40 CFR 220;
 - 2) It complies with the conditions of that permit; and
 - 3) It complies with the following hazardous waste regulations:
 - A) 35 Ill. Adm. Code 724.111 (USEPA Identification Number);
 - B) 35 Ill. Adm. Code 724.171 (Use of Manifest System);
 - C) 35 Ill. Adm. Code 724.172 (Manifest Discrepancies);
 - D) 35 Ill. Adm. Code 724.173(a) and (b)(1) (Operating Record);
 - E) 35 Ill. Adm. Code 724.175 (Biennial Report); and

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- F) 35 Ill. Adm. Code 724.176, (Unmanifested Waste Report).
- b) Injection wells. The owner or operator of an underground injection well disposing of hazardous waste, if the owner or operator fulfills the following conditions:
- 1) It has a permit for underground injection issued under 35 Ill. Adm. Code 704; and
 - 2) It complies with the conditions of that permit and the requirements of Subpart F of 35 Ill. Adm. Code 704 (requirements for wells managing hazardous waste); and
 - 3) For UIC permits issued after November 8, 1984, the following:
 - A) It complies with 35 Ill. Adm. Code 724.201; and
 - B) Where the UIC well is the only unit at the facility that requires a RCRA permit, it complies with Section 703.187.
- c) Publicly owned treatment works (POTW). The owner or operator of a POTW that accepts for treatment hazardous waste, if the owner or operator fulfills the following conditions:
- 1) It has an NPDES permit;
 - 2) It complies with the conditions of that permit;
 - 3) It complies with the following regulations:
 - A) 35 Ill. Adm. Code 724.111 (Identification Number);
 - B) 35 Ill. Adm. Code 724.171 (Use of Manifest System);
 - C) 35 Ill. Adm. Code 724.172 (Manifest Discrepancies);
 - D) 35 Ill. Adm. Code 724.173(a) and (b)(1) (Operating Record);
 - E) 35 Ill. Adm. Code 724.175 (Annual Report);
 - F) 35 Ill. Adm. Code 724.176 (Unmanifested Waste Report); and

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- G) For NPDES permits issued after November 8, 1984, 35 Ill. Adm. Code 724.201 (Corrective Action for Solid Waste Management Units); and
- 4) If the waste meets all federal, it complies with State and local pretreatment requirements that would be applicable to the waste if it were being discharged into the POTW through a sewer, pipe, or similar conveyance.

BOARD NOTE: Illinois pretreatment requirements are codified in 35 Ill. Adm. Code 307 and 310.

BOARD NOTE: See 40 CFR 270.60-~~(2005)~~ (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

SUBPART D: APPLICATIONS

Section 703.181 Contents of Part A

In addition to the information in 35 Ill. Adm. Code 702.123, Part A of the RCRA application must include the following information:

- a) The latitude and longitude of the facility;
- b) The name, address, and telephone number of the owner of the facility;
- c) An indication of whether the facility is new or existing and whether it is a first or revised application;
- d) For existing facilities, a scale drawing of the facility showing the location of all past, present, and future treatment, storage, and disposal areas;
- e) For existing facilities, photographs of the facility clearly delineating all existing structures; existing treatment, storage, and disposal areas; and sites of future treatment, storage, and disposal areas;
- f) A description of the processes to be used for treating, storing, and disposing of hazardous waste, and the design capacity of these items;
- g) A specification of the hazardous wastes listed or designated under 35 Ill. Adm. Code 721 to be treated, stored, or disposed of at the facility, an estimate of the

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quantity of such wastes to be treated, stored, or disposed of annually, and a general description of the processes to be used for such wastes.

- h) For hazardous debris, a description of the debris categories and containment categories to be treated, stored, or disposed of at the facility.

BOARD NOTE: Derived from 40 CFR ~~270.13 (2002)~~ 270.13(b), (e), (g), (h) through (j), and (n) (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 703.183 General Information

The following information is required in the Part B application for all HWM facilities, except as 35 Ill. Adm. Code 724.101 provides otherwise:

- a) A general description of the facility;
- b) Chemical and physical analyses of the hazardous wastes and hazardous debris to be handled at the facility. At a minimum, these analyses must contain all the information that must be known to treat, store, or dispose of the wastes properly in accordance with 35 Ill. Adm. Code 724;
- c) A copy of the waste analysis plan required by 35 Ill. Adm. Code 724.113(b) and, if applicable, 35 Ill. Adm. Code 724.113(c);
- d) A description of the security procedures and equipment required by 35 Ill. Adm. Code 724.114, or a justification demonstrating the reasons for requesting a waiver of this requirement;
- e) A copy of the general inspection schedule required by 35 Ill. Adm. Code 724.115(b). Include where applicable, as part of the inspection schedule, specific requirements in 35 Ill. Adm. Code 724.274, 724.293(i), 724.295, 724.326, 724.354, 724.373, 724.403, 724.702, 724.933, 724.952, 724.953, 724.958, 724.984, 724.985, 724.986, and 724.988;
- f) A justification of any request for a waiver of the preparedness and prevention requirements of Subpart C of 35 Ill. Adm. Code 724;
- g) A copy of the contingency plan required by Subpart D of 35 Ill. Adm. Code 724;

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BOARD NOTE: Include, where applicable, as part of the contingency plan, specific requirements in 35 Ill. Adm. Code 724.200 and 724.327. Corresponding 40 CFR 270.14(b)(7) refers to the requirements of 40 CFR 264.255 (corresponding with 35 Ill. Adm. Code 724.355), marked “reserved” by USEPA.

- h) A description of procedures, structures, or equipment used at the facility as follows:
 - 1) To prevent hazards in unloading operations (for example, ramps, or special forklifts);
 - 2) To prevent runoff from hazardous waste handling areas to other areas of the facility or environment, or to prevent flooding (for example, berms, dikes, or trenches);
 - 3) To prevent contamination of water supplies;
 - 4) To mitigate effects of equipment failure and power outages;
 - 5) To prevent undue exposure of personnel to hazardous waste (for example, protective clothing); and
 - 6) To prevent releases to the atmosphere;
- i) A description of precautions to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes, as required to demonstrate compliance with 35 Ill. Adm. Code 724.117, including documentation demonstrating compliance with 35 Ill. Adm. Code 724.117(c);
- j) A description of the area traffic pattern, the estimated traffic volume (number and types of vehicles), and area traffic control (for example, show turns across traffic lanes and stacking lanes, if appropriate); a description of access road surfacing and load bearing capacity; and the locations and types of traffic control signals;
- k) Facility location information, as required by Section 703.184;

BOARD NOTE: The Board has codified 40 CFR 270.14(b)(11)(iii) through (b)(11)(v) (2005) as Section 703.184(c) through (e) to comport with Illinois Administrative Code codification requirements. The Board did not include an equivalent to 40 CFR 270.14(b)(11)(i) and (b)(11)(ii), relating to certain seismic zones not located within Illinois.

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- l) An outline of both the introductory and continuing training programs by the owner or operator to prepare persons to operate or maintain the HWM facility in a safe manner, as required to demonstrate compliance with 35 Ill. Adm. Code 724.116. A brief description of how training will be designed to meet actual job tasks in accordance with requirements in 35 Ill. Adm. Code 724.116(a)(3);
- m) A copy of the closure plan and, where applicable, the post-closure plan required by 35 Ill. Adm. Code 724.212, 724.218, and 724.297. Include, where applicable, as part of the plans, specific requirements in 35 Ill. Adm. Code 724.278, 724.297, 724.328, 724.358, 724.380, 724.410, 724.451, 724.701, and 724.703;
- n) For hazardous waste disposal units that have been closed, documentation that notices required under 35 Ill. Adm. Code 724.219 have been filed;
- o) The most recent closure cost estimate for the facility, prepared in accordance with 35 Ill. Adm. Code 724.242, and a copy of the documentation required to demonstrate financial assurance under 35 Ill. Adm. Code 724.243. For a new facility, a copy of the required documentation may be submitted 60 days prior to the initial receipt of hazardous wastes, if it is later than the submission of the Part B permit application;
- p) Where applicable, the most recent post-closure cost estimate for the facility, prepared in accordance with 35 Ill. Adm. Code 724.244, plus a copy of the documentation required to demonstrate financial assurance under 35 Ill. Adm. Code 724.245. For a new facility, a copy of the required documentation may be submitted 60 days prior to the initial receipt of hazardous wastes, if it is later than the submission of the Part B permit application;
- q) Where applicable, a copy of the insurance policy or other documentation that comprises compliance with the requirements of 35 Ill. Adm. Code 724.247. For a new facility, documentation showing the amount of insurance meeting the specification of 35 Ill. Adm. Code 724.247(a) and, if applicable, 35 Ill. Adm. Code 724.247(b) that the owner or operator plans to have in effect before initial receipt of hazardous waste for treatment, storage, or disposal. A request for an alternative level of required coverage for a new or existing facility may be submitted as specified in 35 Ill. Adm. Code 724.247(c);
- r) This subsection corresponds with 40 CFR 270.14(b)(18), pertaining to state financial mechanisms that do not apply in Illinois. This statement maintains structural parity with the federal regulations;

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- s) A topographic map showing a distance of 1000 feet around the facility at a scale of 2.5 centimeters (1 inch) equal to not more than 61.0 meters (200 feet). Contours must be shown on the map. The contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each operational unit of the facility. For example, contours with an interval of 1.5 meters (5 feet), if relief is greater than 6.1 meters (20 feet), or an interval of 0.6 meters (2 feet), if relief is less than 6.1 meters (20 feet). An owner or operator of a HWM facility located in a mountainous area must use larger contour intervals to adequately show topographic profiles of facilities. The map must clearly show the following:
- 1) Map scale and date;
 - 2) 100-year floodplain area;
 - 3) Surface waters including intermittent streams;
 - 4) Surrounding land uses (e.g., residential, commercial, agricultural, recreational, etc.);
 - 5) A wind rose (i.e., prevailing windspeed and direction);
 - 6) Orientation of the map (north arrow);
 - 7) Legal boundaries of the HWM facility site;
 - 8) Access control (e.g., fences, gates, etc.);
 - 9) Injection and withdrawal wells both on-site and off-site;
 - 10) Buildings; treatment, storage, or disposal operations; or other structures (e.g., recreation areas, runoff control systems, access and internal roads, storm, sanitary and process sewage systems, loading and unloading areas, fire control facilities, etc.);
 - 11) Barriers for drainage or flood control; and
 - 12) Location of operational units within the HWM facility site, where hazardous waste is (or will be) treated, stored, or disposed of (include equipment cleanup areas);

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BOARD NOTE: For large HWM facilities, the Agency must allow the use of other scales on a case-by-case basis.

- t) Applicants must submit such information as the Agency determines is necessary for it to determine whether to issue a permit and what conditions to impose in any permit issued;
- u) For land disposal facilities, if a case-by-case extension has been approved under 35 Ill. Adm. Code 728.105 or if a petition has been approved under 35 Ill. Adm. Code 728.106, a copy of the notice of approval of the extension or of approval of the petition is required; and
- v) A summary of the pre-application meeting, along with a list of attendees and their addresses, and copies of any written comments or materials submitted at the meeting, as required under 35 Ill. Adm. Code 703.191(c).

BOARD NOTE: Derived from 40 CFR 270.14(b)-(2002) (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

SUBPART F: PERMIT CONDITIONS OR DENIAL

Section 703.241 Establishing Permit Conditions

- a) General conditions:
 - 1) In addition to the conditions established pursuant to 35 Ill. Adm. Code 702.160(a), each RCRA permit must include permit conditions necessary to achieve compliance with each of the applicable requirements specified in 35 Ill. Adm. Code 724 and 726 through 728. In satisfying this provision, the Agency may incorporate applicable requirements of 35 Ill. Adm. Code 724 and 726 through 728 directly into the permit or establish other permit conditions that are based on these Parts;
 - 2) Each RCRA permit issued pursuant to Section 39(d) of the Environmental Protection Act [415 ILCS 5/39(d)] must contain terms and conditions that the Agency determines are necessary to adequately protect human health and the environment; and
 - 3) If, as the result of an assessments or other information, the Agency determines that conditions, in addition to those required under subpart

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EEE of 40 CFR 63 or 35 Ill. Adm. Code 724 or ~~725~~ 726, are necessary to ensure adequate protection of human health and the environment, the Agency must include those terms and conditions in a RCRA permit for a hazardous waste combustion unit.

BOARD NOTE: Subsection (a) derived from 270.32(b) ~~(2005)~~, as amended at 70 Fed. Reg. 59402 (Oct. 12, 2006) (2012).

- b) The conditions specified in this Subpart F, in addition to those set forth in 35 Ill. Adm. Code 702.140 through 702.152, apply to all RCRA permits.

BOARD NOTE: Subsection (b) derived from 40 CFR 270.30 preamble ~~(2005)~~ (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

SUBPART G: CHANGES TO PERMITS

Section 703.280 Permit Modification at the Request of the Permittee

- a) Class 1 modifications. See Section 703.281.
- b) Class 2 modifications. See Section 703.282.
- c) Class 3 modifications. See Section 703.283.
- d) Other modifications.
 - 1) In the case of modifications not explicitly listed in Appendix A of this Part, the permittee may submit a Class 3 modification request to the Agency, or the permittee may request a determination by the Agency that the modification be reviewed and approved as a Class 1 or Class 2 modification. If the permittee requests that the modification be classified as a Class 1 or 2 modification, the permittee must provide the Agency with the necessary information to support the requested classification.
 - 2) The Agency must make the determination described in subsection (d)(1) of this Section as promptly as practicable. In determining the appropriate class for a specific modification, the Agency must consider the similarity of the modification to other modifications codified in Appendix A of this Part and the following criteria:

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- A) Class 1 modifications apply to minor changes that keep the permit current with routine changes to the facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to adequately protect human health or the environment. In the case of Class 1 modifications, the Agency may require prior approval.
 - B) Class 2 modifications apply to changes that are necessary to enable a permittee to respond, in a timely manner, to any of the following:
 - i) Common variations in the types and quantities of the wastes managed under the facility permit;
 - ii) Technological advances; and
 - iii) Changes necessary to comply with new regulations, where these changes can be implemented without substantially changing design specifications or management practices in the permit.
 - C) Class 3 modifications substantially alter the facility or its operation.
- e) Temporary authorizations.
- 1) Upon request of the permittee, the Agency must, without prior public notice and comment, grant the permittee a temporary authorization in accordance with this subsection (e). Temporary authorizations have a term of not more than 180 days.
 - 2) Procedures.
 - A) The permittee may request a temporary authorization for the following:
 - i) Any Class 2 modification meeting the criteria in subsection (e)(3)(B) of this Section; and
 - ii) Any Class 3 modification that meets the criteria in subsection (e)(3)(B)(i) of this Section or that meets the criteria in subsections (e)(3)(B)(iii) through (e)(3)(B)(v) of

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this Section and provides improved management or treatment of a hazardous waste already listed in the facility permit.

- B) The temporary authorization request must include the following:
 - i) A description of the activities to be conducted under the temporary authorization;
 - ii) An explanation of why the temporary authorization is necessary; and
 - iii) Sufficient information to ensure compliance with 35 Ill. Adm. Code 724 standards.
 - C) The permittee must send a notice about the temporary authorization request to all persons on the facility mailing list maintained by the Agency and to appropriate units of State and local governments, as specified in 35 Ill. Adm. Code 705.163(a)(5). This notification must be made within seven days after submission of the authorization request.
- 3) The Agency must approve or deny the temporary authorization as quickly as practical. To issue a temporary authorization, the Agency must find as follows:
- A) That the authorized activities are in compliance with the standards of 35 Ill. Adm. Code 724.
 - B) That the temporary authorization is necessary to achieve one of the following objectives before action is likely to be taken on a modification request:
 - i) To facilitate timely implementation of closure or corrective action activities;
 - ii) To allow treatment or storage in tanks, containers, or containment buildings, in accordance with 35 Ill. Adm. Code 728;

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- iii) To prevent disruption of ongoing waste management activities;
 - iv) To enable the permittee to respond to sudden changes in the types or quantities of the wastes managed under the facility permit; or
 - v) To facilitate other changes to adequately protect human health and the environment.
- 4) A temporary authorization must be reissued for one additional term of up to 180 days, provided that the permittee has requested a Class 2 or 3 permit modification for the activity covered in the temporary authorization, and either of the following is true:
- A) The reissued temporary authorization constitutes the Agency's decision on a Class 2 permit modification in accordance with Section 703.282(f)(1)(D) or (f)(2)(D); or
 - B) The Agency determines that the reissued temporary authorization involving a Class 3 permit modification request is warranted to allow the authorized activities to continue while the modification procedures of 35 Ill. Adm. Code 703.283 are conducted.
- f) Public notice and appeals of permit modification decisions.
- 1) The Agency must notify persons on the facility mailing list and appropriate units of State and local government within 10 days after any decision to grant or deny a Class 2 or 3 permit modification request. The Agency must also notify such persons within 10 days after an automatic authorization for a Class 2 modification goes into effect pursuant to Section 703.282(f)(3) or (f)(5).
 - 2) The Agency's decision to grant or deny a Class 2 or 3 permit modification request may be appealed under the permit appeal procedures of 35 Ill. Adm. Code 705.212.
 - 3) An automatic authorization that goes into effect pursuant to Section 703.282(f)(3) or (f)(5) may be appealed under the permit appeal procedures of 35 Ill. Adm. Code 705.212; however, the permittee may

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continue to conduct the activities pursuant to the automatic authorization until the Board enters a final order on the appeal notwithstanding the provisions of 35 Ill. Adm. Code 705.204.

- g) Newly regulated wastes and units.
 - 1) The permittee is authorized to continue to manage wastes listed or identified as hazardous pursuant to 35 Ill. Adm. Code 721, or to continue to manage hazardous waste in units newly regulated as hazardous waste management units, if each of the following is true:
 - A) The unit was in existence as a hazardous waste facility with respect to the newly listed or characterized waste or newly regulated waste management unit on the effective date of the final rule listing or identifying the waste, or regulating the unit;
 - B) The permittee submits a Class 1 modification request on or before the date on which the waste becomes subject to the new requirements;
 - C) The permittee is in compliance with the applicable standards of 35 Ill. Adm. Code 725 and 726;
 - D) The permittee also submits a complete class 2 or 3 modification request within 180 days after the effective date of the rule listing or identifying the waste, or subjecting the unit to management standards pursuant to 35 Ill. Adm. Code 724, 725, or 726; and
 - E) In the case of land disposal units, the permittee certifies that such unit is in compliance with all applicable requirements of 35 Ill. Adm. Code 725 for groundwater monitoring and financial responsibility requirements on the date 12 months after the effective date of the rule identifying or listing the waste as hazardous, or regulating the unit as a hazardous waste management unit. If the owner or operator fails to certify compliance with all these requirements, the owner or operator loses authority to operate pursuant to this Section.

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- 2) New wastes or units added to a facility's permit pursuant to this subsection (g) do not constitute expansions for the purpose of the 25 percent capacity expansion limit for Class 2 modifications.
- h) Military hazardous waste munitions treatment and disposal. The permittee is authorized to continue to accept waste military munitions notwithstanding any permit conditions barring the permittee from accepting off-site wastes, if each of the following is true:
 - 1) The facility was in existence as a hazardous waste facility and the facility was already permitted to handle the waste military munitions on the date when the waste military munitions became subject to hazardous waste regulatory requirements;
 - 2) On or before the date when the waste military munitions become subject to hazardous waste regulatory requirements, the permittee submits a Class 1 modification request to remove or amend the permit provision restricting the receipt of off-site waste munitions; and
 - 3) The permittee submits a complete Class 2 modification request within 180 days after the date when the waste military munitions became subject to hazardous waste regulatory requirements.
- i) Permit modification list. The Agency must maintain a list of all approved permit modifications and must publish a notice once a year in a State-wide newspaper that an updated list is available for review.
- j) Combustion facility changes to meet federal 40 CFR 63 MACT standards. The following procedures apply to hazardous waste combustion facility permit modifications requested pursuant to Appendix A, paragraph L(9) of this Part.
 - 1) A facility owner or operator must have complied with the federal notification of intent to comply (NIC) requirements of 40 CFR 63.1210 that was in effect prior to October 11, 2000, (see subpart EEE of 40 CFR 63 (2000), incorporated by reference in 35 Ill. Adm. Code 720.111(b)) in order to request a permit modification pursuant to this Section for the purpose of technology changes needed to meet the standards of 40 CFR 63.1203, 63.1204, and 63.1205, incorporated by reference in 35 Ill. Adm. Code 720.111(b).

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- 2) If the Agency does not act to either approve or deny the request within 90 days of receiving it, the request must be deemed approved. The Agency may, at its discretion, extend this 90-day deadline one time for up to 30 days by notifying the facility owner or operator in writing before the 90 days has expired. A facility owner or operator must comply with the NIC requirements of 40 CFR 63.1210(b) and 63.1212(a) before a permit modification can be requested under this Section for the purpose of technology changes needed to meet the 40 CFR 63.1215, 63.1216, 63.1217, 63.1218, 63.1219, 63.1220, and 63.1221 standards as added on October 12, 2005, incorporated by reference in 35 Ill. Adm. Code 720.111(b).
- k) Waiver of RCRA permit conditions in support of transition to the federal 40 CFR 63 MACT standards.
 - 1) The facility owner or operator may request to have specific RCRA operating and emissions limits waived by submitting a Class 1 permit modification request under Appendix A of this Part, paragraph L.10. The owner or operator must provide the information described in subsections (k)(1)(A) through (k)(1)(C) of this Section, with Agency review subject to the conditions of subsection (k)(1)(D) of this Section:
 - A) It must identify the specific RCRA permit operating and emissions limits that the owner or operator is requesting to waive;
 - B) It must provide an explanation of why the changes are necessary in order to minimize or eliminate conflicts between the RCRA permit and MACT compliance; and
 - C) It must discuss how the revised provisions will be sufficiently protective.
 - D) The Agency must approve or deny the request within 30 days after receipt of the request. The Agency may, at its discretion, extend this 30-day deadline one time for up to 30 days by notifying the facility owner or operator in writing.
 - 2) To request this modification in conjunction with MACT performance testing, where permit limits may only be waived during actual test events and pretesting, as defined under 40 CFR 63.1207(h)(2)(i) and (h)(2)(ii),

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incorporated by reference in 35 Ill. Adm. Code 720.111(b), for an aggregate time not to exceed 720 hours of operation (renewable at the discretion of the Agency) the owner or operator must fulfill the conditions of subsection (k)(2)(A) of this Section, subject to the conditions of subsection (k)(2)(B) of this Section:

- A) It must submit its modification request to the Agency at the same time it submits its test plans to the Agency.
- B) The Agency may elect to approve or deny the request contingent upon approval of the test plans.

l) ~~Performance Track member facilities. The following procedures apply to the owners and operators of a Performance Track member facility that requests a permit modification under paragraph O.1. in Appendix A to this Part. This subsection (l) corresponds with 40 CFR 270.42(l), which became obsolete when USEPA terminated the Performance Track Program at 74 Fed. Reg. 22741 (May 14, 2009). USEPA has recognized that program-related rules are no longer effective at 75 Fed. Reg. 12989, 92, note 1 (Mar. 18, 2010). This statement maintains structural consistency with the corresponding federal requirements.~~

- 1) ~~The owner or operator of a Performance Track member facility must have complied with the requirements of 35 Ill. Adm. Code 724.115(b)(5) in order to request a permit modification under this Section.~~
- 2) ~~The owner or operator of the Performance Track member facility should consider the request for permit modification approved if the Agency does not, in writing, within 60 days after receiving an application, either deny the request for permit modification or notify the owner or operator of the Performance Track member facility that the Agency has extended the 60-day deadline. During an extension of the 60-day deadline, the owner or operator of the Performance Track member facility must adhere to the revised inspection schedule outlined in its request for permit modification, and it must maintain a copy of the application in the facility's operating record.~~

BOARD NOTE: Derived from 40 CFR 270.42(d) through ~~(f)~~ (2007) (k) (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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SUBPART H: REMEDIAL ACTION PLANS

Section 703.302 Applying for a RAP

- a) Applying for a RAP. To apply for a RAP, an owner or operator must complete an application, sign it, and submit it to the Agency according to the requirements in this Subpart H.

BOARD NOTE: Subsection (a) is derived from 40 CFR 270.95 ~~(2005)~~ (2012).

- b) The person who must obtain a RAP. When a facility or remediation waste management site is owned by one person, but the treatment, storage, or disposal activities are operated by another person, it is the operator's duty to obtain a RAP, except that the owner must also sign the RAP application.

BOARD NOTE: Subsection (b) is derived from 40 CFR 270.100 ~~(2005)~~ (2012).

- c) The person who must sign the application and any required reports for a RAP. Both the owner and the operator must sign the RAP application and any required reports according to 35 Ill. Adm. Code 702.126(a), (b), and (c). In the application, both the owner and the operator must also make the certification required pursuant to 35 Ill. Adm. Code 702.126(d)(1). However, the owner may choose the alternative certification pursuant to 35 Ill. Adm. Code 702.126(d)(2) if the operator certifies pursuant to 35 Ill. Adm. Code 702.126(d)(1).

BOARD NOTE: Subsection (c) is derived from 40 CFR 270.105 ~~(2005)~~ (2012).

- d) What an owner or operator must include in its application for a RAP. An owner or operator must include the following information in its application for a RAP:

- 1) The name, address, and USEPA identification number of the remediation waste management site;
- 2) The name, address, and telephone number of the owner and operator;
- 3) The latitude and longitude of the site;
- 4) The United States Geological Survey (USGS) or county map showing the location of the remediation waste management site;

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- 5) A scaled drawing of the remediation waste management site showing the following:
 - A) The remediation waste management site boundaries;
 - B) Any significant physical structures; and
 - C) The boundary of all areas on-site where remediation waste is to be treated, stored, or disposed of;
- 6) A specification of the hazardous remediation waste to be treated, stored, or disposed of at the facility or remediation waste management site. This must include information on the following:
 - A) Constituent concentrations and other properties of the hazardous remediation wastes that may affect how such materials should be treated or otherwise managed;
 - B) An estimate of the quantity of these wastes; and
 - C) A description of the processes an owner or operator will use to treat, store, or dispose of this waste, including technologies, handling systems, design, and operating parameters an owner or operator will use to treat hazardous remediation wastes before disposing of them according to the land disposal restrictions of 35 Ill. Adm. Code 728, as applicable;
- 7) Enough information to demonstrate that operations that follow the provisions in the owner's or operator's RAP application will ensure compliance with applicable requirements of 35 Ill. Adm. Code 724, 726, and 728;
- 8) Such information as may be necessary to enable the Agency to carry out its duties under other federal laws as is required for traditional RCRA permits pursuant to Section 703.183(t);
- 9) Any other information the Agency decides is necessary for demonstrating compliance with this Subpart H or for determining any additional RAP conditions that are necessary to adequately protect human health and the environment.

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BOARD NOTE: Subsection (d) is derived from 40 CFR 270.110-~~(2005)~~ (2012).

- e) If an owner or operator wants to keep this information confidential. 35 Ill. Adm. Code ~~120.130~~ allows an owner or operator to claim as confidential any or all of the information an owner or operator submits to the Agency pursuant to this Subpart H. An owner or operator must assert any such claim at the time that the owner or operator submits its RAP application or other submissions by stamping the words "trade secret" in red ink, as provided in 35 Ill. Adm. Code ~~120.305~~ 130.302. If an owner or operator asserts a claim in compliance with 35 Ill. Adm. Code ~~120.201~~ 130.200 at the time it submits the information, the Agency must treat the information according to the procedures in 35 Ill. Adm. Code ~~120.130~~. If an owner or operator does not assert a claim at the time it submits the information, the Agency must make the information available to the public without further notice to the owner or operator. The Agency must deny any requests for confidentiality of an owner's or operator's name or address.

BOARD NOTE: Subsection (e) is derived from 40 CFR 270.115-~~(2005)~~ (2012).

- f) To whom the owner or operator must submit its RAP application. An owner or operator must submit its application for a RAP to the Agency for approval.

BOARD NOTE: Subsection (f) is derived from 40 CFR 270.120-~~(2005)~~ (2012).

- g) If an owner or operator submits its RAP application as part of another document, what the owner or operator must do. If an owner or operator submits its application for a RAP as a part of another document, an owner or operator must clearly identify the components of that document that constitute its RAP application.

BOARD NOTE: Subsection (g) is derived from 40 CFR 270.125-~~(2005)~~ (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 703.306 Obtaining a RAP for an Off-Site Location

An owner or operator may perform remediation waste management activities under a RAP at a location removed from the area where the remediation wastes originated.

- a) An owner or operator may request a RAP for remediation waste management activities at a location removed from the area where the remediation wastes originated if the owner or operator believes such a location would be more protective than the contaminated area or areas in close proximity.

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- b) If the Agency determines that an alternative location, removed from the area where the remediation waste originated, is more protective than managing remediation waste at the area of contamination or areas in close proximity, then the Agency must approve a RAP for this alternative location.
- c) An owner or operator must request the RAP, and the Agency must approve or deny the RAP, according to the procedures and requirements in this Subpart H.
- d) A RAP for an alternative location must also meet the following requirements, which the Agency must include in the RAP for such locations:
 - 1) The RAP for the alternative location must be issued to the person responsible for the cleanup from which the remediation wastes originated;
 - 2) The RAP is subject to the expanded public participation requirements in Sections 703.191, 703.192, and 703.193;
 - 3) The RAP is subject to the public notice requirements in 35 Ill. Adm. Code 705.163;
 - 4) The site permitted in the RAP may not be located within 61 meters or 200 feet of a fault that has had displacement in the Holocene time. (The owner or operator must demonstrate compliance with this standard through the requirements in Section 703.183(k).) (See the definitions of terms in 35 Ill. Adm. Code 724.118(a).)

BOARD NOTE: Sites in Illinois are assumed to be in compliance with the requirement of subsection (d)(4) of this Section, since they are not listed in appendix VI to 40 CFR 264 (Political Jurisdictions in Which Compliance with ~~§ 264.18(a) Must Be Demonstrated~~), incorporated by reference in 35 Ill. Adm. Code 720.111(b).
- e) These alternative locations are remediation waste management sites, and retain the following benefits of remediation waste management sites:
 - 1) Exclusion from facility-wide corrective action under 35 Ill. Adm. Code 724.201; and
 - 2) Application of 35 Ill. Adm. Code 724.101(j) in lieu of Subparts B, C, and D of 35 Ill. Adm. Code 724.

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BOARD NOTE: Derived from 40 CFR 270.230-(2005) (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 703.APPENDIX A Classification of Permit Modifications

Class Modifications

- A. General Permit Provisions
 - 1 1. Administrative and informational changes.
 - 1 2. Correction of typographical errors.
 - 1 3. Equipment replacement or upgrading with functionally equivalent components (e.g., pipes, valves, pumps, conveyors, controls).
 - 4 4. Changes in the frequency of or procedures for monitoring, reporting, sampling, or maintenance activities by the permittee:
 - 1 a. To provide for more frequent monitoring, reporting, or maintenance.
 - 2 b. Other changes.
 - 5 5. Schedule of compliance:
 - 1* a. Changes in interim compliance dates, with prior approval of the Agency.
 - 3 b. Extension of final compliance date.
 - 1* 6. Changes in expiration date of permit to allow earlier permit termination, with prior approval of the Agency.
 - 1* 7. Changes in ownership or operational control of a facility, provided the procedures of Section 703.260(b) are followed.

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- 1* 8. Changes to remove permit conditions that are no longer applicable (i.e., because the standards upon which they are based are no longer applicable to the facility).
- 1* 9. Changes to remove permit conditions applicable to a unit excluded pursuant to the provisions of 35 Ill. Adm. Code 721.104.
- 1* 10. Changes in the expiration date of a permit issued to a facility at which all units are excluded pursuant to the provisions of 35 Ill. Adm. Code 721.104.

B. General Facility Standards

- 1. Changes to waste sampling or analysis methods:
 - 1 a. To conform with Agency guidance or Board regulations.
 - 1* b. To incorporate changes associated with F039 (multi-source leachate) sampling or analysis methods.
 - 1* c. To incorporate changes associated with underlying hazardous constituents in ignitable or corrosive wastes.
 - 2 d. Other changes.
- 2. Changes to analytical quality assurance or quality control plan:
 - 1 a. To conform with agency guidance or regulations.
 - 2 b. Other changes.
- 1 3. Changes in procedures for maintaining the operating record.
- 2 4. Changes in frequency or content of inspection schedules.
- 5. Changes in the training plan:
 - 2 a. That affect the type or decrease the amount of training given to employees.

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- 1 b. Other changes.
- 6. Contingency plan:
 - 2 a. Changes in emergency procedures (i.e., spill or release response procedures).
 - 1 b. Replacement with functionally equivalent equipment, upgrade, or relocate emergency equipment listed.
 - 2 c. Removal of equipment from emergency equipment list.
 - 1 d. Changes in name, address, or phone number of coordinators or other persons or agencies identified in the plan.

Note: When a permit modification (such as introduction of a new unit) requires a change in facility plans or other general facility standards, that change must be reviewed under the same procedures as the permit modification.

- 7. CQA plan:
 - 1 a. Changes that the CQA officer certifies in the operating record will provide equivalent or better certainty that the unit components meet the design specifications.
 - 2 b. Other changes.

Note: When a permit modification (such as introduction of a new unit) requires a change in facility plans or other general facility standards, that change must be reviewed under the same procedures as a permit modification.

C. Groundwater Protection

- 1. Changes to wells:
 - 2 a. Changes in the number, location, depth, or design of upgradient or downgradient wells of permitted groundwater monitoring system.

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- 1 b. Replacement of an existing well that has been damaged or rendered inoperable, without change to location, design, or depth of the well.

- 1* 2. Changes in groundwater sampling or analysis procedures or monitoring schedule, with prior approval of the Agency.

- 1* 3. Changes in statistical procedure for determining whether a statistically significant change in groundwater quality between upgradient and downgradient wells has occurred, with prior approval of the Agency.

- 2 4. Changes in point of compliance.

- 5. Changes in indicator parameters, hazardous constituents, or concentration limits (including ACLs (Alternate Concentration Limits)):
 - 3 a. As specified in the groundwater protection standard.
 - 2 b. As specified in the detection monitoring program.

- 2 6. Changes to a detection monitoring program as required by 35 Ill. Adm. Code 724.198(h), unless otherwise specified in this Appendix.

- 7. Compliance monitoring program:
 - 3 a. Addition of compliance monitoring program as required by 35 Ill. Adm. Code 724.198(g)(4) and 724.199.
 - 2 b. Changes to a compliance monitoring program as required by 35 Ill. Adm. Code 724.199(j), unless otherwise specified in this Appendix.

- 8. Corrective action program:
 - 3 a. Addition of a corrective action program as required by 35 Ill. Adm. Code 724.199(i)(2) and 724.200.

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- 2 b. Changes to a corrective action program as required by 35 Ill. Adm. Code 724.200(h), unless otherwise specified in this Appendix.

- D. Closure

- 1. Changes to the closure plan:

- 1* a. Changes in estimate of maximum extent of operations or maximum inventory of waste on-site at any time during the active life of the facility, with prior approval of the Agency.

- 1* b. Changes in the closure schedule for any unit, changes in the final closure schedule for the facility or extension of the closure period, with prior approval of the Agency.

- 1* c. Changes in the expected year of final closure, where other permit conditions are not changed, with prior approval of the Agency.

- 1* d. Changes in procedures for decontamination of facility equipment or structures, with prior approval of the Agency.

- 2 e. Changes in approved closure plan resulting from unexpected events occurring during partial or final closure, unless otherwise specified in this Appendix.

- 2 f. Extension of the closure period to allow a landfill, surface impoundment, or land treatment unit to receive non-hazardous wastes after final receipt of hazardous wastes under 35 Ill. Adm. Code 724.213(d) or (e).

- 3 2. Creation of a new landfill unit as part of closure.

- 3. Addition of the following new units to be used temporarily for closure activities:

- 3 a. Surface impoundments.

- 3 b. Incinerators.

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- 3 c. Waste piles that do not comply with 35 Ill. Adm. Code 724.350(c).
- 2 d. Waste piles that comply with 35 Ill. Adm. Code 724.350(c).
- 2 e. Tanks or containers (other than specified in paragraph D(3)(f) below).
- 1* f. Tanks used for neutralization, dewatering, phase separation, or component separation, with prior approval of the Agency.
- 2 g. Staging piles.

E. Post-Closure

- 1 1. Changes in name, address, or phone number of contact in post-closure plan.
- 2 2. Extension of post-closure care period.
- 3 3. Reduction in the post-closure care period.
- 1 4. Changes to the expected year of final closure, where other permit conditions are not changed.
- 2 5. Changes in post-closure plan necessitated by events occurring during the active life of the facility, including partial and final closure.

F. Containers

- 1 1. Modification or addition of container units:
 - 3 a. Resulting in greater than 25 percent increase in the facility's container storage capacity, except as provided in F(1)(c) and F(4)(a).
 - 2 b. Resulting in up to 25 percent increase in the facility's container storage capacity, except as provided in F(1)(c) and F(4)(a).

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- 1 c. Modification or addition of container units or treatment processes necessary to treat wastes that are restricted from land disposal to meet some or all of the applicable treatment standards, with prior approval of the Agency. This modification may also involve the addition of new waste codes or narrative description of wastes. It is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027, and F028).
2. Modification of container units without an increased capacity or alteration of the system:
 - 2 a. Modification of a container unit without increasing the capacity of the unit.
 - 1 b. Addition of a roof to a container unit without alteration of the containment system.
3. Storage of different wastes in containers, except as provided in F(4):
 - 3 a. That require additional or different management practices from those authorized in the permit.
 - 2 b. That do not require additional or different management practices from those authorized in the permit.

Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.
4. Storage or treatment of different wastes in containers:
 - 2* a. That require addition of units or change in treatment process or management standards, provided that the wastes are restricted from land disposal and are to be treated to meet some or all of the applicable treatment standards. It is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027, and F028).

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- 1* b. That do not require the addition of units or a change in the treatment process or management standards, and provided that the units have previously received wastes of the same type (e.g., incinerator scrubber water). This modification is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027, and F028).
- G. Tanks
1. Modification of a tank unit, secondary containment system, or treatment process that increases tank capacity, adds a new tank, or alters treatment, specified as follows:
- 3 a. Modification or addition of tank units resulting in greater than 25 percent increase in the facility's tank capacity, except as provided in paragraphs G(1)(c), G(1)(d), and G(1)(e).
- 2 b. Modification or addition of tank units resulting in up to 25 percent increase in the facility's tank capacity, except as provided in paragraphs G(1)(d) and G(1)(e).
- 2 c. Addition of a new tank that will operate for more than 90 days using any of the following physical or chemical treatment technologies: neutralization, dewatering, phase separation, or component separation.
- 1* d. After prior approval of the Agency, addition of a new tank that will operate for up to 90 days using any of the following physical or chemical treatment technologies: neutralization, dewatering, phase separation, or component separation.
- 1* e. Modification or addition of tank units or treatment processes that are necessary to treat wastes that are restricted from land disposal to meet some or all of the applicable treatment standards, with prior approval of the Agency. This modification may also involve the addition of new waste codes. It is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027, and F028).

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- 2 2. Modification of a tank unit or secondary containment system without increasing the capacity of the unit.
- 1 3. Replacement of a tank with a tank that meets the same design standards and has a capacity within ± 10 percent of the replaced tank provided:
- a. The capacity difference is no more than 1500 gallons (5680 ℓ),
- b. The facility's permitted tank capacity is not increased, and
- c. The replacement tank meets the same conditions in the permit.
- 2 4. Modification of a tank management practice.
5. Management of different wastes in tanks:
- 3 a. That require additional or different management practices, tank design, different fire protection specifications or significantly different tank treatment process from that authorized in the permit, except as provided in paragraph G(5)(c).
- 2 b. That do not require additional or different management practices or tank design, different fire protection specification, or significantly different tank treatment process than authorized in the permit, except as provided in paragraph G(5)(d).
- Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.
- 1* c. That require addition of units or change in treatment processes or management standards, provided that the wastes are restricted from land disposal and are to be treated to meet some or all of the applicable treatment standards. The modification is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027, and F028).

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- 1 d. That do not require the addition of units or a change in the treatment process or management standards, and provided that the units have previously received wastes of the same type (e.g., incinerator scrubber water). This modification is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027, and F028).

Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.

H. Surface Impoundments

- 3 1. Modification or addition of surface impoundment units that result in increasing the facility's surface impoundment storage or treatment capacity.

- 3 2. Replacement of a surface impoundment unit.

- 2 3. Modification of a surface impoundment unit without increasing the facility's surface impoundment storage or treatment capacity and without modifying the unit's liner, leak detection system, or leachate collection system.

- 2 4. Modification of a surface impoundment management practice.

5. Treatment, storage, or disposal of different wastes in surface impoundments:

- 3 a. That require additional or different management practices or different design of the liner or leak detection system than authorized in the permit.

- 2 b. That do not require additional or different management practices or different design of the liner or leak detection system than authorized in the permit.

Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.

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- 1 c. That are wastes restricted from land disposal that meet the applicable treatment standards. This modification is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027, and F028).
- 1 d. That are residues from wastewater treatment or incineration, provided the disposal occurs in a unit that meets the minimum technological requirements stated in 40 CFR 268.5(h)(2) (Procedures for Case-by-Case Extensions to an Effective Date), incorporated by reference in 35 Ill. Adm. Code 720.111(b), and provided further that the surface impoundment has previously received wastes of the same type (for example, incinerator scrubber water). This modification is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027, and F028).
- 1* 6. Modifications of unconstructed units to comply with 35 Ill. Adm. Code 724.321(c), 724.322, 724.323, and 724.326(d).
- 7. Changes in response action plan:
 - 3 a. Increase in action leakage rate.
 - 3 b. Change in a specific response reducing its frequency or effectiveness.
 - 2 c. Other changes.

Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.

- I. Enclosed Waste Piles. For all waste piles, except those complying with 35 Ill. Adm. Code 724.350(c), modifications are treated the same as for a landfill. The following modifications are applicable only to waste piles complying with 35 Ill. Adm. Code 724.350(c).
 - 1. Modification or addition of waste pile units:
 - 3 a. Resulting in greater than 25 percent increase in the facility's waste pile storage or treatment capacity.

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2 b. Resulting in up to 25 percent increase in the facility's waste pile storage or treatment capacity.

2 2. Modification of waste pile unit without increasing the capacity of the unit.

1 3. Replacement of a waste pile unit with another waste pile unit of the same design and capacity and meeting all waste pile conditions in the permit.

2 4. Modification of a waste pile management practice.

5. Storage or treatment of different wastes in waste piles:

3 a. That require additional or different management practices or different design of the unit.

2 b. That do not require additional or different management practices or different design of the unit.

Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.

2 6. Conversion of an enclosed waste pile to a containment building unit.

Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.

J. Landfills and Unenclosed Waste Piles

3 1. Modification or addition of landfill units that result in increasing the facility's disposal capacity.

3 2. Replacement of a landfill.

3 3. Addition or modification of a liner, leachate collection system, leachate detection system, runoff control, or final cover system.

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- 2 4. Modification of a landfill unit without changing a liner, leachate collection system, leachate detection system, runoff control, or final cover system.
- 2 5. Modification of a landfill management practice.
6. Landfill different wastes:
- 3 a. That require additional or different management practices, different design of the liner, leachate collection system, or leachate detection system.
- 2 b. That do not require additional or different management practices, different design of the liner, leachate collection system, or leachate detection system.
- Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.
- 1 c. That are wastes restricted from land disposal that meet the applicable treatment standards. This modification is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027, and F028).
- 1 d. That are residues from wastewater treatment or incineration, provided the disposal occurs in a landfill unit that meets the minimum technological requirements stated in 40 CFR 268.5(h)(2) (Procedures for Case-by-Case Extensions to an Effective Date), incorporated by reference in 35 Ill. Adm. Code 720.111(b), and provided further that the landfill has previously received wastes of the same type (for example, incinerator ash). This modification is not applicable to dioxin-containing wastes (F020, F021, F022, F023, F026, F027, and F028).
- 1* 7. Modification of unconstructed units to comply with 35 Ill. Adm. Code 724.351(c), 724.352, 724.353, 724.354(c), 724.401(c), 724.402, 724.403(c), and 724.404.
8. Changes in response action plan:

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- 3 a. Increase in action leakage rate.
- 3 b. Change in a specific response reducing its frequency or effectiveness.
- 2 c. Other changes.

Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.

K. Land Treatment

- 3 1. Lateral expansion of or other modification of a land treatment unit to increase area extent.
- 2 2. Modification of runoff control system.
- 3 3. Modify runoff control system.
- 2 4. Other modification of land treatment unit component specifications or standards required in permit.
- 5 5. Management of different wastes in land treatment units:
 - 3 a. That require a change in permit operating conditions or unit design specifications.
 - 2 b. That do not require a change in permit operating conditions or unit design specifications.

Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.

- 6 6. Modification of a land treatment unit management practice to:
 - 3 a. Increase rate or change method of waste application.
 - 1 b. Decrease rate of waste application.

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- 2 7. Modification of a land treatment unit management practice to change measures of pH or moisture content or to enhance microbial or chemical reactions.

- 3 8. Modification of a land treatment unit management practice to grow food chain crops, to add to or replace existing permitted crops with different food chain crops or to modify operating plans for distribution of animal feeds resulting from such crops.

- 3 9. Modification of operating practice due to detection of releases from the land treatment unit pursuant to 35 Ill. Adm. Code 724.378(g)(2).

- 3 10. Changes in the unsaturated zone monitoring system that result in a change to the location, depth, or number of sampling points or which replace unsaturated zone monitoring devices or components of devices with devices or components that have specifications different from permit requirements.

- 2 11. Changes in the unsaturated zone monitoring system that do not result in a change to the location, depth, or number of sampling points or which replace unsaturated zone monitoring devices or components of devices with devices or components having specifications different from permit requirements.

- 2 12. Changes in background values for hazardous constituents in soil and soil-pore liquid.

- 2 13. Changes in sampling, analysis, or statistical procedure.

- 2 14. Changes in land treatment demonstration program prior to or during the demonstration.

- 1* 15. Changes in any condition specified in the permit for a land treatment unit to reflect results of the land treatment demonstration, provided performance standards are met, and the Agency's prior approval has been received.

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- 1* 16. Changes to allow a second land treatment demonstration to be conducted when the results of the first demonstration have not shown the conditions under which the wastes can be treated completely, provided the conditions for the second demonstration are substantially the same as the conditions for the first demonstration and have received the prior approval of the Agency.

- 3 17. Changes to allow a second land treatment demonstration to be conducted when the results of the first demonstration have not shown the conditions under which the wastes can be treated completely, where the conditions for the second demonstration are not substantially the same as the conditions for the first demonstration.

- 2 18. Changes in vegetative cover requirements for closure.

- L. Incinerators, Boilers and Industrial Furnaces

- 3 1. Changes to increase by more than 25 percent any of the following limits authorized in the permit: A thermal feed rate limit, a feedstream feed rate limit, a chlorine/chloride feed rate limit, a metal feed rate limit, or an ash feed rate limit. The Agency must require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means.

- 2 2. Changes to increase by up to 25 percent any of the following limits authorized in the permit: A thermal feed rate limit, a feedstream feed rate limit, a chlorine/chloride feed rate limit, a metal feed rate limit, or an ash feed rate limit. The Agency must require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means.

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- 3 3. Modification of an incinerator, boiler, or industrial furnace unit by changing the internal size or geometry of the primary or secondary combustion units; by adding a primary or secondary combustion unit; by substantially changing the design of any component used to remove HCl/Cl₂, metals, or particulate from the combustion gases; or by changing other features of the incinerator, boiler, or industrial furnace that could affect its capability to meet the regulatory performance standards. The Agency must require a new trial burn to substantiate compliance with the regulatory performance standards, unless this demonstration can be made through other means.
- 2 4. Modification of an incinerator, boiler, or industrial furnace unit in a manner that will not likely affect the capability of the unit to meet the regulatory performance standards but which will change the operating conditions or monitoring requirements specified in the permit. The Agency may require a new trial burn to demonstrate compliance with the regulatory performance standards.
5. Operating requirements:
- 3 a. Modification of the limits specified in the permit for minimum or maximum combustion gas temperature, minimum combustion gas residence time, oxygen concentration in the secondary combustion chamber, flue gas carbon monoxide or hydrocarbon concentration, maximum temperature at the inlet to the PM emission control system, or operating parameters for the air pollution control system. The Agency must require a new trial burn to substantiate compliance with the regulatory performance standards unless this demonstration can be made through other means.
- 3 b. Modification of any stack gas emission limits specified in the permit, or modification of any conditions in the permit concerning emergency shutdown or automatic waste feed cutoff procedures or controls.
- 2 c. Modification of any other operating condition or any inspection or recordkeeping requirement specified in the permit.

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6. Burning different wastes:
- 3 a. If the waste contains a POHC that is more difficult to burn than authorized by the permit or if burning of the waste requires compliance with different regulatory performance standards than specified in the permit, the Agency must require a new trial burn to substantiate compliance with the regulatory performance standards, unless this demonstration can be made through other means.
- 2 b. If the waste does not contain a POHC that is more difficult to burn than authorized by the permit and if burning of the waste does not require compliance with different regulatory performance standards than specified in the permit.
- Note: See Section 703.280(g) for modification procedures to be used for the management of newly listed or identified wastes.
7. Shakedown and trial burn:
- 2 a. Modification of the trial burn plan or any of the permit conditions applicable during the shakedown period for determining operational readiness after construction, the trial burn period or the period immediately following the trial burn.
- 1* b. Authorization of up to an additional 720 hours of waste burning during the shakedown period for determining operational readiness after construction, with the prior approval of the Agency.
- 1* c. Changes in the operating requirements set in the permit for conducting a trial burn, provided the change is minor and has received the prior approval of the Agency.
- 1* d. Changes in the ranges of the operating requirements set in the permit to reflect the results of the trial burn, provided the change is minor and has received the prior approval of the Agency.
- 1 8. Substitution of an alternative type of non-hazardous waste fuel that is not specified in the permit.

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- 1* 9. Technology changes needed to meet standards under federal subpart EEE of 40 CFR 63 (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors), incorporated by reference in 35 Ill. Adm. Code 720.111(b), provided the procedures of Section 703.280(j) are followed.
- 1* 10. Changes to RCRA Permit provisions needed to support transition to federal subpart EEE of 40 CFR 63 (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors), incorporated by reference in 35 Ill. Adm. Code 720.111(b), provided the procedures of Section 703.280(k) are followed.

M. Containment Buildings

- 1. Modification or addition of containment building units:
 - 3 a. Resulting in greater than 25 percent increase in the facility's containment building storage or treatment capacity.
 - 2 b. Resulting in up to 25 percent increase in the facility's containment building storage or treatment capacity.
- 2 2. Modification of a containment building unit or secondary containment system without increasing the capacity of the unit.
- 3 3. Replacement of a containment building with a containment building that meets the same design standards provided:
 - 1 a. The unit capacity is not increased.
 - 1 b. The replacement containment building meets the same conditions in the permit.
- 2 4. Modification of a containment building management practice.
- 5 5. Storage or treatment of different wastes in containment buildings:
 - 3 a. That require additional or different management practices.

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- 2 b. That do not require additional or different management practices.
- N. Corrective Action
- 3 1. Approval of a corrective action management unit pursuant to 35 Ill. Adm. Code 724.652.
- 2 2. Approval of a temporary unit or time extension pursuant to 35 Ill. Adm. Code 724.653.
- 2 3. Approval of a staging pile or staging pile operating term extension pursuant to 35 Ill. Adm. Code 724.654.
- O. Burden Reduction
1. ~~Approval of reduced inspection frequency for a Performance Track member facility for one of the following: This paragraph O.1. corresponds with paragraph O.1. in appendix I to 40 CFR 270.42, which became obsolete when USEPA terminated the Performance Track Program at 74 Fed. Reg. 22741 (May 14, 2009). USEPA has recognized that program-related rules are no longer effective at 75 Fed. Reg. 12989, 92, note 1 (Mar. 18, 2010). This statement maintains structural consistency with the corresponding federal requirements.~~
- 1* a. ~~A tank system pursuant to 35 Ill. Adm. Code 724.295.~~
- 1* b. ~~A container pursuant to 35 Ill. Adm. Code 724.274.~~
- 1* c. ~~A containment building pursuant to 35 Ill. Adm. Code 724.1101(e)(4).~~
- 1* d. ~~An area subject to spills pursuant to 35 Ill. Adm. Code 724.115(b)(4).~~
- 1 2. Development of one contingency plan based on Integrated Contingency Plan Guidance pursuant to 35 Ill. Adm. Code 724.152(b).

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- 1 3. A change to recordkeeping and reporting requirements pursuant to any of the following: 35 Ill. Adm. Code 724.156(i), 724.443(a)(2), 724.961(b)(1) and (d), 724.962(a)(2), 724.296(f), 724.200(g), or 724.213(e)(5).
- 1 4. A change to inspection frequency for a tank system pursuant to 35 Ill. Adm. Code 724.295(b).
- 1 5. A change to a detection and compliance monitoring program pursuant to 35 Ill. Adm. Code 724.198(d), (g)(2), (g)(3), or 724.199(f) or (g).

Note: * indicates modifications requiring prior Agency approval.

BOARD NOTE: Derived from appendix I to 40 CFR 270.42-~~(2009)~~ (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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- 1) Heading of the Part: UIC Permit Program
- 2) Code citation: 35 Ill. Adm. Code 704
- 3)

<u>Section numbers:</u>	<u>Proposed action:</u>
704.150	Amend
704.187	Amend
- 4) Statutory authority: 415 ILCS 5/7.2, 13, 22.4, and 27.
- 5) Effective date of amendments: OCT 24 2013
- 6) Does this rulemaking contain an automatic repeal date? No.
- 7) Do these amendments contain incorporations by reference? No.
- 8) Statement of availability: The adopted amendments, a copy of the Board's opinion and order adopted September 5, 2013 in docket R13-15, and all materials incorporated by reference are on file at the Board's principal office and are available for public inspection and copying.
- 9) Notice of proposal published in the Illinois Register: July 5, 2013, 37 Ill. Reg. 9187.
- 10) Has JCAR issued a statement of objections to these rules? No. Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).
- 11) Differences between the proposal and the final version: There are no differences between the proposed and adopted versions of the text.
- 12) Have all the changes agreed upon by the Board and JCAR been made as indicated in the agreements issued by JCAR? Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by JCAR.

Since the Notices of Proposed Amendments appeared in the July 5, 2013 issue of the *Illinois Register*, the Board received a number of suggestions for revisions from JCAR.

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The Board evaluated each suggestion and incorporated a number of changes into the text as a result, as detailed in the opinion and order of September 5, 2013 in docket R13-15, as indicated in item 11 above. See the September 5, 2013 opinion and order in docket R13-15 for additional details on the JCAR suggestions and the Board actions with regard to each. One table in that opinion itemizes the changes made in response to various suggestions. Another table indicates JCAR suggestions not incorporated into the text, with a brief explanation for each.

- 13) Will these amendments replace emergency amendments currently in effect? No.
- 14) Are there any other amendments pending on this Part? No.
- 15) Summary and purpose of amendments: The following briefly describes the subjects and issues involved in docket R13-15 rulemaking of which the amendments to Part 704 are a single segment. Also affected is 35 Ill. Adm. Code 703, 720, 722, 724, 725, 726, 727, 728, and 739, which is covered by separate notices in this issue of the Illinois Register. A comprehensive description is contained in the Board's opinion and order of June 20, 2013, proposing amendments in docket R13-15, which opinion and order is available from the address below.

This proceeding updates the Illinois Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste rules to incorporate corrections to various provisions that the United States Environmental Protection Agency (USEPA) suggested. The proceeding further updates the edition of the *Code of Federal Regulations* provisions that are incorporated by reference. The Board further makes a number of corrections to various provisions that the Board has determined are needed.

Specifically, the amendments to Part 704 implement a correction suggested by USEPA and make corrections that the Board has determined are needed. The Board's opinion and order of September 5, 2013 in docket R13-15 discusses the more substantial corrections made in the text. Tables that appear in that opinion and order list all of the various corrections and amendments included in this proceeding. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Tables appear in the Board's opinion and order of September 5, 2013 in docket R13-15 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those

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corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Section 22.4 of the Environmental Protection Act [415 ILCS 5/22.4] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

- 16) Information and questions regarding these adopted amendments shall be directed to:
Please reference consolidated docket R13-15 and direct inquiries to the following person:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago, IL 60601

312-814-6924

Request copies of the Board's opinion and order of September 5, 2013 at 312-814-3620. Alternatively, you may obtain a copy of the Board's opinion and order from the Internet at <http://www.ipcb.state.il.us>.

The full text of the adopted amendments begins on the next page:

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NOTICE OF ADOPTED AMENDMENTS

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER b: PERMITS

PART 704
UIC PERMIT PROGRAM

SUBPART A: GENERAL PROVISIONS

Section	Content
704.101	Content
704.102	Scope of the Permit or Rule Requirement
704.103	Identification of Aquifers
704.104	Exempted Aquifers
704.105	Specific Inclusions and Exclusions
704.106	Classification of Injection Wells
704.107	Definitions
704.108	Electronic Reporting

SUBPART B: PROHIBITIONS

Section	Content
704.121	Prohibition Against Unauthorized Injection
704.122	Prohibition Against Movement of Fluid into USDW
704.123	Identification of USDWs and Exempted Aquifers
704.124	Prohibition Against Class IV Injection Wells
704.125	Prohibition Against Non-Experimental Class V Injection Wells for Geologic Sequestration
704.128	Requirements for Class VI Injection Wells
704.129	Transitioning from a Class II Injection Well to a Class VI Injection Well

SUBPART C: AUTHORIZATION OF UNDERGROUND INJECTION BY
RULE

Section	Content
704.141	Existing Class I and III Injection Wells
704.142	Prohibitions Against Injection into Wells Authorized by Rule
704.143	Expiration of Authorization
704.144	Requirements
704.145	Existing Class IV Injection Wells
704.146	Class V Injection Wells
704.147	Requiring a Permit

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- 704.148 Inventory Requirements
- 704.149 Requiring other Information
- 704.150 Requirements for Class I and III Injection Wells Authorized by Rule
- 704.151 RCRA Interim Status for Class I Injection Wells

SUBPART D: APPLICATION FOR PERMIT

- Section
- 704.161 Application for Permit; Authorization by Permit
- 704.162 Area Permits
- 704.163 Emergency Permits
- 704.164 Signatories to Permit Applications

SUBPART E: PERMIT CONDITIONS

- Section
- 704.181 Additional Conditions
- 704.182 Establishing UIC Permit Conditions
- 704.183 Construction Requirements
- 704.184 Corrective Action
- 704.185 Operation Requirements
- 704.186 Hazardous Waste Requirements
- 704.187 Monitoring and Reporting
- 704.188 Plugging and Abandonment
- 704.189 Financial Responsibility
- 704.190 Mechanical Integrity
- 704.191 Additional Conditions
- 704.192 Waiver of Requirements by Agency
- 704.193 Corrective Action
- 704.194 Maintenance and Submission of Records

SUBPART F: REQUIREMENTS FOR WELLS INJECTING HAZARDOUS
WASTE

- Section
- 704.201 Applicability
- 704.202 Authorization
- 704.203 Requirements

SUBPART G: FINANCIAL RESPONSIBILITY FOR CLASS I HAZARDOUS
WASTE INJECTION WELLS

- Section
- 704.210 Applicability

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704.211	Definitions
704.212	Cost Estimate for Plugging and Abandonment
704.213	Financial Assurance for Plugging and Abandonment
704.214	Trust Fund
704.215	Surety Bond Guaranteeing Payment
704.216	Surety Bond Guaranteeing Performance
704.217	Letter of Credit
704.218	Plugging and Abandonment Insurance
704.219	Financial Test and Corporate Guarantee
704.220	Multiple Financial Mechanisms
704.221	Financial Mechanism for Multiple Facilities
704.222	Release of the Owner or Operator
704.230	Incapacity
704.240	Wording of the Instruments

SUBPART H: ISSUED PERMITS

Section	
704.260	Transfer
704.261	Modification
704.262	Causes for Modification
704.263	Well Siting
704.264	Minor Modifications

SUBPART I: REQUIREMENTS FOR CLASS V INJECTION WELLS

Section	
704.279	General
704.280	Definition of a Class V Injection Well
704.281	Examples of Class V Injection Wells
704.282	Protection of Underground Sources of Drinking Water
704.283	Notification of a Class V Injection Well
704.284	Permit Requirements
704.285	Applicability of the Additional Requirements
704.286	Definitions
704.287	Location in a Groundwater Protection Area or Another Sensitive Area
704.288	Additional Requirements
704.289	Closure of a Class V Injection Well

AUTHORITY: Implementing Sections 7.2, 13, and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 13, 22.4, and 27].

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SOURCE: Adopted in R81-32 at 6 Ill. Reg. 12479, effective March 3, 1984; amended in R82-19, at 7 Ill. Reg. 14402, effective March 3, 1984; amended in R83-39, at 55 PCB 319, at 7 Ill. Reg. 17338, effective December 19, 1983; amended in R85-23 at 10 Ill. Reg. 13290, effective July 29, 1986; amended in R87-29 at 12 Ill. Reg. 6687, effective March 28, 1988; amended in R88-2 at 12 Ill. Reg. 13700, effective August 16, 1988; amended in R88-17 at 13 Ill. Reg. 478, effective December 30, 1988; amended in R89-2 at 14 Ill. Reg. 3116, effective February 20, 1990; amended in R94-17 at 18 Ill. Reg. 17641, effective November 23, 1994; amended in R94-5 at 18 Ill. Reg. 18351, effective December 20, 1994; amended in R00-11/R01-1 at 24 Ill. Reg. 18612, effective December 7, 2000; amended in R01-30 at 25 Ill. Reg. 11139, effective August 14, 2001; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 605, effective December 20, 2006; amended in R11-14 at 36 Ill. Reg. 1613, effective January 20, 2012; amended in R13-15 at 37 Ill. Reg. _____, effective _____.

SUBPART C: AUTHORIZATION OF UNDERGROUND INJECTION BY
RULE

Section 704.150 Requirements for Class I and III Injection Wells Authorized by Rule

The following requirements apply to the owner or operator of a Class I or Class III well authorized by rule under this Subpart C, as provided by Section 704.144.

- a) The owner or operator must comply with all applicable requirements of this Subpart C and with Sections 704.121, 704.122, 704.124, 704.201, 704.202, and 704.203. Any noncompliance with these requirements constitutes a violation of the Act and SDWA and is grounds for enforcement action, except that the owner or operator need not comply with these requirements to the extent and for the duration such noncompliance is authorized by an emergency permit under Section 704.163.
- b) Twenty-four hour reporting. The owner or operator must report any noncompliance that may endanger health or the environment, including either of the events described in subsection (b)(1) or (b)(2) of this Section, subject to the conditions of subsection (b)(3) of this Section:
 - 1) Any monitoring or other information that indicates that any contaminant may cause an endangerment to a USDW; or
 - 2) Any noncompliance or malfunction of the injection system that may cause fluid migration into or between USDWs.

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- 3) Any information must be provided orally within 24 hours from the time the owner or operator becomes aware of the circumstances. A written submission must also be provided within five days of the time the owner or operator becomes aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
- c) Plugging and abandonment plan.
- 1) The owner or operator must prepare, maintain, and comply with a plan for plugging and abandonment of the wells or project that meets the requirements of 35 Ill. Adm. Code 730.110. For purposes of this subsection (c), temporary intermittent cessation of injection operations is not abandonment.
 - 2) Submission of plan.
 - A) The owner or operator must submit the plan on any forms prescribed by the Agency.
 - B) The owner or operator must submit any proposed significant revision to the method of plugging reflected in the plan no later than the notice of plugging required by subsection (i) of this Section (i.e., 45 days prior to plugging, unless shorter notice is approved).
 - C) The plan must include the following information:
 - i) The nature and quantity and material to be used in plugging;
 - ii) The location and extent (by depth) of the plugs;
 - iii) Any proposed test or measurement to be made;
 - iv) The amount, size, and location (by depth) of casing to be left in the well;

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- v) The method and location where casing is to be parted; and
 - vi) The estimated cost of plugging the well.
- D) After a cessation of operations of two years, the owner or operator must plug and abandon the well in accordance with the plan, unless the owner or operator performs both of the following actions:
- i) It provides written notice to the Agency; and
 - ii) It describes actions or procedures, satisfactory to the Agency that the owner or operator will take to ensure that the well will not endanger a USDW during the period of temporary abandonment. These actions and procedures must include compliance with the technical requirements applicable to active injection wells, unless the operator obtains regulatory relief in the form of a variance or adjusted standard from the technical requirements pursuant to 35 Ill. Adm. Code 104 and Title IX of the Act [415 ILCS 5/Title IX].
- E) The owner or operator of any well that has been temporarily abandoned (ceased operations for more than two years and which has met the requirements of subsections (c)(2)(D)(i) and (c)(2)(D)(ii)) of this Section must notify the Agency in writing prior to resuming operation of the well.
- d) Financial responsibility.
- 1) The owner or operator or transferor of a Class I or Class III injection well is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner acceptable to the Agency until one of the following has occurred:
 - A) The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to subsection (c) of this Section and 35 Ill. Adm. Code 730.110 and submission of a plugging and abandonment report has been made pursuant to subsection (k) of this Section;

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- B) The well has been converted in compliance with subsection (j) of this Section; or
 - C) The transferor has received notice from the Agency that the transferee has demonstrated financial responsibility for the well. The owner or operator must show evidence of such financial responsibility to the Agency by the submission of a surety bond or other adequate assurance, such as a financial statement.
- 2) The owner or operator was to have submitted such evidence no later than March 3, 1985. Where the ownership or operational control of the well was transferred later than March 3, 1985, the transferee must submit such evidence no later than the date specified in the notice required pursuant to subsection (1)(2) of this Section.
 - 3) The Agency may require the owner or operator to submit a revised demonstration of financial responsibility if the Agency has reason to believe that the original demonstration is no longer adequate to cover the cost of closing, plugging, and abandoning the well.
 - 4) The owner or operator of a well injecting hazardous waste must comply with the financial responsibility requirements of Subpart G of this Part.
 - 5) An owner or operator must notify the Agency by certified mail of the commencement of any voluntary or involuntary proceeding under Title 11 (Bankruptcy) of the United States Code that names the owner or operator as debtor, within 10 business days after the commencement of the proceeding. Any party acting as guarantor for the owner or operator for the purpose of financial responsibility must so notify the Agency if the guarantor is named as debtor in any such proceeding.
 - 6) In the event of commencement of a proceeding specified in subsection (d)(5) of this Section, an owner or operator that has furnished a financial statement for the purpose of demonstrating financial responsibility pursuant to this Section will be deemed to be in violation of this subsection (d) until an alternative financial assurance demonstration acceptable to the Agency is provided either by the owner or operator or by its trustee in bankruptcy, receiver, or other authorized party. All parties must be prohibited from injecting into the well until such alternative financial assurance is provided.

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- e) This subsection (e) corresponds with 40 CFR 144.28(e), which pertains exclusively to enhanced recovery and hydrocarbon storage wells (Class II wells). Those wells are regulated by the Illinois Department of Natural Resources, Office of Mines and Minerals, rather than by the Board and the Agency. This statement maintains structural consistency with USEPA rules.
- f) Operating requirements.
 - 1) No person must cause or allow injection between the outermost casing protecting USDWs and the well bore.
 - 2) Maintenance of mechanical integrity.
 - A) The owner or operator of a Class I or Class III injection well authorized by rule under this Subpart C must establish and maintain mechanical integrity, as defined in 35 Ill. Adm. Code 730.106, until either of the following has occurred:
 - i) The well is properly plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to subsection (c) of this Section and 35 Ill. Adm. Code 730.110 and a plugging and abandonment report is submitted pursuant to subsection (k); or
 - ii) The well is converted in compliance with subsection (j) of this Section.
 - B) The Agency may require by permit condition that the owner or operator comply with a schedule describing when mechanical integrity demonstrations must be made.
 - 3) Cessation upon Lack of Mechanical Integrity.
 - A) When the Agency determines that a Class I (non-hazardous) or Class III injection well lacks mechanical integrity pursuant to 35 Ill. Adm. Code 730.108, the Agency must give written notice of its determination to the owner or operator.
 - B) Unless the Agency requires immediate cessation, the owner or operator must cease injection into the well within 48 hours of receipt of the Agency's determination.

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- C) The Agency may allow plugging of the well in accordance with 35 Ill. Adm. Code 730.110, or require the owner or operator to perform such additional construction, operation, monitoring, reporting, and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity.
 - D) The owner or operator may resume injection upon receipt of written notification from the Agency that the owner or operator has demonstrated mechanical integrity pursuant to 35 Ill. Adm. Code 730.108.
- 4) The Agency may allow the owner or operator of a well that lacks mechanical integrity pursuant to 35 Ill. Adm. Code 730.108(a)(1) to continue or resume injection if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between USDWs.
 - 5) For a Class I injection well, unless an alternative to a packer has been approved under 35 Ill. Adm. Code 730.112(c), the owner or operator must fill the annulus between the tubing and the long string of casings with a fluid approved by the Agency and maintain a pressure, also approved by the Agency, on the annulus. The owner or operator of a Class I well completed with tubing and packer must fill the annulus between tubing and casing with a non-corrosive fluid and maintain a positive pressure on the annulus. For any other Class I injection well, the owner or operator must insure that the alternative completion method will reliably provide a comparable level of protection of USDWs.
 - 6) Injection pressure for Class I and III injection wells.
 - A) Except during stimulation, the owner or operator must not exceed an injection pressure at the wellhead that must be calculated so as to assure that the pressure during injection does not initiate new fractures or propagate existing fractures in the injection zone; and
 - B) The owner or operator must not inject at a pressure that will initiate fractures in the confining zone or cause the movement of injection or formation fluids into a USDW.

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- g) Monitoring Requirements. The owner or operator must perform the monitoring as described in this subsection (g). Monitoring of the nature of the injected fluids must comply with applicable analytical methods cited in tables IA (List of Approved Biological Methods), IB (List of Approved Inorganic Test Procedures), IC (List of Approved Test Procedures for Non-Pesticide Organic Compounds), ID (List of Approved Test Procedures for Pesticides), IE (List of Approved Radiologic Test Procedures), and IF (List of Approved Methods for Pharmaceutical Pollutants) of 40 CFR 136.3 (Identification of Test Procedures) (1993) or in appendix III of 40 CFR 261 (Chemical Analysis Test Methods) (1992), each incorporated by reference in 35 Ill. Adm. Code 720.111(b), or with other methods that have been approved by the Agency.
- 1) The owner or operator of a Class I injection well must undertake the following actions:
 - A) It must analyze the nature of the injected fluids with sufficient frequency to yield data representative of their characteristics;
 - B) It must install and use continuous recording devices to monitor injection pressure, flow rate and volume, and the pressure on the annulus between the tubing and the long string of casing; and
 - C) It must install and use monitoring wells within the area of review, if required by the Agency, to monitor any migration of fluids into and pressure in the USDWs. The type, number, and location of the wells; the parameters to be measured; and the frequency of monitoring must be approved by the Agency.
 - 2) This subsection (g)(2) corresponds with 40 CFR 144.28(g)(2), a provision related to Class II injection wells, which are regulated by the Illinois Department of Natural Resources, Office of Mines and Minerals, and not by the Board. This statement maintains structural consistency with USEPA rules.
 - 3) The owner or operator of a Class III injection well must undertake the following actions:
 - A) It must provide to the Agency a qualitative analysis and ranges in concentrations of all constituents of injected fluids at least once within the first year of authorization and thereafter whenever the

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injection fluid is modified to the extent that the initial data are incorrect or incomplete.

- i) The owner or operator may request confidentiality pursuant to Sections 7 and 7.1 of the Act and 35 Ill. Adm. Code 130.
 - ii) If the information is proprietary the owner or operator may in lieu of the ranges in concentrations choose to submit maximum concentrations that must not be exceeded.
 - iii) In such a case the owner or operator must retain records of the undisclosed concentration and provide them upon request to the Agency as part of any enforcement investigation;
- B) It must monitor injection pressure and either flow rate or volume semi-monthly, or meter and record daily injected and produced fluid volumes as appropriate;
- C) It must monitor the fluid level in the injection zone semi-monthly, where appropriate; and
- D) All Class III injection wells may be monitored on a field or project basis rather than an individual well basis by manifold monitoring. Manifold monitoring may be used in cases of facilities consisting of more than one injection well, operating with a common manifold. Separate monitoring systems for each well are not required provided the owner or operator demonstrates to the Agency that manifold monitoring is comparable to individual well monitoring.
- h) Reporting requirements. The owner or operator must submit reports to the Agency as follows:
- 1) For a Class I injection well, quarterly reports on all of the following:
 - A) The physical, chemical, and other relevant characteristics of the injection fluids;
 - B) Monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure;

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- C) The results from groundwater monitoring wells prescribed in subsection (f)(1)(C) of this Section;
 - D) The results of any test of the injection well conducted by the owner or operator during the reported quarter if required by the Agency; and
 - E) Any well work over performed during the reported quarter.
- 2) This subsection (h)(2) corresponds with 40 CFR 144.28(h)(2), a provision related to Class II injection wells, which are regulated by the Illinois Department of Natural Resources, Office of Mines and Minerals, and not by the Board. This statement maintains structural consistency with USEPA rules.
- 3) For a Class III injection well, all of the following:
- A) Quarterly reporting on all monitoring, as required in subsections (f)(2)(A), (f)(2)(B), and (f)(2)(C) of this Section;
 - B) Quarterly reporting of the results of any periodic tests required by the Agency that are performed during the reported quarter; and
 - C) Monitoring may be reported on a project or field basis rather than an individual well basis where manifold monitoring is used.
- i) Retention of records. The owner or operator must retain records of all monitoring information, including the following:
- 1) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by this section, for a period of at least three years from the date of the sample, measurement or report. This period may be extended by request of the Agency at any time; and
 - 2) The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under Section 704.188. The owner or operator must retain the records after the three year retention period unless it delivers the records to the Agency or obtains written approval from the Agency to discard the records.

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- j) Notice of abandonment. The owner or operator must notify the Agency at least 45 days before conversion or abandonment of the well.
- k) Plugging and abandonment report. Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator must submit a report to the Agency. If the quarterly report is due less than 15 days before completion of plugging, then the report must be submitted within 60 days. The report must be certified as accurate by the person who performed the plugging operation. Such report must consist of either:
 - 1) A statement that the well was plugged in accordance with the plan previously submitted to the Agency; or
 - 2) Where actual plugging differed from the plan previously submitted, an updated version of the plan, on any form supplied by the Agency, specifying the different procedures used.
- l) Change of ownership.
 - 1) The owner or operator must notify the Agency of a transfer of ownership or operational control of the well at least 30 days in advance of the proposed transfer.
 - 2) The notice must include a written agreement between the transferor and the transferee containing a specific date when the financial responsibility demonstration of subsection (d) of this Section will be met by the transferee.
 - 3) The transferee is authorized to inject unless it receives notification from the Agency that the transferee has not demonstrated financial responsibility pursuant to subsection (d) of this Section.
- m) Requirements for a Class I hazardous waste injection well. The owner or operator of any Class I injection well injecting hazardous waste must comply with Section 704.203. In addition the owner or operator must properly dispose of, or decontaminate by removing all hazardous waste residues, all injection well equipment.

BOARD NOTE: Derived from 40 CFR 144.28 ~~(2011)~~ (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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SUBPART E: PERMIT CONDITIONS

Section 704.187 Monitoring and Reporting

UIC permits must require by condition monitoring and reporting requirements, as set forth in 35 Ill. Adm. Code 730. The permittee must be required to identify types of tests and methods used to generate the monitoring data. Monitoring of the nature of the injected fluids must comply with applicable analytical methods cited and described in tables IA (List of Approved Biological Methods), IB (List of Approved Inorganic Test Procedures), IC (List of Approved Test Procedures for Non-Pesticide Organic Compounds), ID (List of Approved Test Procedures for Pesticides), IE (List of Approved Radiologic Test Procedures), and IF (List of Approved Methods for Pharmaceutical Pollutants) of 40 CFR 136.3 (Identification of Test Procedures) or in appendix III of 40 CFR 261 (Chemical Analysis Test Methods), each incorporated by reference in 35 Ill. Adm. Code 720.111(b); ~~as stated in Appendix C to 35 Ill. Adm. Code 261;~~ or, in certain circumstances, by other methods that have been approved in writing by the Agency.

BOARD NOTE: Derived from 40 CFR 144.52(a)(5) ~~(2005)~~ (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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- 1) Heading of the Part: Hazardous Waste Management System: General
- 2) Code citation: 35 Ill. Adm. Code 720
- 3)

<u>Section numbers:</u>	<u>Proposed action:</u>
720.102	Amend
720.104	Amend
720.111	Amend
- 4) Statutory authority: 415 ILCS 5/7.2, 13, 22.4, and 27.
- 5) Effective date of amendments: OCT 24 2013
- 6) Does this rulemaking contain an automatic repeal date? No.
- 7) Do these amendments contain incorporations by reference? Yes.
- 8) Statement of availability: The adopted amendments, a copy of the Board's opinion and order adopted September 5, 2013 in docket R13-15, and all materials incorporated by reference are on file at the Board's principal office and are available for public inspection and copying.
- 9) Notice of proposal published in the Illinois Register: July 5, 2013, 37 Ill. Reg. 9205.
- 10) Has JCAR issued a statement of objections to these rules? No. Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).
- 11) A table that appears in the Board's opinion and order of September 5, 2013 in docket R13-15 summarizes the differences between the amendments adopted in that order and those proposed by the Board in an opinion and order dated June 20, 2013, in docket R13-15.

The differences are limited to minor corrections to the text. The changes are intended to have no substantive effect. The intent is to correct the text without deviation from the substance of the federal amendments on which this proceeding is based.

- 12) Have all the changes agreed upon by the Board and JCAR been made as indicated in the agreements issued by JCAR? Section 22.4(a) of the Environmental Protection Act [415

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ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by JCAR.

Since the Notices of Proposed Amendments appeared in the July 5, 2013 issue of the *Illinois Register*, the Board received a number of suggestions for revisions from JCAR. The Board evaluated each suggestion and incorporated a number of changes into the text as a result, as detailed in the opinion and order of September 5, 2013 in docket R13-15, as indicated in item 11 above. See the September 5, 2013 opinion and order in docket R13-15 for additional details on the JCAR suggestions and the Board actions with regard to each. One table in that opinion itemizes the changes made in response to various suggestions. Another table indicates JCAR suggestions not incorporated into the text, with a brief explanation for each.

- 13) Will these amendments replace emergency amendments currently in effect? No.
- 14) Are there any other amendments pending on this Part? No.
- 15) Summary and purpose of amendments: The following briefly describes the subjects and issues involved in docket R13-15 rulemaking of which the amendments to Part 720 are a single segment. Also affected is 35 Ill. Adm. Code 703, 704, 722, 724, 725, 726, 727, 728, and 739, which is covered by separate notices in this issue of the *Illinois Register*. A comprehensive description is contained in the Board's opinion and order of June 20, 2013, proposing amendments in docket R13-15, which opinion and order is available from the address below.

This proceeding updates the Illinois Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste rules to incorporate corrections to various provisions that the United States Environmental Protection Agency (USEPA) suggested. The proceeding further updates the edition of the *Code of Federal Regulations* provisions that are incorporated by reference. The Board further makes a number of corrections to various provisions that the Board has determined are needed.

Specifically, the amendments to Part 720 implement a correction suggested by USEPA and make corrections that the Board has determined are needed. The Board's opinion and order of September 5, 2013 in docket R13-15 discusses the more substantial corrections made in the text. Tables that appear in that opinion and order list all of the various corrections and amendments included in this proceeding. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

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Tables appear in the Board's opinion and order of September 5, 2013 in docket R13-15 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Section 22.4 of the Environmental Protection Act [415 ILCS 5/22.4] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

- 16) Information and questions regarding these adopted amendments shall be directed to:
Please reference consolidated docket R13-15 and direct inquiries to the following person:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago, IL 60601

312-814-6924

Request copies of the Board's opinion and order of September 5, 2013 at 312-814-3620. Alternatively, you may obtain a copy of the Board's opinion and order from the Internet at <http://www.ipcb.state.il.us>.

The full text of the adopted amendments begins on the next page:

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NOTICE OF ADOPTED AMENDMENTS

TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE G: WASTE DISPOSAL

CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER c: HAZARDOUS WASTE OPERATING REQUIREMENTS

PART 720

HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

SUBPART A: GENERAL PROVISIONS

Section

- 720.101 Purpose, Scope, and Applicability
- 720.102 Availability of Information; Confidentiality of Information
- 720.103 Use of Number and Gender
- 720.104 Electronic Reporting

SUBPART B: DEFINITIONS AND REFERENCES

Section

- 720.110 Definitions
- 720.111 References

SUBPART C: RULEMAKING PETITIONS AND OTHER PROCEDURES

Section

- 720.120 Rulemaking
 - 720.121 Alternative Equivalent Testing Methods
 - 720.122 Waste Delisting
 - 720.123 Petitions for Regulation as Universal Waste
 - 720.130 Procedures for Solid Waste Determinations and Non-Waste Determinations
 - 720.131 Solid Waste Determinations
 - 720.132 Boiler Determinations
 - 720.133 Procedures for Determinations
 - 720.134 Non-Waste Determinations
 - 720.140 Additional Regulation of Certain Hazardous Waste Recycling Activities on a Case-by-Case Basis
 - 720.141 Procedures for Case-by-Case Regulation of Hazardous Waste Recycling Activities
 - 720.142 Notification Requirement for Hazardous Secondary Materials
 - 720.143 Legitimate Recycling of Hazardous Secondary Materials
- 720.APPENDIX A Overview of Federal RCRA Subtitle C (Hazardous Waste) Regulations (Repealed)

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AUTHORITY: Implementing Sections 7.2, 13, and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 13, 22.4, and 27].

SOURCE: Adopted in R81-22 at 5 Ill. Reg. 9781, effective May 17, 1982; amended and codified in R81-22 at 6 Ill. Reg. 4828, effective May 17, 1982; amended in R82-19 at 7 Ill. Reg. 14015, effective October 12, 1983; amended in R84-9 at 9 Ill. Reg. 11819, effective July 24, 1985; amended in R85-22 at 10 Ill. Reg. 968, effective January 2, 1986; amended in R86-1 at 10 Ill. Reg. 13998, effective August 12, 1986; amended in R86-19 at 10 Ill. Reg. 20630, effective December 2, 1986; amended in R86-28 at 11 Ill. Reg. 6017, effective March 24, 1987; amended in R86-46 at 11 Ill. Reg. 13435, effective August 4, 1987; amended in R87-5 at 11 Ill. Reg. 19280, effective November 12, 1987; amended in R87-26 at 12 Ill. Reg. 2450, effective January 15, 1988; amended in R87-39 at 12 Ill. Reg. 12999, effective July 29, 1988; amended in R88-16 at 13 Ill. Reg. 362, effective December 27, 1988; amended in R89-1 at 13 Ill. Reg. 18278, effective November 13, 1989; amended in R89-2 at 14 Ill. Reg. 3075, effective February 20, 1990; amended in R89-9 at 14 Ill. Reg. 6225, effective April 16, 1990; amended in R90-10 at 14 Ill. Reg. 16450, effective September 25, 1990; amended in R90-17 at 15 Ill. Reg. 7934, effective May 9, 1991; amended in R90-11 at 15 Ill. Reg. 9323, effective June 17, 1991; amended in R91-1 at 15 Ill. Reg. 14446, effective September 30, 1991; amended in R91-13 at 16 Ill. Reg. 9489, effective June 9, 1992; amended in R92-1 at 16 Ill. Reg. 17636, effective November 6, 1992; amended in R92-10 at 17 Ill. Reg. 5625, effective March 26, 1993; amended in R93-4 at 17 Ill. Reg. 20545, effective November 22, 1993; amended in R93-16 at 18 Ill. Reg. 6720, effective April 26, 1994; amended in R94-7 at 18 Ill. Reg. 12160, effective July 29, 1994; amended in R94-17 at 18 Ill. Reg. 17480, effective November 23, 1994; amended in R95-6 at 19 Ill. Reg. 9508, effective June 27, 1995; amended in R95-20 at 20 Ill. Reg. 10929, effective August 1, 1996; amended in R96-10/R97-3/R97-5 at 22 Ill. Reg. 256, effective December 16, 1997; amended in R98-12 at 22 Ill. Reg. 7590, effective April 15, 1998; amended in R97-21/R98-3/R98-5 at 22 Ill. Reg. 17496, effective September 28, 1998; amended in R98-21/R99-2/R99-7 at 23 Ill. Reg. 1704, effective January 19, 1999; amended in R99-15 at 23 Ill. Reg. 9094, effective July 26, 1999; amended in R00-5 at 24 Ill. Reg. 1063, effective January 6, 2000; amended in R00-13 at 24 Ill. Reg. 9443, effective June 20, 2000; amended in R01-3 at 25 Ill. Reg. 1266, effective January 11, 2001; amended in R01-21/R01-23 at 25 Ill. Reg. 9168, effective July 9, 2001; amended in R02-1/R02-12/R02-17 at 26 Ill. Reg. 6550, effective April 22, 2002; amended in R03-7 at 27 Ill. Reg. 3712, effective February 14, 2003; amended in R03-18 at 27 Ill. Reg. 12713, effective July 17, 2003; amended in R05-8 at 29 Ill. Reg. 5974, effective April 13, 2005; amended in R05-2 at 29 Ill. Reg. 6290, effective April 22, 2005; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 2930, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 730, effective December 20, 2006; amended in R07-5/R07-14 at 32 Ill. Reg. 11726, effective July 14, 2008; amended in R09-3 at 33 Ill. Reg. 922, effective December 30, 2008; amended in R09-16/R10-4 at 34 Ill. Reg. 18535, effective November 12, 2010; amended in R11-2/R11-16 at 35 Ill. Reg. 17672, effective October 14, 2011; amended in R12-7 at 36 Ill. Reg.

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8740, effective June 4, 2012; amended in R13-5 at 37 Ill. Reg. 3180, effective March 4, 2013; amended in R13-15 at 37 Ill. Reg. _____, effective _____.

SUBPART A: GENERAL PROVISIONS

Section 720.102 Availability of Information; Confidentiality of Information

- a) Availability and confidentiality of information is governed by Illinois law, including Sections 7 and 7.1 of the Environmental Protection Act [415 ILCS 5/7 and 7.1] and 35 Ill. Adm. Code ~~101.107 and 120.130~~.
- b) Any person who submits information to the Board or the Agency in accordance with this Part or 35 Ill. Adm. Code 721 through 728 may assert a claim of business confidentiality covering part or all of that information by following the procedures set forth in 35 Ill. Adm. Code 130. Information covered by such a claim will be disclosed by the Board or the Agency only to the extent, and by means of the procedures, set forth in 35 Ill. Adm. Code 130. Information required under 35 Ill. Adm. Code 722.153(a) and 722.183 that is submitted in a notification of intent to export a hazardous waste will be provided to the U.S. Department of State and the appropriate authorities in the transit and receiving or importing countries regardless of any claims of confidentiality or trade secret.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 720.104 Electronic Reporting

- a) Scope and Applicability.
 - 1) The USEPA, the Board, or the Agency may allow for the submission of any document as an electronic document in lieu of a paper document. This Section does not require submission of electronic documents in lieu of paper documents. This Section sets forth the requirements for the optional electronic submission of any document that must be submitted to the appropriate of the following:
 - A) To USEPA directly under Title 40 of the Code of Federal Regulations; or
 - B) To the Board or the Agency pursuant to any provision of 35 Ill. Adm. Code 702 through 705, 720 through 728, 730, 733, 738, or 739.

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- 2) Electronic document submission under this Section can occur only as follows:
 - A) For submissions of documents to USEPA, submissions may occur only after USEPA has published a notice in the Federal Register announcing that USEPA is prepared to receive, in an electronic format, documents required or permitted by the identified part or subpart of Title 40 of the Code of Federal Regulations; or
 - B) For submissions of documents to the State, submissions may occur only under the following circumstances:
 - i) As to any existing electronic document receiving system (i.e., one in use or substantially developed on or before October 13, 2005) for which an electronic reporting application has not been submitted on behalf of the Board or the Agency to USEPA pursuant to 40 CFR 3.1000, the Board or the Agency may use that system until October 13, 2007, or until such later date as USEPA has approved in writing as the extended deadline for submitting the application;
 - ii) As to any existing electronic document receiving system (i.e., one in use or substantially developed on or before October 13, 2005) for which an electronic reporting application has been submitted on behalf of the Board or the Agency to USEPA pursuant to 40 CFR 3.1000 on or before October 13, 2007, or on or before such later date as USEPA has approved in writing as the extended deadline for submitting the application, the Board or the Agency may use that system until USEPA disapproves its use in writing; or
 - iii) The Board or the Agency may use any electronic document receiving system for which USEPA has granted approval pursuant to 40 C.F.R. 3.1000, so long as the system complies with 40 C.F.R. 3.2000, incorporated by reference in Section 611.102(c), and USEPA has not withdrawn its approval of the system in writing.

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- 3) This Section does not apply to any of the following documents, whether or not the document is a document submitted to satisfy the requirements cited in subsection (a)(1) of this Section:
 - A) Any document submitted via facsimile;
 - B) Any document submitted via magnetic or optical media, such as diskette, compact disc, digital video disc, or tape; or
 - C) Any data transfer between USEPA, any state, or any local government and either the Board or the Agency as part of administrative arrangements between the parties to the transfer to share data.

- 4) Upon USEPA conferring written approval for the submission of any types of documents as electronic documents in lieu of paper documents, as described in subsection (a)(2)(B)(iii) of this Section, the Agency or the Board, as appropriate, must publish a Notice of Public Information in the Illinois Register that describes the documents approved for submission as electronic documents, the electronic document receiving system approved to receive them, the acceptable formats and procedures for their submission, and, as applicable, the date on which the Board or the Agency will begin to receive those submissions. In the event of written cessation of USEPA approval for receiving any type of document as an electronic document in lieu of a paper document, the Board or the Agency must similarly cause publication of a Notice of Public Information in the Illinois Register.

BOARD NOTE: Subsection (a) of this Section is derived from 40 CFR 3.1, 3.2, 3.10, 3.20, and 3.1000, as added at ~~70 Fed. Reg. 59848 (Oct. 13, 2005)~~ (2012).

- b) Definitions. For the purposes of this Section, terms will have the meaning attributed them in 40 CFR 3.3, incorporated by reference in 35 Ill. Adm. Code 720.111(b).

- c) Procedures for submission of electronic documents in lieu of paper documents to USEPA. Except as provided in subsection (a)(3) of this Section, any person who is required under Title 40 of the Code of Federal Regulations to create and submit or otherwise provide a document to USEPA may satisfy this requirement with an electronic document, in lieu of a paper document, provided the following conditions are met:

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- 1) The person satisfies the requirements of 40 CFR 3.10, incorporated by reference in Section 720.111(b); and
- 2) USEPA has first published a notice in the Federal Register as described in subsection (a)(2)(A) of this Section.

BOARD NOTE: Subsection (c) of this Section is derived from 40 CFR 3.2(a) and subpart B of 40 CFR 3, ~~as added at 70 Fed. Reg. 59848 (Oct. 13, 2005)~~ (2012).

- d) Procedures for submission of electronic documents in lieu of paper documents to the Board or the Agency.
 - 1) The Board or the Agency may, but is not required to, establish procedural rules for the electronic submission of documents. The Board or the Agency must establish any such procedural rules under the Administrative Procedure Act [5 ILCS 100/Art. 5].
 - 2) The Board or the Agency may accept electronic documents under this Section only as provided in subsection (a)(2)(B) of this Section.

BOARD NOTE: Subsection (d) of this Section is derived from 40 CFR 3.2(b) and subpart D of 40 CFR 3, ~~as added at 70 Fed. Reg. 59848 (Oct. 13, 2005)~~ (2012).

- e) Effects of submission of an electronic document in lieu of paper documents.
 - 1) If a person who submits a document as an electronic document fails to comply with the requirements of this Section, that person is subject to the penalties prescribed for failure to comply with the requirement that the electronic document was intended to satisfy.
 - 2) Where a document submitted as an electronic document to satisfy a reporting requirement bears an electronic signature, the electronic signature legally binds, obligates, and makes the signer responsible to the same extent as the signer's handwritten signature would on a paper document submitted to satisfy the same reporting requirement.
 - 3) Proof that a particular signature device was used to create an electronic signature will suffice to establish that the individual uniquely entitled to use the device did so with the intent to sign the electronic document and give it effect.

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- 4) Nothing in this Section limits the use of electronic documents or information derived from electronic documents as evidence in enforcement or other proceedings.

BOARD NOTE: Subsection (e) of this Section is derived from 40 CFR 3.4 and 3.2000(c), as added at 70 Fed. Reg. 59848 (Oct. 13, 2005) (2012).

- f) Public document subject to State laws. Any electronic document filed with the Board is a public document. The document, its submission, its retention by the Board, and its availability for public inspection and copying are subject to various State laws, including, but not limited to, the following:

- 1) The Administrative Procedure Act [5 ILCS 100];
- 2) The Freedom of Information Act [5 ILCS 140];
- 3) The State Records Act [5 ILCS 160];
- 4) The Electronic Commerce Security Act [5 ILCS 175];
- 5) The Environmental Protection Act [415 ILCS 5];
- 6) Regulations relating to public access to Board records (2 Ill. Adm. Code 2175); and
- 7) Board procedural rules relating to protection of trade secrets and confidential information (35 Ill. Adm. Code 130).

- g) Nothing in this Section or in any provisions adopted pursuant to subsection (d)(1) of this Section will create any right or privilege to submit any document as an electronic document.

BOARD NOTE: Subsection (g) of this Section is derived from 40 CFR 3.2(c), as added at 70 Fed. Reg. 59848 (Oct. 13, 2005) (2012).

BOARD NOTE: Derived from 40 CFR 3, and 145.11(a)(33), as added, and 40 CFR 271.10(b), 271.11(b), and 271.12(h) (2005), as amended at 70 Fed. Reg. 59848 (Oct. 13, 2005) (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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SUBPART B: DEFINITIONS AND REFERENCES

Section 720.111 References

The following documents are incorporated by reference for the purposes of this Part and 35 Ill. Adm. Code 702 through 705, 721 through 728, 730, 733, 738, and 739:

- a) Non-Regulatory Government Publications and Publications of Recognized Organizations and Associations:

ACGME. Available from the Accreditation Council for Graduate Medical Education, 515 North State Street, Suite 2000, Chicago, IL 60654, 312-755-5000:

“Accreditation Council for Graduate Medical Education: Glossary of Terms,” March 19, 2009, referenced in 35 Ill. Adm. Code 722.300.

BOARD NOTE: Also available on the Internet for download and viewing as a PDF file at the following Internet address:
http://www.acgme.org/acWebsite/about/ab_ACGMEglossary.pdf.

ACI. Available from the American Concrete Institute, Box 19150, Redford Station, Detroit, Michigan 48219:

ACI 318-83: “Building Code Requirements for Reinforced Concrete,” adopted November 1983, referenced in 35 Ill. Adm. Code 724.673 and 725.543.

ANSI. Available from the American National Standards Institute, 1430 Broadway, New York, New York 10018, 212-354-3300:

See ASME/ANSI B31.3 and B31.4 and supplements below in this subsection (a) under ASME.

API. Available from the American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20005, 202-682-8000:

“Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems,” API Recommended Practice 1632, Second Edition, December 1987, referenced in 35 Ill. Adm. Code 724.292, 724.295, 725.292, and 725.295.

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“Evaporative Loss from External Floating-Roof Tanks,” API publication 2517, Third Edition, February 1989, USEPA-approved for 35 Ill. Adm. Code 725.984.

“Guide for Inspection of Refinery Equipment,” Chapter XIII, “Atmospheric and Low Pressure Storage Tanks,” 4th Edition, 1981, reaffirmed December 1987, referenced in 35 Ill. Adm. Code 724.291, 724.293, 725.291, and 725.292.

“Installation of Underground Petroleum Storage Systems,” API Recommended Practice 1615, Fourth Edition, November 1987, referenced in 35 Ill. Adm. Code 724.292.

ASME. Available from the American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017, 212-705-7722:

“Chemical Plant and Petroleum Refinery Piping,” ASME/ANSI B31.3-1987, as supplemented by B31.3a-1988 and B31.3b-1988, referenced in 35 Ill. Adm. Code 724.292 and 725.292. Also available from ANSI.

“Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols,” ASME/ANSI B31.4-1986, as supplemented by B31.4a-1987, referenced in 35 Ill. Adm. Code 724.292 and 725.292. Also available from ANSI.

ASTM. Available from American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, 610-832-9585:

ASTM C 94-90, “Standard Specification for Ready-Mixed Concrete,” approved March 30, 1990, referenced in 35 Ill. Adm. Code 724.673 and 725.543.

ASTM D 88-87, “Standard Test Method for Saybolt Viscosity,” approved April 24, 1981, reapproved January 1987, referenced in 35 Ill. Adm. Code 726.200.

ASTM D 93-85, “Standard Test Methods for Flash Point by Pensky-Martens Closed Tester,” approved October 25, 1985, USEPA-approved for 35 Ill. Adm. Code 721.121.

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ASTM D 140-70, "Standard Practice for Sampling Bituminous Materials," approved 1970, referenced in Appendix A to 35 Ill. Adm. Code 721.

ASTM D 346-75, "Standard Practice for Collection and Preparation of Coke Samples for Laboratory Analysis," approved 1975, referenced in Appendix A to 35 Ill. Adm. Code 721.

ASTM D 420-69, "Guide to Site Characterization for Engineering, Design, and Construction Purposes," approved 1969, referenced in Appendix A to 35 Ill. Adm. Code 721.

ASTM D 1452-65, "Standard Practice for Soil Investigation and Sampling by Auger Borings," approved 1965, referenced in Appendix A to 35 Ill. Adm. Code 721.

ASTM D 1946-90, "Standard Practice for Analysis of Reformed Gas by Gas Chromatography," approved March 30, 1990, USEPA-approved for 35 Ill. Adm. Code 724.933 and 725.933.

ASTM D 2161-87, "Standard Practice for Conversion of Kinematic Viscosity to Saybolt Universal or to Saybolt Furol Viscosity," March 27, 1987, referenced in 35 Ill. Adm. Code 726.200.

ASTM D 2234-76, "Standard Practice for Collection of a Gross Sample of Coal," approved 1976, referenced in Appendix A to 35 Ill. Adm. Code 721.

ASTM D 2267-88, "Standard Test Method for Aromatics in Light Naphthas and Aviation Gasolines by Gas Chromatography," approved November 17, 1988, USEPA-approved for 35 Ill. Adm. Code 724.963.

ASTM D 2382-88, "Standard Test Method for Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High Precision Method)," approved October 31, 1988, USEPA-approved for 35 Ill. Adm. Code 724.933 and 725.933.

ASTM D 2879-92, "Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature

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of Liquids by Isoteniscope,” approved 1992, USEPA-approved for 35 Ill. Adm. Code 725.984, referenced in 35 Ill. Adm. Code 724.963 and 725.963.

ASTM D 3828-87, “Standard Test Methods for Flash Point of Liquids by Setaflash Closed Tester,” approved December 14, 1988, USEPA-approved for 35 Ill. Adm. Code 721.121(a).

ASTM E 168-88, “Standard Practices for General Techniques of Infrared Quantitative Analysis,” approved May 27, 1988, USEPA-approved for 35 Ill. Adm. Code 724.963.

ASTM E 169-87, “Standard Practices for General Techniques of Ultraviolet-Visible Quantitative Analysis,” approved February 1, 1987, USEPA-approved for 35 Ill. Adm. Code 724.963.

ASTM E 260-85, “Standard Practice for Packed Column Gas Chromatography,” approved June 28, 1985, USEPA-approved for 35 Ill. Adm. Code 724.963.

ASTM G 21-70 (1984a), “Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi,” referenced in 35 Ill. Adm. Code 724.414 and 725.414.

ASTM G 22-76 (1984b), “Standard Practice for Determining Resistance of Plastics to Bacteria,” referenced in 35 Ill. Adm. Code 724.414 and 725.414.

GPO. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, 202-512-1800:

Standard Industrial Classification Manual (1972), and 1977 Supplement, republished in 1983, referenced in 35 Ill. Adm. Code 702.110 and Section 720.110.

“Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” USEPA publication number EPA-530/SW-846 (Third Edition, November 1986), as amended by Updates I (July 1992), II (November 1994), IIA (August, 1993), IIB (January 1995), III (December 1996), IIIA (April 1998), and IIIB (November 2004)

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(document number 955-001-00000-1). See below in this subsection (a) under NTIS.

NACE. Available from the National Association of Corrosion Engineers, 1400 South Creek Dr., Houston, TX 77084, 713-492-0535:

“Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems,” NACE Recommended Practice RP0285-85, approved March 1985, referenced in 35 Ill. Adm. Code 724.292, 724.295, 725.292, and 725.295.

NFPA. Available from the National Fire Protection Association, 1 Batterymarch Park, Boston, MA 02269, 617-770-3000 or 800-344-3555:

“Flammable and Combustible Liquids Code,” NFPA 30, issued July 18, 2003, as supplemented by TIA 03-1, issued July 15, 2004, and corrected by Errata 30-03-01, issued August 13, 2004, USEPA-approved for 35 Ill. Adm. Code 724.298, 725.298, and 727.290, referenced in 35 Ill. Adm. Code 725.301 and 726.211.

NTIS. Available from the U.S. Department of Commerce, National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, 703-605-6000 or 800-553-6847 (Internet address: www.ntis.gov):

“APTI Course 415: Control of Gaseous Emissions,” December 1981, USEPA publication number EPA-450/2-81-005, NTIS document number PB80-208895, USEPA-approved for 35 Ill. Adm. Code 703.210, 703.211, 703.352, 724.935, and 725.935. BOARD NOTE: “APTI” denotes USEPA’s “Air Pollution Training Institute” (Internet address: www.epa.gov/air/oaqps/eog/).

“Generic Quality Assurance Project Plan for Land Disposal Restrictions Program,” USEPA publication number EPA-530/SW-87-011, March 15, 1987, NTIS document number PB88-170766, referenced in 35 Ill. Adm. Code 728.106.

“Method 1664, n-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated n-Hexane Extractable Material (SGT-HEM; Nonpolar Material) by Extraction and Gravimetry,”

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Revision A, February 1999, USEPA publication number EPA-821/R-98-002, NTIS document number PB99-121949, or Revision B, February 2010, USEPA publication number EPA-821/R-10-001, NTIS document number PB2011-100735, USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

BOARD NOTE: Also available on the Internet for free download as a PDF document from the USEPA website at: water.epa.gov/scitech/methods/cwa/methods_index.cfm. Revision A is also from the USEPA, National Service Center for Environmental Publications (NSCEP) website at www.epa.gov/nscep/index.html.

“Methods for Chemical Analysis of Water and Wastes,” Third Edition, March 1983, USEPA document number EPA-600/4-79-020, NTIS document number PB84-128677, referenced in 35 Ill. Adm. Code 725.192.

BOARD NOTE: Also available on the Internet as a viewable/printable HTML document from the USEPA website at: www.epa.gov/clariton/clhtml/pubtitleORD.html as document 600479002.

“North American Industry Classification System,” July 2007, U.S. Department of Commerce, Bureau of the Census, document number PB2007-100002 (hardcover printed volume) or PB2007-500023, referenced in Section 720.110 (definition of “NAICS Code”) for the purposes of Section 720.142.

BOARD NOTE: Also available on the Internet from the Bureau of Census: www.census.gov/naics/2007/naicod07.htm.

“Procedures Manual for Ground Water Monitoring at Solid Waste Disposal Facilities,” August 1977, EPA-530/SW-611, NTIS document number PB84-174820, referenced in 35 Ill. Adm. Code 725.192.

“Screening Procedures for Estimating the Air Quality Impact of Stationary Sources,” October 1992, USEPA publication number EPA-454/R-92-019, NTIS document number 93-219095, referenced in 35 Ill. Adm. Code 726.204 and 726.206.

BOARD NOTE: Also available on the Internet for free download as a WordPerfect document from the USEPA website at the

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following Internet address:

www.epa.gov/scram001/guidance/guide/scrng.wpd.

“Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” USEPA publication number EPA-530/SW-846 (Third Edition, November 1986; Revision 6, January 2005), as amended by Updates I (July 1992), II (November 1994), IIA (August 1993), IIB (January 1995), III (December 1996), IIIA (April 1998), and IIIB (November 2004) (document number 955-001-00000-1), generally referenced in Appendices A and I to 35 Ill. Adm. Code 721 and 35 Ill. Adm. Code 726.200, 726.206, 726.212, and 728.106 (in addition to the references cited below for specific methods):

Method 0010 (November 1986) (Modified Method 5 Sampling Train), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 0011 (December 1996) (Sampling for Selected Aldehyde and Ketone Emissions from Stationary Sources), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721 and for Appendix I to 35 Ill. Adm. Code 726.

Method 0020 (November 1986) (Source Assessment Sampling System), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 0023A (December 1996) (Sampling Method for Polychlorinated Dibenzop-Dioxins and Polychlorinated Dibenzofuran Emissions from Stationary Sources), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721, Appendix I to 35 Ill. Adm. Code 726, and 35 Ill. Adm. Code 726.204.

Method 0030 (November 1986) (Volatile Organic Sampling Train), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 0031 (December 1996) (Sampling Method for Volatile Organic Compounds (SMVOC)), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

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Method 0040 (December 1996) (Sampling of Principal Organic Hazardous Constituents from Combustion Sources Using Tedlar® Bags), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 0050 (December 1996) (Isokinetic HCl/Cl₂ Emission Sampling Train), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721, Appendix I to 35 Ill. Adm. Code 726, and 35 Ill. Adm. Code 726.207.

Method 0051 (December 1996) (Midget Impinger HCl/Cl₂ Emission Sampling Train), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721, Appendix I to 35 Ill. Adm. Code 726, and 35 Ill. Adm. Code 726.207.

Method 0060 (December 1996) (Determination of Metals in Stack Emissions), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721, Appendix I to 35 Ill. Adm. Code 726, and 35 Ill. Adm. Code 726.206.

Method 0061 (December 1996) (Determination of Hexavalent Chromium Emissions from Stationary Sources), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721, 35 Ill. Adm. Code 726.206, and Appendix I to 35 Ill. Adm. Code 726.

Method 1010A (November 2004) (Test Methods for Flash Point by Pensky-Martens Closed Cup Tester), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 1020B (November 2004) (Standard Test Methods for Flash Point by Setaflash (Small Scale) Closed-cup Apparatus), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 1110A (November 2004) (Corrosivity Toward Steel), USEPA-approved for 35 Ill. Adm. Code 721.122 and Appendix I to 35 Ill. Adm. Code 721.

Method 1310B (November 2004) (Extraction Procedure (EP) Toxicity Test Method and Structural Integrity Test),

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USEPA-approved for Appendix I to 35 Ill. Adm. Code 721 and referenced in Appendix I to 35 Ill. Adm. Code 728.

Method 1311 (November 1992) (Toxicity Characteristic Leaching Procedure), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721; for 35 Ill. Adm. Code 721.124, 728.107, and 728.140; and for Table T to 35 Ill. Adm. Code 728.

Method 1312 (November 1994) (Synthetic Precipitation Leaching Procedure), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 1320 (November 1986) (Multiple Extraction Procedure), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 1330A (November 1992) (Extraction Procedure for Oily Wastes), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 9010C (November 2004) (Total and Amenable Cyanide: Distillation), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721 and 35 Ill. Adm. Code 728.140, 728.144, and 728.148, referenced in Table H to 35 Ill. Adm. Code 728.

Method 9012B (November 2004) (Total and Amenable Cyanide (Automated Colorimetric, with Off-Line Distillation)), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721 and 35 Ill. Adm. Code 728.140, 728.144, and 728.148, referenced in Table H to 35 Ill. Adm. Code 728.

Method 9040C (November 2004) (pH Electrometric Measurement), USEPA-approved for 35 Ill. Adm. Code 721.122 and Appendix I to 35 Ill. Adm. Code 721.

Method 9045D (November 2004) (Soil and Waste pH), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

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Method 9060A (November 2004) (Total Organic Carbon), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721 and 35 Ill. Adm. Code 724.934, 724.963, 725.934, and 725.963.

Method 9070A (November 2004) (n-Hexane Extractable Material (HEM) for Aqueous Samples), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 9071B (April 1998) (n-Hexane Extractable Material (HEM) for Sludge, Sediment, and Solid Samples), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721.

Method 9095B (November 2004) (Paint Filter Liquids Test), USEPA-approved for Appendix I to 35 Ill. Adm. Code 721 and 35 Ill. Adm. Code 724.290, 724.414, 725.290, 725.414, 725.981, 727.290, and 728.132.

BOARD NOTE: Also available on the Internet for free download in segments in PDF format from the USEPA website at: www.epa.gov/SW-846.

OECD. Organisation for Economic Co-operation and Development, Environment Directorate, 2 rue Andre Pascal, F-75775 Paris Cedex 16, France, +33 (0) 1 45 24 81 67 (www.oecd.org), also OECD Washington Center, 2001 L Street, NW, Suite 650, Washington, DC 20036-4922, 202-785-6323 or 800-456-6323 (www.oecdwash.org):

OECD Guidance Manual. "Guidance Manual for the Implementation of Council Decision C(2001)107/FINAL, as Amended, on the Control of Transboundary Movements of Wastes Destined for Recovery Operations," 2009 (also called "Guidance Manual for the Control of Transboundary Movements of Recoverable Materials" in OECD documents), but only the following segments, which set forth the substantive requirements of OECD decision C(2001)107/FINAL, as amended by C(2004)20, C(2005)141, and C(2008)156:

"Annex A: OECD Decision C(2001)107/FINAL, as Amended by C(2004)20; C(2005)141 and C(2008)156" (also called "Revision of Council Decision C(92)39/FINAL

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on the Control of Transboundary Movements of Wastes Destined for Recovery Operations,” within the text of Annex A, and “Decision of the Council Concerning the Control of Transboundary Movements of Wastes Destined for Recovery Operations” in the original OECD decision source document, C(2001)107/FINAL (June 14, 2001), as amended by C(2001)107/ADD1 (February 28, 2002), C(2004)20 (March 9, 2004), C(2005)141 (December 2, 2005), and C(2008)156 (December 4, 2008)).

“Annex B: OECD Consolidated List of Wastes Subject to the Green Control Procedure” (individually referred to as “Annex B to OECD Guidance Manual” in 35 Ill. Adm. Code 722), combining Appendix 3 to OECD decision C(2001)107/FINAL, as amended as described above, together with the text of Annex IX (“List B”) to the “Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal” (“Basel Convention”).

“Annex C: OECD Consolidated List of Wastes Subject to the Amber Control Procedure” (individually referred to as “Annex C to OECD Guidance Manual” in 35 Ill. Adm. Code 722), combining Appendix 4 to OECD decision C(2001)107/FINAL, as amended, together with the text of Annexes II (“Categories of Wastes Requiring Special Consideration”) and VIII (“List A”) to the Basel Convention.

BOARD NOTE: The OECD Guidance Manual is available online from OECD at www.oecd.org/dataoecd/57/1/42262259.pdf. The OECD and the Basel Convention consider the OECD Guidance Manual unofficial text of these documents. Despite this unofficial status, the Board has chosen to follow USEPA’s lead and incorporate the OECD Guidance Manual by reference, instead of separately incorporating the OECD decision C(2001)107/FINAL (with its subsequent amendments: OECD decisions C(2001)107/ADD1, C(2004)20, C(2005)141, and C(2008)156) and the Basel Convention by reference. Use of the OECD Guidance Manual eases reference to the documents, increases access to the documents, and facilitates future updates to this incorporation by

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reference. All references to "OECD C(2001)107/FINAL" in the text of 35 Ill. Adm. Code 722 refer to both the OECD decision and the Basel Convention that the OECD decision references. The OECD Guidance Manual includes as Annex A the full text of OECD document C(2001)107/FINAL, with amendments, and Annexes B and C set forth lists of wastes subject to Green control procedures and wastes subject to Amber control procedures, respectively, which consolidate the wastes from C(2001)107/FINAL together with those from the Basel Convention.

OECD Guideline for Testing of Chemicals, "Ready Biodegradability," Method 301B (July 17, 1992), "CO2 Evolution (Modified Sturm Test)," referenced in 35 Ill. Adm. Code 724.414.

STI. Available from the Steel Tank Institute, 728 Anthony Trail, Northbrook, IL 60062, 708-498-1980:

"Standard for Dual Wall Underground Steel Storage Tanks" (1986), referenced in 35 Ill. Adm. Code 724.293.

USDOD. Available from the United States Department of Defense:

"DOD Ammunition and Explosives Safety Standards" (DOD 6055.09-STD), as in effect on February 29, 2008, referenced in 35 Ill. Adm. Code 726.305.

"The Motor Vehicle Inspection Report" (DD Form 626), as in effect in March 2007, referenced in 35 Ill. Adm. Code 726.303.

"Requisition Tracking Form" (DD Form 1348), as in effect in July 1991, referenced in 35 Ill. Adm. Code 726.303.

"The Signature and Tally Record" (DD Form 1907), as in effect in November 2006, referenced in 35 Ill. Adm. Code 726.303.

"Dangerous Goods Shipping Paper/Declaration and Emergency Response Information for Hazardous Materials Transported by Government Vehicles" (DD Form 836), as in effect in December 2007, referenced in 35 Ill. Adm. Code 726.303.

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BOARD NOTE: DOD 6055.09-STD is available on-line for download in pdf format from <http://www.ddesb.pentagon.mil>. DD Form 1348, DD Form 1907, DD Form 836, and DOD 6055.09-STD are available on-line for download in pdf format from <http://www.dtic.mil/whs/directives/infomgt/forms/formsprogram.htm>.

USEPA, Office of Ground Water and Drinking Water. Available from United States Environmental Protection Agency, Office of Drinking Water, State Programs Division, WH 550 E, Washington, D.C. 20460:

“Inventory of Injection Wells,” USEPA Form 7520-16 (Revised 8-01), referenced in 35 Ill. Adm. Code 704.148 and 704.283.

“Technical Assistance Document: Corrosion, Its Detection and Control in Injection Wells,” USEPA publication number EPA-570/9-87-002, August 1987, referenced in 35 Ill. Adm. Code 730.165.

USEPA, Receptor Analysis Branch. Available from Receptor Analysis Branch, USEPA (MD-14), Research Triangle Park, NC 27711:

“Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised,” October 1992, USEPA publication number EPA-450/R-92-019, USEPA-approved for Appendix I to 35 Ill. Adm. Code 726.

BOARD NOTE: Also available for purchase from NTIS (see above) and on the Internet for free download as a WordPerfect document from the USEPA website at following Internet address: www.epa.gov/scram001/guidance/guide/scrng.wpd.

USEPA Region 6. Available from United States Environmental Protection Agency, Region 6, Multimedia Permitting and Planning Division, 1445 Ross Avenue, Dallas, TX 75202 (phone: 214-665-7430):

“EPA RCRA Delisting Program—Guidance Manual for the Petitioner,” March 23, 2000, referenced in Section 720.122.

USGSA. Available from the United States Government Services Administration:

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Government Bill of Lading (GBL) (GSA Standard Form 1103, rev 9/2003, supplemented as necessary with GSA Standard Form 1109, rev 09/1998), referenced in Section 726.303.

BOARD NOTE: Available on-line for download in various formats from www.gsa.gov/forms/forms.htm.

- b) Code of Federal Regulations. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401, 202-783-3238:

10 CFR 20.2006-~~(2012)~~ (2013) (Transfer for Disposal and Manifests), referenced in 35 Ill. Adm. Code ~~702.110, 726.425,~~ and 726.450.

Table II, column 2 in appendix B to 10 CFR 20-~~(2012)~~ (2013) (Water Effluent Concentrations), referenced in 35 Ill. Adm. Code 702.110, 730.103, and 730.151.

Appendix G to 10 CFR 20-~~(2012)~~ (2013) (Requirements for Transfers of Low-Level Radioactive Waste Intended for Disposal at Licensed Land Disposal Facilities and Manifests), referenced in 35 Ill. Adm. Code 726.440.

10 CFR 71-~~(2012)~~ (2013), as amended at 77 Fed. Reg. 39899 (July 6, 2012) (Packaging and Transportation of Radioactive Material), referenced generally in 35 Ill. Adm. Code 726.430.

10 CFR 71.5-~~(2012)~~ (2013) (Transportation of Licensed Material), referenced in 35 Ill. Adm. Code 726.425.

33 CFR 153.203-~~(2012)~~ (2013) (Procedure for the Notice of Discharge), referenced in 35 Ill. Adm. Code 723.130 and 739.143.

~~40 CFR 3.2 (2012) (How Does This Part Provide for Electronic Reporting?), referenced in Section 720.104.~~

~~40 CFR 3.3 (2012) (What Definitions Are Applicable to This Part?), referenced in Section 720.104.~~

~~40 CFR 3.10 (2012) (What Are the Requirements for Electronic Reporting to EPA?), referenced in Section 720.104.~~

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40 CFR 3.2000 (2012) (What Are the Requirements Authorized State, Tribe, and Local Programs' Reporting Systems Must Meet?), referenced in Section 720.104.

40 CFR 51.100(ii) (2012) (Definitions), referenced in 35 Ill. Adm. Code 726.200.

Appendix W to 40 CFR 51 (2012) (Guideline on Air Quality Models), referenced in 35 Ill. Adm. Code 726.204.

BOARD NOTE: Also available from NTIS (see above for contact information) as "Guideline on Air Quality Models," Revised 1986, USEPA publication number EPA-450/12-78-027R, NTIS document numbers PB86-245248 (Guideline) and PB88-150958 (Supplement).

Appendix B to 40 CFR 52.741 (2012) (VOM Measurement Techniques for Capture Efficiency), referenced in 35 Ill. Adm. Code 703.213, 703.352, 724.982, 724.984, 724.986, 724.989, 725.983, 725.985, 725.987, and 725.990.

40 CFR 60 (2012), as amended at 77 Fed. Reg. 44488 (July 30, 2012); 77 Fed. Reg. 48433 (Aug. 14, 2012); 77 Fed. Reg. 49489 (Aug. 16, 2012); 77 Fed. Reg. 56421 (Sept. 12, 2012) (Standards of Performance for New Stationary Sources), referenced generally in 35 Ill. Adm. Code 724.964, 724.980, 725.964, and 725.980.

Subpart VV of 40 CFR 60 (2012) (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry), referenced in 35 Ill. Adm. Code 724.989 and 725.990.

Appendix A to 40 CFR 60 (2012) (Test Methods), referenced generally in 35 Ill. Adm. Code 726.205 (in addition to the references cited below for specific methods):

Method 1 (Sample and Velocity Traverses for Stationary Sources), referenced in 35 Ill. Adm. Code 726.205.

Method 2 (Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)), referenced in 35 Ill. Adm. Code 724.933, 724.934, 725.933, 725.934, and 726.205.

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Method 2A (Direct Measurement of Gas Volume through Pipes and Small Ducts), referenced in 35 Ill. Adm. Code 724.933, 725.933, and 726.205.

Method 2B (Determination of Exhaust Gas Volume Flow Rate from Gasoline Vapor Incinerators), referenced in 35 Ill. Adm. Code 726.205.

Method 2C (Determination of Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube)), referenced in 35 Ill. Adm. Code 724.933, 725.933, and 726.205.

Method 2D (Measurement of Gas Volume Flow Rates in Small Pipes and Ducts), referenced in 35 Ill. Adm. Code 724.933, 725.933, and 726.205.

Method 2E (Determination of Landfill Gas Production Flow Rate), referenced in 35 Ill. Adm. Code 726.205.

Method 2F (Determination of Stack Gas Velocity and Volumetric Flow Rate with Three-Dimensional Probes), referenced in 35 Ill. Adm. Code 726.205.

Method 2G (Determination of Stack Gas Velocity and Volumetric Flow Rate with Two-Dimensional Probes), referenced in 35 Ill. Adm. Code 726.205.

Method 2H (Determination of Stack Gas Velocity Taking into Account Velocity Decay Near the Stack Wall), referenced in 35 Ill. Adm. Code 726.205.

Method 3 (Gas Analysis for the Determination of Dry Molecular Weight), referenced in 35 Ill. Adm. Code 724.443 and 726.205.

Method 3A (Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)), referenced in 35 Ill. Adm. Code 726.205.

Method 3B (Gas Analysis for the Determination of Emission Rate Correction Factor or Excess Air), referenced in 35 Ill. Adm. Code 726.205.

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Method 3C (Determination of Carbon Dioxide, Methane, Nitrogen, and Oxygen from Stationary Sources), referenced in 35 Ill. Adm. Code 726.205.

Method 4 (Determination of Moisture Content in Stack Gases), referenced in 35 Ill. Adm. Code 726.205.

Method 5 (Determination of Particulate Matter Emissions from Stationary Sources), referenced in 35 Ill. Adm. Code 726.205.

Method 5A (Determination of Particulate Matter Emissions from the Asphalt Processing and Asphalt Roofing Industry), referenced in 35 Ill. Adm. Code 726.205.

Method 5B (Determination of Nonsulfuric Acid Particulate Matter Emissions from Stationary Sources), referenced in 35 Ill. Adm. Code 726.205.

Method 5D (Determination of Particulate Matter Emissions from Positive Pressure Fabric Filters), referenced in 35 Ill. Adm. Code 726.205.

Method 5E (Determination of Particulate Matter Emissions from the Wool Fiberglass Insulation Manufacturing Industry), referenced in 35 Ill. Adm. Code 726.205.

Method 5F (Determination of Nonsulfate Particulate Matter Emissions from Stationary Sources), referenced in 35 Ill. Adm. Code 726.205.

Method 5G (Determination of Particulate Matter Emissions from Wood Heaters (Dilution Tunnel Sampling Location)), referenced in 35 Ill. Adm. Code 726.205.

Method 5H (Determination of Particulate Emissions from Wood Heaters from a Stack Location), referenced in 35 Ill. Adm. Code 726.205.

Method 5I (Determination of Low Level Particulate Matter Emissions from Stationary Sources), referenced in 35 Ill. Adm. Code 726.205.

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Method 18 (Measurement of Gaseous Organic Compound Emissions by Gas Chromatography), referenced in 35 Ill. Adm. Code 724.933, 724.934, 725.933, and 725.934.

Method 21 (Determination of Volatile Organic Compound Leaks), referenced in 35 Ill. Adm. Code 703.213, 724.934, 724.935, 724.963, 725.934, 725.935, 725.963, and 725.984.

Method 22 (Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares), referenced in 35 Ill. Adm. Code 724.933, 724.1101, 725.933, 725.1101, and 727.900.

Method 25A (Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer), referenced in 35 Ill. Adm. Code 724.934 and 725.985.

Method 25D (Determination of the Volatile Organic Concentration of Waste Samples), referenced in 35 Ill. Adm. Code 724.982, 725.983, and 725.984.

Method 25E (Determination of Vapor Phase Organic Concentration in Waste Samples), referenced in 35 Ill. Adm. Code 725.984.

Method 27 (Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test), referenced in 35 Ill. Adm. Code ~~724.987~~ 724.986 and 725.987.

40 CFR 61 (2012) (National Emission Standards for Hazardous Air Pollutants), referenced generally in 35 Ill. Adm. Code 724.933, 724.964, 725.933, 725.964, and 725.980.

Subpart V of 40 CFR 61 (2012) (National Emission Standard for Equipment Leaks (Fugitive Emission Sources)), referenced in 35 Ill. Adm. Code 724.989 and 725.990.

Subpart FF of 40 CFR 61 (2012) (National Emission Standard for Benzene Waste Operations), referenced in 35 Ill. Adm. Code 724.982 and 725.983.

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40 CFR 63 (2012), as amended at 77 Fed. Reg. 41075 (July 12, 2012); 77 Fed. Reg. 49489 (Aug. 16, 2012); 77 Fed. Reg. 55698 (Sept. 11, 2012); 77 Fed. Reg. 58219 (Sept. 19, 2012); 77 Fed. Reg. 65135 (Oct. 25, 2012); 77 Fed. Reg. 75739 (Dec. 21, 2012) (National Emission Standards for Hazardous Air Pollutants for Source Categories), referenced generally in 35 Ill. Adm. Code 724.933, 724.964, 724.980, 725.933, 725.964, and 725.980, and 726.200.

Subpart RR of 40 CFR 63 (2012) (National Emission Standards for Individual Drain Systems), referenced in 35 Ill. Adm. Code 724.982, 724.984, 724.985, ~~725.983~~, 725.985, and 725.986.

Subpart EEE of 40 CFR 63 (2000) (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors), referenced in 35 Ill. Adm. Code 703.280.

Subpart EEE of 40 CFR 63 (2012) (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors) (includes 40 CFR 63.1206 (When and How Must You Comply with the Standards and Operating Requirements?), 63.1215 (What are the Health-Based Compliance Alternatives for Total Chlorine?), 63.1216 (What are the Standards for Solid-Fuel Boilers that Burn Hazardous Waste?), 63.1217 (What are the Standards for Liquid-Fuel Boilers that Burn Hazardous Waste?), 63.1218 (What are the Standards for Hydrochloric Acid Production Furnaces that Burn Hazardous Waste?), 63.1219 (What are the Replacement Standards for Hazardous Waste Incinerators?), 63.1220 (What are the Replacement Standards for Hazardous Waste-Burning Cement Kilns?), and 63.1221 (What are the Replacement Standards for Hazardous Waste-Burning Lightweight Aggregate Kilns?)), referenced in Appendix A to 35 Ill. Adm. Code 703 and 35 Ill. Adm. Code 703.155, 703.205, 703.208, 703.221, 703.232, 703.320, 703.280, 724.440, 724.701, 724.950, 725.440, and 726.200.

Method 301 (Field Validation of Pollutant Measurement Methods from Various Waste Media) in appendix A to 40 CFR 63 (2012) (Test Methods), referenced in 35 Ill. Adm. Code 725.984.

Appendix C to 40 CFR 63 (2012) (Determination of the Fraction Biodegraded (Fbio) in a Biological Treatment Unit), referenced in 35 Ill. Adm. Code 725.984.

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Appendix D to 40 CFR 63 (2012) (Test Methods), referenced in 35 Ill. Adm. Code 725.984.

40 CFR 136.3 (Identification of Test Procedures) (2012), referenced in 35 Ill. Adm. Code 702.110, 704.150, 704.187, and 730.103.

40 CFR 144.70 (2012) (Wording of the Instruments), referenced in 35 Ill. Adm. Code 704.240.

40 CFR 232.2 (2012) (Definitions), referenced in 35 Ill. Adm. Code 721.104.

40 CFR 257 (2012) (Criteria for Classification of Solid Waste Disposal Facilities and Practices), referenced in 35 Ill. Adm. Code 739.181.

40 CFR 258 (2012) (Criteria for Municipal Solid Waste Landfills), referenced in 35 Ill. Adm. Code 739.181.

40 CFR 260.21(b) (2012) (Alternative Equivalent Testing Methods), referenced in Section 720.121.

~~Appendix I to 40 CFR 260 (2012) (Overview of Subtitle C Regulations), referenced in Appendix A to 35 Ill. Adm. Code 720.~~

40 CFR 261.151 (2012) (Wording of the Instruments), referenced in 35 Ill. Adm. Code 721.251.

Appendix III to 40 CFR 261 (2012) (Chemical Analysis Test Methods), referenced in 35 Ill. Adm. Code 704.150 and 704.187.

40 CFR 262.53 (2012) (Notification of Intent to Export), referenced in 35 Ill. Adm. Code 722.153.

40 CFR 262.54 (2012) (Special Manifest Requirements), referenced in 35 Ill. Adm. Code 722.154.

40 CFR 262.55 (2012) (Exception Reports), referenced in 35 Ill. Adm. Code 722.155.

40 CFR 262.56 (2012) (Annual Reports), referenced in 35 Ill. Adm. Code 722.156.

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40 CFR 262.57 (2012) (Recordkeeping), referenced in 35 Ill. Adm. Code 722.157.

Appendix to 40 CFR 262 (2012) (Uniform Hazardous Waste Manifest and Instructions (EPA Forms 8700-22 and 8700-22A and Their Instructions)), referenced in Appendix A to 35 Ill. Adm. Code 722 and 35 Ill. Adm. Code 724.986 and 725.987.

40 CFR 264.151 (2012) (Wording of the Instruments), referenced in 35 Ill. Adm. Code 724.251 and 727.240.

Appendix I to 40 CFR 264 (2012) (Recordkeeping Instructions), referenced in Appendix A to 35 Ill. Adm. Code 724.

Appendix IV to 40 CFR 264 (2012) (Cochran's Approximation to the Behrens-Fisher Students' T-Test), referenced in Appendix D to 35 Ill. Adm. Code 724.

Appendix V to 40 CFR 264 (2012) (Examples of Potentially Incompatible Waste), referenced in Appendix E to 35 Ill. Adm. Code 724 and 35 Ill. Adm. Code 727.270.

Appendix VI to 40 CFR 264 (2012) (Political Jurisdictions in Which Compliance with § 264.18(a) Must Be Demonstrated), referenced in 35 Ill. Adm. Code 703.306, ~~and 724.118,~~ and 727.110.

Appendix I to 40 CFR 265 (2012) (Recordkeeping Instructions), referenced in Appendix A to 35 Ill. Adm. Code 725.

Appendix III to 40 CFR 265 (2012) (EPA Interim Primary Drinking Water Standards), referenced in Appendix C to 35 Ill. Adm. Code 725.

Appendix IV to 40 CFR 265 (2012) (Tests for Significance), referenced in Appendix D to 35 Ill. Adm. Code 725.

Appendix V to 40 CFR 265 (2012) (Examples of Potentially Incompatible Waste), referenced in 35 Ill. Adm. Code 725.277, 725.301, 725.330, 725.357, 725.382, and 725.413 and Appendix E to 35 Ill. Adm. Code 725.

Appendix IX to 40 CFR 266 (2012) (Methods Manual for Compliance with the BIF Regulations), referenced generally in ~~35 Ill. Adm. Code~~ Appendix I to 35 Ill. Adm. Code 726.

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Section 4.0 (Procedures for Estimating the Toxicity Equivalence of Chlorinated Dibenzo-p-Dioxin and Dibenzofuran Congeners), referenced in 35 Ill. Adm. Code 726.200 and 726.204.

Section 5.0 (Hazardous Waste Combustion Air Quality Screening Procedure), referenced in 35 Ill. Adm. Code 726.204 and 726.206.

Section 7.0 (Statistical Methodology for Bevill Residue Determinations), referenced in 35 Ill. Adm. Code 726.212.

BOARD NOTE: Also available from NTIS (see above for contact information) as "Methods Manual for Compliance with BIF Regulations: Burning Hazardous Waste in Boilers and Industrial Furnaces," December 1990, USEPA publication number EPA-530/SW-91-010, NTIS document number PB91-120006.

40 CFR 267.151 (2012) (Wording of the Instruments), referenced in 35 Ill. Adm. Code 727.240.

40 CFR 270.5 (2012) (Noncompliance and Program Reporting by the Director), referenced in 35 Ill. Adm. Code 703.305.

40 CFR 761 (2012), as amended at 77 Fed. Reg. 46289 (Aug. 3, 2012); 77 Fed. Reg. 54818 (Sept. 6, 2012) (Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions), referenced generally in 35 Ill. Adm. Code 728.145.

40 CFR 761.3 (2012), as amended at 77 Fed. Reg. 46289 (Aug. 3, 2012); 77 Fed. Reg. 54818 (Sept. 6, 2012) (Definitions), referenced in 35 Ill. Adm. Code 728.102 and 739.110.

40 CFR 761.60 (2012) (Disposal Requirements), referenced in 35 Ill. Adm. Code 728.142.

40 CFR 761.65 (2012), as amended at 77 Fed. Reg. 46289 (Aug. 3, 2012); 77 Fed. Reg. 54818 (Sept. 6, 2012) (Storage for Disposal), referenced in 35 Ill. Adm. Code 728.150.

40 CFR 761.70 (2012), as amended at 77 Fed. Reg. 46289 (Aug. 3, 2012); 77 Fed. Reg. 54818 (Sept. 6, 2012) (Incineration), referenced in 35 Ill. Adm. Code 728.142.

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Subpart B of 49 CFR 107-~~(2011)~~ (2012) (Exemptions), referenced generally in 35 Ill. Adm. Code 724.986 and 725.987.

49 CFR 171-~~(2011)~~, as amended at ~~77 Fed. Reg. 37962 (June 25, 2012)~~ (2012), as amended at 77 Fed. Reg. 60935 (Oct. 5, 2012) (General Information, Regulations, and Definitions), referenced generally in 35 Ill. Adm. Code 721.104, 733.118, 733.138, 733.152, and 739.143.

49 CFR 171.3-~~(2011)~~ (2012) (Hazardous Waste), referenced in 35 Ill. Adm. Code 722.133.

49 CFR 171.8-~~(2011)~~, as amended at ~~77 Fed. Reg. 37962 (June 25, 2012)~~ (2012) (Definitions and Abbreviations), referenced in 35 Ill. Adm. Code 733.118, 733.138, 733.152, 733.155, and 739.143.

49 CFR 171.15-~~(2011)~~ (2012) (Immediate Notice of Certain Hazardous Materials Incidents), referenced in 35 Ill. Adm. Code 723.130 and 739.143.

49 CFR 171.16-~~(2011)~~ (2012) (Detailed Hazardous Materials Incident Reports), referenced in 35 Ill. Adm. Code 723.130 and 739.143.

49 CFR 172-~~(2011)~~, as amended at ~~76 Fed. Reg. 81396 (Dec. 28, 2011); 76 Fed. Reg. 82163 (Dec. 30, 2012); 77 Fed. Reg. 37962 (June 25, 2012)~~ (2012), as amended at 77 Fed. Reg. 60935 (Oct. 5, 2012) (Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements), referenced generally in 35 Ill. Adm. Code 721.104, 722.131, 722.132, 724.986, 725.987, 733.114, 733.118, 733.134, 733.138, 733.152, 733.155, and 739.143.

49 CFR 172.304-~~(2011)~~ (2012) (Marking Requirements), referenced in 35 Ill. Adm. Code 722.132.

Subpart F of 49 CFR 172-~~(2011)~~ (2012), as amended at 77 Fed. Reg. 60935 (Oct. 5, 2012) (Placarding), referenced in 35 Ill. Adm. Code 722.133.

49 CFR 173-~~(2011)~~, as amended at ~~76 Fed. Reg. 81396 (Dec. 28, 2011); 76 Fed. Reg. 82163 (Dec. 30, 2012); 77 Fed. Reg. 37962 (June 25, 2012)~~ (2012), as amended at 77 Fed. Reg. 60935 (Oct. 5, 2012) (Shippers—

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General Requirements for Shipments and Packages), referenced generally in 35 Ill. Adm. Code 721.104, 722.130, 724.416, 724.986, 724.416, 725.416, 725.987, 733.118, 733.138, 733.152, and 739.143.

49 CFR 173.2-(2011) (2012) (Hazardous Materials Classes and Index to Hazard Class Definitions), referenced in 35 Ill. Adm. Code 733.152.

49 CFR 173.12-(2011) (2012), as amended at 77 Fed. Reg. 60935 (Oct. 5, 2012) (Exceptions for Shipments of Waste Materials), referenced in 35 Ill. Adm. Code 724.416, 724.986, 725.416, and 725.987.

49 CFR 173.28-(2011) (2012) (Reuse, Reconditioning, and Remanufacture of Packagings), referenced in 35 Ill. Adm. Code 725.273.

49 CFR 173.50-(2011) (2012) (Class 1—Definitions), referenced in 35 Ill. Adm. Code ~~721.124~~ 721.123.

49 CFR 173.54-(2011) (2012) (Forbidden Explosives), referenced in 35 Ill. Adm. Code ~~721.124~~ 721.123.

49 CFR 173.115-(2011) (2012) (Class 2, Divisions 2.1, 2.2, and 2.3—Definitions), referenced in 35 Ill. Adm. Code 721.121.

49 CFR 173.127 (2012) (Class 2, Divisions 2.1, 2.2, and 2.3—Definitions), referenced in 35 Ill. Adm. Code 721.121.

49 CFR 174-(2011), as amended at 76 Fed. Reg. 81396 (Dec. 28, 2011); 77 Fed. Reg. 37962 (June 25, 2012) (2012) (Carriage by Rail), referenced generally in 35 Ill. Adm. Code 733.118, 733.138, 733.152, and 739.143.

49 CFR 175-(2011), as amended at 76 Fed. Reg. 82163 (Dec. 30, 2012) (2012), as amended at 77 Fed. Reg. 60935 (Oct. 5, 2012) (Carriage by Aircraft), referenced generally in 35 Ill. Adm. Code 733.118, 733.138, 733.152, and 739.143.

49 CFR 176-(2011), as amended at 76 Fed. Reg. 82163 (Dec. 30, 2012) (2012) (Carriage by Vessel), referenced generally in 35 Ill. Adm. Code 733.118, 733.138, 733.152, and 739.143.

49 CFR 177-(2011), as amended at 76 Fed. Reg. 75470 (Dec. 2, 2011) (2012) (Carriage by Public Highway), referenced generally in 35 Ill. Adm. Code 733.118, 733.138, 733.152, and 739.143.

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~~49 CFR 178 (2011)~~ (2012), as amended at 77 Fed. Reg. 60935 (Oct. 5, 2012) (Specifications for Packagings), referenced generally in 35 Ill. Adm. Code 721.104, 722.130, 724.416, 724.986, 725.416, 725.987, 733.118, 733.138, 733.152, and 739.143.

~~49 CFR 179 (2011)~~, as amended at ~~77 Fed. Reg. 37962 (June 25, 2012)~~ (2012), as amended at 77 Fed. Reg. 60935 (Oct. 5, 2012) (Specifications for Tank Cars), referenced in 35 Ill. Adm. Code 721.104, 722.130, 724.416, 724.986, 725.416, 725.987, 733.118, 733.138, 733.152, and 739.143.

~~49 CFR 180 (2011)~~, as amended at ~~77 Fed. Reg. 37962 (June 25, 2012)~~ (2012) (Continuing Qualification and Maintenance of Packagings), referenced generally in 35 Ill. Adm. Code 724.986, 725.987, 733.118, 733.138, 733.152, and 739.143.

c) Federal Statutes:

Section 11 of the Atomic Energy Act of 1954 (42 USC 2014) (2011), referenced in 35 Ill. Adm. Code 721.104 and 726.310.

Sections 201(v), 201(w), and 512(j) of the Federal Food, Drug, and Cosmetic Act (FFDCA; 21 USC 321(v), 321(w), and 360b(j)) (2011), referenced in Section 720.110 and 35 Ill. Adm. Code 733.109.

Section 1412 of the Department of Defense Authorization Act of 1986 (50 USC 1521(j)(1)) (2011), referenced in 35 Ill. Adm. Code 726.301.

d) This Section incorporates no later editions or amendments.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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- 1) Heading of the Part: Standards Applicable to Generators of Hazardous Waste
- 2) Code citation: 35 Ill. Adm. Code 722
- 3)

<u>Section numbers:</u>	<u>Proposed action:</u>
722.111	Amend
722.185	Amend
- 4) Statutory authority: 415 ILCS 5/7.2, 22.4, and 27.
- 5) Effective date of amendments: OCT 24 2013
- 6) Does this rulemaking contain an automatic repeal date? No.
- 7) Do these amendments contain incorporations by reference? No.
- 8) Statement of availability: The adopted amendments, a copy of the Board's opinion and order adopted September 5, 2013 in docket R13-15, and all materials incorporated by reference are on file at the Board's principal office and are available for public inspection and copying.
- 9) Notice of proposal published in the Illinois Register: July 5, 2013, 37 Ill. Reg. 9242.
- 10) Has JCAR issued a statement of objections to these rules? No. Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).
- 11) A table that appears in the Board's opinion and order of September 5, 2013 in docket R13-15 summarizes the difference between the amendments adopted in that order and those proposed by the Board in an opinion and order dated June 20, 2013, in docket R13-15.

The difference is limited to one minor revision in the text, made at the request of USEPA. The change is intended to add clarity to the rule and to have no substantive effect. The intent is to clarify the text without deviation from the substance of the federal amendments on which this proceeding is based.

- 12) Have all the changes agreed upon by the Board and JCAR been made as indicated in the agreements issued by JCAR? Section 22.4(a) of the Environmental Protection Act [415

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NOTICE OF ADOPTED AMENDMENTS

ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by JCAR.

Since the Notices of Proposed Amendments appeared in the July 5, 2013 issue of the *Illinois Register*, the Board received a number of suggestions for revisions from JCAR. The Board evaluated each suggestion and incorporated a number of changes into the text as a result, as detailed in the opinion and order of September 5, 2013 in docket R13-15, as indicated in item 11 above. See the September 5, 2013 opinion and order in docket R13-15 for additional details on the JCAR suggestions and the Board actions with regard to each. One table in that opinion itemizes the changes made in response to various suggestions. Another table indicates JCAR suggestions not incorporated into the text, with a brief explanation for each.

- 13) Will these amendments replace emergency amendments currently in effect? No.
- 14) Are there any other amendments pending on this Part? No.
- 15) Summary and purpose of amendments: The following briefly describes the subjects and issues involved in docket R13-15 rulemaking of which the amendments to Part 722 are a single segment. Also affected is 35 Ill. Adm. Code 703, 704, 720, 724, 725, 726, 727, 728, and 739, which is covered by separate notices in this issue of the *Illinois Register*. A comprehensive description is contained in the Board's opinion and order of June 20, 2013, proposing amendments in docket R13-15, which opinion and order is available from the address below.

This proceeding updates the Illinois Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste rules to incorporate corrections to various provisions that the United States Environmental Protection Agency (USEPA) suggested. The proceeding further updates the edition of the *Code of Federal Regulations* provisions that are incorporated by reference. The Board further makes a number of corrections to various provisions that the Board has determined are needed.

Specifically, the amendments to Part 722 implement a correction suggested by USEPA and make corrections that the Board has determined are needed. The Board's opinion and order of September 5, 2013 in docket R13-15 discusses the more substantial corrections made in the text. Tables that appear in that opinion and order list all of the various corrections and amendments included in this proceeding. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

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Tables appear in the Board's opinion and order of September 5, 2013 in docket R13-15 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Section 22.4 of the Environmental Protection Act [415 ILCS 5/22.4] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

- 16) Information and questions regarding these adopted amendments shall be directed to:
Please reference consolidated docket R13-15 and direct inquiries to the following person:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago, IL 60601

312-814-6924

Request copies of the Board's opinion and order of September 5, 2013 at 312-814-3620. Alternatively, you may obtain a copy of the Board's opinion and order from the Internet at <http://www.ipcb.state.il.us>.

The full text of the adopted amendments begins on the next page:

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POLLUTION CONTROL BOARD

NOTICE OF ADOPTED AMENDMENTS

TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE G: WASTE DISPOSAL

CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER c: HAZARDOUS WASTE OPERATING REQUIREMENTS

PART 722

STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

SUBPART A: GENERAL

Section

- 722.110 Purpose, Scope, and Applicability
- 722.111 Hazardous Waste Determination
- 722.112 USEPA Identification Numbers
- 722.113 Electronic Reporting

SUBPART B: THE MANIFEST

Section

- 722.120 General Requirements
- 722.121 Manifest Tracking Numbers, Manifest Printing, and Obtaining Manifests
- 722.122 Number of Copies
- 722.123 Use of the Manifest
- 722.127 Waste Minimization Certification

SUBPART C: PRE-TRANSPORT REQUIREMENTS

Section

- 722.130 Packaging
- 722.131 Labeling
- 722.132 Marking
- 722.133 Placarding
- 722.134 Accumulation Time

SUBPART D: RECORDKEEPING AND REPORTING

Section

- 722.140 Recordkeeping
- 722.141 Annual Reporting
- 722.142 Exception Reporting
- 722.143 Additional Reporting
- 722.144 Special Requirements for Generators of between 100 and 1,000 kilograms per month

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SUBPART E: EXPORTS OF HAZARDOUS WASTE

Section	
722.150	Applicability
722.151	Definitions
722.152	General Requirements
722.153	Notification of Intent to Export
722.154	Special Manifest Requirements
722.155	Exception Report
722.156	Annual Reports
722.157	Recordkeeping
722.158	International Agreements

SUBPART F: IMPORTS OF HAZARDOUS WASTE

Section	
722.160	Imports of Hazardous Waste

SUBPART G: FARMERS

Section	
722.170	Farmers

SUBPART H: TRANS-BOUNDARY SHIPMENTS OF HAZARDOUS WASTE
FOR RECOVERY WITHIN THE OECD

Section	
722.180	Applicability
722.181	Definitions
722.182	General Conditions
722.183	Notification and Consent
722.184	Movement Document
722.185	Contracts
722.186	Provisions Relating to Recognized Traders
722.187	Reporting and Recordkeeping
722.189	OECD Waste Lists

SUBPART K: ALTERNATIVE REQUIREMENTS FOR HAZARDOUS
WASTE DETERMINATION AND ACCUMULATION OF UNWANTED
MATERIAL FOR LABORATORIES OWNED BY ELIGIBLE ACADEMIC
ENTITIES

Section	
722.300	Definitions
722.301	Applicability

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- 722.302 Opting into the Subpart K Requirements
 - 722.303 Notice of Election into the Subpart K Requirements
 - 722.304 Notice of Withdrawal from the Subpart K Requirements
 - 722.305 Summary of the Requirements of this Subpart K
 - 722.306 Container Standards in the Laboratory
 - 722.307 Personnel Training
 - 722.308 Removing Unwanted Material from the Laboratory
 - 722.309 Hazardous Waste Determination and Removal of Unwanted Material from the Laboratory
 - 722.310 Hazardous Waste Determination in the Laboratory
 - 722.311 Hazardous Waste Determination at an On-Site Central Accumulation Area
 - 722.312 Hazardous Waste Determination at an On-Site Treatment, Storage, or Disposal Facility
 - 722.313 Laboratory Clean-Outs
 - 722.314 Laboratory Management Plan
 - 722.315 Unwanted Material That Is Not Solid Waste or Hazardous Waste
 - 722.316 Non-Laboratory Hazardous Waste Generated at an Eligible Academic Entity
- 722.APPENDIX A Hazardous Waste Manifest

AUTHORITY: Implementing Sections 7.2 and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 22.4, and 27].

SOURCE: Adopted in R81-22 at 5 Ill. Reg. 9781, effective May 17, 1982; amended and codified in R81-22 at 6 Ill. Reg. 4828, effective May 17, 1982; amended in R82-18 at 7 Ill. Reg. 2518, effective February 22, 1983; amended in R84-9 at 9 Ill. Reg. 11950, effective July 24, 1985; amended in R85-22 at 10 Ill. Reg. 1131, effective January 2, 1986; amended in R86-1 at 10 Ill. Reg. 14112, effective August 12, 1986; amended in R86-19 at 10 Ill. Reg. 20709, effective December 2, 1986; amended in R86-46 at 11 Ill. Reg. 13555, effective August 4, 1987; amended in R87-5 at 11 Ill. Reg. 19392, effective November 12, 1987; amended in R87-39 at 12 Ill. Reg. 13129, effective July 29, 1988; amended in R88-16 at 13 Ill. Reg. 452, effective December 27, 1988; amended in R89-1 at 13 Ill. Reg. 18523, effective November 13, 1989; amended in R90-10 at 14 Ill. Reg. 16653, effective September 25, 1990; amended in R90-11 at 15 Ill. Reg. 9644, effective June 17, 1991; amended in R91-1 at 15 Ill. Reg. 14562, effective October 1, 1991; amended in R91-13 at 16 Ill. Reg. 9833, effective June 9, 1992; amended in R92-1 at 16 Ill. Reg. 17696, effective November 6, 1992; amended in R93-4 at 17 Ill. Reg. 20822, effective November 22, 1993; amended in R95-6 at 19 Ill. Reg. 9935, effective June 27, 1995; amended in R95-20 at 20 Ill. Reg. 11236, effective August 1, 1996; amended in R96-10/R97-3/R97-5 at 22 Ill. Reg. 603, effective December 16, 1997; amended in R97-21/R98-3/R98-5 at 22 Ill. Reg. 17950, effective September 28, 1998; amended in R00-5 at 24 Ill. Reg.

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1136, effective January 6, 2000; amended in R00-13 at 24 Ill. Reg. 9822, effective June 20, 2000; expedited correction at 25 Ill. Reg. 5105, effective June 20, 2000; amended in R05-2 at 29 Ill. Reg. 6312, effective April 22, 2005; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 3138, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 871, effective December 20, 2006; amended in R07-5/R07-14 at 32 Ill. Reg. 11927, effective July 14, 2008; amended in R09-16/R10-4 at 34 Ill. Reg. 18817, effective November 12, 2010; amended in R11-2/R11-16 at 35 Ill. Reg. 17888, effective October 14, 2011; amended in R12-7 at 36 Ill. Reg. 8773, effective June 4, 2012; amended in R13-15 at 37 Ill. Reg. _____, effective _____.

SUBPART A: GENERAL

Section 722.111 Hazardous Waste Determination

A person that generates a solid waste, as defined in 35 Ill. Adm. Code 721.102, must determine if that waste is a hazardous waste using the following method:

- a) The person should first determine if the waste is excluded from regulation under 35 Ill. Adm. Code 721.104.
- b) The person should then determine if the waste is listed as a hazardous waste in Subpart D of 35 Ill. Adm. Code 721.

BOARD NOTE: Even if a waste is listed as a hazardous waste, the generator still has an opportunity under 35 Ill. Adm. Code 720.122 to demonstrate that the waste from the generator's particular facility or operation is not a hazardous waste.

- c) For purposes of compliance with 35 Ill. Adm. Code 728, or if the waste is not listed as a hazardous waste in Subpart D of 35 Ill. Adm. Code 721, the generator must then determine whether the waste is identified in Subpart C of 35 Ill. Adm. Code 721 by either of the following methods:
 - 1) Testing the waste according to the methods set forth in Subpart C of 35 Ill. Adm. Code 721, or according to an equivalent method approved by the Board under 35 Ill. Adm. Code 720.121; or
 - 2) Applying knowledge of the hazard characteristic of the waste in light of the materials or processes used.

POLLUTION CONTROL BOARD

NOTICE OF ADOPTED AMENDMENTS

- d) If the generator determines that the waste is hazardous, the generator must refer to 35 Ill. Adm. Code 721, 724 through 728, and 733 for possible exclusions or restrictions pertaining to the management of the specific waste.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

SUBPART H: TRANS-BOUNDARY SHIPMENTS OF HAZARDOUS WASTE
FOR RECOVERY WITHIN THE OECD

Section 722.185 Contracts

- a) Trans-boundary movements of hazardous wastes subject to the Amber control procedures are prohibited unless they occur under the terms of a valid written contract, chain of contracts, or equivalent arrangements (when the movement occurs between parties controlled by the same corporate or legal entity). Such contracts or equivalent arrangements must be executed by the exporter and the owner or operator of the recovery facility, and must specify responsibilities for each. Contracts or equivalent arrangements are valid for the purposes of this Section only if persons assuming obligations under the contracts or equivalent arrangements have appropriate legal status to conduct the operations specified in the contract or equivalent arrangements.
- b) Contracts or equivalent arrangements must specify the following names and USEPA identification numbers, where available:
- 1) The generator of each type of waste;
 - 2) Each person that will have physical custody of the wastes;
 - 3) Each person that will have legal control of the wastes; and
 - 4) The recovery facility.
- c) Contracts or equivalent arrangements must specify which party to the contract will assume responsibility for alternate management of the wastes if its disposition cannot be carried out as described in the notification of intent to export. In such cases, contracts must specify the following:
- 1) That the person having actual possession or physical control over the wastes will immediately inform the exporter and the competent authorities of the country of export and country of import and, if the wastes are

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POLLUTION CONTROL BOARD

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located in a country of transit, the competent authorities of that country;
and

- 2) That the person specified in the contract will assume responsibility for the adequate management of the wastes in compliance with applicable laws and regulations including, if necessary, arranging the return of wastes and, as the case may be, shall provide the notification for re-export.
- d) Contracts must specify that the importer will provide the notification required in Section 722.182(c) prior to re-export of controlled wastes to a third country.
- e) Contracts or equivalent arrangements must include provisions for financial guarantees, if required by the competent authorities of any country concerned, in accordance with applicable national or international law requirements.

BOARD NOTE: Financial guarantees so required are intended to provide for alternative recycling, disposal, or other means of sound management of the wastes in cases where arrangements for the shipment and the recovery operations cannot be carried out as foreseen. The U.S. does not require such financial guarantees at this time; however, some OECD member countries do. It is the responsibility of the exporter to ascertain and comply with such requirements; in some cases, a transporter or importer may refuse to enter into the necessary contracts absent specific references or certifications to financial guarantees.

- f) Contracts or equivalent arrangements must contain provisions requiring each contracting party to comply with all applicable requirements of this Subpart H.
- g) Upon request by USEPA or the Agency, a U.S. exporter, importer, or recovery facility must submit to USEPA and the Agency copies of contracts, chain of contracts, or equivalent arrangements (when the movement occurs between parties controlled by the same corporate or legal entity). Information contained in the contracts or equivalent arrangements for which a claim of confidentiality is asserted in accordance with 35 Ill. Adm. Code ~~120~~ 130 will be treated as confidential and will be disclosed by the Agency only as provided in 35 Ill. Adm. Code ~~120~~ 130.

BOARD NOTE: Although the United States does not require routine submission of contracts at this time, OECD Guidance Manual allows OECD member countries to impose such requirements. When other OECD member countries require submission of partial or complete copies of the contract as a condition to

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granting consent to proposed movements, USEPA or the Agency will request the required information; absent submission of such information, some OECD member countries may deny consent for the proposed movement. Information submitted to USEPA for which a claim of confidentiality is asserted in accordance with 40 CFR 2.203(b) and 260.2 will be treated as confidential and will be disclosed by USEPA only as provided in 40 CFR 260.2.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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POLLUTION CONTROL BOARD

NOTICE OF ADOPTED AMENDMENTS

- 1) Heading of the Part: Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 2) Code citation: 35 Ill. Adm. Code 724
- 3)

<u>Section numbers:</u>	<u>Proposed action:</u>
724.930	Amend
724.980	Amend
724.986	Amend
724.989	Amend
- 4) Statutory authority: 415 ILCS 5/7.2, 22.4, and 27.
- 5) Effective date of amendments: OCT 24 2013
- 6) Does this rulemaking contain an automatic repeal date? No.
- 7) Do these amendments contain incorporations by reference? No.
- 8) Statement of availability: The adopted amendments, a copy of the Board's opinion and order adopted September 5, 2013 in docket R13-15, and all materials incorporated by reference are on file at the Board's principal office and are available for public inspection and copying.
- 9) Notice of proposal published in the Illinois Register: July 5, 2013, 37 Ill. Reg. 9252.
- 10) Has JCAR issued a statement of objections to these rules? No. Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).
- 11) A table that appears in the Board's opinion and order of September 5, 2013 in docket R13-15 summarizes the differences between the amendments adopted in that order and those proposed by the Board in an opinion and order dated June 20, 2013, in docket R13-15.

The differences are limited to minor corrections to the text. The changes are intended to have no substantive effect. The intent is to correct the text without deviation from the substance of the federal amendments on which this proceeding is based.

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- 12) Have all the changes agreed upon by the Board and JCAR been made as indicated in the agreements issued by JCAR? Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by JCAR.

Since the Notices of Proposed Amendments appeared in the July 5, 2013 issue of the *Illinois Register*, the Board received a number of suggestions for revisions from JCAR. The Board evaluated each suggestion and incorporated a number of changes into the text as a result, as detailed in the opinion and order of September 5, 2013 in docket R13-15, as indicated in item 11 above. See the September 5, 2013 opinion and order in docket R13-15 for additional details on the JCAR suggestions and the Board actions with regard to each. One table in that opinion itemizes the changes made in response to various suggestions. Another table indicates JCAR suggestions not incorporated into the text, with a brief explanation for each.

- 13) Will these amendments replace emergency amendments currently in effect? No.
- 14) Are there any other amendments pending on this Part? No.
- 15) Summary and purpose of amendments: The following briefly describes the subjects and issues involved in docket R13-15 rulemaking of which the amendments to Part 724 are a single segment. Also affected is 35 Ill. Adm. Code 703, 704, 720, 722, 725, 726, 727, 728, and 739, which is covered by separate notices in this issue of the *Illinois Register*. A comprehensive description is contained in the Board's opinion and order of June 20, 2013, proposing amendments in docket R13-15, which opinion and order is available from the address below.

This proceeding updates the Illinois Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste rules to incorporate corrections to various provisions that the United States Environmental Protection Agency (USEPA) suggested. The proceeding further updates the edition of the *Code of Federal Regulations* provisions that are incorporated by reference. The Board further makes a number of corrections to various provisions that the Board has determined are needed.

Specifically, the amendments to Part 724 implement a correction suggested by USEPA and make corrections that the Board has determined are needed. The Board's opinion and order of September 5, 2013 in docket R13-15 discusses the more substantial corrections made in the text. Tables that appear in that opinion and order list all of the various corrections and amendments included in this proceeding. Persons interested in

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the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Tables appear in the Board's opinion and order of September 5, 2013 in docket R13-15 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Section 22.4 of the Environmental Protection Act [415 ILCS 5/22.4] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

- 16) Information and questions regarding these adopted amendments shall be directed to:
Please reference consolidated docket R13-15 and direct inquiries to the following person:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago, IL 60601

312-814-6924

Request copies of the Board's opinion and order of September 5, 2013 at 312-814-3620. Alternatively, you may obtain a copy of the Board's opinion and order from the Internet at <http://www.ipcb.state.il.us>.

The full text of the adopted amendments begins on the next page:

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POLLUTION CONTROL BOARD

NOTICE OF ADOPTED AMENDMENTS

TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE G: WASTE DISPOSAL

CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER c: HAZARDOUS WASTE OPERATING REQUIREMENTS

PART 724

STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE
TREATMENT, STORAGE, AND DISPOSAL FACILITIES

SUBPART A: GENERAL PROVISIONS

Section

- 724.101 Purpose, Scope, and Applicability
- 724.103 Relationship to Interim Status Standards
- 724.104 Electronic Reporting

SUBPART B: GENERAL FACILITY STANDARDS

Section

- 724.110 Applicability
- 724.111 USEPA Identification Number
- 724.112 Required Notices
- 724.113 General Waste Analysis
- 724.114 Security
- 724.115 General Inspection Requirements
- 724.116 Personnel Training
- 724.117 General Requirements for Ignitable, Reactive, or Incompatible Wastes
- 724.118 Location Standards
- 724.119 Construction Quality Assurance Program

SUBPART C: PREPAREDNESS AND PREVENTION

Section

- 724.130 Applicability
- 724.131 Design and Operation of Facility
- 724.132 Required Equipment
- 724.133 Testing and Maintenance of Equipment
- 724.134 Access to Communications or Alarm System
- 724.135 Required Aisle Space
- 724.137 Arrangements with Local Authorities

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SUBPART D: CONTINGENCY PLAN AND EMERGENCY PROCEDURES

Section

- 724.150 Applicability
- 724.151 Purpose and Implementation of Contingency Plan
- 724.152 Content of Contingency Plan
- 724.153 Copies of Contingency Plan
- 724.154 Amendment of Contingency Plan
- 724.155 Emergency Coordinator
- 724.156 Emergency Procedures

SUBPART E: MANIFEST SYSTEM, RECORDKEEPING AND REPORTING

Section

- 724.170 Applicability
- 724.171 Use of Manifest System
- 724.172 Manifest Discrepancies
- 724.173 Operating Record
- 724.174 Availability, Retention, and Disposition of Records
- 724.175 Annual Facility Activities Report
- 724.176 Unmanifested Waste Report
- 724.177 Additional Reports

SUBPART F: RELEASES FROM SOLID WASTE MANAGEMENT UNITS

Section

- 724.190 Applicability
- 724.191 Required Programs
- 724.192 Groundwater Protection Standard
- 724.193 Hazardous Constituents
- 724.194 Concentration Limits
- 724.195 Point of Compliance
- 724.196 Compliance Period
- 724.197 General Groundwater Monitoring Requirements
- 724.198 Detection Monitoring Program
- 724.199 Compliance Monitoring Program
- 724.200 Corrective Action Program
- 724.201 Corrective Action for Solid Waste Management Units

SUBPART G: CLOSURE AND POST-CLOSURE CARE

Section

- 724.210 Applicability
- 724.211 Closure Performance Standard

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724.212	Closure Plan; Amendment of Plan
724.213	Closure; Time Allowed For Closure
724.214	Disposal or Decontamination of Equipment, Structures, and Soils
724.215	Certification of Closure
724.216	Survey Plat
724.217	Post-Closure Care and Use of Property
724.218	Post-Closure Care Plan; Amendment of Plan
724.219	Post-Closure Notices
724.220	Certification of Completion of Post-Closure Care

SUBPART H: FINANCIAL REQUIREMENTS

Section	
724.240	Applicability
724.241	Definitions of Terms as Used in This Subpart
724.242	Cost Estimate for Closure
724.243	Financial Assurance for Closure
724.244	Cost Estimate for Post-Closure Care
724.245	Financial Assurance for Post-Closure Care
724.246	Use of a Mechanism for Financial Assurance of Both Closure and Post-Closure Care
724.247	Liability Requirements
724.248	Incapacity of Owners or Operators, Guarantors, or Financial Institutions
724.251	Wording of the Instruments

SUBPART I: USE AND MANAGEMENT OF CONTAINERS

Section	
724.270	Applicability
724.271	Condition of Containers
724.272	Compatibility of Waste with Container
724.273	Management of Containers
724.274	Inspections
724.275	Containment
724.276	Special Requirements for Ignitable or Reactive Waste
724.277	Special Requirements for Incompatible Wastes
724.278	Closure
724.279	Air Emission Standards

SUBPART J: TANK SYSTEMS

Section	
724.290	Applicability

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NOTICE OF ADOPTED AMENDMENTS

- 724.291 Assessment of Existing Tank System Integrity
- 724.292 Design and Installation of New Tank Systems or Components
- 724.293 Containment and Detection of Releases
- 724.294 General Operating Requirements
- 724.295 Inspections
- 724.296 Response to Leaks or Spills and Disposition of Leaking or Unfit-for-Use Tank Systems
- 724.297 Closure and Post-Closure Care
- 724.298 Special Requirements for Ignitable or Reactive Waste
- 724.299 Special Requirements for Incompatible Wastes
- 724.300 Air Emission Standards

SUBPART K: SURFACE IMPOUNDMENTS

- Section
- 724.320 Applicability
- 724.321 Design and Operating Requirements
- 724.322 Action Leakage Rate
- 724.323 Response Actions
- 724.326 Monitoring and Inspection
- 724.327 Emergency Repairs; Contingency Plans
- 724.328 Closure and Post-Closure Care
- 724.329 Special Requirements for Ignitable or Reactive Waste
- 724.330 Special Requirements for Incompatible Wastes
- 724.331 Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027
- 724.332 Air Emission Standards

SUBPART L: WASTE PILES

- Section
- 724.350 Applicability
- 724.351 Design and Operating Requirements
- 724.352 Action Leakage Rate
- 724.353 Response Action Plan
- 724.354 Monitoring and Inspection
- 724.356 Special Requirements for Ignitable or Reactive Waste
- 724.357 Special Requirements for Incompatible Wastes
- 724.358 Closure and Post-Closure Care
- 724.359 Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027

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SUBPART M: LAND TREATMENT

Section	
724.370	Applicability
724.371	Treatment Program
724.372	Treatment Demonstration
724.373	Design and Operating Requirements
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AUTHORITY: Implementing Sections 7.2 and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 22.4, and 27].

SOURCE: Adopted in R82-19 at 7 Ill. Reg. 14059, effective October 12, 1983; amended in R84-9 at 9 Ill. Reg. 11964, effective July 24, 1985; amended in R85-22 at 10 Ill. Reg. 1136, effective January 2, 1986; amended in R86-1 at 10 Ill. Reg. 14119, effective August 12, 1986; amended in R86-28 at 11 Ill. Reg. 6138, effective March 24, 1987; amended in R86-28 at 11 Ill. Reg. 8684, effective April 21, 1987; amended in R86-46 at 11 Ill. Reg. 13577, effective August 4, 1987; amended in R87-5 at 11 Ill. Reg. 19397, effective November 12, 1987; amended in R87-39 at 12 Ill. Reg. 13135, effective July 29, 1988; amended in R88-16 at 13 Ill. Reg. 458, effective December 28, 1988; amended in R89-1 at 13 Ill. Reg. 18527, effective November 13, 1989; amended in R90-2 at 14 Ill. Reg. 14511, effective August 22, 1990; amended in R90-10 at 14 Ill. Reg. 16658, effective September 25, 1990; amended in R90-11 at 15 Ill. Reg. 9654, effective June 17, 1991; amended in R91-1 at 15 Ill. Reg. 14572, effective October 1, 1991; amended in R91-13 at 16 Ill. Reg. 9833, effective June 9, 1992; amended in R92-1 at 16 Ill. Reg. 17702, effective November 6, 1992; amended in R92-10 at 17 Ill. Reg. 5806, effective March 26, 1993; amended in R93-4 at 17 Ill. Reg. 20830, effective November 22, 1993; amended in R93-16 at 18 Ill. Reg. 6973, effective April 26, 1994; amended in R94-7 at 18 Ill. Reg. 12487, effective July 29, 1994; amended in R94-17 at 18 Ill. Reg. 17601, effective November 23, 1994; amended in R95-6 at 19 Ill. Reg. 9951, effective June 27, 1995; amended in R95-20 at 20 Ill. Reg. 11244, effective August 1, 1996; amended in R96-10/R97-3/R97-5 at 22 Ill. Reg. 636, effective December 16, 1997; amended in R98-12 at 22 Ill. Reg. 7638, effective April 15, 1998; amended in R97-21/R98-3/R98-5 at 22 Ill. Reg. 17972, effective September 28, 1998; amended in R98-21/R99-2/R99-7 at 23 Ill. Reg. 2186, effective January 19, 1999; amended in R99-15 at 23 Ill. Reg. 9437, effective July 26, 1999; amended in R00-5 at 24 Ill. Reg. 1146, effective January 6, 2000; amended in R00-13 at 24 Ill. Reg. 9833, effective June 20, 2000; expedited correction at 25 Ill. Reg. 5115, effective June 20, 2000; amended in R02-1/R02-12/R02-17 at 26

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Ill. Reg. 6635, effective April 22, 2002; amended in R03-7 at 27 Ill. Reg. 3725, effective February 14, 2003; amended in R05-8 at 29 Ill. Reg. 6009, effective April 13, 2005; amended in R05-2 at 29 Ill. Reg. 6365, effective April 22, 2005; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 3196, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 893, effective December 20, 2006; amended in R07-5/R07-14 at 32 Ill. Reg. 12365, effective July 14, 2008; amended in R09-3 at 33 Ill. Reg. 1106, effective December 30, 2008; amended in R09-16/R10-4 at 34 Ill. Reg. 18873, effective November 12, 2010; amended in R11-2/R11-16 at 35 Ill. Reg. 17965, effective October 14, 2011; amended in R13-15 at 37 Ill. Reg. _____, effective _____.

SUBPART AA: AIR EMISSION STANDARDS FOR PROCESS VENTS

Section 724.930 Applicability

- a) This Subpart AA applies to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in Section 724.101).
- b) Except for Sections 724.934(d) and (e), this Subpart AA applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw (parts per million by weight), if these operations are conducted as follows:
 - 1) In units that are subject to the permitting requirements of 35 Ill. Adm. Code 703;
 - 2) In a unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 35 Ill. Adm. Code 722.134(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of 35 Ill. Adm. Code 703; or
 - 3) In a unit that is exempt from permitting under the provisions of 35 Ill. Adm. Code 722.134(a) (i.e., a 90-day tank or container) and which is not a recycling unit under the provisions of 35 Ill. Adm. Code 721.106.
- c) For the owner and operator of a facility subject to this Subpart AA that received a final permit under 35 Ill. Adm. Code 702, 703, and 705 prior to December 6, 1996, the requirements of this Subpart AA must be incorporated into the permit

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when the permit is reissued, renewed, or modified in accordance with the requirements of 35 Ill. Adm. Code 703 and 705. Until such date when the owner and operator receives a final permit incorporating the requirements of this Subpart AA, the owner and operator is subject to the requirements of Subpart AA of 35 Ill. Adm. Code 725.

BOARD NOTE: The requirements of Sections 724.932 through 724.936 apply to process vents on hazardous waste recycling units previously exempt under 35 Ill. Adm. Code 721.106(c)(1). Other exemptions under 35 Ill. Adm. Code 721.104, ~~722.134~~ and 724.101(g) are not affected by these requirements.

- d) This subsection (d) corresponds with 40 CFR 264.1030(d), which is marked “reserved” by USEPA. This statement maintains structural consistency with USEPA rules.
- e) The requirements of this Subpart AA do not apply to the process vents at a facility where the facility owner or operator certifies that all of the process vents that would otherwise be subject to this Subpart AA are equipped with and operating air emission controls in accordance with the process requirements of an applicable federal Clean Air Act regulation codified under 40 CFR 60, 61, or 63. The documentation of compliance under regulations at 40 CFR 60, 61, or 63 must be kept with, or made readily available with, the facility operating record.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

SUBPART CC: AIR EMISSION STANDARDS FOR TANKS, SURFACE
IMPOUNDMENTS, AND CONTAINERS

Section 724.980 Applicability

- a) The requirements of this Subpart CC apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to Subpart I, J, or K of this Part, except as Section 724.101 and subsection (b) of this Section provide otherwise.
- b) The requirements of this Subpart CC do not apply to the following waste management units at the facility:

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- 1) A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996.
- 2) A container that has a design capacity less than or equal to 0.1 m³ (3.5 ft³ or 26.4 gal).
- 3) A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.
- 4) A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.
- 5) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is placed in the unit as a result of implementing remedial activities required pursuant to the Act or Board regulations or under the corrective action authorities of RCRA section 3004(u), 3004(v), or 3008(h); CERCLA authorities; or similar federal or State authorities.
- 6) A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act of 1954 (42 USC 2011 et seq.) and the Nuclear Waste Policy Act of 1982 (42 USC 10101 et seq.).
- 7) A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable federal Clean Air Act regulation codified under 40 CFR 60 (Standards of Performance for New Stationary Sources), 61 (National Emission Standards for Hazardous Air Pollutants), or 63 (National Emission Standards for Hazardous Air Pollutants for Source Categories), each incorporated by reference in 35 Ill. Adm. Code 720.111(b). For the purpose of complying with this subsection (b)(7), a tank for which the air emission control includes an enclosure, as opposed to a cover, must be in compliance with the enclosure and control device requirements of Section 724.984(i), except as provided in Section 724.982(c)(5).

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- 8) A tank that has a process vent, as defined in 35 Ill. Adm. Code 724.931.
- c) For the owner and operator of a facility subject to this Subpart CC and that received a final RCRA permit prior to December 6, 1996, the requirements of this Subpart CC must be incorporated into the permit when the permit is reissued, renewed, or modified in accordance with the requirements of 35 Ill. Adm. Code 703 and 705. Until the date when the owner and operator receives a final permit incorporating the requirements of this Subpart CC, the owner and operator are subject to the requirements of Subpart CC of 35 Ill. Adm. Code 725.
- d) The requirements of this Subpart CC, except for the recordkeeping requirements specified in Section 724.989(i), are stayed for a tank or container used for the management of hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations, when the owner or operator of the unit meets all of the following conditions:
 - 1) The owner or operator identifies that the tank or container receives hazardous waste generated by an organic peroxide manufacturing process producing more than one functional family of organic peroxides or multiple organic peroxides within one functional family, that one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures, and that organic peroxides are the predominant products manufactured by the process. For the purposes of this subsection (d), "organic peroxide" means an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.
 - 2) The owner or operator prepares documentation, in accordance with Section 724.989(i), explaining why an undue safety hazard would be created if air emission controls specified in Sections 724.984 through 724.987 are installed and operated on the tanks and containers used at the facility to manage the hazardous waste generated by the organic peroxide manufacturing process or processes meeting the conditions of subsection (d)(1) of this Section.
 - 3) The owner or operator notifies the Agency in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting the conditions of subsection (d)(1) of this Section are managed at the facility in tanks or containers meeting the conditions of subsection

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(d)(2) of this Section. The notification must state the name and address of the facility and be signed and dated by an authorized representative of the facility owner or operator.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 724.986 Standards: Containers

- a) The provisions of this Section apply to the control of air pollutant emissions from containers for which Section 724.982(b) references the use of this Section for such air emission control.
- b) General requirements.
 - 1) The owner or operator must control air pollutant emissions from each container subject to this Section in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in subsection (b)(2) of this Section apply to the container.
 - A) For a container having a design capacity greater than 0.1 m³ (26 gal) and less than or equal to 0.46 m³ (120 gal), the owner or operator must control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in subsection (c) of this Section.
 - B) For a container having a design capacity greater than 0.46 m³ (120 gal) that is not in light material service, the owner or operator must control air pollutant emissions from the container in accordance with the Container Level 1 standards, specified in subsection (c) of this Section.
 - C) For a container having a design capacity greater than 0.46 m³ (120 gal) that is in light material service, the owner or operator must control air pollutant emissions from the container in accordance with the Container Level 2 standards specified in subsection (d) of this Section.
 - 2) When a container having a design capacity greater than 0.1 m³ (26 gal) is used for treatment of a hazardous waste by a waste stabilization process,

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the owner or operator must control air pollutant emissions from the container in accordance with the Container Level 3 standards specified in subsection (e) of this Section at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.

- c) Container Level 1 standards.
 - 1) A container using Container Level 1 controls is one of the following:
 - A) A container that meets the applicable USDOT regulations on packaging hazardous materials for transportation, as specified in subsection (f) of this Section.
 - B) A container equipped with a cover and closure devices that form a continuous barrier over the container openings so that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a “portable tank” or bulk cargo container equipped with a screw-type cap).
 - C) An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container so that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.
 - 2) A container used to meet the requirements of subsection (c)(1)(B) or (c)(1)(C) of this Section must be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices must include the following: the organic vapor permeability; the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind,

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moisture, and sunlight; and the operating practices for which the container is intended to be used.

- 3) Whenever a hazardous waste is in a container using Container Level 1 controls, the owner or operator must install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position, except as follows:
 - A) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container, as follows:
 - i) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator must promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.
 - ii) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator must promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.
 - B) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container, as follows:
 - i) For the purpose of meeting the requirements of this Section, an empty container, as defined in 35 Ill. Adm. Code 721.107(b), may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

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- ii) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container, as defined in 35 Ill. Adm. Code 721.107(b), the owner or operator must promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.
- C) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator must promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.
- D) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device must be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens must be established so that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure

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operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

- E) Opening of a safety device, as defined in 35 Ill. Adm. Code 725.981, is allowed at any time conditions require doing so to avoid an unsafe condition.
- 4) The owner or operator of containers using Container Level 1 controls must inspect the containers and their covers and closure devices, as follows:
 - A) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., it does not meet the conditions for an empty container, as specified in 35 Ill. Adm. Code 721.107(b)), the owner or operator must visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection must be conducted on or before the date on which the container is accepted at the facility (i.e., the date when the container becomes subject to the Subpart CC container standards). For the purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest, as set forth in the appendix to 40 CFR 262 (Uniform Hazardous Waste Manifest and Instructions (EPA Forms 8700-22 and 8700-22A and Their Instructions)), incorporated by reference in 35 Ill. Adm. Code 720.111(b) (USEPA Forms 8700-22 and 8700-22A), as required under Section 724.171. If a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (c)(4)(C) of this Section.
 - B) In the case when a container used for managing hazardous waste remains at the facility for a period of one year or more, the owner or operator must visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure

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devices are secured in the closed position. If a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (c)(4)(C) of this Section.

- C) When a defect is detected for the container, cover, or closure devices, the owner or operator must make first efforts at repair of the defect no later than 24 hours after detection and repair must be completed as soon as possible but no later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste must be removed from the container and the container must not be used to manage hazardous waste until the defect is repaired.
- 5) The owner or operator must maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m³ (120 gal) or greater that do not meet applicable USDOT regulations, as specified in subsection (f) of this Section, are not managing hazardous waste in light material service.
- d) Container Level 2 standards.
 - 1) A container using Container Level 2 controls is one of the following:
 - A) A container that meets the applicable USDOT regulations on packaging hazardous materials for transportation, as specified in subsection (f) of this Section.
 - B) A container that operates with no detectable organic emissions, as defined in 35 Ill. Adm. Code 725.981, and determined in accordance with the procedure specified in subsection (g) of this Section.
 - C) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using Method 27 (Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test) in appendix A to 40 CFR 60 (Test Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b), in accordance with the procedure specified in subsection (h) of this Section.

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- 2) Transfer of hazardous waste in or out of a container using Container Level 2 controls must be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the USEPA considers to meet the requirements of this subsection (d)(2) include using any one of the following: a submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.
- 3) Whenever a hazardous waste is in a container using Container Level 2 controls, the owner or operator must install all covers and closure devices for the container, and secure and maintain each closure device in the closed position, except as follows:
 - A) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container, as follows:
 - i) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator must promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.
 - ii) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator must promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either whichever of the following conditions occurs first: the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the

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container; or the shutdown of the process generating the material being added to the container, ~~whichever condition occurs first.~~

- B) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container, as follows:
- i) For the purpose of meeting the requirements of this Section, an empty container, as defined in 35 Ill. Adm. Code 721.107(b), may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).
 - ii) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container, as defined in 35 Ill. Adm. Code 721.107(b), the owner or operator must promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.
- C) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator must promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.
- D) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device

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must be designed to operate with no detectable organic emission when the device is secured in the closed position. The settings at which the device opens must be established so that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

- E) Opening of a safety device, as defined in 35 Ill. Adm. Code 725.981, is allowed at any time conditions require doing so to avoid an unsafe condition.
- 4) The owner or operator of containers using Container Level 2 controls must inspect the containers and their covers and closure devices, as follows:
- A) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., it does not meet the conditions for an empty container as specified in 35 Ill. Adm. Code 721.107(b)), the owner or operator must visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection must be conducted on or before the date on which the container is accepted at the facility (i.e., the date when the container becomes subject to the Subpart CC container standards). For the purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest, in the appendix to 40 CFR 262 (Uniform Hazardous Waste Manifest and Instructions (USEPA

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Forms 8700-22 and 8700-22A and Their Instructions)), as required under Section 724.171. If a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (d)(4)(C) of this Section.

- B) In the case when a container used for managing hazardous waste remains at the facility for a period of one year or more, the owner or operator must visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (d)(4)(C) of this Section.
 - C) When a defect is detected for the container, cover, or closure devices, the owner or operator must make first efforts at repair of the defect no later than 24 hours after detection, and repair must be completed as soon as possible but no later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste must be removed from the container and the container must not be used to manage hazardous waste until the defect is repaired.
- e) Container Level 3 standards.
- 1) A container using Container Level 3 controls is one of the following:
 - A) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of subsection (e)(2)(B) of this Section.
 - B) A container that is vented inside an enclosure that is exhausted through a closed-vent system to a control device in accordance with the requirements of subsections (e)(2)(A) and (e)(2)(B) of this Section.
 - 2) The owner or operator must meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:

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- A) The container enclosure must be designed and operated in accordance with the criteria for a permanent total enclosure, as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under appendix B to 40 CFR 52.741 (VOM Measurement Techniques for Capture Efficiency), incorporated by reference in 35 Ill. Adm. Code 720.111(b). The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator must perform the verification procedure for the enclosure, as specified in Section 5.0 to “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” initially when the enclosure is first installed and, thereafter, annually.
- B) The closed-vent system and control device must be designed and operated in accordance with the requirements of Section 724.987.
- 3) Safety devices, as defined in 35 Ill. Adm. Code 725.981, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of subsection (e)(1) of this Section.
- 4) Owners and operators using Container Level 3 controls in accordance with the provisions of this Subpart CC must inspect and monitor the closed-vent systems and control devices, as specified in Section 724.987.
- 5) Owners and operators that use Container Level 3 controls in accordance with the provisions of this Subpart CC must prepare and maintain the records specified in Section 724.989(d).
- 6) The transfer of hazardous waste into or out of a container using Container Level 3 controls must be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that USEPA considers to meet the requirements of this subsection (e)(6) include using any one of the following: the use of a

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submerged-fill pipe or other submerged-fill method to load liquids into the container; the use of a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or the use of a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

- f) For the purpose of compliance with subsection (c)(1)(A) or (d)(1)(A) of this Section, containers must be used that meet the applicable USDOT regulations on packaging hazardous materials for transportation, as follows:
 - 1) The container meets the applicable requirements specified by USDOT in 49 CFR 178 (Specifications for Packaging), or 49 CFR 179 (Specifications for Tank Cars), each incorporated by reference in 35 Ill. Adm. Code 720.111(b).
 - 2) Hazardous waste is managed in the container in accordance with the applicable requirements specified by USDOT in subpart B of 49 CFR 107 (Exemptions), 49 CFR 172 (Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements), 49 CFR 173 (Shippers—General Requirements for Shipments and Packages), and 49 CFR 180 (Continuing Qualification and Maintenance of Packagings), each incorporated by reference in 35 Ill. Adm. Code 720.111(b).
 - 3) For the purpose of complying with this Subpart CC, no exceptions to the 49 CFR 178 or 179 regulations are allowed, except as provided for in subsection (f)(4) of this Section.
 - 4) For a lab pack that is managed in accordance with the USDOT requirements of 49 CFR 178 (Specifications for Packagings), for the purpose of complying with this Subpart CC, an owner or operator may comply with the exceptions for combination packagings specified by USDOT in 49 CFR 173.12(b) (Exceptions for Shipments of Waste Materials), incorporated by reference in 35 Ill. Adm. Code 720.111(b).
- g) To determine compliance with the no detectable organic emissions requirement of subsection (d)(1)(B) of this Section, the procedure specified in Section 724.983(d) must be used.

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- 1) Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, must be checked. Potential leak interfaces that are associated with containers include, but are not limited to, the following: the interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.
 - 2) The test must be performed when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous wastes expected to be managed in this type of container. During the test, the container cover and closure devices must be secured in the closed position.
- h) Procedure for determining a container to be vapor-tight using Method 27 for the purpose of complying with subsection (d)(1)(C) of this Section.
- 1) The test must be performed in accordance with Method 27.
 - 2) A pressure measurement device must be used that has a precision of ± 2.5 mm (0.098 in) water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.
 - 3) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals (0.11 psig) within five minutes after it is pressurized to a minimum of 4,500 Pascals (0.65 psig), then the container is determined to be vapor-tight.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 724.989 Recordkeeping Requirements

- a) Each owner or operator of a facility subject to the requirements of this Subpart CC must record and maintain the information specified in subsections (b) through (j) of this Section, as applicable to the facility. Except for air emission control equipment design documentation and information required by subsections (i) and (j) of this Section, records required by this Section must be maintained in the operating record for a minimum of three years. Air emission control equipment design documentation must be maintained in the operating record until the air

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emission control equipment is replaced or is otherwise no longer in service. Information required by subsections (i) and (j) of this Section must be maintained in the operating record for as long as the waste management unit is not using air emission controls specified in Sections 724.984 through 724.987, in accordance with the conditions specified in Section 724.980(d) or (b)(7), respectively.

- b) The owner or operator of a tank using air emission controls in accordance with the requirements of Section 724.984 must prepare and maintain records for the tank that include the following information:
 - 1) For each tank using air emission controls in accordance with the requirements of Section 724.984, the owner or operator must record the following:
 - A) A tank identification number (or other unique identification description, as selected by the owner or operator).
 - B) A record for each inspection required by Section 724.984 that includes the following information:
 - i) Date inspection was conducted.
 - ii) For each defect detected during the inspection: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the requirements of Section 724.984, the owner or operator must also record the reason for the delay and the date that completion of repair of the defect is expected.
 - 2) In addition to the information required by subsection (b)(1) of this Section, the owner or operator must record the following information, as applicable to the tank:
 - A) The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in Section 724.984(c) must prepare and maintain records for each determination for the maximum organic vapor pressure of the hazardous waste in the

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tank performed in accordance with the requirements of Section 724.984(c). The records must include the date and time the samples were collected, the analysis method used, and the analysis results.

- B) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in Section 724.984(e) must prepare and maintain documentation describing the floating roof design.
- C) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in Section 724.984(f) must prepare and maintain the following records:
 - i) Documentation describing the floating roof design and the dimensions of the tank.
 - ii) Records for each seal gap inspection required by Section 724.984(f)(3) describing the results of the seal gap measurements. The records must include the date that the measurements were performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in Section 724.984(f)(1), the records must include a description of the repairs that were made, the date the repairs were made, and the date the tank was emptied, if necessary.
- D) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in Section 724.984(i) must prepare and maintain the following records:
 - i) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under appendix B to 40 CFR 52.741 (VOM Measurement Techniques for Capture Efficiency), incorporated by reference in 35 Ill. Adm. Code 720.111(b).

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- ii) Records required for the closed-vent system and control device in accordance with the requirements of subsection (e) of this Section.
- c) The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of Section 724.985 must prepare and maintain records for the surface impoundment that include the following information:
- 1) A surface impoundment identification number (or other unique identification description as selected by the owner or operator).
 - 2) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in Section 724.985(c).
 - 3) A record for each inspection required by Section 724.985 that includes the following information:
 - A) Date inspection was conducted.
 - B) For each defect detected during the inspection the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of Section 724.985(f), the owner or operator must also record the reason for the delay and the date that completion of repair of the defect is expected.
 - 4) For a surface impoundment equipped with a cover and vented through a closed-vent system to a control device, the owner or operator must prepare and maintain the records specified in subsection (e) of this Section.
- d) The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of Section 724.986 must prepare and maintain records that include the following information:

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- 1) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under appendix B to 40 CFR 52.741 (VOM Measurement Techniques for Capture Efficiency), incorporated by reference in 35 Ill. Adm. Code 720.111(b).
 - 2) Records required for the closed-vent system and control device in accordance with the requirements of subsection (e) of this Section.
- e) The owner or operator using a closed-vent system and control device in accordance with the requirements of Section 724.987 must prepare and maintain records that include the following information:
- 1) Documentation for the closed-vent system and control device that includes the following:
 - A) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in subsection (e)(1)(B) of this Section or by performance tests as specified in subsection (e)(1)(C) of this Section when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.
 - B) If a design analysis is used, then design documentation, as specified in Section 724.935(b)(4). The documentation must include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with Section 724.935(b)(4)(C) and certification by the owner or operator that the control equipment meets the applicable specifications.
 - C) If performance tests are used, then a performance test plan as specified in Section 724.935(b)(3) and all test results.
 - D) Information as required by Section 724.935(c)(1) and Section 724.935(c)(2), as applicable.

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- E) An owner or operator must record, on a semiannual basis, the information specified in subsections (e)(1)(E)(i) and (e)(1)(E)(ii) of this Section for those planned routine maintenance operations that would require the control device not to meet the requirements of Section 724.987(c)(1)(A), (c)(1)(B), or (c)(1)(C) of this Section, as applicable.
- i) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next six-month period. This description must include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.
 - ii) A description of the planned routine maintenance that was performed for the control device during the previous six-month period. This description must include the type of maintenance performed and the total number of hours during those six months that the control device did not meet the requirements of Section 724.987(c)(1)(A), (c)(1)(B), or (c)(1)(C), as applicable, due to planned routine maintenance.
- F) An owner or operator must record the information specified in subsections (e)(1)(F)(i) through (e)(1)(F)(iii) of this Section for those unexpected control device system malfunctions that would require the control device not to meet the requirements of Section 724.987 (c)(1)(A), (c)(1)(B), or (c)(1)(C) of this Section, as applicable.
- i) The occurrence and duration of each malfunction of the control device system.
 - ii) The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.

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- iii) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.
- G) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with Section 724.987(c)(3)(B).
- f) The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of Section 724.982(c) must prepare and maintain the following records, as applicable:
 - 1) For tanks, surface impoundments, or containers exempted under the hazardous waste organic concentration conditions specified in Section 724.982(c)(1) or (c)(2)(A) through ~~(e)(2)(E)~~ (c)(2)(F), the owner or operator must record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator must record the date, time, and location that each waste sample is collected in accordance with the applicable requirements of Section 724.983.
 - 2) For tanks, surface impoundments, or containers exempted under the provisions of Section 724.982(c)(2)(G) or (c)(2)(H), the owner or operator must record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.
- g) An owner or operator designating a cover as “unsafe to inspect and monitor” pursuant to Section 724.984(l) or Section 724.985(g) must record in a log that is kept in the facility operating record the following information: the identification numbers for waste management units with covers that are designated as “unsafe to inspect and monitor,” the explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover.
- h) The owner or operator of a facility that is subject to this Subpart CC and to the control device standards in federal subpart VV of 40 CFR 60 (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry) or subpart V of 40 CFR 61 (National Emission Standard for Equipment Leaks (Fugitive Emission Sources)), each incorporated by

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reference in 35 Ill. Adm. Code 720.111(b), may elect to demonstrate compliance with the applicable Sections of this Subpart CC by documentation either pursuant to this Subpart CC, or pursuant to the provisions of subpart VV of 40 CFR 60 or subpart V of 40 CFR 61, to the extent that the documentation required by 40 CFR 60 or 61 duplicates the documentation required by this Section.

- i) For each tank or container not using air emission controls specified in Sections 724.984 through 724.987 in accordance with the conditions specified in Section 724.980(d), the owner or operator must record and maintain the following information:
 - 1) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in Section 724.980(d)(1).
 - 2) A description of how the hazardous waste containing the organic peroxide compounds identified pursuant to subsection (i)(1) of this Section are managed at the facility in tanks and containers. This description must include the following information:
 - A) For the tanks used at the facility to manage this hazardous waste, sufficient information must be provided to describe the following for each tank: a facility identification number for the tank, the purpose and placement of this tank in the management train of this hazardous waste, and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.
 - B) For containers used at the facility to manage this hazardous waste, sufficient information must be provided to describe each tank container: a facility identification number for the container or group of containers, the purpose and placement of this container or group of containers in the management train of this hazardous waste, and the procedures used to ultimately dispose of the hazardous waste managed in the containers.
 - 3) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified pursuant to subsection (i)(1) of this Section in the tanks or containers identified pursuant to subsection (i)(2) of this Section would create an undue safety hazard if the air emission controls specified in Sections 724.984 through 724.987 were

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installed and operated on these waste management units. This explanation must include the following information:

- A) For tanks used at the facility to manage this hazardous waste, sufficient information must be provided to explain the following: how use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under this Subpart CC, would not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.
 - B) For containers used at the facility to manage this hazardous waste, sufficient information must be provided to explain the following: how use of the required air emission controls on the ~~tanks~~ containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during management of this hazardous waste in the containers; and why installation of safety devices on the required air emission controls, as allowed under this Subpart CC, would not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.
- j) For each hazardous waste management unit not using air emission controls specified in Sections 724.984 through 724.987 in accordance with the requirements of Section 724.980(b)(7), the owner and operator must record and maintain the following information:
- 1) The certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable federal Clean Air Act regulation codified under 40 CFR 60, 61, or 63.

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- 2) An identification of the specific federal requirements codified under 40 CFR 60, 61, or 63 with which the waste management unit is in compliance.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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- 1) Heading of the Part: Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 2) Code citation: 35 Ill. Adm. Code 725
- 3)

<u>Section numbers:</u>	<u>Proposed action:</u>
725.984	Amend
725.985	Amend
725.987	Amend
725.990	Amend
- 4) Statutory authority: 415 ILCS 5/7.2, 22.4, and 27.
- 5) Effective date of amendments: OCT 24 2013
- 6) Does this rulemaking contain an automatic repeal date? No.
- 7) Do these amendments contain incorporations by reference? No.
- 8) Statement of availability: The adopted amendments, a copy of the Board's opinion and order adopted September 5, 2013 in docket R13-15, and all materials incorporated by reference are on file at the Board's principal office and are available for public inspection and copying.
- 9) Notice of proposal published in the Illinois Register: July 5, 2013, 37 Ill. Reg. 9290.
- 10) Has JCAR issued a statement of objections to these rules? No. Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).
- 11) A table that appears in the Board's opinion and order of September 5, 2013 in docket R13-15 summarizes the differences between the amendments adopted in that order and those proposed by the Board in an opinion and order dated June 20, 2013, in docket R13-15.

The differences are limited to minor corrections to the text. The changes are intended to have no substantive effect. The intent is to correct the text without deviation from the substance of the federal amendments on which this proceeding is based.

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- 12) Have all the changes agreed upon by the Board and JCAR been made as indicated in the agreements issued by JCAR? Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by JCAR.

Since the Notices of Proposed Amendments appeared in the July 5, 2013 issue of the *Illinois Register*, the Board received a number of suggestions for revisions from JCAR. The Board evaluated each suggestion and incorporated a number of changes into the text as a result, as detailed in the opinion and order of September 5, 2013 in docket R13-15, as indicated in item 11 above. See the September 5, 2013 opinion and order in docket R13-15 for additional details on the JCAR suggestions and the Board actions with regard to each. One table in that opinion itemizes the changes made in response to various suggestions. Another table indicates JCAR suggestions not incorporated into the text, with a brief explanation for each.

- 13) Will these amendments replace emergency amendments currently in effect? No.
- 14) Are there any other amendments pending on this Part? No.
- 15) Summary and purpose of amendments: The following briefly describes the subjects and issues involved in docket R13-15 rulemaking of which the amendments to Part 725 are a single segment. Also affected is 35 Ill. Adm. Code 703, 704, 720, 722, 724, 726, 727, 728, and 739, which is covered by separate notices in this issue of the *Illinois Register*. A comprehensive description is contained in the Board's opinion and order of June 20, 2013, proposing amendments in docket R13-15, which opinion and order is available from the address below.

This proceeding updates the Illinois Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste rules to incorporate corrections to various provisions that the United States Environmental Protection Agency (USEPA) suggested. The proceeding further updates the edition of the *Code of Federal Regulations* provisions that are incorporated by reference. The Board further makes a number of corrections to various provisions that the Board has determined are needed.

Specifically, the amendments to Part 725 implement a correction suggested by USEPA and make corrections that the Board has determined are needed. The Board's opinion and order of September 5, 2013 in docket R13-15 discusses the more substantial corrections made in the text. Tables that appear in that opinion and order list all of the various corrections and amendments included in this proceeding. Persons interested in

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the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Tables appear in the Board's opinion and order of September 5, 2013 in docket R13-15 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Section 22.4 of the Environmental Protection Act [415 ILCS 5/22.4] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

- 16) Information and questions regarding these adopted amendments shall be directed to:
Please reference consolidated docket R13-15 and direct inquiries to the following person:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago, IL 60601

312-814-6924

Request copies of the Board's opinion and order of September 5, 2013 at 312-814-3620. Alternatively, you may obtain a copy of the Board's opinion and order from the Internet at <http://www.ipcb.state.il.us>.

The full text of the adopted amendments begins on the next page:

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TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER c: HAZARDOUS WASTE OPERATING REQUIREMENTS

PART 725
INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF
HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL
FACILITIES

SUBPART A: GENERAL PROVISIONS

Section	
725.101	Purpose, Scope, and Applicability
725.102	Electronic Reporting
725.104	Imminent Hazard Action

SUBPART B: GENERAL FACILITY STANDARDS

Section	
725.110	Applicability
725.111	USEPA Identification Number
725.112	Required Notices
725.113	General Waste Analysis
725.114	Security
725.115	General Inspection Requirements
725.116	Personnel Training
725.117	General Requirements for Ignitable, Reactive, or Incompatible Wastes
725.118	Location Standards
725.119	Construction Quality Assurance Program

SUBPART C: PREPAREDNESS AND PREVENTION

Section	
725.130	Applicability
725.131	Maintenance and Operation of Facility
725.132	Required Equipment
725.133	Testing and Maintenance of Equipment
725.134	Access to Communications or Alarm System
725.135	Required Aisle Space
725.137	Arrangements with Local Authorities

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SUBPART D: CONTINGENCY PLAN AND EMERGENCY PROCEDURES

Section

- 725.150 Applicability
- 725.151 Purpose and Implementation of Contingency Plan
- 725.152 Content of Contingency Plan
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725.APPENDIX F	Compounds with Henry's Law Constant Less Than 0.1 Y/X (at 25°C)

AUTHORITY: Implementing Sections 7.2 and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 22.4, and 27].

SOURCE: Adopted in R81-22 at 5 Ill. Reg. 9781, effective May 17, 1982; amended and codified in R81-22 at 6 Ill. Reg. 4828, effective May 17, 1982; amended in R82-18 at 7 Ill. Reg. 2518, effective February 22, 1983; amended in R82-19 at 7 Ill. Reg. 14034, effective October 12, 1983; amended in R84-9 at 9 Ill. Reg. 11869, effective July 24, 1985; amended in R85-22 at 10 Ill. Reg. 1085, effective January 2, 1986; amended in R86-1 at 10 Ill. Reg. 14069, effective August 12, 1986; amended in R86-28 at 11 Ill. Reg. 6044, effective March 24, 1987; amended in R86-46 at 11 Ill. Reg. 13489, effective August 4, 1987; amended in R87-5 at 11 Ill. Reg. 19338, effective November 10, 1987; amended in R87-26 at 12 Ill. Reg. 2485, effective January 15, 1988; amended in R87-39 at 12 Ill. Reg. 13027, effective July 29, 1988; amended in R88-16 at 13 Ill. Reg. 437, effective December 28, 1988; amended in R89-1 at 13 Ill. Reg. 18354, effective November 13, 1989; amended in R90-2 at 14 Ill. Reg. 14447, effective August 22, 1990; amended in R90-10 at 14 Ill. Reg. 16498, effective September 25, 1990; amended in R90-11 at 15 Ill. Reg. 9398, effective June 17, 1991; amended in R91-1 at 15 Ill. Reg. 14534, effective October 1, 1991; amended in R91-13 at 16 Ill. Reg. 9578, effective June 9, 1992; amended in R92-1 at 16 Ill. Reg. 17672, effective November 6, 1992; amended in R92-10 at 17 Ill. Reg. 5681, effective March 26, 1993; amended in R93-4 at 17 Ill. Reg. 20620, effective November 22, 1993; amended in R93-16 at 18 Ill. Reg. 6771, effective April 26, 1994; amended in R94-7 at 18 Ill. Reg. 12190, effective July 29, 1994; amended in R94-17 at 18 Ill. Reg. 17548, effective November 23, 1994; amended in R95-6 at 19 Ill. Reg. 9566, effective June 27, 1995; amended in R95-20 at 20 Ill. Reg. 11078, effective August 1, 1996; amended in R96-10/R97-3/R97-5 at 22 Ill. Reg. 369, effective December 16, 1997; amended in R98-12 at 22 Ill. Reg. 7620, effective April 15, 1998; amended in R97-21/R98-3/R98-5 at 22 Ill. Reg. 17620, effective September 28, 1998; amended in R98-21/R99-2/R99-7 at 23 Ill. Reg. 1850, effective January 19, 1999; amended in R99-15 at 23 Ill. Reg. 9168, effective July 26, 1999; amended in R00-5 at 24 Ill. Reg. 1076, effective January 6, 2000; amended in R00-13 at 24 Ill. Reg. 9575, effective June 20, 2000; amended in R03-7 at 27 Ill. Reg. 4187, effective February 14, 2003; amended in R05-8 at 29 Ill. Reg. 6028, effective April 13, 2005; amended in R05-2 at 29 Ill. Reg. 6389, effective April 22, 2005; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 3460, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 1031, effective December 20, 2006; amended in R07-5/R07-14 at 32 Ill. Reg. 12566, effective July 14, 2008; amended in R09-3 at 33

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Ill. Reg. 1155, effective December 30, 2008; amended in R09-16/R10-4 at 34 Ill. Reg. 18890, effective November 12, 2010; amended in R11-2/R11-16 at 35 Ill. Reg. 18052, effective October 14, 2011; amended in R13-15 at 37 Ill. Reg. _____, effective _____.

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Section 725.984 Waste Determination Procedures

- a) Waste determination procedure for volatile organic (VO) concentration of a hazardous waste at the point of waste origination.
 - 1) An owner or operator must determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under the provisions of Section 725.983(c)(1) from using air emission controls in accordance with standards specified in Section 725.985 through Section 725.988, as applicable to the waste management unit.
 - A) An owner or operator must make an initial determination of the average VO concentration of the waste stream before the first time any portion of the material in the hazardous waste stream is placed in a waste management unit exempted under the provisions of Section 725.983(c)(1) from using air emission controls. Thereafter, an owner or operator must make an initial determination of the average VO concentration of the waste stream for each averaging period that a hazardous waste is managed in the unit.
 - B) An owner or operator must perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the VO concentration limits specified in Section 725.983(c)(1).
 - 2) For a waste determination that is required by subsection (a)(1) of this Section, the average VO concentration of a hazardous waste at the point of waste origination must be determined using either direct measurement, as specified in subsection (a)(3) of this Section, or by knowledge of the waste, as specified in subsection (a)(4) of this Section.

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- 3) Direct measurement to determine average VO concentration of a hazardous waste at the point of waste origination.
 - A) Identification. The owner or operator must identify and record the point of waste origination for the hazardous waste.
 - B) Sampling. Samples of the hazardous waste stream must be collected at the point of waste origination in such a manner that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.
 - i) The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis must be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but must not exceed one year.
 - ii) A sufficient number of samples, but no fewer than four samples, must be collected for a hazardous waste determination. All of the samples for a given waste determination must be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.
 - iii) All samples must be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan must describe the procedure by which representative samples of the hazardous waste stream are collected so that a

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minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan must be maintained on-site in the facility operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in Method 25D (Determination of the Volatile Organic Concentration of Waste Samples) in appendix A to 40 CFR 60 (Test Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b).

- iv) Sufficient information, as specified in the “site sampling plan” required under subsection (a)(3)(B)(iii) of this Section, must be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the source or process generating the hazardous waste represented by the samples.
- C) Analysis. Each collected sample must be prepared and analyzed in accordance with Method 25D in appendix A to 40 CFR 60 for the total concentration of volatile organic constituents or using one or more methods when the individual organic compound concentrations are identified and summed and the summed waste concentration accounts for and reflects all organic compounds in the waste with Henry’s law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m³) at 25° C (77° F). At the owner’s or operator’s discretion, the owner or operator may adjust test data measured by any appropriate method to discount any contribution to the total volatile organic concentration that is a result of including a compound with a Henry’s law constant value of less than 0.1 Y/X at 25° C (77° F). To adjust these data, the measured concentration of each individual chemical constituent contained in the waste is multiplied by the constituent-specific adjustment factor (f_{m25D}). If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry’s law constant value greater than or equal to 0.1 Y/X at 25° C contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be

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obtained by contacting the USEPA, Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Other test methods may be used if they meet the requirements in subsection (a)(3)(C)(i) or (a)(3)(C)(ii) of this Section and provided the requirement is met to reflect all organic compounds in the waste with Henry's law constant values greater than or equal to 0.1 Y/X (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m³) at 25° C.

- i) Any USEPA standard method that has been validated in accordance with appendix D to 40 CFR 63 (Alternative Validation Procedure for EPA Waste and Wastewater Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b); or
- ii) Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or 5.3, and the corresponding calculations in Section 6.1 or 6.3, of Method 301 (Field Validation of Pollutant Measurement Methods from Various Waste Media) in appendix A to 40 CFR 63 (Test Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b). The data are acceptable if they meet the criteria specified in Section 6.1.5 or 6.3.3 of Method 301. If correction is required under Section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

D) Calculations.

- i) The average VO concentration (\bar{C}) on a mass-weighted basis must be calculated by using the results for all waste determinations conducted in accordance with subsections (a)(3)(B) and (a)(3)(C) of this Section and the following equation:

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^n (Q_i \times C_i)$$

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Where:

- \bar{C} = Average VO concentration of the hazardous waste at the point of waste origination on a mass-weighted basis, in ppmw
- i = Individual waste determination "i" of the hazardous waste
- n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed one year)
- Q_i = Mass quantity of the hazardous waste stream represented by C_i , in kg/hr
- Q_T = Total mass quantity of the hazardous waste during the averaging period, in kg/hr
- C_i = Measured VO concentration of waste determination "i," as determined in accordance with subsection (a)(3)(C) of this Section (i.e., the average of the four or more samples specified in subsection (a)(3)(B)(ii) of this Section), in ppmw.

ii) For the purpose of determining C_i , for individual waste samples analyzed in accordance with subsection (a)(3)(C) of this Section, the owner or operator must account for VO concentrations determined to be below the limit of detection of the analytical method by using the VO concentration determined according to subsection (a)(3)(G) of this Section.

E) Provided that the test method is appropriate for the waste as required under subsection (a)(3)(C) of this Section, the Agency must determine compliance based on the test method used by the owner or operator as recorded pursuant to Section 725.990(f)(1).

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- F) The quality assurance program elements required under subsections (a)(3)(C)(vi) and (a)(3)(C)(vii) of this Section are as follows:
- i) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.
 - ii) Measurement of the overall accuracy and precision of the specific procedures.

BOARD NOTE: Subsections (a)(3)(F)(i) and (a)(3)(F)(ii) are derived from 40 CFR 265.984(a)(3)(iii)(F)(1), (a)(3)(iii)(F)(2), (a)(3)(iii)(G)(1), and (a)(3)(iii)(G)(2), which the Board has codified here to comport with Illinois Administrative Code format requirements.

- G) VO concentrations below the limit of detection must be considered to be as follows:
- i) If Method 25D is used for the analysis, the VO concentration must be considered to be one-half the blank value determined in the method at Section 4.4 of Method 25D.
 - ii) If any other analytical method is used, the VO concentration must be considered to be one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant value at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m³) at 25° C.

BOARD NOTE: Subsections (a)(3)(G)(i) and (a)(3)(G)(ii) are derived from 40 CFR 265.984(a)(3)(iv)(A)(1) and (a)(3)(iv)(A)(2), which the Board has codified here to comport with Illinois Administrative Code format requirements.

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- 4) Use of owner or operator knowledge to determine average VO concentration of a hazardous waste at the point of waste origination.
 - A) Documentation must be prepared that presents the information used as the basis for the owner's or operator's knowledge of the hazardous waste stream's average VO concentration. Examples of information that may be used as the basis for knowledge include the following: material balances for the source or process generating the hazardous waste stream; constituent-specific chemical test data for the hazardous waste stream from previous testing that are still applicable to the current waste stream; previous test data for other locations managing the same type of waste stream; or other knowledge based on information included in manifests, shipping papers, or waste certification notices.
 - B) If test data are used as the basis for knowledge, then the owner or operator must document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VO concentration. For example, an owner or operator may use organic concentration test data for the hazardous waste stream that are validated in accordance with Method 301 as the basis for knowledge of the waste.
 - C) An owner or operator using chemical constituent-specific concentration test data as the basis for knowledge of the hazardous waste may adjust the test data to the corresponding average VO concentration value that would have been obtained had the waste samples been analyzed using Method 25D. To adjust these data, the measured concentration for each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}).
 - D) In the event that the Agency and the owner or operator disagree on a determination of the average VO concentration for a hazardous waste stream using knowledge, then the results from a determination of average VO concentration using direct measurement, as specified in subsection (a)(3) of this Section, must be used to establish compliance with the applicable requirements of this Subpart CC. The Agency may perform or

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request that the owner or operator perform this determination using direct measurement. The owner or operator may choose one or more appropriate methods to analyze each collected sample in accordance with the requirements of subsection (a)(3)(C) of this Section.

- b) Waste determination procedures for treated hazardous waste.
 - 1) An owner or operator must perform the applicable waste determination for each treated hazardous waste placed in a waste management unit exempted under the provisions of Section 725.983(c)(2)(A) through (c)(2)(F) from using air emission controls in accordance with the standards specified in Sections 725.985 through 725.988, as applicable to the waste management unit.
 - A) An owner or operator must make an initial determination of the average VO concentration of the waste stream before the first time any portion of the material in the treated waste stream is placed in the waste management unit exempt under Section 725.983(c)(2), (c)(3), or (c)(4) from using air emission controls. Thereafter, an owner or operator must update the information used for the waste determination at least once every 12 months following the date of the initial waste determination.
 - B) An owner or operator must perform a new waste determination whenever changes to the process generating or treating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to such a level that the applicable treatment conditions specified in Section 725.983 (c)(2), (c)(3), or (c)(4) are not achieved.
 - 2) The owner or operator must designate and record the specific provision in Section 725.983(c)(2) under which the waste determination is being performed. The waste determination for the treated hazardous waste must be performed using the applicable procedures specified in subsections (b)(3) through (b)(9) of this Section.
 - 3) Procedure to determine the average VO concentration of a hazardous waste at the point of waste treatment.

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- A) Identification. The owner or operator must identify and record the point of waste treatment for the hazardous waste.
- B) Sampling. Samples of the hazardous waste stream must be collected at the point of waste treatment in such a manner that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.
 - i) The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis must be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but must not exceed one year.
 - ii) A sufficient number of samples, but no fewer than four samples, must be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination must be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the hazardous waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the process generating or treating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.
 - iii) All samples must be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan must describe the procedure by which representative samples of the hazardous waste stream are collected so that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling

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plan must be maintained on-site in the facility operating records. An example of an acceptable sample collection and handling procedures for a total organic constituent concentration may be found in Method 25D.

- iv) Sufficient information, as specified in the “site sampling plan” required under subsection (a)(3)(B)(iii) of this Section, must be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the process treating the hazardous waste represented by the samples.
- C) Analysis. Each collected sample must be prepared and analyzed in accordance with Method 25D for the total concentration of volatile organic constituents or using one or more methods when the individual organic compound concentrations are identified and summed, and the summed waste concentration accounts for and reflects all organic compounds in the waste with Henry’s law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m³) at 25°C (75° F). When the owner or operator is making a waste determination for a treated hazardous waste that is to be compared to an average VO concentration at the point of waste origination or the point of waste entry to the treatment system, to determine if the conditions of 35 Ill. Adm. Code 724.982(c)(2)(A) through (c)(2)(F) or Section 725.983(c)(2)(A) through (c)(2)(F) are met, then the waste samples must be prepared and analyzed using the same method or methods as were used in making the initial waste determinations at the point of waste origination or at the point of entry to the treatment system. At the owner’s or operator’s discretion, the owner or operator may adjust test data obtained by any appropriate method to discount any contribution to the total volatile organic concentration that is a result of including a compound with a Henry’s law constant value less than 0.1 Y/X at 25° C. To adjust these data, the measured concentration of each individual chemical constituent contained in the waste is multiplied by the constituent-specific adjustment factor (f_{m25D}). If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry’s law constant value greater than

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or equal to 0.1 Y/X at 25° C contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the USEPA, Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. Other test methods may be used if they meet the requirements in subsection (a)(3)(C)(i) or (a)(3)(C)(ii) of this Section and provided the requirement is met to reflect all organic compounds in the waste with Henry's law constant values greater than or equal to 0.1 Y/X (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m³) at 25° C.

- i) Any USEPA standard method that has been validated in accordance with appendix D to 40 CFR 63, incorporated by reference in 35 Ill. Adm. Code 720.111(b); or
 - ii) Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or 5.3, and the corresponding calculations in Section 6.1 or 6.3, of Method 301 in appendix A to 40 CFR 63, incorporated by reference in 35 Ill. Adm. Code 720.111(b). The data are acceptable if they meet the criteria specified in Section 6.1.5 or 6.3.3 of Method 301. If correction is required under Section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.
- D) Calculations. The average VO concentration (\bar{C}) on a mass-weighted basis must be calculated by using the results for all samples analyzed in accordance with subsection (b)(3)(C) of this Section and the following equation:

$$\bar{C} = \frac{1}{Q_T} \times \sum_{i=1}^n (Q_i \times C_i)$$

Where:

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- \bar{C} = Average VO concentration of the hazardous waste at the point of waste treatment on a mass-weighted basis, in ppmw
- i = Individual determination "i" of the hazardous waste
- n = Total number of waste determinations of the hazardous waste collected for the averaging period (not to exceed one year)
- Q_i = Mass quantity of the hazardous waste stream represented by C_i , in kg/hr
- Q_T = Total mass quantity of hazardous waste during the averaging period, in kg/hr
- C_i = Measured VO concentration of waste determinations "i," as determined in accordance with the requirements of subsection (b)(3)(C) of this Section (i.e., the average of the four or more samples specified in subsection (b)(3)(B)(ii) of this Section), in ppmw.

- E) Provided that the test method is appropriate for the waste as required under subsection (b)(3)(C) of this Section, compliance must be determined based on the test method used by the owner or operator as recorded pursuant to Section 725.990(f)(1).
- 4) Procedure to determine the exit concentration limit (C_t) for a treated hazardous waste.
- A) The point of waste origination for each hazardous waste treated by the process at the same time must be identified.
- B) If a single hazardous waste stream is identified in subsection (b)(4)(A) of this Section, then the exit concentration limit (C_t) must be 500 ppmw.
- C) If more than one hazardous waste stream is identified in subsection (b)(4)(A) of this Section, then the average VO concentration of

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each hazardous waste stream at the point of waste origination must be determined in accordance with the requirements of subsection (a) of this Section. The exit concentration limit (C_t) must be calculated by using the results determined for each individual hazardous waste stream and the following equation:

$$C_t = \frac{\sum_{x=1}^m (Q_x \bar{C}_x) + \sum_{y=1}^n (Q_y \times 500 \text{ppmw})}{\sum_{x=1}^m Q_x + \sum_{y=1}^n Q_y}$$

Where:

C_t = Exit concentration limit for treated hazardous waste, in ppmw

x = Individual hazardous waste stream "x" that has an average VO concentration less than 500 ppmw at the point of waste origination, as determined in accordance with the requirements of subsection (a) of this Section

y = Individual hazardous waste stream "y" that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination, as determined in accordance with the requirements of subsection (a) of this Section

m = Total number of "x" hazardous waste streams treated by process

n = Total number of "y" hazardous waste streams treated by process

Q_x = Annual mass quantity of hazardous waste stream "x," in kg/yr

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Q_y = Annual mass quantity of hazardous waste stream
“y,” in kg/yr

\bar{C}_x = Average VO concentration of hazardous waste
stream “x” at the point of waste origination, as
determined in accordance with the requirements of
subsection (a) of this Section, in ppmw.

- 5) Procedure to determine the organic reduction efficiency (R) for a treated hazardous waste.
- A) The organic reduction efficiency (R) for a treatment process must be determined based on results for a minimum of three consecutive runs.
- B) All hazardous waste streams entering the process and all hazardous waste streams exiting the treatment process must be identified. The owner or operator must prepare a sampling plan for measuring these streams that accurately reflects the retention time of the hazardous waste in the process.
- C) For each run, information must be determined for each hazardous waste stream identified in subsection (b)(5)(B) of this Section, using the following procedures:
- i) The mass quantity of each hazardous waste stream entering the process (Q_b) and the mass quantity of each hazardous waste stream exiting the process (Q_a) must be determined; and
- ii) The average VO concentration at the point of waste origination of each hazardous waste stream entering the process (C_b) during the run must be determined in accordance with the requirements of subsection (a)(3) of this Section. The average VO concentration at the point of waste treatment of each hazardous waste stream exiting the process (C_a) during the run must be determined in accordance with the requirements of subsection (b)(3) of this Section.

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- D) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) must be calculated by using the results determined in accordance with subsection (b)(5)(C) of this Section and the following equations:

$$E_b = \frac{1}{10^6} \sum_{j=1}^m (Q_{bj} \times \overline{C_{bj}})$$

$$E_a = \frac{1}{10^6} \sum_{j=1}^m (Q_{aj} \times \overline{C_{aj}})$$

Where:

E_a = Waste volatile organic mass flow exiting the process, in kg/hr

E_b = Waste volatile organic mass flow entering the process, in kg/hr

m = Total number of runs (at least 3);

j = Individual run "j"

Q_{bj} = Mass quantity of hazardous waste entering the process during run "j," in kg/hr

Q_{aj} = Average mass quantity of waste exiting the process during run "j," in kg/hr

$\overline{C_{aj}}$ = Average VO concentration of hazardous waste exiting the process during run "j," as determined in accordance with the requirements of subsection (b)(3) of this Section, in ppmw

$\overline{C_{bj}}$ = Average VO concentration of hazardous waste entering the process during run "j," as determined in

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accordance with the requirements of subsection 725.984 (a)(3) of this Section, in ppmw.

- E) The organic reduction efficiency of the process must be calculated by using the results determined in accordance with subsection (b)(5)(D) of this Section and the following equation:

$$R = \frac{E_b - E_a}{E_b} \times 100\%$$

Where:

R = Organic reduction efficiency, in percent

E_b = Waste volatile organic mass flow entering the process, as determined in accordance with the requirements of subsection (b)(5)(D) of this Section, in kg/hr

E_a = Waste volatile organic mass flow exiting the process, as determined in accordance with the requirements of subsection (b)(5)(D) of this Section, in kg/hr.

- 6) Procedure to determine the organic biodegradation efficiency (R_{bio}) for a treated hazardous waste.

A) The fraction of organics biodegraded (F_{bio}) must be determined using the procedure specified in appendix C to 40 CFR 63 (Determination of the Fraction Biodegraded (F_{bio}) in a Biological Treatment Unit), incorporated by reference in 35 Ill. Adm. Code 720.111(b).

B) The organic biodegradation efficiency (R_{bio}) must be calculated by using the following equation:

$$R_{bio} = F_{bio} \times 100\%$$

Where:

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R_{bio} = Organic biodegradation efficiency, in percent

F_{bio} = Fraction of organic biodegraded, as determined in accordance with the requirements of subsection (b)(6)(A) of this Section.

- 7) Procedure to determine the required organic mass removal rate (RMR) for a treated hazardous waste.
- A) All of the hazardous waste streams entering the treatment process must be identified.
 - B) The average VO concentration of the hazardous waste stream at the point of waste origination must be determined in accordance with the requirements of subsection (a) of this Section.
 - C) For each individual hazardous waste stream that has an average volatile organic concentration equal to or greater than 500 ppmw at the point of waste origination, the average volumetric flow rate of hazardous waste and the density of the hazardous waste stream at the point of waste origination must be determined.
 - D) The required organic mass removal rate (RMR) for the hazardous waste must be calculated by using the average VO concentration, average volumetric flow rate, and density determined for each individual hazardous waste stream, and the following equation:

$$RMR = \sum_{y=1}^n \left[V_y \times k_y \times \frac{(\bar{C}_y - 500\text{ppmw})}{10^6} \right]$$

Where:

RMR = Required organic mass removal rate, in kg/hr

y = Individual hazardous waste stream "y" that has an average volatile organic (VO) concentration equal to or greater than 500 ppmw at the point of waste origination, as determined in accordance with the requirements of subsection (a) of this Section

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n = Total number of "y" hazardous waste streams treated by process

V_y = Average volumetric flow rate of hazardous waste stream "y" at the point of waste origination, in m^3/hr

k_y = Density of hazardous waste stream "y," in kg/m^3

\bar{C}_y = Average VO concentration of hazardous waste stream "y" at the point of waste origination, as determined in accordance with the requirements of subsection (a) of this Section, in ppmw.

- 8) Procedure to determine the actual organic mass removal rate (MR) for a treated hazardous waste.
- A) The actual organic mass removal rate (MR) must be determined based on results for a minimum of three consecutive runs. The sampling time for each run must be one hour.
 - B) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) must be determined in accordance with the requirements of subsection (b)(5)(D) of this Section.
 - C) The actual organic mass removal rate (MR) must be calculated by using the mass flow rate determined in accordance with the requirements of subsection (b)(8)(B) of this Section and the following equation:

$$MR = E_b - E_a$$

Where:

MR = Actual organic mass removal rate, in kg/hr

E_b = Waste volatile organic mass flow entering the process, as determined in accordance with the

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requirements of subsection (b)(5)(D) of this Section, in kg/hr

E_a = Waste volatile organic mass flow exiting the process, as determined in accordance with the requirements of subsection (b)(5)(D) of this Section, in kg/hr.

- 9) Procedure to determine the actual organic mass biodegradation rate (MR_{bio}) for a treated hazardous waste.
- A) The actual organic mass biodegradation rate (MR_{bio}) must be determined based on results for a minimum of three consecutive runs. The sampling time for each run must be one hour.
 - B) The waste organic mass flow entering the process (E_b) must be determined in accordance with the requirements of subsection (b)(5)(D) of this Section.
 - C) The fraction of organic biodegraded (F_{bio}) must be determined using the procedure specified in appendix C to 40 CFR 63 (Determination of the Fraction Biodegraded (F_{bio}) in a Biological Treatment Unit), incorporated by reference in 35 Ill. Adm. Code 720.111(b).
 - D) The actual organic mass biodegradation rate (MR_{bio}) must be calculated by using the mass flow rates and fraction of organic biodegraded, as determined in accordance with the requirements of subsections (b)(9)(B) and (b)(9)(C) of this Section, respectively, and the following equation:

$$MR_{bio} = E_b \times F_{bio}$$

Where:

MR_{bio} = Actual organic mass biodegradation rate, in kg/hr

E_b = Waste organic mass flow entering the process, as determined in accordance with the requirements of subsection (b)(5)(D) of this Section, in kg/hr

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F_{bio} = Fraction of organic biodegraded, as determined in accordance with the requirements of subsection (b)(9)(C) of this Section.

- c) Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.
- 1) An owner or operator must determine the maximum organic vapor pressure for each hazardous waste placed in a tank using Tank Level 1 controls in accordance with standards specified in Section 725.985(c).
 - 2) An owner or operator must use either direct measurement, as specified in subsection (c)(3) of this Section, or knowledge of the waste, as specified by subsection (c)(4) of this Section, to determine the maximum organic vapor pressure that is representative of the hazardous waste composition stored or treated in the tank.
 - 3) Direct measurement to determine the maximum organic vapor pressure of a hazardous waste.
 - A) Sampling. A sufficient number of samples must be collected to be representative of the waste contained in the tank. All samples must be conducted and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan must describe the procedure by which representative samples of the hazardous waste are collected so that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan must be maintained on-site in the facility operating records. An example of acceptable sample collection and handling procedures may be found in Method 25D.
 - B) Analysis. Any appropriate one of the following methods may be used to analyze the samples and compute the maximum organic vapor pressure of the hazardous waste:
 - i) Method 25E (Determination of Vapor Phase Organic Concentration in Waste Samples) in appendix A to 40 CFR

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- 60 (Test Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b);
- ii) Methods described in API publication 2517 (Evaporative Loss from External Floating-Roof Tanks), incorporated by reference in 35 Ill. Adm. Code 720.111(a);
 - iii) Methods obtained from standard reference texts;
 - iv) ASTM Method D 2879-92 (Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope), incorporated by reference in 35 Ill. Adm. Code 720.111(a);
or
 - v) Any other method approved by the Agency.
- 4) Use of knowledge to determine the maximum organic vapor pressure of the hazardous waste. Documentation must be prepared and recorded that presents the information used as the basis for the owner's or operator's knowledge that the maximum organic vapor pressure of the hazardous waste is less than the maximum vapor pressure limit listed in Section 725.985(b)(1)(A) for the applicable tank design capacity category. An example of information that may be used is documentation that the hazardous waste is generated by a process for which at other locations it previously has been determined by direct measurement that the waste maximum organic vapor pressure is less than the maximum vapor pressure limit for the appropriate tank design capacity category.
- d) The procedure for determining no detectable organic emissions for the purpose of complying with this Subpart CC is as follows:
- 1) The test must be conducted in accordance with the procedures specified in Method 21 (Determination of Volatile Organic Compound Leaks) of appendix A to 40 CFR 60 (Test Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b). Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices must be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to, any of the following: the interface of the cover and its foundation

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mounting, the periphery of any opening on the cover and its associated closure device, and the sealing seat interface on a spring-loaded pressure relief valve.

- 2) The test must be performed when the unit contains a hazardous waste having an organic concentration representative of the range of concentrations for the hazardous waste expected to be managed in the unit. During the test, the cover and closure devices must be secured in the closed position.
- 3) The detection instrument must meet the performance criteria of Method 21, except the instrument response factor criteria in Section 3.1.2(a) of Method 21 must be for the average composition of the organic constituents in the hazardous waste placed in the waste management unit, not for each individual organic constituent.
- 4) The detection instrument must be calibrated before use on each day of its use by the procedures specified in Method 21.
- 5) Calibration gases must be as follows:
 - A) Zero air (less than 10 ppmv hydrocarbon in air), and
 - B) A mixture of methane or n-hexane in air at a concentration of approximately, but less than, 10,000 ppmv methane or n-hexane.
- 6) The background level must be determined according to the procedures in Method 21.
- 7) Each potential leak interface must be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface must be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet must be placed at approximately the center of the exhaust area to the atmosphere.

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- 8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level must be compared with the value of 500 ppmv except when monitoring a seal around a rotating shaft that passes through a cover opening, in which case the comparison must be as specified in subsection (d)(9) of this Section. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.
- 9) For the seals around a rotating shaft that passes through a cover opening, the arithmetic difference between the maximum organic concentration indicated by the instrument and the background level must be compared with the value of 10,000 ppmw. If the difference is less than 10,000 ppmw, then the potential leak interface is determined to operate with no detectable organic emissions.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 725.985 Standards: Tanks

- a) The provisions of this Section apply to the control of air pollutant emissions from tanks for which Section 725.983(b) references the use of this Section for such air emission control.
- b) The owner or operator must control air pollutant emissions from each tank subject to this Section in accordance with the following requirements, as applicable:
 - 1) For a tank that manages hazardous waste that meets all of the conditions specified in subsections (b)(1)(A) through (b)(1)(C) of this Section, the owner or operator must control air pollutant emissions from the tank in accordance with the Tank Level 1 controls specified in subsection (c) of this Section or the Tank Level 2 controls specified in subsection (d) of this Section.
 - A) The hazardous waste in the tank has a maximum organic vapor pressure that is less than the maximum organic vapor pressure limit for the tank's design capacity category, as follows:
 - i) For a tank design capacity equal to or greater than 151 m³ (5333 ft³ or 39,887 gal), the maximum organic vapor

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- pressure limit for the tank is 5.2 kPa (0.75 psia or 39 mm Hg);
- ii) For a tank design capacity equal to or greater than 75 m³ (2649 ft³ or 19,810 gal) but less than 151 m³ (5333 ft³ or 39,887 gal), the maximum organic vapor pressure limit for the tank is 27.6 kPa (4.0 psia or 207 mm Hg); or
 - iii) For a tank design capacity less than 75 m³ (2649 ft³ or 19,810 gal), the maximum organic vapor pressure limit for the tank is 76.6 kPa (11.1 psia or 574 mm Hg).
- B) The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined for the purpose of complying with subsection (b)(1)(A) of this Section.
 - C) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in Section 725.981.
- 2) For a tank that manages hazardous waste that does not meet all of the conditions specified in subsections (b)(1)(A) through (b)(1)(C) of this Section, the owner or operator must control air pollutant emissions from the tank by using Tank Level 2 controls in accordance with the requirements of subsection (d) of this Section. Examples of tanks required to use Tank Level 2 controls include the following: a tank used for a waste stabilization process and a tank for which the hazardous waste in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category, as specified in subsection (b)(1)(A) of this Section.
- c) An owner or operator controlling air pollutant emissions from a tank using Tank Level 1 controls must meet the requirements specified in subsections (c)(1) through (c)(4) of this Section:
 - 1) The owner or operator must determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank using Tank Level 1 controls before the first time the hazardous waste is placed in the

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tank. The maximum organic vapor pressure must be determined using the procedures specified in Section 725.984(c). Thereafter, the owner or operator must perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank design capacity category specified in subsection (b)(1)(A) of this Section, as applicable to the tank.

- 2) The tank must be equipped with a fixed roof designed to meet the following specifications:
 - A) The fixed roof and its closure devices must be designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).
 - B) The fixed roof must be installed in such a manner that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.
 - C) Either of the following must be true of each opening in the fixed roof and of any manifold system associated with the fixed roof must be either:
 - i) The opening or manifold system is equipped with a closure device designed to operate so that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or
 - ii) The opening or manifold system is connected by a closed-vent system that is vented to a control device. The control device must remove or destroy organics in the vent stream, and it must be operating whenever hazardous waste is

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managed in the tank, except as provided for in subsection (c)(2)(E).

- D) The fixed roof and its closure devices must be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and which will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices must include the following: organic vapor permeability; the effects of any contact with the hazardous waste or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.
- E) The control device operated pursuant to subsection (c)(2)(C) of this Section needs not remove or destroy organics in the vent stream under the following conditions:
 - i) During periods when it is necessary to provide access to the tank for performing the activities of subsection (c)(2)(E)(ii) of this Section, venting of the vapor headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed, and removal of the fixed roof is allowed. Following completion of the activity, the owner or operator must promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device; and
 - ii) During periods of routine inspection, maintenance, or other activities needed for normal operations, and for the removal of accumulated sludge or other residues from the bottom of the tank.

BOARD NOTE: Subsections (c)(2)(E)(i) and (c)(2)(E)(ii) are derived from 40 CFR 265.985(c)(2)(iii)(B)(1) and (c)(2)(iii)(B)(2), which the Board has codified here to comport with Illinois Administrative Code format requirements.

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- 3) Whenever a hazardous waste is in the tank, the fixed roof must be installed with each closure device secured in the closed position, except as follows:
- A) Opening of closure devices or removal of the fixed roof is allowed at the following times:
 - i) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator must promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.
 - ii) To remove accumulated sludge or other residues from the bottom of tank.
 - B) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device must be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens must be established so that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations; applicable regulations; fire protection and prevention codes; standard engineering codes and practices; or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

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- C) Opening of a safety device, as defined in Section 725.981, is allowed at any time conditions require doing so to avoid an unsafe condition.
- 4) The owner or operator must inspect the air emission control equipment in accordance with the following requirements:
 - A) The fixed roof and its closure devices must be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.
 - B) The owner or operator must perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to this Section. Thereafter, the owner or operator must perform the inspections at least once every year, except under the special conditions provided for in subsection (l) of this Section.
 - C) In the event that a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (k) of this Section.
 - D) The owner or operator must maintain a record of the inspection in accordance with the requirements specified in Section 725.990(b).
- d) An owner or operator controlling air pollutant emissions from a tank using Tank Level 2 controls must use one of the following tanks:
 - 1) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in subsection (e) of this Section;
 - 2) A tank equipped with an external floating roof in accordance with the requirements specified in subsection (f) of this Section;
 - 3) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in subsection (g) of this Section;

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- 4) A pressure tank designed and operated in accordance with the requirements specified in subsection (h) of this Section; or
 - 5) A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in subsection (i) of this Section.
- e) The owner or operator that controls air pollutant emissions from a tank using a fixed roof with an internal floating roof must meet the requirements specified in subsections (e)(1) through (e)(3) of this Section.
- 1) The tank must be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:
 - A) The internal floating roof must be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.
 - B) The internal floating roof must be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:
 - i) A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in Section 725.981; or
 - ii) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.
 - C) The internal floating roof must meet the following specifications:
 - i) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface;
 - ii) Each opening in the internal floating roof must be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains;

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- iii) Each penetration of the internal floating roof for the purpose of sampling must have a slit fabric cover that covers at least 90 percent of the opening;
 - iv) Each automatic bleeder vent and rim space vent must be gasketed;
 - v) Each penetration of the internal floating roof that allows for passage of a ladder must have a gasketed sliding cover; and
 - vi) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof must have a flexible fabric sleeve seal or a gasketed sliding cover.
- 2) The owner or operator must operate the tank in accordance with the following requirements:
- A) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling must be continuous and must be completed as soon as practical;
 - B) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports; and
 - C) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof must be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.
- 3) The owner or operator must inspect the internal floating roof in accordance with the procedures specified as follows:
- A) The floating roof and its closure devices must be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, the following: when the internal floating roof is not floating on the surface of the liquid inside the tank; when liquid has accumulated

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on top of the internal floating roof; when any portion of the roof seals have detached from the roof rim; when holes, tears, or other openings are visible in the seal fabric; when the gaskets no longer close off the hazardous waste surface from the atmosphere; or when the slotted membrane has more than 10 percent open area;

- B) The owner or operator must inspect the internal floating roof components as follows, except as provided in subsection (e)(3)(C) of this Section:
- i) Visually inspect the internal floating roof components through openings on the fixed roof (e.g., manholes and roof hatches) at least once every 12 months after initial fill, and
 - ii) Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least once every 10 years;
- C) As an alternative to performing the inspections specified in subsection (e)(3)(B) of this Section for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every five years;
- D) Prior to each inspection required by subsection (e)(3)(B) or (e)(3)(C) of this Section, the owner or operator must notify the Agency in advance of each inspection to provide the Agency with the opportunity to have an observer present during the inspection. The owner or operator must notify the Agency of the date and location of the inspection as follows:
- i) Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, written notification must be prepared and sent by the owner or operator so that it is received by the Agency at least 30 calendar days before refilling the tank, except when an

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inspection is not planned, as provided for in subsection (e)(3)(D)(ii) of this Section; and

- ii) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator must notify the Agency as soon as possible, but no later than seven calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Regional Administrator at least seven calendar days before refilling the tank;
- E) In the event that a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (k) of this Section; and
- F) The owner or operator must maintain a record of the inspection in accordance with the requirements specified in Section 725.990(b).
- 4) Safety devices, as defined in Section 725.981, may be installed and operated as necessary on any tank complying with the requirements of this subsection (e).
- f) The owner or operator that controls air pollutant emissions from a tank using an external floating roof must meet the requirements specified in subsections (f)(1) through (f)(3) of this Section.
 - 1) The owner or operator must design the external floating roof in accordance with the following requirements:
 - A) The external floating roof must be designed to float on the liquid surface except when the floating roof must be supported by the leg supports;
 - B) The floating roof must be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge.

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The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

- i) The primary seal must be a liquid-mounted seal or a metallic shoe seal, as defined in Section 725.981. The total area of the gaps between the tank wall and the primary seal must not exceed 212 square centimeters (cm²) per meter (10.0 in² per foot) of tank diameter, and the width of any portion of these gaps must not exceed 3.8 centimeters (cm) (1.5 inches). If a metallic shoe seal is used for the primary seal, the metallic shoe seal must be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters (24 inches) above the liquid surface.
 - ii) The secondary seal must be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal must not exceed 21.2 cm² per meter (1.0 in² per foot) of tank diameter, and the width of any portion of these gaps must not exceed 1.3 cm (0.5 inch); and
- C) The external floating roof must meet the following specifications:
- i) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof must provide a projection below the liquid surface;
 - ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof must be equipped with a gasketed cover, seal, or lid;
 - iii) Each access hatch and each gauge float well must be equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position;
 - iv) Each automatic bleeder vent and each rim space vent must be equipped with a gasket;

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- v) Each roof drain that empties into the liquid managed in the tank must be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening;
 - vi) Each unslotted and slotted guide pole well must be equipped with a gasketed sliding cover or a flexible fabric sleeve seal;
 - vii) Each unslotted guide pole must be equipped with a gasketed cap on the end of the pole;
 - viii) Each slotted guide pole must be equipped with a gasketed float or other device that closes off the liquid surface from the atmosphere; and
 - ix) Each gauge hatch and each sample well must be equipped with a gasketed cover.
- 2) The owner or operator must operate the tank in accordance with the following requirements:
- A) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling must be continuous and must be completed as soon as practical;
 - B) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof must be secured and maintained in a closed position at all times except when the closure device must be open for access;
 - C) Covers on each access hatch and each gauge float well must be bolted or fastened when secured in the closed position;
 - D) Automatic bleeder vents must be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports;
 - E) Rim space vents must be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure

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beneath the rim seal exceeds the manufacturer's recommended setting;

- F) The cap on the end of each unslotted guide pole must be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank;
 - G) The cover on each gauge hatch or sample well must be secured in the closed position at all times except when the hatch or well must be opened for access; and
 - H) Both the primary seal and the secondary seal must completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.
- 3) The owner or operator must inspect the external floating roof in accordance with the procedures specified as follows:
- A) The owner or operator must measure the external floating roof seal gaps in accordance with the following requirements:
 - i) The owner or operator must perform measurements of gaps between the tank wall and the primary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every five years;
 - ii) The owner or operator must perform measurements of gaps between the tank wall and the secondary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year;
 - iii) If a tank ceases to hold hazardous waste for a period of one year or more, subsequent introduction of hazardous waste into the tank must be considered an initial operation for the purposes of subsections (f)(3)(A)(i) and (f)(3)(A)(ii) of this Section;

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- iv) The owner or operator must determine the total surface area of gaps in the primary seal and in the secondary seal individually using the procedure set forth in subsection ~~(f)(4)(D)~~-(f)(3)(D) of this Section;
 - v) In the event that the seal gap measurements do not conform to the specifications in subsection (f)(1)(B) of this Section, the owner or operator must repair the defect in accordance with the requirements of subsection (k) of this Section; and
 - vi) The owner or operator must maintain a record of the inspection in accordance with the requirements specified in Section 725.990(b);
- B) The owner or operator must visually inspect the external floating roof in accordance with the following requirements:
- i) The floating roof and its closure devices must be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to any of the following: holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices;
 - ii) The owner or operator must perform an initial inspection of the external floating roof and its closure devices on or before the date that the tank becomes subject to this Section. Thereafter, the owner or operator must perform the inspections at least once every year except for the special conditions provided for in subsection (l) of this Section;
 - iii) In the event that a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (k) of this Section; and

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- iv) The owner or operator must maintain a record of the inspection in accordance with the requirements specified in Section 725.990(b);
- C) Prior to each inspection required by subsection (f)(3)(A) or (f)(3)(B) of this Section, the owner or operator must notify the Agency in advance of each inspection to provide the Agency with the opportunity to have an observer present during the inspection. The owner or operator must notify the Agency of the date and location of the inspection as follows:
 - i) Prior to each inspection to measure external floating roof seal gaps as required under subsection (f)(3)(A) of this Section, written notification must be prepared and sent by the owner or operator so that it is received by the Agency at least 30 calendar days before the date the measurements are scheduled to be performed;
 - ii) Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, written notification must be prepared and sent by the owner or operator so that it is received by the Agency at least 30 calendar days before refilling the tank except when an inspection is not planned, as provided for in subsection (f)(3)(C)(iii) of this Section; and
 - iii) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator must notify the Agency as soon as possible, but no later than seven calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Regional Administrator at least seven calendar days before refilling the tank;

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- D) Procedure for determining gaps in the primary seal and in the secondary seal for the purposes of subsection (f)(3)(A)(iv) of this Section:
- i) The seal gap measurements must be performed at one or more floating roof levels when the roof is floating off the roof supports;
 - ii) Seal gaps, if any, must be measured around the entire perimeter of the floating roof in each place where a 0.32-cm (1/4-inch) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location;
 - iii) For a seal gap measured under this subsection (f)(3), the gap surface area must be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance; and
 - iv) The total gap area must be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type, as specified in subsection (f)(1)(B) of this Section; and

BOARD NOTE: Subsections (f)(3)(D)(i) through (f)(3)(D)(iv) are derived from 40 CFR 265.1085(f)(3)(i)(D)(1) through (f)(3)(i)(D)(4), which the Board has codified here to comport with Illinois Administrative Code format requirements.

- 4) Safety devices, as defined in Section 725.981, may be installed and operated as necessary on any tank complying with the requirements of this subsection (f).

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- g) The owner or operator that controls air pollutant emissions from a tank by venting the tank to a control device must meet the requirements specified in subsections (g)(1) through (g)(3) of this Section.
 - 1) The tank must be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:
 - A) The fixed roof and its closure devices must be designed to form a continuous barrier over the entire surface area of the liquid in the tank;
 - B) Each opening in the fixed roof not vented to the control device must be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices must be designed to operate so that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device must be designed to operate with no detectable organic emissions;
 - C) The fixed roof and its closure devices must be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices must include the following: organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed; and
 - D) The closed-vent system and control device must be designed and operated in accordance with the requirements of Section 725.988.

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- 2) Whenever a hazardous waste is in the tank, the fixed roof must be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:
 - A) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:
 - i) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator must promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank; and
 - ii) To remove accumulated sludge or other residues from the bottom of a tank; and
 - B) Opening of a safety device, as defined in Section 725.981, is allowed at any time conditions require doing so to avoid an unsafe condition.
- 3) The owner or operator must inspect and monitor the air emission control equipment in accordance with the following procedures:
 - A) The fixed roof and its closure devices must be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to any of the following: visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices;
 - B) The closed-vent system and control device must be inspected and monitored by the owner or operator in accordance with the procedures specified in Section 725.988;

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- C) The owner or operator must perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this Section. Thereafter, the owner or operator must perform the inspections at least once every year except for the special conditions provided for in subsection (l) of this Section;
 - D) In the event that a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (k) of this Section; and
 - E) The owner or operator must maintain a record of the inspection in accordance with the requirements specified in Section 725.990(b).
- h) The owner or operator that controls air pollutant emissions by using a pressure tank must meet the following requirements:
- 1) The tank must be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity;
 - 2) All tank openings must be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in Section 725.984(d); and
 - 3) Whenever a hazardous waste is in the tank, the tank must be operated as a closed-vent system that does not vent to the atmosphere, except under either of the following two conditions:
 - A) The tank does not need to be operated as a closed-vent system at those times when the opening of a safety device, as defined in Section 725.981, is required to avoid an unsafe condition; and
 - B) The tank does not need to be operated as a closed-vent system at those times when the purging of inerts from the tank is required and the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the requirements of Section 724.987.
- i) The owner or operator that controls air pollutant emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device

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must meet the requirements specified in subsections (i)(1) through (i)(4) of this Section.

- 1) The tank must be located inside an enclosure. The enclosure must be designed and operated in accordance with the criteria for a permanent total enclosure, as specified in "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" under appendix B to 40 CFR 52.741 (VOM Measurement Techniques for Capture Efficiency), incorporated by reference in 35 Ill. Adm. Code 720.111(b). The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator must perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually;
 - 2) The enclosure must be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in Section 725.988;
 - 3) Safety devices, as defined in Section 725.981, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of subsections (i)(1) and (i)(2) of this Section; and
 - 4) The owner or operator must inspect and monitor the closed-vent system and control device, as specified in Section 725.988.
- j) The owner or operator must transfer hazardous waste to a tank subject to this Section in accordance with the following requirements:
- 1) Transfer of hazardous waste, except as provided in subsection (j)(2) of this Section, to the tank from another tank subject to this Section or from a surface impoundment subject to Section 725.986 must be conducted using continuous hard-piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to

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be a closed system when it meets the requirements of subpart RR of 40 CFR 63 (National Emission Standards for Individual Drain Systems), incorporated by reference in 35 Ill. Adm. Code 720.111(b); and

- 2) The requirements of subsection (j)(1) of this Section do not apply when transferring a hazardous waste to the tank under any of the following conditions:
 - A) The hazardous waste meets the average VO concentration conditions specified in Section 725.983(c)(1) at the point of waste origination;
 - B) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in Section 725.983(c)(2); and
 - C) The hazardous waste meets the requirements of Section 725.983(c)(4).
- k) The owner or operator must repair each defect detected during an inspection performed in accordance with the requirements of subsection (c)(4), (e)(3), (f)(3), or (g)(3) of this Section as follows:
 - 1) The owner or operator must make first efforts at repair of the defect no later than five calendar days after detection, and repair must be completed as soon as possible but no later than 45 calendar days after detection except as provided in subsection (k)(2) of this Section; and
 - 2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. In this case, the owner or operator must repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect must be completed before the process or unit resumes operation.
- l) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this Subpart CC, subsequent inspection and monitoring

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may be performed at intervals longer than one year under the following special conditions:

- 1) Where inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions, then the owner or operator may designate a cover as an “unsafe to inspect and monitor cover” and comply with all of the following requirements:
 - A) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required; and
 - B) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable Section of this Subpart CC, as frequently as practicable during those times when a worker can safely access the cover; and
- 2) In the case when a tank is buried partially or entirely underground, an owner or operator is required to inspect and monitor, as required by the applicable provisions of this Section, only those portions of the tank cover and those connections to the tank (e.g., fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 725.987 Standards: Containers

- a) The provisions of this Section apply to the control of air pollutant emissions from containers for which Section 725.983(b) references the use of this Section for such air emission control.
- b) General requirements.
 - 1) The owner or operator must control air pollutant emissions from each container subject to this Section in accordance with the following requirements, as applicable to the container, except when the following special provisions for waste stabilization processes specified in subsection (b)(2) of this Section apply to the container:
 - A) For a container having a design capacity greater than 0.1 m³ (26 gal) and less than or equal to 0.46 m³ (120 gal), the owner or

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operator must control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in subsection (c) of this Section;

- B) For a container having a design capacity greater than 0.46 m³ (120 gal) that is not in light material service, the owner or operator must control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in subsection (c) of this Section; and
 - C) For a container having a design capacity greater than 0.46 m³ (120 gal) that is in light material service, the owner or operator must control air pollutant emissions from the container in accordance with the Container Level 2 standards specified in subsection (d) of this Section.
- 2) When a container having a design capacity greater than 0.1 m³ (26 gal) is used for treatment of a hazardous waste by a waste stabilization process, the owner or operator must control air pollutant emissions from the container in accordance with the Container Level 3 standards specified in subsection (e) of this Section at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.
- c) Container Level 1 standards.
- 1) A container using Container Level 1 controls is one of the following:
 - A) A container that meets the applicable USDOT regulations on packaging hazardous materials for transportation, as specified in subsection (f) of this Section;
 - B) A container equipped with a cover and closure devices that form a continuous barrier over the container openings so that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural

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design (e.g., a “portable tank” or bulk cargo container equipped with a screw-type cap); and

- C) An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container so that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.
- 2) A container used to meet the requirements of subsection (c)(1)(B) or (c)(1)(C) of this Section must be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices must include the following: the organic vapor permeability; the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight; and the operating practices for which the container is intended to be used.
 - 3) Whenever a hazardous waste is in a container using Container Level 1 controls, the owner or operator must install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:
 - A) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container, as follows:
 - i) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator must promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation; and
 - ii) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator must promptly secure the

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closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first;

- B) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:
- i) For the purpose of meeting the requirements of this Section, an empty container, as defined in 35 Ill. Adm. Code 721.107(b), may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container); and
 - ii) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container, as defined in 35 Ill. Adm. Code 721.107(b), the owner or operator must promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first;
- C) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator must promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container;

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- D) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that vents to the atmosphere is allowed during normal operations for the purpose of maintaining the container internal pressure in accordance with the design specifications of the container. The device must be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens must be established so that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations; and
 - E) Opening of a safety device, as defined in Section 725.981, is allowed at any time conditions require doing so to avoid an unsafe condition.
- 4) The owner or operator of containers using Container Level 1 controls must inspect the containers and their covers and closure devices as follows:
- A) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., it does not meet the conditions for an empty container as specified in 35 Ill. Adm. Code 721.107(b)), the owner or operator must visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection must be conducted on or before the date on which the container is accepted at the facility (i.e., the date when the container becomes subject to

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the Subpart CC container standards). For the purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest, as set forth in the appendix to 40 CFR 262 (Uniform Hazardous Waste Manifest and Instructions (EPA Forms 8700-22 and 8700-22A and Their Instructions)), incorporated by reference in 35 Ill. Adm. Code 720.111(b), as required under Section 725.171. If a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (c)(4)(C) of this Section;

B) In the case when a container used for managing hazardous waste remains at the facility for a period of one year or more, the owner or operator must visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (c)(4)(C) of this Section; and

C) When a defect is detected in the container, cover, or closure devices, the owner or operator must make first efforts at repair of the defect no later than 24 hours after detection, and repair must be completed as soon as possible but no later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste must be removed from the container and the container must not be used to manage hazardous waste until the defect is repaired.

5) The owner or operator must maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m³ (120 gal) or greater which do not meet applicable USDOT regulations, as specified in subsection (f) of this Section, are not managing hazardous waste in light material service.

d) Container Level 2 standards.

1) A container using Container Level 2 controls is one of the following:

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- A) A container that meets the applicable USDOT regulations on packaging hazardous materials for transportation as specified in subsection (f) of this Section;
 - B) A container that operates with no detectable organic emissions, as defined in Section 725.981, and determined in accordance with the procedure specified in subsection (g) of this Section; and
 - C) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using Method 27 (Determination of Vapor Tightness of Gasoline Delivery Tank Using Pressure-Vacuum Test) in appendix A to 40 CFR 60 (Test Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b), in accordance with the procedure specified in subsection (h) of this Section.
- 2) Transfer of hazardous waste into or out of a container using Container Level 2 controls must be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive or other hazardous materials. Examples of container loading procedures that the USEPA considers to meet the requirements of this subsection (d)(2) include using any one of the following: a submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.
- 3) Whenever a hazardous waste is in a container using Container Level 2 controls, the owner or operator must install all covers and closure devices for the container, and secure and maintain each closure device in the closed position, except as follows:
- A) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container, as follows:

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- i) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator must promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation; and
 - ii) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator must promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first;
- B) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:
- i) For the purpose of meeting the requirements of this Section, an empty container as defined in 35 Ill. Adm. Code 721.107(b) may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container); and
 - ii) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in 35 Ill. Adm. Code 721.107(b), the owner or operator must promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first;

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- C) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator must promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container;
 - D) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device must be designed to operate with no detectable organic emission when the device is secured in the closed position. The settings at which the device opens must be established so that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations; and
 - E) Opening of a safety device, as defined in Section 725.981, is allowed at any time conditions require doing so to avoid an unsafe condition.
- 4) The owner or operator of containers using Container Level 2 controls must inspect the containers and their covers and closure devices as follows:
- A) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the

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container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., it does not meet the conditions for an empty container as specified in 35 Ill. Adm. Code 721.107(b)), the owner or operator must visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection must be conducted on or before the date on which the container is accepted at the facility (i.e., the date when the container becomes subject to the Subpart CC container standards). For the purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest, in the appendix to 40 CFR 262 (Uniform Hazardous Waste Manifest and Instructions (USEPA Forms 8700-22 and 8700-22A and Their Instructions)), as required under Section 725.171. If a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (d)(4)(C) of this Section;

- B) In the case when a container used for managing hazardous waste remains at the facility for a period of one year or more, the owner or operator must visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator must repair the defect in accordance with the requirements of subsection (d)(4)(C) of this Section; and
- C) When a defect is detected in the container, cover, or closure devices, the owner or operator must make first efforts at repair of the defect no later than 24 hours after detection, and repair must be completed as soon as possible but no later than five calendar days after detection. If repair of a defect cannot be completed within five calendar days, then the hazardous waste must be removed from the container and the container must not be used to manage hazardous waste until the defect is repaired.

- e) Container Level 3 standards.

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- 1) A container using Container Level 3 controls is one of the following:
 - A) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of subsection (e)(2)(B) of this Section; or
 - B) A container that is vented inside an enclosure that is exhausted through a closed-vent system to a control device in accordance with the requirements of subsections (e)(2)(A) and (e)(2)(B) of this Section.

- 2) The owner or operator must meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:
 - A) The container enclosure must be designed and operated in accordance with the criteria for a permanent total enclosure, as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under appendix B to 40 CFR 52.741 (VOM Measurement Techniques for Capture Efficiency), incorporated by reference in 35 Ill. Adm. Code 720.111(b). The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator must perform the verification procedure for the enclosure, as specified in Section 5.0 to “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” initially when the enclosure is first installed and, thereafter, annually; and
 - B) The closed-vent system and control device must be designed and operated in accordance with the requirements of Section 725.988.

- 3) Safety devices, as defined in Section 725.981, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of subsection (e)(1) of this Section.

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- 4) Owners and operators using Container Level 3 controls in accordance with the provisions of this Subpart CC must inspect and monitor the closed-vent systems and control devices, as specified in Section 725.988.
 - 5) Owners and operators that use Container Level 3 controls in accordance with the provisions of this Subpart CC must prepare and maintain the records specified in Section 725.990(d).
 - 6) The transfer of hazardous waste into or out of a container using Container Level 3 controls must be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that USEPA considers to meet the requirements of this subsection (e)(6) include using any one of the following: the use of a submerged-fill pipe or other submerged-fill method to load liquids into the container; the use of a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or the use of a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.
- f) For the purpose of compliance with subsection (c)(1)(A) or (d)(1)(A) of this Section, containers must be used that meet the applicable USDOT regulations on packaging hazardous materials for transportation as follows:
- 1) The container meets the applicable requirements specified by USDOT in 49 CFR 178 (Specifications for Packaging), or 49 CFR 179 (Specifications for Tank Cars), each incorporated by reference in 35 Ill. Adm. Code 720.111(b);
 - 2) Hazardous waste is managed in the container in accordance with the applicable requirements specified by USDOT in subpart B of 49 CFR 107 (Exemptions), 49 CFR 172 (Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements), 49 CFR 173 (Shippers—General Requirements for Shipments and Packages), and 49 CFR 180 (Continuing Qualification and Maintenance of Packagings), each incorporated by reference in 35 Ill. Adm. Code 720.111(b);

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- 3) For the purpose of complying with this Subpart CC, no exceptions to the federal 49 CFR 178 or 179 regulations are allowed, except as provided for in subsection (f)(4) of this Section; and
 - 4) For a lab pack that is managed in accordance with the USDOT requirements of 49 CFR 178 (Specifications for Packagings) for the purpose of complying with this Subpart CC, an owner or operator may comply with the exceptions for combination packagings specified by USDOT in 49 CFR 173.12(b) (Exceptions for Shipments of Waste Materials), incorporated by reference in 35 Ill. Adm. Code 720.111(b).
- g) To determine compliance with the no detectable organic emissions requirements of subsection (d)(1)(B) of this Section, the procedure specified in Section 725.984(d) must be used.
- 1) Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, must be checked. Potential leak interfaces that are associated with containers include, but are not limited to: the interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.
 - 2) The test must be performed when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous wastes expected to be managed in this type of container. During the test, the container cover and closure devices must be secured in the closed position.
- h) The procedure for determining a container to be vapor-tight using Method 27 for the purpose of complying with subsection (d)(1)(C) of this Section is as follows:
- 1) The test must be performed in accordance with Method 27;
 - 2) A pressure measurement device must be used that has a precision of ± 2.5 mm (0.10 inch) water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness; and
 - 3) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals (0.11 psig)

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within five minutes after it is pressurized to a minimum of 4,500 Pascals (0.65 psig), then the container is determined to be vapor-tight.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 725.990 Recordkeeping Requirements

- a) Each owner or operator of a facility subject to the requirements in this Subpart CC must record and maintain the information specified in subsections (b) through (j) of this Section, as applicable to the facility. Except for air emission control equipment design documentation and information required by ~~subsection~~ subsections (i) and (j) of this Section, records required by this Section must be maintained in the operating record for a minimum of three years. Air emission control equipment design documentation must be maintained in the operating record until the air emission control equipment is replaced or is otherwise no longer in service. Information required by subsections (i) and (j) of this Section must be maintained in the operating record for as long as the waste management unit is not using air emission controls specified in Sections 725.985 through 725.988, in accordance with the conditions specified in Section 725.980(d) or (b)(7), respectively.
- b) The owner or operator of a tank using air emission controls in accordance with the requirements of Section 725.985 must prepare and maintain records for the tank that include the following information:
 - 1) For each tank using air emission controls in accordance with the requirements of Section 725.985 of this Subpart CC, the owner or operator must record the following information:
 - A) A tank identification number (or other unique identification description as selected by the owner or operator); and
 - B) A record for each inspection required by Section 725.985 that includes the following information:
 - i) Date inspection was conducted; and
 - ii) For each defect detected during the inspection, the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect.

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In the event that repair of the defect is delayed in accordance with the provisions of Section 725.985, the owner or operator must also record the reason for the delay and the date that completion of repair of the defect is expected; and

- 2) In addition to the information required by subsection (b)(1) of this Section, the owner or operator must record the following information, as applicable to the tank:
 - A) The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in Section 725.985(c) must prepare and maintain records for each determination for the maximum organic vapor pressure of the hazardous waste in the tank performed in accordance with the requirements of Section 725.985(c). The records must include the date and time the samples were collected, the analysis method used, and the analysis results;
 - B) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in Section 725.985(e) must prepare and maintain documentation describing the floating roof design;
 - C) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in Section 725.985(f) must prepare and maintain the following records:
 - i) Documentation describing the floating roof design and the dimensions of the tank; and
 - ii) Records for each seal gap inspection required by Section 725.985(f)(3) describing the results of the seal gap measurements. The records must include the date that the measurements were performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in Section 725.985(f)(1), the records must include a description of the

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repairs that were made, the date the repairs were made, and the date the tank was emptied, if necessary.

- D) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in Section 725.985(i) must prepare and maintain the following records:
- i) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under appendix B to 40 CFR 52.741 (VOM Measurement Techniques for Capture Efficiency), incorporated by reference in 35 Ill. Adm. Code 720.111(b); and
 - ii) Records required for the closed-vent system and control device in accordance with the requirements of subsection (e) of this Section.
- c) The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of Section 725.986 must prepare and maintain records for the surface impoundment that include the following information:
- 1) A surface impoundment identification number (or other unique identification description as selected by the owner or operator);
 - 2) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in Section 725.986(c);
 - 3) A record for each inspection required by Section 725.986 that includes the following information:
 - A) Date inspection was conducted; and

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- B) For each defect detected during the inspection the following information: the location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of Section 725.986(f), the owner or operator must also record the reason for the delay and the date that completion of repair of the defect is expected; and
- 4) For a surface impoundment equipped with a cover and vented through a closed-vent system to a control device, the owner or operator must prepare and maintain the records specified in subsection (e) of this Section.
- d) The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of Section 725.987 must prepare and maintain records that include the following information:
 - 1) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in “Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure” under appendix B to 40 CFR 52.741 (VOM Measurement Techniques for Capture Efficiency), incorporated by reference in 35 Ill. Adm. Code 720.111(b); and
 - 2) Records required for the closed-vent system and control device in accordance with the requirements of subsection (e) of this Section.
- e) The owner or operator using a closed-vent system and control device in accordance with the requirements of Section 725.988 must prepare and maintain records that include the following information:
 - 1) Documentation for the closed-vent system and control device that includes the following:
 - A) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in subsection (e)(1)(B) of this Section or by performance tests as specified in subsection (e)(1)(C) of this Section when the tank,

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surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur;

- B) If a design analysis is used, then design documentation, as specified in Section 725.935(b)(4). The documentation must include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with Section 725.935(b)(4)(C) and certification by the owner or operator that the control equipment meets the applicable specifications;
- C) If performance tests are used, then a performance test plan as specified in Section 725.935(b)(3) and all test results;
- D) Information as required by Section 725.935(c)(1) and (c)(2), as applicable;
- E) An owner or operator must record, on a semiannual basis, the following information for those planned routine maintenance operations that would require the control device not to meet the requirements of Section 725.988(c)(1)(A), (c)(1)(B), or (c)(1)(C), as applicable:
 - i) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next six-month period. This description must include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods; and
 - ii) A description of the planned routine maintenance that was performed for the control device during the previous six-month period. This description must include the type of maintenance performed and the total number of hours during those six months that the control device did not meet the requirements of Section 725.988(c)(1)(A), (c)(1)(B), or (c)(1)(C), as applicable, due to planned routine maintenance;
- F) An owner or operator must record the following information for those unexpected control device system malfunctions that would

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require the control device not to meet the requirements of Section 725.988(c)(1)(A), (c)(1)(B), or (c)(1)(C), as applicable:

- i) The occurrence and duration of each malfunction of the control device system;
 - ii) The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning; and
 - iii) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation; and
- G) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with Section 725.988(c)(3)(B).
- f) The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of Section 725.983(c) must prepare and maintain the following records, as applicable:
- 1) For tanks, surface impoundments, or containers exempted under the hazardous waste organic concentration conditions specified in Section 725.983 (c)(1) or 725.983(c)(2)(A) through (c)(2)(F), the owner or operator must record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator must record the date, time, and location that each waste sample is collected in accordance with the applicable requirements of Section 725.984; and
 - 2) For tanks, surface impoundments, or containers exempted under the provisions of Section 725.983(c)(2)(G) or (c)(2)(H), the owner or operator must record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.

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- g) An owner or operator designating a cover as “unsafe to inspect and monitor” pursuant to Section 725.985(l) or 725.986(g) must record in a log that is kept in the facility operating record the following information: the identification numbers for waste management units with covers that are designated as “unsafe to inspect and monitor,” the explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover.
- h) The owner or operator of a facility that is subject to this Subpart CC and to the control device standards in federal subpart VV of 40 CFR 60 (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry), or subpart V of 40 CFR 61 (National Emission Standard for Equipment Leaks (Fugitive Emission Sources), each incorporated by reference in 35 Ill. Adm. Code 270.111, may elect to demonstrate compliance with the applicable Sections of this Subpart by documentation either pursuant to this Subpart CC, or pursuant to the provisions of subpart VV of 40 CFR 60 or subpart V of 40 CFR 61, to the extent that the documentation required by 40 CFR 60 or 61 duplicates the documentation required by this Section.
- i) For each tank or container not using air emission controls specified in Sections 725.985 through 725.988 in accordance with the conditions specified in Section 725.980(d), the owner or operator must record and maintain the following information:
 - 1) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in Section 725.980(d)(1);
 - 2) A description of how the hazardous waste containing the organic peroxide compounds identified pursuant to subsection (i)(1) are managed at the facility in tanks and containers. This description must include the following information:
 - A) For the tanks used at the facility to manage this hazardous waste, sufficient information must be provided to describe each tank: a facility identification number for the tank, the purpose and placement of this tank in the management train of this hazardous waste, and the procedures used to ultimately dispose of the hazardous waste managed in the tanks; and

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- B) For containers used at the facility to manage this hazardous waste, sufficient information must be provided to describe the following for each container: a facility identification number for the container or group of containers; the purpose and placement of this container or group of containers in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers; and
- 3) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified pursuant to subsection (i)(1) of this Section in the tanks or containers identified pursuant to subsection (i)(2) of this Section would create an undue safety hazard if the air emission controls specified in Sections 725.985 through 725.988 were installed and operated on these waste management units. This explanation must include the following information:
- A) For tanks used at the facility to manage this hazardous waste, sufficient information must be provided to explain: how use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under this Subpart CC, would not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides; and
 - B) For containers used at the facility to manage this hazardous waste, sufficient information must be provided to explain: how use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during management of this hazardous waste in the containers; and why installation of safety devices on the required air emission controls, as allowed under this Subpart CC, would not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

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- j) For each hazardous waste management unit not using air emission controls specified in Sections 725.985 through 725.988 in accordance with the provisions of Section 725.980(b)(7), the owner and operator must record and maintain the following information:
- 1) The certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable federal Clean Air Act regulation codified under 40 CFR 60, 61, or 63; and
 - 2) An identification of the specific federal requirements codified under 40 CFR 60, 61, or 63 with which the waste management unit is in compliance.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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- 1) Heading of the Part: Standards for the Management of Specific Hazardous Waste and Specific Types of Hazardous Waste Management Facilities
- 2) Code citation: 35 Ill. Adm. Code 726
- 3)

<u>Section numbers:</u>	<u>Proposed action:</u>
726.200	Amend
726.212	Amend
726.Appendix E	Amend
- 4) Statutory authority: 415 ILCS 5/7.2, 22.4, and 27.
- 5) Effective date of amendments: OCT 24 2013
- 6) Does this rulemaking contain an automatic repeal date? No.
- 7) Do these amendments contain incorporations by reference? No.
- 8) Statement of availability: The adopted amendments, a copy of the Board's opinion and order adopted September 5, 2013 in docket R13-15, and all materials incorporated by reference are on file at the Board's principal office and are available for public inspection and copying.
- 9) Notice of proposal published in the Illinois Register: July 5, 2013, 37 Ill. Reg. 9367.
- 10) Has JCAR issued a statement of objections to these rules? No. Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).
- 11) A table that appears in the Board's opinion and order of September 5, 2013 in docket R13-15 summarizes the differences between the amendments adopted in that order and those proposed by the Board in an opinion and order dated June 20, 2013, in docket R13-15. Discussion of one of the corrections appears in the September 5, 2013 opinion and order.

The differences are limited to minor corrections to the text, one of which caused addition of Section 726.212 to this proceeding for a parallel correction. The changes are intended to have no substantive effect. The intent is to correct the text without deviation from the substance of the federal amendments on which this proceeding is based.

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- 12) Have all the changes agreed upon by the Board and JCAR been made as indicated in the agreements issued by JCAR? Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by JCAR.

Since the Notices of Proposed Amendments appeared in the July 5, 2013 issue of the *Illinois Register*, the Board received a number of suggestions for revisions from JCAR. The Board evaluated each suggestion and incorporated a number of changes into the text as a result, as detailed in the opinion and order of September 5, 2013 in docket R13-15, as indicated in item 11 above. See the September 5, 2013 opinion and order in docket R13-15 for additional details on the JCAR suggestions and the Board actions with regard to each. One table in that opinion itemizes the changes made in response to various suggestions. Another table indicates JCAR suggestions not incorporated into the text, with a brief explanation for each.

- 13) Will these amendments replace emergency amendments currently in effect? No.
- 14) Are there any other amendments pending on this Part? No.
- 15) Summary and purpose of amendments: The following briefly describes the subjects and issues involved in docket R13-15 rulemaking of which the amendments to Part 726 are a single segment. Also affected is 35 Ill. Adm. Code 703, 704, 720, 722, 724, 725, 727, 728, and 739, which is covered by separate notices in this issue of the *Illinois Register*. A comprehensive description is contained in the Board's opinion and order of June 20, 2013, proposing amendments in docket R13-15, which opinion and order is available from the address below.

This proceeding updates the Illinois Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste rules to incorporate corrections to various provisions that the United States Environmental Protection Agency (USEPA) suggested. The proceeding further updates the edition of the *Code of Federal Regulations* provisions that are incorporated by reference. The Board further makes a number of corrections to various provisions that the Board has determined are needed.

Specifically, the amendments to Part 726 implement a correction suggested by USEPA and make corrections that the Board has determined are needed. The Board's opinion and order of September 5, 2013 in docket R13-15 discusses the more substantial corrections made in the text. Tables that appear in that opinion and order list all of the various corrections and amendments included in this proceeding. Persons interested in

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the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Tables appear in the Board's opinion and order of September 5, 2013 in docket R13-15 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Section 22.4 of the Environmental Protection Act [415 ILCS 5/22.4] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

- 16) Information and questions regarding these adopted amendments shall be directed to:
Please reference consolidated docket R13-15 and direct inquiries to the following person:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago, IL 60601

312-814-6924

Request copies of the Board's opinion and order of September 5, 2013 at 312-814-3620. Alternatively, you may obtain a copy of the Board's opinion and order from the Internet at <http://www.ipcb.state.il.us>.

The full text of the adopted amendments begins on the next page:

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TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER c: HAZARDOUS WASTE OPERATING REQUIREMENTS

PART 726
STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS
WASTE AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT
FACILITIES

SUBPART A: GENERAL

Section
726.102 Electronic Reporting

SUBPART C: RECYCLABLE MATERIALS USED IN A MANNER
CONSTITUTING DISPOSAL

Section
726.120 Applicability
726.121 Standards Applicable to Generators and Transporters of Materials Used in a
Manner that Constitutes Disposal
726.122 Standards Applicable to Storers, Who Are Not the Ultimate Users, of Materials
that Are To Be Used in a manner that Constitutes Disposal
726.123 Standards Applicable to Users of Materials that Are Used in a Manner that
Constitutes Disposal

SUBPART D: HAZARDOUS WASTE BURNED FOR ENERGY RECOVERY

Section
726.130 Applicability (Repealed)
726.131 Prohibitions (Repealed)
726.132 Standards applicable to generators of hazardous waste fuel (Repealed)
726.133 Standards applicable to transporters of hazardous waste fuel (Repealed)
726.134 Standards applicable to marketers of hazardous waste fuel (Repealed)
726.135 Standards applicable to burners of hazardous waste fuel (Repealed)
726.136 Conditional exemption for spent materials and by-products exhibiting a
characteristic of hazardous waste (Repealed)

SUBPART E: USED OIL BURNED FOR ENERGY RECOVERY

Section
726.140 Applicability (Repealed)
726.141 Prohibitions (Repealed)

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- 726.142 Standards applicable to generators of used oil burned for energy recovery (Repealed)
- 726.143 Standards applicable to marketers of used oil burned for energy recovery (Repealed)
- 726.144 Standards applicable to burners of used oil burned for energy recovery (Repealed)

SUBPART F: RECYCLABLE MATERIALS UTILIZED FOR PRECIOUS METAL RECOVERY

- Section 726.170 Applicability and Requirements

SUBPART G: SPENT LEAD-ACID BATTERIES BEING RECLAIMED

- Section 726.180 Applicability and Requirements

SUBPART H: HAZARDOUS WASTE BURNED IN BOILERS AND INDUSTRIAL FURNACES

- Section 726.200 Applicability
- 726.201 Management Prior to Burning
- 726.202 Permit Standards for Burners
- 726.203 Interim Status Standards for Burners
- 726.204 Standards to Control Organic Emissions
- 726.205 Standards to Control PM
- 726.206 Standards to Control Metals Emissions
- 726.207 Standards to Control HCl and Chlorine Gas Emissions
- 726.208 Small Quantity On-Site Burner Exemption
- 726.209 Low Risk Waste Exemption
- 726.210 Waiver of DRE Trial Burn for Boilers
- 726.211 Standards for Direct Transfer
- 726.212 Regulation of Residues
- 726.219 Extensions of Time

SUBPART M: MILITARY MUNITIONS

- Section 726.300 Applicability
- 726.301 Definitions
- 726.302 Definition of Solid Waste
- 726.303 Standards Applicable to the Transportation of Solid Waste Military Munitions
- 726.304 Standards Applicable to Emergency Responses

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- 726.305 Standards Applicable to the Storage of Solid Waste Military Munitions
- 726.306 Standards Applicable to the Treatment and Disposal of Waste Military Munitions

SUBPART N: CONDITIONAL EXEMPTION FOR LOW-LEVEL MIXED
WASTE STORAGE, TREATMENT, TRANSPORTATION AND DISPOSAL

- Section
- 726.310 Definitions
- 726.320 Storage and Treatment Conditional Exemption
- 726.325 Wastes Eligible for a Storage and Treatment Conditional Exemption for Low-Level Mixed Waste
- 726.330 Conditions to Qualify for and Maintain a Storage and Treatment Conditional Exemption
- 726.335 Treatment Allowed by a Storage and Treatment Conditional Exemption
- 726.340 Loss of a Storage and Treatment Conditional Exemption and Required Action
- 726.345 Reclaiming a Lost Storage and Treatment Conditional Exemption
- 726.350 Recordkeeping for a Storage and Treatment Conditional Exemption
- 726.355 Waste No Longer Eligible for a Storage and Treatment Conditional Exemption
- 726.360 Applicability of Closure Requirements to Storage Units
- 726.405 Transportation and Disposal Conditional Exemption
- 726.410 Wastes Eligible for a Transportation and Disposal Conditional Exemption
- 726.415 Conditions to Qualify for and Maintain a Transportation and Disposal Conditional Exemption
- 726.420 Treatment Standards for Eligible Waste
- 726.425 Applicability of the Manifest and Transportation Condition
- 726.430 Effectiveness of a Transportation and Disposal Exemption
- 726.435 Disposal of Exempted Waste
- 726.440 Containers Used for Disposal of Exempted Waste
- 726.445 Notification
- 726.450 Recordkeeping for a Transportation and Disposal Conditional Exemption
- 726.455 Loss of a Transportation and Disposal Conditional Exemption and Required Action
- 726.460 Reclaiming a Lost Transportation and Disposal Conditional Exemption

- 726.APPENDIX A Tier I and Tier II Feed Rate and Emissions Screening Limits for Metals
- 726.APPENDIX B Tier I Feed Rate Screening Limits for Total Chlorine
- 726.APPENDIX C Tier II Emission Rate Screening Limits for Free Chlorine and Hydrogen Chloride
- 726.APPENDIX D Reference Air Concentrations
- 726.APPENDIX E Risk-Specific Doses
- 726.APPENDIX F Stack Plume Rise

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726.APPENDIX G	Health-Based Limits for Exclusion of Waste-Derived Residues
726.APPENDIX H	Potential PICs for Determination of Exclusion of Waste-Derived Residues
726.APPENDIX I	Methods Manual for Compliance with BIF Regulations
726.APPENDIX J	Guideline on Air Quality Models (Repealed)
726.APPENDIX K	Lead-Bearing Materials that May be Processed in Exempt Lead Smelters
726.APPENDIX L	Nickel or Chromium-Bearing Materials that May Be Processed in Exempt Nickel-Chromium Recovery Furnaces
726.APPENDIX M	Mercury-Bearing Wastes that May Be Processed in Exempt Mercury Recovery Units
726.TABLE A	Exempt Quantities for Small Quantity Burner Exemption

AUTHORITY: Implementing Sections 7.2 and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 22.4 and 27].

SOURCE: Adopted in R85-22 at 10 Ill. Reg. 1162, effective January 2, 1986; amended in R86-1 at 10 Ill. Reg. 14156, effective August 12, 1986; amended in R87-26 at 12 Ill. Reg. 2900, effective January 15, 1988; amended in R89-1 at 13 Ill. Reg. 18606, effective November 13, 1989; amended in R90-2 at 14 Ill. Reg. 14533, effective August 22, 1990; amended in R90-11 at 15 Ill. Reg. 9727, effective June 17, 1991; amended in R91-13 at 16 Ill. Reg. 9858, effective June 9, 1992; amended in R92-10 at 17 Ill. Reg. 5865, effective March 26, 1993; amended in R93-4 at 17 Ill. Reg. 20904, effective November 22, 1993; amended in R94-7 at 18 Ill. Reg. 12500, effective July 29, 1994; amended in R95-4/R95-6 at 19 Ill. Reg. 10006, effective June 27, 1995; amended in R95-20 at 20 Ill. Reg. 11263, effective August 1, 1996; amended in R96-10/R97-3/R97-5 at 22 Ill. Reg. 754, effective December 16, 1997; amended in R97-21/R98-3/R98-5 at 22 Ill. Reg. 18042, effective September 28, 1998; amended in R99-15 at 23 Ill. Reg. 9482, effective July 26, 1999; amended in R00-13 at 24 Ill. Reg. 9853, effective June 20, 2000; amended in R02-1/R02-12/R02-17 at 26 Ill. Reg. 6667, effective April 22, 2002; amended in R03-7 at 27 Ill. Reg. 4200, effective February 14, 2003; amended in R03-18 at 27 Ill. Reg. 12916, effective July 17, 2003; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 3700, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 1096, effective December 20, 2006; amended in R07-5/R07-14 at 32 Ill. Reg. 12741, effective July 14, 2008; amended in R11-2/R11-16 at 35 Ill. Reg. 18117, effective October 14, 2011; amended in R13-5 at 37 Ill. Reg. 3249, effective March 4, 2013; amended in R13-15 at 37 Ill. Reg. _____, effective _____.

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SUBPART H: HAZARDOUS WASTE BURNED IN BOILERS AND
INDUSTRIAL FURNACES

Section 726.200 Applicability

- a) The regulations of this Subpart H apply to hazardous waste burned or processed in a boiler or industrial furnace (BIF) (as defined in 35 Ill. Adm. Code 720.110) irrespective of the purpose of burning or processing, except as provided by subsections (b), (c), (d), (g), and (h) of this Section. In this Subpart H, the term “burn” means burning for energy recovery or destruction or processing for materials recovery or as an ingredient. The emissions standards of Sections 726.204, 726.205, 726.206, and 726.207 apply to facilities operating under interim status or under a RCRA permit, as specified in Sections 726.202 and 726.203.
- b) Integration of the MACT standards.
 - 1) Except as provided by subsections (b)(2), (b)(3), and (b)(4) of this Section, the standards of this Part do not apply to a new hazardous waste boiler or industrial furnace unit that becomes subject to RCRA permit requirements after October 12, 2005; or no longer apply when an owner or operator of an existing hazardous waste boiler or industrial furnace unit demonstrates compliance with the maximum achievable control technology (MACT) requirements of federal subpart EEE of 40 CFR 63 (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors), incorporated by reference in 35 Ill. Adm. Code 720.111(b), by conducting a comprehensive performance test and submitting to the Agency a Notification of Compliance, pursuant to 40 CFR 63.1207(j) (What are the performance testing requirements?) and 63.1210(d) (What are the notification requirements?), documenting compliance with the requirements of federal subpart EEE of 40 CFR 63. Nevertheless, even after this demonstration of compliance with the MACT standards, RCRA permit conditions that were based on the standards of this Part will continue to be in effect until they are removed from the permit or the permit is terminated or revoked, unless the permit expressly provides otherwise.
 - 2) The following standards continue to apply:
 - A) If an owner or operator elects to comply with 35 Ill. Adm. Code 703.320(a)(1)(A) to minimize emissions of toxic compounds from

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startup, shutdown, and malfunction events, Section 726.202(e)(1), requiring operations in accordance with the operating requirements specified in the permit at all times that hazardous waste is in the unit, and Section 726.202(e)(2)(C), requiring compliance with the emission standards and operating requirements, during startup and shutdown if hazardous waste is in the combustion chamber, except for particular hazardous wastes. These provisions apply only during startup, shutdown, and malfunction events;

- B) The closure requirements of Sections 726.202(e)(11) and 726.203(l);
 - C) The standards for direct transfer of Section 726.211;
 - D) The standards for regulation of residues of Section 726.212; and
 - E) The applicable requirements of Subparts A through H, BB, and CC of 35 Ill. Adm. Code 724 and 725.
- 3) The owner or operator of a boiler or hydrochloric acid production furnace that is an area source under 40 CFR 63.2, incorporated by reference in 35 Ill. Adm. Code 720.111(b) (as 40 CFR 63), that has not elected to comply with the emission standards of 40 CFR 63.1216, 63.1217, and 63.1218, incorporated by reference in 35 Ill. Adm. Code 720.111(b) (as subpart EEE of 40 CFR 63), for particulate matter, semivolatile and low volatile metals, and total chlorine, also remains subject to the following requirements of this Part:
- A) Section 726.205 (Standards to Control PM);
 - B) Section 726.206 (Standards to Control Metals Emissions); and
 - C) Section 726.207 (Standards to Control HCl and Chlorine Gas Emissions).
- 4) The particulate matter standard of Section 726.205 remains in effect for a boiler that elects to comply with the alternative to the particulate matter standard under 40 CFR 63.1216(e) and 63.1217(e), each incorporated by reference in 35 Ill. Adm. Code 720.111(b) (as subpart EEE of 40 CFR 63).

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BOARD NOTE: Sections 9.1 and 39.5 of the Environmental Protection Act [415 ILCS 5/9.1 and 39.5] make the federal MACT standards directly applicable to entities in Illinois and authorize the Agency to issue permits based on the federal standards. In adopting this subsection (b), USEPA stated as follows (at 64 Fed Reg. 52828, 52975 (November 30, 1999)):

Under [the approach adopted by USEPA as a] final rule, MACT air emissions and related operating requirements are to be included in title V permits; RCRA permits will continue to be required for all other aspects of the combustion unit and the facility that are governed by RCRA (e.g., corrective action, general facility standards, other combustor-specific concerns such as materials handling, risk-based emissions limits and operating requirements, as appropriate, and other hazardous waste management units).

- c) The following hazardous wastes and facilities are not subject to regulation pursuant to this Subpart H:
- 1) Used oil burned for energy recovery that is also a hazardous waste solely because it exhibits a characteristic of hazardous waste identified in Subpart C of 35 Ill. Adm. Code 721. Such used oil is subject to regulation pursuant to 35 Ill. Adm. Code 739, rather than this Subpart H;
 - 2) Gas recovered from hazardous or solid waste landfills, when such gas is burned for energy recovery;
 - 3) Hazardous wastes that are exempt from regulation pursuant to 35 Ill. Adm. Code 721.104 and 721.106(a)(3)(C) and (a)(3)(D) and hazardous wastes that are subject to the special requirements for conditionally exempt small quantity generators pursuant to 35 Ill. Adm. Code 721.105; and
 - 4) Coke ovens, if the only hazardous waste burned is USEPA hazardous waste no. K087 decanter tank tar sludge from coking operations.
- d) Owners and operators of smelting, melting, and refining furnaces (including pyrometallurgical devices, such as cupolas, sintering machines, roasters, and foundry furnaces, but not including cement kilns, aggregate kilns, or halogen acid furnaces burning hazardous waste) that process hazardous waste solely for metal recovery are conditionally exempt from regulation pursuant to this Subpart H, except for Sections 726.201 and 726.212.

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- 1) To be exempt from Sections 726.202 through 726.211, an owner or operator of a metal recovery furnace or mercury recovery furnace must comply with the following requirements, except that an owner or operator of a lead or a nickel-chromium recovery furnace or a metal recovery furnace that burns baghouse bags used to capture metallic dust emitted by steel manufacturing must comply with the requirements of subsection (d)(3) of this Section, and an owner or operator of a lead recovery furnace that is subject to regulation under the Secondary Lead Smelting NESHAP of federal subpart X of 40 CFR 63 (National Emission Standards for Hazardous Air Pollutants from Secondary Lead Smelting) must comply with the requirements of subsection (h) of this Section:
 - A) Provide a one-time written notice to the Agency indicating the following:
 - i) The owner or operator claims exemption pursuant to this subsection (d);
 - ii) The hazardous waste is burned solely for metal recovery consistent with the provisions of subsection (d)(2) of this Section;
 - iii) The hazardous waste contains recoverable levels of metals; and
 - iv) The owner or operator will comply with the sampling and analysis and recordkeeping requirements of this subsection (d);
 - B) Sample and analyze the hazardous waste and other feedstocks as necessary to comply with the requirements of this subsection (d) by using appropriate methods; and
 - C) Maintain at the facility for at least three years records to document compliance with the provisions of this subsection (d), including limits on levels of toxic organic constituents and Btu value of the waste and levels of recoverable metals in the hazardous waste compared to normal non-hazardous waste feedstocks.

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- 2) A hazardous waste meeting either of the following criteria is not processed solely for metal recovery:
 - A) The hazardous waste has a total concentration of organic compounds listed in Appendix H to 35 Ill. Adm. Code 721 exceeding 500 ppm by weight, as fired, and so is considered to be burned for destruction. The concentration of organic compounds in a waste as-generated may be reduced to the 500 ppm limit by bona fide treatment that removes or destroys organic constituents. Blending for dilution to meet the 500 ppm limit is prohibited, and documentation that the waste has not been impermissibly diluted must be retained in the records required by subsection (d)(1)(C) of this Section; or
 - B) The hazardous waste has a heating value of 5,000 Btu/lb or more, as-fired, and is so considered to be burned as fuel. The heating value of a waste as-generated may be reduced to below the 5,000 Btu/lb limit by bona fide treatment that removes or destroys organic constituents. Blending for dilution to meet the 5,000 Btu/lb limit is prohibited and documentation that the waste has not been impermissibly diluted must be retained in the records required by subsection (d)(1)(C) of this Section.

- 3) To be exempt from Sections 726.202 through 726.211, an owner or operator of a lead, nickel-chromium, or mercury recovery furnace, except for an owner or operator of a lead recovery furnace that is subject to regulation pursuant to the Secondary Lead Smelting NESHAP of subpart X of 40 CFR 63, or a metal recovery furnace that burns baghouse bags used to capture metallic dusts emitted by steel manufacturing must provide a one-time written notice to the Agency identifying each hazardous waste burned and specifying whether the owner or operator claims an exemption for each waste pursuant to this subsection (d)(3) or subsection (d)(1) of this Section. The owner or operator must comply with the requirements of subsection (d)(1) of this Section for those wastes claimed to be exempt pursuant to that subsection and must comply with the following requirements for those wastes claimed to be exempt pursuant to this subsection (d)(3):
 - A) The hazardous wastes listed in Appendices K, L, and M of this Part and baghouse bags used to capture metallic dusts emitted by steel manufacturing are exempt from the requirements of subsection (d)(1) of this Section, provided the following are true:

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- i) A waste listed in Appendix K of this Part must contain recoverable levels of lead, a waste listed in Appendix L of this Part must contain recoverable levels of nickel or chromium, a waste listed in Appendix M of this Part must contain recoverable levels of mercury and contain less than 500 ppm of Appendix H to 35 Ill. Adm. Code 721 organic constituents, and baghouse bags used to capture metallic dusts emitted by steel manufacturing must contain recoverable levels of metal;
 - ii) The waste does not exhibit the toxicity characteristic of 35 Ill. Adm. Code 721.124 for an organic constituent;
 - iii) The waste is not a hazardous waste listed in Subpart D of 35 Ill. Adm. Code 721 because it is listed for an organic constituent, as identified in Appendix G of 35 Ill. Adm. Code 721; and
 - iv) The owner or operator certifies in the one-time notice that hazardous waste is burned pursuant to the provisions of subsection (d)(3) of this Section and that sampling and analysis will be conducted or other information will be obtained as necessary to ensure continued compliance with these requirements. Sampling and analysis must be conducted according to subsection (d)(1)(B) of this Section, and records to document compliance with subsection (d)(3) of this Section must be kept for at least three years.
- B) The Agency may decide, on a case-by-case basis, that the toxic organic constituents in a material listed in Appendix K, Appendix L, or Appendix M of this Part that contains a total concentration of more than 500 ppm toxic organic compounds listed in Appendix H to 35 Ill. Adm. Code 721 may pose a hazard to human health and the environment when burned in a metal recovery furnace exempt from the requirements of this Subpart H. Under these circumstances, after adequate notice and opportunity for comment, the metal recovery furnace will become subject to the requirements of this Subpart H when burning that material. In making the hazard determination, the Agency must consider the following factors:

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- i) The concentration and toxicity of organic constituents in the material;
 - ii) The level of destruction of toxic organic constituents provided by the furnace; and
 - iii) Whether the acceptable ambient levels established in Appendix D or E of this Part will be exceeded for any toxic organic compound that may be emitted based on dispersion modeling to predict the maximum annual average off-site ground level concentration.
- e) The standards for direct transfer operations pursuant to Section 726.211 apply only to facilities subject to the permit standards of Section 726.202 or the interim status standards of Section 726.203.
- f) The management standards for residues pursuant to Section 726.212 apply to any BIF burning hazardous waste.
- g) Owners and operators of smelting, melting, and refining furnaces (including pyrometallurgical devices such as cupolas, sintering machines, roasters, and foundry furnaces) that process hazardous waste for recovery of economically significant amounts of the precious metals gold, silver, platinum, palladium, iridium, osmium, rhodium, ruthenium, or any combination of these metals are conditionally exempt from regulation pursuant to this Subpart H, except for Section 726.212. To be exempt from Sections 726.202 through 726.211, an owner or operator must do the following:
 - 1) Provide a one-time written notice to the Agency indicating the following:
 - A) The owner or operator claims exemption pursuant to this Section,
 - B) The hazardous waste is burned for legitimate recovery of precious metal, and
 - C) The owner or operator will comply with the sampling and analysis and recordkeeping requirements of this Section;
 - 2) Sample and analyze the hazardous waste, as necessary, to document that the waste is burned for recovery of economically significant amounts of

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the metals and that the treatment recovers economically significant amounts of precious metal; and

- 3) Maintain, at the facility for at least three years, records to document that all hazardous wastes burned are burned for recovery of economically significant amounts of precious metal.

- h) An owner or operator of a lead recovery furnace that processes hazardous waste for recovery of lead and which is subject to regulation pursuant to the Secondary Lead Smelting NESHAP of subpart X of 40 CFR 63, is conditionally exempt from regulation pursuant to this Subpart H, except for Section 726.201. To become exempt, an owner or operator must provide a one-time notice to the Agency identifying each hazardous waste burned and specifying that the owner or operator claims an exemption pursuant to this subsection (h). The notice also must state that the waste burned has a total concentration of non-metal compounds listed in Appendix H to 35 Ill. Adm. Code 721 of less than 500 ppm by weight, as fired and as provided in subsection (d)(2)(A) of this Section, or is listed in Appendix K to this Part.

- i) Abbreviations and definitions. The following definitions and abbreviations are used in this Subpart H:

“APCS” means air pollution control system.

“BIF” means boiler or industrial furnace.

“Carcinogenic metals” means arsenic, beryllium, cadmium, and chromium.

“CO” means carbon monoxide.

“Continuous monitor” is a monitor that continuously samples the regulated parameter without interruption, that evaluates the detector response at least once each 15 seconds, and that computes and records the average value at least every 60 seconds.

BOARD NOTE: Derived from 40 CFR 266.100(e)(6)(i)(B)(1)(i) and (e)(6)(ii)(B)(1).

“DRE” means destruction or removal efficiency.

“cu m” or “m³” means cubic meters.

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“E” means “ten to the power.” For example, “XE-Y” means “X times ten to the -Y power.”

“Feed rates” are measured as specified in Section 726.202(e)(6).

“Good engineering practice stack height” is as defined by federal 40 CFR 51.100(ii) (Definitions), incorporated by reference in 35 Ill. Adm. Code 720.111(b).

“HC” means hydrocarbon.

“HCl” means hydrogen chloride gas.

“Hourly rolling average” means the arithmetic mean of the 60 most recent one-minute average values recorded by the continuous monitoring system.
BOARD NOTE: Derived from 40 CFR 266.100(e)(6)(i)(B)(1)(ii).

“K” means Kelvin.

“kVA” means kilovolt amperes.

“MEI” means maximum exposed individual.

“MEI location” means the point with the maximum annual average off-site (unless on-site is required) ground level concentration.

“Noncarcinogenic metals” means antimony, barium, lead, mercury, thallium, and silver.

“One hour block average” means the arithmetic mean of the one minute averages recorded during the 60-minute period beginning at one minute after the beginning of the preceding clock hour.
BOARD NOTE: Derived from 40 CFR 266.100(e)(6)(ii)(B)(2).

“PIC” means product of incomplete combustion.

“PM” means particulate matter.

“POHC” means principal organic hazardous constituent.

“ppmv” means parts per million by volume.

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“QA/QC” means quality assurance and quality control.

“Rolling average for the selected averaging period” means the arithmetic mean of one hour block averages for the averaging period.

BOARD NOTE: Derived from 40 CFR 266.100(e)(6)(ii)(B)(2).

“RAC” means reference air concentration, the acceptable ambient level for the noncarcinogenic metals for purposes of this Subpart. RACs are specified in Appendix D of this Part.

“RSD” means risk-specific dose, the acceptable ambient level for the carcinogenic metals for purposes of this Subpart. RSDs are specified in Appendix E of this Part.

“SSU” means “Saybolt Seconds Universal,” a unit of viscosity measured by ASTM D 88-87 (Standard Test Method for Saybolt Viscosity) or D 2161-87 (Standard Practice for Conversion of Kinematic Viscosity to Saybolt Universal or to Saybolt Furol Viscosity), each incorporated by reference in 35 Ill. Adm. Code 720.111(a).

“TCLP test” means Method 1311 (Toxicity Characteristic Leaching Procedure) in “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” USEPA publication number EPA-530/SW-846, incorporated by reference in 35 Ill. Adm. Code 720.111(a), as used for the purposes of 35 Ill. Adm. Code 721.124.

“TESH” means terrain-adjusted effective stack height (in meters).

“Tier I.” See Section 726.206(b).

“Tier II.” See Section 726.206(c).

“Tier III.” See Section 726.206(d).

“Toxicity equivalence” is estimated, pursuant to Section 726.204(e), using section 4.0 (Procedures for Estimating the Toxicity Equivalence of Chlorinated Dibenzo-p-Dioxin and Dibenzofuran Congeners) in appendix IX to 40 CFR 266 (Methods Manual for Compliance with the BIF Regulations), incorporated by reference in 35 Ill. Adm. Code 720.111(b) (see Appendix I of this Part).

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“mg” “ μ g” means microgram.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 726.212 Regulation of Residues

A residue derived from the burning or processing of hazardous waste in a BIF is not excluded from the definition of a hazardous waste under 35 Ill. Adm. Code 721.104(b)(4), (b)(7), or (b)(8), unless the device and the owner or operator meet the following requirements:

- a) The device meets the following criteria:
 - 1) Boilers. Boilers must burn at least 50 percent coal on a total heat input or mass basis, whichever results in the greater mass feed rate of coal;
 - 2) Ore or mineral furnaces. Industrial furnaces subject to 35 Ill. Adm. Code 721.104(b)(7) must process at least 50 percent by weight of normal, nonhazardous raw materials;
 - 3) Cement kilns. Cement kilns must process at least 50 percent by weight of normal cement-production raw materials;
- b) The owner or operator demonstrates that the hazardous waste does not significantly affect the residue by demonstrating conformance with either of the following criteria:
 - 1) Comparison of waste-derived residue with normal residue. The waste-derived residue must not contain constituents listed in Appendix H to 35 Ill. Adm. Code 721 (toxic constituents) that could reasonably be attributable to the hazardous waste at concentrations significantly higher than in residue generated without burning or processing of hazardous waste, using the following procedure. Toxic compounds that could reasonably be attributable to burning or processing the hazardous waste (constituents of concern) include toxic constituents in the hazardous waste, and the organic compounds listed in Appendix H to 35 Ill. Adm. Code 721 that may be PICs. For polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans, analyses must be performed to determine specific congeners and homologues, and the results converted to 2,3,7,8-TCDD equivalent values using the procedure specified in section 4.0 of the documents referenced in Appendix I of this Part.

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- A) Normal residue. Concentrations of toxic constituents of concern in normal residue must be determined based on analyses of a minimum of 10 samples representing a minimum of 10 days of operation. Composite samples may be used to develop a sample for analysis provided that the compositing period does not exceed 24 hours. The upper tolerance limit (at 95 percent confidence with a 95 percent proportion of the sample distribution) of the concentration in the normal residue must be considered the statistically-derived concentration in the normal residue. If changes in raw materials or fuels reduce the statistically-derived concentrations of the toxic constituents of concern in the normal residue, the statistically-derived concentrations must be revised or statistically-derived concentrations of toxic constituents in normal residue must be established for a new mode of operation with the new raw material or fuel. To determine the upper tolerance limit in the normal residue, the owner or operator must use statistical procedures prescribed in section 7.0 (Statistical Methodology for Bevill Residue Determinations) in federal appendix IX to 40 CFR 266 (Methods Manual for Compliance with the BIF Regulations), USEPA publication number EPA-454/R-92-019, incorporated by reference in 35 Ill. Adm. Code 720.111(b) (see Appendix I of this Part).
- B) Waste-derived residue. Waste derived residue must be sampled and analyzed as often as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the concentrations established for the normal residue under subsection (b)(1)(A) of this Section. If so, hazardous waste burning has significantly affected the residue and the residue is not excluded from the definition of "hazardous waste." Concentrations of toxic constituents in waste-derived residue must be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite sample for analysis provided that the sampling period does not exceed 24 hours. If more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent must be the arithmetic mean of the concentrations in the samples. No results can be disregarded; or

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- 2) Comparison of waste-derived residue concentrations with health-based limits.
- A) Nonmetal constituents. The concentration of each nonmetal toxic constituent of concern (specified in subsection (b)(1) of this Section) in the waste-derived residue must not exceed the health-based level specified in Appendix G of this Part, or the level of detection, whichever is higher. If a health-based limit for a constituent of concern is not listed in Appendix G of this Part, then a limit of 0.002 ~~mg/kg~~ ~~µg/kg~~ or the level of detection (using appropriate analytical methods), whichever is higher, must be used. The levels specified in Appendix G of this Part (and the default level of 0.002 ~~mg/kg~~ ~~µg/kg~~ or the level of detection for constituents, as identified in Note 1 of Appendix G of this Part) are administratively stayed under the condition, for those constituents specified in subsection (b)(1) of this Section, that the owner or operator complies with alternative levels defined as the land disposal restriction limits specified in 35 Ill. Adm. Code 728.143 and Table B to 35 Ill. Adm. Code 728 for F039 nonwastewaters. In complying with those alternative levels, if an owner or operator is unable to detect a constituent despite documenting use of the best good-faith efforts, as defined by applicable USEPA guidance and standards, the owner or operator is deemed to be in compliance for that constituent. Until USEPA develops new guidance or standards, the owner or operator may demonstrate such good-faith efforts by achieving a detection limit for the constituent that does not exceed an order of magnitude above (ten times) the level provided by 35 Ill. Adm. Code 728.143 and Table B to 35 Ill. Adm. Code 728 for F039 nonwastewater levels for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (D/F), analyses must be performed for total hexachlorodibenzo-p-dioxins, total hexachlorodibenzofurans, total pentachlorodibenzo-p-dioxins, total pentachlorodibenzofurans, total tetrachlorodibenzo-p-dioxins, and total tetrachlorodibenzofurans;

BOARD NOTE: In a note to corresponding 40 CFR 266.112(b)(2)(i), USEPA stated as follows:

The administrative stay, under the condition that the owner or operator complies with alternative levels

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defined as the land disposal restriction limits specified in 35 Ill. Adm. Code 728.143 for F039 nonwastewaters, remains in effect until further administrative action is taken and notice is published in the Federal Register and the Code of Federal Regulations.

Under Section 3006(b) and (g) of RCRA, 42 USC 6926(b) and (g), federal amendments do not go into effect in Illinois until the State of Illinois incorporates them into the State program. This applies unless the authority under which USEPA adopted the amendments is the Hazardous and Solid Waste Amendments of 1984 (HSWA), in which case the federal amendments become effective in Illinois on their federal effective date.

The federal regulations do not themselves define the phrase "appropriate analytical methods," but USEPA did include a definition in its preamble discussion accompanying the rule. The Board directs attention to the following segment (at 70 Fed. Reg. 34538, 34541 (June 14, 2005)) for the purposes of subsections (b)(1)(C) and (b)(1)(D) of this Section:

[T]wo primary considerations in selecting an appropriate method, which together serve as our general definition of an appropriate method [are the following] . . . :

1. Appropriate methods are reliable and accepted as such in the scientific community.
2. Appropriate methods generate effective data.

USEPA went on to further elaborate these two concepts and to specify other documents that might provide guidance.

- B) Metal constituents. The concentration of metals in an extract obtained using the TCLP test must not exceed the levels specified in Appendix G of this Part;
- C) Sampling and analysis. Wastewater-derived residue must be sampled and analyzed as often as necessary to determine whether the

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residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the health-based levels. Concentrations of concern in the wastewater-derived residue must be determined based on analysis of one or more samples obtained over a 24-hour period. Multiple samples may be analyzed, and multiple samples may be taken to form a composite for analysis provided that the sampling period does not exceed 24 hours. If more than one sample is analyzed to characterize waste-derived residues generated over a 24-hour period, the concentration of each toxic constituent is the arithmetic mean of the concentrations of the samples. No results can be disregarded; and

- c) Records sufficient to document compliance with the provisions of this Section must be retained until closure of the BIF unit. At a minimum, the following must be recorded:
 - 1) Levels of constituents in Appendix H to 35 Ill. Adm. Code 721 that are present in waste-derived residues;
 - 2) If the waste-derived residue is compared with normal residue under subsection (b)(1) of this Section:
 - A) The levels of constituents in Appendix H to 35 Ill. Adm. Code 721 that are present in normal residues; and
 - B) Data and information, including analyses of samples as necessary, obtained to determine if changes in raw materials or fuels would reduce the concentration of toxic constituents of concern in the normal residue.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 726.APPENDIX E Risk-Specific Doses

BOARD NOTE: These are risk specific doses (RSDs) based on a risk of 1 in 10,000 (1×10^{-5}).

Constituent	CAS No.	Unit risk ($m^3/\mu g$)	RSD ($\mu g/m^3$)
Acrylamide	79-06-1	0.0013	0.0077

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Acrylonitrile	107-13-1	0.000068	0.15
Aldrin	309-00-2	0.0049	0.0020
Aniline	62-53-3	0.0000074	1.4
Arsenic	7440-38-2	0.0043	0.0023
Benz(a)anthracene	56-55-3	0.00089	0.011
Benzene	71-43-2	0.0000083	1.2
Benzidine	92-87-5	0.067	0.00015
Benzo(a)pyrene	50-32-8	0.0033	0.0030
Beryllium	7440-41-7	0.0024	0.0042
Bis(2-chloroethyl)ether	111-44-4	0.00033	0.030
Bis(chloromethyl)ether	542-88-1	0.062	0.00016
Bis(2-ethylhexyl)-phthalate	117-81-7	0.00000024	42.
1,3-Butadiene	106-99-0	0.00028	0.036
Cadmium	7440-43-9	0.0018	0.0056
Carbon Tetrachloride	56-23-5	0.000015	0.67
Chlordane	57-74-9	0.00037	0.027
Chloroform	67-66-3	0.000023	0.43
Chloromethane	74-87-3	0.0000036	2.8
Chromium VI	7440-47-3	0.012	0.00083
DDT	50-29-3	0.000097	0.10
Dibenz(a,h)anthracene	53-70-3	0.014	0.00071
1,2-Dibromo-3-chloropropane	96-12-8	0.0063	0.0016
<u>1,2-Dibromo-3-chloropropane</u>			
1,2-Dibromoethane	106-93-4	0.00022	0.045
1,1-Dichloroethane	75-34-3	0.000026	0.38
1,2-Dichloroethane	107-06-2	0.000026	0.38
1,1-Dichloroethylene	75-35-4	0.000050	0.20
1,3-Dichloropropene	542-75-6	0.35	0.000029
Dieldrin	60-57-1	0.0046	0.0022
Diethylstilbestrol	56-53-1	0.14	0.000071
Dimethylnitrosamine	62-75-9	0.014	0.00071
2,4-Dinitrotoluene	121-14-2	0.000088	0.11
1,2-Diphenylhydrazine	122-66-7	0.00022	0.045
1,4-Dioxane	123-91-1	0.0000014	7.1
Epichlorohydrin	106-89-8	0.0000012	8.3
Ethylene Oxide	75-21-8	0.00010	0.10
Ethylene Dibromide	106-93-4	0.00022	0.045
Formaldehyde	50-00-0	0.000013	0.77
Heptachlor	76-44-8	0.0013	0.0077

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Heptachlor Epoxide	1024-57-3	0.0026	0.0038
Hexachlorobenzene	118-74-1	0.00049	0.020
Hexachlorobutadiene	87-68-3	0.000020	0.50
Alpha-hexachlorocyclohexane	319-84-6	0.0018	0.0056
Beta-hexachlorocyclohexane	319-85-7	0.00053	0.019
Gamma-hexachlorocyclohexane	58-89-9	0.00038	0.026
Hexachlorocyclohexane, Technical		0.00051	0.020
Hexachlorodibenzo-p-dioxin (1,2 Mixture)		1.3	0.0000077
Hexachloroethane	67-72-1	0.0000040	2.5
Hydrazine	302-01-2	0.0029	0.0034
Hydrazine Sulfate	302-01-2	0.0029	0.0034
3-Methylcholanthrene	56-49-5	0.0027	0.0037
Methyl Hydrazine	60-34-4	0.00031	0.032
Methylene Chloride	75-09-2	0.0000041	2.4
4,4'-Methylene-bis-2-chloroaniline	101-14-4	0.000047	0.21
Nickel	7440-02-0	0.00024	0.042
Nickel Refinery Dust	7440-02-0	0.00024	0.042
Nickel Subulfide	12035-72-2	0.00048	0.021
2-Nitropropane	79-46-9	0.027	0.00037
N-Nitroso-n-butylamine	924-16-3	0.0016	0.0063
N-Nitroso-n-methylurea	684-93-5	0.086	0.00012
N-Nitrosodiethylamine	55-18-5	0.043	0.00023
N-Nitrosopyrrolidine	930-55-2	0.00061	0.016
Pentachloronitrobenzene	82-68-8	0.000073	0.14
PCBs	1336-36-3	0.0012	0.0083
Pronamide	23950-58-5	0.0000046	2.2
Reserpine	50-55-5	0.0030	0.0033
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	45.	0.0000022
1,1,2,2-Tetrachloroethane	79-34-5	0.000058	0.17
Tetrachloroethylene	127-18-4	0.00000048	21.
Thiourea	62-56-6	0.00055	0.018
1,1,2-Trichloroethane	79-00-5	0.000016	0.63
Trichloroethylene	79-01-6	0.0000013	7.7
2,4,6-Trichlorophenol	88-06-2	0.0000057	1.8
Toxaphene	8001-35-2	0.00032	0.031
Vinyl Chloride	75-01-4	0.0000071	1.4

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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- 1) Heading of the Part: Standards for Owners and Operators of Hazardous Waste Facilities Operating Under a RCRA Standardized Permit
- 2) Code citation: 35 Ill. Adm. Code 727
- 3)

<u>Section numbers:</u>	<u>Proposed action:</u>
727.110	Amend
727.240	Amend
- 4) Statutory authority: 415 ILCS 5/7.2, 22.4, and 27.
- 5) Effective date of amendments: OCT 24 2013
- 6) Does this rulemaking contain an automatic repeal date? No.
- 7) Do these amendments contain incorporations by reference? No.
- 8) Statement of availability: The adopted amendments, a copy of the Board's opinion and order adopted September 5, 2013 in docket R13-15, and all materials incorporated by reference are on file at the Board's principal office and are available for public inspection and copying.
- 9) Notice of proposal published in the Illinois Register: July 5, 2013, 37 Ill. Reg. 9388.
- 10) Has JCAR issued a statement of objections to these rules? No. Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).
- 11) A table that appears in the Board's opinion and order of September 5, 2013 in docket R13-15 summarizes the differences between the amendments adopted in that order and those proposed by the Board in an opinion and order dated June 20, 2013, in docket R13-15.

The differences are limited to minor corrections and *Illinois Administrative Code* format corrections to the text, each of which is listed in a table in the Board's opinion and order of September 5, 2013. The changes are intended to have no substantive effect. The intent is to correct the text without deviation from the substance of the federal amendments on which this proceeding is based.

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- 12) Have all the changes agreed upon by the Board and JCAR been made as indicated in the agreements issued by JCAR? Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by JCAR.

Since the Notices of Proposed Amendments appeared in the July 5, 2013 issue of the *Illinois Register*, the Board received a number of suggestions for revisions from JCAR. The Board evaluated each suggestion and incorporated a number of changes into the text as a result, as detailed in the opinion and order of September 5, 2013 in docket R13-15, as indicated in item 11 above. See the September 5, 2013 opinion and order in docket R13-15 for additional details on the JCAR suggestions and the Board actions with regard to each. One table in that opinion itemizes the changes made in response to various suggestions. Another table indicates JCAR suggestions not incorporated into the text, with a brief explanation for each.

- 13) Will these amendments replace emergency amendments currently in effect? No.
- 14) Are there any other amendments pending on this Part? No.
- 15) Summary and purpose of amendments: The following briefly describes the subjects and issues involved in docket R13-15 rulemaking of which the amendments to Part 727 are a single segment. Also affected is 35 Ill. Adm. Code 703, 704, 720, 722, 724, 725, 726, 728, and 739, which is covered by separate notices in this issue of the *Illinois Register*. A comprehensive description is contained in the Board's opinion and order of June 20, 2013, proposing amendments in docket R13-15, which opinion and order is available from the address below.

This proceeding updates the Illinois Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste rules to incorporate corrections to various provisions that the United States Environmental Protection Agency (USEPA) suggested. The proceeding further updates the edition of the *Code of Federal Regulations* provisions that are incorporated by reference. The Board further makes a number of corrections to various provisions that the Board has determined are needed.

Specifically, the amendments to Part 727 implement a correction suggested by USEPA and make corrections that the Board has determined are needed. The Board's opinion and order of September 5, 2013 in docket R13-15 discusses the more substantial corrections made in the text. Tables that appear in that opinion and order list all of the various corrections and amendments included in this proceeding. Persons interested in

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the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Tables appear in the Board's opinion and order of September 5, 2013 in docket R13-15 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Section 22.4 of the Environmental Protection Act [415 ILCS 5/22.4] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

- 16) Information and questions regarding these adopted amendments shall be directed to:
Please reference consolidated docket R13-15 and direct inquiries to the following person:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago, IL 60601

312-814-6924

Request copies of the Board's opinion and order of September 5, 2013 at 312-814-3620. Alternatively, you may obtain a copy of the Board's opinion and order from the Internet at <http://www.ipcb.state.il.us>.

The full text of the adopted amendments begins on the next page:

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TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER c: HAZARDOUS WASTE OPERATING REQUIREMENTS

PART 727

STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE
FACILITIES OPERATING UNDER A RCRA STANDARDIZED PERMIT

Section

727.100	General
727.110	General Facility Standards
727.130	Preparedness and Prevention
727.150	Contingency Plan and Emergency Procedures
727.170	Recordkeeping, Reporting, and Notifying
727.190	Releases from Solid Waste Management Units
727.210	Closure
727.240	Financial Requirements
727.270	Use and Management of Containers
727.290	Tank Systems
727.900	Containment Buildings

~~727. Appendix~~ APPENDIX A Financial Assurance Forms

~~727. Illustration~~ ILLUSTRATION A Letter of Chief Financial Officer: Financial Assurance for Facility Closure

~~727. Illustration~~ ILLUSTRATION B Letter of Chief Financial Officer: Financial Assurance for Liability Coverage

~~727. Appendix~~ APPENDIX B Correlation of State and Federal Provisions

~~727. Table~~ TABLE A Correlation of Federal RCRA Standardized Permit Provisions to State Provisions

~~727. Table~~ TABLE B Correlation of State RCRA Standardized Permit Provisions to Federal Provisions

AUTHORITY: Implementing Sections 7.2 and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 22.4, and 27].

SOURCE: Adopted in R06-16/R06-17/R06-18 at 31 Ill. Reg. 1146, effective December 20, 2006; amended in R07-5/R07-14 at 32 Ill. Reg. 12829, effective July 14, 2008; amended in R13-15 at 37 Ill. Reg. _____, effective _____.

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Section 727.110 General Facility Standards

- a) Applicability of this Section. This Section applies to the owner or operator of a facility that treats or stores hazardous waste under a Subpart J of 35 Ill. Adm. Code 703 RCRA standardized permit, except as provided in Section 727.100(a)(2).

BOARD NOTE: Subsection (a) of this Section is derived from 40 CFR 267.10, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

- b) Compliance with this Section. To comply with this Section, the facility owner or operator must obtain a USEPA identification number, and follow the requirements of this Part for waste analysis, security, inspections, training, special waste handling, and location standards.

BOARD NOTE: Subsection (b) of this Section is derived from 40 CFR 267.11, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

- c) Obtaining a USEPA identification number. The facility owner or operator must apply to USEPA Region 5 for a USEPA identification number ~~following the USEPA notification procedures and using USEPA form Form 8700-12~~. The owner or operator ~~may must obtain information and required forms a copy of the form from the Agency or from, and submit a completed copy of the form to the Bureau of Land, in addition to notification to USEPA Region 5.~~

BOARD NOTE: Subsection (c) of this Section is derived from 40 CFR 267.12, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

- d) Waste analysis requirements.
- 1) Before it treats or stores any hazardous wastes, the facility owner or operator must obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, the analysis must contain all the information needed to treat or store the waste to comply with this Part and 35 Ill. Adm. Code 728.
- A) The facility owner or operator may include data in the analysis that was developed pursuant to 35 Ill. Adm. Code 721 or data published or documented on the hazardous waste or on hazardous waste generated from similar processes.

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- B) The facility owner or operator must repeat the analysis as necessary to ensure that it is accurate and up to date. At a minimum, the owner or operator must repeat the analysis if the process or operation generating the hazardous wastes has changed.
- 2) The facility owner or operator must develop and follow a written waste analysis plan that describes the procedures it will follow to comply with subsection (d)(1) of this Section. The owner or operator must keep this plan at the facility. If the owner or operator receives wastes generated from off-site and is eligible for a RCRA standardized permit, the owner or operator also must have submitted the waste analysis plan with the Notice of Intent. At a minimum, the plan must specify all of the following:
- A) The hazardous waste parameters that the owner or operator will analyze and the rationale for selecting these parameters (that is, how analysis for these parameters will provide sufficient information on the waste's properties to comply with subsection (d)(1) of this Section).
 - B) The test methods the owner or operator will use to test for these parameters.
 - C) The sampling method the owner or operator will use to obtain a representative sample of the waste to be analyzed. The owner or operator may obtain a representative sample using either of the following methods:
 - i) One of the sampling methods described in Appendix A of 35 Ill. Adm. Code 721; or
 - ii) An equivalent sampling method.
 - D) How frequently the owner or operator will review or repeat the initial analysis of the waste to ensure that the analysis is accurate and up to date.
 - E) Where applicable, the methods the owner or operator will use to meet the additional waste analysis requirements for specific waste management methods, as specified in 35 Ill. Adm. Code 724.117, 724.934(d), 724.963(d), and 724.983.

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BOARD NOTE: Subsection (d) of this Section is derived from 40 CFR 267.13, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

- e) Security requirements.
- 1) The facility owner or operator must prevent, and minimize the possibility for, livestock and unauthorized people from entering the active portion of its facility.
 - 2) The facility must have either of the features listed in subsection (e)(2)(A) of this Section or those listed in subsections (e)(2)(B) and (e)(2)(C) of this Section:
 - A) A 24-hour surveillance system (for example, television monitoring or surveillance by guards or facility personnel) that continuously monitors and controls entry onto the active portion of the facility; or
 - B) An artificial or natural barrier (for example, a fence in good repair or a fence combined with a cliff) that completely surrounds the active portion of the facility; and
 - C) A means to control entry, at all times, through the gates or other entrances to the active portion of the facility (for example, an attendant, television monitors, locked entrance, or controlled roadway access to the facility).
 - 3) The facility owner or operator must post a sign at each entrance to the active portion of a facility, and at other prominent locations, in sufficient numbers to be seen from any approach to this active portion. The sign must bear the legend "Danger—Unauthorized Personnel Keep Out." The legend must be in English and in any other language predominant in the area surrounding the facility (for example, French or Spanish), and must be legible from a distance of at least 25 feet. The owner or operator may use existing signs with a legend other than "Danger—Unauthorized Personnel Keep Out" if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion and entry onto the active portion can be dangerous.

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BOARD NOTE: Subsection (e) of this Section is derived from 40 CFR 267.14, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

- f) General inspection requirements.
- 1) The owner or operator must inspect its facility for malfunctions and deterioration, operator errors, and discharges that may be causing, or may lead to either of the conditions listed in subsection (f)(1)(A) or (f)(1)(B) of this Section. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they result in harm to human health and the environment.
 - A) A release of hazardous waste constituents to the environment; or
 - B) A threat to human health.
 - 2) The facility owner or operator must develop and follow a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.
 - A) The owner or operator must keep this schedule at the facility.
 - B) The schedule must identify the equipment and devices that the owner or operator will inspect and what problems it will look for, such as malfunctions or deterioration of equipment (for example, inoperative sump pump, leaking fitting, etc.).
 - C) The frequency of the owner's or operator's inspections may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies required in Sections 727.270(e), 727.290(d) and (f), and 727.900(d) and 35 Ill. Adm. Code 724.933, 724.952, 724.953, 724.958, and 724.983 through 724.989, where applicable.

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- 3) The facility owner or operator must remedy any deterioration or malfunction of equipment or structures that the inspection reveals in time to prevent any environmental or human health hazards. Where hazard is imminent or has already occurred, the owner or operator must take immediate remedial action.
- 4) The facility owner or operator must record all inspections. The owner or operator must keep these records for at least three years from the date of inspection. At a minimum, the owner or operator must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

BOARD NOTE: Subsection (f) of this Section is derived from 40 CFR 267.15, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

- g) Employee training.
 - 1) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this Part. The facility owner or operator must ensure that this program includes all the elements described in the documents that are required pursuant to subsection (g)(4)(C) of this Section.
 - A) A person trained in hazardous waste management procedures must direct this program, and must teach facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to their employment positions.
 - B) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by including instruction on emergency procedures, emergency equipment, and emergency systems, including all of the following, where applicable:
 - i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment.
 - ii) Key parameters for automatic waste feed cut-off systems.

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- iii) Communications or alarm systems.
 - iv) Response to fires or explosions.
 - v) Response to groundwater contamination incidents.
 - vi) Shutdown of operations.
- 2) Facility personnel must successfully complete the program required in subsection (g)(1) of this Section within six months after the date of their employment or assignment to a facility or to a new position at a facility, whichever is later. Employees hired after the effective date of the owner's or operator's RCRA standardized permit must not work in unsupervised positions until they have completed the training requirements of subsection (g)(1) of this Section.
- 3) Facility personnel must take part in an annual review of the initial training required in subsection (g)(1) of this Section.
- 4) The facility owner or operator must maintain the following documents and records at its facility:
- A) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;
 - B) A written job description for each position listed pursuant to subsection (g)(4)(A) of this Section. This description must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;
 - C) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed pursuant to subsection (g)(4)(A) of this Section;
 - D) Records that document that facility personnel have received and completed the training or job experience required pursuant to subsections (g)(1), (g)(2), and (g)(3) of this Section.
- 5) The facility owner or operator must keep training records on current personnel until its facility closes. The owner or operator must keep training records on former employees for at least three years from the date

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the employee last worked at its facility. Personnel training records may accompany personnel transferred within a company.

BOARD NOTE: Subsection (g) of this Section is derived from 40 CFR 267.16; ~~as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).~~

- h) Requirements for managing ignitable, reactive, or incompatible wastes.
- 1) The facility owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste by following these requirements:
 - A) The owner or operator must separate these wastes and protect them from sources of ignition or reaction such as open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (for example, from heat-producing chemical reactions), and radiant heat.
 - B) While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flames to specially designated locations.
 - C) "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.
 - 2) If it treats or stores ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, the owner or operator must take precautions to prevent reactions that do the following:
 - A) Generate extreme heat or pressure, fire or explosions, or violent reactions.
 - B) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment.
 - C) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions.
 - D) Damage the structural integrity of the device or facility.
 - E) Threaten human health and the environment in any similar way.

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- 3) The facility owner or operator must document compliance with subsection (h)(1) or (h)(2) of this Section. The owner or operator may base this documentation on references to published scientific or engineering literature, data from trial tests (for example bench scale or pilot scale tests), waste analyses (as specified in Section 727.110(d)), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

BOARD NOTE: Subsection (h) of this Section is derived from 40 CFR 267.17, ~~as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).~~

i) Facility location standards.

- 1) The facility owner or operator may not locate any portion of a new facility where hazardous waste will be treated or stored within 61 meters (200 feet) of a fault that has had displacement in Holocene time.
 - A) “Fault” means a fracture along which rocks on one side have been displaced with respect to those on the other side.
 - B) “Displacement” means the relative movement of any two sides of a fault measured in any direction.
 - C) “Holocene” means the most recent epoch of the Quaternary period, extending from the end of the Pleistocene to the present.

BOARD NOTE: Under the note to corresponding 40 CFR 267.18(a)(3) and 40 CFR 270.14(b)(11), a facility that is located in a political jurisdiction other than those listed in appendix VI of 40 CFR 264, incorporated by reference in 35 Ill. Adm. Code 720.111(b), is assumed to be in compliance with this requirement. No area of Illinois is listed in appendix VI of 40 CFR 264.

- 2) If an owner’s or operator’s facility is located within a 100-year flood plain, it must be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood.
 - A) “100-year flood plain” means any land area that is subject to a one percent or greater chance of flooding in any given year from any source.

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- B) “Washout” means the movement of hazardous waste from the active portion of the facility as a result of flooding.
- C) “100-year flood” means a flood that has a one percent chance of being equaled or exceeded in any given year.

BOARD NOTE: Subsection (i) of this Section is derived from 40 CFR 267.18, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 727.240 Financial Requirements

- a) Applicability and substance of the financial requirements.
 - 1) The regulations in this Section apply to owners and operators who treat or store hazardous waste under a RCRA standardized permit, except as provided in Section 727.100(a)(2) or subsection (a)(4) of this Section.
 - 2) The facility owner or operator must do each of the following:
 - A) It must prepare a closure cost estimate as required in subsection (c) of this Section;
 - B) It must demonstrate financial assurance for closure as required in subsection (d) of this Section; and
 - C) It must demonstrate financial assurance for liability as required in subsection (h) of this Section.
 - 3) The owner or operator must notify the Agency if the owner or operator is named as a debtor in a bankruptcy proceeding under Title 11 (Bankruptcy) of the United States Code (see also subsection (i) of this Section).
 - 4) States and the federal government are exempt from the requirements of this Section.

BOARD NOTE: Subsection (a) of this Section is derived from 40 CFR 267.140, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

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- b) Definitions of terms as used in this Section.
- 1) “Closure plan” means the plan for closure prepared in accordance with the requirements of Section 727.210(c).
 - 2) “Current closure cost estimate” means the most recent of the estimates prepared in accordance with subsections (c)(1), (c)(2), and (c)(3) of this Section.
 - 3) This subsection (b)(3) corresponds with 40 CFR 267.141(c), which USEPA has marked “Reserved.” This statement maintains structural consistency with the corresponding federal rules.
 - 4) “Parent corporation” means a corporation that directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator. In this instance, the owned corporation that is the facility owner or operator is deemed a “subsidiary” of the parent corporation.
 - 5) This subsection (b)(5) corresponds with 40 CFR 267.141(e), which USEPA has marked “Reserved.” This statement maintains structural consistency with the corresponding federal rules.
 - 6) The following terms are used in the specifications for the financial tests for closure and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices:
 - “Assets” means all existing and all probable future economic benefits obtained or controlled by a particular entity.
 - “Current plugging and abandonment cost estimate” means the most recent of the estimates prepared in accordance with 35 Ill. Adm. Code 704.212(a), (b), and (c).
 - “Independently audited” refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.
 - “Liabilities” means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide

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services to other entities in the future as a result of past transactions or events.

“Tangible net worth” means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

- 7) In the liability insurance requirements, the terms “bodily injury” and “property damage” have the meanings given them by applicable State law. However, these terms do not include those liabilities that, consistent with standard industry practices, are excluded from coverage in liability insurance policies for bodily injury and property damage. The Agency intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of these regulations and are not intended to limit their meanings in a way that conflicts with general insurance industry usage.

“Accidental occurrence” means an accident, including continuous or repeated exposure to conditions, that results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

“Legal defense costs” means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

“Sudden accidental occurrence” means an occurrence that is not continuous or repeated in nature.

- 8) “Substantial business relationship” means the extent of a business relationship necessary under applicable ~~State~~ state law to make a guarantee contract issued incident to that relationship valid and enforceable. A “substantial business relationship” must arise from a pattern of recent or ongoing business transactions, in addition to the guarantee itself, such that the Agency can reasonably determine that a substantial business relationship currently existing business relationship exists between the guarantor and the facility owner or operator is demonstrated to the satisfaction of the Agency that is adequate

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consideration to support the obligation of the guarantee relating to any liability towards a third-party. "Applicable state law," as used in this subsection (d)(8), means the laws of the State of Illinois and those of any sister state that govern the guarantee and the adequacy of the consideration.

BOARD NOTE: Subsection (b) of this Section is derived from 40 CFR 267.141, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012). Subsection (b)(8) is also derived from the discussion at 53 Fed. Reg. 33938, 41-43 (Sept. 1, 1988). The term "substantial business relationship" is also independently defined in 35 Ill. Adm. Code 724.241(h) and 725.241(h). Any Agency determination that a substantial business relationship exists is subject to Board review pursuant to section 40 of the Act [415 ILCS 5/40].

- c) Cost estimate for closure.
 - 1) The facility owner or operator must have at the facility a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in Section 727.210(b) through (f) and applicable closure requirements in Sections 727.270(g), 727.290(l), and 727.900(i).
 - A) The estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by the closure plan (see Section 727.210(c)(2)).
 - B) The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See the definition of parent corporation in subsection (b)(4) of this Section.) The owner or operator may use costs for on-site disposal if it can demonstrate that on-site disposal capacity will exist at all times over the life of the facility.
 - C) The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, or non-hazardous wastes, facility structures or equipment, land, or other assets associated with the facility at the time of partial or final closure.

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- D) The facility owner or operator may not incorporate a zero cost for hazardous wastes, or non-hazardous wastes that might have economic value.
- 2) During the active life of the facility, the facility owner or operator must adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instruments used to comply with subsection (d) of this Section. For an owner or operator using the financial test or corporate guarantee, the closure cost estimate must be updated for inflation within 30 days after the close of the guarantor's fiscal year and before submission of updated information to the Agency as specified in subsection (n)(3) of this Section. The adjustment may be made by recalculating the maximum costs of closure in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross Domestic Product (Deflator) published by the U.S. Department of Commerce in its Survey of Current Business, as specified in subsections (c)(2)(A) and (c)(2)(B) of this Section. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.
- A) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.
- B) Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

BOARD NOTE: The table of Deflators is available as Table 1.1.9. in the National Income and Product Account Tables, published by U.S. Department of Commerce, Bureau of Economic Analysis, National Economic Accounts, available on-line at the following web address: www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=3&isuri=1&903=13.

- 3) During the active life of the facility, the facility owner or operator must revise the closure cost estimate no later than 30 days after the Agency has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in subsection (c)(2) of this Section.

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- 4) The facility owner or operator must keep the following at the facility during the operating life of the facility: the latest closure cost estimate prepared in accordance with subsections (c)(1) and (c)(3) of this Section and, when this estimate has been adjusted in accordance with subsection (c)(2) of this Section, the latest adjusted closure cost estimate.

BOARD NOTE: Subsection (c) of this Section is derived from 40 CFR 267.142, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

- d) Financial assurance for closure. The facility owner or operator must establish financial assurance for closure of each storage or treatment unit that it owns or operates. In establishing financial assurance for closure, the owner or operator must choose from among the financial assurance mechanisms in subsections (d)(1) through (d)(7) of this Section. The owner or operator can also use a combination of mechanisms for a single facility if the combination meets the requirement in subsection (d)(8) of this Section, or it may use a single mechanism for multiple facilities as in subsection (d)(9) of this Section. The Agency must release the owner or operator from the requirements of this subsection (d) after the owner or operator meets the criteria pursuant to subsection (d)(10) of this Section.
 - 1) Closure trust fund. An owner or operator may use the "closure trust fund" that is specified in 35 Ill. Adm. Code 724.243(a)(1), (a)(2), and (a)(6) through (a)(11). For purposes of this subsection (d)(1), the following provisions also apply:
 - A) Payments into the trust fund for a new facility must be made annually by the owner or operator over the remaining operating life of the facility as estimated in the closure plan, or over three years, whichever period is shorter. This period of time is hereafter referred to as the "pay-in period."
 - B) For a new facility, the facility owner or operator must make the first payment into the closure trust fund before the facility may accept the initial storage. A receipt from the trustee must be submitted by the owner or operator to the Agency before this initial storage of waste. The first payment must be at least equal to the current closure cost estimate, divided by the number of years in the pay-in period, except as provided in subsection (d)(8) of this Section for multiple mechanisms. Subsequent payments must be

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made no later than 30 days after each anniversary date of the first payment. The owner or operator determines the amount of each subsequent payment by subtracting the current value of the trust fund from the current closure cost estimate, and dividing this difference by the number of years remaining in the pay-in period. Mathematically, the formula is as follows:

$$NP = \frac{(CCE - CVTF)}{YRPP}$$

Where:

NP = the amount of the next payment
CCE = the current closure cost estimate
CVTF = the current value of the trust fund
YRPP = the years remaining in the pay-in period.

- C) The owner or operator of a facility existing on the effective date of this subsection (d)(1) can establish a trust fund to meet the financial assurance requirements of this subsection (d)(1). If the value of the trust fund is less than the current closure cost estimate when a final approval of the permit is granted for the facility, the owner or operator must pay the difference into the trust fund within 60 days.
- D) The facility owner or operator may accelerate payments into the trust fund or deposit the full amount of the closure cost estimate when establishing the trust fund. However, the owner or operator must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in subsections (d)(1)(B) or (d)(1)(C) of this Section.
- E) The facility owner or operator must submit a trust agreement with the wording specified in ~~40 CFR 264.151(a)(1), incorporated by reference in 35 Ill. Adm. Code 720.111(b)~~ designated by the Agency pursuant to subsection (1)(3) of this Section.
- 2) Surety bond guaranteeing payment into a closure trust fund. An owner or operator may use the "surety bond guaranteeing payment into a closure trust fund," as specified in 35 Ill. Adm. Code 724.243(b), including the

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use of the surety bond instrument ~~specified at 40 CFR 264.151(b), incorporated by reference in 35 Ill. Adm. Code 720.111(b) designated by the Agency pursuant to subsection (l)(3) of this Section~~, and the standby trust specified at 35 Ill. Adm. Code 724.243(b)(3).

- 3) Surety bond guaranteeing performance of closure. An owner or operator may use the “surety bond guaranteeing performance of closure,” as specified in 35 Ill. Adm. Code 724.243(c), the submission and use of the surety bond instrument ~~specified at 40 CFR 264.151(e), incorporated by reference in 35 Ill. Adm. Code 720.111(b) designated by the Agency pursuant to subsection (l)(3) of this Section~~, and the standby trust specified at 35 Ill. Adm. Code 724.243(c)(3).
- 4) Closure letter of credit. An owner or operator may use the “closure letter of credit” specified in 35 Ill. Adm. Code 724.243(d), the submission and use of the irrevocable letter of credit instrument ~~specified in 40 CFR 264.151(d), incorporated by reference in 35 Ill. Adm. Code 720.111(b) designated by the Agency pursuant to subsection (l)(3) of this Section~~, and the standby trust specified in 35 Ill. Adm. Code 724.243(d)(3).
- 5) Closure insurance. An owner or operator may use “closure insurance,” as specified in 35 Ill. Adm. Code 724.243(e), utilizing the certificate of insurance for closure ~~specified at 40 CFR 264.151(e), incorporated by reference in 35 Ill. Adm. Code 720.111(b) designated by the Agency pursuant to subsection (l)(3) of this Section~~.
- 6) Corporate financial test. An owner or operator that satisfies the requirements of this subsection (d)(6) may demonstrate financial assurance up to the amount specified in this subsection (d)(6).
 - A) Financial component. See subsection (m) of this Section.

BOARD NOTE: It was necessary for the Board to codify corresponding 40 CFR 267.143(f)(1) as subsection (m) of this Section to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to this subsection (d), (d)(6), or (d)(6)(A) also include added subsection (m) of this Section, as applicable.

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- B) Recordkeeping and reporting requirements. See subsection (n) of this Section.

BOARD NOTE: It was necessary for the Board to codify 40 CFR 267.143(f)(2) as subsection (n) of this Section to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to this subsection (d), (d)(6), or (d)(6)(B) also include added subsection (n) of this Section, as applicable.

- ~~C) The terms of the guarantee must provide as set forth in subsection (e) of this Section.~~

~~BOARD NOTE: It was necessary for the Board to codify 40 CFR 267.143(f)(3) as subsection (e) of this Section to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to this subsection (d), (d)(6), or (d)(6)(C) also include added subsection (e) of this Section, as applicable.~~

- 7) Corporate guarantee.

- A) A facility owner or operator may meet the requirements of this subsection (d) by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a “substantial business relationship” with the owner or operator. The guarantor must meet the requirements for owners or operators in subsection (d)(6) of this Section and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording in ~~40 CFR 264.151(h), incorporated by reference in 35 Ill. Adm. Code 720.111(b) designated by the Agency pursuant to subsection (l)(3) of this Section.~~ The certified copy of the guarantee must accompany the letter from the guarantor’s chief financial officer and accountants’ opinions. If the guarantor’s parent corporation is also the parent corporation of the owner or operator, the letter from the guarantor’s chief financial officer must describe the value received in consideration of the guarantee. If the guarantor is a firm with a “substantial business relationship”

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with the owner or operator, this letter must describe this “substantial business relationship” and the value received in consideration of the guarantee.

- B) For a new facility, the guarantee must be effective and the guarantor must submit the items in subsection (d)(7)(A) of this Section and the items specified in subsection (n)(1) of this Section to the Agency at least 60 days before the owner or operator places waste in the facility.
- C) The terms of the guarantee must provide as required by subsection (o) of this Section.

BOARD NOTE: It was necessary for the Board to codify 40 CFR 267.143(g)(3) as subsection (o) of this Section to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to this subsection (d), (d)(7), or (d)(7)(C) also include added subsection (o) of this Section, as applicable.

- D) If a corporate guarantor no longer meets the requirements of subsection (d)(6)(A) of this Section, the owner or operator must, within 90 days, obtain alternative assurance, and submit the assurance to the Agency for approval. If the owner or operator fails to provide alternate financial assurance within the 90-day period, the guarantor must provide that alternate assurance within the next 30 days, and submit it to the Agency for approval.
 - E) The guarantor is no longer required to meet the requirements of this subsection (d)(7) when either of the following occurs:
 - i) The facility owner or operator substitutes alternate financial assurance as specified in this subsection (d); or
 - ii) The facility owner or operator is released from the requirements of this subsection (d) in accordance with subsection (d)(10) of this Section.
- 8) Use of multiple financial mechanisms. An owner or operator may use more than one mechanism at a particular facility to satisfy the

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requirements of this subsection (d). The acceptable mechanisms are trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, insurance, the financial test, and the guarantee, except owners or operators cannot combine the financial test with the guarantee. The mechanisms must be as specified in subsections (d)(1), (d)(2), (d)(4), (d)(5), (d)(6), and (d)(7) of this Section, respectively, except it is the combination of mechanisms rather than a single mechanism that must provide assurance for an amount at least equal to the cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or letter of credit, it may use the trust fund as the standby trust for the other mechanisms. A single trust fund can be established for two or more mechanisms. The Agency may use any or all of the mechanisms to provide for closure of the facility.

- 9) Use of a financial mechanism for multiple facilities. An owner or operator may use a financial mechanism for multiple facilities, as specified in 35 Ill. Adm. Code 724.243(h).
- 10) Release of the owner or operator from the requirements of this subsection (d). Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Agency will notify the owner or operator in writing that the owner or operator is no longer required by this subsection (d) to maintain financial assurance for final closure of the facility, unless the Agency has reason to believe that final closure has not been completed in accordance with the approved closure plan. The Agency must provide the owner or operator with a detailed written statement of any such reasons to believe that closure has not been conducted in accordance with the approved closure plan.

BOARD NOTE: Subsection (d) of this Section is derived from 40 CFR 267.143, ~~as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).~~

- e) This subsection (e) corresponds with 40 CFR 267.144, which USEPA has marked "Reserved." This statement maintains structural consistency with the corresponding federal rules.

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- f) This subsection (f) corresponds with 40 CFR 267.145, which USEPA has marked "Reserved." This statement maintains structural consistency with the corresponding federal rules.
- g) This subsection (g) corresponds with 40 CFR 267.146, which USEPA has marked "Reserved." This statement maintains structural consistency with the corresponding federal rules.
- h) Liability requirements.
 - 1) Coverage for sudden accidental occurrences. The owner or operator of a hazardous waste treatment or storage facility, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least \$1 million per occurrence with an annual aggregate of at least \$2 million, exclusive of legal defense costs. This liability coverage may be demonstrated as specified in subsection (h)(1)(A) through (h)(1)(G) of this Section:
 - A) Trust fund for liability coverage. The owner or operator may meet the requirements of this subsection (h) by obtaining a trust fund for liability coverage as specified in 35 Ill. Adm. Code 724.247(j).
 - B) Surety bond for liability coverage. The owner or operator may meet the requirements of this subsection (h) by obtaining a surety bond for liability coverage as specified in 35 Ill. Adm. Code 724.247(i).
 - C) Letter of credit for liability coverage. The owner or operator may meet the requirements of this subsection (h) by obtaining a letter of credit for liability coverage as specified in 35 Ill. Adm. Code 724.247(h).
 - D) Insurance for liability coverage. The owner or operator may meet the requirements of this subsection (h) by obtaining liability insurance as specified in 35 Ill. Adm. Code 724.247(a)(1).

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- E) Financial test for liability coverage. The owner or operator may meet the requirements of this subsection (h) by passing a financial test as specified in subsection (h)(6) of this Section.
 - F) Guarantee for liability coverage. The owner or operator may meet the requirements of this subsection (h) by obtaining a guarantee as specified in subsection (h)(7) of this Section.
 - G) Combination of mechanisms. The owner or operator may demonstrate the required liability coverage through the use of combinations of mechanisms as allowed by 35 Ill. Adm. Code 724.247(a)(6).
 - H) An owner or operator shall notify the Agency in writing within 30 days whenever either of the following occurs:
 - i) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in subsections (h)(1)(A) through (h)(1)(G) of this Section; or
 - ii) A Certification of Valid Claim for bodily injury or property damages caused by a sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage pursuant to subsections (h)(1)(A) through (h)(1)(G) of this Section; or
 - iii) A final court order establishing a judgment for bodily injury or property damage caused by a sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage pursuant to subsections (h)(1)(A) through (h)(1)(G) of this Section.
- 2) This subsection (h)(2) corresponds with 40 CFR 267.147(b), which USEPA has marked "Reserved." This statement maintains structural consistency with the corresponding federal rules.

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- 3) This subsection (h)(3) corresponds with 40 CFR 267.147(c), which USEPA has marked "Reserved." This statement maintains structural consistency with the corresponding federal rules.
- 4) This subsection (h)(4) corresponds with 40 CFR 267.147(d), which USEPA has marked "Reserved." This statement maintains structural consistency with the corresponding federal rules.
- 5) Period of coverage. Within 60 days after receiving certifications from the facility owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Agency must notify the owner or operator in writing that he is no longer required by this section to maintain liability coverage from that facility, unless the Agency has reason to believe that closure has not been in accordance with the approved closure plan.
- 6) Financial test for liability coverage. A facility owner or operator that satisfies the requirements of this subsection (h)(6) may demonstrate financial assurance for liability up to the amount specified in this subsection (h)(6):
 - A) Financial component.
 - i) If using the financial test for only liability coverage, the owner or operator must have tangible net worth greater than the sum of the liability coverage to be demonstrated by this test plus \$10 million.
 - ii) The owner or operator must have assets located in the United States amounting to at least the amount of liability covered by this financial test.
 - iii) An owner or operator who is demonstrating coverage for liability and any other environmental obligations, including closure pursuant to subsection (d)(6) of this Section, through a financial test must meet the requirements of subsection (d)(6) of this Section.
 - B) Recordkeeping and reporting requirements. See subsection (p) of this Section.

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BOARD NOTE: It was necessary for the Board to codify 40 CFR 267.147(f)(2) as subsection (p) of this Section to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to this subsection (h), (h)(6), or (h)(6)(B) also include added subsection (p) of this Section, as applicable.

- 7) Guarantee for liability coverage.
 - A) Subject to subsection (h)(7)(B) of this Section, a facility owner or operator may meet the requirements of this subsection (h) by obtaining a written guarantee, hereinafter referred to as “guarantee.” The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a “substantial business relationship” with the owner or operator. The guarantor must meet the requirements for owners or operators in subsections (h)(6)(A) and (h)(6)(B) of this Section. The wording of the guarantee must be identical to the wording specified in 40 CFR 264.151(h)(2), incorporated by reference in 35 Ill. Adm. Code 720.111(b) designated by the Agency pursuant to subsection (l)(3) of this Section. A certified copy of the guarantee must accompany the items sent to the Agency, as specified in subsection (h)(6)(B) of this Section. One of these items must be the letter from the guarantor’s chief financial officer. If the guarantor’s parent corporation is also the parent corporation of the owner or operator, this letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a “substantial business relationship” with the owner or operator, this letter must describe this “substantial business relationship” and the value received in consideration of the guarantee.
 - i) If the facility owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden accidental occurrences arising from the operation of facilities covered by this corporate guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from such injury or damage, the guarantor will do so up to the limits of coverage.

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- ii) This subsection (h)(7)(A)(ii) corresponds with 40 CFR 267.147(g)(1)(ii), which USEPA has marked "Reserved." This statement maintains structural consistency with the corresponding federal rules.

- B) Foreign Corporations. See subsection (q) of this Section.

BOARD NOTE: It was necessary for the Board to codify 40 CFR 267.147(g)(2) as subsection (q) of this Section to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to this subsection (h), (h)(7), or (h)(7)(B) also include added subsection (q) of this Section, as applicable. See the further explanation of the differences between subsection (q) of this Section and 40 CFR 267.147(g)(2) in the Board note appended to subsection (q).

BOARD NOTE: Subsection (h) of this Section is derived from 40 CFR 267.147, ~~as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).~~

- i) Incapacity of owners or operators, guarantors, or financial institutions.
 - 1) The facility owner or operator must notify the Agency by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy) of the United States Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in subsections (d)(7) and (h)(7) of this Section must make such a notification if it is named as debtor, as required under the terms of the corporate guarantee ~~(see 40 CFR 264.151(h), incorporated by reference in 35 Ill. Adm. Code 720.111(b))~~ designated by the Agency pursuant to subsection (l)(3) of this Section.
 - 2) An owner or operator who fulfills the requirements of subsection (d) or (h) of this Section by obtaining a trust fund, surety bond, letter of credit, or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within 60 days after such an event.

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BOARD NOTE: Subsection (i) of this Section is derived from 40 CFR 267.148, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

- j) This subsection (j) corresponds with 40 CFR 267.149, which USEPA has marked "Reserved." This statement maintains structural consistency with the corresponding federal rules.
- k) State assumption of responsibility.
 - 1) If the State either assumes legal responsibility for an owner's or operator's compliance with the closure care or liability requirements of this Part or assures that funds will be available from State sources to cover those requirements, the owner or operator will be in compliance with the requirements of subsection (d) or (h) of this Section if ~~the Agency~~ USEPA Region 5 determines that the State's assumption of responsibility is at least equivalent to the financial mechanisms specified in this Section. ~~The Agency must~~ USEPA has stated that USEPA Region 5 will evaluate the equivalency of State guarantees principally in terms of the following: the certainty of the availability of funds for the required closure care activities or liability coverage; and the amount of funds that will be made available. ~~The Agency~~ USEPA has stated that USEPA Region 5 may also consider other factors as it deems appropriate. The facility owner or operator must submit to ~~the Agency~~ USEPA Region 5 a letter from the State describing the nature of the State's assumption of responsibility together with a letter from the owner or operator requesting that the State's assumption of responsibility be considered acceptable for meeting the requirements of this Section. The letter from the State must include, or have attached to it, the following information: the facility's USEPA identification number, the facility name and address, and the amount of funds for closure care or liability coverage that are guaranteed by the State. ~~The Agency~~ USEPA has stated that USEPA Region 5 will notify the owner or operator of his determination regarding the acceptability of the State's guarantee in lieu of financial mechanisms specified in this Section. ~~The Agency~~ USEPA has stated that USEPA Region 5 may require the owner or operator to submit additional information as is deemed necessary to make this determination. Pending this determination, the owner or operator will be deemed to be in compliance with the requirements of subsection (d) or (h) of this Section, as applicable.

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- 2) If a State's assumption of responsibility is found acceptable as specified in subsection (k)(1) of this Section except for the amount of funds available, the owner or operator may satisfy the requirements of this Section by use of both the State's assurance and additional financial mechanisms as specified in this Section. The amount of funds available through the State and federal mechanisms must at least equal the amount required by this Section.

BOARD NOTE: Subsection (k) of this Section is derived from 40 CFR 267.150, as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

- 1) Wording of the instruments.

- 1) Forms for using the corporate financial test to demonstrate financial assurance for closure. The chief financial officer of an owner or operator of a facility with a RCRA standardized permit who uses a financial test to demonstrate financial assurance for that facility must complete a letter as specified in subsection (d)(6) of this Section. The letter must be worded as set forth in Appendix A, Illustration A of this Part designated by the Agency pursuant to subsection (l)(3) of this Section.

~~BOARD NOTE: It was necessary for the Board to codify the form set forth in 40 CFR 267.151(a) as Appendix A, Illustration A of this Part. The Board intends that any citation to this subsection (l) or (l)(1) also include added Appendix A, Illustration A of this Part, as applicable.~~

- 2) Forms for using the financial test to demonstrate financial assurance for third-party liability. The chief financial officer of an owner or operator of a facility with a RCRA standardized permit who use a financial test to demonstrate financial assurance only for third party liability for that (or other RCRA standardized permit) facility (or those facilities) must complete a letter as specified in subsection (h)(6) of this Section. The letter must be worded as set forth in Appendix A, Illustration B of this Part designated by the Agency pursuant to subsection (l)(3) of this Section.

~~BOARD NOTE: It was necessary for the Board to codify the form set forth in 40 CFR 267.151(b) as Appendix A, Illustration B of this Part. The Board intends that any citation to this subsection (l) or (l)(2) also include added Appendix A, Illustration B of this Part, as applicable.~~

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- 3) The Agency must designate standardized forms based on 40 CFR 264.151 and 40 CFR 267.151 (Wording of the Instruments), each incorporated by reference in 35 Ill. Adm. Code 720.111(b), with such changes in wording as are necessary under Illinois law. Any owner or operator required to establish financial assurance under this Section must do so only upon the standardized forms promulgated by the Agency. The Agency must reject any financial assurance document that is not submitted on such standardized forms.

BOARD NOTE: Subsection (l) of this Section is derived from 40 CFR 267.151; as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012).

- m) Financial component for using the corporate financial test to demonstrate financial assurance for closure.
- 1) The facility owner or operator must satisfy one of the following three conditions:
 - A) A current rating for its senior unsecured debt of AAA, AA, A, or BBB, as issued by Standard and Poor's, or Aaa, Aa, A or Baa, as issued by Moody's; or
 - B) A ratio of less than 1.5 comparing total liabilities to net worth; or
 - C) A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities.
 - 2) The tangible net worth of the owner or operator must be greater than both of the following:
 - A) The sum of the current environmental obligations (see subsection (n)(1)(A)(i) of this Section), including guarantees, covered by a financial test plus \$10 million, except as provided in subsection (m)(2)(B) of this Section; and
 - B) \$10 million in tangible net worth plus the amount of any guarantees that have not been recognized as liabilities on the financial statements provided all of the environmental obligations (see subsection (n)(1)(A)(i) of this Section) covered by a financial

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test are recognized as liabilities on the owner's or operator's audited financial statements, and subject to the approval of the Agency.

- 3) The facility owner or operator must have assets located in the United States amounting to at least the sum of environmental obligations covered by a financial test as described in subsection (n)(1)(A)(i) of this Section.

BOARD NOTE: Subsection (m) of this Section is derived from 40 CFR 267.143(f)(1), ~~as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012)~~. The Board moved the corresponding federal provision to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to subsection (d), (d)(6), or (d)(6)(A) of this Section also include this added subsection (m), as applicable.

- n) Recordkeeping and reporting requirements for using the corporate financial test to demonstrate financial assurance for closure.

- 1) The facility owner or operator must submit the following items to the Agency:

- A) A letter signed by the owner's or operator's chief financial officer that provides the following information:

- i) It lists all the applicable current types, amounts, and sums of environmental obligations covered by a financial test. These obligations include both obligations in the programs that USEPA directly operates and obligations where USEPA has delegated authority to a State or approved a State's program. These obligations include, but are not limited to the information described in subsection (n)(1)(E) of this Section.

BOARD NOTE: It was necessary for the Board to codify 40 CFR 267.143(f)(2)(i)(A)(I) through (f)(2)(i)(A)(I)(vii) as subsection (n)(1)(E) through (n)(1)(E)(vii) of this Section to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to subsection (d), (d)(6), or (d)(6)(B) of this Section or to this subsection (n), (n)(1), (n)(1)(A), or

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(n)(1)(A)(i) also include added subsection (n)(1)(E) through (n)(1)(E)(vii) of this Section, as applicable.

- ii) It provides evidence demonstrating that the firm meets the conditions of either subsection (m)(1)(A), (m)(1)(B), or (m)(1)(C) of this Section and subsections (m)(2) and (m)(3) of this Section.
- B) A copy of the independent certified public accountant's unqualified opinion of the owner's or operator's financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner's or operator's financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion, disclaimer of opinion, or other qualified opinion will be cause for disallowance, with the potential exception for qualified opinions provided in the next sentence. The Agency may evaluate qualified opinions on a case-by-case basis and allow use of the financial test in cases where the Agency deems that the matters that form the basis for the qualification are insufficient to warrant disallowance of the test. If the Agency does not allow use of the test, the owner or operator must provide alternate financial assurance that meets the requirements of this section within 30 days after the notification of disallowance.
- C) If the chief financial officer's letter providing evidence of financial assurance includes financial data showing that the owner or operator satisfies subsection (m)(1)(B) or (m)(1)(C) of this Section that are different from data in the audited financial statements referred to in subsection (n)(1)(B) of this Section or any other audited financial statement or data filed with the SEC, then a special report from the owner's or operator's independent certified public accountant to the owner or operator is required. The special report must be based upon an agreed upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the chief financial officer's letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

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- D) If the chief financial officer's letter provides a demonstration that the firm has assured for environmental obligations as provided in subsection (m)(2)(B) of this Section, then the letter shall include a report from the independent certified public accountant that verifies that all of the environmental obligations covered by a financial test have been recognized as liabilities on the audited financial statements, how these obligations have been measured and reported, and that the tangible net worth of the firm is at least \$10 million plus the amount of any guarantees provided.
- E) Contents of the letter signed by the chief financial officer (for the purposes of subsection (n)(1)(A)(i) of this Section):
 - i) The liability, closure, post-closure and corrective action cost estimates required for hazardous waste treatment, storage, and disposal facilities pursuant to the applicable provisions of 35 Ill. Adm. Code 724.201, 724.242, 724.244, 724.247, 725.242, 725.244, and 725.247;
 - ii) The cost estimates required for municipal solid waste management facilities pursuant to the applicable provisions of Subpart G of 35 Ill. Adm. Code 811;
 - iii) The current plugging cost estimates required for UIC facilities pursuant to 35 Ill. Adm. Code 704.212;
 - iv) The federally required cost estimates required for petroleum underground storage tank facilities pursuant to 40 CFR 280.93;
 - v) The federally required cost estimates required for PCB storage facilities pursuant to 40 CFR 761.65;
 - vi) Any federally required financial assurance required by or as part of an action undertaken pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (42 USC 9601 et seq.); and
 - vii) Any other environmental obligations that are assured through a financial test.

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BOARD NOTE: Subsections (n)(1)(E) through (n)(1)(E)(vi) of this Section ~~is~~ are derived from 40 CFR 267.143(f)(2)(i)(A)(I) through (f)(2)(i)(A)(I)(vi), ~~as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012)~~. The Board moved the corresponding federal provision to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to subsection (d), (d)(6), (d)(6)(B), (n), (n)(1), (n)(1)(A), or (n)(1)(A)(i) of this Section also include added subsections (n)(1)(E) through (n)(1)(E)(vi), as applicable.

- 2) The owner or operator of a new facility must submit the items specified in subsection (n)(1) of this Section to the Agency at least 60 days before placing waste in the facility.
- 3) After the initial submission of items specified in subsection (n)(1) of this Section, the owner or operator must send updated information to the Agency within 90 days following the close of the ~~owner~~ owner's or operator's fiscal year. The Agency may provide up to an additional 45 days for an owner or operator who can demonstrate that 90 days is insufficient time to acquire audited financial statements. The updated information must consist of all items specified in subsection (n)(1) of this Section.
- 4) The owner or operator is no longer required to submit the items specified in this subsection (n) of this Section or comply with the requirements of subsection (d)(6) of this Section when either of the following occurs:
 - A) The owner or operator substitutes alternate financial assurance as specified in subsection (d) of this Section that is not subject to these recordkeeping and reporting requirements; or
 - B) The Agency releases the owner or operator from the requirements of subsection (d) of this Section in accordance with subsection (d)(10) of this Section.
- 5) An owner or operator who no longer meets the requirements of subsection (m) of this Section cannot use the financial test to demonstrate financial assurance. Instead an owner or operator who no longer meets the requirements of subsection (m) of this Section, must do the following:

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- A) It must send notice to the Agency of intent to establish alternate financial assurance as specified in this section. The owner or operator must send this notice by certified mail within 90 days following the close the ~~owner~~ owner's or operator's fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements of this subsection (n) and subsections (d), (m), and (o) of this Section; and
 - B) It must provide alternative financial assurance within 120 days after the end of such fiscal year.
- 6) The Agency may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subsection (m) of this Section, require at any time the owner or operator to provide reports of its financial condition in addition to or including current financial test documentation as specified in this subsection (n) ~~of this Section~~. If the Agency finds that the owner or operator no longer meets the requirements of subsection (m) of this Section, the owner or operator must provide alternate financial assurance that meets the requirements of subsection (d) of this Section.

BOARD NOTE: Subsection (n) of this Section is derived from 40 CFR 267.143(f)(2), ~~as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012)~~. The Board moved the corresponding federal provision to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to subsection (d), (d)(6), or (d)(6)(B) of this Section also include this added subsection (n), as applicable.

- o) The terms of the guarantee for using the corporate guarantee to demonstrate financial assurance for closure must provide as follows:
 - 1) If the facility owner or operator fails to perform closure at a facility covered by the guarantee, the guarantor will accomplish the following:
 - A) It will perform, or pay a third party to perform closure (performance guarantee); or
 - B) It will establish a fully funded trust fund as specified in subsection (d)(1) of this Section in the name of the owner or operator (payment guarantee).

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- 2) The guarantee will remain in force for as long as the facility owner or operator must comply with the applicable financial assurance requirements of this Section unless the guarantor sends prior notice of cancellation by certified mail to the owner or operator and to the Agency. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Agency as evidenced by the return receipts.
- 3) If notice of cancellation is given, the facility owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and the Agency, obtain alternate financial assurance, and submit documentation for that alternate financial assurance to the Agency. If the owner or operator fails to provide alternate financial assurance and obtain the written approval of such alternative assurance from the Agency within the 90-day period, the guarantor must provide that alternate assurance in the name of the owner or operator and submit the necessary documentation for the alternative assurance to the Agency within 120 days after the cancellation notice.

BOARD NOTE: Subsection (o) of this Section is derived from 40 CFR 267.143(f)(3), as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) 267.143(g)(3) (2012). The Board moved the corresponding federal provision to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to subsection (d), ~~(d)(6)~~ (d)(7), or ~~(d)(6)(C)~~ (d)(7)(C) of this Section also include this added subsection (o), as applicable.

- p) Recordkeeping and reporting requirements.
 - 1) The owner or operator must submit the following items to the Agency:
 - A) A letter signed by the owner's or operator's chief financial officer that provides evidence demonstrating that the firm meets the conditions of subsections (h)(6)(A)(i) and (h)(6)(A)(ii) of this Section. If the firm is providing only liability coverage through a financial test for a facility or facilities with a permit pursuant to this Part 727, the letter should use the wording in subsection (l)(2) of this Section. If the firm is providing only liability coverage through a financial test for facilities regulated pursuant to this Part 727 and 35 Ill. Adm. Code 724 or 725, it should use the letter in 40 CFR 264.151(g), incorporated by reference in 35 Ill. Adm. Code

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720.111(b) designated by the Agency pursuant to subsection (l)(3) of this Section. If the firm is providing liability coverage through a financial test for a facility or facilities with a permit pursuant to this Part 727, and it assures closure costs or any other environmental obligations through a financial test, it must use the letter in subsection (l)(1) of this Section for the facilities issued a permit pursuant to this Part 727.

- B) A copy of the independent certified public accountant's unqualified opinion of the owner's or operator's financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner's or operator's financial statements must receive an unqualified opinion from the independent certified public accountant. An adverse opinion, disclaimer of opinion, or other qualified opinion will be cause for disallowance, with the potential exception for qualified opinions provided in the next sentence. The Agency may evaluate qualified opinions on a case-by-case basis and allow use of the financial test in cases where the Agency deems that the matters that form the basis for the qualification are insufficient to warrant disallowance of the test. If the Agency does not allow use of the test, the owner or operator must provide alternate financial assurance that meets the requirements of this subsection (h) within 30 days after the notification of disallowance.
- C) If the chief financial officer's letter providing evidence of financial assurance includes financial data showing that the owner or operator satisfies subsections (h)(6)(A)(i) and (h)(6)(A)(ii) of this Section that are different from data in the audited financial statements referred to in subsection (p)(1)(B) of this Section or any other audited financial statement or data filed with the SEC, then a special report from the owner's or operator's independent certified public accountant to the owner or operator is required. The special report shall be based upon an agreed upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the chief financial officer's letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for any differences.

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- 2) The owner or operator of a new facility must submit the items specified in subsection (p)(1) of this Section to the Agency at least 60 days before placing waste in the facility.
- 3) After the initial submission of items specified in subsection (p)(1) of this Section, the facility owner or operator must send updated information to the Agency within 90 days following the close of the ~~owner~~owner's or operator's fiscal year. The Agency may provide up to an additional 45 days for an owner or operator who can demonstrate that 90 days is insufficient time to acquire audited financial statements. The updated information must consist of all items specified in subsection (p)(1) of this Section.
- 4) The owner or operator is no longer required to submit the items specified in this subsection (p) or comply with the requirements of subsection (h)(6) of this Section when either of the following occurs:
 - A) The facility owner or operator substitutes alternate financial assurance as specified in subsection (h) of this Section that is not subject to these recordkeeping and reporting requirements; or
 - B) The Agency releases the facility owner or operator from the requirements of subsection (h) of this Section in accordance with subsection (d)(10) of this Section.
- 5) An owner or operator that no longer meets the requirements of subsection (h)(6)(A) of this Section cannot use the financial test to demonstrate financial assurance. An owner or operator who no longer meets the requirements of subsection (h)(6)(A) of this Section, must do the following:
 - A) Send notice to the Agency of intent to establish alternate financial assurance as specified in this section. The facility owner or operator must send this notice by certified mail within 90 days following the close of the ~~owner~~owner's or operator's fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements of this ~~section~~ Section.
 - B) Provide alternative financial assurance within 120 days after the end of ~~such that~~ such that fiscal year.

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- 6) The Agency may, based on a reasonable belief that the owner or operator may no longer meet the requirements of subsection (h)(6)(A) of this Section, require at any time the owner or operator to provide reports of its financial condition in addition to or including current financial test documentation as specified in this subsection (p) of this Section. If the Agency finds that the owner or operator no longer meets the requirements of subsection (h)(6)(A) of this Section, the owner or operator must provide alternate financial assurance that meets the requirements of subsection (h) of this Section.

BOARD NOTE: Subsection (p) of this Section is derived from 40 CFR 267.147(f)(2), as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012). The Board moved the corresponding federal provision to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to subsection (h), (h)(6), or (h)(6)(B) of this Section also include this added subsection (p), as applicable.

q) Foreign corporations.

- 1) The guarantor must execute the guarantee in Illinois. The guarantee must be accompanied by a letter signed by the guarantor that states as follows:
- A) The guarantee was signed in Illinois by an authorized agent of the guarantor;
 - B) The guarantee is governed by Illinois law; and
 - C) The name and address of the guarantor's registered agent for service of process.
- 2) The guarantor must have a registered agent pursuant to Section 5.05 of the Business Corporation Act of 1983 [805 ILCS 5/5.05] or Section 105.05 of the General Not-for-Profit Corporation Act of 1986 [805 ILCS 105/105.05].

BOARD NOTE: Subsection (q) of this Section is derived from 40 CFR 267.147(g)(2), as added at 70 Fed. Reg. 53420 (Sep. 8, 2005) (2012). The Board moved the corresponding federal provision to comport with Illinois Administrative Code indent level codification requirements. The Board intends that any citation to subsection (h), (h)(7), or (h)(7)(B) of this Section also include

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this added subsection (q), as applicable. The text of 40 CFR 267.147(g)(2) is substantially identical to that of 40 CFR 264.147(g)(2). The Board has substituted the language of 35 Ill. Adm. Code 724.247(g)(2), which corresponds with 40 CFR 264.147(g)(2), for that of 40 CFR 267.147(g)(2).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by JCAR.

Since the Notices of Proposed Amendments appeared in the July 5, 2013 issue of the *Illinois Register*, the Board received a number of suggestions for revisions from JCAR. The Board evaluated each suggestion and incorporated a number of changes into the text as a result, as detailed in the opinion and order of September 5, 2013 in docket R13-15, as indicated in item 11 above. See the September 5, 2013 opinion and order in docket R13-15 for additional details on the JCAR suggestions and the Board actions with regard to each. One table in that opinion itemizes the changes made in response to various suggestions. Another table indicates JCAR suggestions not incorporated into the text, with a brief explanation for each.

- 13) Will this amendment replace an emergency amendment currently in effect? No.
- 14) Are there any other amendments pending on this Part? No.
- 15) Summary and purpose of amendment: The following briefly describes the subjects and issues involved in docket R13-15 rulemaking of which the amendments to Part 728 are a single segment. Also affected is 35 Ill. Adm. Code 703, 704, 720, 722, 724, 725, 726, 727, and 739, which is covered by separate notices in this issue of the *Illinois Register*. A comprehensive description is contained in the Board's opinion and order of June 20, 2013, proposing amendments in docket R13-15, which opinion and order is available from the address below.

This proceeding updates the Illinois Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste rules to incorporate corrections to various provisions that the United States Environmental Protection Agency (USEPA) suggested. The proceeding further updates the edition of the *Code of Federal Regulations* provisions that are incorporated by reference. The Board further makes a number of corrections to various provisions that the Board has determined are needed.

Specifically, the amendments to Part 728 implement a correction suggested by USEPA and make corrections that the Board has determined are needed. The Board's opinion and order of September 5, 2013 in docket R13-15 discusses the more substantial corrections made in the text. Tables that appear in that opinion and order list all of the various corrections and amendments included in this proceeding. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

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Tables appear in the Board's opinion and order of September 5, 2013 in docket R13-15 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Section 22.4 of the Environmental Protection Act [415 ILCS 5/22.4] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

- 16) Information and questions regarding these adopted amendment shall be directed to:
Please reference consolidated docket R13-15 and direct inquiries to the following person:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago, IL 60601

312-814-6924

Request copies of the Board's opinion and order of September 5, 2013 at 312-814-3620. Alternatively, you may obtain a copy of the Board's opinion and order from the Internet at <http://www.ipcb.state.il.us>.

The full text of the adopted amendment begins on the next page:

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TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER c: HAZARDOUS WASTE OPERATING REQUIREMENTS

PART 728
LAND DISPOSAL RESTRICTIONS

SUBPART A: GENERAL

Section	
728.101	Purpose, Scope, and Applicability
728.102	Definitions
728.103	Dilution Prohibited as a Substitute for Treatment
728.104	Treatment Surface Impoundment Exemption
728.105	Procedures for Case-by-Case Extensions to an Effective Date
728.106	Petitions to Allow Land Disposal of a Waste Prohibited Pursuant to Subpart C
728.107	Testing, Tracking, and Recordkeeping Requirements for Generators, Treaters, and Disposal Facilities
728.108	Landfill and Surface Impoundment Disposal Restrictions (Repealed)
728.109	Special Rules for Characteristic Wastes

SUBPART B: SCHEDULE FOR LAND DISPOSAL PROHIBITION AND
ESTABLISHMENT OF TREATMENT STANDARDS

Section	
728.110	First Third (Repealed)
728.111	Second Third (Repealed)
728.112	Third Third (Repealed)
728.113	Newly Listed Wastes
728.114	Surface Impoundment Exemptions

SUBPART C: PROHIBITION ON LAND DISPOSAL

Section	
728.120	Waste-Specific Prohibitions: Dyes and Pigments Production Wastes
728.130	Waste-Specific Prohibitions: Wood Preserving Wastes
728.131	Waste-Specific Prohibitions: Dioxin-Containing Wastes
728.132	Waste-Specific Prohibitions: Soils Exhibiting the Toxicity Characteristic for Metals and Containing PCBs
728.133	Waste-Specific Prohibitions: Chlorinated Aliphatic Wastes
728.134	Waste-Specific Prohibitions: Toxicity Characteristic Metal Wastes
728.135	Waste-Specific Prohibitions: Petroleum Refining Wastes

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- 728.136 Waste-Specific Prohibitions: Inorganic Chemical Wastes
- 728.137 Waste-Specific Prohibitions: Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated
- 728.138 Waste-Specific Prohibitions: Newly-Identified Organic Toxicity Characteristic Wastes and Newly-Listed Coke By-Product and Chlorotoluene Production Wastes
- 728.139 Waste-Specific Prohibitions: Spent Aluminum Potliners and Carbamate Wastes

SUBPART D: TREATMENT STANDARDS

- Section
- 728.140 Applicability of Treatment Standards
- 728.141 Treatment Standards Expressed as Concentrations in Waste Extract
- 728.142 Treatment Standards Expressed as Specified Technologies
- 728.143 Treatment Standards Expressed as Waste Concentrations
- 728.144 ~~Adjustment of~~ USEPA Variance from a Treatment Standard
- 728.145 Treatment Standards for Hazardous Debris
- 728.146 Alternative Treatment Standards Based on HTMR
- 728.148 Universal Treatment Standards
- 728.149 Alternative LDR Treatment Standards for Contaminated Soil

SUBPART E: PROHIBITIONS ON STORAGE

- Section
- 728.150 Prohibitions on Storage of Restricted Wastes

- 728.APPENDIX A Toxicity Characteristic Leaching Procedure (TCLP) (Repealed)
- 728.APPENDIX B Treatment Standards (As concentrations in the Treatment Residual Extract) (Repealed)
- 728.APPENDIX C List of Halogenated Organic Compounds Regulated under Section 728.132
- 728.APPENDIX D Wastes Excluded from Lab Packs
- 728.APPENDIX E Organic Lab Packs (Repealed)
- 728.APPENDIX F Technologies to Achieve Deactivation of Characteristics
- 728.APPENDIX G Federal Effective Dates
- 728.APPENDIX H National Capacity LDR Variances for UIC Wastes
- 728.APPENDIX I EP Toxicity Test Method and Structural Integrity Test
- 728.APPENDIX J Recordkeeping, Notification, and Certification Requirements (Repealed)
- 728.APPENDIX K Metal-Bearing Wastes Prohibited from Dilution in a Combustion Unit According to Section 728.103(c)

- 728.TABLE A Constituent Concentrations in Waste Extract (CCWE)
- 728.TABLE B Constituent Concentrations in Wastes (CCW)
- 728.TABLE C Technology Codes and Description of Technology-Based Standards

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728.TABLE D	Technology-Based Standards by RCRA Waste Code
728.TABLE E	Standards for Radioactive Mixed Waste
728.TABLE F	Alternative Treatment Standards for Hazardous Debris
728.TABLE G	Alternative Treatment Standards Based on HTMR
728.TABLE H	Wastes Excluded from CCW Treatment Standards
728.TABLE I	Generator Paperwork Requirements
728.TABLE T	Treatment Standards for Hazardous Wastes
728.TABLE U	Universal Treatment Standards (UTS)

AUTHORITY: Implementing Sections 7.2 and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 22.4, and 27].

SOURCE: Adopted in R87-5 at 11 Ill. Reg. 19354, effective November 12, 1987; amended in R87-39 at 12 Ill. Reg. 13046, effective July 29, 1988; amended in R89-1 at 13 Ill. Reg. 18403, effective November 13, 1989; amended in R89-9 at 14 Ill. Reg. 6232, effective April 16, 1990; amended in R90-2 at 14 Ill. Reg. 14470, effective August 22, 1990; amended in R90-10 at 14 Ill. Reg. 16508, effective September 25, 1990; amended in R90-11 at 15 Ill. Reg. 9462, effective June 17, 1991; amended in R90-11 at 15 Ill. Reg. 11937, effective August 12, 1991; amendment withdrawn at 15 Ill. Reg. 14716, October 11, 1991; amended in R91-13 at 16 Ill. Reg. 9619, effective June 9, 1992; amended in R92-10 at 17 Ill. Reg. 5727, effective March 26, 1993; amended in R93-4 at 17 Ill. Reg. 20692, effective November 22, 1993; amended in R93-16 at 18 Ill. Reg. 6799, effective April 26, 1994; amended in R94-7 at 18 Ill. Reg. 12203, effective July 29, 1994; amended in R94-17 at 18 Ill. Reg. 17563, effective November 23, 1994; amended in R95-6 at 19 Ill. Reg. 9660, effective June 27, 1995; amended in R95-20 at 20 Ill. Reg. 11100, effective August 1, 1996; amended in R96-10/R97-3/R97-5 at 22 Ill. Reg. 783, effective December 16, 1997; amended in R98-12 at 22 Ill. Reg. 7685, effective April 15, 1998; amended in R97-21/R98-3/R98-5 at 22 Ill. Reg. 17706, effective September 28, 1998; amended in R98-21/R99-2/R99-7 at 23 Ill. Reg. 1964, effective January 19, 1999; amended in R99-15 at 23 Ill. Reg. 9204, effective July 26, 1999; amended in R00-13 at 24 Ill. Reg. 9623, effective June 20, 2000; amended in R01-3 at 25 Ill. Reg. 1296, effective January 11, 2001; amended in R01-21/R01-23 at 25 Ill. Reg. 9181, effective July 9, 2001; amended in R02-1/R02-12/R02-17 at 26 Ill. Reg. 6687, effective April 22, 2002; amended in R03-18 at 27 Ill. Reg. 13045, effective July 17, 2003; amended in R05-8 at 29 Ill. Reg. 6049, effective April 13, 2005; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 3800, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 1254, effective December 20, 2006; amended in R07-5/R07-14 at 32 Ill. Reg. 12840, effective July 14, 2008; amended in R09-3 at 33 Ill. Reg. 1186, effective December 30, 2008; amended in R11-2/R11-16 at 35 Ill. Reg. 18131, effective October 14, 2011; amended in R12-7 at 36 Ill. Reg. 8790, effective June 4, 2012; amended in R13-15 at 37 Ill. Reg. _____, effective _____.

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SUBPART D: TREATMENT STANDARDS

Section 728.144 Adjustment of USEPA Variance from a Treatment Standard

- a) Based on a petition filed by a generator or treater of hazardous waste, ~~the Board will grant an adjusted standard~~ USEPA has stated that it may approve a variance from an applicable treatment standard if the petitioner can demonstrate that either of the following applies to treatment of the waste:
- 1) It is not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard. To show that this is the case, the petitioner must demonstrate that because the physical or chemical properties of the waste differ significantly from waste analyzed in developing the treatment standard, the waste cannot be treated to the specified level or by the specified method; or
 - 2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible. To show that this is the case, the petitioner must demonstrate that either of the following applies to treatment of the waste:
 - A) Treatment to the specified level or by the specified method is technically inappropriate (for example, resulting in combustion of large amounts of mildly contaminated environmental media); or
 - B) For remediation waste only, treatment to the specified level or by the specified method is environmentally inappropriate because it would likely discourage aggressive remediation.

BOARD NOTE: ~~Corresponding federal 40 CFR 268.44 refers to these as "treatability variances." The Board has not used this term in its rules to avoid confusion with the Board variances under Title IX of the Environmental Protection Act. The equivalent Board procedures are an "adjusted standard from a treatment standard" pursuant to subsections (a) through (m) of this Section, or a "treatability exception" adopted pursuant to subsection (p) of this Section. While the latter is adopted by "identical in substance" rulemaking following a USEPA action, the former is an original Board action that will be the only mechanism following~~

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authorization to the State of this component of the RCRA program. A variance from a treatment standard is available only from USEPA. USEPA has reserved to itself the authority to grant a variance from a treatment standard.

- b) Each petition must be submitted in accordance with the procedures in ~~Subpart D of 35 Ill. Adm. Code 104~~ 40 CFR 260.20.
- c) Each petition must include the following statement signed by the petitioner or an authorized representative:
- I certify under penalty of law that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.
- d) After receiving a petition for an adjusted treatment standard, ~~the Board~~ USEPA has stated that it may request any additional information or samples that are necessary to evaluate the petition. Additional copies of the complete petition may be requested as needed to send to affected states and Regional Offices.
- e) ~~The Board~~ USEPA has stated that it will give public notice in the Federal Register of the intent to approve or deny a petition and provide an opportunity for public comment, as provided in Subpart D of 35 Ill. Adm. Code 104. In conjunction with any updating of the RCRA regulations, the Board will maintain, in this Part, a listing of all adjusted treatment standards granted by the Board pursuant to this Section. A listing of all adjusted standards granted pursuant to this section will be published in the Illinois Register and Environmental Register at the end of each fiscal year. (Section 28.1(d)(3) of the Environmental Protection Act [415 ILCS 5/28.1(d)(3)]) USEPA has stated that the final decision on a variance from a treatment standard will be published in the Federal Register.
- f) A generator, treatment facility or disposal facility that is managing a waste covered by an adjusted treatment standard must comply with the waste analysis requirements for restricted wastes found under Section 728.107.

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- g) During the petition review process, the applicant is required to comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached.
- h) Based on a petition filed by a generator or treater of hazardous waste, ~~the Board will grant an adjusted standard~~ USEPA has stated that it may approve a site-specific variance from an applicable treatment standard if the petitioner can demonstrate that either of the following applies to treatment of the waste:
- 1) It is not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard. To show that this is the case, the petitioner must demonstrate that because the physical or chemical properties of the waste differ significantly from waste analyzed in developing the treatment standard, the waste cannot be treated to the specified level or by the specified method; or
 - 2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible. To show that this is the case, the petitioner must demonstrate that either of the following applies to treatment of the waste:
 - A) Treatment to the specified level or by the specified method is technically inappropriate (for example, resulting in combustion of large amounts of mildly contaminated environmental media where the treatment standard is not based on combustion of such media); or
 - B) For remediation waste only, treatment to the specified level or by the specified method is environmentally inappropriate because it would likely discourage aggressive remediation.
 - 3) For contaminated soil only, treatment to the level or by the method specified in the soil treatment standards would result in concentrations of hazardous constituents that are below (i.e., lower than) the concentrations necessary to minimize short- and long-term threats to human health and the environment. ~~An adjusted standard from a treatment standard~~ USEPA has stated that a treatment variance granted under this subsection (h)(3) 40 CFR 268.44(h)(3) will include the following features:

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- A) ~~At a minimum, the adjusted standard from the treatment standard~~ USEPA has stated that a treatment variance approved under 40 CFR 268.44(h)(3) will impose an alternative land disposal restriction treatment standard that will achieve the following, using a reasonable maximum exposure scenario:
- i) For carcinogens, it will achieve constituent concentrations that result in the total excess risk to an individual exposed over a lifetime, generally falling within a range from 10^{-4} to 10^{-6} ; and
 - ii) For constituents with non-carcinogenic effects, it will achieve constituent concentrations that an individual could be exposed to on a daily basis without appreciable risk of deleterious effect during a lifetime.
- B) ~~The treatment adjusted standard~~ USEPA has stated that a treatment variance approved under 40 CFR 268.44(h)(3) will not consider post-land-disposal controls.
- 4) For contaminated soil only, treatment to the level or by the method specified in the soil treatment standards would result in concentrations of hazardous constituents that are below (i.e., lower than) natural background concentrations at the site where the contaminated soil will be land disposed.
- 5) ~~The Board will follow the procedures of Section 28.1 of the Act and Subpart D of 35 Ill. Adm. Code 104 pertaining to public notice and a reasonable opportunity for public comment before granting or denying a petition.~~ USEPA has stated that public notice and a reasonable opportunity for public comment must be provided before granting or denying a petition.
- i) Each petition for a site-specific ~~adjusted variance from a treatment standard~~ must include the information in ~~35 Ill. Adm. Code 720.120(b)(1) through (b)(4)~~ 40 CFR 260.20(b)(1) through (b)(4).
 - j) After receiving a petition for a site-specific adjusted treatment standard an application for site-specific variance from a treatment standard, the Board ~~USEPA~~

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may request any additional information or samples that ~~the Board~~ USEPA determines are necessary to evaluate the petition.

- k) A generator, treatment facility, or disposal facility that is managing a waste covered by a site-specific ~~adjusted variance from a~~ treatment standard must comply with the waste analysis requirements for restricted wastes in Section 728.107.
- l) During the petition review process, the petitioner for a site-specific ~~adjusted treatment standard variance~~ must comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached.
- m) For any ~~adjusted treatment standard variance~~ from a treatment standard, the petitioner must also demonstrate that compliance with the requested ~~adjusted treatment standard variance~~ is sufficient to minimize threats to human health and the environment posed by land disposal of the waste. In evaluating this demonstration, ~~the Board~~ USEPA has stated that it will take into account whether the ~~adjusted standard treatment variance~~ should be granted if the subject waste is to be used in a manner constituting disposal pursuant to ~~Sections 728.120 through 728.123~~ 40 CFR 266.20 through 266.23.
- n) This subsection (n) corresponds with 40 CFR 268.44(n), marked “reserved” by USEPA. This statement maintains structural consistency with corresponding federal regulations.
- o) The facilities listed in Table H of this Part are excluded from the treatment standards under Section 728.143(a) and Table B of this Part, and are subject to the constituent concentrations listed in Table H of this Part.
- p) ~~If~~ After USEPA grants a treatability exception by regulatory action pursuant to 40 CFR 268.44 and a person demonstrates that the treatability exception needs to be adopted as part of the Illinois RCRA program because the waste is generated or managed in Illinois, the Board will adopt the treatability exception by identical in substance rulemaking pursuant to Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)].

~~BOARD NOTE: The Board will adopt the treatability exception during a RCRA update Docket if a timely demonstration is made. Otherwise, the Board will assign the matter to a separate Docket.~~

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(Source: Amended at 37 Ill. Reg. _____, effective _____)

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- 1) Heading of the Part: Standards for the Management of Used Oil
- 2) Code citation: 35 Ill. Adm. Code 739
- 3)

<u>Section numbers:</u>	<u>Proposed action:</u>
739.142	Amend
739.151	Amend
739.152	Amend
739.162	Amend
739.173	Amend
739.181	Amend
- 4) Statutory authority: 415 ILCS 5/7.2, 22.4, and 27.
- 5) Effective date of amendments: OCT 24 2013
- 6) Does this rulemaking contain an automatic repeal date? No.
- 7) Do these amendments contain incorporations by reference? No.
- 8) Statement of availability: The adopted amendments, a copy of the Board's opinion and order adopted September 5, 2013 in docket R13-15, and all materials incorporated by reference are on file at the Board's principal office and are available for public inspection and copying.
- 9) Notice of proposal published in the Illinois Register: July 5, 2013, 37 Ill. Reg. 9442.
- 10) Has JCAR issued a statement of objections to these rules? No. Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).
- 11) A table that appears in the Board's opinion and order of September 5, 2013 in docket R13-15 summarizes the differences between the amendments adopted in that order and those proposed by the Board in an opinion and order dated June 20, 2013, in docket R13-15.

The differences are limited to minor clarifications and *Illinois Administrative Code* format corrections to the text. The changes are intended to have no substantive effect.

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OCT 24 2013

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The intent is to clarify and correct the text without deviation from the substance of the federal amendments on which this proceeding is based.

- 12) Have all the changes agreed upon by the Board and JCAR been made as indicated in the agreements issued by JCAR? Section 22.4(a) of the Environmental Protection Act [415 ILCS 5/22.4(a)] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by JCAR.

Since the Notices of Proposed Amendments appeared in the July 5, 2013 issue of the *Illinois Register*, the Board received a number of suggestions for revisions from JCAR. The Board evaluated each suggestion and incorporated a number of changes into the text as a result, as detailed in the opinion and order of September 5, 2013 in docket R13-15, as indicated in item 11 above. See the September 5, 2013 opinion and order in docket R13-15 for additional details on the JCAR suggestions and the Board actions with regard to each. One table in that opinion itemizes the changes made in response to various suggestions. Another table indicates JCAR suggestions not incorporated into the text, with a brief explanation for each.

- 13) Will these amendments replace emergency amendments currently in effect? No.
- 14) Are there any other amendments pending on this Part? No.
- 15) Summary and purpose of amendments: The following briefly describes the subjects and issues involved in docket R13-15 rulemaking of which the amendments to Part 739 are a single segment. Also affected is 35 Ill. Adm. Code 703, 704, 720, 722, 724, 725, 726, 727, and 728, which is covered by separate notices in this issue of the *Illinois Register*. A comprehensive description is contained in the Board's opinion and order of June 20, 2013, proposing amendments in docket R13-15, which opinion and order is available from the address below.

This proceeding updates the Illinois Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste rules to incorporate corrections to various provisions that the United States Environmental Protection Agency (USEPA) suggested. The proceeding further updates the edition of the *Code of Federal Regulations* provisions that are incorporated by reference. The Board further makes a number of corrections to various provisions that the Board has determined are needed.

Specifically, the amendments to Part 739 implement a correction suggested by USEPA and make corrections that the Board has determined are needed. The Board's opinion

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and order of September 5, 2013 in docket R13-15 discusses the more substantial corrections made in the text. Tables that appear in that opinion and order list all of the various corrections and amendments included in this proceeding. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Tables appear in the Board's opinion and order of September 5, 2013 in docket R13-15 that list numerous corrections and amendments that are not based on current federal amendments. The tables contain deviations from the literal text of the federal amendments underlying these amendments, as well as corrections and clarifications that the Board made in the base text involved. Persons interested in the details of those corrections and amendments should refer to the September 5, 2013 opinion and order in docket R13-15.

Section 22.4 of the Environmental Protection Act [415 ILCS 5/22.4] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to this rulemaking. Because this rulemaking is not subject to Section 5-35 of the APA, it is not subject to First Notice or to Second Notice review by the Joint Committee on Administrative Rules (JCAR).

- 16) Information and questions regarding these adopted amendments shall be directed to:
Please reference consolidated docket R13-15 and direct inquiries to the following person:

Michael J. McCambridge
Staff Attorney
Illinois Pollution Control Board
100 W. Randolph 11-500
Chicago, IL 60601

312-814-6924

Request copies of the Board's opinion and order of September 5, 2013 at 312-814-3620. Alternatively, you may obtain a copy of the Board's opinion and order from the Internet at <http://www.ipcb.state.il.us>.

The full text of the adopted amendments begins on the next page:

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NOTICE OF ADOPTED AMENDMENTS

TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE G: WASTE DISPOSAL

CHAPTER I: POLLUTION CONTROL BOARD

SUBCHAPTER c: HAZARDOUS WASTE OPERATING REQUIREMENTS

PART 739

STANDARDS FOR THE MANAGEMENT OF USED OIL

SUBPART A: DEFINITIONS

Section
739.100 Definitions

SUBPART B: APPLICABILITY

Section
739.110 Applicability
739.111 Used Oil Specifications
739.112 Prohibitions
739.113 Electronic Reporting

SUBPART C: STANDARDS FOR USED OIL GENERATORS

Section
739.120 Applicability
739.121 Hazardous Waste Mixing
739.122 Used Oil Storage
739.123 On-Site Burning in Space Heaters
739.124 Off-Site Shipments

SUBPART D: STANDARDS FOR USED OIL COLLECTION CENTERS AND
AGGREGATION POINTS

Section
739.130 Do-It-Yourselfer Used Oil Collection Centers
739.131 Used Oil Collection Centers
739.132 Used Oil Aggregate Points Owned by the Generator

SUBPART E: STANDARDS FOR USED OIL TRANSPORTER AND
TRANSFER FACILITIES

Section
739.140 Applicability
739.141 Restrictions on Transporters that Are Not Also Processors
739.142 Notification

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- 739.143 Used Oil Transportation
- 739.144 Rebuttable Presumption for Used Oil
- 739.145 Used Oil Storage at Transfer Facilities
- 739.146 Tracking
- 739.147 Management of Residues

SUBPART F: STANDARDS FOR USED OIL PROCESSORS

Section

- 739.150 Applicability
- 739.151 Notification
- 739.152 General Facility Standards
- 739.153 Rebuttable Presumption for Used Oil
- 739.154 Used Oil Management
- 739.155 Analysis Plan
- 739.156 Tracking
- 739.157 Operating Record and Reporting
- 739.158 Off-Site Shipments of Used Oil
- 739.159 Management of Residues

SUBPART G: STANDARDS FOR USED OIL BURNERS THAT BURN OFF-SPECIFICATION USED OIL FOR ENERGY RECOVERY

Section

- 739.160 Applicability
- 739.161 Restriction on Burning
- 739.162 Notification
- 739.163 Rebuttable Presumption for Used Oil
- 739.164 Used Oil Storage
- 739.165 Tracking
- 739.166 Notices
- 739.167 Management of Residues

SUBPART H: STANDARDS FOR USED OIL FUEL MARKETERS

Section

- 739.170 Applicability
- 739.171 Prohibitions
- 739.172 On-Specification Used Oil Fuel
- 739.173 Notification
- 739.174 Tracking
- 739.175 Notices

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SUBPART I: DISPOSAL OF USED OIL

Section	
739.180	Applicability
739.181	Disposal
739.182	Use As a Dust Suppressant

AUTHORITY: Implementing Sections 7.2 and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 22.4, and 27].

SOURCE: Adopted in R93-4 at 17 Ill. Reg. 20954, effective November 22, 1993; amended in R93-16 at 18 Ill. Reg. 6931, effective April 26, 1994; amended in R94-17 at 18 Ill. Reg. 17616, effective November 23, 1994; amended in R95-6 at 19 Ill. Reg. 10036, effective June 27, 1995; amended in R96-10/R97-3/R97-5 at 22 Ill. Reg. 767, effective December 16, 1997; amended in R98-21/R99-2/R99-7 at 23 Ill. Reg. 2274, effective January 19, 1999; amended in R04-16 at 28 Ill. Reg. 10706, effective July 19, 2004; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 4094, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 1413, effective December 20, 2006; amended in R07-5/R07-14 at 32 Ill. Reg. 13047, effective July 14, 2008; amended in R06-20(A) at 34 Ill. Reg. 3296, effective February 25, 2010; amended in R06-20(B) at 34 Ill. Reg. 17381, effective October 29, 2010; amended in R13-15 at 37 Ill. Reg. _____, effective _____.

SUBPART E: STANDARDS FOR USED OIL TRANSPORTER AND
TRANSFER FACILITIES

Section 739.142 Notification

- a) Identification numbers. A used oil transporter that has not previously complied with the notification requirements of RCRA Section 3010 must comply with these requirements and obtain a USEPA identification number pursuant to RCRA Section 3010 and an Illinois special waste identification number.
- b) Mechanics of notification.
 - 1) A used oil transporter that has not received a USEPA identification number may obtain one by notifying USEPA Region 5 and the Agency of its used oil activity by submitting either of the following:
 - A) A completed USEPA Form 8700-12 ~~(To obtain ordering information for USEPA Form 8700-12 call the RCRA/Superfund~~

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Hotline at 1-800-424-9346 or 703-920-9810) to USEPA Region 5 and the Agency; or

BOARD NOTE: The used oil transporter that wishes to use USEPA Form 8700-12 for notification must obtain a copy of the form from the Agency.

- B) A letter to USEPA Region 5 and the Agency requesting a USEPA identification number. ~~(Call the RCRA/Superfund Hotline to determine where to send a letter requesting a USEPA identification number.)~~ The letter should include the following information:
- i) The transporter company name;
 - ii) The owner of the transporter company;
 - iii) The mailing address for the transporter;
 - iv) The name and telephone number for the transporter point of contact;
 - v) The type of transport activity (i.e., transport only, transport and transfer facility, or transfer facility only);
 - vi) The location of all transfer facilities at which used oil is stored;
 - vii) The name and telephone number for a contact at each transfer facility.
- 2) A used oil transporter that has not received an Illinois special waste identification number may obtain one pursuant to 35 Ill. Adm. Code 809 by contacting the Agency at the following address: Division of Land Pollution Control, Illinois EPA, 1021 North Grand Avenue, Springfield, Illinois 62794-9276 (telephone: 217-782-6761).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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SUBPART F: STANDARDS FOR USED OIL PROCESSORS

Section 739.151 Notification

- a) Identification numbers. A used oil processor or re-refiner that has not previously complied with the notification requirements of RCRA Section 3010 must obtain a USEPA identification number pursuant to RCRA Section 3010 and an Illinois special waste identification number.
- b) Mechanics of notification.
 - 1) A used oil processor or re-refiner that has not received a USEPA identification number may obtain one by notifying USEPA Region 5 and the Agency of its used oil activity by submitting either of the following:
 - A) A completed USEPA Form 8700-12 ~~(To obtain ordering information for USEPA Form 8700-12 call the RCRA/Superfund Hotline at 1-800-424-9346 or 703-920-9810)~~ to USEPA Region 5 and the Agency; or

BOARD NOTE: The used oil processor or re-refiner that wishes to use USEPA Form 8700-12 for notification must obtain a copy of USEPA Form 8700-12 from the Agency.
 - B) A letter to USEPA Region 5 and the Agency requesting a USEPA identification number. ~~(Call the RCRA/Superfund Hotline to determine where to send a letter requesting a USEPA identification number.)~~ The letter should include the following information:
 - i) The processor or re-refiner company name;
 - ii) The owner of the processor or re-refiner company;
 - iii) The mailing address for the processor or re-refiner;
 - iv) The name and telephone number for the processor or re-refiner point of contact;
 - v) The type of transport activity (i.e., transport only, transport and transfer facility, or transfer facility only);

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- vi) The location of all transfer facilities at which used oil is stored;
 - vii) The name and telephone number for a contact at each transfer facility.
- 2) A used oil processor or re-refiner that has not received an Illinois special waste identification number may obtain one by contacting the Agency at the following address: Division of Land Pollution Control, Illinois EPA, 1021 North Grand Avenue, Springfield, Illinois 62794-9276 (telephone: 217-782-6761).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

Section 739.152 General Facility Standards

- a) Preparedness and prevention. An owner or operator of a used oil processing or re-refining facility must comply with the following requirements:
 - 1) Maintenance and operation of a facility. All facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of used oil to air, soil, or surface water that could threaten human health or the environment.
 - 2) Required equipment. All facilities must be equipped with the following, unless none of the hazards posed by used oil handled at the facility could require a particular kind of equipment specified in subsections (a)(2)(A) through (a)(2)(D) of this Section:
 - A) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;
 - B) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams;
 - C) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry

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chemicals), spill control equipment, and decontamination equipment;
and

- D) Water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems.
- 3) Testing and maintenance of equipment. All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.
- 4) Access to communications or alarm system.
 - A) Whenever used oil is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not required in subsection (a)(2) of this Section.
 - B) If there is ever just one employee on the premises while the facility is operating, the employee must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required in subsection (a)(2) of this Section.
- 5) Required aisle space. The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.
- 6) Arrangements with local authorities.
 - A) The owner or operator must attempt to make the following arrangements, as appropriate for the type of used oil handled at the facility and the potential need for the services of these organizations:

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- i) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of used oil handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes;
 - ii) Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;
 - iii) Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and
 - iv) Arrangements to familiarize local hospitals with the properties of used oil handled at the facility and the types of injuries or illnesses that could result from fires, explosions, or releases at the facility.
 - B) Where State or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.
- b) Contingency plan and emergency procedures. An owner or operator of a used oil processing or re-refining facility must comply with the following requirements:
 - 1) Purpose and implementation of contingency plan.
 - A) Each owner or operator must have a contingency plan for the facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of used oil to air, soil, or surface water.
 - B) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of used oil that could threaten human health or the environment.

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- 2) Content of contingency plan.
 - A) The contingency plan must describe the actions facility personnel must take to comply with subsections (b)(1) and (b)(6) of this Section in response to fires, explosions, or any unplanned sudden or non-sudden release of used oil to air, soil, or surface water at the facility.
 - B) If the owner or operator has already prepared a Spill Prevention Control and Countermeasures (SPCC) Plan in accordance with federal 40 CFR 112-~~or 40 CFR 300~~, or some other emergency or contingency plan exists for the facility under federal, State, or local regulation (e.g., federal 40 CFR 300 or 40 CFR 280), the owner or operator need only amend that plan to incorporate used oil management provisions that are sufficient to comply with the requirements of this Part.
 - C) The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to subsection (a)(6) of this Section.
 - D) The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see subsection (b)(5) of this Section), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.
 - E) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.
 - F) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signals to be used to begin evacuation, evacuation

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routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of used oil or fires).

- 3) Copies of contingency plan. Copies of the contingency plan and all revisions to the plan must be disposed of as follows:
 - A) Maintained at the facility; and
 - B) Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

- 4) Amendment of contingency plan. The contingency plan must be reviewed, and immediately amended, if necessary, whenever one of the following occurs:
 - A) Applicable regulations are revised;
 - B) The plan fails in an emergency;
 - C) The facility changes—in its design, construction, operation, maintenance, or other circumstances—in a way that materially increases the potential for fires, explosions, or releases of used oil, or changes the response necessary in an emergency;
 - D) The list of emergency coordinators changes; or
 - E) The list of emergency equipment changes.

- 5) Emergency coordinator. At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristic of used oil handled, the location of all records within the facility, and facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

BOARD NOTE: USEPA cited the following as guidance: "The emergency coordinator's responsibilities are more fully spelled out in [subsection (b)(6)

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of this Section]. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of used oil handled by the facility, and type and complexity of the facility.”

- 6) Emergency procedures.
 - A) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or the designee when the emergency coordinator is on call) must immediately do the following:
 - i) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and
 - ii) Notify appropriate State or local agencies with designated response roles if their help is needed.
 - B) Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. He or she may do this by observation or review of facility records or manifests and, if necessary, by chemical analyses.
 - C) Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or chemical agents used to control fire and heat-induced explosions).
 - D) If the emergency coordinator determines that the facility has had a release, fire, or explosion that could threaten human health, or the environment, outside the facility, he or she must report his findings as follows:
 - i) If his assessment indicated that evacuation of local areas may be advisable, he or she must immediately notify appropriate local authorities. He or she must be available to help

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appropriate officials decide whether local areas should be evacuated; and

- ii) He must immediately notify either the government official designated as the on-scene coordinator for the geographical area (in the applicable regional contingency plan under federal 40 CFR 300), or the National Response Center (using their 24-hour toll free number (800) 424-8802). The report must include the following information: name and telephone number of reporter; name and address of facility; time and type of incident (e.g., release, fire); name and quantity of materials involved, to the extent known; the extent of injuries, if any; and the possible hazards to human health, or the environment, outside the facility.
- E) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other used oil or hazardous waste at the facility. These measures must include, where applicable, stopping processes and operation, collecting and containing released used oil, and removing or isolating containers.
 - F) If the facility stops operation in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.
 - G) Immediately after an emergency, the emergency coordinator must provide for recycling, storing, or disposing of recovered used oil, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.
 - H) The emergency coordinator must ensure that the following occur, in the affected areas of the facility:
 - i) No waste or used oil that may be incompatible with the released material is recycled, treated, stored, or disposed of until cleanup procedures are completed; and

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- ii) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.
 - iii) The owner or operator must notify the Agency, and all other appropriate State and local authorities that the facility is in compliance with subsections (b)(6)(H)(i) and (b)(6)(H)(ii) of this Section before operations are resumed in the affected areas of the facility.
- I) The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, it must submit a written report on the incident to USEPA Region 5. The report must include the following:
- i) The name, address, and telephone number of the owner or operator;
 - ii) The name, address, and telephone number of the facility;
 - iii) The date, time, and type of incident (e.g., fire, explosion);
 - iv) The name and quantity of materials involved;
 - v) The extent of injuries, if any;
 - vi) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
 - vii) The estimated quantity and disposition of recovered material that resulted from the incident.

(Source: Amended at 37 Ill. Reg. _____, effective _____)

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SUBPART G: STANDARDS FOR USED OIL BURNERS THAT BURN OFF-SPECIFICATION USED OIL FOR ENERGY RECOVERY

Section 739.162 Notification

- a) Identification numbers. A used oil burner that has not previously complied with the notification requirements of RCRA Section 3010 must comply with these requirements and obtain a USEPA identification number pursuant to RCRA Section 3010 and an Illinois special waste identification number.
- b) Mechanics of notification. A used oil burner that has not received a USEPA identification number may obtain one by notifying USEPA Region 5 and the Agency of its used oil activity by submitting either of the following:
 - 1) A completed USEPA Form 8700-12 ~~(to obtain USEPA Form 8700-12 call RCRA/Superfund Hotline at 1-800-424-9346 or 703-920-9810) to USEPA Region 5 and the Agency;~~ or

BOARD NOTE: The used oil burner that wishes to use USEPA Form 8700-12 for notification must obtain a copy of the form from the Agency, Bureau of Land (217-782-6762), and submit the completed form to USEPA Region 5.

- 2) A letter to USEPA Region 5 and the Agency requesting a USEPA identification number. ~~Call the RCRA/Superfund Hotline to determine where to send a letter requesting a USEPA identification number.~~ The letter should include the following information:
 - A) The burner company name;
 - B) The owner of the burner company;
 - C) The mailing address for the burner;
 - D) The name and telephone number for the burner point of contact;
 - E) The type of used oil activity; and
 - F) The location of the burner facility.

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- c) A used oil burner that has not previously obtained an Illinois special waste identification number may obtain one by contacting the Agency at the following address: Division of Land Pollution Control, Illinois EPA, 1021 North Grand Avenue, Springfield, Illinois 62794-9276 (telephone: 217-782-6761).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

SUBPART H: STANDARDS FOR USED OIL FUEL MARKETERS

Section 739.173 Notification

- a) A used oil fuel marketer subject to the requirements of this Section that has not previously complied with the notification requirements of RCRA Section 3010 must comply with these requirements and obtain a USEPA identification number pursuant to RCRA Section 3010 and an Illinois special waste identification number.
- b) A used oil marketer that has not received a USEPA identification number may obtain one by notifying the USEPA Region 5 and the Agency of its used oil activity by submitting either of the following:
- 1) A completed USEPA Form 8700-12 to USEPA Region 5 and the Agency; or
BOARD NOTE: The used oil fuel marketer that wishes to use USEPA Form 8700-12 for notification must obtain a copy of the form from the Agency, Bureau of Land (217-782-6762), and submit the completed form to USEPA Region 5.
 - 2) A letter to USEPA Region 5 and the Agency requesting a USEPA identification number. The letter should include the following information:
 - A) The marketer company name;
 - B) The owner of the marketer;
 - C) The mailing address for the marketer;
 - D) The name and telephone number for the marketer point of contact; and
 - E) The type of used oil activity (i.e., generator directing shipments of off-specification used oil to a burner).

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- c) A used oil burner that has not previously obtained an Illinois special waste identification number may obtain one by contacting the Agency at the following address: Division of Land Pollution Control, Illinois EPA, 1021 North Grand Avenue, Springfield, Illinois 62794-9276 (telephone: 217-782-6761).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

SUBPART I: DISPOSAL OF USED OIL

Section 739.181 Disposal

- a) Disposal of hazardous used oils. A used oil that is identified as a hazardous waste and which cannot be recycled in accordance with this Part must be managed in accordance with the hazardous waste management requirements of 35 Ill. Adm. Code 702, 703, and 720 through 728.
- b) Disposal of non-hazardous used oils. A used oil that is not a hazardous waste and cannot be recycled under this Part must be disposed of in accordance with the requirements of 35 Ill. Adm. Code 807 through 815 and 40 CFR 257 and 258, incorporated by reference in 35 Ill. Adm. Code 720.111(b).

(Source: Amended at 37 Ill. Reg. _____, effective _____)

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER f: RISK BASED CLEANUP OBJECTIVES

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742.APPENDIX H	Memorandum of Understanding

AUTHORITY: Implementing Sections 22.4, 22.12, Title XVI, and Title XVII and authorized by Sections 27 and 58.5 of the Environmental Protection Act [415 ILCS 5/22.4, 22.12, 27, and 58.5 and Title XVI and Title XVII].

SOURCE: Adopted in R97-12(A) at 21 Ill. Reg. 7942, effective July 1, 1997; amended in R97-12(B) at 21 Ill. Reg. 16391, effective December 8, 1997; amended in R97-12(C) at 22 Ill. Reg. 10847, effective June 8, 1998; amended in R00-19(A) at 25 Ill. Reg. 651, effective January 6, 2001; amended in R00-19(B) at 25 Ill. Reg. 10374, effective August 15, 2001; amended in R00-19(C) at 26 Ill. Reg. 2683, effective February 5, 2002; amended in R06-10 at 31 Ill. Reg. 4063, effective February 23, 2007; amended in R11-09 at 37 Ill. Reg. 7506, effective July 15, 2013.

NOTE: Italics indicates statutory language.

SUBPART A: INTRODUCTION

Section 742.100 Intent and Purpose

- a) This Part sets forth procedures for evaluating the risk to human health posed by environmental conditions and developing remediation objectives that achieve acceptable risk levels.
- b) The purpose of these procedures is to provide for the adequate protection of human health and the environment based on the risks to human health posed by environmental conditions while incorporating site related information.

Section 742.105 Applicability

- a) Any person, including a person required to perform an investigation pursuant to the Illinois Environmental Protection Act [415 ILCS 5] (Act), may elect to proceed under this Part to the extent allowed by State or federal law and regulations and the provisions of this Part and subject to the exceptions listed in subsection (h) below. A person proceeding under this Part may do so to the extent such actions are consistent with the requirements of the program under which site remediation is being addressed.
- b) This Part is to be used in conjunction with the procedures and requirements applicable to the following programs:
 - 1) Leaking Underground Storage Tanks (35 Ill. Adm. Code 731 and 734);
 - 2) Site Remediation Program (35 Ill. Adm. Code 740); and
 - 3) RCRA Part B Permits and Closure Plans (35 Ill. Adm. Code 724 and 725).
- c) The procedures in this Part may not be used if their use would delay response action to address imminent and substantial threats to human health and the environment. This Part may only be used after actions to address such threats have been completed.
- d) This Part may be used to develop remediation objectives to protect surface waters, sediments or ecological concerns, when consistent with the regulations of other programs, and as approved by the Agency.
- e) A no further remediation determination issued by the Agency prior to July 1, 1997 pursuant to Section 4(y) of the Act or one of the programs listed in subsection (b) of this Section that approves completion of remedial action relative to a release shall remain in effect in accordance with the terms of that determination.
- f) Site specific groundwater remediation objectives determined under this Part for contaminants of concern may exceed the groundwater quality standards established pursuant to the rules promulgated under the Illinois Groundwater Protection Act [415 ILCS 55] as long as done in accordance with Sections 742.805 and 742.900(c)(9). (See 415 ILCS 5/58.5(d)(4))
- g) Where contaminants of concern include polychlorinated byphenyls (PCBs), a person may need to evaluate the applicability of regulations adopted under the Toxic Substances Control Act (15 USC 2601).
- h) This Part may not be used in lieu of the procedures and requirements applicable to landfills under 35 Ill. Adm. Code 807 or 811 through 814.
- i) An evaluation of the indoor inhalation exposure route under this Part addresses the potential of contaminants present in soil gas or groundwater to reach human

receptors within buildings. This Part does not address the remediation or mitigation of any contamination within a building from a source other than soil gas or groundwater, such as the building structure itself and products within the building.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.110 Overview of Tiered Approach

- a) This Part presents an approach for developing remediation objectives (see Appendix A, Illustrations A and B) that include an option for exclusion of pathways from further consideration, use of area background concentrations as remediation objectives and three tiers for selecting applicable remediation objectives. An understanding of human exposure routes is necessary to properly conduct an evaluation under this approach. In some cases, applicable human exposure routes can be excluded from further consideration prior to any tier evaluation. Selecting which tier or combination of tiers to be used to develop remediation objectives is dependent on the site-specific conditions and remediation goals. Tier 1 evaluations and Tier 2 evaluations are not prerequisites to conducting Tier 3 evaluations.
- b) A Tier 1 evaluation compares the concentration of contaminants detected at a site to the corresponding remediation objectives for residential and industrial/commercial properties contained in Appendix B, Tables A, B, C, D, E, G, H and I. To complete a Tier 1 evaluation, the extent and concentrations of the contaminants of concern, the groundwater class, the land use classification, human exposure routes at the site, and, if appropriate, soil pH, must be known. If remediation objectives are developed based on industrial/commercial property use, then institutional controls under Subpart J are required. For the indoor inhalation exposure route, institutional controls under Subpart J are required to use remediation objectives in Appendix B, Table H or Table I.
- c) A Tier 2 evaluation uses the risk based equations from the Soil Screening Level (SSL) model, Risk Based Corrective Action (RBCA) model and modified Johnson and Ettinger (J&E) model documents listed in Appendix C, Tables A, C and L, respectively. In addition to the information that is required for a Tier 1 evaluation, site-specific information is used to calculate Tier 2 remediation objectives. As in Tier 1, Tier 2 evaluates residential and industrial/commercial properties only. If remediation objectives are developed based on industrial/commercial property use, then institutional controls under Subpart J are required. For the indoor inhalation exposure route, institutional controls under Subpart J are required to develop remediation objectives pursuant to Appendix C, Table L.

- d) A Tier 3 evaluation allows alternative parameters and factors, not available under a Tier 1 or Tier 2 evaluation, to be considered when developing remediation objectives. Remediation objectives developed for conservation and agricultural properties can only be developed under Tier 3.
- e) Remediation objectives may be developed using area background concentrations or any of the three tiers if the evaluation is conducted in accordance with applicable requirements in Subparts D through I. When contaminant concentrations do not exceed remediation objectives developed under one of the tiers or area background procedures under Subpart D, further evaluation under any of the other tiers is not required.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.115 Key Elements

To develop remediation objectives under this Part, the following key elements shall be addressed.

- a) Exposure Routes
 - 1) This Part identifies the following as potential exposure routes to be addressed:
 - A) Outdoor inhalation;
 - B) Indoor inhalation;
 - C) Soil ingestion;
 - D) Groundwater ingestion; and
 - E) Dermal contact with soil.
 - 2) The evaluation of exposure routes under subsections (a)(1)(A), (a)(1)(B), (a)(1)(C) and (a)(1)(D) is required for all sites when developing remediation objectives or excluding exposure pathways. Evaluation of the dermal contact exposure route is required for use of RBCA equations in Appendix C, Table C or use of formal risk assessment under Section 742.915.
 - 3) The groundwater ingestion exposure route is comprised of two components:
 - A) Migration from soil to groundwater (soil component); and

- B) Direct ingestion of groundwater (groundwater component).
- 4) The outdoor inhalation route is comprised of two components:
 - A) Migration from soil through soil gas to outdoor air (soil component); and
 - B) Migration from soil gas to outdoor air (soil gas component).
- 5) The indoor inhalation exposure route is comprised of two components:
 - A) Migration from soil gas to indoor air (soil gas component); and
 - B) Migration from groundwater through soil gas to indoor air (groundwater component).

b) Contaminants of Concern

The contaminants of concern to be remediated depend on the following:

- 1) The materials and wastes managed at the site;
- 2) The extent of the no further remediation determination being requested from the Agency pursuant to a specific program; and
- 3) The requirements applicable to the specific program, as listed at Section 742.105(b) under which the remediation is being performed.

c) Land Use

The present and post-remediation uses of the site where exposures may occur shall be evaluated. The land use of a site, or portion thereof, shall be classified as one of the following:

- 1) Residential property;
- 2) Conservation property;
- 3) Agricultural property; or
- 4) Industrial/commercial property.

d) Environmental Media of Concern

This Part provides procedures for developing remediation objectives for the following environmental media:

- 1) Soil;
- 2) Soil gas;
- 3) Groundwater.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.120 Site Characterization

Characterization of the extent and concentrations of contamination at a site shall be performed before beginning development of remediation objectives. The actual steps and methods taken to characterize a site are determined by the requirements applicable to the specific program under which site remediation is being addressed.

SUBPART B: GENERAL

Section 742.200 Definitions

Except as stated in this Section, or unless a different meaning of a word or term is clear from the context, the definition of words or terms in this Part shall be the same as that applied to the same words or terms in the Act.

“Act” means the Illinois Environmental Protection Act [415 ILCS 5].

“ADL” means Acceptable Detection Limit, which is the detectable concentration of a substance that is equal to the lowest appropriate Practical Quantitation Limit (PQL) as defined in this Section.

“Agency” means the Illinois Environmental Protection Agency.

“Agricultural Property” means any real property for which its present or post-remediation use is for growing agricultural crops for food or feed either as harvested crops, cover crops or as pasture. This definition includes, but is not limited to, properties used for confinement or grazing of livestock or poultry and for silviculture operations. Excluded from this definition are farm residences, farm outbuildings and agrichemical facilities.

“Aquifer” means *saturated (with groundwater) soils and geologic materials which are sufficiently permeable to readily yield economically useful quantities of water to wells, springs, or streams under ordinary hydraulic gradients.* (Illinois Groundwater Protection Act [415 ILCS 55/3(a)])

“Area Background” means *concentrations of regulated substances that are consistently present in the environment in the vicinity of a site that are the result of natural conditions or human activities, and not the result solely of releases at the site.* [415 ILCS 5/58.2]

“ASTM” means the American Society for Testing and Materials.

“Board” means the Illinois Pollution Control Board.

“Building” means a man-made structure with an enclosing roof and enclosing walls (except for windows and doors) that is fit for any human occupancy for at least six consecutive months.

“Building Control Technology” means any technology or barrier that affects air flow or air pressure within a building for purposes of reducing or preventing contaminant migration to the indoor air.

“Cancer Risk” means a unitless probability of an individual developing cancer from a defined exposure rate and frequency.

“Cap” means a barrier designed to prevent the infiltration of precipitation or other surface water, or impede the ingestion or inhalation of contaminants.

“Capillary Fringe” means the zone above the water table in which water is held by surface tension. Water in the capillary fringe is under a pressure less than atmospheric.

“Carcinogen” means *a contaminant that is classified as a category A1 or A2 carcinogen by the American Conference of Governmental Industrial Hygienists; a category 1 or 2A/2B carcinogen by the World Health Organization's International Agency for Research on Cancer; a "human carcinogen" or "anticipated human carcinogen" by the United States Department of Health and Human Service National Toxicological Program; or a category A or B1/B2 carcinogen or as "carcinogenic to humans" or "likely to be carcinogenic to humans" by the United States Environmental Protection Agency in the integrated risk information system or a final rule issued in a Federal Register notice by the USEPA.* [415 ILCS 5/58.2]

“Class I Groundwater” means groundwater that meets the Class I: Potable Resource Groundwater criteria set forth in 35 Ill. Adm. Code 620.

“Class II Groundwater” means groundwater that meets the Class II: General Resource Groundwater criteria set forth in 35 Ill. Adm. Code 620.

“Conservation Property” means any real property for which present or post-remediation use is primarily for wildlife habitat.

“Construction Worker” means a person engaged on a temporary basis to perform work involving invasive construction activities including, but not limited to, personnel performing demolition, earth-moving, building, and routine and emergency utility installation or repair activities.

“Contaminant of Concern” or “Regulated Substance of Concern” means *any contaminant that is expected to be present at the site based upon past and current land uses and associated releases that are known to the person conducting a remediation based upon reasonable inquiry.* [415 ILCS 5/58.2]

“County Highway” means county highway as defined in the Illinois Highway Code [605 ILCS 5].

“District Road” means district road as defined in the Illinois Highway Code [605 ILCS 5].

“Engineered Barrier” means a barrier designed or verified using engineering practices that limits exposure to or controls migration of the contaminants of concern.

“Environmental Land Use Control” means an instrument that meets the requirements of this Part and is placed in the chain of title to real property that limits or places requirements upon the use of the property for the purpose of protecting human health or the environment, is binding upon the property owner, heirs, successors, assigns, and lessees, and runs in perpetuity or until the Agency approves, in writing, removal of the limitation or requirement from the chain of title.

“Exposure Route” means the transport mechanism by which a contaminant of concern reaches a receptor.

“Federally Owned Property” means real property owned in fee by the United States of America on which institutional controls are sought to be placed in accordance with this Subpart.

“Federal Landholding Entity” means that federal department, agency, or instrumentality with the authority to occupy and control the day-to-day use, operation and management of Federally Owned Property.

“Free Product” means a contaminant that is present as a non-aqueous phase liquid for chemicals whose melting point is less than 30°C (e.g., liquid not dissolved in water).

“GIS” means Geographic Information System.

“GPS” means Global Positioning System.

“Groundwater” means underground water which occurs within the saturated zone and geologic materials where the fluid pressure in the pore space is equal to or greater than atmospheric pressure. [415 ILCS 5/3.64]

“Groundwater Quality Standards” means the standards for groundwater as set forth in 35 Ill. Adm. Code 620.

“Hazard Quotient” means the ratio of a single substance exposure level during a specified time period to a reference dose for that substance derived from a similar exposure period.

“Highway” means any public way for vehicular travel which has been laid out in pursuance of any law of this State, or of the Territory of Illinois, or which has been established by dedication, or used by the public as a highway for 15 years, or which has been or may be laid out and connect a subdivision or platted land with a public highway and which has been dedicated for the use of the owners of the land included in the subdivision or platted land where there has been an acceptance and use under such dedication by such owners, and which has not been vacated in pursuance of law. The term "highway" includes rights of way, bridges, drainage structures, signs, guard rails, protective structures and all other structures and appurtenances necessary or convenient for vehicular traffic. A highway in a rural area may be called a "road", while a highway in a municipal area may be called a "street". (Illinois Highway Code [605 ILCS 5/2-202])

“Highway Authority” means *the Department of Transportation with respect to a State highway; the Illinois State Toll Highway with respect to a toll highway; the County Board with respect to a county highway or a county unit district road if a discretionary function is involved and the County Superintendent of Highways if a ministerial function is involved; the Highway Commissioner with respect to a township or district road not in a county unit road district; or the corporate authorities of a municipality with respect to a municipal street. (Illinois Highway Code [605 ILCS 5/2-213])*

“Human Exposure Pathway” means a physical condition which may allow for a risk to human health based on the presence of all of the following: contaminants of concern; an exposure route; and a receptor activity at the point of exposure that could result in contaminant of concern intake.

“Industrial/Commercial Property” means any real property that does not meet the definition of residential property, conservation property or agricultural property.

“Infiltration” means the amount of water entering into the ground as a result of precipitation.

“Institutional Control” means a legal mechanism for imposing a restriction on land use, as described in Subpart J.

“Intrusive activities” means activities that would affect potential flow of contaminants into a building (e.g., breaching the integrity of a foundation due to repairs or installation of utilities).

“Land Use Control Memoranda of Agreement” mean agreements entered into between one or more agencies of the United States and the Illinois Environmental Protection Agency that limit or place requirements upon the use of Federally Owned Property for the purpose of protecting human health or the environment.

“Man-Made Pathways” means *constructed* physical conditions *that may allow for the transport of regulated substances including, but not limited to, sewers, utility lines, utility or elevator vaults, building foundations, basements, crawl spaces, drainage ditches, previously excavated and filled areas* or sumps. [415 ILCS 5/58.2]

“Natural Pathways” means *natural* physical conditions that may allow *for the transport of regulated substances including, but not limited to, soil, groundwater, sand seams and lenses, and gravel seams and lenses*. [415 ILCS 5/58.2]

“Person” means an *individual, trust, firm, joint stock company, joint venture, consortium, commercial entity, corporation (including a government corporation), partnership, association, state, municipality, commission, political subdivision of a state, or any interstate body including the United States government and each department, agency, and instrumentality of the United States*. [415 ILCS 5/58.2]

“Point of Human Exposure” means the points at which human exposure to a contaminant of concern may reasonably be expected to occur. The point of human exposure is at the source, unless an institutional control limiting human exposure for the applicable exposure route has been or will be in place, in which case the point of human exposure will be the boundary of the institutional control. Point of human exposure may be at a different location than the point of compliance.

“Populated Area” means:

an area within the boundaries of a municipality that has a population of 10,000 or greater based on the year 2000 or most recent census; or

an area less than three miles from the boundary of a municipality that has a population of 10,000 or greater based on the year 2000 or most recent census.

“Potable” means *generally fit for human consumption in accordance with accepted water supply principles and practices.* (Illinois Groundwater Protection Act [415 ILCS 55/3(h)])

“PQL” means practical quantitation limit or estimated quantitation limit, which is the lowest concentration that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method during routine laboratory operating conditions in accordance with “Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods”, EPA Publication No. SW-846, incorporated by reference in Section 742.210. When applied to filtered water samples, PQL includes the method detection limit or estimated detection limit in accordance with the applicable method revision in: “Methods for the Determination of Organic Compounds in Drinking Water”, Supplement II”, EPA Publication No. EPA/600/4-88/039; “Methods for the Determination of Organic Compounds in Drinking Water, Supplement III”, EPA Publication No. EPA/600/R-95/131, all of which are incorporated by reference in Section 742.210.

“ Q_{soil} ” means the volumetric flow rate of soil gas from the subsurface into the enclosed building space.

“RBCA” means Risk Based Corrective Action as defined in ASTM E-1739-95, as incorporated by reference in Section 742.210.

“RCRA” means the Resource Conservation and Recovery Act of 1976 (42 USC 6921).

“Reference Concentration” or “RfC” means an estimate of a daily exposure, in units of milligrams of chemical per cubic meter of air (mg/m^3), to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious effects during a portion of a lifetime (up to approximately seven years, subchronic) or for a lifetime (chronic).

“Reference Dose” or “RfD” means an estimate of a daily exposure, in units of milligrams of chemical per kilogram of body weight per day ($\text{mg}/\text{kg}/\text{d}$), to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious effects during a portion of a lifetime (up to approximately seven years, subchronic) or for a lifetime (chronic).

“Regulated Substance” means *any hazardous substance as defined under Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (P.L. 96-510) and petroleum products including crude oil or any fraction thereof, natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).* [415 ILCS 5/58.2]

“Rendered inoperable” means having become unable to operate effectively, including, but not limited to, being shut down as part of routine maintenance or due to a malfunction, power failure, or vandalism.

“Residential Property” means any real property that is used for habitation by individuals, or where children have the opportunity for exposure to contaminants through ingestion or inhalation (indoor or outdoor) at educational facilities, health care facilities, child care facilities or recreational areas. [415 ILCS 5/58.2]

“Right of Way” means the land, or interest therein, acquired for or devoted to a highway. (Illinois Highway Code [605 ILCS 5/2-217])

“Saturated Zone” means a subsurface zone in which all the interstices or voids are filled with water under pressure greater than that of the atmosphere.

“Similar-Acting Chemicals” are chemical substances that have toxic or harmful effect on the same specific organ or organ system (see Appendix A. Tables E and F for a list of similar-acting chemicals with noncarcinogenic and carcinogenic effects).

“Site” means any single location, place, tract of land or parcel of property, or portion thereof, including contiguous property separated by a public right-of-way. [415 ILCS 5/58.2]

“Slurry Wall” means a man-made barrier made of geologic material which is constructed to prevent or impede the movement of contamination into a certain area.

“Soil Gas” means the air existing in void spaces in the soil between the groundwater table and the ground surface.

“Soil Saturation Limit” or “ C_{sat} ” means the contaminant concentration at which the absorptive limits of the soil particles, the solubility limits of the available soil moisture, and saturation of soil pore air have been reached. Above the soil saturation concentration, the assumptions regarding vapor transport to air and/or dissolved phase transport to groundwater (for chemicals that are liquid at ambient soil temperatures) do not apply, and alternative modeling approaches are required.

“Soil Vapor Saturation Limit” or “ C_v^{sat} ” means the maximum vapor concentration that can exist in the soil pore air at a given temperature and pressure.

“Solubility” means a chemical specific maximum amount of solute that can dissolve in a specific amount of solvent (groundwater) at a specific temperature.

“SPLP” means Synthetic Precipitation Leaching Procedure (Method 1312) as published in “Test Methods for Evaluating Solid Waste, Physical/Chemical

Methods”, USEPA Publication No. SW-846, as incorporated by reference in Section 742.210.

“SSL” means Soil Screening Levels as defined in USEPA’s Soil Screening Guidance: User's Guide and Technical Background Document, as incorporated by reference in Section 742.210.

“State Highway” means State highway as defined in the Illinois Highway Code [605 ILCS 5].

“Stratigraphic Unit” means a site-specific geologic unit of native deposited material and/or bedrock of varying thickness (e.g., sand, gravel, silt, clay, bedrock, etc.). A change in stratigraphic unit is recognized by a clearly distinct contrast in geologic material or a change in physical features within a zone of gradation. For the purposes of this Part, a change in stratigraphic unit is identified by one or a combination of differences in physical features such as texture, cementation, fabric, composition, density, and/or permeability of the native material and/or bedrock.

“Street” means street as defined in the Illinois Highway Code [605 ILCS 5].

“TCLP” means Toxicity Characteristic Leaching Procedure (Method 1311) as published in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA Publication No. SW-846, as incorporated by reference in Section 742.210.

“Toll Highway” means toll highway as defined in the Illinois Highway Code [605 ILCS 5].

“Total Petroleum Hydrocarbon” or “TPH” means the additive total of all petroleum hydrocarbons found in an analytical sample.

“Township Road” means township road as defined in the Illinois Highway Code [605 ILCS 5].

“Unconfined Aquifer” means an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure.

“Volatile Chemicals” means chemicals with a Dimensionless Henry’s Law Constant of greater than 1.9×10^{-2} or a vapor pressure greater than 0.1 Torr (mmHg) at 25°C. For purposes of the indoor inhalation exposure route, elemental mercury is included in this definition.

“Water Table” means the top water surface of an unconfined aquifer at atmospheric pressure.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.205 Severability

If any provision of this Part or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of this Part as a whole or any portion not adjudged invalid.

Section 742.210 Incorporations by Reference

- a) The Board incorporates the following material by reference:

Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Levels (MRLs), U.S. Environmental Protection Agency, 1600 Clifton Road, Mailstop F32, Atlanta, Georgia 30333, (770) 488-3357 (November 2007).

ASTM International. 100 Barr Harbor Drive, West Conshohocken PA 19428-2959, (610) 832-9585.

ASTM D 2974-00, Standard Test Methods for Moisture, Ash and Organic Matter of Peat and Other Organic Soils, approved August 10, 2000.

ASTM D 2488-00, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), approved February 10, 2000.

ASTM D 1556-00, Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method, approved March 10, 2000.

ASTM D 2167-94, Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method, approved March 15, 1994.

ASTM D 2922-01, Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth), approved June 10, 2001.

ASTM D 2937-00e1, Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method, approved June 10, 2000.

ASTM D 854-02, Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer, approved July 10, 2002.

ASTM D 2216-98, Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass, approved February 10, 1998.

ASTM D 4959-00, Standard Test Method for Determination of Water (Moisture) Content of Soil by Direct Heating, approved March 10, 2000.

ASTM D 4643-00, Standard Test Method for Determination of Water (Moisture) Content of Soil by the Microwave Oven Method, approved February 10, 2000.

ASTM D 5084-03, Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter, approved November 1, 2003.

ASTM D 422-63 (2002), Standard Test Method for Particle-Size Analysis of Soils, approved November 10, 2002.

ASTM D 1140-00, Standard Test Methods for Amount of Material in Soils Finer than the No. 200 (75 μ m) Sieve, approved June 10, 2000.

ASTM D 3017-01, Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth), approved June 10, 2001.

ASTM D 4525-90 (2001), Standard Test Method for Permeability of Rocks by Flowing Air, approved May 25, 1990.

ASTM D 2487-00, Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System), approved March 10, 2000.

ASTM D 1945-03, Standard Test Method for Analysis of Natural Gas by Gas Chromatography, approved May 10, 2003.

ASTM D 1946-90, Standard Practice for Analysis of Reformed Gas by Gas Chromatography, approved June 1, 2006.

ASTM E 1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, approved May 10, 2000. Vol. 11.04.

ASTM E 1739-95 (2002), Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites, approved September 10, 1995.

ASTM E 2121-09, Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings, approved November 1, 2009.

ASTM E 2600-10, Standard Practice for Assessment for Vapor Intrusion into Structures on Property Involved in Real Estate Transactions, approved June 2010.

API. American Petroleum Institute, 1220 L Street, NW, Washington DC 20005-4070 (202) 682-8000.

BIOVAPOR-A 1-D Vapor Intrusion Model with Oxygen-Limited Aerobic Biodegradation, Version 2.0 (January 2010).

Barnes, Donald G. and Dourson, Michael. (1988). Reference Dose (RfD): Description and Use in Health Risk Assessments. Regulatory Toxicology and Pharmacology. 8, 471-486.

EPRI. Electric Power Research Institute. 3420 Hillview Avenue, Palo Alto, California 94304. (650) 855-2121.

Polycyclic Aromatic Hydrocarbons (PAHs) in Surface Soil in Illinois: Background PAHs, EPRI, Palo Alto CA, We Energies, Milwaukee WI and IEPA, Springfield IL: 2004. 1011376.

Reference Handbook for Site-Specific Assessment of Subsurface Vapor Intrusion to Indoor Air, Electric Power Research Institute (EPRI), Inc., Program No. 1008492 (March 2005).

GPO. Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20401, (202) 783-3238.

USEPA Guidelines for Carcinogenic Risk Assessment, 51 Fed. Reg. 33992-34003 (September 24, 1986).

“Test Methods for Evaluating Solid Waste, Physical/Chemical Methods”, USEPA Publication number SW-846 (Third Edition, Final Update IIIA, April 1998), as amended by Updates I, IIA, III, and IIIA (Document No. 955-001-00000-1).

“Methods for the Determination of Organic Compounds in Drinking Water”, EPA Publication No. EPA/600/4-88/039 (December 1988 (Revised July 1991)).

“Methods for the Determination of Organic Compounds in Drinking Water, Supplement I”, EPA Publication No. EPA/600/4-90/020 (July 1990).

“Methods for the Determination of Organic Compounds in Drinking Water, Supplement II”, EPA Publication No. EPA/600/R-92/129 (August 1992).

“Methods for the Determination of Organic Compounds in Drinking Water, Supplement III”, EPA Publication No. EPA/600/R-95/131 (August 1995).

“Guidance for Data Quality Assessment, Practical Methods for Data Analysis, EPA QA/G-9, QAOO Update,” EPA/600/R-96/084 (July 2000). Available at www.epa.gov/quality/qs-docs/g9-final.pdf.

“Assessment of Vapor Intrusion in Homes Near the Raymark Superfund Site Using Basement and Sub-Slab Air Samples”, EPA Publication No. EPA/600/R-05/147 (March 2006).

“Model Standards and Techniques for Control of Radon in New Residential Buildings” EPA Publication No. EPA/402/R-94/009 (March 1994).

“Radon Reduction Techniques for Existing Detached Houses: Technical Guidance (Third Edition) for Active Soil Depressurization Systems”, EPA Publication No. EPA/625/R-93/011 (October 1993).

Illinois Environmental Protection Agency, 1021 N. Grand Ave East, Springfield IL 62701, (217) 785-0830.

“A Summary of Selected Background Conditions for Inorganics in Soil”, Publication No. IEPA/ENV/94-161 (August 1994).

IRIS. Integrated Risk Information System, National Center for Environmental Assessment, U.S. Environmental Protection Agency, 26 West Martin Luther King Drive, MS-190, Cincinnati, OH 45268, (513) 569-7254.

“Reference Dose (RfD): Description and Use in Health Risk Assessments”, Background Document 1A (March 15, 1993).

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- c) This Section incorporates no later editions or amendments.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.215 Determination of Soil Attenuation Capacity

- a) The concentrations of organic contaminants of concern remaining in the soil shall not exceed the attenuation capacity of the soil, as determined under subsection (b) of this Section.
- b) The soil attenuation capacity is not exceeded if:
 - 1) The sum of the organic contaminant residual concentrations analyzed for the purposes of the remediation program for which the analysis is performed, at each discrete sampling point, is less than the natural organic carbon fraction of the soil. If the information relative to the concentration of other organic contaminants is available, such information shall be included in the sum. The natural organic carbon fraction (f_{oc}) shall be either:
 - A) A default value of 6000 mg/kg for soils within the top meter and 2000 mg/kg for soils below one meter of the surface; or
 - B) A site-specific value as measured by the analytical method referenced in Appendix C, Table F, multiplied by 0.58 to estimate the fraction of organic carbon, as stated in, Nelson and Sommers (1982), as incorporated by reference in Section 742.210;
 - 2) The total petroleum hydrocarbon concentration is less than the natural organic carbon fraction of the soil as demonstrated using a method approved by the Agency. The method selected shall be appropriate for the contaminants of concern to be addressed; or
 - 3) Another method, approved by the Agency, shows that the soil attenuation capacity is not exceeded.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.220 Determination of Soil Saturation Limit

- a) For any organic contaminant that has a melting point below 30°C, the remediation objective for the outdoor inhalation exposure route developed under Tier 2 shall not exceed the soil saturation limit, as determined under subsection (c).
- b) For any organic contaminant that has a melting point below 30°C, the remediation objective under Tier 2 for the soil component of the groundwater ingestion exposure route shall not exceed the soil saturation limit, as determined under subsection (c).
- c) The soil saturation limit shall be:

- 1) The value listed in Appendix A, Table A for that specific contaminant;
- 2) A value derived from Equation S29 in Appendix C, Table A; or
- 3) A value derived from another method approved by the Agency.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.222 Determination of Soil Vapor Saturation Limit

- a) For any volatile chemical, the soil gas remediation objective for the indoor and outdoor inhalation exposure routes developed under Tier 2 shall not exceed the soil vapor saturation limit, as determined under subsection (b).
- b) The soil vapor saturation limit shall be:
 - 1) The value listed in Appendix A, Table K for that specific contaminant;
 - 2) A value derived from Equation J&E5 in Appendix C, Table L; or
 - 3) A value derived from another method approved by the Agency.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.225 Demonstration of Compliance with Soil and Groundwater Remediation Objectives

Compliance with soil and groundwater remediation objectives is achieved if each sample result does not exceed that respective remediation objective unless a person elects to proceed under subsections (c), (d) and (e).

- a) Compliance with groundwater remediation objectives developed under Subparts D through F and H through I shall be demonstrated by comparing the contaminant concentrations of discrete samples at each sample point to the applicable groundwater remediation objective. Sample points shall be determined by the program under which remediation is performed.
- b) Unless the person elects to composite samples or average sampling results as provided in subsections (c) and (d), compliance with soil remediation objectives developed under Subparts D through G and I shall be demonstrated by comparing the contaminant concentrations of discrete samples to the applicable soil remediation objective.

- 1) Except as provided in subsections (c) and (d), compositing of samples is not allowed.
 - 2) Except as provided in subsections (c) and (d), averaging of sample results is not allowed.
 - 3) Notwithstanding subsections (c) and (d), compositing of samples and averaging of sample results is not allowed for the construction worker population.
 - 4) The number of sampling points required to demonstrate compliance is determined by the requirements applicable to the program under which remediation is performed.
- c) If a person chooses to composite soil samples or average soil sample results to demonstrate compliance relative to the soil component of the groundwater ingestion exposure route, the following requirements apply:
- 1) A minimum of two sampling locations for every 0.5 acre of contaminated area is required, with discrete samples at each sample location obtained at every two feet of depth, beginning at six inches below the ground surface for surface contamination and at the upper limit of contamination for subsurface contamination and continuing through the zone of contamination. Alternatively, a sampling method may be approved by the Agency based on an appropriately designed site-specific evaluation. Samples obtained at or below the water table shall not be used in compositing or averaging.
 - 2) For contaminants of concern other than volatile chemicals:
 - A) Discrete samples from the same boring may be composited; or
 - B) Discrete sample results from the same boring may be averaged.
 - 3) For volatile chemicals:
 - A) Compositing of samples is not allowed.
 - B) Discrete sample results from the same boring may be averaged.
 - 4) Composite samples may not be averaged. An arithmetic average may be calculated for discrete samples collected at every two feet of depth through the zone of contamination as specified in subsection (c)(1).

- d) If a person chooses to composite soil samples or average soil sample results to demonstrate compliance relative to the outdoor inhalation exposure route or ingestion exposure route, the following requirements apply:
- 1) A person shall submit a sampling plan for Agency approval, based upon a site-specific evaluation;
 - 2) For volatile chemicals, compositing of samples is not allowed;
 - 3) All samples shall be collected within the contaminated area;
 - 4) Composite samples may not be averaged. Procedures specified in “Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites”, USEPA Office of Emergency and Remedial Response, OSWER 9285.6-10 (December 2002), as incorporated by reference in Section 742.210, or an alternative procedure approved by the Agency, shall be used to determine sample averages.
- e) When averaging under this Section, if no more than 15% of sample results are reported as “non-detect”, “no contamination”, “below detection limits”, or similar terms, such results shall be included in the averaging calculations as one-half the reported analytical detection limit for the contaminant. However, when performing a test for normal or lognormal distribution for the purpose of calculating a 95% Upper Confidence Limit of the mean for a contaminant, a person may substitute for each non-detect value a randomly generated value between, but not including, zero and the reported analytical detection limit. If more than 15% of sample results are "non-detect", procedures specified in “Guidance for Data Quality Assessment, Practical Methods for Data Analysis, EPA QA/G-9, QA00 Update”, EPA/600/R-96/084 (July 2000), as incorporated by reference in Section 742.210, or an alternative procedure approved by the Agency shall be used to address the non-detect values, or another statistically valid procedure approved by the Agency may be used to determine an average.
- f) All soil samples collected after August 15, 2001 shall be reported on a dry weight basis for the purpose of demonstrating compliance, with the exception of the TCLP and SPLP and the property pH.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.227 Demonstration of Compliance with Soil Gas Remediation Objectives for the Outdoor and Indoor Inhalation Exposure Routes

- a) For purposes of the outdoor inhalation exposure route and the indoor inhalation exposure route, compliance with soil gas remediation objectives developed under any tier shall be demonstrated in accordance with this Section by comparing the contaminant concentrations of discrete samples at each sample point to the applicable soil gas remediation objective.

- b) This Section applies to exterior soil gas samples for the outdoor inhalation exposure route, near-slab soil gas samples collected outside of an existing building for the indoor inhalation exposure route, and exterior soil gas samples collected at the footprint of a potential building for the indoor inhalation exposure route. Proposals to use sub-slab soil gas data for the indoor inhalation exposure route shall follow Section 742.935(c).
- c) Sample points shall be determined by the program under which remediation is performed.
- d) When collecting soil gas samples:
 - 1) Use rigid-wall tubing made of nylon or Teflon® or other material approved by the Agency;
 - 2) Use gas-tight, inert containers to hold the sample. For light sensitive or halogenated volatile chemicals, these containers shall be opaque or dark-colored;
 - 3) Purge three volumes before obtaining each discrete soil gas sample;
 - 4) Use a helium tracer or other leak apparatus detection system approved by the Agency; and
 - 5) Limit the flow rate to 200 ml/min.
- e) Soil gas samples shall be analyzed using a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory.
- f) Soil gas remediation objectives shall be compared to concentrations of soil gas collected at a depth at least 3 feet below ground surface and above the saturated zone.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.230 Agency Review and Approval

- a) Documents and requests filed with the Agency under this Part shall be submitted in accordance with the procedures applicable to the specific program under which remediation is performed.
- b) Agency review and approval of documents and requests under this Part shall be performed in accordance with the procedures applicable to the specific program under which the remediation is performed.

SUBPART C: EXPOSURE ROUTE EVALUATIONS

Section 742.300 Exclusion of Exposure Route

- a) This Subpart sets forth requirements to demonstrate that an actual or potential impact to a receptor or potential receptor from a contaminant of concern can be excluded from consideration from one or more exposure routes. If an evaluation under this Subpart demonstrates the applicable requirements for excluding an exposure route are met, then the exposure route is excluded from consideration and no remediation objective(s) need be developed for that exposure route.
- b) No exposure route may be excluded from consideration until characterization of the extent and concentrations of contaminants of concern at a site has been performed. The actual steps and methods taken to characterize a site shall be determined by the specific program requirements under which the site remediation is being addressed.
- c) As an alternative to the use of the requirements in this Subpart, a person may use the procedures for evaluation of exposure routes under Tier 3 as set forth in Section 742.925.

(Source: Amended at 25 Ill. Reg. 10374, effective August 15, 2001)

Section 742.305 Contaminant Source and Free Product Determination

No exposure route shall be excluded from consideration relative to a contaminant of concern unless the following requirements are met:

- a) The sum of the concentrations of all organic contaminants of concern shall not exceed the attenuation capacity of the soil as determined under Section 742.215;
- b) The concentrations of any organic contaminants of concern remaining in the soil shall not exceed the soil saturation limit as determined under Section 742.220;
- c) Any soil which contains contaminants of concern shall not exhibit any of the characteristics of reactivity for hazardous waste as determined under 35 Ill. Adm. Code 721.123;
- d) Any soil which contains contaminants of concern shall not exhibit a pH less than or equal to 2.0 or greater than or equal to 12.5, as determined by SW-846 Method 9040B: pH Electrometric for soils with 20% or greater aqueous (moisture) content or by SW-846 Method 9045C: Soil pH for soils with less than 20% aqueous (moisture) content as incorporated by reference in Section 742.210;
- e) Any soil which contains contaminants of concern in the following list of inorganic chemicals or their salts shall not exhibit any of the characteristics of toxicity for hazardous waste as determined by 35 Ill. Adm. Code 721.124: arsenic, barium, cadmium, chromium, lead, mercury, selenium or silver;

- f) If contaminants of concern include polychlorinated biphenyls (PCBs), the concentration of any PCBs in the soil shall not exceed 50 parts per million as determined by SW-846 Methods; and
- g) The concentration of any contaminant of concern in soil gas shall not exceed 10% of its Lower Explosive Limit (LEL) as measured by a hand held combustible gas indicator that has been calibrated to manufacturer specifications.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.310 Outdoor Inhalation Exposure Route

The outdoor inhalation exposure route may be excluded from consideration if:

- a) The requirements in subsection (a)(1) or (a)(2) are met:
 - 1) An approved engineered barrier is in place that meets the requirements of Subpart K; or
 - 2) The only contaminants of concern are benzene, toluene, ethylbenzene, and total xylenes, and a demonstration of active biodegradation has been made for benzene, toluene, ethylbenzene, and total xylenes such that no outdoor inhalation exposure will occur. This demonstration shall be submitted to the Agency for review and approval;
- b) The requirements of Sections 742.300 and 742.305 are met;
- c) Safety precautions for the construction worker are taken if the Tier 1 construction worker remediation objectives are exceeded; and
- d) An institutional control, in accordance with Subpart J, will be placed on the property.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.312 Indoor Inhalation Exposure Route

The indoor inhalation exposure route may be excluded from consideration if:

- a) None of the contaminants of concern are listed on Appendix A, Table J and none of the contaminants of concern are volatile chemicals, as defined in Section 742.200; or
- b) The requirements in subsections (b)(1)(A), (B) or (C) and (b)(2) and (b)(3) are met:

- 1) Exclusion options when the contaminants of concern are volatile chemicals:
 - A) No building or man-made pathway exists or will be placed above contaminated soil gas or groundwater exceeding Tier 1 remediation objectives for residential property (Appendix B, Table H), provided, however, that there is also no soil or groundwater contamination exceeding Tier 1 remediation objectives for residential property (Appendix B, Table A) or Class I groundwater (Appendix B, Table E) located 5 feet or less, horizontally, from any existing or potential building or man-made pathway; or
 - B) An approved building control technology is in place or will be placed that meets the requirements of Subpart L; or
 - C) If the contaminants of concern are benzene, toluene, ethylbenzene, and total xylenes only, a demonstration of active biodegradation has been made for benzene, toluene, ethylbenzene, and total xylenes such that no indoor inhalation exposure will occur. This demonstration shall be submitted to the Agency for review and approval;
- 2) The requirements of Sections 742.300 and 742.305 are met; and
- 3) An institutional control, in accordance with Subpart J, will be placed on the property.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.315 Soil Ingestion Exposure Route

The soil ingestion exposure route may be excluded from consideration if:

- a) The requirements of Sections 742.300 and 742.305 are met;
- b) An approved engineered barrier is in place that meets the requirements of Subpart K;
- c) Safety precautions for the construction worker are taken if the Tier 1 construction worker remediation objectives are exceeded; and
- d) An institutional control, in accordance with Subpart J, will be placed on the property.

(Source: Amended at 25 Ill. Reg. 10374, effective August 15, 2001)

Section 742.320 Groundwater Ingestion Exposure Route

The groundwater ingestion exposure route may be excluded from consideration if:

- a) The requirements of Sections 742.300 and 742.305 are met;
- b) The corrective action measures have been completed to remove any free product to the maximum extent practicable;
- c) The source of the release is not located within the minimum or designated maximum setback zone or within a regulated recharge area of a potable water supply well;
- d) As demonstrated in accordance with Section 742.1015, for any area within the measured and modeled extent of groundwater contamination above what would otherwise be the applicable Tier 1 groundwater remediation objectives, an ordinance adopted by a unit of local government is in place that effectively prohibits the installation of potable water supply wells (and the use of such wells);
- e) As demonstrated using Equation R26, in Appendix C, Table C, in accordance with Section 742.810, the concentration of any contaminant of concern in groundwater within the minimum or designated maximum setback zone of an existing potable water supply well will meet the applicable Tier 1 groundwater remediation objective; and
- f) As demonstrated using Equation R26, in Appendix C, Table C, in accordance with Section 742.810, the concentration of any contaminant of concern in groundwater discharging into a surface water will meet the applicable surface water quality standard under 35 Ill. Adm. Code 302.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

SUBPART D: DETERMINING AREA BACKGROUNDS

Section 742.400 Area Background

This Subpart provides procedures for determining area background concentrations for contaminants of concern. Except as described in Section 742.415(c) and (d) of this Subpart, area background concentrations may be used as remediation objectives for contaminants of concern at a site.

Section 742.405 Determination of Area Background for Soil

- a) Soil sampling results shall be obtained for purposes of determining area background levels in accordance with the following procedures:
 - 1) For volatile chemicals, sample results shall be based on discrete samples;
 - 2) Unless an alternative method is approved by the Agency, for contaminants other than volatile chemicals, sample results shall be based on discrete

samples or composite samples. If a person elects to use composite samples, each 0.5 acre of the area to be sampled shall be divided into quadrants and 5 aliquots of equal volume per quadrant shall be composited into 1 sample;

- 3) Samples shall be collected from similar depths and soil types, which shall be consistent with the depths and soil types in which maximum levels of contaminants are found in the areas of known or suspected releases; and
 - 4) Samples shall be collected from areas of the site or adjacent to the site that are unaffected by known or suspected releases at or from the site. If the sample results show an impact from releases at or from the site, then the sample results shall not be included in determining area background levels under this Part.
- b) Area background shall be determined according to one of the following approaches:
- 1) Statewide Area Background Approach:
 - A) The concentrations of inorganic chemicals in background soils listed in Appendix A, Table G may be used as the upper limit of the area background concentration for the site. The first column to the right of the chemical name presents inorganic chemicals in background soils for counties within Metropolitan Statistical Areas. Counties within Metropolitan Statistical Areas are identified in Appendix A, Table G, Footnote a. Sites located in counties outside Metropolitan Statistical Areas shall use the concentrations of inorganic chemicals in background soils shown in the second column to the right of the chemical name.
 - B) Soil area background concentrations determined according to this statewide area background approach shall be used as provided in Section 742.415(b) of this Part. For each parameter whose sampling results demonstrate concentrations above those in Appendix A, Table G, the person shall develop appropriate soil remediation objectives in accordance with this Part, or may determine area background in accordance with subsection (b)(2).
 - 2) A statistically valid approach for determining area background concentrations appropriate for the characteristics of the data set, and approved by the Agency.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.410 Determination of Area Background for Groundwater

- a) Groundwater sampling results shall be obtained for purposes of determining area background in accordance with the following procedures:
 - 1) Samples shall be collected from areas of the site or adjacent to the site that are unaffected by releases at the site;
 - 2) The background monitoring wells shall be sufficient in number to account for the spatial and temporal variability, size, and number of known or suspected off-site releases of contaminants of concern, and the hydrogeological setting of the site;
 - 3) The samples shall be collected in consecutive quarters for a minimum of one year for each well unless another sample schedule is approved by the Agency;
 - 4) The samples shall be collected from the same stratigraphic unit(s) as the groundwater contamination at the site; and
 - 5) The background monitoring wells shall be located hydraulically upgradient from the release(s) of contaminants of concern, unless a person demonstrates to the Agency that the upgradient location is undefinable or infeasible.

- b) Area background shall be determined according to one of the following approaches:
 - 1) Prescriptive Approach:
 - A) If more than 15% of the groundwater sampling results for a chemical obtained in accordance with subsection (a) of this Section are less than the appropriate detection limit for that chemical, the Prescriptive Approach may not be used for that chemical. If 15% or less of the sampling results are less than the appropriate detection limit, a concentration equal to one-half the detection limit shall be used for that chemical in the calculations contained in this Prescriptive Approach.
 - B) The groundwater sampling results obtained in accordance with subsection (a) of this Section shall be used to determine if the sample set is normally distributed. The Shapiro-Wilk Test of Normality shall be used to determine whether the sample set is normally distributed, if the sample set for the background well(s) contains 50 or fewer samples. Values necessary for the Shapiro-Wilk Test of Normality shall be determined using Appendix A,

Tables C and D. If the computed value of W is greater than the 5% Critical Value in Appendix A, Table D, the sample set shall be assumed to be normally distributed, and the Prescriptive Approach is allowed. If the computed value of W is less than 5% Critical Value in Appendix A, Table D, the sample set shall be assumed to not be normally distributed, and the Prescriptive Approach shall not be used.

- C) If the sample set contains at least ten sample results, the Upper Tolerance Limit (UTL) of a normally distributed sample set may be calculated using the mean (\bar{x}) and standard deviation(s), from:

$$UTL = \bar{x} + (K \cdot s),$$

where K = the one-sided normal tolerance factor for estimating the 95% upper confidence limit of the 95th percentile of a normal distribution. Values for K shall be determined using Appendix A, Table B.

- D) If the sample set contains at least ten sample results, the UTL shall be the upper limit of the area background concentration for the site. If the sample set contains fewer than ten sample results, the maximum value of the sample set shall be the upper limit of the area background concentration for the site.
- E) This Prescriptive Approach shall not be used for determining area background for the parameter pH.

- 2) Another statistically valid approach for determining area background concentrations appropriate for the characteristics of the data set, and approved by the Agency.

Section 742.415 Use of Area Background Concentrations

- a) A person may request that area background concentration determined pursuant to Sections 742.405 and 742.410 be used according to the provisions of subsection (b) of this Section. Such request shall address the following:
- 1) The natural or man-made pathways of any suspected off-site contamination reaching the site;
 - 2) Physical and chemical properties of suspected off-site contaminants of concern reaching the site; and
 - 3) The location and justification of all background sampling points.
- b) Except as specified in subsections (c) and (d) of this Section, an area background concentration may be used as follows:

- 1) To support a request to exclude a chemical as a contaminant of concern from further consideration for remediation at a site due to its presence as a result of background conditions; or
 - 2) As a remediation objective for a contaminant of concern at a site in lieu of an objective developed pursuant to the other procedures of this Part.
- c) An area background concentration shall not be used *in the event that the Agency has determined in writing that the background level for a regulated substance poses an acute threat to human health or the environment at the site when considering the post-remedial action land use.* (Section 58.5(b)(3) of the Act)
- d) *In the event that the concentration of a regulated substance of concern on the site exceeds a remediation objective adopted by the Board for residential land use, the property may not be converted to residential use unless such remediation objective or an alternative risk-based remediation objective for that regulated substance of concern is first achieved.* If the land use is restricted, there shall be an institutional control in place in accordance with Subpart J. (Section 58.5(b)(2) of the Act)

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

SUBPART E: TIER 1 EVALUAION

Section 742.500 Tier 1 Evaluation Overview

Section 742.500 Tier 1 Evaluation Overview

- a) A Tier 1 evaluation compares the concentration of each contaminant of concern detected at a site to the baseline remediation objectives provided in Appendix B, Tables A, B, C, D, E, G, H and I. Use of Tier 1 remediation objectives requires only limited site-specific information: concentrations of contaminants of concern, groundwater classification, land use classification, and, if appropriate, soil pH. (See Appendix B, Illustration A.)
- b) Although Tier 1 allows for differentiation between residential and industrial/commercial property use of a site, an institutional control under Subpart J is required where remediation objectives are based on an industrial/commercial property use.
- c) For the indoor inhalation exposure route:
 - 1) Appendix B, Tables H and I apply only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls; and

- 2) Institutional controls under Subpart J are required to use remediation objectives in Appendix B, Table H or Table I.
- d) Any given exposure route is not a concern if the concentration of each contaminant of concern detected at the site is below the Tier 1 value of that given route. In such a case, no further evaluation of that route is necessary.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.505 Tier 1 Soil, Soil Gas and Groundwater Remediation Objectives

- a) Soil
 - 1) Outdoor Inhalation Exposure Route
 - A) The Tier 1 soil remediation objectives for this exposure route based upon residential property use are listed in Appendix B, Table A.
 - B) The Tier 1 soil remediation objectives for this exposure route based upon industrial/commercial property use are listed in Appendix B, Table B. Soil remediation objective determinations relying on this table require use of institutional controls in accordance with Subpart J.
 - C) For this exposure route, it is acceptable to determine compliance by meeting either the soil or soil gas remediation objectives.
 - 2) Ingestion Exposure Route
 - A) The Tier 1 soil remediation objectives for this exposure route based upon residential property use are listed in Appendix B, Table A.
 - B) The Tier 1 soil remediation objectives for this exposure route based upon industrial/commercial property use are listed in Appendix B, Table B. Soil remediation objective determinations relying on this table require use of institutional controls in accordance with Subpart J.
 - 3) Soil Component of the Groundwater Ingestion Route
 - A) The Tier 1 soil remediation objectives for this exposure route based upon residential property use are listed in Appendix B, Table A.

- B) The Tier 1 soil remediation objectives for this exposure route based upon industrial/commercial property use are listed in Appendix B, Table B.
 - C) The pH-dependent Tier 1 soil remediation objectives for identified ionizable organics or inorganics for the soil component of the groundwater ingestion exposure route (based on the total amount of contaminants present in the soil sample results and groundwater classification) are provided in Appendix B, Tables C and D.
 - D) Values used to calculate the Tier 1 soil remediation objectives for this exposure route are listed in Appendix B, Table F.
- 4) Evaluation of the dermal contact with soil exposure route is not required under Tier 1.

b) Soil Gas

1) Outdoor Inhalation Exposure Route

- A) The Tier 1 soil gas remediation objectives for this exposure route based upon residential property use are listed in Appendix B, Table G.
- B) The Tier 1 soil gas remediation objectives for this exposure route based upon industrial/commercial property use, including the construction worker population, are listed in Appendix B, Table G. Soil gas remediation objective determinations relying on an industrial/commercial scenario require use of institutional controls in accordance with Subpart J.
- C) For this exposure route, it is acceptable to determine compliance by meeting either the soil or soil gas remediation objectives.

2) Indoor Inhalation Exposure Route

- A) The Tier 1 soil gas remediation objectives for this exposure route are listed in Appendix B, Tables H and I.
- B) The Tier 1 soil gas remediation objectives for this exposure route are based on a default water-filled soil porosity value of 0.15 cm^3/cm^3 and the assumed presence of a building with a 10-cm thick, full concrete slab-on-grade.

- C) Appendix B, Table H shall be used when any soil or groundwater contamination is located 5 feet or less, vertically or horizontally, from the existing or potential building or man-made pathway. In this scenario, the mode of contaminant transport is both diffusion and advection, which sets the Q_{soil} value at $83.33 \text{ cm}^3/\text{sec}$. Appendix B, Table H applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls. Pursuant to Section 742.1000(a)(9), soil gas remediation objective determinations relying on Appendix B, Table H require the use of institutional controls in accordance with Subpart J.
- D) Appendix B, Table I may be used only when all soil and groundwater contamination is located more than 5 feet, vertically and horizontally, from the existing or potential building or man-made pathway. In this scenario, the mode of contaminant transport is diffusion only, which sets the Q_{soil} value at $0.0 \text{ cm}^3/\text{sec}$. Appendix B, Table I applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls. Pursuant to Section 742.1000(a)(7) and (a)(9), soil gas remediation objective determinations relying on Appendix B, Table I require the use of institutional controls in accordance with Subpart J. As an alternative to using Appendix B, Table I, it is permissible to use Appendix B, Table H.
- E) To determine whether the Q_{soil} value can be set at $0.0 \text{ cm}^3/\text{sec}$, the site evaluator shall demonstrate that all soil and groundwater located 5 feet or less, vertically or horizontally, from the existing or potential building or man-made pathway meets the Tier 1 remediation objectives for residential property listed in Appendix B, Table A, and the Tier 1 remediation objectives for Class I groundwater listed in Appendix B, Table E, respectively.

c) Groundwater

- 1) The Tier 1 groundwater remediation objectives for the groundwater component of the groundwater ingestion route are listed in Appendix B, Table E.
- 2) The Tier 1 groundwater remediation objectives for this exposure route are given for Class I and Class II groundwaters, respectively.
- 3) The evaluation of 35 Ill. Adm. Code 620.615 regarding mixtures of similar-acting chemicals shall be considered satisfied for Class I groundwater at the point of human exposure if:

- A) No more than one similar-acting noncarcinogenic chemical as listed in Appendix A, Table E is detected in the groundwater at the site; and
 - B) No carcinogenic contaminant of concern as listed in Appendix A, Table I is detected in any groundwater sample associated with the site, using analytical procedures capable of achieving either the 1 in 1,000,000 cancer risk concentration or the ADL, whichever is greater.
- 4) If the conditions of subsection (c)(3) of this Section are not met, the Class I groundwater remediation objectives set forth in Appendix B, Table E shall be corrected for the cumulative effect of mixtures of similar-acting chemicals using the following methodologies:
- A) For noncarcinogenic chemicals, the methodologies set forth at Section 742.805(c) or Section 742.915(h) shall be used; and
 - B) For carcinogenic chemicals, the methodologies set forth at Section 742.805(d) or Section 742.915(h) shall be used.
- 5) For the groundwater component of the indoor inhalation exposure route, the Tier 1 groundwater remediation objectives are listed in Appendix B, Tables H and I.
- A) The Tier 1 groundwater remediation objectives for this exposure route are based on a default water-filled soil porosity value of $0.15 \text{ cm}^3/\text{cm}^3$ and the assumed presence of a building with a 10-cm thick, full concrete slab-on-grade.
 - B) Appendix B, Table H shall be used when any soil or groundwater contamination is located 5 feet or less, vertically or horizontally, from the existing or potential building or man-made pathway. In this scenario, the mode of contaminant transport is both diffusion and advection, which sets the Q_{soil} value at $83.33 \text{ cm}^3/\text{sec}$. Appendix B, Table H applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls. Pursuant to Section 742.1000(a)(9), groundwater remediation objective determinations relying on Appendix B, Table H require the use of institutional controls in accordance with Subpart J.
 - C) Appendix B, Table I may be used only when all soil and groundwater contamination is located more than 5 feet, vertically and horizontally, from the existing or potential building or man-made pathway. In this scenario, the mode of contaminant transport

is diffusion only, which sets the Q_{soil} value at $0.0 \text{ cm}^3/\text{sec}$. Appendix B, Table I applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls. Pursuant to Section 742.1000(a)(7) and (a)(9), groundwater remediation objective determinations relying on Appendix B, Table I require the use of institutional controls in accordance with Subpart J. As an alternative to using Appendix B, Table I, it is permissible to use Appendix B, Table H.

- D) To determine whether the Q_{soil} value can be set at $0.0 \text{ cm}^3/\text{sec}$, the site evaluator shall demonstrate that all soil and groundwater located 5 feet or less, vertically or horizontally, from the existing or potential building or man-made pathway meets the Tier 1 remediation objectives for residential property listed in Appendix B, Table A, and the Tier 1 remediation objectives for Class I groundwater listed in Appendix B, Table E, respectively.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.510 Tier 1 Remediation Objectives Tables for the Ingestion, Outdoor Inhalation and Soil Component of the Groundwater Ingestion Exposure Routes

- a) Soil remediation objectives are listed in Appendix B, Tables A, B, C and D.
- 1) Appendix B, Table A is based upon residential property use.
- A) The first column to the right of the chemical name lists soil remediation objectives for the soil ingestion exposure route.
- B) The second column lists the soil remediation objectives for the outdoor inhalation exposure route.
- C) The third and fourth columns list soil remediation objectives for the soil component of the groundwater ingestion exposure route for the respective classes of groundwater:
- i) Class I groundwater; and
- ii) Class II groundwater.
- D) The final column lists the Acceptable Detection Limit (ADL), only when applicable.
- 2) Appendix B, Table B is based upon industrial/commercial property use.

- A) The first and third columns to the right of the chemical name list the soil remediation objectives for the soil ingestion exposure route based on two receptor populations:
 - i) Industrial/commercial; and
 - ii) Construction worker.
 - B) The second and fourth columns to the right of the chemical name list the soil remediation objectives for the outdoor inhalation exposure route based on two receptor populations:
 - i) Industrial/commercial; and
 - ii) Construction worker.
 - C) The fifth and sixth columns to the right of the chemical name list the soil remediation objectives for the soil component of the groundwater ingestion exposure route for two classes of groundwater:
 - i) Class I groundwater; and
 - ii) Class II groundwater.
 - D) The final column lists the acceptable detection limit (ADL), only when applicable.
- 3) Appendix B, Tables C and D set forth pH specific soil remediation objectives for inorganic and ionizing organic chemicals for the soil component of the groundwater ingestion route.
- A) Table C sets forth remediation objectives based on Class I groundwater and Table D sets forth remediation objectives based on Class II groundwater.
 - B) The first column in Tables C and D lists the chemical names.
 - C) The second through ninth columns to the right of the chemical names list the pH based soil remediation objectives.
- 4) For the inorganic chemicals listed in Appendix B, Tables A and B, the soil component of the groundwater ingestion exposure route shall be evaluated using TCLP (SW-846 Method 1311) or SPLP (SW-846 Method 1312), incorporated by reference at Section 742.210 unless a person chooses to evaluate the soil component on the basis of the total amount of

contaminant in a soil sample result in accordance with subsection (a)(5) of this Section.

- 5) For those inorganic and ionizing organic chemicals listed in Appendix B, Tables C and D, if a person elects to evaluate the soil component of the groundwater ingestion exposure route based on the total amount of contaminant in a soil sample result (rather than TCLP or SPLP analysis), the person shall determine the soil pH at the site and then select the appropriate soil remediation objectives based on Class I and Class II groundwaters from Tables C and D, respectively. If the soil pH is less than 4.5 or greater than 9.0, then Tables C and D cannot be used.
 - 6) Unless one or more exposure routes are excluded from consideration under Subpart C, the most stringent soil remediation objective of the exposure routes (i.e., soil ingestion exposure route, outdoor inhalation exposure route, and soil component of the groundwater ingestion exposure route) shall be compared to the concentrations of soil contaminants of concern measured at the site. When using Appendix B, Table B to select soil remediation objectives for the ingestion exposure route and outdoor inhalation exposure routes, the remediation objective shall be the more stringent soil remediation objective of the industrial/commercial populations and construction worker populations.
 - 7) Confirmation sample results may be averaged or soil samples may be composited in accordance with Section 742.225.
 - 8) If a soil remediation objective for a chemical is less than the ADL, the ADL shall serve as the soil remediation objective.
- b) Groundwater remediation objectives for the groundwater component of the groundwater ingestion exposure route are listed in Appendix B, Table E. However, Appendix B, Table E must be corrected for cumulative effect of mixtures of similar-acting noncarcinogenic chemicals as set forth in Section 742.505(c)(3) and (c)(4).
- 1) The first column to the right of the chemical name lists groundwater remediation objectives for Class I groundwater, and the second column lists the groundwater remediation objectives for Class II groundwater.
 - 2) To use Appendix B, Table E of this Part, the 35 Ill. Adm. Code 620 classification for groundwater at the site shall be determined. The concentrations of groundwater contaminants of concern at the site are compared to the applicable Tier 1 groundwater remediation objectives for the groundwater component of the groundwater ingestion exposure route in Appendix B, Table E.

- c) Soil gas remediation objectives for the outdoor inhalation exposure route are listed in Appendix B, Table G.
 - 1) The first column to the right of the chemical name lists the soil gas remediation objectives for residential populations.
 - 2) The second and third columns to the right of the chemical names list the soil gas remediation objectives for the outdoor inhalation exposure route based on two receptor populations:
 - A) Industrial/commercial; and
 - B) Construction worker.
- d) For contaminants of concern not listed in Appendix B, Tables A, B, E, and G, a person may request site-specific remediation objectives from the Agency or propose site-specific remediation objectives in accordance with 35 Ill. Adm. Code 620, Subpart I of this Part, or both.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.515 Tier 1 Remediation Objectives Tables for the Indoor Inhalation Exposure Route

- a) For the indoor inhalation exposure route:
 - 1) Appendix B, Tables H and I apply only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls; and
 - 2) Institutional controls under Subpart J are required to use remediation objectives in Appendix B, Table H or Table I.
- b) When the mode of contaminant transport is both diffusion and advection as described in Section 742.505 (i.e., any soil or groundwater contamination is located 5 feet or less, vertically or horizontally, from the existing or potential building or man-made pathway), the remediation objectives for soil gas or groundwater listed in Appendix B, Table H shall be used.
 - 1) The first column to the right of the chemical name lists the soil gas remediation objectives for residential receptors.
 - 2) The second column lists the soil gas remediation objectives for industrial/commercial receptors.

- 3) The third column lists the groundwater remediation objectives for residential receptors.
 - 4) The fourth column lists the groundwater remediation objectives for industrial/commercial receptors.
- c) Only when the mode of contaminant transport is diffusion only as described in Section 742.505 (i.e., all soil and groundwater contamination is located more than 5 feet, vertically and horizontally, from the existing or potential building or man-made pathway), the remediation objectives for soil gas and groundwater listed in Appendix B, Table I may be used.
- 1) The first column to the right of the chemical name lists the soil gas remediation objectives for residential receptors.
 - 2) The second column lists the soil gas remediation objectives for industrial/commercial receptors.
 - 3) The third column lists the groundwater remediation objectives for residential receptors.
 - 4) The fourth column lists the groundwater remediation objectives for industrial/commercial receptors.
- d) If using Appendix B, Table H, compliance is determined by meeting either the soil gas remediation objectives or the groundwater remediation objectives.
- e) If using Appendix B, Table I, compliance is determined by meeting both the soil gas remediation objectives and the groundwater remediation objectives.
- f) For volatile chemicals not listed in Appendix B, Table H or I, a person may request site-specific remediation objectives from the Agency or propose site-specific remediation objectives in accordance with Subpart I, or both.
- g) As an alternative to using Appendix B, Table I pursuant to subsection (c), it is permissible to use Appendix B, Table H pursuant to subsection (b).

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

SUBPART F: TIER 2 GENERAL EVALUATION

Section 742.600 Tier 2 Evaluation Overview

- a) Tier 2 remediation objectives are developed through the use of equations which allow site-specific data to be used. (See Appendix C, Illustrations A and B.) The

equations, identified in Appendix C, Tables A, C, and L may be used to develop Tier 2 remediation objectives.

- b) Tier 2 evaluation is only required for contaminants of concern and corresponding exposure routes (except where excluded from further consideration under Subpart C) exceeding the Tier 1 remediation objectives. When conducting Tier 2 evaluations, the values used in the calculations must have the appropriate units of measure as identified in Appendix C, Tables B, D, and M.
- c) Any development of remediation objectives using site-specific information or equations outside the Tier 2 framework shall be evaluated under Tier 3.
- d) Any development of a remediation objective under Tier 2 shall not use a target hazard quotient greater than one at the point of human exposure or a target cancer risk greater than 1 in 1,000,000 at the point of human exposure.
- e) In conducting a Tier 2 evaluation, the following conditions shall be met:
 - 1) For each discrete sample, the total soil contaminant concentration of either a single contaminant or multiple contaminants of concern shall not exceed the attenuation capacity of the soil as provided in Section 742.215.
 - 2) Remediation objectives for noncarcinogenic compounds which affect the same target organ, organ system or similar mode of action shall meet the requirements of Section 742.720.
 - 3) The soil remediation objectives based on the outdoor inhalation exposure route and the soil component of the groundwater ingestion exposure routes shall not exceed the soil saturation limit as provided in Section 742.220.
 - 4) The soil gas remediation objectives based on the indoor and outdoor inhalation exposure routes shall not exceed the soil vapor saturation limit provided pursuant to Section 742.222.
- f) Tier 2 remediation objectives for the indoor inhalation exposure route shall be calculated for either soil gas or groundwater if a Q_{soil} value of $83.33 \text{ cm}^3/\text{sec}$ is used.
- g) Tier 2 remediation objectives for the indoor inhalation exposure route shall be calculated for both soil gas and groundwater if a Q_{soil} value of $0.0 \text{ cm}^3/\text{sec}$ is used.
- h) If the calculated Tier 2 soil remediation objective for an applicable exposure route is more stringent than the corresponding Tier 1 remediation objective, then the Tier 1 remediation objective applies.

- i) If the calculated Tier 2 soil remediation objective for an exposure route is more stringent than the Tier 1 soil remediation objectives for the other exposure routes, then the Tier 2 calculated soil remediation objective applies and Tier 2 soil remediation objectives for the other exposure routes are not required.
- j) If the calculated Tier 2 soil remediation objective is less stringent than one or more of the soil remediation objectives for the remaining exposure routes, then the Tier 2 values are calculated for the remaining exposure routes and the most stringent Tier 2 calculated value applies.
- k) If a contaminant has both carcinogenic and noncarcinogenic effects for any applicable exposure route or receptor, remediation objectives shall be calculated for each effect and the more stringent remediation objective shall apply. The toxicological-specific information is described in Section 742.705(d).
- l) For the indoor inhalation exposure route:
 - 1) Appendix C, Table L applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls; and
 - 2) Institutional controls under Subpart J are required to develop remediation objectives pursuant to Appendix C, Table L.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.605 Land Use

- a) Present and post-remediation land use is evaluated in a Tier 2 evaluation. Acceptable exposure factors for the Tier 2 evaluation for residential, industrial/commercial, and construction worker populations are provided in the far right column of Appendix C, Tables B, D, and M. Use of exposure factors different from those in Appendix C, Tables B, D, and M must be approved by the Agency as part of a Tier 3 evaluation.
- b) If a Tier 2 evaluation is based on an industrial/commercial property use, then:
 - 1) Construction worker populations shall also be evaluated, except for the indoor inhalation exposure route; and
 - 2) Institutional controls are required in accordance with Subpart J.
- c) For the indoor inhalation exposure route, institutional controls under Subpart J are required to develop remediation objectives pursuant to Appendix C, Table L.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.610 Chemical and Site Properties

a) Physical and Chemical Properties of Contaminants

Tier 2 evaluations require information on the physical and chemical properties of the contaminants of concern. The physical and chemical properties used in a Tier 2 evaluation are contained in Appendix C, Table E. If the site has contaminants not included in this table, a person may request the Agency to provide the applicable physical and chemical input values or may propose input values under Subpart I. If a person proposes to apply values other than those in Appendix C, Table E, or those provided by the Agency, the evaluation shall be considered under Tier 3.

b) Soil and Groundwater Parameters

- 1) A Tier 2 evaluation requires examination of soil and groundwater parameters. The parameters that may be varied, and the conditions under which these parameters are determined as part of Tier 2, are summarized in Appendix C, Tables B, D, and M. If a person proposes to vary site-specific parameters outside of the framework of these tables, the evaluation shall be considered under Tier 3.
- 2) To determine site-specific physical soil parameters, a minimum of one boring per 0.5 acre of contamination shall be collected. This boring must be deep enough to allow the collection of the required field measurements. The site-specific physical soil parameters must be determined from the portion of the boring representing the stratigraphic units being evaluated. For example, if evaluating the soil component of the groundwater ingestion exposure route, two samples from the boring will be required:
 - A) A sample of the predominant soil type for the vadose zone; and
 - B) A sample of the predominant soil type for the saturated zone.
- 3) A site-specific SSL dilution factor (used in developing soil remediation objectives based upon the protection of groundwater) may be determined by substituting site information in Equation S22 in Appendix C, Table A. To make this demonstration, a minimum of three monitoring wells shall be used to determine the hydraulic gradient. As an alternative, the default dilution factor value listed in Appendix C, Table B may be used. If monitoring wells are used to determine the hydraulic gradient, the soil taken from the borings shall be visually inspected to ensure there are no significant differences in the stratigraphy. If there are similar soil types in

the field, one boring shall be used to determine the site-specific physical soil parameters. If there are significant differences, all of the borings shall be evaluated before determining the site-specific physical soil parameters for the site.

- 4) Not all of the parameters identified in Appendix C, Tables B, D, and M need to be determined on a site-specific basis. A person may choose to collect partial site-specific information and use default values as listed in Appendix C, Tables B, D, and M for the rest of the parameters.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

SUBPART G: TIER 2 SOIL EVALUATION

Section 742.700 Tier 2 Soil and Soil Gas Evaluation Overview

- a) Tier 2 remediation objectives are developed through the use of models which allow site-specific data to be considered. Appendix C, Tables A, C, and L list equations that shall be used under a Tier 2 evaluation to calculate soil remediation objectives prescribed by the SSL, RBCA, and modified J&E models, respectively. (See also Appendix C, Illustration A.)
- b) Appendix C, Table A lists equations that are used under the SSL model. (See also Appendix C, Illustration A.) The SSL model has equations to evaluate the following human exposure routes:
 - 1) Soil ingestion exposure route;
 - 2) Outdoor Inhalation exposure route; and
 - 3) Soil component of the groundwater ingestion exposure route.
- c) Evaluation of the dermal exposure route is not required under the SSL model.
- d) Appendix C, Table C lists equations that are used under the RBCA model. (See also Appendix C, Illustration A.) The RBCA model has equations to evaluate human exposure based on the following:
 - 1) The combined exposure routes of outdoor inhalation of vapors and particulates, soil ingestion and dermal contact with soil;
 - 2) The outdoor inhalation exposure route from subsurface soils;
 - 3) Soil component of the groundwater ingestion exposure route; and
 - 4) Groundwater ingestion exposure route.

- e) Appendix C, Table L lists equations that are used under the modified J&E model. The modified J&E model has equations to evaluate human exposure by the indoor inhalation exposure route. The modified model allows for the development of soil gas remediation objectives. For the indoor inhalation exposure route:
 - 1) Appendix C, Table L applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls; and
 - 2) Institutional controls under Subpart J are required to develop soil gas remediation objectives pursuant to Appendix C, Table L.
- f) The equations in either Appendix C, Table A, C, or L may be used to calculate remediation objectives for each contaminant of concern under Tier 2, if the following requirements are met:
 - 1) The Tier 2 soil or soil gas remediation objectives for the ingestion and outdoor inhalation exposure routes shall use the applicable equations from the same approach (i.e., SSL equations in Appendix C, Table C). For the indoor inhalation exposure route, only the J&E equations can be used.
 - 2) The equations used to calculate soil remediation objectives for the soil component of the groundwater ingestion exposure route are not dependent on the approach utilized to calculate soil remediation objectives for the other exposure routes. For example, it is acceptable to use the SSL equations for calculating Tier 2 soil remediation objectives for the ingestion and outdoor inhalation exposure routes, and the RBCA equations for calculating Tier 2 soil remediation objectives for the soil component of the groundwater ingestion exposure route.
 - 3) Combining equations from Appendix C, Tables A, C, and L to form a new model is not allowed. In addition, Appendix C, Tables A, C, and L must use their own applicable parameters identified in Appendix C, Tables B, D, and M, respectively.
- g) In calculating soil or soil gas remediation objectives for industrial/commercial property use, applicable calculations shall be performed twice: once using industrial/commercial population default values and once using construction worker population default values. The more stringent soil or soil gas remediation objectives derived from these calculations must be used for further Tier 2 evaluations. The indoor inhalation exposure route does not apply to the construction worker population.

- h) Tier 2 data sheets provided by the Agency shall be used to present calculated Tier 2 remediation objectives, if required by the particular program for which remediation is being performed.
- i) The RBCA equations which rely on the parameter Soil Water Sorption Coefficient (k_s) can only be used for ionizing organics and inorganics by substituting values for k_s from Appendix C, Tables I and J, respectively. This will also require the determination of a site-specific value for soil pH.
- j) For the outdoor inhalation exposure route, it is acceptable to use either Section 742.710 to develop a soil remediation objective or Section 742.712 to develop a soil gas remediation objective to determine compliance with the pathway.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.705 Parameters for Soil Remediation Objective Equations

- a) Appendix C, Tables B, D, and M list the input parameters for the SSL, RBCA, and J&E equations, respectively. The first column lists each symbol as it is presented in the equation. The next column defines the parameters. The third column shows the units for the parameters. The fourth column identifies where information on the parameters can be obtained (i.e., field measurement, applicable equations, reference source, or default value). The last column identifies how the parameters can be generated.

- b) Default Values

Default values are numerical values specified for use in the Tier 2 equations. The fourth column of Appendix C, Tables B, D, and M denotes if the default values are from the SSL model, RBCA model, modified J&E model or some other source. The last column of Appendix C, Tables B, D, and M lists the numerical values for the default values used in the SSL, RBCA, and J&E equations, respectively.

- c) Site-specific Information

Site-specific information is a parameter measured, obtained, or determined from the site to calculate Tier 2 remediation objectives. The fourth column of Appendix C, Tables B, D, and M identifies those site-specific parameters that may require direct field measurement. For some parameters, numerical default inputs have been provided in the last column of Appendix C, Tables B, D, and M to substitute for site-specific information. In some cases, information on the receptor or soil type is required to select the applicable numerical default inputs. Site-specific information includes:

- 1) Physical soil parameters identified in Appendix C, Table F. The second column identifies the location where the sample is to be collected. Acceptable methods for measuring or calculating these soil parameters are identified in the last column of Appendix C, Table F;
 - 2) Institutional controls or engineered barriers, pursuant to Subparts J and K, describe applicable institutional controls and engineered barriers under a Tier 2 evaluation; and
 - 3) Land use classification
- d) Toxicological-specific Information
- 1) Toxicological-specific information is used to calculate Tier 2 remediation objectives for the following parameters, if applicable:
 - A) Oral Chronic Reference Dose (RfD_o , expressed in mg/kg-d);
 - B) Oral Subchronic Reference Dose (RfD_s , expressed in mg/kg-d, shall be used for construction worker remediation objective calculations);
 - C) Oral Slope Factor (SF_o , expressed in $(\text{mg/kg-d})^{-1}$);
 - D) Inhalation Unit Risk Factor (URF expressed in $(\mu\text{g/m}^3)^{-1}$);
 - E) Inhalation Chronic Reference Concentration (RfC , expressed in mg/m^3);
 - F) Inhalation Subchronic Reference Concentration (RfC_s , expressed in mg/m^3 , shall be used for construction worker remediation objective calculations);
 - G) Inhalation Chronic Reference Dose (RfD_i , expressed in mg/kg-d);
 - H) Inhalation Subchronic Reference Dose (RfD_{is} , expressed in mg/kg-d, shall be used for construction worker remediation objective calculations); and
 - I) Inhalation Slope Factor (SF_i , expressed in $(\text{mg/kg-d})^{-1}$);
 - 2) Toxicological information can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210, or the program under which the remediation is being performed.
- e) Chemical-specific Information

Chemical-specific information used to calculate Tier 2 remediation objectives is listed in Appendix C, Table E.

f) Calculations

Calculating numerical values for some parameters requires the use of equations listed in Appendix C, Tables A, C, and L. The parameters that are calculated are listed in Appendix C, Tables B, D, and M.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.710 SSL Soil Equations

a) This Section sets forth the equations and parameters used to develop Tier 2 soil remediation objectives for the three exposure routes using the SSL approach.

b) Soil Ingestion Exposure Route

1) Equations S1 through S3 form the basis for calculating Tier 2 remediation objectives for the soil ingestion exposure route using the SSL approach. Equation S1 is used to calculate soil remediation objectives for noncarcinogenic contaminants. Equations S2 and S3 are used to calculate soil remediation objectives for carcinogenic contaminants for residential populations and industrial/commercial and construction worker populations, respectively.

2) For Equations S1 through S3, the SSL default values cannot be modified with site-specific information.

c) Outdoor Inhalation Exposure Route

1) Equations S4 through S16, S26 and S27 are used to calculate Tier 2 soil remediation objectives for the outdoor inhalation exposure route using the SSL approach. To address this exposure route, organic contaminants and mercury must be evaluated separately from fugitive dust using their own equations set forth in subsections (c)(2) and (c)(3), respectively.

2) Organic Contaminants

A) Equations S4 through S10 are used to calculate Tier 2 soil remediation objectives for organic contaminants and mercury based on the outdoor inhalation exposure route. Equation S4 is used to calculate soil remediation objectives for noncarcinogenic organic contaminants in soil for residential and industrial/commercial populations. Equation S5 is used to calculate soil remediation objectives for noncarcinogenic organic

contaminants and mercury in soil for construction worker populations. Equation S6 is used to calculate soil remediation objectives for carcinogenic organic contaminants in soil for residential and industrial/commercial populations. Equation S7 is used to calculate soil remediation objectives for carcinogenic organic contaminants in soil for construction worker populations. Equations S8 through S10, S27 and S28 are used for calculating numerical values for some of the parameters in Equations S4 through S7.

- B) For Equation S4, a numerical value for the Volatilization Factor (VF) can be calculated in accordance with subsection (c)(2)(F). The remaining parameters in Equation S4 have either SSL default values listed in Appendix C, Table B or toxicological-specific information (i.e., RfC), which can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210 or requested from the program under which the remediation is being performed.
- C) For Equation S5, a numerical value for the Volatilization Factor adjusted for Agitation (VF') can be calculated in accordance with subsection (c)(2)(G). The remaining parameters in Equation S5 have either SSL default values listed in Appendix C, Table B or toxicological-specific information (i.e., RfC), which can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210 or requested from the program under which the remediation is being performed.
- D) For Equation S6, a numerical value for VF can be calculated in accordance with subsection (c)(2)(F). The remaining parameters in Equation S6 have either default values listed in Appendix C, Table B or toxicological-specific information (i.e., URF), which can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210 or requested from the program under which the remediation is being performed.
- E) For Equation S7, a numerical value for VF' can be calculated in accordance with subsection (c)(2)(G). The remaining parameters in Equation S7 have either default values listed in Appendix C, Table B or toxicological-specific information (i.e., URF), which can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210 or requested from the program under which the remediation is being performed.

- F) The VF can be calculated for residential and industrial/commercial populations using one of the following equations based on the information known about the contaminant source and receptor population:
- i) Equation S8, in conjunction with Equation S10, is used to calculate VF assuming an infinite source of contamination; or
 - ii) If the area and depth of the contaminant source are known or can be estimated reliably, mass limit considerations may be used to calculate VF using Equation S26.
- G) The VF' can be calculated for the construction worker populations using one of the following equations based on the information known about the contaminant source:
- i) Equation S9 is used to calculate VF' assuming an infinite source of contamination; or
 - ii) If the area and depth of the contaminant source are known or can be estimated reliably, mass limit considerations may be used to calculate VF' using Equation S27.

3) Fugitive Dust

- A) Equations S11 through S16 are used to calculate Tier 2 soil remediation objectives using the SSL fugitive dust model for the outdoor inhalation exposure route. Equation S11 is used to calculate soil remediation objectives for noncarcinogenic contaminants in fugitive dust for residential and industrial/commercial populations. Equation S12 is used to calculate soil remediation objectives for noncarcinogenic contaminants in fugitive dust for construction worker populations. Equation S13 is used to calculate soil remediation objectives for carcinogenic contaminants in fugitive dust for residential and industrial/commercial populations. Equation S14 is used to calculate soil remediation objectives for carcinogenic contaminants in fugitive dust for construction worker populations. Equations S15 and S16 are used for calculating numerical quantities for some of the parameters in Equations S11 through S14.
- B) For Equation S11, a numerical value can be calculated for the Particulate Emission Factor (PEF) using Equation S15. This equation relies on various input parameters from a variety of

sources. The remaining parameters in Equation S11 have either SSL default values listed in Appendix C, Table B or toxicological-specific information (i.e., RfC), which can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210 or requested from the program under which the remediation is being performed.

- C) For Equation S12, a numerical value for the Particulate Emission Factor for Construction Worker (PEF') can be calculated using Equation S16. The remaining parameters in Equation S12 have either SSL default values listed in Appendix C, Table B or toxicological-specific information (i.e., RfC), which can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210 or requested from the program under which the remediation is being performed.
- D) For Equation S13, a numerical value for PEF can be calculated using Equation S15. The remaining parameters in Equation S13 have either default values listed in Appendix C, Table B or toxicological-specific information (i.e., URF), which can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210 or requested from the program under which the remediation is being performed.
- E) For Equation S14, a numerical value for PEF' can be calculated using Equation S16. The remaining parameters in Equation S14 have either default values listed in Appendix C, Table B or toxicological-specific information (i.e., URF), which can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210 or requested from the program under which the remediation is being performed.

d) Soil Component of the Groundwater Ingestion Exposure Route

The Tier 2 remediation objective for the soil component of the groundwater ingestion exposure route can be calculated using one of the following equations based on the information known about the contaminant source and receptor population:

- 1) Equation S17 is used to calculate the remediation objective assuming an infinite source of contamination.
 - A) The numerical quantities for four parameters in Equation S17, the Target Soil Leachate Concentration (C_w), Soil-Water Partition Coefficient (K_d) for non-ionizing organics, Water-Filled Soil Porosity θ_w and Air-Filled Soil Porosity θ_a , are calculated using Equations S18, S19, S20 and S21,

respectively. Equations S22, S23, S24 and S25 are also needed to calculate numerical values for Equations S18 and S21. The pH-dependent K_d values for ionizing organics can be calculated using Equation S19 and the pH-dependent Koc values in Appendix C, Table I.

- B) The remaining parameters in Equation S17 are Henry's Law Constant (H'), a chemical specific value listed in Appendix C, Table E and Dry Soil Bulk Density (ρ_b), a site-specific based value listed in Appendix C, Table B.
 - C) The default value for GW_{obj} is the Tier 1 groundwater objective. For chemicals for which there is no Tier 1 groundwater remediation objective, the value for GW_{obj} shall be the concentration determined according to the procedures specified in 35 Ill. Adm. Code 620, Subpart F. As an alternative to using Tier 1 groundwater remediation objectives or concentrations determined according to the procedures specified in 35 Ill. Adm. Code 620, Subpart F, GW_{obj} may be developed using Equations R25 and R26, if approved institutional controls are in place as required in Subpart J.
- 2) If the area and depth of the contaminant source are known or can be estimated reliably, mass limit considerations may be used to calculate the remediation objective for this exposure route using Equation S28. The parameters in Equation S28 have default values listed in Appendix C, Table B.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.712 SSL Soil Gas Equation for the Outdoor Inhalation Exposure Route

- a) This Section sets forth the equation and parameters used to develop Tier 2 soil gas remediation objectives for the outdoor inhalation exposure route using the SSL approach.
- b) Equation S30 is used to calculate Tier 2 soil gas remediation objectives for the outdoor inhalation exposure route for residential, industrial/commercial, and construction worker populations.
- c) Equations S4 through S16, S26 and S27, which calculate Tier 2 soil remediation objectives as described in Section 742.710(c), form the basis for developing the Tier 2 soil gas remediation objectives for the outdoor inhalation exposure route using the SSL model.

- d) The remaining parameters used to calculate Equation S30 are listed in Appendix C, Table B, except for Dimensionless Henry's Law Constant (25°C), a chemical specific value listed in Appendix C, Table E.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.715 RBCA Soil Equations

- a) This Section presents the RBCA model and describes the equations and parameters used to develop Tier 2 soil remediation objectives.
- b) Ingestion, Outdoor Inhalation, and Dermal Contact
- 1) The two sets of equations in subsections (b)(2) and (b)(3) shall be used to generate Tier 2 soil remediation objectives for the combined ingestion, outdoor inhalation, and dermal contact with soil exposure routes.
 - 2) Combined Exposure Routes of Soil Ingestion, Outdoor Inhalation of Vapors and Particulates, and Dermal Contact with Soil
 - A) Equations R1 and R2 form the basis for deriving Tier 2 remediation objectives for the set of equations that evaluates the combined exposure routes of soil ingestion, outdoor inhalation of vapors and particulates, and dermal contact with soil using the RBCA approach. Equation R1 is used to calculate soil remediation objectives for carcinogenic contaminants. Equation R2 is used to calculate soil remediation objectives for noncarcinogenic contaminants. Soil remediation objectives for the outdoor inhalation exposure route from subsurface soils must also be calculated in accordance with the procedures outlined in subsection (b)(3) of this Section and compared to the values generated from Equations R1 or R2. The smaller value (i.e., R1 and R2 compared to R7 and R8, respectively) from these calculations is the Tier 2 soil remediation objective for the combined exposure routes of soil ingestion, outdoor inhalation, and dermal contact with soil.
 - B) In Equation R1, numerical values are calculated for two parameters:
 - i) The volatilization factor for surficial soils (VF_{ss}) using Equations R3 and R4; and
 - ii) The volatilization factor for surficial soils regarding particulates (VF_p) using Equation R5.

- C) VF_{ss} uses Equations R3 and R4 to derive a numerical value. Equation R3 requires the use of Equation R6. Both equations must be used to calculate the VF_{ss} . The lowest calculated value from these equations must be substituted into Equation R1.
 - D) The remaining parameters in Equation R1 have either default values listed in Appendix C, Table D or toxicological-specific information (i.e., SF_o , SF_i), which can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210 or requested from the program under which the remediation is being performed.
 - E) For Equation R2, the parameters VF_{ss} and VF_p are calculated. The remaining parameters in Equation R2 have either default values listed in Appendix C, Table D or toxicological-specific information (i.e., RfD_o , RfD_i), which can be obtained by following the guidelines in OSWER Directive 9285.7-53, as incorporated by reference in Section 742.210 or requested from the program under which the remediation is being performed.
 - F) For chemicals other than inorganics which do not have default values for the dermal absorption factor (RAF_d) in Appendix C, Table D a dermal absorption factor of 0.5 shall be used for Equations R1 and R2. For inorganics, dermal absorption may be disregarded (i.e., $RAF_d = 0$).
- 3) Outdoor Inhalation Exposure Route from Subsurface Soils (soil below one meter)
- A) Equations R7 and R8 form the basis for deriving Tier 2 remediation objectives for the outdoor inhalation exposure route from subsurface soils using the RBCA approach. Equation R7 is used to calculate soil remediation objectives for carcinogenic contaminants. Equation R8 is used to calculate soil remediation objectives for noncarcinogenic contaminants.
 - B) For Equation R7, the carcinogenic risk-based screening level for air ($RBSL_{air}$) and the volatilization factor for soils below one meter to ambient air (VF_{samb}) have numerical values that are calculated using Equations R9 and R11, respectively. Both equations rely on input parameters from a variety of sources.
 - C) The noncarcinogenic risk-based screening level for air ($RBSL_{air}$) and the volatilization factor for soils below one meter to ambient air (VF_{samb}) in Equation R8 have numerical values that can be calculated using Equations R10 and R11, respectively.

- c) Soil Component of the Groundwater Ingestion Exposure Route
- 1) Equation R12 forms the basis for deriving Tier 2 remediation objectives for the soil component of the groundwater ingestion exposure route using the RBCA approach. The parameters, groundwater at the source (GW_{source}) and Leaching Factor (LF_{sw}), have numerical values that are calculated using Equations R13 and R14, respectively.
 - 2) Equation R13 requires numerical values that are calculated using Equation R15.
 - 3) Equation R14 requires numerical values that are calculated using Equations R21, R22, and R24. For non-ionizing organics, the Soil Water Sorption Coefficient (k_s) shall be calculated using Equation R20. For ionizing organics and inorganics, the values for k_s are listed in Appendix C, Tables I and J, respectively. The pH-dependent k_s values for ionizing organics can be calculated using Equation R20 and the pH-dependent K_{oc} values in Appendix C, Table I. The remaining parameters in Equation R14 are field measurements or default values listed in Appendix C, Table D.
- d) The default value for GW_{comp} is the Tier 1 groundwater remediation objective. For chemicals for which there is no Tier 1 groundwater remediation objective, the value for GW_{comp} shall be the concentration determined according to the procedures specified in 35 Ill. Adm. Code 620, Subpart F. As an alternative to using the above concentrations, GW_{comp} may be developed using Equations R25 and R26, if approved institutional controls are in place as may be required in Subpart J.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.717 J&E Soil Gas Equations for the Indoor Inhalation Exposure Route

- a) This Section sets forth the equations and parameters to be used to develop Tier 2 soil gas remediation objectives for the indoor inhalation exposure route using the modified J&E model.
- b) Equations J&E1 and J&E2 calculate, for carcinogens and noncarcinogens, respectively, an acceptable concentration of the contaminant of concern in indoor air that adequately protects humans who inhale this air. Equation J&E3 converts indoor air concentrations from parts per million volume to milligrams per cubic meter.

- c) Equation J&E4 calculates an acceptable concentration of the contaminant of concern in the soil gas at the source of contamination. This calculation is made using:
- 1) an attenuation factor developed in accordance with Equations J&E7 through 18; and
 - 2) the acceptable concentration of the contaminant of concern in indoor air calculated in accordance with Equation J&E1 (for carcinogens) or J&E2 (for noncarcinogens).
- d) The attenuation factor (Equation J&E7 or J&E8) accounts for the following processes:
- 1) Migration of contaminants from the source upwards through the vadose zone;
 - 2) Migration of contaminants through the earthen filled cracks in the building's full concrete slab-on-grade or full concrete basement floor and walls; and
 - 3) Mixing of the contaminants with air inside the building.
- e) Equation J&E7 must be used when the mode of contaminant transport is both diffusion and advection. In this scenario, the Q_{soil} value equals $83.33 \text{ cm}^3/\text{sec}$ as described in Section 742.505.
- f) Equation J&E8 may be used only when the mode of contaminant transport is diffusion only. In this scenario, the Q_{soil} value equals $0.0 \text{ cm}^3/\text{sec}$ as described in Section 742.505. As an alternative to using Equation J&E8 pursuant to this subsection, it is permissible to use Equation J&E7, in which case the Q_{soil} value equals $83.33 \text{ cm}^3/\text{sec}$ as described in Section 742.505.
- g) Equations J&E9a through J&E18 calculate input parameters for either Equation J&E7 or J&E8 (the equations used to calculate an attenuation factor). These equations assume there are "n" different soil layers between the source of the contamination and the floor of the building. Equations J&E11, 16, 17 and 18 shall be used to calculate the needed parameters for each of the n layers (the general soil layer is referred to as soil layer "i" and $i = 1, 2, \dots n$). Equations J&E16, 17, and 18 shall also be used to calculate needed parameters for the soil in the cracks of the building's full concrete slab-on-grade or full concrete basement floor and walls (it is through these cracks that contaminated soil gas is assumed to flow from the subsurface into the building). As reflected in Equation J&E14, the only crack assumed to be present is the floor-wall seam gap. To calculate the surface area of the enclosed space at or below grade, Equation J&E12a shall be

used for a building with a full concrete slab-on-grade and Equation J&E12b shall be used for a building with a full concrete basement floor and walls.

- h) The default representative subsurface temperature for Henry's Law Constant is 13°C. This value shall be used, as appropriate, in all calculations needed to represent the system by which contaminants migrate through the subsurface.
- i) The calculated soil gas remediation objective shall be compared with the soil vapor saturation limit (C_v^{sat} , Equation J&E5) for each volatile chemical. The calculated C_v^{sat} shall use the default representative subsurface temperature specified in subsection (h). If the calculated soil gas remediation objective is greater than C_v^{sat} , then C_v^{sat} is used as the soil gas remediation objective.
- j) The calculated soil gas remediation objective shall be compared to concentrations of soil gas collected at a depth at least 3 feet below ground surface and above the saturated zone. If a valid sample cannot be collected, a soil gas sampling plan shall be approved by the Agency under Tier 3.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.720 Chemicals with Cumulative Noncarcinogenic Effects

Appendix A, Table E lists the groups of chemicals from Appendix B, Tables A and B that have remediation objectives based on noncarcinogenic toxicity and that affect the same target organ. If more than one chemical detected at a site affects the same target organ (i.e., has the same critical effect as defined by the RfD), the initially calculated remediation value for each chemical in the group shall be corrected for cumulative effects by one of the following two methods:

- a) Calculate the weighted average using the following equations:

$$W_{ave} = \frac{x_1}{CUO_{x_1}} + \frac{x_2}{CUO_{x_2}} + \frac{x_3}{CUO_{x_3}} + \dots + \frac{x_a}{CUO_{x_a}}$$

where:

W_{ave} = Weighted Average

x_1 through x_a = Concentration of each individual contaminant at the location of concern. Note that, depending on the target organ/mode of action, the actual number of contaminants will range from 2 to 14.

CUO_{x_a} = A Tier 2 remediation objective must be developed

for each x_a .

If the value of the weighted average calculated in accordance with the equations above is less than or equal to 1.0, then the remediation objectives are met for those chemicals.

If the value of the weighted average calculated in accordance with the equations above is greater than 1.0, then additional remediation must be carried out until the level of contaminants remaining in the remediated area has a weighted average calculated in accordance with the equation above less than or equal to one.

- b) Divide each individual chemical's remediation objective by the number of chemicals in that specific target organ group that were detected at the site. Each of the contaminant concentrations at the site is then compared to the remediation objectives that have been adjusted to account for this potential additivity. For the noncarcinogenic contaminants listed in Appendix A, Table E, a respective soil remediation objective need be no lower than the respective value listed in Appendix B, Table A or B.

SUBPART H: TIER 2 GROUNDWATER EVALUATION

Section 742.800 Tier 2 Groundwater Evaluation Overview

If the contaminant concentrations in the groundwater exceed the applicable Tier 1 remediation objectives, a person has the following options:

- a) Demonstrate that the groundwater ingestion exposure route is excluded from consideration pursuant to Subpart C;
- b) Demonstrate that the groundwater contamination is at or below area background concentrations in accordance with Subpart D and, if necessary, an institutional control restricting usage of the groundwater is in place in accordance with Subpart J;
- c) Remediate to Tier 1 remediation objectives;
- d) Propose and obtain approval of Tier 2 groundwater remediation objectives in accordance with Section 742.805 and remediate to that level, if necessary;
- e) Conduct a Tier 3 evaluation in accordance with Subpart I; or
- f) Obtain approval from the Board to:
 - 1) Reclassify the groundwater pursuant to 35 Ill. Adm. Code 620.260; or

- 2) Use an adjusted standard pursuant to Section 28.1 of the Act. [415 ILCS 5/28.1].

Section 742.805 Tier 2 Groundwater Remediation Objectives

- a) To develop a groundwater remediation objective under this Section that exceeds the applicable Tier 1 groundwater remediation objective, or for which there is no Tier I groundwater remediation objective, a person may request approval from the Agency if the person has performed the following:
 - 1) Identified the horizontal and vertical extent of groundwater for which the Tier 2 groundwater remediation objective is sought;
 - 2) Taken corrective action, to the maximum extent practicable to remove any free product;
 - 3) Using Equation R26 in accordance with Section 742.810, demonstrated that the concentration of any contaminant of concern in groundwater will meet:
 - A) The applicable Tier 1 groundwater remediation objective at the point of human exposure; or
 - B) For any contaminant of concern for which there is no Tier 1 groundwater remediation objective, the concentration determined according to the procedures specified in 35 Ill. Adm. Code 620 at the point of human exposure. A person may request the Agency to provide these concentrations or may propose these concentrations under Subpart I;
 - 4) Using Equation R26 in accordance with Section 742.810, demonstrated that the concentration of any contaminant of concern in groundwater within the minimum or designated maximum setback zone of an existing potable water supply well will meet the applicable Tier 1 groundwater remediation objective or, if there is no Tier 1 groundwater remediation objective, the concentration determined according to the procedures specified in 35 Ill. Adm. Code 620. A person may request the Agency to provide these concentrations or may propose these concentrations under Subpart I;
 - 5) Using Equation R26 in accordance with Section 742.810, demonstrated that the concentration of any contaminant of concern in groundwater discharging into a surface water will meet the applicable water quality standard under 35 Ill. Adm. Code 302;

- 6) Demonstrated that the source of the release is not located within the minimum or designated maximum setback zone or within a regulated recharge area of an existing potable water supply well; and
 - 7) If the selected corrective action includes an engineered barrier as set forth in Subpart K to minimize migration of contaminants of concern from the soil to the groundwater, demonstrated that the engineered barrier will remain in place for post-remediation land use through an institutional control as set forth in Subpart J.
- b) A groundwater remediation objective that exceeds the water solubility of that chemical (refer to Appendix C, Table E for solubility values) is not allowed.
 - c) The contaminants of concern for which a Tier 1 remediation objective has been developed shall be included in any mixture of similar-acting chemicals under consideration in Tier 2. The evaluation of 35 Ill. Adm. Code 620.615 regarding mixtures of similar-acting chemicals shall be considered satisfied for Class I groundwater at the point of human exposure if either of the following requirements are achieved:
 - 1) Calculate the weighted average using the following equations:

$$W_{ave} = \frac{x_1}{CUO_{x_1}} + \frac{x_2}{CUO_{x_2}} + \frac{x_3}{CUO_{x_3}} + \dots + \frac{x_a}{CUO_{x_a}}$$

where:

W_{ave} = Weighted Average

x_1 through x_a = Concentration of each individual contaminant at the location of concern. Note that, depending on the target organ, the actual number of contaminants will range from 2 to 33.

CUO_{x_a} = A Tier 1 or Tier 2 remediation objective must be developed for each x_a .

- A) If the value of the weighted average calculated in accordance with the equations above is less than or equal to 1.0, then the remediation objectives are met for those chemicals.
- B) If the value of the weighted average calculated in accordance with the equations above is greater than 1.0, then additional remediation must be carried out until the level of contaminants remaining in the remediated area has a weighted average calculated in accordance with the equation above less than or equal to one; or

- 2) Divide each individual chemical's remediation objective by the number of chemicals in that specific target organ group that were detected at the site. Each of the contaminant concentrations at the site is then compared to the remediation objectives that have been adjusted to account for this potential additivity.
- d) The evaluation of 35 Ill. Adm. Code 620.615 regarding mixtures of similar-acting chemicals is considered satisfied if the cumulative risk from any contaminants of concern listed in Appendix A, Table I, plus any other contaminants of concern detected in groundwater and listed in Appendix A, Table F as affecting the same target organ/organ system as the contaminants of concern detected from Appendix A, Table I, does not exceed 1 in 10,000.
 - e) Groundwater remediation objectives for the indoor inhalation exposure route shall be developed in accordance with Section 742.812. For the indoor inhalation exposure route:
 - 1) Appendix C, Table L applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls; and
 - 2) Institutional controls under Subpart J are required to develop groundwater remediation objectives pursuant to Appendix C, Table L.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.810 RBCA Calculations to Predict Impacts from Remaining Groundwater Contamination

- a) Equation R26 predicts the contaminant concentration along the centerline of a groundwater plume emanating from a vertical planar source in the aquifer (dimensions S_w wide and S_d deep). This model accounts for both three-dimensional dispersion (x is the direction of groundwater flow, y is the other horizontal direction, and z is the vertical direction) and biodegradation.
 - 1) The parameters in this equation are:

$X =$	distance from the planar source to the location of concern, along the centerline of the groundwater plume (i.e., $y=0, z=0$)
$C_x =$	the concentration of the contaminant at a distance X from the source, along the centerline of the plume

C_{source} = the greatest potential concentration of the contaminant of concern in the groundwater at the source of the contamination, based on the concentrations of contaminants in groundwater due to the release and the projected concentration of the contaminant migrating from the soil to the groundwater. As indicated above, the model assumes a planar source discharging groundwater at a concentration equal to C_{source} .

α_x = dispersivity in the x direction (i.e., Equation R16)

α_y = dispersivity in the y direction (i.e., Equation R17)

α_z = dispersivity in the z direction (i.e., Equation R18)

U = specific discharge (i.e., actual groundwater flow velocity through a porous medium; takes into account the fact that the groundwater actually flows only through the pores of the subsurface materials) where the aquifer hydraulic conductivity (K), the hydraulic gradient (I) and the total soil porosity θ_T must be known (i.e., Equation R19)

λ = first order degradation constant obtained from Appendix C, Table E or from measured groundwater data

S_w = width of planar groundwater source in the y direction

S_d = depth of planar groundwater source in the z direction

2) The following parameters are determined through field measurements: U , K , I , θ_T , S_w , S_d .

A) The determination of values for U , K , I and θ_T can be obtained through the appropriate laboratory and field techniques;

B) From the immediate down-gradient edge of the source of the groundwater contamination values for S_w and S_d shall be determined. S_w is defined as the width of groundwater at the source which exceeds the Tier 1 groundwater remediation objective. S_d is defined as the depth of groundwater at the source which exceeds the Tier 1 groundwater remediation objective; and

C) Total soil porosity can also be calculated using Equation R23.

- b) Once values are obtained for all the input parameters identified in subsection (a) of this Section, the contaminant concentration C_x along the centerline of the plume at a distance X from the source shall be calculated so that X is the distance from the down-gradient edge of the source of the contamination at the site to the point where the contaminant concentration is equal to the Tier 1 groundwater remediation objective or concentration determined according to the procedures specified in 35 Ill. Adm. Code 620, Subpart F.
- 1) If there are any potable water supply wells located within the calculated distance X , then the Tier 1 groundwater remediation objective or concentration shall be met at the edge of the minimum or designated maximum setback zone of the nearest potable water supply down-gradient of the source. To demonstrate that a minimum or maximum setback zone of a potable water supply well will not be impacted above the applicable Tier 1 groundwater remediation objective or concentration determined according to the procedures specified in 35 Ill. Adm. Code 620, Subpart F, X shall be the distance from the C_{source} location to the edge of the setback zone.
 - 2) To demonstrate that no surface water is adversely impacted, X shall be the distance from the down-gradient edge of the source of the contamination site to the nearest surface water body. This calculation must show that the contaminant in the groundwater at this location (C_x) does not exceed the applicable water quality standard.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.812 J&E Groundwater Equations for the Indoor Inhalation Exposure Route

Groundwater remediation objectives for the indoor inhalation exposure route are calculated using the modified J&E model as described in Section 742.717, except as follows:

- a) In Equation J&E9a, the total number of layers of soil that contaminants migrate through from the source to the building shall include a capillary fringe layer.
- b) The thickness of the capillary fringe layer is 37.5 cm.
- c) The volumetric water content of the capillary fringe shall be 90 % of the total porosity of the soil that comprises the capillary fringe.
- d) Equations J&E7 and J&E8 calculate an acceptable groundwater remediation objective.
 - 1) This calculation is made using:
 - A) the soil gas remediation objective calculated in accordance with Equation J&E4; and

- B) the assumption that this gas is in equilibrium with any contamination in the groundwater.
- 2) Equation J&E7 must be used when the mode of contaminant transport is both diffusion and advection. In this scenario, the Q_{soil} value equals 83.33 cm^3/sec as described in Section 742.505.
- 3) Equation J&E8 may be used only when the mode of contaminant transport is diffusion only. In this scenario, the Q_{soil} value equals 0.0 cm^3/sec as described in Section 742.505. As an alternative to using Equation J&E8 pursuant to this subsection, it is permissible to use Equation J&E7, in which case the Q_{soil} value equals 83.33 cm^3/sec as described in Section 742.505.
- e) A groundwater remediation objective that exceeds the water solubility of that chemical (refer to Appendix C, Table E for solubility values) is not allowed. If the calculated groundwater remediation objective is greater than the water solubility of that chemical, then the solubility is used as the groundwater remediation objective.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

SUBPART I: TIER 3 EVALUATION

Section 742.900 Tier 3 Evaluation Overview

- a) Tier 3 sets forth a flexible framework to develop remediation objectives outside of the requirements of Tiers 1 and 2. Although Tier 1 and Tier 2 evaluations are not prerequisites to conduct Tier 3 evaluations, data from Tier 1 and Tier 2 can assist in developing remediation objectives under a Tier 3 evaluation.
- b) The level of detail required to adequately characterize a site depends on the particular use of Tier 3. Tier 3 can require additional investigative efforts beyond those described in Tier 2 to characterize the physical setting of the site. However, in situations where remedial efforts have simply reached a physical obstruction additional investigation may not be necessary for a Tier 3 submittal.
- c) Situations that can be considered for a Tier 3 evaluation include, but are not limited to:
 - 1) Modification of parameters not allowed under Tier 2;
 - 2) Use of models different from those used in Tier 2;

- 3) Use of additional site data, such as results of indoor air sampling, to improve or confirm predictions of exposed receptors to contaminants of concern;
 - 4) Analysis of site-specific risks using formal risk assessment, probabilistic data analysis, and sophisticated fate and transport models (e.g., requesting a target hazard quotient greater than 1 or a target cancer risk greater than 1 in 1,000,000);
 - 5) Requests for site-specific remediation objectives because an assessment indicates further remediation is not practical;
 - 6) Incomplete human exposure pathways not excluded under Subpart C;
 - 7) Use of toxicological-specific information not available from the sources listed in Tier 2;
 - 8) Land uses which are substantially different from the assumed residential or industrial/commercial property uses of a site (e.g., a site will be used for recreation in the future and cannot be evaluated in Tier 1 or 2);
 - 9) Requests for site-specific remediation objectives that exceed Tier 1 groundwater remediation objectives so long as the following is demonstrated:
 - A) *To the extent practical, the exceedance of the groundwater quality standard has been minimized and beneficial use appropriate to the groundwater that was impacted has been returned; and*
 - B) *Any threat to human health or the environment has been minimized [415 ILCS 5/58.5(d)(4)(A)]; and*
 - 10) Use of building control technologies, other than those described in Subpart L, to prevent completion of the indoor inhalation exposure route.
- d) For requests of a target cancer risk ranging between 1 in 1,000,000 and 1 in 10,000 at the point of human exposure or a target hazard quotient greater than 1 at the point of human exposure, the requirements of Section 742.915 shall be followed. Requests for a target cancer risk exceeding 1 in 10,000 at the point of human exposure are not allowed.
- e) Requests for approval of a Tier 3 evaluation must be submitted to the Agency for review under the specific program under which remediation is performed. When reviewing a submittal under Tier 3, the Agency shall consider *whether the interpretations and conclusions reached are supported by the information gathered* [415 ILCS 58.7(e)(1)]. The Agency shall approve a Tier 3 evaluation if

the person submits the information required under this Part and establishes through such information that public health is protected and that specified risks to human health and the environment have been minimized.

- f) If contaminants of concern include polychlorinated biphenyls (PCBs), requests for approval of a Tier 3 evaluation must additionally address the applicability of 40 CFR 761.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.905 Modifications of Parameters

Any proposed changes to Tier 2 parameters which are not provided for in Tier 2 shall be submitted to the Agency for review and approval. A submittal under this Section shall include the following information:

- a) The justification for the modification; and
- b) The technical and mathematical basis for the modification.

Section 742.910 Alternative Models

Any proposals for the use of models other than those specified in Tier 2 shall be submitted to the Agency for review and approval. A submittal under this Section shall include the following information:

- a) Physical and chemical properties of contaminants of concern;
- b) Contaminant movement properties;
- c) Contaminant availability to receptors;
- d) Receptor exposure to the contaminants of concern;
- e) Mathematical and technical justification for the model proposed;
- f) A licensed copy of the model, if the Agency does not have a licensed copy of the model currently available for use; and
- g) Demonstration that the models were correctly applied.

Section 742.915 Formal Risk Assessments

A comprehensive site-specific risk assessment shall demonstrate that contaminants of concern at a site do not pose a significant risk to any human receptor. All site-specific risk assessments shall be submitted to the Agency for review and approval. A submittal under this Section shall address the following factors:

- a) Whether the risk assessment procedure used is nationally recognized and accepted including, but not limited to, those procedures incorporated by reference in Section 742.210;
- b) Whether the site-specific data reflect actual site conditions;
- c) The adequacy of the investigation of present and post-remediation exposure routes and risks to receptors identified at the site;
- d) The appropriateness of the sampling and analysis;
- e) The adequacy and appropriateness of toxicity information;
- f) The extent of contamination;
- g) Whether the calculations were accurately performed;
- h) Similar-acting chemicals shall be specifically addressed. At a minimum, the chemicals subject to this requirement are identified in Appendix A, Tables E and F; and
- i) Proposals seeking to modify the target risk consistent with Section 742.900(d) shall address the following factors:
 - 1) the presence of sensitive populations;
 - 2) the number of receptors potentially impacted;
 - 3) the duration of risk at the differing target levels; and
 - 4) the characteristic of the chemicals of concern.

SOURCE: Amended at 21 Ill. Reg. 16391, effective December 8, 1997.

Section 742.920 Impractical Remediation

Any request for site-specific remediation objectives due to impracticality of remediation shall be submitted to the Agency for review and approval. Any request for site-specific remediation objectives due to impracticality of remediation that involves the indoor inhalation exposure route

shall follow Section 742.935 in lieu of this Section. A submittal under this Section shall include the following information:

- a) The reasons why the remediation is impractical;
- b) The current extent and modeled migration of contamination;
- c) Geology, including soil types and parameters;
- d) The potential impact to groundwater;
- e) Results and locations of sampling events;
- f) Map of the area, including all utilities and structures; and
- g) Present and post-remediation uses of the area of contamination, including human receptors at risk.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.925 Exposure Routes

Technical information may demonstrate that there is no actual or potential impact of contaminants of concern to receptors from a particular exposure route. In these instances, a demonstration excluding an exposure route shall be submitted to the Agency for review and approval. A demonstration that involves the indoor inhalation exposure route shall follow Section 742.935 in lieu of this Section. A submittal under this Section shall include the following information:

- a) A description of the route evaluated;
- b) A description of the site and physical site characteristics;
- c) A discussion of the result and possibility of the route becoming active in the future; and
- d) Technical support that may include, but is not limited to, the following:
 - 1) a discussion of the natural or man-made barriers to that exposure route;
 - 2) calculations and modeling;
 - 3) physical and chemical properties of contaminants of concern; and
 - 4) contaminant migration properties.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.930 Derivation of Toxicological Data

If toxicological-specific information is not available for one or more contaminants of concern from the sources incorporated by reference in Section 742.210, the derivations of toxicological-specific information shall be submitted for Agency review and approval.

Section 742.935 Indoor Inhalation Exposure Route

a) Exclusion of Exposure Route

Site information may demonstrate that there is no actual or potential impact of contaminants of concern to receptors from the indoor inhalation exposure route. In these instances, a demonstration excluding the exposure route shall be submitted to the Agency for review and approval. A submittal under this Section shall include the following information:

- 1) A description of the site, physical site characteristics, existing and planned buildings, and existing and planned man-made pathways; and
- 2) A discussion of the possibility of the route becoming active in the future.

b) Exclusion of Exposure Route Using Building Control Technologies

Any proposals to use building control technologies as a means to prevent or mitigate human exposures under the indoor inhalation exposure route that differ from the requirements of Subpart L shall be submitted to the Agency for review and approval. A submittal under this Section shall include the following information:

- 1) A description of the site and physical site characteristics;
- 2) The current extent and modeled migration of contamination;
- 3) Geology, including soil types and parameters;
- 4) Results and locations of sampling events;
- 5) Scaled map of the area, including all buildings and man-made pathways;
- 6) A description of building characteristics and methods of construction, including a description of man-made pathways;

- 7) Present and post-remediation uses of the land that are at issue due to the area of contamination, including human receptors at risk;
 - 8) A description of any building control technologies currently in place or proposed for installation that can reduce or eliminate the potential for completion of the exposure route, including design and construction specifications;
 - 9) Information regarding the effectiveness of any building control technologies currently in place or proposed for installation and a schedule for performance testing to show the effectiveness of the control technology. For buildings not yet constructed, an approved building control technology shall be in place and operational prior to human occupancy;
 - 10) Identification of documents reviewed and the criteria used in the documents for determining whether building control technologies are effective and how those criteria compare to existing or potential buildings or man-made pathways at the site; and
 - 11) A description as to how the effectiveness of the building control technologies will be operated and maintained for the life of the buildings and man-made pathways, or until soil gas and groundwater contaminant concentrations have reached remediation objectives that are approved by the Agency. This includes provisions for potential extended system inoperability due to power failure or other disruption.
- c) Calculations and Modeling Used to Establish Soil Gas Remediation Objectives

The calculations and modeling shall account for contaminant transport through the mechanisms of diffusion and advection. Proposals to use soil gas data, including sub-slab samples, to establish remediation objectives for the indoor inhalation exposure route that differ from the requirements of Section 742.227 shall be submitted to the Agency for review and approval. A submittal under this Section shall include the following information:

- 1) Scaled map of the area, showing all buildings and man-made pathways (current and planned);
- 2) The current extent and modeled migration of contamination;
- 3) Geology, including soil types and parameters;
- 4) Depth to groundwater (including seasonal variation) and flow direction;
- 5) Location of soil gas sampling points;

- 6) A discussion of soil gas sampling procedures that, at a minimum, addresses the following:
 - A) sampling equipment;
 - B) soil gas collection protocol, including field tests and weather conditions; and
 - C) laboratory analytical methods.

d) **Calculations and Modeling Used to Establish Soil Remediation Objectives**

The calculations and modeling shall account for contaminant transport through the mechanisms of diffusion and advection. Any proposals to use soil data in lieu of soil gas data to establish remediation objectives for the indoor inhalation exposure route shall be submitted to the Agency for review and approval. A submittal under this Section shall include the following information:

- 1) Scaled map of the area, showing all buildings and man-made pathways (current and planned);
- 2) The current extent and modeled migration of contamination;
- 3) Geology, including soil types and parameters;
- 4) Location of soil sampling points;
- 5) A discussion of soil sampling procedures that, at a minimum, addresses the following:
 - A) sampling equipment;
 - B) soil collection protocol, including field tests and weather conditions; and
 - C) laboratory analytical methods;
- 6) Mathematical and technical justification for the model proposed; and
- 7) Demonstration that the model was correctly applied.

e) **Calculations and Modeling Used to Establish Groundwater Remediation Objectives**

The calculations and modeling shall account for contaminant transport through the mechanisms of diffusion and advection. Proposals to use groundwater data to establish remediation objectives for the indoor inhalation exposure route that differ from the requirements of Sections 742.805 and 742.812 shall be submitted to the Agency for review and approval. A submittal under this Section shall include the following information:

- 1) Scaled map of the area, showing all buildings and man-made pathways (current and planned);
- 2) The current extent and modeled migration of contamination;
- 3) Geology, including soil types and parameters and the thickness of the capillary fringe;
- 4) Depth to groundwater (including seasonal variation) and flow direction;
- 5) Results and locations of groundwater sampling events;
- 6) Mathematical and technical justification for the model proposed; and
- 7) Demonstration that the model was correctly applied.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

SUBPART J: INSTITUTIONAL CONTROLS

Section 742.1000 Institutional Controls

- a) Institutional controls in accordance with this Subpart must be placed on the property when remediation objectives are based on any of the following assumptions:
 - 1) Industrial/Commercial property use;
 - 2) Target cancer risk greater than 1 in 1,000,000;
 - 3) Target hazard quotient greater than 1;
 - 4) Engineered barriers;
 - 5) The point of human exposure is located at a place other than at the source;
 - 6) Exclusion of exposure routes;

- 7) A diffusion only mode of contaminant transport for the indoor inhalation exposure route;
 - 8) Use of an indoor inhalation building control technology;
 - 9) For the indoor inhalation exposure route, the presence of a building with a full concrete slab-on-grade or a full concrete basement floor and walls; or
 - 10) Any combination of the above.
- b) The Agency shall not approve any remediation objective under this Part that is based on the use of institutional controls unless the person has proposed institutional controls meeting the requirements of this Subpart and the requirements of the specific program under which the institutional control is proposed. A proposal for approval of institutional controls shall provide identification of the selected institutional controls from among the types recognized in this Subpart.
- c) The following instruments may be institutional controls subject to the requirements of this Subpart J and the requirements of the specific program under which the institutional control is proposed:
- 1) No Further Remediation Letters;
 - 2) Environmental Land Use Controls;
 - 3) Land Use Control Memoranda of Agreement;
 - 4) Ordinances adopted and administered by a unit of local government;
 - 5) Agreements between a property owner (or, in the case of a petroleum leaking underground storage tank, the owner or operator of the tank) and a highway authority with respect to any contamination remaining under highways; and
 - 6) Agreements between a highway authority that is also the property owner (or, in the case of a petroleum leaking underground storage tank, the owner or operator of the tank) and the Agency with respect to any contamination remaining under the highways.
- d) No Further Remediation Letters and Environmental Land Use Controls that meet the requirements of this Subpart and the recording requirements of the program under which remediation is being performed are transferred with the property.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.1005 No Further Remediation Letters

- a) A No Further Remediation Letter issued by the Agency under 35 Ill. Adm. Code 732 or 740 may be used as an institutional control under this Part if the requirements of subsection (b) of this Section are met.
- b) A request for approval of a No Further Remediation Letter as an institutional control shall meet the requirements applicable to the specific program under which the remediation is performed.

(Source: Amended at 25 Ill. Reg. 10374, effective August 15, 2001)

Section 742.1010 Environmental Land Use Controls

- a) An Environmental Land Use Control (ELUC) is an institutional control that may be used under this Part to impose land use limitations or requirements related to environmental contamination. ELUCs are only effective when approved by the Agency in accordance with this Part. Activities or uses that may be limited or required include, but are not limited to, prohibition of use of groundwater for potable purposes, restriction to industrial/commercial uses, operation or maintenance of engineered barriers, indoor inhalation building control technologies, or worker safety plans. ELUCs may be used in the following circumstances:
 - 1) When No Further Remediation Letters are not available, including but not limited to when contamination has migrated off-site or outside the remediation site; or
 - 2) When No Further Remediation Letters are not issued under the program for which a person is undergoing remediation.
- b) Recording requirements:
 - 1) An ELUC approved by the Agency pursuant to this Section must be recorded in the Office of the Recorder or Registrar of Titles for the county in which the property that is the subject of the ELUC is located. A copy of the ELUC demonstrating that it has been recorded must be submitted to the Agency before the Agency will issue a no further remediation determination.
 - 2) An ELUC approved under this Section will not become effective until officially recorded in the chain of title for the property that is the subject of the ELUC in accordance with subsection (b)(1) of this Section.
 - 3) Reference to the recorded ELUC must be made in the instrument memorializing the Agency's no further remediation determination. Recording of the no further remediation determination and confirmation of

recording must be in accordance with the requirements of the program under which the determination was issued.

- 4) The requirements of this Section do not apply to Federally Owned Property for which the Federal Landholding Entity does not have the authority under federal law to record land use limitations on the chain of title.
- 5) The requirements of this Section apply only to those sites for which a request for a no further remediation determination has not yet been made to the Agency by January 6, 2001.

c) Duration:

- 1) Except as provided in this subsection (c), an ELUC shall remain in effect in perpetuity.
- 2) *At no time shall any site for which an ELUC has been imposed as a result of remediation activities under this Part be used in a manner inconsistent with the land use limitation unless attainment of objectives appropriate for the new land use is achieved and a new no further remediation determination has been obtained and recorded in accordance with the program under which the ELUC was first imposed or the Site Remediation Program (35 Ill. Adm. Code 740) [415 ILCS 58.8(c)]. In addition, the appropriate release or modification of the ELUC must be prepared by the Agency and filed on the chain of title for the property that is the subject of the ELUC.*
 - A) For a Leaking Underground Storage Tank (LUST) site under 35 Ill. Adm. Code 731 or 734 or a Site Remediation Program site under 35 Ill. Adm. Code 740, an ELUC may be released or modified only if the NFR Letter is also modified under the Site Remediation Program to reflect the change;
 - B) For a RCRA site under 35 Ill. Adm. Code 721-730, an ELUC may be released or modified only if there is also an amended certification of closure or a permit modification.
- 3) In addition to any other remedies that may be available, a failure to comply with the limitations or requirements of an ELUC may result in avoidance of an Agency no further remediation determination in accordance with the program under which the determination was made. The failure to comply with the limitations or requirements of an ELUC may also be grounds for an enforcement action pursuant to Title VIII of the Act.

- d) An ELUC submitted to the Agency must match the form and contain the same substance, except for variable elements (e.g., name of property owner), as the model in Appendix F and must contain the following elements:
- 1) Name of property owners and declaration of property ownership;
 - 2) Identification of the property to which the ELUC applies by common address, legal description, and Real Estate Tax Index/Parcel Index Number;
 - 3) A reference to the Bureau of Land LPC numbers or 10-digit identification numbers under which the remediation was conducted;
 - 4) A statement of the reason for the land use limitation or requirement relative to protecting human health and the surrounding environment from soil, groundwater, and/or other environmental contamination;
 - 5) The language instituting such land use limitations or requirements;
 - 6) A statement that the limitations or requirements apply to the current owners, occupants, and all heirs, successors, assigns, and lessees;
 - 7) A statement that the limitations or requirements apply in perpetuity or until:
 - A) The Agency determines that there is no longer a need for the ELUC;
 - B) The Agency, upon written request, issues to the site that received the no further remediation determination that relies on the ELUC a new no further remediation determination approving modification or removal of the limitations or requirements;
 - C) The new no further remediation determination is filed on the chain of title of the site subject to the no further remediation determination; and
 - D) A release or modification of the land use limitation is filed on the chain of title for the property that is the subject of the ELUC;
 - 8) Scaled site maps showing:
 - A) The legal boundary of the property to which the ELUC applies;
 - B) The horizontal and vertical extent of contaminants of concern above applicable remediation objectives for soil, groundwater, and soil gas to which the ELUC applies;

- C) Any physical features to which an ELUC applies (e.g., engineered barriers, monitoring wells, caps, indoor inhalation building control technologies); and
 - D) The nature, location of the source, and direction of movement of the contaminants of concern;
- 9) A statement that any information regarding the remediation performed on the property for which the ELUC is necessary may be obtained from the Agency through a request under the Freedom of Information Act [5 ILCS 140] and rules promulgated thereunder; and
- 10) The dated, notarized signatures of the property owners or authorized agent.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.1012 Federally Owned Property: Land Use Control Memoranda of Agreement

- a) A Land Use Control Memorandum of Agreement (LUC MOA) between one or more agencies of the federal government and the Illinois Environmental Protection Agency is the institutional control that shall be used under this Part to impose land use limitations or restrictions related to environmental contamination on Federally Owned Property. A LUC MOA may be used only for Federally Owned Property. Each LUC MOA, at a minimum, must require that the Federal Landholding Entities responsible for the Federally Owned Property do the following:
- 1) Provide adequate identification of the location on the Federally Owned Property of each site with land use limitations or requirements. Such identification shall be by means of common address, notations in any available facility master land use plan, site specific GIS or GPS coordinates, plat maps, or any other means which identifies the site in question with particularity;
 - 2) Implement periodic site inspection procedures to ensure adequate oversight by the Federal Landholding Entities of such land use limitation or requirement;
 - 3) Implement procedures for the Federal Landholding Entities to periodically advise the Agency of continued compliance with the maintenance of the land use control and site inspection requirements included in the LUC MOA;
 - 4) Implement procedures for the Federal Landholding Entities to notify the Agency of any planned or emergency changes in land use that may adversely impact any site with land use limitations or requirements; and

- 5) Notify the Agency at least 60 days in advance of a conveyance by deed or fee simple title, by the Federal Landholding Entities, of a site with land use limitations or requirements, to any entity that will not remain or become a Federal Landholding Entity, and provide the Agency with information about how the Federal Landholding Entities will ensure that the requirements of Section 742.1010 are to be satisfied upon conveyance of that site.
- a) Any LUC MOA entered into pursuant to this Section remains effective only so long as title to the affected property is retained by the United States.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.1015 Ordinances

- a) An ordinance adopted by a unit of local government that effectively prohibits the installation of potable water supply wells (and the use of such wells) may be used as an institutional control to meet the requirements of Section 742.320(d) or 742.805(a)(3) if the requirements of this Section are met. A model ordinance is found in Appendix G. Ordinances prohibiting the installation of potable water supply wells (and the use of such wells) that do not expressly prohibit the installation of potable water supply wells (and the use of such wells) by units of local government may be acceptable as institutional controls if the requirements of this Section are met and a Memorandum of Understanding (MOU) is entered into under subsection (i) of this Section. For purposes of this Section, a unit of local government is considered to be expressly prohibited from installing and using potable water supply wells only if the unit of local government is included in the prohibition provision by name. The prohibition required by this Section shall satisfy the following requirements at a minimum:
 - 1) The prohibition shall not allow exceptions for potable water well installation and use other than for the adopting unit of local government;
 - 2) The prohibition shall apply at all depths and shall not be limited to particular aquifers or other geologic formations;
 - 3) If the prohibition does not apply everywhere within the boundaries of the unit of local government, the limited area to which the prohibition applies shall be easily identifiable and clearly defined by the ordinance (e.g., narrative descriptions accompanied by maps with legends or labels showing prohibition boundaries, or narrative descriptions using fixed, common reference points such as street names). Boundaries of prohibitions limited by area shall be fixed by the terms of the ordinance and shall not be subject to change without amending the ordinance in which the prohibition has been adopted (e.g., no boundaries defined with reference to zoning districts or the availability of the public water supply); and

- 4) The prohibition shall not in any way restrict or limit the Agency's approval of the use of the ordinance as an institutional control pursuant to this Part (e.g., no restrictions based on remediation program participation, no restrictions on persons performing remediation within the prohibition area who may use the ordinance).
- b) A request for approval of a local ordinance as an institutional control shall provide the following:
- 1) A copy of the ordinance restricting groundwater use certified by an official of the unit of local government in which the site is located that it is a true and accurate copy of the ordinance, unless the Agency and the unit of local government have entered an agreement under subsection (i) of this Section, in which case the request may alternatively reference the MOU. The ordinance must demonstrate that potable use of groundwater from potable water supply wells is prohibited;
 - 2) A scaled map or maps delineating the area and extent of groundwater contamination modeled above the applicable remediation objectives including any measured data showing concentrations of contaminants of concern in which the applicable remediation objectives are exceeded;
 - 3) A scaled map delineating the boundaries of all properties under which groundwater is located that exceeds the applicable groundwater remediation objectives;
 - 4) Information identifying the current owners of each property identified in subsection (b)(3); and
 - 5) A copy of the proposed written notification to the unit of local government that adopted the ordinance and to the current owners identified in subsection (b)(4) that includes the following information:
 - A) The name and address of the unit of local government that adopted the ordinance;
 - B) The ordinance's citation;
 - C) A description of the property being sent notice by adequate legal description, reference to a plat showing the boundaries of the property, or accurate street address;
 - D) Identification of the party requesting to use the groundwater ordinance as an institutional control, and a statement that the party

has requested approval from the Agency to use the ordinance as an institutional control;

- E) A statement that use of the ordinance as an institutional control allows contamination above groundwater ingestion remediation objectives to remain in groundwater beneath the affected properties, and that the ordinance strictly prohibits human and domestic consumption of the groundwater;
 - F) A statement as to the nature of the release and response action with the site name, site address, and Agency site number or Illinois inventory identification number; and
 - G) A statement that more information about the remediation site may be obtained by contacting the party requesting the use of the groundwater ordinance as an institutional control or by submitting a FOIA request to the Agency.
- c) Written notification proposed pursuant to subsection (b)(5) must be sent to the unit of local government that adopted the ordinance, as well as to all current property owners identified in subsection (b)(4). Written proof that the notification was sent to the unit of local government and the property owners shall be submitted to the Agency within 45 days from the date the Agency's no further remediation determination is recorded. Such proof may consist of the return card from certified mail, return receipt requested, a notarized certificate of service, or a notarized affidavit.
- d) Unless the Agency and the unit of local government have entered into a MOU under subsection (i), the current owner or successors in interest of a site who have received approval of use of an ordinance as an institutional control under this Section shall:
- 1) Monitor activities of the unit of local government relative to variance requests or changes in the ordinance relative to the use of potable groundwater at properties identified in subsection (b)(3); and
 - 2) Notify the Agency of any approved variance requests or ordinance changes within 30 days after the date such action has been approved.
- e) The information required in subsections (b)(1) through (b)(5) and the Agency letter approving the groundwater remediation objective shall be submitted to the unit of local government. Proof that the information has been filed with the unit of local government shall be provided to the Agency.
- f) Any ordinance or MOU used as an institutional control pursuant to this Section shall be recorded in the Office of the Recorder or Registrar of Titles of the county

in which the site is located together with the instrument memorializing the Agency's no further remediation determination pursuant to the specific program within 45 days after receipt of the Agency's no further remediation determination.

- g) An institutional control approved under this Section shall not become effective until officially recorded in accordance with subsection (f). The person receiving the approval shall obtain and submit to the Agency within 30 days after recording a copy of the institutional control demonstrating that it has been recorded.
- h) The following shall be grounds for voidance of the ordinance as an institutional control and the instrument memorializing the Agency's no further remediation determination:
 - 1) Modification of the ordinance by the unit of local government to allow potable use of groundwater;
 - 2) Approval of a site-specific request, such as a variance, to allow potable use of groundwater at a site identified in subsection (b)(3);
 - 3) Violation of the terms of an institutional control recorded under Section 742.1005 or Section 742.1010; or
 - 4) Failure to provide notification and proof of such notification pursuant to subsection (c).
- i) The Agency and a unit of local government may enter into a MOU under this Section if the unit of local government has adopted an ordinance satisfying subsection (a) and if the requirements of this subsection are met. The MOU submitted to the Agency must match the form and contain the same substance as the model in Appendix H and shall include the following:
 - 1) Identification of the authority of the unit of local government to enter the MOU;
 - 2) Identification of the legal boundaries, or equivalent, under which the ordinance is applicable;
 - 3) A certified copy of the ordinance;
 - 4) A commitment by the unit of local government to notify the Agency of any variance requests or proposed ordinance changes at least 30 days prior to the date the local government is scheduled to take action on the request or proposed change;

- 5) A commitment by the unit of local government to maintain a registry of all sites within the unit of local government that have received no further remediation determinations pursuant to specific programs; and
- 6) If the ordinance does not expressly prohibit the installation of potable water supply wells (and the use of such wells) by units of local government, a commitment by the unit of local government:
 - A) To review the registry of sites established under subsection (i)(5) prior to siting potable water supply wells within the area covered by the ordinance;
 - B) To determine whether the potential source of potable water may be or has been affected by contamination left in place at those sites; and
 - C) To take whatever steps are necessary to ensure that the potential source of potable water is protected from the contamination or treated before it is used as a potable water supply.
- j) A groundwater ordinance may not be used to exclude the indoor inhalation exposure route.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.1020 Highway Authority Agreements and Highway Authority Agreement Memoranda of Agreement

- a) An agreement with a highway authority may be used as an institutional control where the requirements of this Section are met and the Agency has determined that no further remediation is required as to the property(ies) to which the agreement is to apply. Highway Authority Agreements submitted to the Agency, except for those agreements with the Illinois Department of Transportation, must match the form and contain the same substance, except for variable elements, as the model in Appendix D.
- b) As part of the agreement the highway authority shall agree to:
 - 1) Prohibit the use of groundwater under the highway right of way that is contaminated above residential Tier 1 remediation objectives from the release as a potable supply of water; and
 - 2) Limit access to soil contamination under the highway right of way that is contaminated above residential Tier 1 or construction worker remediation objectives, whichever is less, from the release. Access to soil contamination may be allowed if, during and after any access, public health and the environment are protected.

- c) The agreement shall provide the following:
 - 1) Fully executed signature blocks by the highway authority and the owner of the property (or, in the case of a petroleum leaking underground storage tank, the owner or operator of the tank) from which the release occurred;
 - 2) A scaled map delineating the area and extent of soil and groundwater contamination above the applicable Tier 1 remediation objectives or a statement that either soil or groundwater is not contaminated above the applicable Tier 1 residential remediation objectives;
 - 3) Information showing the concentration of contaminants of concern within the zone in which the applicable Tier 1 remediation objectives are exceeded;
 - 4) A stipulation of the information required by subsections (c)(2) and (3) of this Section in the agreement if it is not practical to obtain the information by sampling the highway right-of-way; and
 - 5) Information identifying the highway authority having jurisdiction.
- d) Highway Authority Agreements must be referenced in the instrument that is to be recorded on the chain of title for the remediation property.
- e) Violation of the terms of an Agreement approved by the Agency as an institutional control under this Section shall be grounds for voidance of the Agreement as an institutional control and the instrument memorializing the Agency's no further remediation determination.
- f) Failure to provide all of the information required in subsections (b) and (c) of this Section will be grounds for denial of the Highway Authority Agreement as an institutional control.
- g) In instances in which the highway authority is also the property owner of the site, a Highway Authority Agreement may not be used. In such cases, the highway authority shall instead enter into a Highway Authority Agreement Memorandum of Agreement (HAA MOA) between the highway authority and the Agency. An HAA MOA may be used as an institutional control where the requirements of this Section are met and the Agency has determined that no further remediation is required as to the property(ies) to which the agreement is to apply. HAA MOAs submitted to the Agency must match the form and contain the same substance, except for variable elements, as the model in Appendix E.
- h) As part of the HAA MOA the highway authority shall agree to:
 - 1) Prohibit the use of groundwater under the highway right of way that is contaminated above residential Tier 1 or construction worker remediation objectives, whichever are less, from the release as a potable supply of water; and
 - 2) Limit access to soil contamination under the highway right of way that is contaminated above residential Tier 1 or construction worker remediation objectives, whichever are less, from the release. Access to soil

contamination may be allowed if, during and after any access, public health and the environment are protected.

- i) The HAA MOA shall provide the following:
- 1) Information identifying the site by common address or legal description or both;
 - 2) The Illinois Emergency Management Agency's (IEMA) incident number for the site, if one has been assigned;
 - 3) A scaled map delineating the current and estimated future area and extent of soil and groundwater contamination above the applicable Tier 1 or construction worker remediation objectives, whichever are less, or a statement that either soil or groundwater is not contaminated above the applicable Tier 1 residential remediation objectives;
 - 4) Information prepared by the highway authority that lists each contaminant of concern that exceeds its Tier 1 residential or construction worker remediation objective, its Tier 1 residential remediation objective, and its concentrations within the zone where Tier 1 residential or construction worker remediation objectives, whichever is less, are exceeded;
 - 5) A scaled map prepared by the highway authority showing the area of the highway authority's right of way that is governed by the HAA MOA;
 - 6) If samples have not been collected within the right of way because of impracticability, a stipulation by the parties that, based on modeling, soil and groundwater contamination exceeding Tier 1 residential or construction worker remediation objectives, whichever is less, does not and will not extend beyond the boundaries of the right-of-way;
 - 7) A stipulation by the highway authority that it has jurisdiction over the right of way that gives it sole control over the use of the groundwater and access to the soil located within or beneath the right of way;
 - 8) A stipulation by the highway authority that it agrees to limit access by itself and others to soil within the right of way exceeding Tier 1 residential or construction worker remediation objectives, whichever is less. Access may only be allowed if human health (including worker safety) and the environment are protected during and after any access. The highway authority may construct, reconstruct, improve, repair, maintain, and operate a highway upon the right of way, or allow others to do the same by permit. The highway authority and others using or working in the right of way under permit have the right to remove soil or groundwater from the right of way and dispose of the same in accordance with applicable environmental laws and regulations. The highway authority agrees to issue all permits for work in the right of way, and make all existing permits for work in the right of way, subject to the following or substantially similar conditions:

- A) As a condition of this permit the permittee shall request the office issuing this permit to identify sites in the right of way where a HAA MOA governs access to soil that exceeds the Tier 1 residential remediation objectives of 35 Ill. Adm. Code 742; and
 - B) The permittee shall take all measures necessary to protect human health (including worker safety) and the environment during and after any access to such soil;
- 9) A stipulation that the HAA MOA shall be referenced in the Agency's no further remediation determination issued for the release(s);
 - 10) A stipulation that the highway authority shall notify the Agency of any transfer of jurisdiction over the right of way at least 30 days prior to the date the transfer takes effect. The HAA MOA shall be null and void upon the transfer unless the transferee agrees to be bound by the agreement as if the transferee were an original party to the agreement. The transferee's agreement to be bound by the terms of the agreement shall be memorialized at the time of transfer as a rider to this agreement that references the HAA MOA and is signed by the highway authority, or subsequent transferor, and the transferee;
 - 11) A stipulation that the HAA MOA will become effective on the date the Agency issues a no further remediation determination for the release(s). It shall remain effective until the right of way is demonstrated to be suitable for unrestricted use and the Agency issues a new no further remediation determination to reflect there is no longer a need for the HAA MOA, or until the agreement is otherwise terminated or voided;
 - 12) A stipulation that in addition to any other remedies that may be available, the Agency may bring suit to enforce the terms of the HAA MOA or may, at its sole discretion, declare the HAA MOA null and void if the highway authority or a transferee violates any term of the HAA MOA. The highway authority or transferee shall be notified in writing of any such declaration; and
 - 13) A fully executed signature block by the highway authority and a block for the Agency's Director.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

SUBPART K: ENGINEERED BARRIERS

Section 742.1100 Engineered Barriers

- a) Any person who develops remediation objectives under this Part based on engineered barriers shall meet the requirements of this Subpart and the requirements of Subpart J relative to institutional controls.

- b) The Agency shall not approve any remediation objective under this Part that is based on the use of engineered barriers unless the person has proposed engineered barriers meeting the requirements of this Subpart.
- c) The use of engineered barriers can be recognized in calculating remediation objectives only if the engineered barriers are intended for use as part of the final corrective action.
- d) Any no further remediation determination based upon the use of engineered barriers shall require effective maintenance of the engineered barrier. The maintenance requirements shall be included in an institutional control under Subpart J. This institutional control shall address provisions for temporary breaches of the barrier by requiring the following if intrusive construction work is to be performed in which the engineered barrier is to be temporarily breached:
 - 1) The construction workers shall be notified by the site owner/operator in advance of intrusive activities. Such notification shall enumerate the contaminant of concern known to be present; and
 - 2) The site owner/operator shall require construction workers to implement protective measures consistent with good industrial hygiene practice.
- e) Failure to maintain an engineered barrier in accordance with that no further remediation determination shall be grounds for voidance of the determination and the instrument memorializing the Agency's no further remediation determination.

Section 742.1105 Engineered Barrier Requirements

- a) Natural attenuation, access controls, and point of use treatment shall not be considered engineered barriers. Engineered barriers may not be used to prevent direct human exposure to groundwater without the use of institutional controls.
- b) For purposes of determining remediation objectives under Tier 1, engineered barriers are not recognized.
- c) The following engineered barriers are recognized for purposes of calculating remediation objectives that exceed residential remediation objectives:
 - 1) For the soil component of the groundwater ingestion exposure route, the following engineered barriers are recognized if they prevent completion of the exposure pathway:
 - A) Caps or walls constructed of compacted clay, asphalt, concrete or other material approved by the Agency; and
 - B) Permanent structures such as buildings and highways.

- 2) For the soil ingestion exposure route, the following engineered barriers are recognized if they prevent completion of the exposure pathway:
 - A) Caps or walls constructed of compacted clay, asphalt, concrete, or other material approved by the Agency;
 - B) Permanent structures such as buildings and highways; and
 - C) Soil, sand, gravel, or other geologic materials that:
 - i) Cover the contaminated media;
 - ii) Meet the soil remediation objectives under Subpart E for residential property for contaminants of concern; and
 - iii) Are a minimum of three feet in depth.

- 3) For the outdoor inhalation exposure route, the following engineered barriers are recognized if they prevent completion of the exposure pathway:
 - A) Caps or walls constructed of compacted clay, asphalt, concrete, or other material approved by the Agency;
 - B) Permanent structures such as buildings and highways; and
 - C) Soil, sand, gravel, or other geologic materials that:
 - i) Cover the contaminated media;
 - ii) Meet the soil remediation objectives under Subpart E for residential property for contaminants of concern; and
 - iii) Are a minimum of ten feet in depth and not within ten feet of any manmade pathway.

- 4) For the ingestion of groundwater exposure route, the following engineered barriers are recognized if they prevent completion of the exposure pathway:
 - A) Slurry walls; and
 - B) Hydraulic control of groundwater.

- d) Unless otherwise prohibited under Section 742.1100, any other type of engineered barrier may be proposed if it will be as effective as the options listed in subsection (c).

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

SUBPART L: BUILDING CONTROL TECHNOLOGIES

Section 742.1200 Building Control Technologies

- a) Any person who develops remediation objectives under this Part based on building control technologies shall meet the requirements of this Subpart and the requirements of Subpart J relative to institutional controls.
- b) The Agency shall not approve any remediation objective under this Part that is based on the use of building control technologies unless the person has proposed building control technologies meeting the requirements of the following:
 - 1) This Subpart L or Subpart I; and
 - 2) Subpart J relative to institutional controls.
- c) The use of building control technologies can be recognized in determining remediation objectives only if the building control technologies are intended for use as part of the final corrective action.
- d) An approved building control technology shall be in place and operational prior to human occupancy.
- e) Any no further remediation determination based upon the use of building control technologies shall require effective maintenance of the building control technology. The maintenance requirements shall be included in an institutional control under Subpart J. This institutional control shall address provisions for inoperability by requiring the following if the building control technology is rendered inoperable:
 - 1) The site owner/operator shall notify building occupants and workers in advance of intrusive activities. The notification shall enumerate the contaminant of concern known to be present;
 - 2) The site owner/operator shall require building occupants and workers to implement protective measures consistent with good industrial hygiene practice; and

- 3) For a school, the school administrator shall notify the Agency, the school board, and every parent or legal guardian for all enrolled students when a building control technology is rendered inoperable for a period of five consecutive calendar days during the school year when school is in session. For purposes of the preceding sentence, any occurrence of inoperability, regardless of its duration, results in the date of the occurrence constituting a day of inoperability. For purposes of this subsection (e)(3), the term “school” means any public educational facility in Illinois, including grounds and/or campus, consisting of students, comprising one or more grade groups or other identifiable groups, organized as one unit with one or more teachers to give instruction of a defined type. Public educational facility includes, but is not limited to, primary and secondary (kindergarten-12th grade), charter, vocational, alternative, and special education schools. Public educational facility does not include junior colleges, colleges, or universities. For purposes of this subsection (e)(3), the term “school administrator” means the school’s principal, or similar administrator responsible for the school’s operations, or his or her designee.
- f) Failure to install or maintain a building control technology in accordance with a no further remediation determination shall be grounds for voidance of the determination and the instrument memorializing the Agency’s no further remediation determination.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.1205 Building Control Technology Proposals

A proposal to use a building control technology under this Subpart shall include the following information:

- a) A description of the site and physical site characteristics;
- b) The current extent and modeled migration of contamination;
- c) Geology, including soil types and parameters;
- d) Results and locations of sampling events;
- e) Scaled map of the area, including all buildings and man-made pathways;
- f) A description of building characteristics and methods of construction, including a description of man-made pathways; and

- g) Present and post-remediation uses of the land that are at issue due to the area of contamination, including human receptors at risk.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.1210 Building Control Technology Requirements

- a) Natural attenuation, access controls, and point of use treatment shall not be considered building control technologies.
- b) For purposes of determining compliance with remediation objectives under Tier 1, building control technologies are not recognized.
- c) The following building control technologies are recognized for purposes of pathway exclusion under Section 742.312.
 - 1) Sub-slab depressurization (SSD) systems meeting the following requirements:
 - A) A suction pit is installed that is at least two cubic feet and extends at least 6 inches below the slab (larger suction pits may be excavated as needed to achieve the performance criteria in subsection (c)(1)(B));
 - B) A PVC pipe of at least 3 inches in diameter extends from the suction pit to the intake side of an in-line fan capable of achieving a static vacuum of at least 0.25 inches water column (wc) at the suction point and measureable vacuum at the farthest edges of the area served by the suction pit under worst case conditions (all exhaust fans and heating systems running, during cold weather) as determined by a differential pressure reading of at least -0.003 inches wc below the slab or visible downward flow of air at test holes using chemical or smoke sticks;
 - C) All visible cracks and joints in the slab (including the place where the pipe exits the slab) and foundation walls are sealed;
 - D) The pipe exhausts outside the building at least 10 feet above ground and at least 10 feet from any door or window; and
 - E) Additional suction pits meeting the requirements of subsection (c)(1)(A) shall be installed as necessary to achieve measureable vacuum below the slab in all areas, including in any area where subsurface or foundation conditions (e.g., a sub-slab grade beam) prevent adequate suction field extension.

- 2) Sub-membrane depressurization (SMD) systems meeting the following requirements:
 - A) A non-woven geotextile is installed on the exposed earthen material;
 - B) A cross-laminated polyethylene membrane liner at least 0.10 mm (or 4 mil) thick is placed over the geotextile and sealed to foundation walls using a low volatile adhesive that is recommended by the liner manufacturer (e.g., acrylic latex adhesive);
 - C) A 3 inch diameter PVC pipe extends from a hole cut in the liner to the intake side of an in-line fan capable of achieving a static vacuum of at least 0.25 inches water column (wc) at the riser pipe and measureable vacuum at the farthest edges of the liner under worst case conditions (all exhaust fans running during cold weather) as determined by a differential pressure reading of at least -0.003 inches wc below the liner or visible downward flow of air in test holes using chemical or smoke sticks;
 - D) The pipe is sealed to the liner;
 - E) The pipe exhausts outside the building at least 10 feet above ground and at least 10 feet from any door or window; and
 - F) No leaks based on smoke stick tests along the entire perimeter of the liner (i.e., at all sealed edges) with the fan running. Where leaks are identified, appropriate repairs are undertaken and smoke stick testing repeated until no leaks are detected.

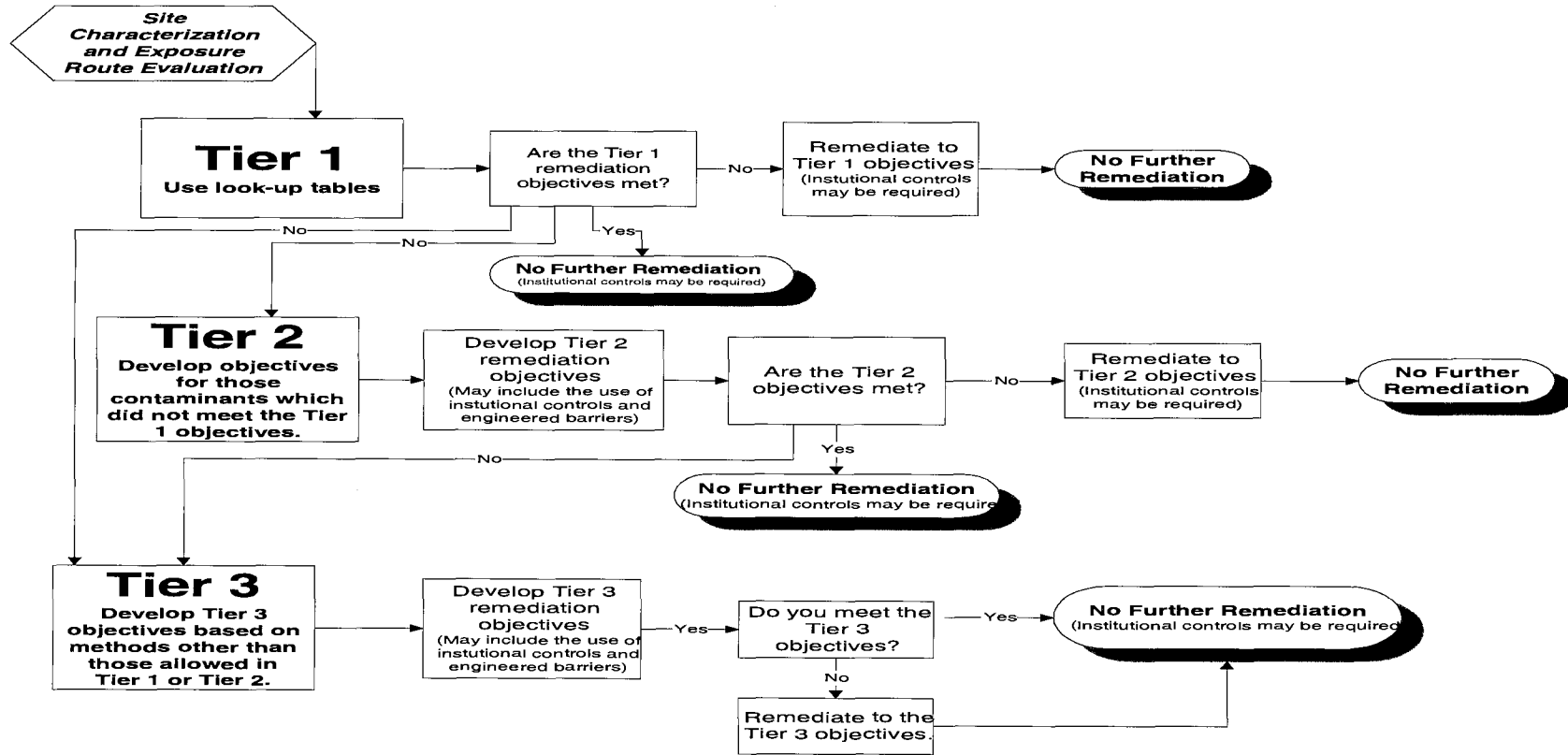
- 3) Membrane barrier systems when placed below concrete slabs meeting the following requirements:
 - A) The membrane is impermeable to volatile chemicals and is not less than 1.5 mm (or 60 mil) thick;
 - B) The membrane is sealed to foundation walls and any penetrating pipes according to membrane manufacturer/installer recommendations;
 - C) The membrane is installed in accordance with the manufacturer's requirements and by an applicator trained and approved by the manufacturer;

- D) A smoke test of the membrane system (where smoke is injected below the installed liner prior to slab installation), in accordance with the manufacturer's requirements, is performed to ensure no leaks exist. Where leaks are identified, appropriate repairs are undertaken and smoke testing repeated until no leaks are detected;
 - E) The membrane is puncture resistant to slab installation construction activities and protected by sand layers or geotextiles as recommended by the manufacturer; and
 - F) Construction activities following membrane installation do not damage, puncture or tear the membrane or otherwise compromise its ability to prevent the migration of volatile chemicals.
- 4) Vented raised floors meeting the following requirements:
- A) An interconnected void system below the slab sufficient to allow free movement of air and communication of negative pressures to all points below the slab;
 - B) Sealing of all construction joints, open cracks, and penetrations through the slab (e.g., for utilities and riser pipes) with a low volatile caulk; and
 - C) At least one 3 inch diameter riser pipe venting to the atmosphere above the roof line (at least 10 feet from any doors or windows) for each 5000 square feet of membrane area, with the capability of converting passively vented floor systems to actively vented or SSD systems meeting the performance requirements of subsection (c)(1).

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

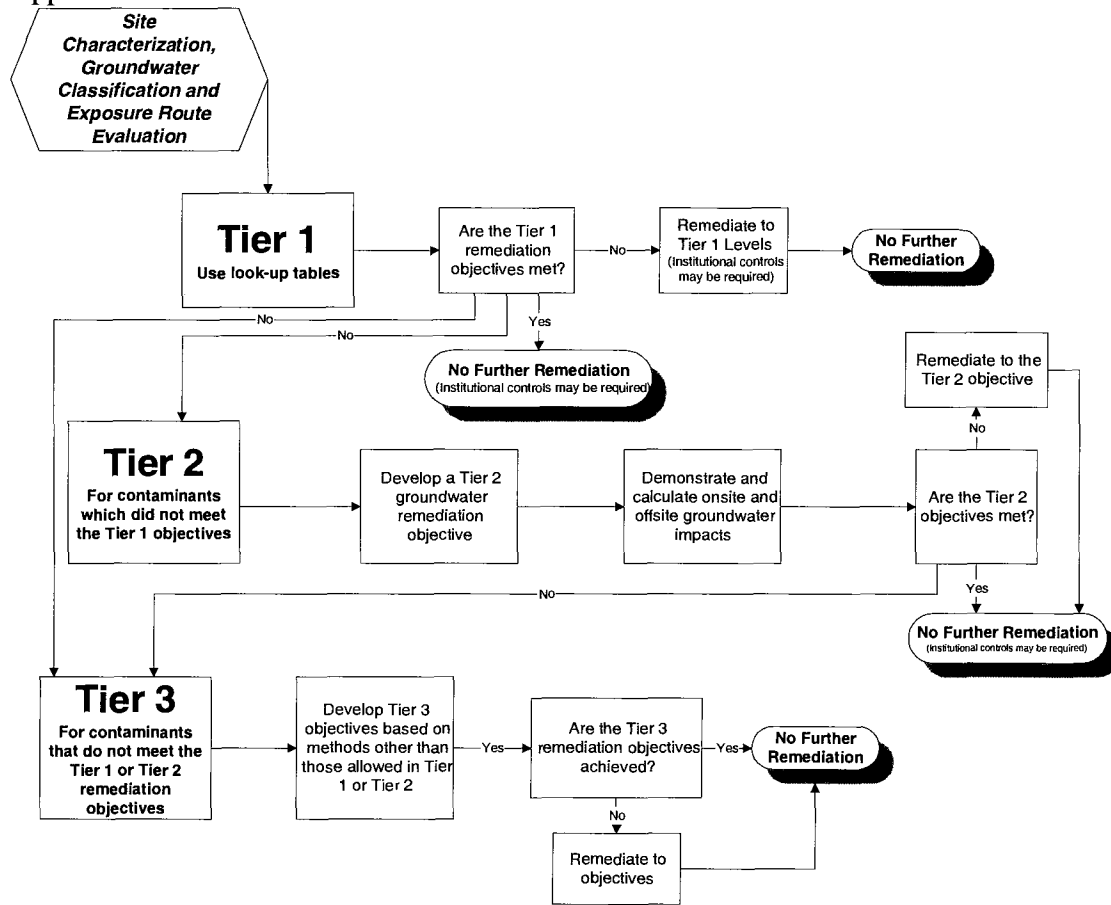
Section 742.APPENDIX A: General

Section 742.Illustration A: Developing Soil Remediation Objectives Under the Tiered Approach



Section 742.APPENDIX A: General

Section 742.Illustration B: Developing Groundwater Remediation Objectives Under the Tiered Approach



Section 742.APPENDIX A: General

Section 742.TABLE A: Soil Saturation Limits (C_{sat}) for Chemicals Whose Melting Point is Less Than 30° C

CAS No.	Chemical Name	For the Outdoor Inhalation Exposure Route ^a C_{sat} (mg/kg)	For the Soil Component of the Groundwater Ingestion Exposure Route ^b C_{sat} (mg/kg)
67-64-1	Acetone	1.00E+05	2.00E+05
71-43-2	Benzene	8.00E+02	5.80E+02
111-44-4	Bis(2-chloroethyl)ether	3.00E+03	3.90E+03
117-81-7	Bis(2-ethylhexyl)phthalate	2.00E+02	6.80E+01
75-27-4	Bromodichloromethane (Dichlorobromomethane)	2.80E+03	2.00E+03
75-25-2	Bromoform	2.00E+03	1.20E+03
71-36-3	Butanol	1.00E+04	1.60E+04
78-93-3	2-Butanone (MEK)	2.50E+04	4.50E+04
85-68-7	Butyl benzyl phthalate	1.00E+03	3.40E+02
75-15-0	Carbon disulfide	8.50E+02	5.20E+02
56-23-5	Carbon tetrachloride	1.20E+03	5.60E+02
108-90-7	Chlorobenzene (Monochlorobenzene)	6.20E+02	2.90E+02
124-48-1	Chlorodibromomethane (Dibromochloromethane)	1.40E+03	8.90E+02
67-66-3	Chloroform	3.40E+03	2.50E+03
95-57-8	2-Chlorophenol ^c (ionizable organic)	1.00E+04	7.10E+03
75-99-0	Dalapon	1.20E+05	1.90E+05
96-12-8	1,2-Dibromo-3-chloropropane	6.90E+02	4.30E+02
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	1.60E+03	1.20E+03

CAS No.	Chemical Name	For the Outdoor Inhalation Exposure Route ^a C _{sat} (mg/kg)	For the Soil Component of the Groundwater Ingestion Exposure Route ^b C _{sat} (mg/kg)
84-74-2	Di- <i>n</i> -butyl phthalate	2.60E+03	8.80E+02
95-50-1	1,2-Dichlorobenzene (o-Dichlorobenzene)	5.60E+02	2.10E+02
75-71-8	Dichlorodifluoromethane	8.70E+02	4.30E+02
75-34-3	1,1-Dichloroethane	1.70E+03	1.40E+03
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	1.90E+03	2.10E+03
75-35-4	1,1-Dichloroethylene	1.40E+03	9.10E+02
156-59-2	<i>cis</i> -1,2-Dichloroethylene	1.30E+03	1.00E+03
156-60-5	<i>trans</i> -1,2-Dichloroethylene	3.00E+03	2.10E+03
78-87-5	1,2-Dichloropropane	1.20E+03	8.70E+02
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i>)	1.00E+03	8.50E+02
84-66-2	Diethyl phthalate	2.20E+03	9.20E+02
105-67-9	2,4-Dimethylphenol	1.00E+04	4.70E+03
117-84-0	Di- <i>n</i> -octyl phthalate	1.60E+01	5.20E+00
123-91-1	p-Dioxane	1.00E+05	2.00E+05
100-41-4	Ethylbenzene	3.50E+02	1.50E+02
77-47-4	Hexachlorocyclopentadiene	1.30E+02	4.40E+01
78-59-1	Isophorone	3.00E+03	3.00E+03
98-82-8	Isopropylbenzene (Cumene)	9.40E+02	4.00E+02
7439-97-6	Mercury (elemental)	3.10E+00	N/A
74-83-9	Methyl bromide (Bromomethane)	3.10E+03	3.60E+03
1634-04-4	Methyl tertiary-butyl ether	8.40E+03	1.10E+04
75-09-2	Methylene chloride (Dichloromethane)	2.50E+03	3.00E+03

CAS No.	Chemical Name	For the Outdoor Inhalation Exposure Route ^a C _{sat} (mg/kg)	For the Soil Component of the Groundwater Ingestion Exposure Route ^b C _{sat} (mg/kg)
98-95-3	Nitrobenzene	7.10E+02	5.90E+02
621-64-7	n-Nitrosodi-n-propylamine	1.90E+03	2.30E+03
100-42-5	Styrene	6.30E+02	2.60E+02
127-18-4	Tetrachloroethylene (Perchloroethylene)	8.00E+02	3.10E+02
108-88-3	Toluene	5.80E+02	2.90E+02
120-82-1	1,2,4-Trichlorobenzene	3.40E+02	1.20E+02
71-55-6	1,1,1-Trichloroethane	1.30E+03	6.70E+02
79-00-5	1,1,2-Trichloroethane	1.80E+03	1.30E+03
79-01-6	Trichloroethylene	1.20E+03	6.50E+02
75-69-4	Trichlorofluoromethane	1.80E+03	8.90E+02
108-05-4	Vinyl acetate	2.60E+03	4.20E+03
75-01-4	Vinyl chloride	2.60E+03	2.90E+03
108-38-3	m-Xylene	4.10E+02	1.60E+02
95-47-6	o-Xylene	3.70E+02	1.50E+02
106-42-3	p-Xylene	3.30E+02	1.40E+02
1330-20-7	Xylenes (total)	2.80E+02	1.10E+02

^a Soil Saturation Limits calculated using an f_{oc} of 0.006 g/g and a system temperature of 25°C.

^b Soil Saturation Limits calculated using an f_{oc} of 0.002 g/g and a system temperature of 25°C.

^c C_{sat} for pH of 6.8. If soil pH is other than 6.8, a site-specific C_{sat} should be calculated using equations S19 and S29 and the pH-specific K_{oc} values in Appendix C Table I.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX A: General

Section 742.TABLE B: Tolerance Factor (K)

Tolerance factors (K) for one-sided normal tolerance intervals with probability level (confidence factor) $Y = 0.95$ and coverage $P = 95\%$. n = number of samples collected.

<u>n</u>	<u>K</u>
3	7.655
4	5.145
5	4.202
6	3.707
7	3.399
8	3.188
9	3.031
10	2.911
11	2.815
12	2.736
13	2.670
14	2.614
15	2.566
16	2.523
17	2.486
18	2.543
19	2.423
20	2.396
21	2.371
22	2.350
23	2.329
24	2.309
25	2.292
30	2.220
35	2.166
40	2.126
45	2.092
50	2.065
55	2.036
60	2.017
65	2.000
70	1.986
75	1.972
100	1.924
125	1.891
150	1.868
175	1.850

200	1.836
225	1.824
250	1.814
275	1.806
300	1.799
325	1.792
350	1.787
375	1.782
400	1.777
425	1.773
450	1.769

n

K

475	1.766
500	1.763
525	1.760
550	1.757
575	1.754
600	1.752
625	1.750
650	1.748
675	1.746
700	1.744
725	1.742
750	1.740
775	1.739
800	1.737
825	1.736
850	1.734
875	1.733
900	1.732
925	1.731
950	1.729
975	1.728
1000	1.727

Section 742.APPENDIX A: General

Section 742.TABLE C: Coefficients $\{A_{N-i+1}\}$ for W Test of Normality, for $N=2(1)50$

i/n	2	3	4	5	6	7	8	9	10	
1	0.7071	0.7071	0.6872	0.6646	0.6431	0.6233	0.6052	0.5888	0.5739	
2	---	.0000	.1677	.2413	.2806	.3031	.3164	.3244	.3291	
3	---	---	---	.0000	.0875	.1401	.1743	.1976	.2141	
4	---	---	---	---	---	.0000	.0561	.0947	.1224	
5	---	---	---	---	---	---	---	.0000	.0399	
i/n	11	12	13	14	15	16	17	18	19	20
1	0.5601	0.5475	0.5359	0.5251	0.5150	0.5056	0.4968	0.4886	0.4808	0.4734
2	.3315	.3325	.3325	.3318	.3306	.3290	.3273	.3253	.3232	.3211
3	.2260	.2347	.2412	.2460	.2495	.2521	.2540	.2553	.2561	.2565
4	.1429	.1586	.1707	.1802	.1878	.1939	.1988	.2027	.2059	.2085
5	.0695	.0922	.1099	.1240	.1353	.1447	.1524	.1587	.1641	.1686
6	0.0000	0.0303	0.0539	0.0727	0.0880	0.1005	0.1109	0.1197	0.1271	0.1334
7	---	---	.0000	.0240	.0433	.0593	.0725	.0837	.0932	.1013
8	---	---	---	---	.0000	.0196	.0359	.0496	.0612	.0711
9	---	---	---	---	---	---	.0000	.0163	.0303	.0422
10	---	---	---	---	---	---	---	---	.0000	.0140

i/n	21	22	23	24	25	26	27	28	29	30
1	0.4643	0.4590	0.4542	0.4493	0.4450	0.4407	0.4366	0.4328	0.4291	0.4254
2	.3185	.3156	.3126	.3098	.3069	.3043	.3018	.2992	.2968	.2944
3	.2578	.2571	.2563	.2554	.2543	.2533	.2522	.2510	.2499	.2487
4	.2119	.2131	.2139	.2145	.2148	.2151	.2152	.2151	.2150	.2148
5	.1736	.1764	.1787	.1807	.1822	.1836	.1848	.1857	.1864	.1870
6	0.1399	0.1443	0.1480	0.1512	0.1539	0.1563	0.1584	0.1601	0.1616	0.1630
7	.1092	.1150	.1201	.1245	.1283	.1316	.1346	.1372	.1395	.1415
8	.0804	.0878	.0941	.0997	.1046	.1089	.1128	.1162	.1192	.1219
9	.0530	.0618	.0696	.0764	.0823	.0876	.0923	.0965	.1002	.1036
10	.0263	.0368	.0459	.0539	.0610	.0672	.0728	.0778	.0822	.0862
11	0.0000	0.0122	0.0228	0.0321	0.0403	0.0476	0.0540	0.0598	0.0650	0.0697
12	---	---	.0000	.0107	.0200	.0284	.0358	.0424	.0483	.0537
13	---	---	---	---	.0000	.0094	.0178	.0253	.0320	.0381
14	---	---	---	---	---	---	.0000	.0084	.0159	.0227
15	---	---	+	---	---	---	---	---	.0000	.0076

i/n	31	32	33	34	35	36	37	38	39	40
1	0.4220	0.4188	0.4156	0.4127	0.4096	0.4068	0.4040	0.4015	0.3989	0.3964
2	.2921	.2898	.2876	.2854	.2834	.2813	.2794	.2774	.2755	.2737
3	.2475	.2463	.2451	.2439	.2427	.2415	.2403	.2391	.2380	.2368
4	.2145	.2141	.2137	.2132	.2127	.2121	.2116	.2110	.2104	.2098
5	.1874	.1878	.1880	.1882	.1883	.1883	.1883	.1881	.1880	.1878
i/n	31	32	33	34	35	36	37	38	39	40
6	0.1641	0.1651	0.1660	0.1667	0.1673	0.1678	0.1683	0.1686	0.1689	0.1691
7	.1433	.1449	.1463	.1475	.1487	.1496	.1503	.1513	.1520	.1526
8	.1243	.1265	.1284	.1301	.1317	.1331	.1344	.1356	.1366	.1376
9	.1066	.1093	.1118	.1140	.1160	.1179	.1196	.1211	.1225	.1237
10	.0899	.0931	.0961	.0988	.1013	.1036	.1056	.1075	.1092	.1108
11	0.0739	0.0777	0.0812	0.0844	0.0873	0.0900	0.0924	0.0947	0.0967	0.0986
12	.0585	.0629	.0669	.0706	.0739	.0770	.0798	.0824	.0848	.0870
13	.0435	.0485	.0530	.0572	.0610	.0645	.0677	.0706	.0733	.0759
14	.0289	.0344	.0395	.0441	.0484	.0523	.0559	.0592	.0622	.0651
15	.0144	.0206	.0262	.0314	.0361	.0404	.0444	.0481	.0515	.0546

16	0.0000	0.0068	0.0131	0.0187	0.0239	0.0287	0.0331	0.0372	0.0409	0.0444
17	---	---	.0000	.0062	.0119	.0172	.0220	.0264	.0305	.0343
18	---	---	---	---	.0000	.0057	.0110	.0158	.0203	.0244
19	---	---	---	---	---	---	.0000	.0053	.0101	.0146
20	---	---	---	---	---	---	---	---	.0000	.0049

i/n	41	42	43	44	45	46	47	48	49	50
1	0.3940	0.3917	0.3894	0.3872	0.3850	0.3830	0.3808	0.3789	0.3770	0.3751
2	.2719	.2701	.2684	.2667	.2651	.2635	.2620	.2604	.2589	.2574
3	.2357	.2345	.2334	.2323	.2313	.2302	.2291	.2281	.2271	.2260
4	.2091	.2085	.2078	.2072	.2065	.2058	.2052	.2045	.2038	.2032
5	.1876	.1874	.1871	.1868	.1865	.1862	.1859	.1855	.1851	.1847

i/n	41	42	43	44	45	46	47	48	49	50
6	0.1693	0.1694	0.1695	0.1695	0.1695	0.1695	0.1695	0.1693	0.1692	0.1691
7	.1531	.1535	.1539	.1542	.1545	.1548	.1550	.1551	.1553	.1554
8	.1384	.1392	.1398	.1405	.1410	.1415	.1420	.1423`	.1427	.1430
9	.1249	.1259	.1269	.1278	.1286	.1293	.1300	.1306	.1312	.1317
10	.1123	.1136	.1149	.1160	.1170	.1180	.1189	.1197	.1205	.1212

11	0.1004	0.1020	0.1035	0.1049	0.1062	0.1073	0.1085	0.1095	0.1105	0.1113
12	.0891	.0909	.0927	.0943	.0959	.0972	.0986	.0998	.1010	.1020
13	.0782	.0804	.0824	.0842	.0860	.0876	.0892	.0906	.0919	.0932
14	.0677	.0701	.0724	.0745	.0775	.0785	.0801	.0817	.0832	.0846
15	.0575	.0602	.0628	.0651	.0673	.0694	.0713	.0731	.0748	.0764
16	0.0476	0.0506	0.0534	0.0560	0.0584	0.0607	0.0628	0.0648	0.0667	0.0685
17	.0379	.0411	.0442	.0471	.0497	.0522	.0546	.0568	.0588	.0608
18	.0283	.0318	.0352	.0383	.0412	.0439	.0465	.0489	.0511	.0532
19	.0188	.0227	.0263	.0296	.0328	.0357	.0385	.0411	.0436	.0459
20	.0094	.0136	.0175	.0211	.0245	.0277	.0307	.0335	.0361	.0386
21	0.0000	0.0045	0.0087	0.0126	0.0163	0.0197	0.0229	0.0259	0.0288	0.0314
22	---	---	.0000	.0042	.0081	.0118	.0153	.0185	.0215	.0244
23	---	---	---	---	.0000	.0039	.0076	.0111	.0143	.0174
24	---	---	---	---	---	---	.0000	.0037	.0071	.0104
25	---	---	---	---	---	---	---	---	.0000	.0035

Section 742.APPENDIX A: General

Section 742.TABLE D: Percentage Points of the W Test for n=3(1)50

N	0.01	0.05
3	0.753	0.767
4	0.687	0.748
5	0.686	0.762
6	0.713	0.788
7	0.730	0.803
8	0.749	0.818
9	0.764	0.829
10	0.781	0.842
11	0.792	0.850
12	0.805	0.859
13	0.814	0.866
14	0.825	0.874
15	0.835	0.881
16	0.844	0.887
17	0.851	0.892
18	0.858	0.897
19	0.863	0.901
20	0.868	0.905
21	0.873	0.908
22	0.878	0.911
23	0.881	0.914
24	0.884	0.916
25	0.888	0.918
26	0.891	0.920
27	0.894	0.923
28	0.896	0.924
29	0.898	0.926
30	0.900	0.927
31	0.902	0.929
32	0.904	0.930
33	0.906	0.931
34	0.908	0.933

N	0.01	0.05
35	0.910	0.934

(Source: Amended at 25 Ill. Reg. 10374, effective August 15,2001)

Section 742.APPENDIX A General

Section 742.TABLE E Similar-Acting Noncarcinogenic Chemicals

Adrenal Gland

Isopropylbenzene

Cholinesterase Inhibition

Aldicarb

Carbofuran

Circulatory System

Alachlor

Antimony (ingestion only)

Benzene

Cobalt (ingestion only)

2,4-D

cis-1,2-Dichloroethylene (ingestion only)

2,4-Dimethylphenol

2,4-Dinitrotoluene

2,6-Dinitrotoluene

Enzosulfan

Fluoranthene

Fluorene

Methylene Chloride (inhalation only)

Nickel (Res. & I/C only) (inhalation only)

Nitrate as N

Nitrobenzene (ingestion only)

Selenium

Simazine

Styrene (ingestion only)

1,3,5-Trinitrobenzene

Zinc

Decreased Body Weight Gain

Atrazine

Bis(2-chloroethyl)ether

Cyanide

1,2-Dichlorobenzene (inhalation only)

Diethyl phthalate (ingestion only)

Enzosulfan

2-Methylphenol (o-cresol)

Naphthalene (ingestion only)

Nickel (ingestion only)

n-Nitrosodiphenylamine

Phenol (ingestion only)

Simazine

Tetrachloroethylene (ingestion only)

1,1,1-Trichloroethane (ingestion only)
Vinyl acetate (ingestion only)
Xylenes (Res. & I/C only) (ingestion only)

Endocrine System

Cyanide
1,2-Dibromoethane (ingestion only)
Di-n-octyl phthalate (ingestion only)
Nitrobenzene
1,2,4-Trichlorobenzene (ingestion only)

Eye

2,4-Dinitrophenol
n-Nitrosodiphenylamine
Polychlorinated biphenyls (PCBs)
Trichloroethylene

Gastrointestinal System

Beryllium (ingestion only)
Copper
1,3-Dichloropropene (*cis + trans*) (ingestion only)
Endothall
Fluoride
Hexachlorocyclopentadiene (ingestion only)
Iron
Methyl bromide (ingestion only)
Methyl tertiary-butyl ether (ingestion only)

Immune System

4-Chloroaniline
2,4-Dichlorophenol
Mercury (ingestion only)
Polychlorinated biphenyls (PCBs)

Kidney

Acetone (ingestion only)
Aldrin (CW only)
Barium
Bromodichloromethane (ingestion only)
Cadmium
2,4-D
Dalapon
1,1-Dichloroethane
1,2-Dichloroethane (CW only) (ingestion only)
Ensolulfan
Ethylbenzene (ingestion only)
Fluoranthene

gamma-HCH (gamma-BHC)
Hexachloroethane (ingestion only)
Isopropylbenzene
Mecoprop (MCP)
Methyl tertiary-butyl ether (inhalation only)
Pentachlorophenol
Pyrene
Toluene (ingestion only)
2,4,5-Trichlorophenol
Vinyl acetate (ingestion only)

Liver

Acenaphthene
Aldrin (Res. & I/C only)
Bis(2-ethylhexyl)phthalate (Res. & I/C only) (ingestion only)
Bromoform
Butyl Benzyl Phthalate (ingestion only)
Carbon Tetrachloride
Chlordane
Chlorobenzene (ingestion only)
Chlorodibromomethane (ingestion only)
Chloroform
2,4-D
DDT
1,2-Dibromoethane (ingestion only)
1,2-Dichlorobenzene (CW only) (ingestion only)
1,4-Dichlorobenzene
Dichlorodifluoromethane
1,2-Dichloroethane (inhalation only)
1,1-Dichloroethylene
trans-1,2-Dichloroethylene
1,2-Dichloropropane (ingestion only)
Dieldrin (Res. & I/C only)
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate (ingestion only)
p-Dioxane
Endrin
Ethylbenzene (ingestion only)
Fluoranthene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
alpha-HCH (alpha-BHC)
gamma-HCH (gamma-BHC)
High Melting Explosive, Octogen (HMX)
Isophorone (inhalation only)

Methyl tertiary-butyl ether
Methylene Chloride (ingestion only)
Pentachlorophenol
Phenol (inhalation only)
Picloram
Styrene (ingestion only)
Tetrachloroethylene (ingestion only)
Toxaphene (CW only)
2,4,5-TP (Silvex)
1,2,4-Trichlorobenzene (inhalation only)
1,1,1-Trichloroethane (inhalation only)
1,1,2-Trichloroethane (ingestion only)
2,4,5-Trichlorophenol
2,4,6-Trinitrotoluene (TNT)
Vinyl Chloride

Mortality

Di-n-butyl phthalate (ingestion only)
Xylenes (Res. & I/C only) (ingestion only)

Nervous System

Butanol (ingestion only)
Carbon disulfide (inhalation only)
Cyanide
Dieldrin (CW only)
2,4-Dimethylphenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Endrin
Hexachloroethane (inhalation only) (CW only)
Manganese
Mercury (inhalation only)
2-Methylphenol (o-cresol)
Phenol (inhalation only)
Selenium
Styrene (inhalation only)
Tetrachloroethylene (inhalation only)
Toluene (inhalation only)
Trichloroethylene
Xylenes (CW only) (ingestion only)
Xylenes (inhalation only)

Reproductive System

Arsenic (inhalation only)
Bis(2-ethylhexyl)phthalate (CW only) (ingestion only)
Boron
2-Butanone

Carbofuran
Carbon disulfide (ingestion only)
2-Chlorophenol
1,2-Dibromo-3-chloropropane
1,2-Dibromoethane (ingestion only)
Dicamba
Dinoseb
Ethylbenzene (inhalation only)
Isophorone (inhalation only)
Methoxychlor
Royal Demolition Explosive , Cyclonite (RDX)
2,4,6-Trichlorophenol

Respiratory System

Antimony (inhalation only)
Benzoic Acid (inhalation only)
Beryllium (inhalation only)
Cadmium (inhalation only)
Chromium (hex) (inhalation only)
Cobalt (inhalation only)
1,2-Dibromoethane (inhalation only)
trans-1,2-Dichloroethylene (inhalation only)
1,2-Dichloropropane (inhalation only)
1,3-Dichloropropene (*cis + trans*) (inhalation only)
Hexachlorocyclopentadiene (inhalation only)
Methyl bromide (inhalation only)
Naphtalene (inhalation only)
Nickel (inhalation only)
Nitrobenzene (inhalation only)
Vinyl acetate (inhalation only)

Skin

Arsenic (ingestion only)
Polychlorinated biphenyls (PCBs)
Selenium
Silver

Spleen

1,3-Dinitrobenzene
1,3,5-Trinitrobenzene

Notes:

Res. = Residential receptor
I/C = Industrial/Commercial receptor
CW = Construction Worker receptor

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX A: General

Section 742.TABLE F: Similar-Acting Carcinogenic Chemicals

Bladder

1,3-Dichloropropene (*cis + trans*) (ingestion only)
n-Nitrosodiphenylamine

Circulatory System

Benzene
1,2-Dibromoethane
1,2-Dichloroethane
Pentachlorophenol
2,4,6-Trichlorophenol

Gall Bladder

p-Dioxane (inhalation only)

Gastrointestinal System

Benzo(a)anthracene (ingestion only)
Benzo(b)fluoranthene (ingestion only)
Benzo(k)fluoranthene (ingestion only)
Benzo(a)pyrene (ingestion only)
Bromoform
Chrysene (ingestion only)
Dibenzo(a,h)anthracene (ingestion only)
1,2-Dibromoethane (ingestion only)
Indeno(1,2,3-cd)pyrene (ingestion only)

Kidney

Bromodichloromethane (ingestion only)
Chloroform (ingestion only)
1,2-Dibromo-3-chloropropane (ingestion only)
Nitrobenzene

Liver

Aldrin
Bis(2-chloroethyl)ether
Bis(2-ethylhexyl)phthalate
Carbazole
Carbon Tetrachloride

Respiratory System (continued)

Benzo(k)fluoranthene (inhalation only)
Benzo(a)pyrene (inhalation only)
Beryllium
Cadmium

Liver (continued)

Chlordane
Chloroform
DDD
DDE
DDT
1,2-Dichloropropane
Dieldrin
2,4-Dinitrotoluene
2,6-Dinitrotoluene
p-Dioxane
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
alpha-HCH (alpha-BHC)
gamma-HCH (gamma-BHC)
Methylene Chloride
Nitrobenzene
n-Nitrosodiphenylamine (inhalation only)
n-Nitrosodi-n-propylamine
Pentachlorophenol
Polychlorinated biphenyls (PCBs)
Tetrachloroethylene
Toxaphene
Trichloroethylene
Vinyl Chloride (I/C & CW)
Vinyl Chloride (Res.)

Mammary Gland

3,3'-Dichlorobenzidine
2,4-Dinitrotoluene
2,6-Dinitrotoluene

Respiratory System

Arsenic (inhalation only)
Benzo(a)anthracene (inhalation only)
Benzo(b)fluoranthene (inhalation only)

Chromium (hexavalent ion)
Chrysene (inhalation only)
Cobalt
Dibenzo(a,h)anthracene (inhalation only)
1,2-Dibromo-3-chloropropane (inhalation only)
1,2-Dibromoethane (inhalation only)
1,3-Dichloropropene (*cis + trans*) (inhalation only)
p-Dioxane (inhalation only)
Trichloroethylene

Notes:

Res. = Residential receptor

I/C = Industrial/Commercial receptor

CW = Construction Worker receptor

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX A General

Section 742.TABLE G Concentrations of Inorganic Chemicals in Background Soils

Chemical Name	Counties Within Metropolitan Statistical Areas (mg/kg)	Counties Outside Metropolitan Statistical Areas (mg/kg)
Aluminum	9,500	9,200
Antimony	4.0	3.3
Arsenic	13.0	11.3
Barium	110	122
Beryllium	0.59	0.56
Cadmium	0.6	0.50
Calcium	9,300	5,525
Chromium	16.2	13.0
Cobalt	8.9	8.9
Copper	19.6	12.0
Cyanide	0.51	0.50
Iron	15,900	15,000
Lead	36.0	20.9
Magnesium	4,820	2,700
Manganese	636	630
Mercury	0.06	0.05
Nickel	18.0	13.0
Potassium	1,268	1,100
Selenium	0.48	0.37
Silver	0.55	0.50
Sodium	130	130.0
Sulfate	85.5	110
Sulfide	3.1	2.9
Thallium	0.32	0.42
Vanadium	25.2	25.0
Zinc	95.0	60.2

BOARD NOTE: Counties within Metropolitan Statistical Areas: Boone, Champaign, Clinton, Cook, DuPage, Grundy, Henry, Jersey, Kane, Kankakee, Kendall, Lake, Macon, Madison, McHenry, McLean, Menard, Monroe, Peoria, Rock Island, Sangamon, St. Clair, Tazewell, Will, Winnebago and Woodford.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX A: General

Section 742.TABLE H Concentrations of Polynuclear Aromatic Hydrocarbon Chemicals in Background Soils

Chemical Name	Chicago ^a mg/kg	Metropolitan Areas ^b (mg/kg)	Non-Metropolitan Areas ^c (mg/kg)
2-Methylnaphthalene	-----	0.14	0.29
Acenaphthene	0.09	0.13	0.04
Acenaphthylene	0.03	0.07	0.04
Anthracene	0.25	0.40	0.14
Benzo(a)anthracene	1.1	1.8	0.72
Benzo(a)pyrene	1.3	2.1	0.98
Benzo(b)fluoranthene	1.5	2.1	0.70
Benzo(g,h,i)perylene	0.68	1.7	0.84
Benzo(k)fluoranthene	0.99	1.7	0.63
Chrysene	1.2	2.7	1.1
Dibenzo(a,h)anthracene	0.20	0.42	0.15
Fluoranthene	2.7	4.1	1.8
Fluorene	0.10	0.18	0.04
Indeno(1,2,3-c,d)pyrene	0.86	1.6	0.51
Naphthalene	0.04	0.20	0.17
Phenanthrene	1.3	2.5	0.99
Pyrene	1.9	3.0	1.2

^a Chicago means within the corporate limits of the City of Chicago.

^b Metropolitan area means a populated area, as defined in Section 742.200, (other than the City of Chicago) that is located within any county in a Metropolitan Statistical Area listed in Appendix A, Table G, footnote a.

^c Non-Metropolitan area means a populated area, as defined in Section 742.200, that is not located within any county in a Metropolitan Statistical Area listed in Appendix A, Table G, footnote a.

(Source: Appendix A, Table H renumbered to Appendix A, Table I and new Appendix A, Table H Added at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX A General

Section 742.TABLE I Chemicals Whose Tier 1 Class I Groundwater Remediation Objective Exceeds the 1 in 1,000,000 Cancer Risk Concentration

Chemical	Class I Groundwater Remediation Objective (mg/L)	1 in 1,000,000 Cancer Risk Concentration (mg/L)	ADL (mg/L)
Aldrin	0.014	0.000005	0.014
Benzo(a)pyrene	0.0002	0.000012	0.00023
Bis(2-chloroethyl)ether	0.01	0.000077	0.01
Bis(2-ethylhexyl)phthalate (Di(2-ethylhexyl)phthalate)	0.006	0.0061	0.0027
Carbon Tetrachloride	0.005	0.00066	0.0001
Chlordane	0.002	0.000066	0.00014
DDD	0.014	0.00023	0.014
DDE	0.01	0.00023	0.01
DDT	0.006	0.00023	0.006
Dibenzo(a,h)anthracene	0.0003	0.000012	0.0003
1,2-Dibromo-3-chloropropane	0.0002	0.000061	0.001
1,2-Dibromoethane	0.00005	0.00002	0.001
3,3'-Dichlorobenzidine	0.02	0.00019	0.02
1,2-Dichloroethane	0.005	0.00094	0.0003
Dieldrin	0.009	0.0000053	0.009
2,6-Dinitrotoluene	0.00031	0.0001	0.00031
Heptachlor	0.0004	0.000019	0.013
Heptachlor epoxide	0.0002	0.0000094	0.015
Hexachlorobenzene	0.00006	0.000053	0.00006
Alpha-HCH	0.00011	0.000014	0.000111
Tetrachloroethylene	0.005	0.0016	0.0004
Toxaphene	0.003	0.000077	0.00086
Vinyl chloride	0.002	0.000045	0.0002
Ionizable Organics			
N-Nitrosodi-n-propylamine	0.0018	0.000012	0.0018
Pentachlorophenol	0.001	0.00071	0.000076
2,4,6-Trichlorophenol	0.01	0.007	0.01
Inorganics			
Arsenic	0.05	0.000057	0.001

(Source: Appendix A, Table I renumbered from Appendix A, Table H and amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742. Table J: List of TACO Volatile Chemicals for the Indoor Inhalation Exposure Route

CAS No.	Chemical
67-64-1	Acetone
71-43-2	Benzene
111-44-4	Bis(2-chloroethyl)ether
75-27-4	Bromodichloromethane
75-25-2	Bromoform
71-36-3	Butanol
78-93-3	2-Butanone (MEK)
75-15-0	Carbon disulfide
56-23-5	Carbon tetrachloride
108-90-7	Chlorobenzene
124-48-1	Chlorodibromomethane
67-66-3	Chloroform
95-57-8	2-Chlorophenol
75-99-0	Dalapon
96-12-8	1,2-dibromo-3-chloropropane
106-93-4	1,2-Dibromoethane
95-50-1	1,2-Dichlorobenzene
106-46-7	1,4-Dichlorobenzene
75-71-8	Dichlorodifluoromethane
75-34-3	1,1-Dichloroethane
107-06-2	1,2-Dichloroethane
75-35-4	1,1-Dichloroethylene
156-59-2	<i>cis</i> -1,2-Dichloroethylene
156-60-5	<i>trans</i> -1,2-Dichloroethylene
78-87-5	1,2-Dichloropropane
542-75-6	1,3-Dichloropropylene (<i>cis</i> + <i>trans</i>)
123-91-1	p-Dioxane
100-41-4	Ethylbenzene
76-44-8	Heptachlor
118-74-1	Hexachlorobenzene
77-47-4	Hexachlorocyclopentadiene
67-72-1	Hexachloroethane
78-59-1	Isophorone
98-82-8	Isopropylbenzene (Cumene)
7439-97-6	Mercury
74-83-9	Methyl bromide
1634-04-4	Methyl tertiary-butyl ether
75-09-2	Methylene chloride
93-65-2	2-Methylnaphthalene
95-48-7	2-Methylphenol (o-cresol)
91-20-3	Naphthalene

CAS No.	Chemical
98-95-3	Nitrobenzene
621-64-7	n-Nitrosodi-n-propylamine
108-95-2	Phenol
1336-36-3	Polychlorinated biphenyls (PCBs)
100-42-5	Styrene
127-18-4	Tetrachloroethylene
108-88-3	Toluene
120-82-1	1,2,4-Trichlorobenzene
71-55-6	1,1,1-Trichloroethane
79-00-5	1,1,2-Trichloroethane
79-01-6	Trichloroethylene
75-69-4	Trichlorofluoromethane
108-05-4	Vinyl acetate
75-01-4	Vinyl chloride
108-38-3	m-Xylene
95-47-6	o-Xylene
106-42-3	p-Xylene
1330-20-7	Xylenes (total)

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX A: General

Section 742.TABLE K: Soil Vapor Saturation Limits (C_v^{sat}) for Volatile Chemicals

CAS No.	Chemical Name	C_v^{sat} (mg/m ³)
67-64-1	Acetone	7.50E+05
71-43-2	Benzene	4.20E+05
111-44-4	Bis(2-chloroethyl)ether	1.20E+04
75-27-4	Bromodichloromethane	4.50E+05
75-25-2	Bromoform	7.80E+04
71-36-3	Butanol	2.90E+04
78-93-3	2-Butanone (MEK)	3.80E+05
75-15-0	Carbon disulfide	1.50E+06
56-23-5	Carbon tetrachloride	1.00E+06
108-90-7	Chlorobenzene	7.40E+04
124-48-1	Chlorodibromomethane	5.70E+04
67-66-3	Chloroform	1.30E+06
95-57-8	2-Chlorophenol (ionizable organic)	1.70E+04
75-99-0	Dalapon	1.50E+03
96-12-8	1,2-Dibromo-3-chloropropane	7.80E+03
106-93-4	1,2-Dibromoethane	1.40E+05
95-50-1	1,2-Dichlorobenzene	1.10E+04
106-46-7	1,4-Dichlorobenzene	8.40E+03
75-71-8	Dichlorodifluoromethane	3.30E+07
75-34-3	1,1-Dichloroethane	1.30E+06
107-06-2	1,2-Dichloroethane	4.40E+05
75-35-4	1,1-Dichloroethylene	3.30E+06
156-59-2	<i>cis</i> -1,2-Dichloroethylene	1.10E+06
156-60-5	<i>trans</i> -1,2-Dichloroethylene	1.80E+06
78-87-5	1,2-Dichloropropane	3.20E+05

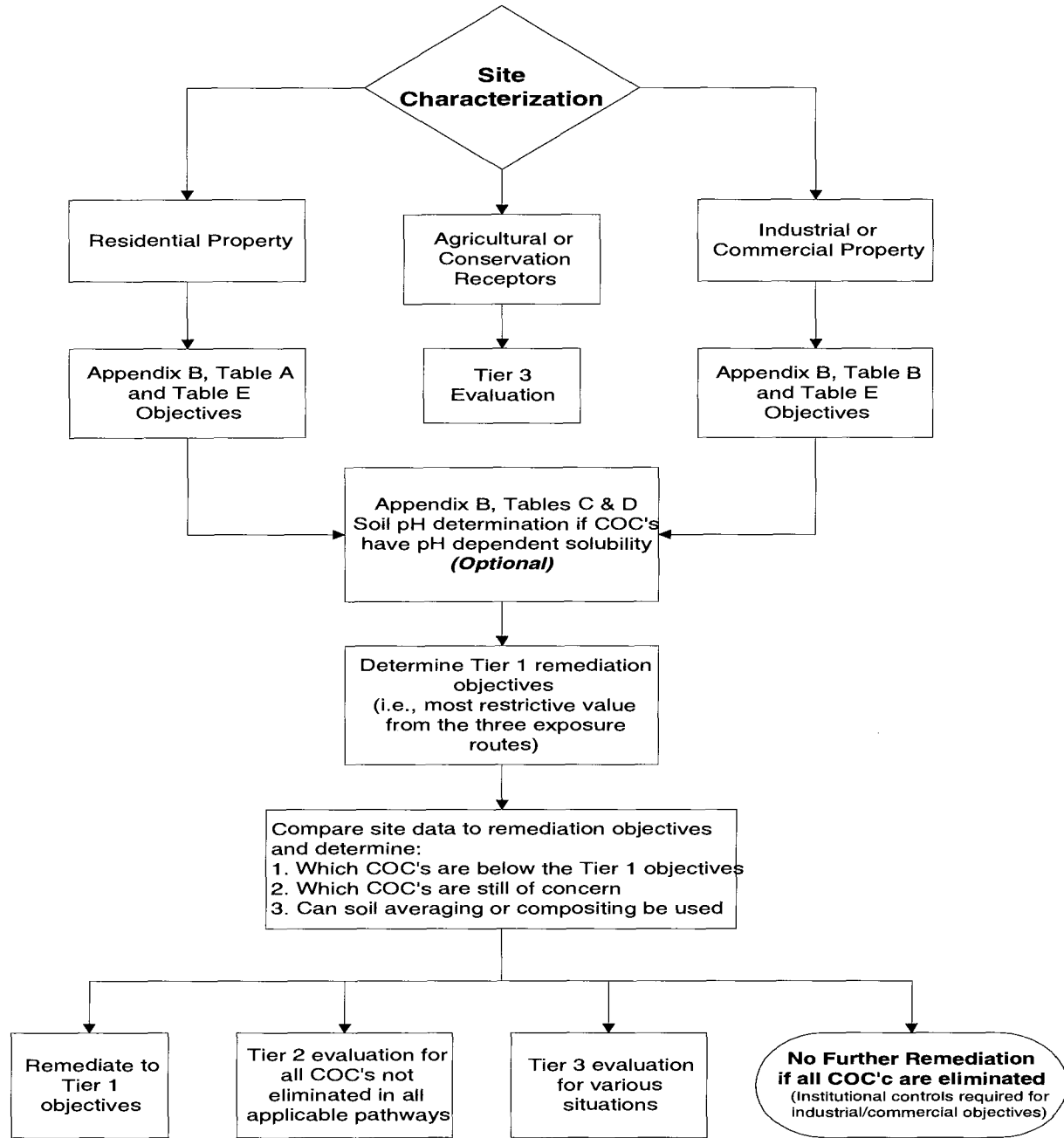
CAS No.	Chemical Name	C_v^{sat} (mg/m ³)
542-75-6	1,3-Dichloropropylene (<i>cis</i> + <i>trans</i>)	2.10E+05
123-91-1	p-Dioxane	1.90E+05
100-41-4	Ethylbenzene	5.90E+04
76-44-8	Heptachlor	8.30E+00
118-74-1	Hexachlorobenzene	2.80E-01
77-47-4	Hexachlorocyclopentadiene	9.10E+02
67-72-1	Hexachloroethane	2.80E+03
78-59-1	Isophorone	3.40E+03
98-82-8	Isopropylbenzene (Cumene)	3.00E+04
7439-97-6	Mercury (elemental)	2.20E+01
74-83-9	Methyl bromide	8.60E+06
1634-04-4	Methyl tertiary-butyl ether	1.20E+06
75-09-2	Methylene chloride	2.00E+06
93-65-2	2-Methylnaphthalene	5.30E+02
1634-04-4	2-Methylphenol (o-cresol)	1.80E+03
91-20-3	Naphthalene	6.20E+02
98-95-3	Nitrobenzene	1.70E+03
621-64-7	n-Nitrosodi-n-propylamine	9.50E+02
108-95-2	Phenol	1.50E+03
1336-36-3	Polychlorinated biphenyls (PCBs)	9.00E+00
100-42-5	Styrene	3.40E+04
127-18-4	Tetrachloroethylene	1.80E+05
108-88-3	Toluene	1.40E+05
120-82-1	1,2,4-Trichlorobenzene	4.30E+03
71-55-6	1,1,1-Trichloroethane	8.70E+05
79-00-5	1,1,2-Trichloroethane	1.70E+05
79-01-6	Trichloroethylene	5.30E+05

CAS No.	Chemical Name	C_v^{sat} (mg/m ³)
75-69-4	Trichlorofluoromethane	6.30E+06
108-05-4	Vinyl acetate	4.30E+05
75-01-4	Vinyl chloride	1.10E+07
108-38-3	m-Xylene	5.20E+04
95-47-6	o-Xylene	4.10E+04
106-42-3	p-Xylene	5.50E+04
1330-20-7	Xylenes (total)	4.90E+04

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX B Tier 1 Illustrations and Tables

Section 742.Illustration A Tier 1 Evaluation



(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX B Tier 1 Illustrations and Tables

Section 742.TABLE A Tier 1 Soil Remediation Objectives^a for Residential Properties

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
83-32-9	Acenaphthene	4,700 ^b	--- ^c	570 ^b	2,900	*
67-64-1	Acetone	70,000 ^b	100,000 ^d	25 ^b	25	*
15972-60-8	Alachlor ^o	8 ^e	--- ^c	0.04	0.2	NA
116-06-3	Aldicarb ^o	78 ^b	--- ^c	0.013	0.07	NA
309-00-2	Aldrin	0.04 ^e	3 ^e	0.5 ^e	2.5	0.94
120-12-7	Anthracene	23,000 ^b	--- ^c	12,000 ^b	59,000	*
1912-24-9	Atrazine ^o	2700 ^b	--- ^c	0.066	0.33	NA
71-43-2	Benzene	12 ^e	0.8 ^e	0.03	0.17	*
56-55-3	Benzo(a)anthracene	0.9 ^{e,w}	--- ^c	2	8	*
205-99-2	Benzo(b)fluoranthene	0.9 ^{e,w}	--- ^c	5	25	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
207-08-9	Benzo(<i>k</i>)fluoranthene	9 ^e	--- ^c	49	250	*
50-32-8	Benzo(<i>a</i>)pyrene	0.09 ^{e, w}	--- ^c	8	82	*
111-44-4	Bis(2-chloroethyl)ether	0.6 ^e	0.2 ^e	0.0004 ^e	0.0004	0.66
117-81-7	Bis(2-ethylhexyl)phthalate	46 ^e	31,000 ^d	3,600	31,000 ^d	*
75-27-4	Bromodichloromethane (Dichlorobromomethane)	10 ^e	3,000 ^d	0.6	0.6	*
75-25-2	Bromoform	81 ^e	53 ^e	0.8	0.8	*
71-36-3	Butanol	7,800 ^b	10,000 ^d	17 ^b	17	NA
85-68-7	Butyl benzyl phthalate	16,000 ^b	930 ^d	930 ^d	930 ^d	*
86-74-8	Carbazole	32 ^e	--- ^c	0.6 ^e	2.8	NA
1563-66-2	Carbofuran ^o	390 ^b	--- ^c	0.22	1.1	NA
75-15-0	Carbon disulfide	7,800 ^b	720 ^{d, x}	32 ^b	160	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
56-23-5	Carbon tetrachloride	5 ^e	0.3 ^e	0.07	0.33	*
57-74-9	Chlordane	1.8 ^e	72 ^{e, x}	10	48	*
106-47-8	4-Chloroaniline (<i>p</i> -Chloroaniline)	310 ^b	--- ^c	0.7 ^b	0.7	*
108-90-7	Chlorobenzene (Monochlorobenzene)	1,600 ^b	130 ^{b, x}	1	6.5	*
124-48-1	Chlorodibromomethane (Dibromochloromethane)	1,600 ^b	1,300 ^d	0.4	0.4	*
67-66-3	Chloroform	100 ^c	0.3 ^e	0.6	2.9	*
218-01-9	Chrysene	88 ^e	--- ^c	160	800	*
94-75-7	2,4-D ^o	780 ^b	--- ^c	1.5	7.7	*
75-99-0	Dalapon ^o	2,300 ^b	--- ^c	0.85	8.5	*
72-54-8	DDD	3 ^e	--- ^c	16 ^e	80	*
72-55-9	DDE	2 ^e	--- ^c	54 ^e	270	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
50-29-3	DDT	2 ^e	--- ^{g, x}	32 ^e	160	*
53-70-3	Dibenzo(<i>a,h</i>)anthracene	0.09 ^{e, w}	--- ^c	2	7.6	*
96-12-8	1,2-Dibromo-3-chloropropane	0.46 ^e	11 ^{b, x}	0.002	0.02	*
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.32 ^e	0.06 ^e	0.0004	0.004	0.005
84-74-2	Di- <i>n</i> -butyl phthalate	7,800 ^b	2,300 ^d	2,300 ^d	2,300 ^d	*
95-50-1	1,2-Dichlorobenzene (<i>o</i> -Dichlorobenzene)	7,000 ^b	560 ^{d, x}	17	43	*
106-46-7	1,4-Dichlorobenzene (<i>p</i> -Dichlorobenzene)	--- ^c	11,000 ^{b, x}	2	11	*
91-94-1	3,3'-Dichlorobenzidine	1 ^e	--- ^c	0.007 ^e	0.033	1.3
75-34-3	1,1-Dichloroethane	7,800 ^b	1,300 ^{b, x}	23 ^b	110	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	7 ^e	0.4 ^e	0.02	0.1	*
75-35-4	1,1-Dichloroethylene	3,900 ^b	290 ^{b, x}	0.06	0.3	*
156-59-2	<i>cis</i> -1,2-Dichloroethylene	780 ^b	1,200 ^d	0.4	1.1	*
156-60-5	<i>trans</i> -1,2-Dichloroethylene	1,600 ^b	3,100 ^d	0.7	3.4	*
78-87-5	1,2-Dichloropropane	9 ^e	15 ^{b, x}	0.03	0.15	*
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i>)	6.4 ^e	1.1 ^{e, x}	0.004 ^e	0.02	0.005
60-57-1	Dieldrin ⁿ	0.04 ^e	1 ^e	0.004 ^e	0.02	0.603
84-66-2	Diethyl phthalate	63,000 ^b	2,000 ^d	470 ^b	470	*
105-67-9	2,4-Dimethylphenol	1,600 ^b	--- ^c	9 ^b	9	*
121-14-2	2,4-Dinitrotoluene	0.9 ^e	--- ^c	0.0008 ^c	0.0008	0.250

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
606-20-2	2,6-Dinitrotoluene	0.9 ^e	--- ^c	0.0007 ^e	0.0007	0.260
117-84-0	Di- <i>n</i> -octyl phthalate	1,600 ^b	10,000 ^d	10,000 ^d	10,000 ^d	*
115-29-7	Endosulfan ^o	470 ^b	--- ^c	18 ^b	90	*
145-73-3	Endothall ^o	1,600 ^b	--- ^c	0.4	0.4	NA
72-20-8	Endrin	23 ^b	--- ^c	1	5	*
100-41-4	Ethylbenzene	7,800 ^b	400 ^{d, x}	13	19	*
206-44-0	Fluoranthene	3,100 ^b	--- ^c	4,300 ^b	21,000	*
86-73-7	Fluorene	3,100 ^b	--- ^c	560 ^b	2,800	*
76-44-8	Heptachlor	0.1 ^e	0.1 ^e	23	110	0.871
1024-57-3	Heptachlor epoxide	0.07 ^e	5 ^e	0.7	3.3	1.005
118-74-1	Hexachlorobenzene	0.4 ^e	1 ^e	2	11	*
319-84-6	<i>Alpha</i> -HCH (<i>alpha</i> -BHC)	0.1 ^e	0.8 ^e	0.0005 ^e	0.003	0.0074

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
58-89-9	<i>Gamma</i> -HCH (Lindane) ⁿ	0.5 ^e	--- ^{c, x}	0.009	0.047	*
77-47-4	Hexachlorocyclopentadiene	550 ^b	10 ^{b, x}	400	2,200 ^d	*
67-72-1	Hexachloroethane	78 ^b	--- ^c	0.5 ^b	2.6	*
193-39-5	Indeno(1,2,3- <i>c,d</i>)pyrene	0.9 ^{e,w}	--- ^c	14	69	*
78-59-1	Isophorone	15,600 ^b	4,600 ^d	8 ^b	8	*
72-43-5	Methoxychlor ^o	390 ^b	--- ^c	160	780	*
74-83-9	Methyl bromide (Bromomethane)	110 ^b	10 ^{b, x}	0.2 ^b	1.2	*
1634-04-4	Methyl tertiary-butyl ether	780 ^b	8,800 ^{d, x}	0.32	0.32	*
75-09-2	Methylene chloride (Dichloromethane)	85 ^e	13 ^e	0.02 ^e	0.2	*
95-48-7	2-Methylphenol (<i>o</i> -Cresol)	3,900 ^b	--- ^c	15 ^b	15	*
91-20-3	Naphthalene	1,600 ^b	170 ^{b, x}	12 ^b	18	*
98-95-3	Nitrobenzene	39 ^b	92 ^{b, x}	0.1 ^b	0.1	0.26

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	ADL (mg/kg)
86-30-6	<i>N</i> -Nitrosodiphenylamine	130 ^e	--- ^c	1 ^e	5.6	*
621-64-7	<i>N</i> -Nitrosodi- <i>n</i> -propylamine	0.09 ^e	--- ^c	0.00005 ^e	0.00005	0.0018
108-95-2	Phenol	23,000 ^b	--- ^c	100 ^b	100	*
1918-02-1	Picloram ^o	5,500 ^b	--- ^c	2	20	NA
1336-36-3	Polychlorinated biphenyls (PCBs) ⁿ	1 ^h	--- ^{c,h}	--- ^h	--- ^h	*
129-00-0	Pyrene	2,300 ^b	--- ^c	4,200 ^b	21,000	*
122-34-9	Simazine ^o	390 ^b	--- ^c	0.04	0.37	NA
100-42-5	Styrene	16,000 ^b	1,500 ^{d,x}	4	18	*
127-18-4	Tetrachloroethylene (Perchloroethylene)	12 ^e	11 ^e	0.06	0.3	*
108-88-3	Toluene	16,000 ^b	650 ^{d,x}	12	29	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
8001-35-2	Toxaphene ⁿ	0.6 ^e	89 ^e	31	150	*
120-82-1	1,2,4-Trichlorobenzene	780 ^b	3,200 ^{b, x}	5	53	*
71-55-6	1,1,1-Trichloroethane	--- ^c	1,200 ^d	2	9.6	*
79-00-5	1,1,2-Trichloroethane	310 ^b	1,800 ^d	0.02	0.3	*
79-01-6	Trichloroethylene	58 ^e	5 ^e	0.06	0.3	*
108-05-4	Vinyl acetate	78,000 ^b	1,000 ^{b, x}	170 ^b	170	*
75-01-4	Vinyl chloride	0.46 ^e	0.28 ^e	0.01	0.07	*
108-38-3	m-Xylene	16,000 ^b	420 ^{d, x}	210	210	*
95-47-6	o-Xylene	16,000 ^b	410 ^{d, x}	190	190	*
106-42-3	p-Xylene	16,000 ^b	460 ^{d, x}	200	200	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
1330-20-7	Xylenes (total)	16,000 ^b	320 ^{d, x}	150	150	*
	Ionizable Organics					
65-85-0	Benzoic Acid	310,000 ^b	--- ^c	400 ^{b, i}	400 ⁱ	*
95-57-8	2-Chlorophenol	390 ^b	53,000 ^d	4 ^{b, i}	4 ⁱ	*
120-83-2	2,4-Dichlorophenol	230 ^b	--- ^c	1 ^{b, i}	1 ⁱ	*
51-28-5	2,4-Dinitrophenol	160 ^b	--- ^c	0.2 ^b	0.2	3.3
88-85-7	Dinoseb ^o	78 ^b	--- ^c	0.34 ^{b, i}	3.4 ⁱ	*
87-86-5	Pentachlorophenol	3 ^{e, j}	--- ^c	0.03 ⁱ	0.14 ⁱ	*
93-72-1	2,4,5-TP (Silvex)	630 ^b	--- ^c	11 ⁱ	55 ⁱ	*
95-95-4	2,4,5-Trichlorophenol	7,800 ^b	--- ^c	270 ^{b, i}	1,400 ⁱ	*
88-06-2	2,4,6 Trichlorophenol	58 ^e	200 ^e	0.2 ^{e, i}	0.77 ⁱ	0.66

CAS No.	Chemical Name	Exposure Route-specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/L)	Class II (mg/L)	ADL (mg/kg)
	Inorganics					
7440-36-0	Antimony	31 ^b	--- ^c	0.006 ^m	0.024 ^m	*
7440-38-2	Arsenic ^{l,n}	--- ^t	750 ^e	0.05 ^m	0.2 ^m	*
7440-39-3	Barium	5,500 ^b	690,000 ^b	2.0 ^m	2.0 ^m	*
7440-41-7	Beryllium	160 ^b	1,300 ^c	0.004 ^m	0.5 ^m	*
7440-42-8	Boron	16,000 ^b	--- ^c	2.0 ^m	2.0 ^m	*
7440-43-9	Cadmium ^{l,n}	78 ^{b,r}	1,800 ^e	0.005 ^m	0.05 ^m	*
7440-70-2	Calcium ⁿ	--- ^g	--- ^c	--- ^c	--- ^c	*
16887-00-6	Chloride	--- ^c	--- ^c	200 ^m	200 ^m	*
7440-47-3	Chromium, total	230 ^b	270 ^c	0.1 ^m	1.0 ^m	*
16065-83-1	Chromium, ion, trivalent	120,000 ^b	--- ^c	--- ^g	--- ^g	*
18540-29-9	Chromium, ion, hexavalent	230 ^b	270 ^c	---	---	*

CAS No.	Chemical Name	Exposure Route-specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/L)	Class II (mg/L)	
7440-48-4	Cobalt	4,700 ^b	--- ^c	1.0 ^m	1.0 ^m	*
7440-50-8	Copper ⁿ	2,900 ^b	--- ^c	0.65 ^m	0.65 ^m	*
57-12-5	Cyanide (amenable)	1,600 ^b	--- ^c	0.2 ^{q,m}	0.6 ^{q,m}	*
7782-41-4	Fluoride	4,700 ^b	--- ^c	4.0 ^m	4.0 ^m	*
15438-31-0	Iron	--- ^c	--- ^c	5.0 ^m	5.0 ^m	*
7439-92-1	Lead	400 ^k	--- ^c	0.0075 ^m	0.1 ^m	*
7439-95-4	Magnesium ⁿ	325,000	--- ^c	--- ^c	--- ^c	*
7439-96-5	Manganese	1,600 ^{b,v}	69,000 ^{b,x}	0.15 ^m	10.0 ^m	*
7439-97-6	Mercury ^{l,n,s}	23 ^b	10 ^{b,x}	0.002 ^m	0.01 ^m	*
7440-02-0	Nickel ^l	1,600 ^b	13,000 ^c	0.1 ^m	2.0 ^m	*
14797-55-8	Nitrate as N ^p	130,000 ^b	--- ^c	10.0 ^{q,m}	100 ^q	*
7723-14-0	Phosphorus ⁿ	--- ^g	--- ^c	--- ^c	--- ^c	*

CAS No.	Chemical Name	Exposure Route-specific Values for Soils		Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/L)	Class II (mg/L)	
7440-09-7	Potassium ⁿ	--- ^g	--- ^c	--- ^c	--- ^c	*
7782-49-2	Selenium ^{l,n}	390 ^b	--- ^c	0.05 ^m	0.05 ^m	*
7440-22-4	Silver	390 ^b	--- ^c	0.05 ^m	--- ^c	*
7440-23-5	Sodium ⁿ	--- ^g	--- ^c	--- ^c	--- ^c	*
14808-79-8	Sulfate	--- ^c	--- ^c	400 ^m	400 ^m	*
7440-28-0	Thallium	6.3 ^{b,u}	--- ^c	0.002 ^m	0.02 ^m	*
7440-62-2	Vanadium	550 ^b	--- ^c	0.049 ^m	0.1 ^m	*
7440-66-6	Zinc ^l	23,000 ^b	--- ^c	5.0 ^m	10 ^m	*

“*” indicates that the ADL is less than or equal to the specified remediation objective.
NA means not available; no PQL or EQL available in USEPA analytical methods.

Chemical Name and Soil Remediation Objective Notations

- ^a Soil remediation objectives based on human health criteria only.
- ^b Calculated values correspond to a target hazard quotient of 1.
- ^c No toxicity criteria available for the route of exposure.
- ^d Soil saturation concentration ($C_{[sat]}$) = the concentration at which the absorptive limits of the soil particles, the solubility limits of the available soil moisture, and saturation of soil pore air have been reached. Above the soil saturation concentration, the assumptions regarding vapor transport to air and/or dissolved phase transport to groundwater (for chemicals which are liquid at ambient soil temperatures) have been violated, and alternative modeling approaches are required.
- ^e Calculated values correspond to a cancer risk level of 1 in 1,000,000.
- ^g Chemical-specific properties are such that this route is not of concern at any soil contaminant concentration.
- ^h 40 CFR 761 contains applicability requirements and methodologies for the development of PCB remediation objectives. Requests for approval of a Tier 3 evaluation must address the applicability of 40 CFR 761.
- ⁱ Soil remediation objective for pH of 6.8. If soil pH is other than 6.8, refer to Appendix B, Tables C and D of this Part.
- ^j Ingestion soil remediation objective adjusted by a factor of 0.5 to account for dermal route.
- ^k A preliminary remediation goal of 400 mg/kg has been set for lead based on *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, OSWER Directive #9355.4-12.
- ^l Potential for soil-plant-human exposure.
- ^m The person conducting the remediation has the option to use: 1) TCLP or SPLP test results to compare with the remediation objectives listed in this Table; 2) where applicable, the total amount of contaminant in the soil sample results to compare with pH specific remediation objectives listed in Appendix B, Table C or D of this Part (see Section 742.510); or 3) the appropriate background value listed in Appendix A, Table G. If the person conducting the remediation wishes to calculate soil remediation objectives based on background concentrations, this should be done in accordance with Subpart D of this Part.
- ⁿ The Agency reserves the right to evaluate the potential for remaining contaminant concentrations to pose significant threats to crops, livestock, or wildlife.
- ^o For agricultural facilities, remediation objectives for surficial soils which are based on field application rates may be more appropriate for currently registered pesticides. Consult the Agency for further information.
- ^p For agricultural facilities, soil remediation objectives based on site-specific background concentrations of Nitrate as N may be more appropriate. Such determinations shall be conducted in accordance with the procedures set forth in Subparts D and I of this Part.
- ^q The TCLP extraction must be done using water at a pH of 7.0.
- ^r Value based on dietary Reference Dose.

^s Value for Ingestion based on Reference Dose for Mercuric chloride (CAS No. 7487-94-7); value for Inhalation based on Reference Concentration for elemental Mercury (CAS No. 7439-97-6). Inhalation remediation objective only applies at sites where elemental mercury is a contaminant of concern.

^t For the ingestion route for arsenic, see 742.Appendix A, Table G.

^u Value based on Reference Dose for Thallium sulfate (CAS No. 7446-18-6).

^v Value based on Reference Dose adjusted for dietary intake.

^w For sites located in any populated area as defined in Section 742.200, Appendix A, Table H may be used.

^x The remediation objectives for these chemicals must also include the construction worker inhalation objective in Appendix B, Table B.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX B Tier 1 Illustrations and Tables

Section 742.Table B Tier 1 Soil Remediation Objectives^a for Industrial/Commercial Properties

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial		Construction Worker		Class I (mg/kg)	ClassII (mg/kg)	
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
83-32-9	Acenaphthene	120,000 ^b	----- ^c	120,000 ^b	----- ^c	570 ^b	2,900	*
67-64-1	Acetone	---- ^g	100,000 ^d	---- ^g	100,000 ^d	25 ^b	25	*
15972-60-8	Alachlor ^o	72 ^e	----- ^c	1,600 ^e	----- ^c	0.04	0.2	NA
116-06-3	Aldicarb ^o	2,000 ^b	----- ^c	200 ^b	----- ^c	0.013	0.07	NA
309-00-2	Aldrin	0.3 ^e	6.6 ^e	6.1 ^b	9.3 ^e	0.5 ^e	2.5	0.94
120-12-7	Anthracene	610,000 ^b	----- ^c	610,000 ^b	----- ^c	12,000 ^b	59,000	*
1912-24-9	Atrazine ^o	72,000 ^b	----- ^c	7,100 ^b	----- ^c	0.066	0.33	NA
71-43-2	Benzene	100 ^e	1.6 ^e	2,300 ^e	2.2 ^e	0.03	0.17	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial		Construction Worker		Class I (mg/kg)	ClassII (mg/kg)	
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
56-55-3	Benzo(a)anthracene	8 ^e	----- ^c	170 ^e	----- ^c	2	8	*
205-99-2	Benzo(b)fluoranthene	8 ^e	----- ^c	170 ^e	----- ^c	5	25	*
207-08-9	Benzo(k)fluroanthene	78 ^e	----- ^c	1,700 ^e	----- ^c	49	250	*
50-32-8	Benzo(a)pyrene	0.8 ^{e,x}	----- ^c	17 ^e	----- ^c	8	82	*
111-44-4	Bis(2-chloroethyl)ether	5 ^e	0.47 ^e	75 ^e	0.66 ^e	0.0004 ^e	0.0004	0.66
117-81-7	Bis(2-ethylhexyl)phthalate	410 ^e	31,000 ^d	4,100 ^b	31,000 ^d	3,600	31,000 ^d	*
75-27-4	Bromodichloromethane (Dichlorobromomethane)	92 ^e	3,000 ^d	2,000 ^e	3,000 ^d	0.6	0.6	*
75-25-2	Bromoform	720 ^c	100 ^e	16,000 ^e	140 ^e	0.8	0.8	*
71-36-3	Butanol	200,000 ^b	10,000 ^d	200,000 ^b	10,000 ^d	17 ^b	17	NA
85-68-7	Butyl benzyl phthalate	410,000 ^b	930 ^d	410,000 ^b	930 ^d	930 ^d	930 ^d	*
86-74-8	Carbazole	290 ^e	----- ^c	6,200 ^e	----- ^c	0.6 ^e	2.8	NA

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	ClassII (mg/kg)	
1563-66-2	Carbofuran ^o	10,000 ^b	----- ^c	1,000 ^b	----- ^c	0.22	1.1	NA
75-15-0	Carbon disulfide	200,000 ^b	720 ^d	20,000 ^b	9.0 ^b	32 ^b	160	*
56-23-5	Carbon tetrachloride	44 ^e	0.64 ^e	410 ^b	0.90 ^e	0.07	0.33	*
57-74-9	Chlordane	16 ^e	140 ^e	100 ^b	22 ^b	10	48	*
106-47-8	4 – Chloroaniline (<i>p</i> -Chloroaniline)	8,200 ^b	----- ^c	820 ^b	----- ^c	0.7 ^b	0.7	*
108-90-7	Chlorobenzene (Monochlorobenzene)	41,000 ^b	210 ^b	4,100 ^b	1.3 ^b	1	6.5	*
124-48-1	Chlorodibromomethane (Dibromochloromethane)	41,000 ^b	1,300 ^d	41,000 ^b	1,300 ^d	0.4	0.4	*
67-66-3	Chloroform	940 ^e	0.54 ^e	2,000 ^b	0.76 ^e	0.6	2.9	*
218-01-9	Chrysene	780 ^e	----- ^c	17,000 ^e	----- ^e	160	800	*
94-75-7	2,4-D ^o	20,000 ^b	----- ^c	2,000 ^b	----- ^c	1.5	7.7	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial	Inhalation (mg/kg)	Construction Worker	Inhalation (mg/kg)	Class I (mg/kg)	Class II (mg/kg)	
75-99-0	Dalapon ^o	61,000 ^b	----- ^c	6,100 ^b	----- ^c	0.85	8.5	*
72-54-8	DDD	24 ^e	----- ^c	520 ^e	----- ^c	16 ^e	80	*
72-55-9	DDE	17 ^e	----- ^c	370 ^e	----- ^c	54 ^e	270	*
50-29-3	DDT	17 ^e	1,500 ^e	100 ^b	2,100 ^c	32 ^e	160	*
53-70-3	Dibenzo(<i>a,h</i>)anthracene	0.8 ^e	----- ^c	17 ^e	----- ^c	2	7.6	*
96-12-8	1,2-Dibromo-3-chloropropane	4 ^e	17 ^b	89 ^e	0.11 ^b	0.002	0.02	*
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	2.9 ^e	0.12 ^e	62 ^e	0.16 ^e	0.0004	0.004	0.005
84-74-2	Di- <i>n</i> -butyl phthalate	200,000 ^b	2,300 ^d	200,000 ^b	2,300 ^d	2,300 ^d	2,300 ^d	*
95-50-1	1,2-Dichlorobenzene (<i>o</i> -Dichlorobenzene)	180,000 ^b	560 ^d	18,000 ^b	310 ^b	17	43	*
106-46-7	1,4-Dichlorobenzene (<i>p</i> -Dichlorobenzene)	----- ^c	17,000 ^b	----- ^c	340 ^b	2	11	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	ClassII (mg/kg)	
91-94-1	3,3'-Dichlorobenzidine	13 ^e	----- ^c	280 ^e	----- ^c	0.007 ^e	0.033	1.3
75-34-3	1,1-Dichloroethane	200,000 ^b	1,700 ^d	200,000 ^b	130 ^b	23 ^b	110	*
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	63 ^e	0.70 ^e	1,400 ^e	0.99 ^e	0.02	0.1	*
75-35-4	1,1-Dichloroethylene	100,000 ^b	470 ^b	10,000 ^b	3.0 ^b	0.06	0.3	*
156-59-2	<i>cis</i> -1,2-Dichloroethylene	20,000 ^b	1,200 ^d	20,000 ^b	1,200 ^d	0.4	1.1	*
156-60-5	<i>Trans</i> -1,2-Dichloroethylene	41,000 ^b	3,100 ^d	41,000 ^b	3,100 ^d	0.7	3.4	*
78-87-5	1,2-Dichloropropane	84 ^e	23 ^b	1,800 ^e	0.50 ^b	0.03	0.15	*
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i>)	57 ^e	2.1 ^e	1,200 ^e	0.39 ^b	0.004 ^e	0.02	0.005
60-57-1	Dieldrin ⁿ	0.4 ^e	2.2 ^e	7.8 ^e	3.1 ^e	0.004 ^e	0.02	0.603
84-66-2	Diethyl phthalate	1,000,000 ^b	2,000 ^d	1,000,000 ^b	2,000 ^d	470 ^b	470	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial		Construction Worker		Class I (mg/kg)	Class II (mg/kg)	
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
105-67-9	2,4-Dimethylphenol	41,000 ^b	----- ^c	41,000 ^b	----- ^c	9 ^b	9	*
121-14-2	2,4-Dinitrotoluene	8.4 ^e	----- ^c	180 ^e	----- ^c	0.0008 ^e	0.0008	0.250
606-20-2	2,6-Dinitrotoluene	8.4 ^e	----- ^c	180 ^e	----- ^c	0.0007 ^e	0.0007	0.260
117-84-0	Di- <i>n</i> -octyl phthalate	41,000 ^e	10,000 ^d	4,100 ^b	10,000 ^d	10,000 ^d	10,000 ^d	*
115-29-7	Endosulfan ^o	12,000 ^b	----- ^c	1,200 ^b	----- ^c	18 ^b	90	*
145-73-3	Endothall ^o	41,000 ^c	----- ^c	4,100 ^b	----- ^c	0.4	0.4	NA
72-20-8	Endrin	610 ^b	----- ^c	61 ^b	----- ^c	1	5	*
100-41-4	Ethylbenzene	200,000 ^b	400 ^d	20,000 ^b	58 ^b	13	19	*
206-44-0	Fluoranthene	82,000 ^b	----- ^c	82,000 ^b	----- ^c	4,300 ^b	21,000	*
86-73-7	Fluorene	82,000 ^b	----- ^c	82,000 ^b	----- ^c	560 ^b	2,800	*
76-44-8	Heptachlor	1 ^e	11 ^e	28 ^e	16 ^e	23	110	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial	Inhalation (mg/kg)	Construction Worker	Inhalation (mg/kg)	Class I (mg/kg)	ClassII (mg/kg)	
1024-57-3	Heptachlor epoxide	0.6 ^e	9.2 ^e	2.7 ^b	13 ^e	0.7	3.3	1.005
118-74-1	Hexachlorobenzene	4 ^e	1.8 ^e	78 ^e	2.6 ^e	2	11	*
319-84-6	<i>Alpha</i> -HCH (<i>alpha</i> -BHC)	0.9 ^e	1.5 ^e	20 ^e	2.1 ^e	0.0005 ^e	0.003	0.0074
58-89-9	<i>Gamma</i> -HCH (Lindane) ⁿ	4 ^e	----- ^c	96 ^e	----- ^c	0.009	0.047	*
77-47-4	Hexachlorocyclopentadiene	14,000 ^b	16 ^b	14,000 ^b	1.1 ^b	400	2,200 ^d	*
67-72-1	Hexachloroethane	2,000 ^b	----- ^c	2,000 ^b	----- ^c	0.5 ^b	2.6	*
193-39-5	Indeno(1,2,3- <i>c,d</i>)pyrene	8 ^e	----- ^c	170 ^e	----- ^c	14	69	*
78-59-1	Isophorone	410,000 ^b	4,600 ^d	410,000 ^b	4,600 ^d	8 ^b	8	*
72-43-5	Methoxychlor ^o	10,000 ^b	----- ^c	1,000 ^b	----- ^c	160	780	*
74-83-9	Methyl bromide (Bromomethane)	2,900 ^b	15 ^b	1,000 ^b	3.9 ^b	0.2 ^b	1.2	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/kg)	ClassII (mg/kg)	
1634-04-4	Methyl tertiary-butyl ether	20,000 ^b	8,800 ^d	2,000 ^b	140 ^b	0.32	0.32	*
75-09-2	Methylene chloride (Dichloromethane)	760 ^e	24 ^e	12,000 ^b	34 ^e	0.02 ^e	0.2	*
95-48-7	2-Methylphenol (<i>o</i> - Cresol)	100,000 ^b	----- ^c	100,000 ^b	----- ^c	15 ^b	15	*
86-30-6	<i>N</i> -Nitrosodiphenylamine	1,200 ^e	----- ^c	25,000 ^e	----- ^c	1 ^e	5.6	*
621-64-7	<i>N</i> -Nitrosodi- <i>n</i> -propylamine	0.8 ^e	----- ^c	18 ^e	----- ^c	0.00005 ^e	0.00005	0.0018
91-20-3	Naphthalene	41,000 ^b	270 ^b	4,100 ^b	1.8 ^b	12 ^b	18	*
98-95-3	Nitrobenzene	1,000 ^b	140 ^b	1,000 ^b	9.4 ^b	0.1 ^b	0.1	0.26
108-95-2	Phenol	610,000 ^b	----- ^c	61,000 ^b	----- ^c	100 ^b	100	*
1918-02-1	Picloram ^o	140,000 ^b	----- ^c	14,000 ^b	----- ^c	2	20	NA
1336-36-3	Polychlorinated biphenyls (PCBs) ⁿ	1 ^h	----- ^{c,h}	1 ^h	----- ^{c,h}	----- ^h	----- ^h	*
129-00-0	Pyrene	61,000 ^b	----- ^c	61,000 ^b	----- ^c	4,200 ^b	21,000	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial	Inhalation (mg/kg)	Construction Worker	Inhalation (mg/kg)	Class I (mg/kg)	ClassII (mg/kg)	
122-34-9	Simazine ^o	10,000 ^b	----- ^c	1,000 ^b	----- ^c	0.04	0.37	NA
100-42-5	Styrene	410,000 ^b	1,500 ^d	41,000 ^b	430 ^b	4	18	*
127-18-4	Tetrachloroethylene (Perchloroethylene)	110 ^e	20 ^e	2,400 ^e	28 ^e	0.06	0.3	*
108-88-3	Toluene	410,000 ^b	650 ^d	410,000 ^b	42 ^b	12	29	*
8001-35-2	Toxaphene ⁿ	5.2 ^e	170 ^e	110 ^e	240 ^e	31	150	*
120-82-1	1,2,4-Trichlorobenzene	20,000 ^b	3,200 ^d	2,000 ^b	920 ^b	5	53	*
71-55-6	1,1,1-Trichloroethane	----- ^c	1,200 ^d	----- ^c	1,200 ^d	2	9.6	*
79-00-5	1,1,2-Trichloroethane	8,200 ^b	1,800 ^d	8,200 ^b	1,800 ^d	0.02	0.3	*
79-01-6	Trichloroethylene	520 ^e	8.9 ^e	1,200 ^b	12 ^e	0.06	0.3	*
108-05-4	Vinyl acetate	1,000,000 ^b	1,600 ^b	200,000 ^b	10 ^b	170 ^b	170	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial	Inhalation (mg/kg)	Construction Worker	Inhalation (mg/kg)	Class I (mg/kg)	ClassII (mg/kg)	
75-01-4	Vinyl chloride	7.9 ^e	1.1 ^e	170 ^e	1.1 ^b	0.01	0.07	*
108-38-3	m-Xylene	410,000 ^b	420 ^d	41,000 ^b	6.4 ^b	210	210	*
95-47-6	o-Xylene	410,000 ^b	410 ^d	41,000 ^b	6.5 ^b	190	190	*
106-42-3	p-Xylene	410,000 ^b	460 ^d	41,000 ^b	5.9 ^b	200	200	*
1330-20-7	Xylenes (total)	410,000 ^b	320 ^d	41,000 ^b	5.6 ^b	150	150	*
	Ionizable Organics							
65-85-0	Benzoic Acid	1,000,000 ^b	----- ^c	820,000 ^b	----- ^c	400 ^{b,i}	400 ⁱ	*
95-57-8	2-Chlorophenol	10,000 ^b	53,000 ^d	10,000 ^b	53,000 ^d	4 ^{b,i}	20 ⁱ	*
120-83-2	2,4-Dichlorophenol	6,100 ^b	----- ^c	610 ^b	----- ^c	1 ^{b,i}	1 ⁱ	*
51-28-5	2,4-Dinitrophenol	4,100 ^b	----- ^c	410 ^b	----- ^c	0.2 ^{b,i}	0.2 ⁱ	3.3
88-85-7	Dinoseb ^o	2,000 ^b	----- ^c	200 ^b	----- ^c	0.34 ^{b,i}	3.4 ⁱ	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial		Construction Worker		Class I (mg/kg)	ClassII (mg/kg)	
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
87-86-5	Pentachlorophenol	24 ^{e,j}	----- ^c	520 ^{e,j}	----- ^c	0.03 ⁱ	0.14 ⁱ	*
93-72-1	2,4,5-TP (Silvex)	16,000 ^b	----- ^c	1,600 ^b	----- ^c	11 ⁱ	55 ⁱ	*
95-95-4	2,4,5-Trichlorophenol	200,000 ^b	----- ^c	200,000 ^b	----- ^c	270 ^{b,i}	1,400 ⁱ	*
88-06-2	2,4,6- Trichlorophenol	520 ^e	390 ^e	11,000 ^e	540 ^e	0.2 ^{e,i}	0.77 ⁱ	0.66

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial	Inhalation (mg/kg)	Construction Worker	Inhalation (mg/kg)	Class I (mg/L)	Class II (mg/L)	
	Inorganics							
7440-36-0	Antimony	820 ^b	----- ^c	82 ^b	----- ^c	0.006 ^m	0.024 ^m	*
7440-38-2	Arsenic ^{l,n}	--- ^t	1,200 ^e	61 ^b	25,000 ^e	0.05 ^m	0.2 ^m	*
7440-39-3	Barium	140,000 ^b	910,000 ^b	14,000 ^b	870,000 ^b	2.0 ^m	2.0 ^m	*
7440-41-7	Beryllium	4,100 ^b	2,100 ^e	410 ^b	44,000 ^e	0.004 ^m	0.5 ^m	*
7440-42-8	Boron	410,000 ^b	--- ^c	41,000 ^b	--- ^c	2.0 ^m	2.0 ^m	*
7440-43-9	Cadmium ^{l,n}	2,000 ^{b,r}	2,800 ^e	200 ^{b,r}	59,000 ^e	0.005 ^m	0.05 ^m	*
7440-70-2	Calcium ⁿ	--- ^g	--- ^c	--- ^g	--- ^c	--- ^c	--- ^c	*
16887-00-6	Chloride	----- ^c	----- ^c	----- ^c	----- ^c	200 ^m	200 ^m	*
7440-47-3	Chromium, total	6,100 ^b	420 ^e	4,100 ^b	690 ^b	0.1 ^m	1.0 ^m	*
16065-83-1	Chromium, ion, trivalent	1,000,000 ^b	----- ^c	310,000 ^b	----- ^c	----- ^g	----- ^g	*
18540-29-9	Chromium, ion, hexavalent	6,100 ^b	420 ^e	4,100 ^b	690 ^b	-----	-----	*

		Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		
		Industrial-Commercial		Construction Worker				
CAS No.	Chemical Name	Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)	Class I (mg/L)	Class II (mg/L)	ADL (mg/kg)
7440-48-4	Cobalt	120,000 ^b	----- ^c	12,000 ^b	----- ^c	1.0 ^m	1.0 ^m	*
7440-50-8	Copper ⁿ	82,000 ^b	----- ^c	8,200 ^b	----- ^c	0.65 ^m	0.65 ^m	*
57-12-5	Cyanide (amenable)	41,000 ^b	----- ^c	4,100 ^b	----- ^c	0.2 ^{q,m}	0.6 ^{q,m}	*
7782-41-4	Fluoride	120,000 ^b	----- ^c	12,000 ^b	----- ^c	4.0 ^m	4.0 ^m	*
15438-31-0	Iron	----- ^c	----- ^c	----- ^c	----- ^c	5.0 ^m	5.0 ^m	*
7439-92-1	Lead	800 ^y	----- ^c	700 ^y	----- ^c	0.0075 ^m	0.1 ^m	*
7439-95-4	Magnesium ⁿ	--- ^g	--- ^c	730,000	--- ^c	--- ^c	--- ^c	*
7439-96-5	Manganese	41,000 ^{b,w}	91,000 ^b	4,100 ^{b,w}	8,700 ^b	0.15 ^m	10.0 ^m	*
7439-97-6	Mercury ^{l,n,s}	610 ^b	16 ^b	61 ^b	0.1 ^b	0.002 ^m	0.01 ^m	*
7440-02-0	Nickel ^l	41,000 ^b	21,000 ^e	4,100 ^b	440,000 ^e	0.1 ^m	2.0 ^m	*
14797-55-8	Nitrate as N ^p	1,000,000 ^b	----- ^c	330,000 ^b	----- ^c	10.0 ^{q,m}	100 ^q	*
7723-14-0	Phosphorus ⁿ	--- ^g	--- ^c	--- ^g	--- ^c	--- ^c	--- ^c	*

CAS No.	Chemical Name	Exposure Route-Specific Values for Soils				Soil Component of the Groundwater Ingestion Exposure Route Values		ADL (mg/kg)
		Industrial-Commercial		Construction Worker		Class I (mg/L)	Class II (mg/L)	
		Ingestion (mg/kg)	Inhalation (mg/kg)	Ingestion (mg/kg)	Inhalation (mg/kg)			
7440-09-7	Potassium ⁿ	--- ^g	--- ^c	--- ^g	--- ^c	--- ^c	--- ^c	*
7782-49-2	Selenium ^{l,n}	10,000 ^b	---- ^c	1,000 ^b	---- ^c	0.05 ^m	0.05 ^m	*
7440-22-4	Silver	10,000 ^b	---- ^c	1,000 ^b	---- ^c	0.05 ^m	----	*
7440-23-5	Sodium ⁿ	--- ^g	--- ^c	--- ^g	--- ^c	--- ^c	--- ^c	*
14808-79-8	Sulfate	---- ^c	---- ^c	---- ^c	---- ^c	400 ^m	400 ^m	*
7440-28-0	Thallium	160 ^{b,u}	---- ^c	160 ^{b,u}	---- ^c	0.002 ^m	0.02 ^m	*
7440-62-2	Vanadium	14,000 ^b	---- ^c	1,400 ^b	---- ^c	0.049 ^m	0.1 ^m	*
7440-66-6	Zinc ^l	610,000 ^b	---- ^c	61,000 ^b	---- ^c	5.0 ^m	10 ^m	*

“*” indicates that the ADL is less than or equal to the specified remediation objective.

NA means Not Available; no PQL or EQL available in USEPA analytical methods.

Chemical Name and Soil Remediation Objective Notations (2nd, 5th thru 8th Columns)

^a oil remediation objectives based on human health criteria only.

^b Calculated values correspond to a target hazard quotient of 1.

^c No toxicity criteria available for this route of exposure.

- ^d Soil saturation concentration ($C_{[sat]}$) = the concentration at which the absorptive limits of the soil particles, the solubility limits of the available soil moisture, and saturation of soil pore air have been reached. Above the soil saturation concentration, the assumptions regarding vapor transport to air and/or dissolved phase transport to groundwater (for chemicals which are liquid at ambient soil temperatures) have been violated, and alternative modeling approaches are required.
- ^e Calculated values correspond to a cancer risk level of 1 in 1,000,000.
- ^g Chemical-specific properties are such that this route is not of concern at any soil contaminant concentration.
- ^h 40 CFR 761 contains applicability requirements and methodologies for the development of PCB remediation objectives. Requests for approval of a Tier 3 evaluation must address the applicability of 40 CFR 761.
- ⁱ Soil remediation objective for pH of 6.8. If soil pH is other than 6.8, refer to Appendix B, Tables C and D in this Part.
- ^j Ingestion soil remediation objective adjusted by a factor of 0.5 to account for dermal route.
- ^l Potential for soil-plant-human exposure.
- ^m The person conducting the remediation has the option to use: (1) TCLP or SPLP test results to compare with the remediation objectives listed in this Table; (2) the total amount of contaminant in the soil sample results to compare with pH specific remediation objectives listed in Appendix B, Table C or D of this Part (see Section 742.510); or (3) the appropriate background value listed in Appendix A, Table G. If the person conducting the remediation wishes to calculate soil remediation objectives based on background concentrations, this should be done in accordance with Subpart D of this Part.
- ⁿ The Agency reserves the right to evaluate the potential for remaining contaminant concentrations to pose significant threats to crops, livestock, or wildlife.
- ^o For agricultural facilities, remediation objectives for surficial soils which are based on field application rates may be more appropriate for currently registered pesticides. Consult the Agency for further information.
- ^p For agricultural facilities, soil remediation objectives based on site-specific background concentrations of Nitrate as N may be more appropriate. Such determinations shall be conducted in accordance with the procedures set forth in Subparts D and I of this Part.
- ^q The TCLP extraction must be done using water at a pH of 7.0.
- ^r Value based on dietary Reference Dose.
- ^s Value for Ingestion based on Reference Dose for Mercuric chloride (CAS No. 7487-94-7); value for Inhalation based on Reference Concentration for elemental Mercury (CAS No. 7439-97-6). Inhalation remediation objective only applies at sites where elemental mercury is a contaminant of concern.
- ^t For the ingestion route for arsenic for industrial/commercial, see 742.Appendix A, Table G.
- ^u Value based on Reference Dose for Thallium sulfate (CAS No. 7446-18-6).
- ^w Value based on Reference Dose adjusted for dietary intake.
- ^x For any populated areas as defined in Section 742.200, Appendix A, Table H may be used.

^y Value based on maintaining fetal blood lead below 10 ug/dl, using the USEPA adults Blood Lead Model.
(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX B Tier 1 Illustrations and Tables

Section 742.Table C pH Specific Soil Remediation Objectives for Inorganics and Ionizing Organics for the Soil Component of the Groundwater Ingestion Route (Class I Groundwater)

Chemical (totals) (mg/kg)	pH 4.5 to 4.74	pH 4.75 to 5.24	pH 5.25 to 5.74	pH 5.75 to 6.24	pH 6.25 to 6.64	pH 6.65 to 6.89	pH 6.9 to 7.24	pH 7.25 to 7.74	pH 7.75 to 8.24	pH 8.25 to 8.74	pH 8.75 to 9.0
Inorganics											
Antimony	5	5	5	5	5	5	5	5	5	5	5
Arsenic	25	26	27	28	29	29	29	30	31	32	33
Barium	260	490	850	1,200	1,500	1,600	1,700	1,800	2,100	___ ^a	___ ^a
Beryllium	1.1	2.1	3.4	6.6	22	63	140	1,000	8,000	___ ^a	___ ^a
Cadmium	1.0	1.7	2.7	3.7	5.2	7.5	11	59	430	___ ^a	___ ^a
Chromium (+6)	70	62	54	46	40	38	36	32	28	24	21
Copper	330	580	2,100	11,000	59,000	130,000	200,000	330,000	330,000	___ ^a	___ ^a
Cyanide	40	40	40	40	40	40	40	40	40	40	40
Lead	23	23	23	23	107	107	107	107	107	107	282
Mercury	0.01	0.01 ¹	0.03	0.15	0.89	2.1	3.3	6.4	8.0	___ ^a	___ ^a
Nickel	20	36	56	76	100	130	180	700	3,800	___ ^a	___ ^a
Selenium	24	17	12	8.8	6.3	5.2	4.5	3.3	2.4	1.8	1.3
Silver	0.24	0.33	0.62	1.5	4.4	8.5	13	39	110	___ ^a	___ ^a

Chemical (totals) (mg/kg)	pH 4.5 to 4.74	pH 4.75 to 5.24	pH 5.25 to 5.74	pH 5.75 to 6.24	pH 6.25 to 6.64	pH 6.65 to 6.89	pH 6.9 to 7.24	pH 7.25 to 7.74	pH 7.75 to 8.24	pH 8.25 to 8.74	pH 8.75 to 9.0
Thallium	1.6	1.8	2.0	2.4	2.6	2.8	3.0	3.4	3.8	4.4	4.9
Vanadium	980	980	980	980	980	980	980	980	980	980	980
Zinc	1,000	1,800	2,600	3,600	5,100	6,200	7,500	16,000	53,000	— ^a	— ^a
Organics											
Benzoic Acid	440	420	410	400	400	400	400	400	400	400	400
2-Chlorophenol	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.6	3.1	2.2	1.5
2,4-Dichlorophenol	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.86	0.69	0.56	0.48
Dinoseb	8.4	4.5	1.9	0.82	0.43	0.34	0.31	0.27	0.25	0.25	0.25
Pentachlorophenol	0.54	0.32	0.15	0.07	0.04	0.03	0.02	0.02	0.02	0.02	0.02
2,4,5-TP (Silvex)	26	16	12	11	11	11	11	11	11	11	11
2,4,5-Trichlorophenol	400	390	390	370	320	270	230	130	64	36	26
2,4,6-Trichlorophenol	0.37	0.36	0.34	0.29	0.20	0.15	0.13	0.09	0.07	0.07	0.07

^a No data available for this pH range.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX B Tier 1 Illustrations and Tables

Section 742.Table D pH Specific Soil Remediation Objectives for Inorganics and Ionizing Organics for the Soil Component of the Groundwater Ingestion Route (Class II Groundwater)

Chemical (totals) (mg/kg)	pH 4.5 to 4.74	pH 4.75 to 5.24	pH 5.25 to 5.74	pH 5.75 to 6.24	pH 6.25 to 6.64	pH 6.65 to 6.89	pH 6.9 to 7.24	pH 7.25 to 7.74	pH 7.75 to 8.24	pH 8.25 to 8.74	pH 8.75 to 9.0
Inorganics											
Antimony	20	20	20	20	20	20	20	20	20	20	20
Arsenic	100	100	100	110	110	120	120	120	120	130	130
Barium	260	490	850	1,200	1,500	1,600	1,700	1,800	2,100	___ ^a	___ ^a
Beryllium	140	260	420	820	2,800	7,900	17,000	130,000	1,000,000	___ ^a	___ ^a
Cadmium	10	17	27	37	52	75	110	590	4,300	___ ^a	___ ^a
Chromium (+6)	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
Copper	330	580	2,100	11,000	59,000	130,000	200,000	330,000	330,000	___ ^a	___ ^a
Cyanide	120	120	120	120	120	120	120	120	120	120	120
Lead	300	300	300	300	1,420	1,420	1,420	1,420	1,420	1,420	3,760
Mercury	0.05	0.06	0.14	0.75	4.4	10	16	32	40	___ ^a	___ ^a
Nickel	400	730	1,100	1,500	2,000	2,600	3,500	14,000	76,000	___ ^a	___ ^a
Selenium	24	17	12	8.8	6.3	5.2	4.5	3.3	2.4	1.8	1.3
Thallium	16	18	20	24	26	28	30	34	38	44	49

Chemical (totals) (mg/kg)	pH 4.5 to 4.74	pH 4.75 to 5.24	pH 5.25 to 5.74	pH 5.75 to 6.24	pH 6.25 to 6.64	pH 6.65 to 6.89	pH 6.9 to 7.24	pH 7.25 to 7.74	pH 7.75 to 8.24	pH 8.25 to 8.74	pH 8.75 to 9.0
Zinc	2,000	3,600	5,200	7,200	10,000	12,000	15,000	32,000	110,000	— ^a	— ^a
Organics											
Benzoic Acid	440	420	410	400	400	400	400	400	400	400	400
2-Chlorophenol	20	20	20	20	20	20	19	3.6	3.1	2.2	1.5
2,4- Dichlorophenol	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.86	0.69	0.56	0.48
Dinoseb	84	45	19	8.2	4.3	3.4	3.1	2.7	2.5	2.5	2.5
Pentachlorophenol	2.7	1.6	0.75	0.33	0.18	0.15	0.12	0.11	0.10	0.10	0.10
2,4,5-TP (Silvex)	130	79	62	57	55	55	55	55	55	55	55
2,4,5- Trichlorophenol	2,000	2,000	1,900	1,800	1,600	1,400	1,200	640	64	36	26
2,4,6- Trichlorophenol	1.9	1.8	1.7	1.4	1.0	0.77	0.13	0.09	0.07	0.07	0.07

^a No data available for this pH range.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX B Tier 1 Illustrations and Tables

Section 742.TABLE E Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Route

CAS No.	Chemical Name Organics	Groundwater Remediation Objective	
		Class I (mg/L)	Class II (mg/L)
83-32-9	Acenaphthene	0.42	2.1
67-64-1	Acetone	6.3	6.3
15972-60-8	Alachlor	0.002 ^c	0.01 ^c
116-06-3	Aldicarb	0.003 ^c	0.015 ^c
309-00-2	Aldrin	0.014 ^a	0.07
120-12-7	Anthracene	2.1	10.5
1912-24-9	Atrazine	0.003 ^c	0.015 ^c
71-43-2	Benzene	0.005 ^c	0.025 ^c
56-55-3	Benzo(<i>a</i>)anthracene	0.00013 ^a	0.00065
205-99-2	Benzo(<i>b</i>)fluoranthene	0.00018 ^a	0.0009
207-08-9	Benzo(<i>k</i>)fluoroanthene	0.00017 ^a	0.00085
50-32-8	Benzo(<i>a</i>)pyrene	0.0002 ^{a,c}	0.002 ^c
65-85-0	Benzoic Acid	28	28
111-44-4	Bis(2-chloroethyl)ether	0.01 ^a	0.01
117-81-7	Bis(2-ethylhexyl)phthalate (Di(2-ethylhexyl)phthalate)	0.006 ^c	0.06 ^c
75-27-4	Bromodichloromethane (Dichlorobromomethane)	0.0002 ^a	0.0002
75-25-2	Bromoform	0.001 ^a	0.001
71-36-3	Butanol	0.7	0.7
85-68-7	Butyl benzyl phthalate	1.4	7.0
86-74-8	Carbazole	---	---
1563-66-2	Carbofuran	0.04 ^c	0.2 ^c
75-15-0	Carbon disulfide	0.7	3.5
56-23-5	Carbon tetrachloride	0.005 ^c	0.025 ^c
57-74-9	Chlordane	0.002 ^c	0.01 ^c

CAS No.	Chemical Name	Groundwater Remediation Objective	
		Class I (mg/L)	Class II (mg/L)
106-47-8	4-Chloroaniline (<i>p</i> -Chloroaniline)	0.028	0.028
108-90-7	Chlorobenzene (Monochlorobenzene)	0.1 ^c	0.5 ^c
124-48-1	Chlorodibromomethane (Dibromochloromethane)	0.14	0.14
67-66-3	Chloroform	0.0002 ^a	0.001
95-57-8	2-Chlorophenol (pH 4.9-7.3)	0.035	0.175
	2-Chlorophenol (pH 7.4-8.0)	0.035	0.035
218-01-9	Chrysene	0.0015 ^a	0.0075
94-75-7	2,4-D	0.07 ^c	0.35 ^c
75-99-0	Dalapon	0.2 ^c	2.0 ^c
72-54-8	DDD	0.014 ^a	0.07
72-55-9	DDE	0.01 ^a	0.05
50-29-3	DDT	0.006 ^a	0.03
53-70-3	Dibenzo(<i>a,h</i>)anthracene	0.0003 ^a	0.0015
96-12-8	1,2-Dibromo-3-chloropropane	0.0002 ^c	0.002 ^c
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.00005 ^c	0.0005 ^c
84-74-2	Di- <i>n</i> -butyl phthalate	0.7	3.5
95-50-1	1,2-Dichlorobenzene (<i>o</i> -Dichlorobenzene)	0.6 ^c	1.5 ^c
106-46-7	1,4-Dichlorobenzene (<i>p</i> -Dichlorobenzene)	0.075 ^c	0.375 ^c
91-94-1	3,3'-Dichlorobenzidine	0.02 ^a	0.1
75-34-3	1,1-Dichloroethane	0.7	3.5
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	0.005 ^c	0.025 ^c
75-35-4	1,1-Dichloroethylene ^b	0.007 ^c	0.035 ^c
156-59-2	<i>cis</i> -1,2-Dichloroethylene	0.07 ^c	0.2 ^c
156-60-5	<i>trans</i> -1,2-Dichloroethylene	0.1 ^c	0.5 ^c
120-83-2	2,4-Dichlorophenol	0.021	0.021

78-87-5	1,2-Dichloropropane	0.005 ^c	0.025 ^c
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i>)	0.001 ^a	0.005

CAS No.	Chemical Name	Groundwater Remediation Objective	
		Class I (mg/L)	Class II (mg/L)
60-57-1	Dieldrin	0.009 ^a	0.045
84-66-2	Diethyl phthalate	5.6	5.6
105-67-9	2,4-Dimethylphenol	0.14	0.14
51-28-5	2,4-Dinitrophenol	0.014	0.014
121-14-2	2,4-Dinitrotoluene	0.00002 ^a	0.00002
606-20-2	2,6-Dinitrotoluene	0.00031 ^a	0.00031
88-85-7	Dinoseb	0.007 ^c	0.07 ^c
117-84-0	Di- <i>n</i> -octyl phthalate	0.14	0.7
115-29-7	Endosulfan	0.042	0.21
145-73-3	Endothall	0.1 ^c	0.1 ^c
72-20-8	Endrin	0.002 ^c	0.01 ^c
100-41-4	Ethylbenzene	0.7 ^c	1.0 ^c
206-44-0	Fluoranthene	0.28	1.4
86-73-7	Fluorene	0.28	1.4
76-44-8	Heptachlor	0.0004 ^c	0.002 ^c
1024-57-3	Heptachlor epoxide	0.0002 ^c	0.001 ^c
118-74-1	Hexachlorobenzene	0.00006 ^a	0.0003
319-84-6	<i>alpha</i> -HCH (<i>alpha</i> -BHC)	0.00011 ^a	0.00055
58-89-9	<i>Gamma</i> -HCH (Lindane)	0.0002 ^c	0.001 ^c
77-47-4	Hexachlorocyclopentadiene	0.05 ^c	0.5 ^c
67-72-1	Hexachloroethane	0.007	0.035
193-39-5	Indeno(1,2,3- <i>c,d</i>)pyrene	0.00043 ^a	0.00215
78-59-1	Isophorone	1.4	1.4
72-43-5	Methoxychlor	0.04 ^c	0.2 ^c
74-83-9	Methyl bromide (Bromomethane)	0.0098	0.049
1634-04-4	Methyl tertiary-butyl ether	0.07	0.07
75-09-2	Methylene chloride (Dichloromethane)	0.005 ^c	0.05 ^c
95-48-7	2-Methylphenol (<i>o</i> -Cresol)	0.35	0.35
91-20-3	Naphthalene	0.14	0.22

98-95-3	Nitrobenzene ^b	0.0035	0.0035
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CAS No.	Chemical Name	Groundwater Remediation Objective	
		Class I (mg/L)	Class II (mg/L)
86-30-6	<i>N</i> -Nitrosodiphenylamine	0.0032 ^a	0.016
621-64-7	<i>N</i> -Nitrosodi- <i>n</i> -propylamine	0.0018 ^a	0.0018
87-86-5	Pentachlorophenol	0.001 ^c	0.005 ^c
108-95-2	Phenol	0.1 ^c	0.1 ^c
1918-02-1	Picloram	0.5 ^c	5.0 ^c
1336-36-3	Polychlorinated biphenyls (PCBs)	0.0005 ^c	0.0025 ^c
129-00-0	Pyrene	0.21	1.05
122-34-9	Simazine	0.004 ^c	0.04 ^c
100-42-5	Styrene	0.1 ^c	0.5 ^c
93-72-1	2,4,5-TP (Silvex)	0.05 ^c	0.25 ^c
127-18-4	Tetrachloroethylene (Perchloroethylene)	0.005 ^c	0.025 ^c
108-88-3	Toluene	1.0 ^c	2.5 ^c
8001-35-2	Toxaphene	0.003 ^c	0.015 ^c
120-82-1	1,2,4-Trichlorobenzene	0.07 ^c	0.7 ^c
71-55-6	1,1,1-Trichloroethane ^b	0.2 ^c	1.0 ^c
79-00-5	1,1,2-Trichloroethane	0.005 ^c	0.05 ^c
79-01-6	Trichloroethylene	0.005 ^c	0.025 ^c
95-95-4	2,4,5-Trichlorophenol (pH 4.9-7.8)	0.7	3.5
	2,4,5-Trichlorophenol (pH 7.9-8.0)	0.7	0.7
88-06-2	2,4,6-Trichlorophenol (pH 4.9-6.8)	0.01 ^a	0.05
	2,4,6-Trichlorophenol (pH 6.9-8.0)	0.01	0.01
108-05-4	Vinyl acetate	7.0	7.0
75-01-4	Vinyl chloride	0.002 ^c	0.01 ^c
1330-20-7	Xylenes (total)	10.0 ^c	10.0 ^c

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CAS No.	Chemical Name	Groundwater Remediation Objective	
		Class I (mg/L)	Class II (mg/L)
	Inorganics		
7440-36-0	Antimony	0.006 ^c	0.024 ^c
7440-38-2	Arsenic	0.05 ^c	0.2 ^c
7440-39-3	Barium	2.0 ^c	2.0 ^c
7440-41-7	Beryllium	0.004 ^c	0.5 ^c
7440-42-8	Boron	2.0 ^c	2.0 ^c
7440-43-9	Cadmium	0.005 ^c	0.05 ^c
7440-70-2	Calcium	--- ^d	--- ^d
16887-00-6	Chloride	200 ^c	200 ^c
7440-47-3	Chromium, total	0.1 ^c	1.0 ^c
18540-29-9	Chromium, ion, hexavalent	---	---
7440-48-4	Cobalt	1.0 ^c	1.0 ^c
7440-50-8	Copper	0.65 ^c	0.65 ^c
57-12-5	Cyanide	0.2 ^c	0.6 ^c
7782-41-4	Fluoride	4.0 ^c	4.0 ^c
15438-31-0	Iron	5.0 ^c	5.0 ^c
7439-92-1	Lead	0.0075 ^c	0.1 ^c
7439-95-4	Magnesium	--- ^d	--- ^d
7439-96-5	Manganese	0.15 ^c	10.0 ^c
7439-97-6	Mercury	0.002 ^c	0.01 ^c
7440-02-0	Nickel	0.1 ^c	2.0 ^c
14797-55-8	Nitrate as N	10.0 ^c	100 ^c
7723-14-0	Phosphorus	--- ^d	--- ^d
7440-09-7	Potassium	--- ^d	--- ^d
7782-49-2	Selenium	0.05 ^c	0.05 ^c

CAS No.	Chemical Name	Groundwater Remediation Objective	
		Class I (mg/L)	Class II (mg/L)
7440-22-4	Silver	0.05 ^c	---
7440-23-5	Sodium	--- ^d	--- ^d
14808-79-8	Sulfate	400 ^c	400 ^c
7440-28-0	Thallium	0.002 ^c	0.02 ^c
7440-62-2	Vanadium ^b	0.049	0.1
7440-66-6	Zinc	5.0 ^c	10 ^c

Chemical Name and Groundwater Remediation Objective Notations

- ^a The groundwater remediation objective is equal to the ADL for carcinogens according to the procedures specified in 35 Ill. Adm. Code 620.
- ^b Oral Reference Dose and/or Reference Concentration under review by USEPA. Listed values subject to change.
- ^c Value listed is also the Groundwater Quality Standard for this chemical pursuant to 35 Ill. Adm. Code 620.410 for Class I Groundwater or 35 Ill. Adm. Code 620.420 for Class II Groundwater.
- ^d This chemical is included in the Total Dissolved Solids (TDS) Groundwater Quality Standard of 1,200 mg/l pursuant to 35 Ill. Adm. Code 620.410 for Class I Groundwater or 35 Ill. Adm. Code 620.420 for Class II Groundwater.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX B Tier 1 Illustrations and Tables

Section 742.TABLE F Values Used to Calculate the Tier 1 Soil Remediation Objectives for the Soil Component of the Groundwater Ingestion Route

CAS No.	Chemical Name Organics	GW _{obj} Concentration used to Calculate Tier 1 Soil Remediation Objectives ^a	
		Class I (mg/L)	Class II (mg/L)
83-32-9	Acenaphthene	2.0 ^b	10
67-64-1	Acetone	6.3	6.3
15972-60-8	Alachlor	0.002 ^c	0.01 ^c
116-06-3	Aldicarb	0.003 ^c	0.015 ^c
309-00-2	Aldrin	5.0E-6 ^b	2.5E-5
120-12-7	Anthracene	10 ^b	50
1912-24-9	Atrazine	0.003 ^c	0.015 ^c
71-43-2	Benzene	0.005 ^c	0.025 ^c
56-55-3	Benzo(<i>a</i>)anthracene	0.0001 ^b	0.0005
205-99-2	Benzo(<i>b</i>)fluoranthene	0.0001 ^b	0.0005
207-08-9	Benzo(<i>k</i>)fluroanthene	0.001 ^b	0.005
50-32-8	Benzo(<i>a</i>)pyrene	0.0002 ^{a,c}	0.002 ^c
65-85-0	Benzoic Acid	100 ^b	100
111-44-4	Bis(2-chloroethyl)ether	8.0E-5 ^b	8.0E-5
117-81-7	Bis(2-ethylhexyl)phthalate (Di(2-ethylhexyl)phthalate)	0.006 ^{a,c}	0.06 ^c
75-27-4	Bromodichloromethane (Dichlorobromomethane)	0.1 ^b	0.1
75-25-2	Bromoform	0.1 ^b	0.01
71-36-3	Butanol	4.0 ^b	4.0
85-68-7	Butyl benzyl phthalate	7.0 ^b	35
86-74-8	Carbazole	0.004 ^b	0.02
1563-66-2	Carbofuran	0.04 ^c	0.2 ^c
75-15-0	Carbon disulfide	4.0 ^b	20
56-23-5	Carbon tetrachloride	0.005 ^c	0.025 ^c
57-74-9	Chlordane	0.002 ^c	0.01 ^c

CAS No.	Chemical Name	GW _{obj} Concentration used to Calculate Tier 1 Soil Remediation Objectives ^a	
		Class I (mg/L)	Class II (mg/L)
106-47-8	4-Chloroaniline (p-Chloroaniline)	0.1 ^b	0.1
108-90-7	Chlorobenzene (Monochlorobenzene)	0.1 ^c	0.5 ^c
124-48-1	Chlorodibromomethane (Dibromochloromethane)	0.06 ^b	0.06
67-66-3	Chloroform	0.1 ^b	0.5
95-57-8	2-Chlorophenol (pH 4.9-7.3)	0.2 ^b	1.0
	2-Chlorophenol (pH 7.4-8.0)	0.2	0.2
218-01-9	Chrysene	0.1 ^b	0.05
94-75-7	2,4-D	0.07 ^c	0.35 ^c
75-99-0	Dalapon	0.2 ^c	2.0 ^c
72-54-8	DDD	0.0004 ^b	0.002
72-55-9	DDE	0.0003 ^b	0.0015
50-29-3	DDT	0.0003 ^b	0.0015
53-70-3	Dibenzo(a,h)anthracene	1.0E-5 ^b	5.0E-5
96-12-8	1,2-Dibromo-3-chloropropane	0.0002 ^c	0.002 ^c
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.00005 ^{a,c}	0.0005 ^c
84-74-2	Di-n-butyl phthalate	4.0 ^b	20
95-50-1	1,2-Dichlorobenzene (o - Dichlorobenzene)	0.6 ^c	1.5 ^c
106-46-7	1,4-Dichlorobenzene (p - Dichlorobenzene)	0.075 ^c	0.375 ^c
91-94-1	3,3'-Dichlorobenzidine	0.0002 ^b	0.001
75-34-3	1,1-Dichloroethane	4.0 ^b	20
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	0.005 ^c	0.025 ^c
75-35-4	1,1-Dichloroethylene	0.007 ^c	0.035 ^c
156-59-2	cis-1,2-Dichloroethylene	0.07 ^c	0.2 ^c
156-60-5	trans-1,2-Dichloroethylene	0.1 ^c	0.5 ^c

120-83-2	2,4-Dichlorophenol	0.1 ^b	0.1
78-97-5	1,2-Dichloropropane	0.005 ^c	0.025 ^c
542-75-6	1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i>)	0.0005 ^b	0.0025

CAS No.	Chemical Name	GW _{obj} Concentration used to Calculate Tier 1 Soil Remediation Objectives ^a	
		Class I (mg/L)	Class II (mg/L)
60-57-1	Dieldrin	5.0E-6 ^b	2.5E-5
84-66-2	Diethyl phthalate	30 ^b	30
105-67-9	2,4-Dimethylphenol	0.7 ^b	0.7
51-28-5	2,4-Dinitrophenol	0.04 ^b	0.04
121-14-2	2,4-Dinitrotoluene	0.0001 ^b	0.0001
606-20-2	2,6-Dinitrotoluene	0.0001	0.0001
88-85-7	Dinoseb	0.007 ^c	0.07 ^c
117-84-0	Di- <i>n</i> -octyl phthalate	0.7 ^b	3.5
115-29-7	Endosulfan	0.2 ^b	1.0
145-73-3	Endothall	0.1 ^c	0.1 ^c
72-20-8	Endrin	0.002 ^c	0.01 ^c
100-41-4	Ethylbenzene	0.7 ^c	1.0 ^c
206-44-0	Fluoranthene	1.0 ^b	5.0
86-73-7	Fluorene	1.0 ^b	5.0
76-44-8	Heptachlor	0.0004 ^c	0.002 ^c
1024-57-3	Heptachlor epoxide	0.0002 ^c	0.001 ^c
118-74-1	Hexachlorobenzene	0.001 ^b	0.005
319-84-6	<i>alpha</i> -HCH (<i>alpha</i> -BHC)	1.0E-5 ^b	5.0E-5
58-89-9	<i>Gamma</i> -HCH (Lindane)	0.0002 ^c	0.001 ^c
77-47-4	Hexachlorocyclopentadiene	0.05 ^c	0.5 ^c
67-72-1	Hexachloroethane	0.007	0.035
193-39-5	Indeno(1,2,3- <i>c,d</i>)pyrene	0.0001 ^b	0.0005
78-59-1	Isophorone	1.4	1.4
72-43-5	Methoxychlor	0.04 ^c	0.2 ^c
74-83-9	Methyl bromide (Bromomethane)	0.05 ^b	0.25
1634-04-4	Methyl tertiary-butyl ether	0.07	0.07
75-09-2	Methylene chloride (Dichloromethane)	0.005 ^c	0.05 ^c
95-48-7	2-Methylphenol (<i>o</i> -Cresol)	2.0 ^b	2.0

91-20-3	Naphthalene	0.14	0.22
98-95-3	Nitrobenzene	0.02 ^b	0.02

CAS No.	Chemical Name	GW _{obj} Concentration used to Calculate Tier 1 Soil Remediation Objectives ^a	
		Class I (mg/L)	Class II (mg/L)
86-30-6	<i>N</i> -Nitrosodiphenylamine	0.02 ^b	0.1
621-64-7	<i>N</i> -Nitrosodi- <i>n</i> -propylamine	1.0E-5 ^b	1.0E-5
87-86-5	Pentachlorophenol	0.001 ^{a,c}	0.005 ^c
108-95-2	Phenol	0.1 ^c	0.1 ^c
1918-02-1	Picloram	0.5 ^c	5.0 ^c
1336-36-3	Polychlorinated biphenyls (PCBs)	---	---
129-00-0	Pyrene	1.0 ^b	5.0
122-34-9	Simazine	0.004 ^c	0.04 ^c
100-42-5	Styrene	0.1 ^c	0.5 ^c
93-72-1	2,4,5-TP (Silvex)	0.05 ^c	0.25 ^c
127-18-4	Tetrachloroethylene (Perchloroethylene)	0.005 ^c	0.025 ^c
108-88-3	Toluene	1.0 ^c	2.5 ^c
8001-35-2	Toxaphene	0.003 ^c	0.015 ^c
120-82-1	1,2,4-Trichlorobenzene	0.07 ^c	0.7 ^c
71-55-6	1,1,1-Trichloroethane	0.2 ^c	1.0 ^c
79-00-5	1,1,2-Trichloroethane	0.005 ^c	0.05 ^c
79-01-6	Trichloroethylene	0.005 ^c	0.025 ^c
95-95-4	2,4,5-Trichlorophenol (pH 4.9-7.8)	4.0 ^b	20
	2,4,5-Trichlorophenol (pH 7.9-8.0)	4.0	4.0
88-06-2	2,4,6-Trichlorophenol (pH 4.9-6.8)	0.008 ^b	0.04
	2,4,6-Trichlorophenol (pH 6.9-8.0)	0.008	0.008
108-05-4	Vinyl acetate	40 ^b	40
75-01-4	Vinyl chloride	0.002 ^c	0.01 ^c
1330-20-7	Xylenes (total)	10.0 ^c	10.0 ^c

		GW _{obj} Concentration used to Calculate Tier 1 Soil Remediation Objectives ^a	
CAS No.	Chemical Name	Class I (mg/L)	Class II (mg/L)
	Inorganics		
7440-36-0	Antimony	0.006 ^c	0.024 ^c
7440-38-2	Arsenic	0.05 ^c	0.2 ^c
7440-39-3	Barium	2.0 ^c	2.0 ^c
7440-41-7	Beryllium	0.004 ^c	0.5 ^c
7440-42-8	Boron	2.0 ^c	2.0 ^c
7440-43-9	Cadmium	0.005 ^c	0.05 ^c
7440-70-2	Calcium	---	---
16887-00-6	Chloride	200 ^c	200 ^c
7440-47-3	Chromium, total	0.1 ^c	1.0 ^c
18540-29-9	Chromium, ion, hexavalent	---	---
7440-48-4	Cobalt	1.0 ^c	1.0 ^c
7440-50-8	Copper	0.65 ^c	0.65 ^c
57-12-5	Cyanide	0.2 ^c	0.6 ^c
7782-41-4	Fluoride	4.0 ^c	4.0 ^c
15438-31-0	Iron	5.0 ^c	5.0 ^c
7439-92-1	Lead	0.0075 ^c	0.1 ^c
7439-95-4	Magnesium	---	---
7439-96-5	Manganese	0.15 ^c	10.0 ^c
7439-97-6	Mercury	0.002 ^c	0.01 ^c
7440-02-0	Nickel	0.1 ^c	2.0 ^c
14797-55-8	Nitrate as N	10.0 ^c	100 ^c

CAS No.	Chemical Name	GW _{obj} Concentration used to Calculate Tier 1 Soil Remediation Objectives ^a	
		Class I (mg/L)	Class II (mg/L)
7723-14-0	Phosphorus	---	---
7440-09-7	Potassium	---	---
7782-49-2	Selenium	0.05 ^c	0.05 ^c
7440-22-4	Silver	0.05 ^c	---
7440-23-5	Sodium	---	---
14808-79-8	Sulfate	400 ^c	400 ^c
7440-28-0	Thallium	0.002 ^c	0.02 ^c
7440-62-2	Vanadium	0.049	0.1
7440-66-6	Zinc	5.0 ^c	10 ^c

Chemical Name and Groundwater Remediation Objective Notations

- ^a The Equation S17 is used to calculate the Soil Remediation Objective for the Soil Component of the Groundwater Ingestion Route; this equation requires calculation of the Target Soil Leachate Concentration (C_w) from Equation S18: $C_w = DF \times GW_{obj}$.
- ^b Value listed is the Water Health Based Limit (HBL) for this chemical from Soil Screening Guidance: User's Guide, incorporated by reference at Section 742.210. The HBL is equal to the non-zero MCLG (if available); the MCL (if available); or, for carcinogens, a cancer risk of 1.0E-6, and for noncarcinogens is equal to a Hazard Quotient of 1.0. NOTE: These GW_{obj} concentrations are not equal to the Tier 1 Groundwater Remediation Objectives for the Direct Ingestion of Groundwater Component of the Groundwater Ingestion Route, listed in Section 742.Appendix B, Table E.
- ^c Value listed is also the Groundwater Quality Standard for this chemical pursuant to 35 Ill. Adm. Code 620.410 for Class I Groundwater or 35 Ill. Adm. Code 620.420 for Class II Groundwater.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX B: Tier 1 Illustrations and Tables

Section 742.TABLE G: Tier 1 Soil Gas Remediation Objectives for the Outdoor Inhalation Exposure Route^a

CAS No.	Chemical Name	Residential (mg/m ³)	Industrial/Commercial (mg/m ³)	Construction Worker (mg/m ³)
67-64-1	Acetone	750,000 ^e	750,000 ^e	750,000 ^e
71-43-2	Benzene	420 ^c	800 ^c	1,100 ^c
111-44-4	Bis(2-chloroethyl)ether	1.3 ^c	2.4 ^c	3.4 ^c
75-27-4	Bromodichloromethane	450,000 ^e	450,000 ^e	450,000 ^e
75-25-2	Bromoform	1,800 ^c	3,500 ^c	4,900 ^c
71-36-3	Butanol	29,000 ^e	29,000 ^e	29,000 ^e
78-93-3	2-Butanone (MEK)	380,000 ^e	380,000 ^e	15,000 ^b
75-15-0	Carbon disulfide	1,500,000 ^e	1,500,000 ^e	48,000 ^b
56-23-5	Carbon tetrachloride	290 ^c	550 ^c	770 ^c
108-90-7	Chlorobenzene	36,000 ^b	57,000 ^b	3,700 ^b
124-48-1	Chlorodibromomethane	57,000 ^e	57,000 ^e	150 ^b
67-66-3	Chloroform	110 ^c	200 ^c	290 ^c
95-57-8	2-Chlorophenol	17,000 ^e	17,000 ^e	17,000 ^e
75-99-0	Dalapon	1,500 ^e	1,500 ^e	1,500 ^e
96-12-8	1,2-Dibromo-3-chloropropane	0.14 ^c	0.27 ^c	0.38 ^c
106-93-4	1,2-Dibromoethane	2.9 ^c	5.6 ^c	7.9 ^c
95-50-1	1,2-Dichlorobenzene	11,000 ^e	11,000 ^e	6,700 ^b
106-46-7	1,4-Dichlorobenzene	8,400 ^e	8,400 ^e	6,400 ^b
75-71-8	Dichlorodifluoromethane	890,000 ^b	1,400,000 ^b	92,000 ^b
75-34-3	1,1-Dichloroethane	870,000 ^b	1,300,000 ^e	90,000 ^b
107-06-2	1,2-Dichloroethane	67 ^c	130 ^c	180 ^c
75-35-4	1,1-Dichloroethylene	520,000 ^b	820,000 ^b	5,300 ^b

CAS No.	Chemical Name	Residential (mg/m ³)	Industrial/Commercial (mg/m ³)	Construction Worker (mg/m ³)
156-59-2	<i>cis</i> -1,2-Dichloroethylene	1,100,000 ^e	1,100,000 ^e	1,100,000 ^e
156-60-5	<i>trans</i> -1,2-Dichloroethylene	120,000 ^b	190,000 ^b	12,000 ^b
78-87-5	1,2-Dichloropropane	240 ^c	470 ^c	110 ^c
542-75-6	1,3-Dichloropropylene (<i>cis</i> + <i>trans</i>)	1,900 ^c	3,700 ^c	1,400 ^c
123-91-1	p-Dioxane	16 ^c	30 ^c	42 ^c
100-41-4	Ethylbenzene	59,000 ^e	59,000 ^e	8,500 ^b
76-44-8	Heptachlor	0.40 ^c	0.76 ^c	1.1 ^c
118-74-1	Hexachlorobenzene	0.26 ^c	0.28 ^e	0.28 ^e
77-47-4	Hexachlorocyclopentadiene	85 ^b	140 ^b	440 ^b
67-72-1	Hexachloroethane	2,800 ^e	2,800 ^e	2,800 ^c
78-59-1	Isophorone	3,400 ^e	3,400 ^e	1,500 ^b
98-82-8	Isopropylbenzene (Cumene)	30,000 ^e	30,000 ^e	30,000 ^e
7439-97-6	Mercury ^f	22 ^e	22 ^e	0.62 ^b
74-83-9	Methyl bromide	12,000 ^b	19,000 ^b	2,400 ^b
1634-04-4	Methyl tertiary-butyl ether	1,200,000 ^e	1,200,000 ^e	23,000 ^b
75-09-2	Methylene chloride	6,100 ^c	12,000 ^c	5,100 ^b
91-57-6	2-Methylnaphthalene	530 ^e	530 ^e	530 ^e
95-48-7	2-Methylphenol (o-cresol)	1,800 ^e	1,800 ^e	410 ^b
91-20-3	Naphthalene	560 ^b	620 ^e	5.8 ^b
98-95-3	Nitrobenzene	6.5 ^c	12 ^c	10 ^b
621-64-7	n-Nitrosodi-n-propylamine	0.056 ^c	0.11 ^c	0.15 ^c
108-95-2	Phenol	1,500 ^e	1,500 ^e	79 ^b
1336-36-3	Polychlorinated biphenyls (PCBs)	--- ^d	--- ^d	--- ^d
100-42-5	Styrene	34,000 ^e	34,000 ^e	16,000 ^b
127-18-4	Tetrachloroethylene	360 ^c	690 ^c	970 ^c
108-88-3	Toluene	140,000 ^e	140,000 ^e	50,000 ^b
120-82-1	1,2,4-Trichlorobenzene	1,000 ^b	1,600 ^b	110 ^b
71-55-6	1,1,1-Trichloroethane	870,000 ^c	870,000 ^e	89,000 ^b

CAS No.	Chemical Name	Residential (mg/m ³)	Industrial/Commercial (mg/m ³)	Construction Worker (mg/m ³)
79-00-5	1,1,2-Trichloroethane	170,000 ^e	170,000 ^e	170,000 ^e
79-01-6	Trichloroethylene	1,700 ^c	3,300 ^c	1,500 ^b
75-69-4	Trichlorofluoromethane	2,100,000 ^b	3,400,000 ^b	220,000 ^b
108-05-4	Vinyl acetate	160,000 ^b	250,000 ^b	1,600 ^b
75-01-4	Vinyl chloride	780 ^c	3,000 ^c	3,000 ^b
108-38-3	m-Xylene	52,000 ^e	52,000 ^e	3,100 ^b
95-47-6	o-Xylene	41,000 ^e	41,000 ^e	2,600 ^b
106-42-3	p-Xylene	55,000 ^e	55,000 ^e	3,300 ^b
1330-20-7	Xylenes (total)	49,000 ^e	49,000 ^e	2,900 ^b

Chemical Name and Remediation Objective Notations

- ^a For the outdoor inhalation exposure route, it is acceptable to determine compliance by meeting either the soil or soil gas remediation objectives. The soil remediation objectives for the outdoor inhalation route are located in Appendix B, Tables A and B.
- ^b Calculated values correspond to a target hazard quotient of 1.
- ^c Calculated values correspond to a cancer risk level of 1 in 1,000,000.
- ^d PCBs are a mixture of different congeners. The appropriate values to use for the physical/chemical and toxicity parameters depend on the congeners present at the site. Persons remediating sites should consult with IEPA Bureau of Land (BOL) if calculation of Tier 2 or 3 remediation objectives is desired.

- e The value shown is the C_v^{sat} value of the chemical in soil gas. The C_v^{sat} of the chemical becomes the remediation objective if the calculated value exceeds the C_v^{sat} value or if there are no toxicity criteria available for the inhalation route of exposure.
- f Value for the inhalation exposure route is based on Reference Concentration for elemental Mercury (CAS No. 7439-97-6). Inhalation remediation objectives only apply at sites where elemental Mercury is a contaminant of concern.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX B: Tier 1 Illustrations and Tables

Section 742.TABLE H: Tier 1 Soil Gas and Groundwater Remediation Objectives for the Indoor Inhalation Exposure Route – Diffusion and Advection^j

Q_{soil} equals $83.33 \text{ cm}^3/\text{sec}^a$

CAS No.	Chemical Name	Soil Gas		Groundwater	
		Residential (mg/m^3)	Industrial/Commercial (mg/m^3)	Residential (mg/L)	Industrial/Commercial (mg/L)
67-64-1	Acetone	750,000 ^f	750,000 ^f	1,000,000 ^g	1,000,000 ^g
71-43-2	Benzene	0.37 ^c	2.8 ^c	0.11 ^c	0.41 ^c
111-44-4	Bis(2-chloroethyl)ether	0.014 ^c	0.087 ^c	0.083 ^c	0.43 ^c
75-27-4	Bromodichloromethane	450,000 ^f	450,000 ^f	6,700 ^g	6,700 ^g
75-25-2	Bromoform	11 ^c	52 ^c	3.1 ^c	12 ^c
71-36-3	Butanol	29,000 ^f	29,000 ^f	74,000 ^g	74,000 ^g
78-93-3	2-Butanone (MEK)	6,400 ^b	40,000 ^b	10,000 ^b	48,000 ^b
75-15-0	Carbon disulfide	780 ^b	5,300 ^b	67 ^b	210 ^b
56-23-5	Carbon tetrachloride	0.21 ^c	1.5 ^c	0.020 ^c	0.076 ^c
108-90-7	Chlorobenzene	69 ^b	420 ^b	26 ^b	82 ^b
124-48-1	Chlorodibromomethane	57,000 ^f	57,000 ^f	2,600 ^g	2,600 ^g
67-66-3	Chloroform	0.11 ^c	0.92 ^c	0.07 ⁱ	0.15 ^c
95-57-8	2-Chlorophenol	17,000 ^f	17,000 ^f	22,000 ^g	22,000 ^g
75-99-0	Dalapon ^e	1,500 ^f	1,500 ^f	900,000 ^g	900,000 ^g
96-12-8	1,2-Dibromo-3-chloropropane ^e	0.0012 ^c	0.0062 ^c	0.00065 ^c	0.0027 ^c
106-93-4	1,2-Dibromoethane	0.0078 ^c	0.048 ^c	0.0035 ^c	0.014 ^c
95-50-1	1,2-Dichlorobenzene	290 ^b	1,700 ^b	140 ^b	160 ^g
106-46-7	1,4-Dichlorobenzene	1,200 ^b	6,800 ^b	79 ^g	79 ^g
75-71-8	Dichlorodifluoromethane	270 ^b	1,700 ^b	3.0 ^b	9.2 ^b
75-34-3	1,1-Dichloroethane	690 ^b	4,200 ^b	180 ^b	580 ^b

CAS No.	Chemical Name	Soil Gas		Groundwater	
		Residential (mg/m ³)	Industrial/Commercial (mg/m ³)	Residential (mg/L)	Industrial/Commercial (mg/L)
107-06-2	1,2-Dichloroethane	0.099 ^c	0.81 ^c	0.054 ^c	0.22 ^c
75-35-4	1,1-Dichloroethylene	240 ^b	1,600 ^b	24 ^b	74 ^b
156-59-2	<i>cis</i> -1,2-Dichloroethylene	1,100,000 ^f	1,100,000 ^f	3,500 ^g	3,500 ^g
156-60-5	<i>trans</i> -1,2-Dichloroethylene	85 ^b	510 ^b	16 ^b	51 ^b
78-87-5	1,2-Dichloropropane	0.31 ^c	2.3 ^c	0.12 ^c	0.48 ^c
542-75-6	1,3-Dichloropropylene (<i>cis</i> + <i>trans</i>)	0.90 ^c	6.2 ^c	0.14 ^c	0.52 ^c
123-91-1	p-Dioxane	0.22 ^c	2.3 ^c	2.9 ^c	25 ^c
100-41-4	Ethylbenzene	1.3 ^c	9.3 ^c	0.37 ^c	1.4 ^c
76-44-8	Heptachlor	0.0063 ^c	0.032 ^c	0.0025 ^c	0.0096 ^c
118-74-1	Hexachlorobenzene	0.0087 ^c	0.057 ^c	0.0059 ^c	0.0062 ^g
77-47-4	Hexachlorocyclopentadiene	0.58 ^b	2.6 ^b	0.084 ^b	0.26 ^b
67-72-1	Hexachloroethane	2,800 ^f	2,800 ^f	50 ^g	50 ^g
78-59-1	Isophorone	2,900 ^b	3,400 ^f	12,000 ^g	12,000 ^g
98-82-8	Isopropylbenzene (Cumene)	600 ^b	3,500 ^b	2.7 ^b	8.4 ^b
7439-97-6	Mercury ^h	0.42 ^b	2.5 ^b	0.053 ^b	0.060 ^g
74-83-9	Methyl bromide	6.9 ^b	42 ^b	1.5 ^b	4.8 ^b
1634-04-4	Methyl tertiary-butyl ether	3,700 ^b	24,000 ^b	1,900 ^b	6,800 ^b
75-09-2	Methylene chloride	5.6 ^c	45 ^c	2.1 ^c	8.2 ^c
91-57-6	2-Methylnaphthalene	530 ^f	530 ^f	25 ^g	25 ^g
95-48-7	2-Methylphenol (o-cresol)	600 ^b	1,800 ^f	26,000 ^g	26,000 ^g
91-20-3	Naphthalene	0.11 ^c	0.75 ^c	0.075 ^c	0.32 ^c
98-95-3	Nitrobenzene	0.077 ^c	0.57 ^c	0.34 ^c	2.0 ^c
621-64-7	n-Nitrosodi-n-propylamine	0.0016 ^c	0.012 ^c	0.044 ^c	0.27 ^c
108-95-2	Phenol	140 ^b	1,300 ^b	28,000 ^b	83,000 ^g

CAS No.	Chemical Name	Soil Gas		Groundwater	
		Residential (mg/m ³)	Industrial/Commercial (mg/m ³)	Residential (mg/L)	Industrial/Commercial (mg/L)
1336-36-3	Polychlorinated biphenyls (PCBs)	--- ^d	--- ^d	--- ^d	--- ^d
100-42-5	Styrene	1,400 ^b	8,500 ^b	310 ^g	310 ^g
127-18-4	Tetrachloroethylene	0.55 ^c	4.0 ^c	0.091 ^c	0.34 ^c
108-88-3	Toluene	6,200 ^b	40,000 ^b	530 ^g	530 ^g
120-82-1	1,2,4-Trichlorobenzene	5.4 ^b	25 ^b	1.8 ^b	5.9 ^b
71-55-6	1,1,1-Trichloroethane	6,600 ^b	41,000 ^b	1,000 ^b	1,300 ^g
79-00-5	1,1,2-Trichloroethane	170,000 ^f	170,000 ^f	4,400 ^g	4,400 ^g
79-01-6	Trichloroethylene	1.5 ^c	12 ^c	0.34 ^c	1.3 ^c
75-69-4	Trichlorofluoromethane	860 ^b	5,600 ^b	26 ^b	82 ^b
108-05-4	Vinyl acetate	250 ^b	1,600 ^b	160 ^b	550 ^b
75-01-4	Vinyl chloride	0.29 ^c	4.8 ^c	0.028 ^c	0.21 ^c
108-38-3	m-Xylene	140 ^b	850 ^b	43 ^b	130 ^b
95-47-6	o-Xylene	120 ^b	790 ^b	40 ^b	130 ^b
106-42-3	p-Xylene	130 ^b	820 ^b	38 ^b	120 ^b
1330-20-7	Xylenes (total) ^c	140 ^b	840 ^b	30 ^b	93 ^b

Chemical Name and Remediation Objective Notations

- ^a Compliance is determined by meeting either the soil gas remediation objectives or the groundwater remediation objectives. See Sections 742.505 and 742.515.
- ^b Calculated values correspond to a target hazard quotient of 1.
- ^c Calculated values correspond to a cancer risk level of 1 in 1,000,000.

- ^d PCBs are a mixture of different congeners. The appropriate values to use for the physical/chemical and toxicity parameters depend on the congeners present at the site. Persons remediating sites should consult with BOL if calculation of Tier 2 or 3 remediation objectives is desired.
- ^e Groundwater remediation objective calculated at 25°C. For Dalapon and 1,2-Dibromo-3-chloropropane, the critical temperature (T_c) and enthalpy of vaporization at the normal boiling point ($H_{v,b}$) are not available. For Xylenes (total), the enthalpy of vaporization at the normal boiling point ($H_{v,b}$) is not available.
- ^f The value shown is the C_v^{sat} value of the chemical in soil gas. The C_v^{sat} of the chemical becomes the remediation objective if the calculated value exceeds the C_v^{sat} value or if there are no toxicity criteria available for the inhalation route of exposure.
- ^g The value shown is the solubility of the chemical in water. The solubility of the chemical becomes the remediation objective if the calculated value exceeds the solubility or if there are no toxicity criteria available for the ingestion route of exposure.
- ^h Value for the inhalation exposure route is based on Reference Concentration for elemental Mercury (CAS No. 7439-97-6). Inhalation remediation objectives only apply at sites where elemental Mercury is a contaminant of concern.
- ⁱ The value shown is the Groundwater Remediation Objective listed in Appendix B, Table E.
- ^j Calculated values for the remediation objectives in this table are based on the assumption that the existing or potential building has a full concrete slab-on-grade, though the remediation objectives in this table are also considered protective of occupants of buildings with full concrete basement floors and walls. This table applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls. Institutional controls under Subpart J are required to use remediation objectives in this table. This table does not apply when the existing or potential building has neither a full concrete slab-on-grade nor a full concrete basement floor and walls, such as a building with an earthen crawl space, an earthen floor, a stone foundation, a partial concrete floor, or a sump. In such cases, site evaluators have the option of excluding the indoor inhalation exposure route under Section 742.312, meeting the building control technology requirements under Subpart L, or proposing an alternative approach under Tier 3.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)



Section 742.APPENDIX B: Tier 1 Illustrations and Tables

Section 742.TABLE I: Tier 1 Soil Gas and Groundwater Remediation Objectives for the Indoor Inhalation Exposure Route – Diffusion Only^j

Q_{soil} equals $0.0 \text{ cm}^3/\text{sec}$ ^{a,b}

CAS No.	Chemical Name	Soil Gas		Groundwater	
		Residential (mg/m ³)	Industrial/Commercial (mg/m ³)	Residential (mg/L)	Industrial/Commercial (mg/L)
67-64-1	Acetone	750,000 ^g	750,000 ^g	1,000,000 ^h	1,000,000 ^h
71-43-2	Benzene	41 ^d	300 ^d	0.41 ^d	2.6 ^d
111-44-4	Bis(2-chloroethyl)ether	1.9 ^d	14 ^d	6.6 ^d	48 ^d
75-27-4	Bromodichloromethane	450,000 ^g	450,000 ^g	6,700 ^h	6,700 ^h
75-25-2	Bromoform	1,800 ^d	13,000 ^d	170 ^d	1,300 ^d
71-36-3	Butanol	29,000 ^g	29,000 ^g	74,000 ^h	74,000 ^h
78-93-3	2-Butanone (MEK)	380,000 ^g	380,000 ^g	220,000 ^h	220,000 ^h
75-15-0	Carbon disulfide	81,000 ^c	500,000 ^c	170 ^c	820 ^c
56-23-5	Carbon tetrachloride	24 ^d	180 ^d	0.052 ^d	0.31 ^d
108-90-7	Chlorobenzene	8,300 ^c	51,000 ^c	130 ^c	470 ^h
124-48-1	Chlorodibromomethane	57,000 ^g	57,000 ^g	2,600 ^h	2,600 ^h
67-66-3	Chloroform	12 ^d	87 ^d	0.17 ^d	1.1 ^d
95-57-8	2-Chlorophenol	17,000 ^g	17,000 ^g	22,000 ^h	22,000 ^h
75-99-0	Dalapon ^f	1,500 ^g	1,500 ^g	900,000 ^h	900,000 ^h
96-12-8	1,2-Dibromo-3-chloropropane ^f	0.17 ^d	1.3 ^d	0.029 ^d	0.21 ^d
106-93-4	1,2-Dibromoethane	1.1 ^d	7.9 ^d	0.073 ^d	0.52 ^d
95-50-1	1,2-Dichlorobenzene	11,000 ^g	11,000 ^g	160 ^h	160 ^h
106-46-7	1,4-Dichlorobenzene	8,400 ^g	8,400 ^g	79 ^h	79 ^h
75-71-8	Dichlorodifluoromethane	32,000 ^c	200,000 ^c	6.8 ^c	33 ^c
75-34-3	1,1-Dichloroethane	81,000 ^c	500,000 ^c	750 ^c	4,100 ^c

CAS No.	Chemical Name	Soil Gas		Groundwater	
		Residential (mg/m ³)	Industrial/Commercial (mg/m ³)	Residential (mg/L)	Industrial/Commercial (mg/L)
107-06-2	1,2-Dichloroethane	10 ^d	76 ^d	0.50 ^d	3.5 ^d
75-35-4	1,1-Dichloroethylene	27,000 ^c	160,000 ^c	61 ^c	300 ^c
156-59-2	<i>cis</i> -1,2-Dichloroethylene	1,100,000 ^g	1,100,000 ^g	3,500 ^h	3,500 ^h
156-60-5	<i>trans</i> -1,2-Dichloroethylene	10,000 ^c	63,000 ^c	58 ^c	310 ^c
78-87-5	1,2-Dichloropropane	36 ^d	260 ^d	0.67 ^d	4.5 ^d
542-75-6	1,3-Dichloropropylene (<i>cis</i> + <i>trans</i>)	110 ^d	830 ^d	0.42 ^d	2.6 ^d
123-91-1	p-Dioxane	15 ^d	110 ^d	140 ^d	1,000 ^d
100-41-4	Ethylbenzene	150 ^d	1,100 ^d	1.3 ^d	8.1 ^d
76-44-8	Heptachlor	0.97 ^d	7.1 ^d	0.058 ^d	0.18 ^h
118-74-1	Hexachlorobenzene	0.28 ^g	0.28 ^g	0.0062 ^h	0.0062 ^h
77-47-4	Hexachlorocyclopentadiene	86 ^c	530 ^c	0.29 ^c	1.5 ^c
67-72-1	Hexachloroethane	2,800 ^g	2,800 ^g	50 ^h	50 ^h
78-59-1	Isophorone	3,400 ^g	3,400 ^g	12,000 ^h	12,000 ^h
98-82-8	Isopropylbenzene (Cumene)	30,000 ^g	30,000 ^g	6.2 ^c	30 ^c
7439-97-6	Mercury ⁱ	22 ^g	22 ^g	0.060 ^h	0.060 ^h
74-83-9	Methyl bromide	830 ^c	5,100 ^c	6.1 ^c	33 ^c
1634-04-4	Methyl tertiary-butyl ether	420,000 ^c	1,200,000 ^g	30,000 ^c	51,000 ^h
75-09-2	Methylene chloride	590 ^d	4,400 ^d	12 ^d	84 ^d
91-57-6	2-Methylnaphthalene	530 ^g	530 ^g	25 ^h	25 ^h
95-48-7	2-Methylphenol (o-cresol)	1,800 ^g	1,800 ^g	26,000 ^h	26,000 ^h
91-20-3	Naphthalene	14 ^d	100 ^d	1.8 ^d	13 ^d
98-95-3	Nitrobenzene	9.0 ^d	66 ^d	23 ^d	170 ^d
621-64-7	n-Nitrosodi-n-propylamine	0.18 ^d	1.3 ^d	3.3 ^d	24 ^d
108-95-2	Phenol	1,500 ^g	1,500 ^g	83,000 ^h	83,000 ^h
1336-36-3	Polychlorinated biphenyls	--- ^e	--- ^e	--- ^e	--- ^e

CAS No.	Chemical Name	Soil Gas		Groundwater	
		Residential (mg/m ³)	Industrial/Commercial (mg/m ³)	Residential (mg/L)	Industrial/Commercial (mg/L)
	(PCBs)				
100-42-5	Styrene	34,000 ^g	34,000 ^g	310 ^h	310 ^h
127-18-4	Tetrachloroethylene	66 ^d	490 ^d	0.26 ^d	1.6 ^d
108-88-3	Toluene	140,000 ^g	140,000 ^g	530 ^h	530 ^h
120-82-1	1,2,4-Trichlorobenzene	800 ^c	4,300 ^g	35 ^h	35 ^h
71-55-6	1,1,1-Trichloroethane	770,000 ^c	870,000 ^g	1,300 ^h	1,300 ^h
79-00-5	1,1,2-Trichloroethane	170,000 ^g	170,000 ^g	4,400 ^h	4,400 ^h
79-01-6	Trichloroethylene	180 ^d	1,300 ^d	1.1 ^d	6.7 ^d
75-69-4	Trichlorofluoromethane	97,000 ^c	600,000 ^c	62 ^c	300 ^c
108-05-4	Vinyl acetate	28,000 ^c	170,000 ^c	2,500 ^c	15,000 ^c
75-01-4	Vinyl chloride	30 ^d	440 ^d	0.065 ^d	0.75 ^d
108-38-3	m-Xylene	17,000 ^d	52,000 ^c	160 ^c	160 ^h
95-47-6	o-Xylene	14,000 ^d	41,000 ^c	170 ^c	180 ^h
106-42-3	p-Xylene	16,000 ^d	55,000 ^c	140 ^c	160 ^h
1330-20-7	Xylenes (total) ^f	17,000 ^d	49,000 ^c	96 ^c	110 ^h

Chemical Name and Remediation Objective Notations

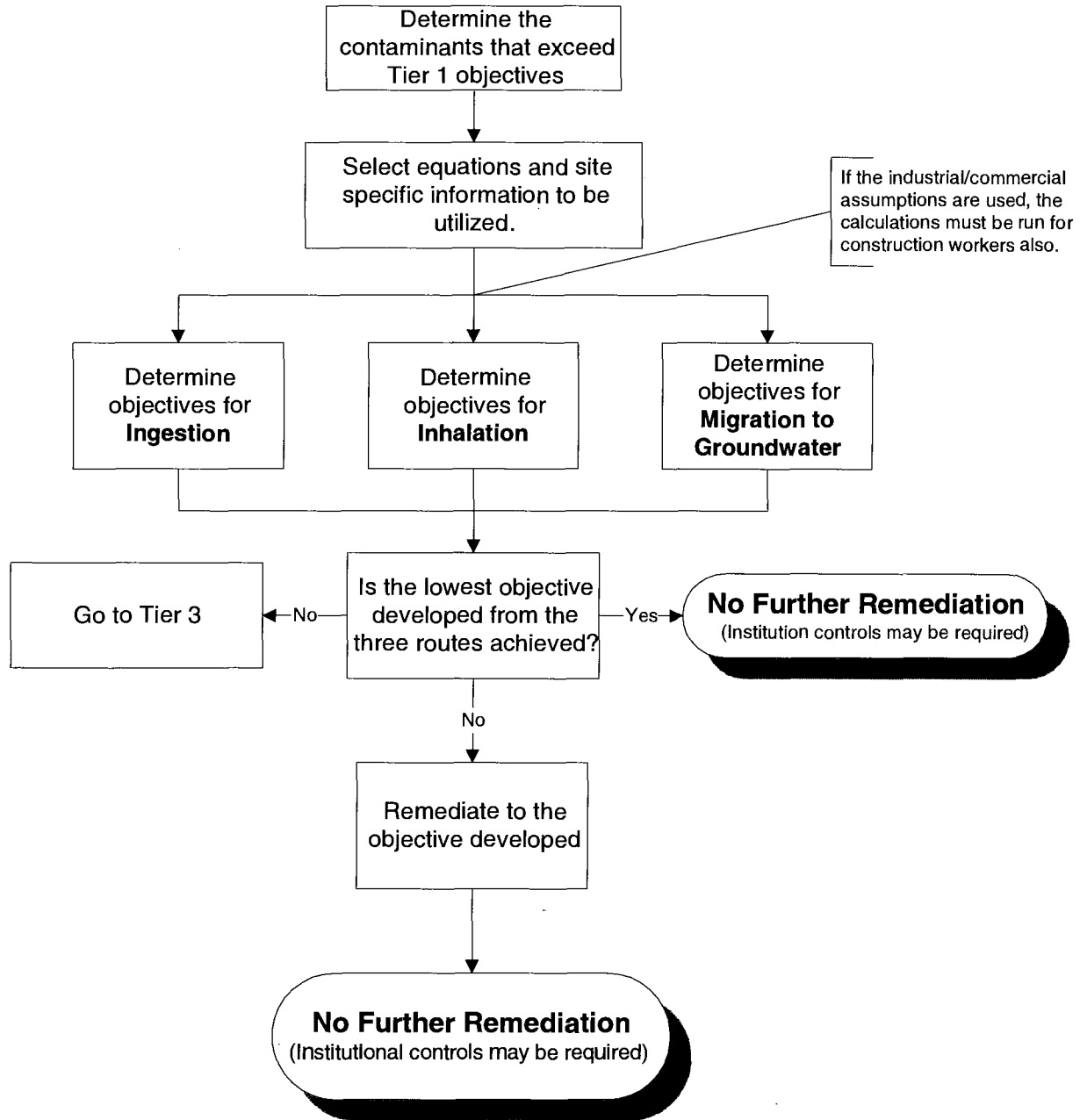
- ^a Compliance is determined by meeting both the soil gas remediation objectives and the groundwater remediation objectives. See Sections 742.505 and 742.515.
- ^b Remediation objectives relying on this table require use of institutional controls in accordance with Subpart J.
- ^c Calculated values correspond to a target hazard quotient of 1.
- ^d Calculated values correspond to a cancer risk level of 1 in 1,000,000.

- ^e PCBs are a mixture of different congeners. The appropriate values to use for the physical/chemical and toxicity parameters depend on the congeners present at the site. Persons remediating sites should consult with BOL if calculation of Tier 2 or 3 remediation objectives is desired
- ^f Groundwater remediation objective calculated at 25°C. For Dalapon and 1,2-Dibromo-3-chloropropane, the critical temperature (T_c) and enthalpy of vaporization at the normal boiling point ($H_{v,b}$) are not available. For Xylenes (total), the enthalpy of vaporization at the normal boiling point ($H_{v,b}$) is not available.
- ^g The value shown is the C_v^{sat} value of the chemical in soil gas. The C_v^{sat} of the chemical becomes the remediation objective if the calculated value exceeds the C_v^{sat} value or if there are no toxicity criteria available for the inhalation route of exposure.
- ^h The value shown is the solubility of the chemical in water. The solubility of the chemical becomes the remediation objective if the calculated value exceeds the solubility or if there are no toxicity criteria available for the inhalation route of exposure.
- ⁱ Value for the inhalation exposure route is based on Reference Concentration for elemental Mercury (CAS No. 7439-97-6). Inhalation remediation objectives only apply at sites where elemental Mercury is a contaminant of concern.
- ^j Calculated values for the remediation objectives in this table are based on the assumption that the existing or potential building has a full concrete slab-on-grade, though the remediation objectives in this table are also considered protective of occupants of buildings with full concrete basement floors and walls. This table applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls. Institutional controls under Subpart J are required to use remediation objectives in this table. This table does not apply when the existing or potential building has neither a full concrete slab-on-grade nor a full concrete basement floor and walls, such as a building with an earthen crawl space, an earthen floor, a stone foundation, a partial concrete floor, or a sump. In such cases, site evaluators have the option of excluding the indoor inhalation exposure route under Section 742.312, meeting the building control technology requirements under Subpart L, or proposing an alternative approach under Tier 3.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX C Tier 2 Illustrations and Tables

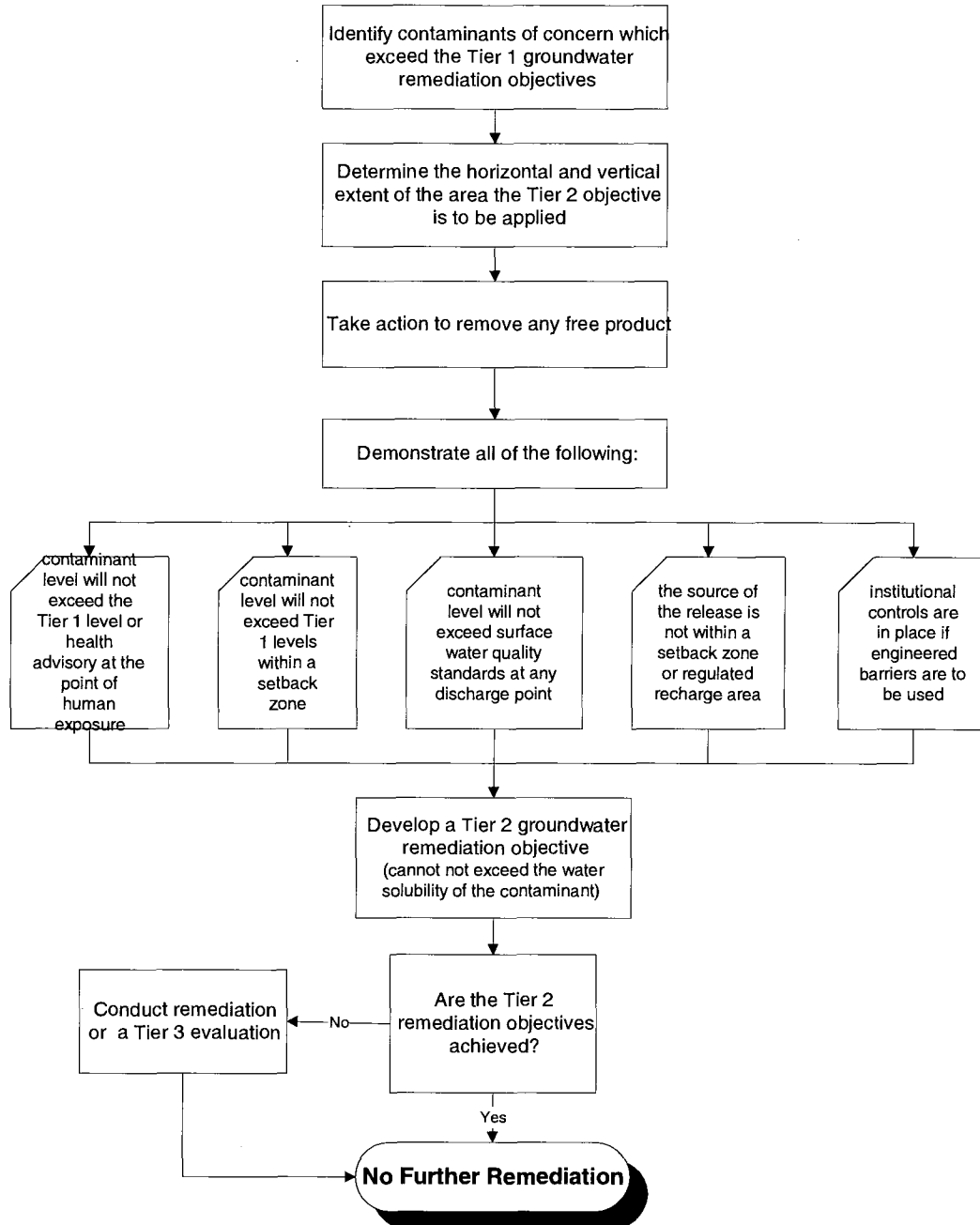
Section 742.Illustration A Tier 2 Evaluation for Soil



(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX C Tier 2 Illustrations and Tables

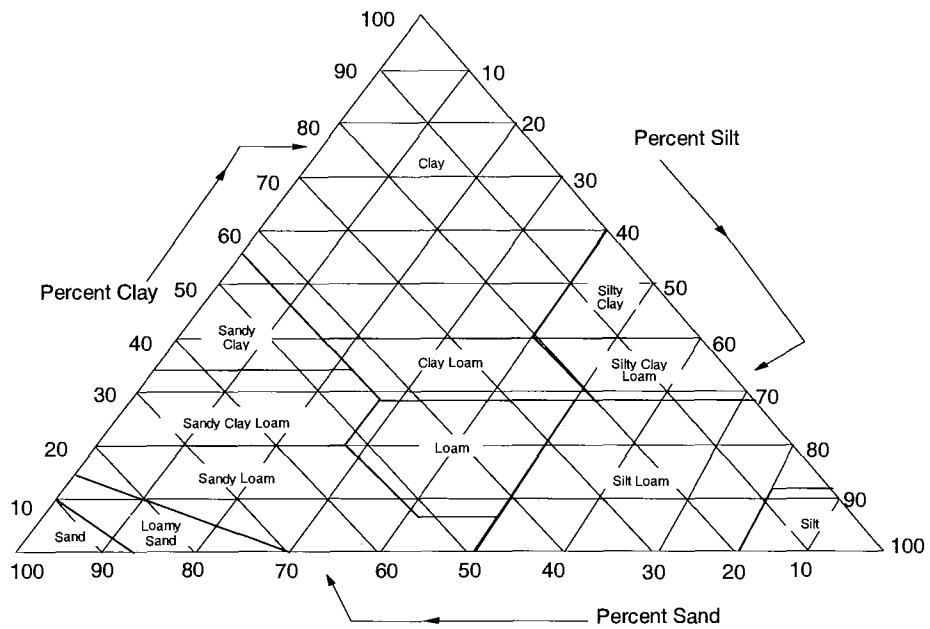
Section 742.Illustration B Tier 2 Evaluation for Groundwater



(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX C Tier 2 Illustrations and Tables

Section 742.Illustration C U.S. Department of Agriculture Soil Texture Classification



Criteria Used with the Field Method for Determining Soil Texture Classes

Criterion	Sand	Sandy loam	Loam	Slit loam	Clay loam	Clay
1. Individual grains visible to eye	Yes	Yes	Some	Few	No	No
2. Stability of dry clods	Do not form	Do not form	Easily broken	Moderately easily broken	Hard and stable	Very hard and stable
3. Stability of wet clods	Unstable	Slightly stable	Moderately stable	Stable	Very stable	Very stable
4. Stability of "ribbon" when wet soil rubbed between thumb and fingers	Does not form	Does not form	Does not form	Broken appearance	Thin, will break	Very long, flexible

Particle Size, mm								
0.002		0.05		0.10	0.25	0.5	1.0	2.0
Clay	Silt		Very Fine	Fine	Med.	Coarse	Very Coarse	Gravel
Sand								

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX C: Tier 2 Illustrations and Tables

Section 742.Table A: SSL Equations

Equations for Soil Ingestion Exposure Route	Remediation Objectives for Noncarcinogenic Contaminants (mg/kg)	$\frac{THQ \cdot BW \cdot AT \cdot 365 \frac{d}{yr}}{\frac{1}{RfD_o} \cdot 10^{-6} \frac{kg}{mg} \cdot EF \cdot ED \cdot IR_{soil}}$	S1
	Remediation Objectives for Carcinogenic Contaminants - Residential (mg/kg)	$\frac{TR \cdot AT_c \cdot 365 \frac{d}{yr}}{SF_o \cdot 10^{-6} \frac{kg}{mg} \cdot EF \cdot IF_{soil-adj}}$	S2
	Remediation Objectives for Carcinogenic Contaminants - Industrial/ Commercial, Construction Worker (mg/kg)	$\frac{TR \cdot BW \cdot AT_c \cdot 365 \frac{d}{yr}}{SF_o \cdot 10^{-6} \frac{kg}{mg} \cdot EF \cdot ED \cdot IR_{soil}}$	S3

Equations for Inhalation Exposure Route (Organic Contaminants and Mercury)	Remediation Objectives for Noncarcinogenic Contaminants - Residential, Industrial/ Commercial (mg/kg)	$\frac{THQ \cdot AT \cdot 365 \frac{d}{yr}}{EF \cdot ED \cdot \left(\frac{1}{RfC} \cdot \frac{1}{VF} \right)}$	S4
	Remediation Objectives for Noncarcinogenic Contaminants - Construction Worker (mg/kg)	$\frac{THQ \cdot AT \cdot 365 \frac{d}{yr}}{EF \cdot ED \cdot \left(\frac{1}{RfC} \cdot \frac{1}{VF} \right)}$	S5
	Remediation Objectives for Carcinogenic Contaminants - Residential, Industrial/ Commercial (mg/kg)	$\frac{TR \cdot AT_c \cdot 365 \frac{d}{yr}}{URF \cdot 1,000 \frac{\mu g}{mg} \cdot EF \cdot ED \cdot \frac{1}{VF}}$	S6
	Remediation Objectives for Carcinogenic Contaminants - Construction Worker (mg/kg)	$\frac{TR \cdot AT_c \cdot 365 \frac{d}{yr}}{URF \cdot 1,000 \frac{\mu g}{mg} \cdot EF \cdot ED \cdot \frac{1}{VF}}$	S7

	Equation for Derivation of the Volatilization Factor - Residential, Industrial/ Commercial, VF (m ³ /kg)	$VF = \frac{Q}{C} \cdot \frac{(3.14 \cdot D_A \cdot T)^{1/2}}{(2 \cdot \rho_b \cdot D_A)} \cdot 10^{-4} \frac{m^2}{cm^2}$	S8
	Equation for Derivation of the Volatilization Factor - Construction Worker, VF' (m ³ /kg)	$VF' = \frac{VF}{10}$	S9
	Equation for Derivation of Apparent Diffusivity, D _A (cm ² /s)	$D_A = \frac{(\theta_a^{3.33} \cdot D_i \cdot H') + (\theta_w^{3.33} \cdot D_w)}{\eta^2} \cdot \frac{1}{(\rho_b \cdot K_d) + \theta_w + (\theta_a \cdot H')}$	S10
Equations for Inhalation Exposure Route (Fugitive Dusts)	Remediation Objectives for Noncarcinogenic Contaminants - Residential, Industrial/Commercial (mg/kg)	$\frac{THQ \cdot AT \cdot 365 \frac{d}{yr}}{EF \cdot ED \cdot \left(\frac{1}{RfC} \cdot \frac{1}{PEF} \right)}$	S11

	Remediation Objectives for Noncarcinogenic Contaminants - Construction Worker (mg/kg)	$\frac{THQ \cdot AT \cdot 365 \frac{d}{yr}}{EF \cdot ED \cdot \left(\frac{1}{RfC} \cdot \frac{1}{PEF'} \right)}$	S12
	Remediation Objectives for Carcinogenic Contaminants - Residential, Industrial/ Commercial (mg/kg)	$\frac{TR \cdot AT_c \cdot 365 \frac{d}{yr}}{URF \cdot 1,000 \frac{ug}{mg} \cdot EF \cdot ED \cdot \frac{1}{PEF}}$	S13
	Remediation Objectives for Carcinogenic Contaminants - Construction Worker (mg/kg)	$\frac{TR \cdot AT_c \cdot 365 \frac{d}{yr}}{URF \cdot 1,000 \frac{ug}{mg} \cdot EF \cdot ED \cdot \frac{1}{PEF'}}$	S14
	Equation for Derivation of Particulate Emission Factor, PEF (m ³ /kg)	$PEF = \frac{Q}{C} \cdot \frac{3,600 \frac{s}{hr}}{0.036 \cdot (1-V) \cdot \left(\frac{U_m}{U_t} \right)^3 \cdot F(x)}$	S15

	Equation for Derivation of Particulate Emission Factor, PEF' - Construction Worker (m ³ /kg)	$PEF' = \frac{PEF}{10}$ <p>NOTE: PEF must be the industrial/commercial value</p>	S16
Equations for the Soil Component of the Groundwater Ingestion Exposure Route	Remediation Objective (mg/kg)	$C_w \cdot \left[K_d + \frac{(\theta_w + \theta_a \cdot H')}{\rho_b} \right]$ <p>NOTE: This equation can only be used to model contaminant migration not in the water bearing unit.</p>	S17
	Target Soil Leachate Concentration, C _w (mg/L)	$C_w = DF \cdot GW_{obj}$	S18

	Soil-Water Partition Coefficient, K_d (cm^3/g)	$K_d = K_{oc} \cdot f_{oc}$	S19
	Water-Filled Soil Porosity, θ_w ($L_{\text{water}}/L_{\text{soil}}$)	$\theta_w = \eta \cdot \left(\frac{I}{K_s} \right)^{1/(2b+3)}$	S20
	Air-Filled Soil Porosity, θ_a ($L_{\text{air}}/L_{\text{soil}}$)	$\theta_a = \eta - \theta_w$	S21
	Dilution Factor, DF (unitless)	$DF = 1 + \frac{K \cdot i \cdot d}{I \cdot L}$	S22
	Groundwater Remediation Objective for Carcinogenic Contaminants, GW_{obj} (mg/L)	$\frac{TR \cdot BW \cdot AT_c \cdot 365 \frac{d}{\text{yr}}}{SF_o \cdot IR_w \cdot EF \cdot ED}$	S23
	Total Soil Porosity, η ($L_{\text{pore}}/L_{\text{soil}}$)	$\eta = 1 - \frac{\rho_b}{\rho_s}$	S24
	Equation for Estimation of Mixing Zone Depth, d (m)	$d = (0.0112 \cdot L^2)^{0.5} + d_a \left[1 - \exp \left(\frac{-L \cdot I}{K \cdot i \cdot d_a} \right) \right]$	S25

<p>Mass-Limit Equations for Inhalation Exposure Route and Soil Component of the Groundwater Ingestion Exposure Route</p>	<p>Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Residential, Industrial/ Commercial, VF (m³/kg)</p>	$VF_{M-L} = \frac{Q}{C} \cdot \frac{\left[T_{M-L} \cdot \left(3.15 \cdot 10^7 \frac{s}{yr} \right) \right]}{\rho_b \cdot d_s \cdot 10^6 \frac{cm^3}{m^3}}$ <p>NOTE: This equation may be used when vertical thickness of contamination is known or can be estimated reliably.</p>	<p>S26</p>
	<p>Mass-Limit Volatilization Factor for Inhalation Exposure Route - Construction Worker, VF' - (m³/kg)</p>	$VF'_{M-L} = \frac{VF_{M-L}}{10}$	<p>S27</p>
	<p>Mass-Limit Remediation Objective for Soil Component of the Groundwater Ingestion Exposure Route (mg/kg)</p>	$\frac{(C_w \cdot I_{M-L} \cdot ED_{M-L})}{\rho_b \cdot d_s}$ <p>NOTE: This equation may be used when vertical thickness is known or can be estimated reliably.</p>	<p>S28</p>

Equation for Derivation of the Soil Saturation Limit, C_{sat}	$C_{sat} = \frac{S}{\rho_b} \cdot [(K_d \cdot \rho_b) + \theta_w + (H' \cdot \theta_a)]$	S29
Equation for the soil gas component of the Outdoor Inhalation Exposure Route	$RO_{soil\ gas} = \frac{RO_{soil} \times H \times \rho_b \times 1000}{H' \times \theta_a + \theta_w + K_d \times \rho_b}$	S30

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX C: Tier 2 Illustrations and Tables

Section 742.Table B: SSL Parameters

Symbol	Parameter	Units	Source	Parameter Value(s)
AT	Averaging Time for Noncarcinogens in Ingestion Equation	yr		Residential = 6 Industrial/Commercial = 25 Construction Worker = 0.115
AT	Averaging Time for Noncarcinogens in Inhalation Equation	yr		Residential = 30 Industrial/Commercial = 25 Construction Worker = 0.115
AT _c	Averaging Time for Carcinogens	yr	SSL	70
BW	Body Weight	kg		Residential = 15, noncarcinogens 70, carcinogens Industrial/Commercial = 70 Construction Worker = 70
C _{sat}	Soil Saturation Concentration	mg/kg	Appendix A, Table A or Equation S29 in Appendix C, Table A	Chemical-Specific or Calculated Value
C _w	Target Soil Leachate Concentration	mg/L	Equation S18 in Appendix C, Table A	Groundwater Standard, Health Advisory concentration, or Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
d	Mixing Zone Depth	m	SSL or Equation S25 in Appendix C, Table A	2 m or Calculated Value
d _a	Aquifer Thickness	m	Field Measurement	Site-Specific
d _s	Depth of Source (Vertical thickness of contamination)	m	Field Measurement or Estimation	Site-Specific
D _A	Apparent Diffusivity	cm ² /s	Equation S10 in Appendix C, Table A	Calculated Value
D _i	Diffusivity in Air	cm ² /s	Appendix C, Table E	Chemical-Specific
D _w	Diffusivity in Water	cm ² /s	Appendix C, Table E	Chemical-Specific
DF	Dilution Factor	unitless	Equation S22 in Appendix C, Table A	20 or Calculated Value
ED	Exposure Duration for Ingestion of Carcinogens	yr		Industrial/Commercial = 25 Construction Worker = 1
ED	Exposure Duration for Inhalation of Carcinogens	yr		Residential = 30 Industrial/Commercial = 25 Construction Worker = 1

Symbol	Parameter	Units	Source	Parameter Value(s)
ED	Exposure Duration for Ingestion of Noncarcinogens	yr		Residential = 6 Industrial/Commercial = 25 Construction Worker = 1
ED	Exposure Duration for Inhalation of Noncarcinogens	yr		Residential = 30 Industrial/Commercial = 25 Construction Worker = 1
ED	Exposure Duration for the Direct Ingestion of Groundwater	yr		Residential = 30 Industrial/Commercial = 25 Construction Worker = 1
ED _{M-L}	Exposure Duration for Migration to Groundwater Mass-Limit Equation S28	yr	SSL	70
EF	Exposure Frequency	d/yr		Residential = 350 Industrial/Commercial = 250 Construction Worker = 30
F(x)	Function dependent on U_m/U_t	unitless	SSL	0.194
f _{oc}	Organic Carbon Content of Soil	g/g	SSL or Field Measurement (See Appendix C, Table F)	Surface Soil = 0.006 Subsurface soil = 0.002, or Site-Specific

Symbol	Parameter	Units	Source	Parameter Value(s)
GW_{obj}	Groundwater Remediation Objective	mg/L	Appendix B, Table E, 35 IAC 620.Subpart F, or Equation S23 in Appendix C, Table A	Chemical-Specific or Calculated
H'	Henry's Law Constant	unitless	Appendix C, Table E	Chemical-Specific
i	Hydraulic Gradient	m/m	Field Measurement (See Appendix C, Table F)	Site-Specific
I	Infiltration Rate	m/yr	SSL	0.3
I_{M-L}	Infiltration Rate for Migration to Groundwater Mass-Limit Equation S28	m/yr	SSL	0.18
$IF_{soil-adj}$ (residential)	Age Adjusted Soil Ingestion Factor for Carcinogens	(mg-yr)/(kg-d)	SSL	114
IR_{soil}	Soil Ingestion Rate	mg/d		Residential = 200 Industrial/Commercial = 50 Construction Worker = 480
IR_w	Daily Water Ingestion Rate	L/d		Residential = 2 Industrial/Commercial = 1

Symbol	Parameter	Units	Source	Parameter Value(s)
K	Aquifer Hydraulic Conductivity	m/yr	Field Measurement (See Appendix C, Table F)	Site-Specific
K _d (Non-ionizing organics)	Soil-Water Partition Coefficient	cm ³ /g or L/kg	Equation S19 in Appendix C, Table A	Calculated Value
K _d (Ionizing organics)	Soil-Water Partition Coefficient	cm ³ /g or L/kg	Equation S19 in Appendix C, Table A	Chemical and pH-Specific (see Appendix C, Table I)
K _d (Inorganics)	Soil-Water Partition Coefficient	cm ³ /g or L/kg	Appendix C, Table J	Chemical and pH-Specific
K _{oc}	Organic Carbon Partition Coefficient	cm ³ /g or L/kg	Appendix C, Table E or Appendix C, Table I	Chemical-Specific
K _s	Saturated Hydraulic Conductivity	m/yr	Appendix C, Table K Appendix C, Illustration C	Site-Specific
L	Source Length Parallel to Groundwater Flow	m	Field Measurement	Site-Specific
PEF	Particulate Emission Factor	m ³ /kg	SSL or Equation S15 in Appendix C, Table A	Residential = $1.32 \cdot 10^9$ or Site-Specific Industrial/Commercial = $1.24 \cdot 10^9$ or Site-Specific

Symbol	Parameter	Units	Source	Parameter Value(s)
PEF'	Particulate Emission Factor adjusted for Agitation (construction worker)	m ³ /kg	Equation S16 in Appendix C, Table A using PEF (industrial/commercial)	1.24 • 10 ⁸ or Site-Specific
Q/C (used in VF equations)	Inverse of the mean concentration at the center of a square source	(g/m ² -s)/(kg/m ³)	Appendix C, Table H	Residential = 68.81 Industrial/Commercial = 85.81 Construction Worker = 85.81
Q/C (used in PEF equations)	Inverse of the mean concentration at the center of a square source	(g/m ² -s)/(kg/m ³)	SSL or Appendix C, Table H	Residential = 90.80 Industrial/Commercial = 85.81 Construction Worker = 85.81
RfC	Inhalation Reference Concentration	mg/m ³	Illinois EPA: http://www.epa.state.il.us/land/taco/toxicity-values.xls	Toxicological-Specific (Note: for Construction Workers use subchronic reference concentrations)
RfD _o	Oral Reference Dose	mg/(kg-d)	Illinois EPA: http://www.epa.state.il.us/land/taco/toxicity-values.xls	Toxicological-Specific (Note: for Construction Worker use subchronic reference doses)
RO _{soil}	Soil remediation objective	mg/kg	Equation S30 in Appendix C, Table A	Calculated value

Symbol	Parameter	Units	Source	Parameter Value(s)
$RO_{\text{soil gas}}$	Soil gas remediation objective	mg/m^3	Equation S30 in Appendix C, Table A	Calculated value
S	Solubility in Water	mg/L	Appendix C, Table E	Chemical-Specific
SF_o	Oral Slope Factor	$(\text{mg}/\text{kg}\cdot\text{d})^{-1}$	Illinois EPA: http://www.epa.state.il.us/land/taco/toxicity-values.xls	Toxicological-Specific
T	Exposure Interval	s		Residential = $9.5 \cdot 10^8$ Industrial/Commercial = $7.9 \cdot 10^8$ Construction Worker = $3.6 \cdot 10^6$
T_{M-L}	Exposure Interval for Mass-Limit Volatilization Factor Equation S26	yr	SSL	30
THQ	Target Hazard Quotient	unitless	SSL	1
TR	Target Cancer Risk	unitless		Residential = 10^{-6} at the point of human exposure Industrial/Commercial = 10^{-6} at the point of human exposure Construction Worker = 10^{-6} at the point of human exposure
U_m	Mean Annual Windspeed	m/s	SSL	4.69

Symbol	Parameter	Units	Source	Parameter Value(s)
URF	Inhalation Unit Risk Factor	$(\text{ug}/\text{m}^3)^{-1}$	Illinois EPA: http://www.epa.state.il.us/land/taco/toxicity-values.xls	Toxicological-Specific
U_t	Equivalent Threshold Value of Windspeed at 7 m	m/s	SSL	11.32
V	Fraction of Vegetative Cover	unitless	SSL or Field Measurement	0.5 or Site-Specific
VF	Volatilization Factor	m^3/kg	Equation S8 in Appendix C, Table A	Calculated Value
VF'	Volatilization Factor adjusted for Agitation	m^3/kg	Equation S9 in Appendix C, Table A	Calculated Value
$\text{VF}_{\text{M-L}}$	Mass-Limit Volatilization Factor	m^3/kg	Equation S26 in Appendix C, Table A	Calculated Value
$\text{VF}'_{\text{M-L}}$	Mass-Limit Volatilization Factor adjusted for Agitation	m^3/kg	Equation S27 in Appendix C, Table A	Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
η	Total Soil Porosity	$L_{\text{pore}}/L_{\text{soil}}$	SSL or Equation S24 in Appendix C, Table A	0.43, or Gravel = 0.25 Sand = 0.32 Silt = 0.40 Clay = 0.36, or Calculated Value
θ_a	Air-Filled Soil Porosity	$L_{\text{air}}/L_{\text{soil}}$	SSL or Equation S21 in Appendix C, Table A	Surface Soil (top 1 meter) = 0.28 Subsurface Soil (below 1 meter) = 0.13, or Gravel = 0.05 Sand = 0.14 Silt = 0.24 Clay = 0.19, or Calculated Value
θ_w	Water-Filled Soil Porosity	$L_{\text{water}}/L_{\text{soil}}$	SSL or Equation S20 in Appendix C, Table A	Surface Soil (top 1 meter) = 0.15 Subsurface Soil (below 1 meter) = 0.30, or Gravel = 0.20 Sand = 0.18 Silt = 0.16 Clay = 0.17, or Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
ρ_b	Dry Soil Bulk Density	kg/L or g/cm ³	SSL or Field Measurement (See Appendix C, Table F)	1.5, or Gravel = 2.0 Sand = 1.8 Silt = 1.6 Clay = 1.7, or Site-Specific
ρ_s	Soil Particle Density	g/cm ³	SSL or Field Measurement (See Appendix C, Table F)	2.65, or Site-Specific
ρ_w	Water Density	g/cm ³	SSL	1
1/(2b+3)	Exponential in Equation S20	unitless	Appendix C, Table K Appendix C, Illustration C	Site-Specific

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX C Tier 2 Illustrations and Tables

Section 742.Table C RBCA Equations

Equations for the combined exposures routes of soil ingestion inhalation of vapors and particulates, and dermal contact with soil	Remediation Objectives for Carcinogenic Contaminants (mg/kg)	$\frac{TR \cdot BW \cdot AT_C \cdot 365 \frac{d}{yr}}{EF \cdot ED \cdot \left\{ \left[SF_o \cdot 10^{-6} \frac{kg}{mg} \cdot \left((IR_{soil} \cdot RAF_o) + (SA \cdot M \cdot RAF_d) \right) \right] + \left[SF_i \cdot IR_{air} \cdot (VF_{ss} + VF_p) \right] \right\}}$	R1
	Remediation Objectives for Non-carcinogenic Contaminants (mg/kg)	$EF \cdot ED \cdot \left[\frac{10^{-6} \frac{kg}{mg} \left[(IR_{soil} \cdot RAF_o) + (SA \cdot M \cdot RAF_d) \right]}{RfD_o} + \frac{IR_{air} \cdot (VF_{ss} + VF_p)}{RfD_i} \right]$	R2
	Volatilization Factor for Surficial Soils, VF_{ss} (kg/m^3) Whichever is less between R3 and R4	$VF_{ss} = \frac{2 \cdot W \cdot \rho_s \cdot 10^3 \frac{cm^3 \cdot kg}{m^3 \cdot g}}{U_{air} \cdot \delta_{air}} \cdot \sqrt{\frac{D_s^{eff} \cdot H'}{\pi \cdot [\theta_{ws} + (k_s \cdot \rho_s) + (H' \cdot \theta_{as})] \cdot \tau}}$	R3
	$VF_{ss} = \frac{W \cdot \rho_s \cdot d \cdot 10^3 \frac{cm^3 \cdot kg}{m^3 \cdot g}}{U_{air} \cdot \delta_{air} \cdot \tau}$	R4	

	<p>Volatilization Factor for Surficial Soils Regarding Particulates, VF_p (kg/m^3)</p>	$VF_p = \frac{P_e \cdot W \cdot 10^3 \frac{\text{cm}^3 \cdot \text{kg}}{\text{m}^3 \cdot \text{g}}}{U_{air} \cdot \delta_{air}}$	<p>R5</p>
	<p>Effective Diffusion Coefficient in Soil Based on Vapor-Phase Concentration D_s^{eff} (cm^2/s)</p>	$D_s^{eff} = \frac{D^{air} \cdot \theta_{as}^{3.33}}{\theta_T^2} + \frac{D^{water} \cdot \theta_{ws}^{3.33}}{H' \cdot \theta_T^2}$	<p>R6</p>
<p>Equations for the ambient vapor inhalation (outdoor) route from subsurface soils</p>	<p>Remediation Objectives for Carcinogenic Contaminants (mg/kg)</p>	$\frac{RBSL_{air} \cdot 10^{-3}}{VF_{samb}}$	<p>R7</p>
	<p>Remediation Objectives for Non-carcinogenic Contaminants (mg/kg)</p>	$\frac{RBSL_{air} \cdot 10^{-3}}{VF_{samb}}$	<p>R8</p>

<p>Carcinogenic Risk-Based Screening Level for Air, $RBSL_{air}$ (ug/m^3)</p>	$RBSL_{air} = \frac{TR \cdot BW \cdot AT_c \cdot 365 \frac{d}{yr} \cdot 10^3 \frac{ug}{mg}}{SF_i \cdot IR_{air} \cdot EF \cdot ED}$	<p>R9</p>
<p>Noncarcinogenic Risk-Based Screening Level for Air, $RBSL_{air}$ (ug/m^3)</p>	$RBSL_{air} = \frac{THQ \cdot RfD_i \cdot BW \cdot AT_n \cdot 365 \frac{d}{yr} \cdot 10^3 \frac{ug}{mg}}{IR_{air} \cdot EF \cdot ED}$	<p>R10</p>
<p>Volatilization Factor - Subsurface Soil to Ambient Air, VF_{samb} (mg/m^3)/(mg/kg_{soil})</p>	$VF_{samb} = \frac{H' \cdot \rho_s \cdot 10^3 \frac{cm^3 \cdot kg}{m^3 \cdot g}}{[\theta_{ws} + (k_s \cdot \rho_s) + (H' \cdot \theta_{as})] \cdot \left[1 + \frac{(U_{air} \cdot \delta_{air} \cdot L_s)}{(D_s^{eff} \cdot W)} \right]}$	<p>R11</p>

Equations for the Soil Component of the Groundwater Ingestion Exposure Route	Remediation Objective (mg/kg)	$\frac{GW_{source}}{LF_{sw}}$ <p>NOTE: This equation can only be used to model contaminant migration not in the water bearing unit.</p>	R12
	Groundwater at the source, GW_{source} (mg/L)	$GW_{source} = \frac{GW_{comp}}{C_{(x)}/C_{source}}$	R13
	Leaching Factor, LF_{sw} (mg/L _{water})/(mg/kg _{soil})	$LF_{sw} = \frac{\rho_s \cdot \frac{cm^3 \cdot kg}{L \cdot g}}{[\theta_{ws} + (k_s \cdot \rho_s) + (H' \cdot \theta_{as})] \cdot \left[1 + \frac{(U_{gw} \cdot \delta_{gw})}{(I \cdot W)} \right]}$	R14
	Steady-State Attenuation Along the Centerline of a Dissolved Plume, $C_{(x)}/C_{source}$	$C_{(x)}/C_{source} = \exp \left[\left(\frac{X}{2\alpha_x} \right) \cdot \left(1 - \sqrt{1 + \frac{4\lambda \cdot \alpha_x}{U}} \right) \right] \cdot \operatorname{erf} \left[\frac{S_w}{4 \cdot \sqrt{\alpha_y \cdot X}} \right] \cdot \operatorname{erf} \left[\frac{S_d}{2 \cdot \sqrt{\alpha_z \cdot X}} \right]$ <p>NOTE: 1. This equation does not predict the contaminant flow within bedrock and may not accurately predict downgradient concentrations in the presence of a confining layer. 2. If the value of the First Order Degradation Constant (λ) is not readily available, then set $\lambda = 0$.</p>	R15
	Longitudinal Dispersivity, α_x (cm)	$\alpha_x = 0.10 \cdot X$	R16

Transverse Dispersivity, α_y (cm)	$\alpha_y = \frac{\alpha_x}{3}$	R17
Vertical Dispersivity, α_z (cm)	$\alpha_z = \frac{\alpha_x}{20}$	R18
Specific Discharge, U (cm/d)	$U = \frac{K \cdot i}{\theta_T}$	R19
Soil-Water Sorption Coefficient, k_s	$k_s = K_{oc} \cdot f_{oc}$	R20
Volumetric Air Content in Vadose Zone Soils, θ_{as} (cm ³ _{air} /cm ³ _{soil})	$\theta_{as} = \theta_T - \frac{(w \cdot \rho_s)}{\rho_w}$	R21
Volumetric Water Content in Vadose Zone Soils, θ_{ws} (cm ³ _{water} /cm ³ _{soil})	$\theta_{ws} = \frac{w \cdot \rho_s}{\rho_w}$	R22
Total Soil Porosity, θ_T (cm ³ /cm ³ _{soil})	$\theta_T = \theta_{as} + \theta_{ws}$	R23

	Groundwater Darcy Velocity, U_{gw} (cm/yr)	$U_{gw} = K \cdot i$	R24
Equations for the Groundwater Ingestion Exposure Route	Remediation Objective for Carcinogenic Contaminants (mg/L)	$\frac{TR \cdot BW \cdot AT_c \cdot 365 \frac{d}{yr}}{SF_o \cdot IR_w \cdot EF \cdot ED}$	R25
	Dissolved Hydrocarbon Concentration along Centerline, $C_{(x)}$ (mg/L _{water})	$C_{(x)} = C_{source} \cdot \exp \left[\left(\frac{X}{2\alpha_x} \right) \cdot \left(1 - \sqrt{1 + \frac{4\lambda \cdot \alpha_x}{U}} \right) \right] \cdot \operatorname{erf} \left[\frac{S_w}{4 \cdot \sqrt{\alpha_y \cdot X}} \right] \cdot \operatorname{erf} \left[\frac{S_d}{2 \cdot \sqrt{\alpha_z \cdot X}} \right]$ <p>NOTE:</p> <ol style="list-style-type: none"> 1. This equation does not predict the contaminant flow within bedrock and may not accurately predict downgradient concentrations in the presence of a confining layer. 2. If the value of the First Order Degradation Constant (λ) is not readily available, then set $\lambda = 0$. 	R26

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX C Tier 2 Illustrations and Tables

Section 742.Table D RBCA Parameters

Symbol	Parameter	Units	Source	Parameter Value(s)
AT _c	Averaging Time for Carcinogens	yr	RBCA	70
AT _n	Averaging Time for Noncarcinogens	yr	RBCA	Residential = 30 Industrial/Commercial = 25 Construction Worker = 0.115
BW	Adult Body Weight	kg	RBCA	70
C _{source}	The greatest potential concentration of the contaminant of concern in the groundwater at the source of the contamination, based on the concentrations of contaminants in groundwater due to the release and the projected concentration of the contaminant migrating from the soil to the groundwater.	mg/L	Field Measurement	Site-Specific
C _(x)	Concentration of Contaminant in Groundwater at Distance X from the source	mg/L	Equation R26 in Appendix C, Table C	Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
$C_{(x)}/C_{\text{source}}$	Steady-State Attenuation Along the Centerline of a Dissolved Plume	unitless	Equation R15 in Appendix C, Table C	Calculated Value
d	Lower Depth of Surficial Soil Zone	cm	Field Measurement	100 or Site-Specific (not to exceed 100)
D^{air}	Diffusion Coefficient in Air	cm^2/s	Appendix C, Table E	Chemical-Specific
D^{water}	Diffusion Coefficient in Water	cm^2/s	Appendix C, Table E	Chemical-Specific
D_s^{eff}	Effective Diffusion Coefficient in Soil Based on Vapor-Phase Concentration	cm^2/s	Equation R6 in Appendix C, Table C	Calculated Value
ED	Exposure Duration	yr	RBCA	Residential = 30 Industrial/Commercial = 25 Construction Worker = 1
EF	Exposure Frequency	d/yr	RBCA	Residential = 350 Industrial/Commercial = 250 Construction Worker = 30
erf	Error Function	unitless	Appendix C, Table G	Mathematical Function

Symbol	Parameter	Units	Source	Parameter Value(s)
f_{oc}	Organic Carbon Content of Soil	g/g	RBCA or Field Measurement (See Appendix C, Table F)	Surface Soil = 0.006 Subsurface Soil = 0.002 or Site-Specific
GW_{comp}	Groundwater Objective at the Compliance Point	mg/L	Appendix B, Table E, 35 IAC 620.Subpart F, or Equation R25 in Appendix C, Table C	Site-Specific
GW_{source}	Groundwater Concentration at the Source	mg/L	Equation R13 in Appendix C, Table C	Calculated Value
H'	Henry's Law Constant	cm^3_{water}/cm^3_{air}	Appendix C, Table E	Chemical-Specific
i	Hydraulic Gradient	cm/cm (unitless)	Field Measurement (See Appendix C, Table F)	Site-Specific
I	Infiltration Rate	cm/yr	RBCA	30
IR_{air}	Daily Outdoor Inhalation Rate	m^3/d	RBCA	20
IR_{soil}	Soil Ingestion Rate	mg/d	RBCA	Residential = 100 Industrial/Commercial = 50 Construction Worker = 480
IR_w	Daily Water Ingestion Rate	L/d	RBCA	Residential = 2 Industrial/Commercial = 1

Symbol	Parameter	Units	Source	Parameter Value(s)
K	Aquifer Hydraulic Conductivity	cm/d for Equations R15, R19 and R26 cm/yr for Equation R24	Field Measurement (See Appendix C, Table F)	Site-Specific
K _{oc}	Organic Carbon Partition Coefficient	cm ³ /g or L/kg	Appendix C, Table E or Appendix C, Table I	Chemical-Specific
k _s (non-ionizing organics)	Soil Water Sorption Coefficient	cm ³ _{water} /g _{soil}	Equation R20 in Appendix C, Table C	Calculated Value
k _s (ionizing organics)	Soil Water Sorption Coefficient	cm ³ _{water} /g _{soil}	Equation R20 in Appendix C, Table C	Chemical and pH-Specific (See Appendix C, Table I)
k _s (inorganics)	Soil Water Sorption Coefficient	cm ³ _{water} /g _{soil}	Appendix C, Table J	Chemical and pH-Specific
L _s	Depth to Subsurface Soil Sources	cm	RBCA	100
LF _{sw}	Leaching Factor	(mg/L _{water})/ (mg/kg _{soil})	Equation R14 in Appendix C, Table C	Calculated Value
M	Soil to Skin Adherence Factor	mg/cm ²	RBCA	0.5

Symbol	Parameter	Units	Source	Parameter Value(s)
Pe	Particulate Emission Rate	g/cm ² -s	RBCA	6.9 • 10 ⁻¹⁴
RAF _d	Dermal Relative Absorption Factor	unitless	RBCA	0.5
RAF _d (PNAs)	Dermal Relative Absorption Factor	unitless	RBCA	0.05
RAF _d (inorganics)	Dermal Relative Absorption Factor	unitless	RBCA	0
RAF _o	Oral Relative Absorption Factor	unitless	RBCA	1.0
RBSL _{air}	Carcinogenic Risk-Based Screening Level for Air	ug/m ³	Equation R9 in Appendix C, Table C	Chemical-, Media-, and Exposure Route-Specific
RBSL _{air}	Noncarcinogenic Risk-Based Screening Level for Air	ug/m ³	Equations R10 in Appendix C, Table C	Chemical-, Media-, and Exposure Route-Specific
RfD _i	Inhalation Reference Dose	mg/kg-d	IEPA (IRIS/HEAST ^a)	Toxicological-Specific
RfD _o	Oral Reference Dose	mg/(kg-d)	IEPA (IRIS/HEAST ^a)	Toxicological-Specific (Note: for Construction Worker use subchronic reference doses)
SA	Skin Surface Area	cm ² /d	RBCA	3,160

Symbol	Parameter	Units	Source	Parameter Value(s)
S _d	Source Width Perpendicular to Groundwater Flow Direction in Vertical Plane	cm	Field Measurement	For Migration to Groundwater Route: Use 200 or Site-Specific For Groundwater remediation objective: Use Site-Specific
S _w	Source Width Perpendicular to Groundwater Flow Direction in Horizontal Plane	cm	Field Measurement	Site-Specific
SF _i	Inhalation Cancer Slope Factor	(mg/kg-d) ⁻¹	IEPA (IRIS/HEAST ^a)	Toxicological-Specific
SF _o	Oral Slope Factor	(mg/kg-d) ⁻¹	IEPA (IRIS/HEAST ^a)	Toxicological-Specific
THQ	Target Hazard Quotient	unitless	RBCA	1
TR	Target Cancer Risk	unitless	RBCA	Residential = 10 ⁻⁶ at the point of human exposure Industrial/Commercial = 10 ⁻⁶ at the point of human exposure Construction Worker = 10 ⁻⁶ at the point of human exposure
U	Specific Discharge	cm/d	Equation R19 in Appendix C, Table C	Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
U_{air}	Average Wind Speed Above Ground Surface in Ambient Mixing Zone	cm/s	RBCA	225
U_{gw}	Groundwater Darcy Velocity	cm/yr	Equation R24 in Appendix C, Table C	Calculated Value
VF_p	Volatilization Factor for Surficial Soils Regarding Particulates	kg/m^3	Equation R5 in Appendix C, Table C	Calculated Value
VF_{samb}	Volatilization Factor (Subsurface Soils to Ambient Air)	$(mg/m^3_{air})/(mg/kg_{soil})$ or kg/m^3	Equation R11 in Appendix C, Table C	Calculated Value
VF_{ss}	Volatilization Factor for Surficial Soils	kg/m^3	Use Equations R3 and R4 in Appendix C, Table C	Calculated Value from Equation R3 or R4 (whichever is less)
W	Width of Source Area Parallel to Direction to Wind or Groundwater Movement	cm	Field Measurement	Site-Specific

Symbol	Parameter	Units	Source	Parameter Value(s)
w	Average Soil Moisture Content	$g_{\text{water}}/g_{\text{soil}}$	RBCA or Field Measurement (See Appendix C, Table F)	0.1, or Surface Soil (top 1 meter) = 0.1 Subsurface Soil (below 1 meter) = 0.2, or Site-Specific
X	Distance along the Centerline of the Groundwater Plume Emanating from a Source. The x direction is the direction of groundwater flow	cm	Field Measurement	Site-Specific
α_x	Longitudinal Dispersivity	cm	Equation R16 in Appendix C, Table C	Calculated Value
α_y	Transverse Dispersivity	cm	Equation R17 in Appendix C, Table C	Calculated Value
α_z	Vertical Dispersivity	cm	Equation R18 in Appendix C, Table C	Calculated Value
δ_{air}	Ambient Air Mixing Zone Height	cm	RBCA	200

Symbol	Parameter	Units	Source	Parameter Value(s)
δ_{gw}	Groundwater Mixing Zone Thickness	cm	RBCA	200
θ_{as}	Volumetric Air Content in Vadose Zone Soils	$\text{cm}^3_{\text{air}}/\text{cm}^3_{\text{soil}}$	RBCA or Equation R21 in Appendix C, Table C	Surface Soil (top 1 meter) = 0.28 Subsurface Soil (below 1 meter) = 0.13, Or Gravel = 0.05 Sand = 0.14 Silt = 0.16 Clay = 0.17, or Calculated Value
θ_{ws}	Volumetric Water Content in Vadose Zone Soils	$\text{cm}^3_{\text{water}}/\text{cm}^3_{\text{soil}}$	RBCA or Equation R22 in Appendix C, Table C	Surface Soil (top 1 meter) = 0.15 Subsurface Soil (below 1 meter) = 0.30, or Gravel = 0.20 Sand = 0.18 Silt = 0.16 Clay = 0.17, or Calculated Value

Symbol	Parameter	Units	Source	Parameter Value(s)
θ_T	Total Soil Porosity	$\text{cm}^3/\text{cm}^3_{\text{soil}}$	RBCA or Equation R23 in Appendix C, Table C	0.43, or Gravel = 0.25 Sand = 0.32 Silt = 0.40 Clay = 0.36, or Calculated Value
λ	First Order Degradation Constant	d^{-1}	Appendix C, Table E	Chemical-Specific
π	pi			3.1416
ρ_b	Soil Bulk Density	g/cm^3	RBCA or Field Measurement (See Appendix C, Table F)	1.5, or Gravel = 2.0 Sand = 1.8 Silt = 1.6 Clay = 1.7, or Site-Specific
ρ_w	Water Density	g/cm^3	RBCA	1
τ	Averaging Time for Vapor Flux	s	RBCA	$9.46 \cdot 10^8$

^a HEAST = Health Effects Assessment Summary Tables. USEPA, Office of Solid Waste and Emergency Response. EPA/540/R-95/036. Updated Quarterly.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX C: Tier 2 Illustrations and Tables

Section 742.Table E: Default Physical and Chemical Parameters^e

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D _i) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H') (25°C)	Dimensionless Henry's Law Constant (H') (13°C) For the indoor inhalation exposure route	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (λ) (d ⁻¹)	Vapor Pressure (mm/Hg)
Neutral Organics									
83-32-9	Acenaphthene	3.60E+00	4.76E-02	7.69E-06	6.60E-03	----- ^b	6.30E+03	3.40E-03	2.50E-03
67-64-1	Acetone	1.00E+06	1.24E-01	1.14E-05	1.60E-03	9.73E-04	7.80E-01	4.95E-02	2.30E+02
15972-60-8	Alachlor	2.40E+02	2.13E-02	5.28E-06	3.40E-06	----- ^b	3.20E+03	No Data	2.20E-05
116-06-3	Aldicarb	6.03E+03	3.18E-02	7.24E-06	5.90E-08	----- ^b	1.29E+01	1.09E-03	3.47E-05
309-00-2	Aldrin	1.70E-02	1.96E-02	4.86E-06	7.00E-03	----- ^b	2.50E+05	5.90E-04	6.00E-06
120-12-7	Anthracene	4.30E-02	3.85E-02	7.74E-06	2.70E-03	----- ^b	2.50E+04	7.50E-04	2.70E-06
1912-24-9	Atrazine	7.00E+01	2.59E-02	6.67E-06	9.68E-08	----- ^b	3.63E+02	No Data	2.70E-07
71-43-2	Benzene	1.80E+03	8.80E-02	1.02E-05	2.30E-01	1.34E-01	5.00E+01	9.00E-04	9.50E+01
56-55-3	Benzo(a)anthracene	9.40E-03	5.10E-02	9.00E-06	1.39E-04	----- ^b	4.00E+05	5.10E-04	1.10E-07
205-99-2	Benzo(b)fluoranthene	1.50E-03	2.23E-02	5.56E-06	4.55E-03	----- ^b	1.05E+06	5.70E-04	5.00E-07
207-08-9	Benzo(k)fluoranthene	8.00E-04	2.23E-02	5.56E-06	3.40E-05	----- ^b	1.00E+06	1.60E-04	2.00E-09

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D_i) (cm^2/s)	Diffusivity in Water (D_w) (cm^2/s)	Dimensionless Henry's Law Constant (H') (25°C)	Dimensionless Henry's Law Constant (H') (13°C) For the indoor inhalation exposure route	Organic Carbon Partition Coefficient (K_{oc}) (L/kg)	First Order Degradation Constant (λ) (d^{-1})	Vapor Pressure (mm/Hg)
65-85-0	Benzoic Acid	3.40E+03	7.02E-02	7.97E-06	1.56E-06	----- ^b	1.21E+00 ^d	No Data	7.00E-04
50-32-8	Benzo(a)pyrene	1.60E-03	4.30E-02	9.49E-06	4.50E-05	----- ^b	7.90E+05	6.50E-04	5.50E-09
111-44-4	Bis(2-chloroethyl)ether	1.72E+04	4.13E-02	7.53E-06	7.40E-04	2.94E-04	1.26E+01	1.90E-03	1.55E+00
117-81-7	Bis(2-ethylhexyl) phthalate	3.40E-01	3.51E-02	3.66E-06	4.10E-06	----- ^b	1.00E+05	1.80E-03	6.80E-08
75-27-4	Bromodichloro-methane	6.70E+03	5.61E-02	1.06E-05	6.60E-02	3.71E-02	5.00E+01	No Data	5.00E+01
75-25-2	Bromoform	3.10E+03	1.49E-02	1.03E-05	2.19E-02	1.06E-02	9.12E+01	1.90E-03	5.51E+00
71-36-3	Butanol	7.40E+04	8.00E-02	9.30E-06	3.61E-04	1.55E-04	6.00E+00	1.28E-02	7.00E+00
78-93-3	2-Butanone (MEK)	2.20E+05	8.08E-02	9.8E-06	2.30E-03	1.32E-03	2.00E+00	4.95E-02	9.50E+01
85-68-7	Butyl Benzyl Phthalate	2.70E+00	1.99E-02	4.89E-06	5.30E-05	----- ^b	6.30E+04	3.85E-03	8.30E-06
86-74-8	Carbazole	1.20E+00	4.17E-02	7.45E-06	3.60E-06	----- ^b	4.00E+03	No Data	7.00E-04
1563-66-2	Carbofuran	3.20E+02	2.37E-02	5.95E-06	1.27E-07	----- ^b	1.91E+02	No Data	4.85E-06
75-15-0	Carbon Disulfide	1.20E+03	1.04E-01	1.00E-05	1.23E+00	8.06E-01	6.30E+01	No Data	3.60E+02
56-23-5	Carbon Tetrachloride	7.90E+02	7.80E-02	8.80E-06	1.23E+00	7.48E-01	2.00E+02	1.90E-03	1.20E+02
57-74-9	Chlordane	5.60E-02	1.79E-02	4.37E-06	2.00E-03	----- ^b	2.50E+05	2.50E-04	9.80E-06

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D _i) (cm ² /s)	Diffusivity in Water (D _w) (cm ² /s)	Dimensionless Henry's Law Constant (H') (25°C)	Dimensionless Henry's Law Constant (H') (13°C) For the indoor inhalation exposure route	Organic Carbon Partition Coefficient (K _{oc}) (L/kg)	First Order Degradation Constant (λ) (d ⁻¹)	Vapor Pressure (mm/Hg)
106-47-8	p-Chloroaniline	5.30E+03	6.99E-02	1.01E-05	4.76E-05	----- ^b	6.31E+01	No Data	1.23E-02
108-90-7	Chlorobenzene	4.70E+02	7.30E-02	8.70E-06	1.50E-01	7.93E-02	2.00E+02	2.30E-03	1.20E+01
124-48-1	Chlorodibromo-methane	2.60E+03	3.66E-02	1.05E-05	3.20E-02	2.07E-02	6.92E+01	3.85E-03	4.90E+00
67-66-3	Chloroform	7.90E+03	1.04E-01	1.00E-05	1.50E-01	9.18E-02	5.00E+01	3.90E-04	2.00E+02
95-57-8	2-Chlorophenol	2.20E+04	6.61E-02	9.46E-06	1.60E-02	7.28E-03	5.93E+01 ^d	No Data	2.34E+00
218-01-9	Chrysene	6.30E-03	2.44E-02	6.21E-06	3.90E-03	----- ^b	4.00E+05	3.50E-04	6.20E-09
94-75-7	2,4-D	6.77E+02	5.88E-02	6.49E-06	4.18E-07	----- ^b	5.75E+02	3.85E-03	6.00E-07
72-54-8	4,4'-DDD	9.00E-02	2.27E-02	5.79E-06	1.60E-04	----- ^b	7.90E+05	6.20E-05	6.70E-07
72-55-9	4,4'-DDE	1.20E-01	2.38E-02	5.87E-06	8.60E-04	----- ^b	4.00E+05	6.20E-05	6.00E-06
50-29-3	4,4'-DDT	2.50E-02	1.99E-02	4.95E-06	3.30E-04	----- ^b	2.00E+06	6.20E-05	1.60E-07
75-99-0	Dalapon	9.00E+05	6.08E-02	9.45E-06	2.64E-06	NA	4.80E+00	5.78E-03	1.90E-01
53-70-3	Dibenzo(a,h)anthracene	2.50E-03	2.11E-02	5.24E-06	6.10E-07	----- ^b	2.50E+06	3.70E-04	1.00E-10
96-12-8	1,2-Dibromo-3-chloropropane	1.20E+03	2.68E-02	7.02E-06	6.20E-03 ^c	NA	7.90E+01	1.93E-03	5.80E-01
106-93-4	1,2-Dibromoethane	4.00E+03	4.37E-02	8.44E-06	3.00E-02	1.54E-02	5.00E+01	5.78E-03	1.30E+01

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84-74-2	Di-n-butyl Phthalate	1.10E+01	4.38E-02	7.86E-06	7.40E-05	----- ^a	4.00E+04	3.01E-02	7.30E-05
1918-00-9	Dicamba	4.50E+03	2.37E-02	5.95E-06	2.18E-09	----- ^a	2.95E+00	No Data	3.38E-05
95-50-1	1,2-Dichlorobenzene	1.56E+02	6.90E-02	7.90E-06	7.79E-02	3.56E-02	5.75E+02	1.90E-03	1.36E+00
106-46-7	1,4-Dichlorobenzene	7.90E+01	6.90E-02	7.90E-06	9.80E-02	4.69E-02	7.90E+02	1.90E-03	1.00E+00
91-94-1	3,3-Dichlorobenzidine	3.10E+00	2.59E-02	6.74E-06	1.60E-07	----- ^a	2.82E+03	1.90E-03	3.71E-08
75-71-8	Dichlorodifluoromethane	2.80E+02	7.60E-02	1.08E-05	1.41E+01	8.14E+00	6.17E+01	1.92E-03	4.85E+03
75-34-3	1,1-Dichloroethane	5.10E+03	7.42E-02	1.05E-05	2.30E-01	1.42E-01	3.20E+01	1.90E-03	2.30E+02
107-06-2	1,2-Dichloroethane	8.50E+03	1.04E-02	9.90E-06	4.00E-02	2.29E-02	2.00E+01	1.90E-03	7.90E+01
75-35-4	1,1-Dichloroethylene	2.30E+03	9.00E-02	1.04E-05	1.10E+00	7.10E-01	5.00E+01	5.30E-03	6.00E+02
156-59-2	<i>cis</i> -1,2-Dichloroethylene	3.50E+03	8.86E-02	1.13E-05	1.70E-01	1.00E-01	4.00E+01	2.40E-04	2.00E+02
156-60-5	<i>trans</i> -1,2-Dichloroethylene	6.30E+03	7.03E-02	1.19E-05	3.90E-01	2.43E-01	5.00E+01	2.40E-04	3.30E+02
120-83-2	2,4-Dichlorophenol	4.50E+03	4.89E-02	8.77E-06	1.30E-04	----- ^a	7.32E+02 ^d	2.70E-04	6.70E-02

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78-87-5	1,2-Dichloropropane	2.80E+03	7.82E-02	8.73E-06	1.10E-01	6.52E-02	5.00E+01	2.70E-04	5.20E+01
542-75-6	1,3-Dichloropropylene (cis + trans)	2.80E+03	6.26E-02	1.00E-05	7.40E-01	3.98E-01	2.00E+01	6.10E-02	3.40E+01
60-57-1	Dieldrin	2.00E-01	1.92E-02	4.74E-06	6.2E-04	----- ^a	2.50E+04	3.20E-04	5.9E-06
84-66-2	Diethyl Phthalate	1.10E+03	2.49E-02	6.35E-06	1.80E-05	----- ^a	3.20E+02	6.19E-03	1.60E-03
105-67-9	2,4-Dimethylphenol	7.90E+03	6.43E-02	8.69E-06	8.20E-05	----- ^a	2.00E+02	4.95E-02	9.80E-02
75-71-8	1,3-Dinitrobenzene	8.60E+02	4.55E-02	8.46E-06	2.30E-07	----- ^a	3.20E+01	1.92E-03	9.00E-04
51-28-5	2,4-Dinitrophenol	2.79E+03	2.73E-02	9.06E-06	1.82E-05	----- ^a	3.24E+01	1.32E-03	5.10E-03
121-14-2	2,4-Dinitrotoluene	2.70E+02	2.03E-01	7.06E-06	3.80E-06	----- ^a	8.90E+01	1.92E-03	1.47E-04
606-20-2	2,6-Dinitrotoluene	1.82E+02	3.70E-02	7.76E-06	3.06E-05	----- ^a	4.90E+01	1.92E-03	5.67E-04
88-85-7	Dinoseb	5.20E+01	2.45E-02	6.25E-06	1.87E-05	----- ^a	9.17E+01 ^d	2.82E-03	7.50E-05
117-84-0	Di-n-octyl Phthalate	2.00E-02	1.73E-02	4.17E-06	2.74E-03	----- ^a	1.30E+05	1.90E-03	2.60E-06
123-91-1	p-Dioxane	1.00E+06	2.29E-01	1.02E-05	1.97E-04	1.07E-04	7.20E-01	1.92E-03	3.81E+01
115-29-7	Endosulfan	5.10E-01	1.85E-02	4.55E-06	4.51E-04	----- ^a	5.00E+03	7.63E-02	1.00E-05

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145-73-3	Endothall	2.10E+04	2.91E-02	8.07E-06	1.58E-14	----- ^a	7.59E+01	No Data	1.57E-10
72-20-8	Endrin	2.50E-01	1.92E-02	4.74E-6	3.08E-04	----- ^a	3.20E+04	3.20E-04	3.00E-06
100-41-4	Ethylbenzene	1.70E+02	7.50E-02	7.80E-06	3.24E-01	1.64E-01	3.20E+02	3.00E-03	9.60E+00
206-44-0	Fluoranthene	2.06E-01	2.51E-02	6.35E-06	6.60E-04	----- ^a	7.40E+04	1.90E-04	1.23E-08
86-73-7	Fluorene	2.00E+00	4.40E-02	7.88E-06	2.62E-03	----- ^a	1.30E+04	6.91E-04	6.30E-04
76-44-8	Heptachlor	1.80E-01	2.23E-02	5.69E-06	6.07E-02	1.73E-02	3.00E+03	1.30E-01	4.00E-04
1024-57-3	Heptachlor epoxide	2.00E-01	2.19E-02	5.57E-06	3.90E-04	----- ^a	2.00E+05	6.30E-04	1.90E-05
118-74-1	Hexachlorobenzene	6.20E-03	5.42E-02	5.91E-06	5.33E-02	1.35E-02	2.00E+04	1.70E-04	1.80E-05
319-84-6	Alpha-HCH (alpha-BHC)	2.00E+00	2.04E-02	5.04E-06	4.51E-04	----- ^a	5.00E+03	2.50E-03	4.50E-05
58-89-9	Gamma-HCH (Lindane)	7.30E+00	2.75E-02	7.34E-06	5.74E-04	----- ^a	3.00E+03	2.90E-03	4.10E-04
2691-41-0	High Melting Explosive, Octogen (HMX)	5.00E+00	2.69E-02	7.15E-06	8.67E-10	3.55E-08	1.40E+00	No Data	3.30E-14
77-47-4	Hexachlorocyclopentadiene	1.80E+00	2.79E-02	7.21E-06	1.11E+00	4.22E-01	1.20E+04	1.20E-02	5.96E-02
67-72-1	Hexachloroethane	5.00E+01	2.50E-03	6.80E-06	1.59E-01	7.26E-02	1.50E+03	1.92E-03	2.10E-01

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193-39-5	Indeno(1,2,3-c,d)pyrene	2.20E-05	2.25E-02	5.66E-06	6.56E-05	----- ^a	3.10E+06	4.70E-04	1.00E-10
78-59-1	Isophorone	1.20E+04	6.23E-02	6.76E-06	2.72E-04	1.12E-04	2.50E+01	1.24E-02	4.38E-01
98-82-8	Isopropylbenzene (Cumene)	6.10E+01	6.50E-02	7.10E-06	4.92E+01	2.10E+01	1.02E+03	4.33E-02	4.50E+00
93-65-2	Mecoprop (MCP)	8.95E+02	2.40E-02	6.05E-06	7.70E-09	----- ^a	1.84E+01 ^d	3.85E-03	2.44E-05
7439-97-6	Mercury	6.00E-02	7.14E-02	3.01E-05	4.51E-01	1.59E-01	8.70E+03	No Data	2.00E-03
72-43-5	Methoxychlor	4.50E-02	1.84E-02	4.46E-06	6.56E-04	----- ^a	5.00E+04	1.90E-03	6.00E-07
74-83-9	Methyl Bromide	1.50E+04	7.28E-02	1.21E-05	2.56E-01	1.79E-01	1.00E+01	1.82E-02	1.62E+03
1634-04-4	Methyl tertiary-butyl ether	5.10E+04	8.59E-02	1.10E-05	2.42E-02	1.50E-02	1.00E+01	No Data	2.50E+02
75-09-2	Methylene Chloride	1.30E+04	1.01E-01	1.17E-05	9.02E-02	5.70E-02	1.30E+01	1.20E-02	4.30E+02
93-65-2	2-Methylnaphthalene	2.50E+01	5.22E-02	7.75E-06	2.10E-02	6.95E-03	1.60E+03	No Data	6.80E-02
95-48-7	2-Methylphenol (o-cresol)	2.60E+04	7.40E-02	8.30E-06	4.92E-05	2.00E-05	4.20E+01	4.95E-02	2.99E-01
91-20-3	Naphthalene	3.10E+01	5.90E-02	7.50E-06	1.97E-02	8.29E-03	5.00E+02	2.70E-03	8.50E-02
98-95-3	Nitrobenzene	2.09E+03	7.60E-02	8.60E-06	9.84E-04	3.99E-04	4.00E+01	1.76E-03	2.40E-01

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86-30-6	N-Nitrosodiphenylamine	3.50E+01	2.83E-02	7.19E-06	2.10E-04	----- ^a	1.00E+03	1.00E-02	6.70E-04
621-64-7	N-Nitrosodi-n-propylamine	9.89E+03	5.87E-02	8.17E-06	9.20E-05	5.48E-05	1.45E+01	1.90E-03	1.30E-01
87-86-5	Pentachlorophenol	2.00E+03	5.60E-02	6.10E-06	9.84E-07	----- ^a	2.77E+03 ^d	4.50E-04	3.20E-05
108-95-2	Phenol	8.30E+04	8.20E-02	9.10E-06	1.64E-05	6.67E-06	2.00E+01	9.90E-02	2.80E-01
1918-02-1	Picloram	4.30E+02	2.26E-02	5.64E-06	2.19E-12	----- ^a	2.00E+00	No Data	7.21E-11
1336-36-3	Polychlorinated biphenyls (PCBs)	----- ^a	----- ^a	----- ^a	----- ^a	----- ^a	----- ^a	----- ^a	----- ^a
129-00-0	Pyrene	1.40E+00	2.77E-02	7.24E-06	4.51E-04	----- ^a	6.31E+04	1.80E-04	4.60E-06
121-82-4	Royal Demolition Explosive, Cyclonite (RDX)	5.97E+01	3.11E-02	8.49E-06	2.01E-11	----- ^a	7.20E+00	No Data	4.10E-09
122-34-9	Simazine	6.20E+00	2.48E-02	6.28E-06	3.80E-08	----- ^a	1.32E+02	No Data	2.21E-08
100-42-5	Styrene	3.10E+02	7.10E-02	8.00E-06	1.11E-01	5.48E-03	3.16E+02	3.30E-03	6.10E+00
93-72-1	2,4,5-TP (Silvex)	7.10E+01	2.30E-02	5.83E-06	3.71E-07	----- ^a	5.50E+03	No Data	9.97E-06
127-18-4	Tetrachloroethylene	2.00E+02	7.20E-02	8.20E-06	7.38E-01	4.00E-01	6.31E+02	9.60E-04	1.90E+01
108-88-3	Toluene	5.30E+02	8.70E-02	8.60E-06	2.71E-01	1.49E-01	1.58E+02	1.10E-02	2.80E+01

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8001-35-2	Toxaphene	7.40E-01	2.16E-02	5.51E-06	2.46E-04	----- ^a	5.01E+04	No Data	9.80E-07
120-82-1	1,2,4-Trichlorobenzene	3.50E+01	3.00E-02	8.23E-06	5.74E-02	2.38E-02	1.58E+03	1.90E-03	4.30E-01
71-55-6	1,1,1-Trichloroethane	1.30E+03	7.80E-02	8.80E-06	6.97E-01	4.21E-01	1.26E+02	1.30E-03	1.20E+02
79-00-5	1,1,2-Trichloroethane	4.40E+03	7.80E-02	8.80E-06	3.73E-02	1.98E-02	5.01E+01	9.50E-04	2.30E+01
79-01-6	Trichloroethylene	1.50E+03	7.90E-02	9.10E-06	4.10E-01	2.41E-01	1.00E+02	4.20E-04	7.30E+01
75-69-4	Trichlorofluoromethane	1.10E+03	8.70E-02	9.70E-06	3.98E+00	2.69E+00	1.30E+02	9.63E-04	8.00E+02
95-95-4	2,4,5-Trichlorophenol	1.20E+03	2.91E-02	7.03E-06	1.78E-04	----- ^a	2.68E+03 ^d	3.80E-04	2.40E-02
88-06-2	2,4,6-Trichlorophenol	8.00E+02	2.61E-02	6.36E-06	3.53E-04	----- ^a	8.78E+02 ^d	3.80E-04	2.00E-02
108-05-4	Vinyl Acetate	2.00E+04	8.50E-02	9.20E-06	2.09E-02	1.18E-02	4.57E+00	No Data	9.00E+01
99-35-4	1,3,5-Trinitrobenzene	2.80E+02	2.41E-02	6.08E-06	3.30E-10	----- ^a	1.60E+01	No Data	6.40E-06
118-96-7	2,4,6-Trinitrotoluene (TNT)	1.24E+02	2.94E-02	7.90E-06	4.87E-09	----- ^a	3.72E+01	1.92E-03	2.02E-06
57-01-4	Vinyl Chloride	8.80E+03	1.06E-01	1.23E-06	1.11E+00	8.14E-01	1.58E+01	2.40E-04	3.00E+03
108-38-3	m-Xylene	1.60E+02	7.00E-02	7.80E-06	2.99E-01	1.52E-01	3.98E+02	1.90E-03	8.50E+00

CAS No.	Chemical	Solubility in Water (S) (mg/L)	Diffusivity in Air (D_i) (cm^2/s)	Diffusivity in Water (D_w) (cm^2/s)	Dimensionless Henry's Law Constant (H') (25°C)	Dimensionless Henry's Law Constant (H') (13°C) For the indoor inhalation exposure route	Organic Carbon Partition Coefficient (K_{oc}) (L/kg)	First Order Degradation Constant (λ) (d^{-1})	Vapor Pressure (mm/Hg)
95-47-6	o-Xylene	1.80E+02	8.70E-02	1.00E-05	2.13E-01	1.07E-01	3.16E+02	1.90E-03	6.60E+00
106-42-3	p-Xylene	1.60E+02	7.69E-02	8.44E-06	3.16E-01	1.59E-01	3.16E+02	1.90E-03	8.90E+00
1330-20-7	Xylenes (total)	1.10E+02	7.35E-02	9.23E-06	2.71E-01	NA	3.98E+02	1.90E-03	8.00E+00

Chemical Abstracts Service (CAS) registry number. This number in the format xxx-xx-x, is unique for each chemical and allows efficient searching on computerized data bases.

- ^a Soil remediation objectives are determined pursuant to 40 CFR 761, as incorporated by reference at Section 742.210(b) (the USEPA "PCB Spill Cleanup Policy"), for most sites; persons remediating sites should consult with BOL if calculation of Tier 2 or 3 remediation objectives is desired. PCBs are a mixture of different congeners. The appropriate values to use for the physical/chemical parameters depend on congeners present at the site.
- ^b Dimensionless Henry's Law Constant at 13°C is not calculated because the chemical is not volatile and does not require evaluation under the indoor inhalation exposure route.
- ^c Dimensionless Henry's Law Constant = 20°C
- ^d These chemicals are ionizing and its K_{oc} value will change with pH. The K_{oc} values listed in this table is the effective K_{oc} at pH of 6.8. If the site-specific pH is values other than 6.8, the K_{oc} value listed in Section 742, Appendix C, Table I should be used.
- ^e The values in this table were taken from the following sources (in order of preference): SCDMS online database (<http://www.epa.gov/superfund/sites/npl/hrsres/tools/scdm.htm>); CHEMFATE online database (<http://www.srcinc.com/what-we-do/databaseforms.aspx?id=381>); PhysProp online database (<http://www.srcinc.com/what-we-do/databaseforms.aspx?id=386>); Water9

(<http://www.epa.gov/ttn/chief/software/water/>) for diffusivity values; and Handbook of Environmental Degradation Rates by P.H. Howard (1991) for first order degradation constant values.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX C: Tier 2 Illustrations and Tables

Section 742.Table F: Methods for Determining Physical Soil Parameters

Methods for Determining Physical Soil Parameters		
Parameter	Sampling Location ^a	Method
ρ_b (soil bulk density)	Surface	ASTM - D 1556-90 Sand Cone Method ^b
		ASTM - D 2167-94 Rubber Balloon Method ^b
		ASTM - D 2922-91 Nuclear Method ^b
	Subsurface	ASTM - D 2937-94 Drive Cylinder Method ^b
ρ_s (soil particle density)	Surface or Subsurface	ASTM - D 854-92 Specific Gravity of Soil ^b
w (moisture content)	Surface or Subsurface	ASTM - D 4959-89 (Reapproved 1994) Standard ^b
		ASTM - D 4643-93 Microwave Oven ^b
		ASTM - D2216-92 Laboratory Determination ^b
		ASTM - D3017-88 (Reapproved 1993) Nuclear Method ^b
		Equivalent USEPA Method (e.g., sample preparation procedures described in methods 3541 or 3550)
f_{oc} (fraction organic carbon content)	Surface or Subsurface	ASTM - D 2974-00 Moisture, Ash, and Organic Matter appropriately adjusted to estimate the fraction of organic carbon as stated in Nelson and Sommers (1982) ^b

Methods for Determining Physical Soil Parameters		
Parameter	Sampling Location ^a	Method
η or θ_T (total soil porosity)	Surface or Subsurface (calculated)	Equation S24 in Appendix C, Table A for SSL Model, or Equation R23 in Appendix C, Table C for RBCA Model, or Equation J&E 16 in Appendix C, Table L for J&E Model
θ_a or θ_{as} (air-filled soil porosity)	Surface or Subsurface (calculated)	Equation S21 in Appendix C, Table A for SSL Model, or Equation R21 in Appendix C, Table C for RBCA Model, or Equation J&E 18 in Appendix C, Table L for J&E Model
θ_w or θ_{ws} (water-filled soil porosity)	Surface or Subsurface (calculated)	Equation S20 in Appendix C, Table A for SSL Model, or Equation R22 in Appendix C, Table C for RBCA Model, or Equation J&E 17 in Appendix C, Table L for J&E Model
K (hydraulic conductivity)	Surface or Subsurface	ASTM - D 5084-90 Flexible Wall Permeameter ^b
		Pump Test
		Slug Test
i (hydraulic gradient)	Surface or Subsurface	Field Measurement

^a This is the location where the sample is collected

^b As incorporated by reference in Section 742.120.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX C: Tier 2 Tables and Illustrations

Section 742.Table G: Error Function (erf)

$$erf(\beta) = \frac{2}{\sqrt{\pi}} \int_0^{\beta} e^{-\varepsilon^2} d\varepsilon$$

β	$erf(\beta)$
0	0
0.05	0.056372
0.1	0.112463
0.15	0.167996
0.2	0.222703
0.25	0.276326
0.3	0.328627
0.35	0.379382
0.4	0.428392
0.45	0.475482
0.5	0.520500
0.55	0.563323
0.6	0.603856
0.65	0.642029
0.7	0.677801
0.75	0.711156
0.8	0.742101
0.85	0.770668
0.9	0.796908
0.95	0.820891
1.0	0.842701
1.1	0.880205
1.2	0.910314

1.3	0.934008
1.4	0.952285
1.5	0.966105
1.6	0.976348
1.7	0.983790
1.8	0.989091
1.9	0.992790
2.0	0.995322
2.1	0.997021
2.2	0.998137
2.3	0.998857
2.4	0.999311
2.5	0.999593
2.6	0.999764
2.7	0.999866
2.8	0.999925
2.9	0.999959
3.0	0.999978

Section 742.APPENDIX C Tier 2 Illustrations and Tables

Section 742.Table H Q/C Values by Source Area

Source (Acres)	Area Q/C Value (g/m ² -s per kg/m ³)
0.5	97.78
1	85.81
2	76.08
5	65.75
10	59.16
30	50.60

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX C TABLE I: K_{oc} Values for Ionizing Organics as a Function of pH (cm^3/g or L/kg or cm^3_{water}/g_{soil})

pH	Benzoic Acid	2-Chloro-phenol	2,4-Dichloro-phenol	Pentachloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	Dinoseb	2,4,5-TP (Silvex)
4.5	1.07E+01	3.98E+02	1.59E+02	1.34E+04	2.37E+03	1.06E+03	3.00E+04	1.28E+04
4.6	9.16E+00	3.98E+02	1.59E+02	1.24E+04	2.37E+03	1.05E+03	2.71E+04	1.13E+04
4.7	7.79E+00	3.98E+02	1.59E+02	1.13E+04	2.37E+03	1.05E+03	2.41E+04	1.01E+04
4.8	6.58E+00	3.98E+02	1.59E+02	1.02E+04	2.37E+03	1.05E+03	2.12E+04	9.16E+03
4.9	5.54E+00	3.98E+02	1.59E+02	9.05E+03	2.37E+03	1.04E+03	1.85E+04	8.40E+03
5.0	4.62E+00	3.98E+02	1.59E+02	7.96E+03	2.36E+03	1.03E+03	1.59E+04	7.76E+03
5.1	3.86E+00	3.98E+02	1.59E+02	6.93E+03	2.36E+03	1.02E+03	1.36E+04	7.30E+03
5.2	3.23E+00	3.98E+02	1.59E+02	5.97E+03	2.35E+03	1.01E+03	1.15E+04	6.91E+03
5.3	2.70E+00	3.98E+02	1.59E+02	5.10E+03	2.34E+03	9.99E+02	9.66E+03	6.60E+03
5.4	2.27E+00	3.98E+02	1.58E+02	4.32E+03	2.33E+03	9.82E+02	8.10E+03	6.36E+03
5.5	1.92E+00	3.97E+02	1.58E+02	3.65E+03	2.32E+03	9.62E+02	6.77E+03	6.16E+03
5.6	1.63E+00	3.97E+02	1.58E+02	3.07E+03	2.31E+03	9.38E+02	5.65E+03	6.00E+03
5.7	1.40E+00	3.97E+02	1.58E+02	2.58E+03	2.29E+03	9.10E+02	4.73E+03	5.88E+03
5.8	1.22E+00	3.97E+02	1.58E+02	2.18E+03	2.27E+03	8.77E+02	3.97E+03	5.78E+03
5.9	1.07E+00	3.97E+02	1.57E+02	1.84E+03	2.24E+03	8.39E+02	3.35E+03	5.70E+03
6.0	9.50E-01	3.96E+02	1.57E+02	1.56E+03	2.21E+03	7.96E+02	2.84E+03	5.64E+03
6.1	8.54E-01	3.96E+02	1.57E+02	1.33E+03	2.17E+03	7.48E+02	2.43E+03	5.59E+03
6.2	7.78E-01	3.96E+02	1.56E+02	1.15E+03	2.12E+03	6.97E+02	2.10E+03	5.55E+03
6.3	7.19E-01	3.95E+02	1.55E+02	9.98E+02	2.06E+03	6.44E+02	1.83E+03	5.52E+03

pH	Benzoic Acid	2-Chlorophenol	2,4-Dichlorophenol	Pentachlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	Dinoseb	2,4,5-TP (Silvex)
6.4	6.69E-01	3.94E+02	1.54E+02	8.77E+02	1.99E+03	5.89E+02	1.62E+03	5.50E+03
6.5	6.31E-01	3.93E+02	1.53E+02	7.81E+02	1.91E+03	5.33E+02	1.45E+03	5.48E+03
6.6	6.00E-01	3.92E+02	1.52E+02	7.03E+02	1.82E+03	4.80E+02	1.32E+03	5.46E+03
6.7	5.74E-01	3.90E+02	1.50E+02	6.40E+02	1.71E+03	4.29E+02	1.21E+03	5.45E+03
6.8	5.55E-01	3.88E+02	1.47E+02	5.92E+02	1.60E+03	3.81E+02	1.12E+03	5.44E+03
6.9	5.39E-01	3.86E+02	1.45E+02	5.52E+02	1.47E+03	3.38E+02	1.05E+03	5.43E+03
7.0	5.28E-01	3.83E+02	1.41E+02	5.21E+02	1.34E+03	3.00E+02	9.96E+02	5.43E+03
7.1	5.18E-01	3.79E+02	1.38E+02	4.96E+02	1.21E+03	2.67E+02	9.52E+02	5.42E+03
7.2	5.10E-01	3.75E+02	1.33E+02	4.76E+02	1.07E+03	2.39E+02	9.18E+02	5.42E+03
7.3	5.04E-01	3.69E+02	1.28E+02	4.61E+02	9.43E+02	2.15E+02	8.90E+02	5.42E+03
7.4	4.99E-01	3.62E+02	1.21E+02	4.47E+02	8.19E+02	1.95E+02	8.68E+02	5.41E+03
7.5	4.95E-01	3.54E+02	1.14E+02	4.37E+02	7.03E+02	1.78E+02	8.50E+02	5.41E+03
7.6	4.92E-01	3.44E+02	1.07E+02	4.29E+02	5.99E+02	1.64E+02	8.36E+02	5.41E+03
7.7	4.86E-01	3.33E+02	9.84E+01	4.23E+02	5.07E+02	1.53E+02	8.25E+02	5.41E+03
7.8	4.86E-01	3.19E+02	8.97E+01	4.18E+02	4.26E+02	1.44E+02	8.17E+02	5.41E+03
7.9	4.85E-01	3.04E+02	8.07E+01	4.14E+02	3.57E+02	1.37E+02	8.10E+02	5.41E+03
8.0	4.85E-01	2.86E+02	7.17E+01	4.10E+02	2.98E+02	1.31E+02	8.04E+02	5.41E+03
8.1	4.84E-01	2.67E+02	6.30E+01	4.09E+02	2.49E+02	1.26E+02	8.00E+02	5.40E+03
8.2	4.84E-01	2.46E+02	5.47E+01	4.07E+02	2.08E+02	1.22E+02	7.97E+02	5.40E+03
8.3	4.83E-01	2.24E+02	4.40E+01	4.05E+02	1.75E+02	1.19E+02	7.93E+02	5.40E+03

pH	Benzoic Acid	2-Chloro-phenol	2,4-Dichloro-phenol	Pentachloro-phenol	2,4,5-Trichloro-phenol	2,4,6-Trichloro-phenol	Dinoseb	2,4,5-TP (Silvex)
8.4	4.83E-01	2.02E+02	4.00E+01	4.04E+02	1.48E+02	1.17E+02	7.91E+02	5.40E+03
8.5	4.82E-01	1.80E+02	3.38E+01	4.03E+02	1.25E+02	1.15E+02	7.89E+02	5.40E+03
8.6	4.82E-01	1.58E+02	2.84E+01	4.02E+02	1.08E+02	1.13E+02	7.88E+02	5.40E+03
8.7	4.82E-01	1.37E+02	2.38E+01	4.02E+02	9.31E+02	1.12E+02	7.87E+02	5.40E+03
8.8	4.81E-01	1.18E+02	1.99E+01	4.01E+02	8.16E+02	1.11E+02	7.86E+02	5.40E+03
8.9	4.81E-01	1.00E+02	1.66E+01	4.01E+02	7.23E+01	1.10E+02	7.85E+02	5.40E+03
9.0	4.80E-01	8.47E+01	1.39E+01	4.00E+02	6.48E+01	1.09E+02	7.85E+02	5.40E+03

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX C: Tier 2 Illustrations and Tables

Section 742.TABLE J Values to be Substituted for k_d or k_s when Evaluating Inorganics as a Function of pH (cm^3/g or L/kg or $\text{cm}^3_{\text{water}}/\text{g}_{\text{soil}}$)

pH	As	Ba	Be	Cd	Cr (+3)	Cr (+6)	Hg	Ni	Ag	Se	Tl	Zn	Pb
4.9	2.5E+01	1.1E+01	2.3E+01	1.5E+01	1.2E+03	3.1E+01	4.0E-02	1.6E+01	1.0E-01	1.8E+01	4.4E+01	1.6E+01	1.5E+01
5.0	2.5E+01	1.2E+01	2.6E+01	1.7E+01	1.9E+03	3.1E+01	6.0E-02	1.8E+01	1.3E-01	1.7E+01	4.5E+01	1.8E+01	1.5E+01
5.1	2.5E+01	1.4E+01	2.8E+01	1.9E+01	3.0E+03	3.0E+01	9.0E-02	2.0E+01	1.6E-01	1.6E+01	4.6E+01	1.9E+01	1.5E+01
5.2	2.6E+01	1.5E+01	3.1E+01	2.1E+01	4.9E+03	2.9E+01	1.4E-01	2.2E+01	2.1E-01	1.5E+01	4.7E+01	2.1E+01	1.5E+01
5.3	2.6E+01	1.7E+01	3.5E+01	2.3E+01	8.1E+03	2.8E+01	2.0E-01	2.4E+01	2.6E-01	1.4E+01	4.8E+01	2.3E+01	1.5E+01
5.4	2.6E+01	1.9E+01	3.8E+01	2.5E+01	1.3E+04	2.7E+01	3.0E-01	2.6E+01	3.3E-01	1.3E+01	5.0E+01	2.5E+01	1.5E+01
5.5	2.6E+01	2.1E+01	4.2E+01	2.7E+01	2.1E+04	2.7E+01	4.6E-01	2.8E+01	4.2E-01	1.2E+01	5.1E+01	2.6E+01	1.5E+01
5.6	2.6E+01	2.2E+01	4.7E+01	2.9E+01	3.5E+04	2.6E+01	6.9E-01	3.0E+01	5.3E-01	1.1E+01	5.2E+01	2.8E+01	1.5E+01
5.7	2.7E+01	2.4E+01	5.3E+01	3.1E+01	5.5E+04	2.5E+01	1.0E-00	3.2E+01	6.7E-01	1.1E+01	5.4E+01	3.0E+01	1.5E+01
5.8	2.7E+01	2.6E+01	6.0E+01	3.3E+01	8.7E+04	2.5E+01	1.6E-00	3.4E+01	8.4E-01	9.8E+00	5.5E+01	3.2E+01	1.5E+01

pH	As	Ba	Be	Cd	Cr (+3)	Cr (+6)	Hg	Ni	Ag	Se	Tl	Zn	Pb
5.9	2.7E+01	2.8E+01	6.9E+01	3.5E+01	1.3E+05	2.4E+01	2.3E-00	3.6E+01	1.1E+00	9.2E+00	5.6E+01	3.4E+01	1.5E+01
6.0	2.7E+01	3.0E+01	8.2E+01	3.7E+01	2.0E+05	2.3E+01	3.5E-00	3.8E+01	1.3E+00	8.6E+00	5.8E+01	3.6E+01	1.5E+01
6.1	2.7E+01	3.1E+01	9.9E+01	4.0E+01	3.0E+05	2.3E+01	5.1E-00	4.0E+01	1.7E+00	8.0E+00	5.9E+01	3.9E+01	1.5E+01
6.2	2.8E+01	3.3E+01	1.2E+02	4.2E+01	4.2E+05	2.2E+01	7.5E-00	4.2E+01	2.1E+00	7.5E+00	6.1E+01	4.2E+01	1.5E+01
6.3	2.8E+01	3.5E+01	1.6E+02	4.4E+01	5.8E+05	2.2E+01	1.1E+01	4.5E+01	2.7E+00	7.0E+00	6.2E+01	4.4E+01	1.5E+01
6.4	2.8E+01	3.6E+01	2.1E+02	4.8E+01	7.7E+05	2.1E+01	1.6E+01	4.7E+01	3.4E+00	6.5E+00	6.4E+01	4.7E+01	7.1E+02
6.5	2.8E+01	3.7E+01	2.8E+02	5.2E+01	9.9E+05	2.0E+01	2.2E+01	5.0E+01	4.2E+00	6.1E+00	6.6E+01	5.1E+01	7.1E+02
6.6	2.8E+01	3.9E+01	3.9E+02	5.7E+01	1.2E+06	2.0E+01	3.0E+01	5.4E+01	5.3E+00	5.7E+00	6.7E+01	5.4E+01	7.1E+02
6.7	2.9E+01	4.0E+01	5.5E+02	6.4E+01	1.5E+06	1.9E+01	4.0E+01	5.8E+01	6.6E+00	5.3E+00	6.9E+01	5.8E+01	7.1E+02
6.8	2.9E+01	4.1E+01	7.9E+02	7.5E+01	1.8E+06	1.9E+01	5.2E+01	6.5E+01	8.3E+00	5.0E+00	7.1E+01	6.2E+01	7.1E+02
6.9	2.9E+01	4.2E+01	1.1E+03	9.1E+01	2.1E+06	1.8E+01	6.6E+01	7.4E+01	1.0E+01	4.7E+00	7.3E+01	6.8E+01	7.1E+02
7.0	2.9E+01	4.2E+01	1.7E+03	1.1E+02	2.5E+06	1.8E+01	8.2E+01	8.8E+01	1.3E+01	4.3E+00	7.4E+01	7.5E+01	7.1E+02

pH	As	Ba	Be	Cd	Cr (+3)	Cr (+6)	Hg	Ni	Ag	Se	Tl	Zn	Pb
7.1	2.9E+01	4.3E+01	2.5E+03	1.5E+02	2.8E+06	1.7E+01	9.9E+0 1	1.1E+02	1.6E+0 1	4.1E+00	7.6E+01	8.3E+01	7.1E+02
7.2	3.0E+01	4.4E+01	3.8E+03	2.0E+02	3.1E+06	1.7E+01	1.2E+0 2	1.4E+02	2.0E+0 1	3.8E+00	7.8E+01	9.5E+01	7.1E+02
7.3	3.0E+01	4.4E+01	5.7E+03	2.8E+02	3.4E+06	1.6E+01	1.3E+0 2	1.8E+02	2.5E+0 1	3.5E+00	8.0E+01	1.1E+02	7.1E+02
7.4	3.0E+01	4.5E+01	8.6E+03	4.0E+02	3.7E+06	1.6E+01	1.5E+0 2	2.5E+02	3.1E+0 1	3.3E+00	8.2E+01	1.3E+02	7.1E+02
7.5	3.0E+01	4.6E+01	1.3E+04	5.9E+02	3.9E+06	1.6E+01	1.6E+0 2	3.5E+02	3.9E+0 1	3.1E+00	8.5E+01	1.6E+02	7.1E+02
7.6	3.1E+01	4.6E+01	2.0E+04	8.7E+02	4.1E+06	1.5E+01	1.7E+0 2	4.9E+02	4.8E+0 1	2.9E+00	8.7E+01	1.9E+02	7.1E+02
7.7	3.1E+01	4.7E+01	3.0E+04	1.3E+03	4.2E+06	1.5E+01	1.8E+0 2	7.0E+02	5.9E+0 1	2.7E+00	8.9E+01	2.4E+02	7.1E+02
7.8	3.1E+01	4.9E+01	4.6E+04	1.9E+03	4.3E+06	1.4E+01	1.9E+0 2	9.9E+02	7.3E+0 1	2.5E+00	9.1E+01	3.1E+02	7.1E+02
7.9	3.1E+01	5.0E+01	6.9E+04	2.9E+03	4.3E+06	1.4E+01	1.9E+0 2	1.4E+03	8.9E+0 1	2.4E+00	9.4E+01	4.0E+02	7.1E+02
8.0	3.1E+01	5.2E+01	1.0E+05	4.3E+03	4.3E+06	1.4E+01	2.0E+0 2	1.9E+03	1.1E+0 2	2.2E+00	9.6E+01	5.3E+02	7.1E+02
8.1	3.2E+01	--- ^a	--- ^a	--- ^a	--- ^a	1.3E+01	--- ^a	--- ^a	--- ^a	2.1E+00	1.0E+02	--- ^a	7.1E+02
8.2	3.2E+01	--- ^a	--- ^a	--- ^a	--- ^a	1.3E+01	--- ^a	--- ^a	--- ^a	1.9E+00	1.0E+02	--- ^a	7.1E+02

pH	As	Ba	Be	Cd	Cr (+3)	Cr (+6)	Hg	Ni	Ag	Se	Tl	Zn	Pb
8.3	3.2E+01	--- ^a	--- ^a	--- ^a	--- ^a	1.3E+01	--- ^a	--- ^a	--- ^a	1.8E+00	1.0E+02	--- ^a	7.1E+02
8.4	3.2E+01	--- ^a	--- ^a	--- ^a	--- ^a	1.2E+01	--- ^a	--- ^a	--- ^a	1.7E+00	1.1E+02	--- ^a	7.1E+02
8.5	3.2E+01	--- ^a	--- ^a	--- ^a	--- ^a	1.2E+01	--- ^a	--- ^a	--- ^a	1.6E+00	1.1E+02	--- ^a	7.1E+02
8.6	3.3E+01	--- ^a	--- ^a	--- ^a	--- ^a	1.2E+01	--- ^a	--- ^a	--- ^a	1.5E+00	1.1E+02	--- ^a	7.1E+02
8.7	3.3E+01	--- ^a	--- ^a	--- ^a	--- ^a	1.2E+01	--- ^a	--- ^a	--- ^a	1.4E+00	1.2E+02	--- ^a	7.1E+02
8.8	3.3E+01	--- ^a	--- ^a	--- ^a	--- ^a	1.1E+01	--- ^a	--- ^a	--- ^a	1.3E+00	1.2E+02	--- ^a	1.9E+03
8.9	3.3E+01	--- ^a	--- ^a	--- ^a	--- ^a	1.1E+01	--- ^a	--- ^a	--- ^a	1.2E+00	1.2E+02	--- ^a	1.9E+03
9.0	3.3E+01	--- ^a	--- ^a	--- ^a	--- ^a	1.0E+01	--- ^a	--- ^a	--- ^a	1.1E+00	1.2E+02	--- ^a	1.9E+03

^a No data available for this pH.

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX C Tier 2 Illustrations and Tables

Section 742.TABLE K Parameter Estimates for Calculating Water-Filled Soil Porosity (θ_w)

Soil Texture ^a	Saturated Hydraulic Conductivity, K_s (m/yr)	$1/(2b+3)^b$
Sand	1,830	0.090
Loamy Sand	540	0.085
Sandy Loam	230	0.080
Silt Loam	120	0.074
Loam	60	0.073
Sandy Clay Loam	40	0.058
Silt Clay Loam	13	0.054
Clay Loam	20	0.050
Sandy Clay	10	0.042
Silt Clay	8	0.042
Clay	5	0.039

^a The appropriate texture classification is determined by a particle size analysis by ASTM D2488-93 as incorporated by reference in Section 742.210 and the U.S. Department of Agriculture Soil Textural Triangle shown in Appendix C, Illustration C.

^b Where b is the soil-specific exponential parameter (unitless)

(Source: Amended at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX C: Tier 2 Tables

Section 742.Table L: J&E Equations^a

Indoor air remediation objectives (mg/m ³)	For carcinogenic contaminants	$RO_{indoor\ air} = \frac{TR \times AT_c \times 365 \frac{days}{yr}}{ED \times EF \times URF \times 1000 \frac{\mu g}{mg}}$	J&E1
	For noncarcinogenic contaminants	$RO_{indoor\ air} = \frac{THQ \times AT_{nc} \times 365 \frac{days}{yr} \times RfC}{ED \times EF}$	J&E2
To convert mg/m ³ from parts per million volume		$mg / m^3 = \frac{ppmv \times MW}{24.45}$ <p>Note: 24.45 equals the molar volume of air in liters at normal temperature (25°C) and pressure (760 mm Hg).</p>	J&E3

Soil gas remediation objective (mg/m ³)		$RO_{soil\ gas} = \frac{RO_{indoor\ air}}{\alpha}$	J&E4
Soil Vapor Saturation Limit (mg/m ³ -air)		$C_v^{sat} = \frac{P \times MW}{R \times T} \times 10^6$	J&E5
Groundwater remediation objectives		$RO_{gw} = \frac{RO_{soil\ gas}}{H'_{TS} \times 1000 \frac{L}{m^3}}$	J&E6
Attenuation factor	<p>Attenuation factor when the mode of contaminant transport is both diffusion and advection</p> <p>$Q_{soil} = 83.33$ cm³/sec</p>	$\alpha = \frac{\left[\left(\frac{D_T^{eff} \times A_B}{Q_{bldg} \times L_T} \right) \times \exp\left(\frac{Q_{soil} \times L_{crack}}{D_{crack}^{eff} \times A_{crack}} \right) \right]}{\left[\exp\left(\frac{Q_{soil} \times L_{crack}}{D_{crack}^{eff} \times A_{crack}} \right) + \left(\frac{D_T^{eff} \times A_B}{Q_{bldg} \times L_T} \right) + \left(\frac{D_T^{eff} \times A_B}{Q_{soil} \times L_T} \right) \left[\exp\left(\frac{Q_{soil} \times L_{crack}}{D_{crack}^{eff} \times A_{crack}} \right) - 1 \right] \right]}$	J&E7

	<p>Attenuation factor when the mode of contaminant transport is diffusion only</p> <p>$Q_{soil} = 0 \text{ cm}^3/\text{sec}$</p>	$\alpha = \frac{\left(\frac{D_T^{eff} \times A_B}{Q_{bldg} \times L_T} \right)}{\left[1 + \left(\frac{D_T^{eff} \times A_B}{Q_{bldg} \times L_T} \right) + \left(\frac{D_T^{eff} \times A_B \times L_{crack}}{L_T \times D_{crack}^{eff} \times A_{crack}} \right) \right]}$	<p>J&E8</p>
<p>Total overall effective diffusion coefficient for vapor transport in porous media for multiple soil layers (cm^2/s)</p>		$D_T^{eff} = \frac{L_T}{\sum_{i=1}^n L_i / D_i^{eff}}$	<p>J&E9a</p>
	<p>In Equation J&E9a, the following condition must be satisfied:</p>	$\sum_{i=1}^n L_i = L_T$	<p>J&E9b</p>
<p>Source to building separation (cm)</p>		$L_T = D_{source} - L_F$	<p>J&E10</p>
<p>Effective diffusion coefficient for each soil layer (cm^2/s)</p>		$D_i^{eff} = D_i \left(\frac{\theta_{a,i}^{3.33}}{\theta_{T,i}^2} \right) + \left(\frac{D_w}{H_{TS}} \right) \left(\frac{\theta_{w,i}^{3.33}}{\theta_{T,i}^2} \right)$	<p>J&E11</p>

Surface area of enclosed space at or below grade (cm ²)	For a building with a full concrete slab-on-grade	$A_B = (L_B \times W_B)$	J&E12a
Surface area of enclosed space at or below grade (cm ²)	For a building with a full concrete basement floor and walls	$A_B = (L_B \times W_B) + (2 \times L_F \times L_B) + (2 \times L_F \times W_B)$	J&E12b
Building ventilation rate (cm ³ /s)		$Q_{bldg} = \left(\frac{L_B \times W_B \times H_B \times ER}{3600 \frac{sec}{hr}} \right)$	J&E13
Area of total cracks (cm ²)		$A_{crack} = 2 \times (L_B + W_B) \times w$	J&E14
Effective diffusion coefficient through the cracks (cm ² /s)		$D_{crack}^{eff} = D_i \left(\frac{\theta_{a,crack}^{3.33}}{\theta_{T,crack}^2} \right) + \left(\frac{D_w}{H_{TS}} \right) \left(\frac{\theta_{w,crack}^{3.33}}{\theta_{T,crack}^2} \right)$	J&E15

Total porosity		$\theta_{T_i} = 1 - \frac{\rho_{bi}}{\rho_s}$	J&E16
Water-filled soil porosity		$\theta_w = (W) \left(\frac{\rho_b}{\rho_w} \right)$	J&E17
Air-filled soil porosity		$\theta_a = \theta_T - \theta_w$	J&E18

^a This table contains equations based on the assumption that the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls. This table applies only when the existing or potential building has a full concrete slab-on-grade or a full concrete basement floor and walls. Institutional controls under Subpart J are required to develop remediation objectives pursuant to this table. This table does not apply when the existing or potential building has neither a full concrete slab-on-grade nor a full concrete basement floor and walls, such as a building with an earthen crawl space, an earthen floor, a stone foundation, a partial concrete floor, or a sump. In such cases, site evaluators have the option of excluding the indoor inhalation exposure route under Section 742.312, meeting the building control technology requirements under Subpart L, or proposing an alternative approach under Tier 3.

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX C: Tier 2 Tables

Section 742.Table M: J&E Parameters

Symbol	Parameter	Units	Source	Tier 1 or Calculated Value
A_B	Surface area of enclosed space at or below grade	cm^2	Equation J&E 12a or 12b, Appendix C, Table L	Residential = 1×10^6 Industrial/Commercial = 4.0×10^6
A_{crack}	Area of total cracks	cm^2	Equation J&E 14, Appendix C, Table L	Calculated Value
AT_c	Averaging time for carcinogens	year	SSL, May 1996	70
AT_{nc}	Averaging time for noncarcinogens	year	$AT_{nc} = ED$	Residential = 30 Industrial/Commercial = 25
C_v^{sat}	Soil vapor saturation limit	mg/m^3 -air	Equation J&E 5, Appendix C, Table L	Chemical-Specific or Calculated Value
D_{crack}^{eff}	Effective diffusion coefficient through the cracks	cm^2 / s	Equation J&E 15, Appendix C, Table L	Calculated Value
D_i	Diffusivity in air	cm^2 / s	Appendix C, Table E	Chemical-Specific

Symbol	Parameter	Units	Source	Tier 1 or Calculated Value
D_i^{eff}	Effective diffusion coefficient for each soil layer	cm^2 /s	Equation J&E 11, Appendix C, Table L	Calculated Value
D_{source}	Distance from ground surface to top of contamination	cm	Field Measurement	Soil Gas Contamination = 152.4 Groundwater Contamination = 304.8 Site-Specific
D_T^{eff}	Total overall effective diffusion coefficient	cm^2 /s	Equation J&E 9a, Appendix C, Table L	Calculated Value
D_w	Diffusivity in water	cm^2 /s	Appendix C, Table E	Chemical-Specific
ED	Exposure duration	year	Residential: SSL, May 1996 Industrial/Commercial: SSL 2002	Residential = 30 Industrial/Commercial = 25
EF	Exposure frequency	day/year	Residential: SSL, May 1996 Industrial/Commercial: SSL 2002	Residential = 350 Industrial/Commercial = 250

Symbol	Parameter	Units	Source	Tier 1 or Calculated Value
ER	Air exchange rate	exchanges per hour	Illinois EPA	Residential = 0.53 Industrial/Commercial = 0.93
f_{oc}	Fraction organic carbon content	g/g	SSL, May 1996, or Field Measurement Appendix C, Table F	0.002 or Site-Specific
H_B	Height of building	cm	Illinois EPA	Slab on Grade Residential = 244 Industrial/Commercial = 305 or Site-Specific in Tier 3 Basement Residential = 427 Industrial/Commercial = 488 or Site-Specific in Tier 3
H'_{TS}	Dimensionless Henry's law constant at the system (soil) temperature 13°C	unitless	Appendix C, Table E	Chemical-Specific

Symbol	Parameter	Units	Source	Tier 1 or Calculated Value
L_B	Length of building	cm	Illinois EPA	Residential = 1000 Industrial/Commercial = 2000 or Site-Specific in Tier 3
L_{crack}	Slab thickness	cm	US EPA, Users Guide 2004	10
L_F	Distance from ground surface to bottom of slab	cm	US EPA, Users Guide 2004	10 (slab on grade) 200 (basement)
L_i	Thickness of soil layer i	cm	Field Measurement For capillary fringe, USEPA, 2004	Site-Specific For capillary fringe, 37.5 cm
L_T	Distance from bottom of slab to top of contamination	cm	Field Measurement or Equation J&E 10, Appendix C, Table L	142.4 or Site-Specific
MW	Molecular weight	g/mole	Illinois EPA	Chemical-Specific

Symbol	Parameter	Units	Source	Tier 1 or Calculated Value
n	Total number of layers of different types of soil vapors migrate through from source to building (if source is groundwater, include a capillary fringe layer of 37.5 cm as one of the layers)	unitless	Field measurement	Site-Specific
P	Vapor Pressure	atm	Appendix C, Table E	Chemical-Specific
Q _{bldg}	Building ventilation rate	cm ³ /s	Equation J&E 13, Appendix C, Table L	Slab on Grade Residential = 3.59×10^4 Industrial/Commercial = 3.15×10^5 or Site-Specific in Tier 3 Basement Residential = 6.28×10^4 Industrial/Commercial = 5.04×10^5 or Site-Specific in Tier 3

Symbol	Parameter	Units	Source	Tier 1 or Calculated Value
Q_{soil}	Volumetric flow rate of soil gas into the enclosed space	cm^3/s	US EPA, Users Guide for Evaluating Subsurface Vapor Intrusion into Buildings 2004	<p>If L_T is less than 5 feet (152 cm), Q_{soil} equals 83.33</p> <p>If L_T is 5 feet (152 cm) or greater, Q_{soil} equals zero</p> <p>An input value of zero requires an institutional control. See Section 742.505(b) and (c).</p>
R	Ideal gas constant	atm-L/mol-K	US EPA, Users Guide 2004	0.08206
RfC	Reference concentration	ug/m^3	Illinois EPA: http://www.epa.state.il.us/land/taco/toxicity-values.xls	Toxicological-Specific
RO_{gw}	Groundwater remediation objective	mg/L	Appendix B, Table E, or Equation J&E 6, Appendix C, Table L	Chemical-Specific or Calculated Value
$RO_{\text{indoor air}}$	Indoor air remediation objective	mg/m^3	Equations J&E 1 and 2, Appendix C, Table L	Calculated Value

Symbol	Parameter	Units	Source	Tier 1 or Calculated Value
$RO_{\text{soil gas}}$	Soil gas remediation objective	mg/m ³	Equation J&E 4, Appendix C, Table L	Calculated Value
S	Solubility in water	mg/L	Appendix C, Table E	Chemical-Specific
T	Temperature	K	US EPA, Users Guide 2004	286 (converted from 13°C)
THQ	Target hazard quotient for a chemical	unitless	SSL, May 1996	1
TR	Target risk or the increased chance of developing cancer over a lifetime due to exposure to a chemical	unitless	SSL, May 1996	Residential = 10 ⁻⁶ at the point of human exposure Industrial/Commercial = 10 ⁻⁶ at the point of human exposure
URF	Unit risk factor	(ug/m ³) ⁻¹	Illinois EPA: http://www.epa.state.il.us/land/taco/toxicity-values.xls	Toxicological- Specific

Symbol	Parameter	Units	Source	Tier 1 or Calculated Value
w	Floor-wall seam gap	cm	US EPA, Users Guide 2004	0.1
W	Moisture content	g of water/g of soil	Field Measurement, Appendix C, Table F	Site-Specific
W _B	Width of building	cm	Illinois EPA	Residential = 1000 Industrial/Commercial = 2000 or Site-Specific in Tier 3
α	Attenuation factor	unitless	Equations J&E 7 or 8, Appendix C, Table L	Site-Specific
θ_a	Air-filled soil porosity	cm ³ /cm ³	SSL, May 1996 or Equation J&E 18, Appendix C, Table L	0.28 or Calculated Value
$\theta_{a,crack}$	Air-filled porosity for soil in cracks	cm ³ /cm ³	SSL, May 1996 or Equation J&E 18, Appendix C, Table L	0.13
$\theta_{a,i}$	Air-filled porosity of soil layer i	cm ³ /cm ³	SSL, May 1996 or Equation J&E 18, Appendix C, Table L	0.13 or Calculated Value For capillary fringe, $\theta_{a,i} = 0.1 \theta_{T,i}$

Symbol	Parameter	Units	Source	Tier 1 or Calculated Value
$\theta_{T,crack}$	Total porosity for soil in cracks	cm^3/cm^3	SSL, May 1996 or Equation J&E 16, Appendix C, Table L	0.43
$\theta_{T,i}$	Total porosity of soil layer i	cm^3/cm^3	SSL, May 1996 or Equation J&E 16, Appendix C, Table L	0.43 or Calculated Value
θ_w	Water-filled soil porosity	cm^3/cm^3	SSL, May 1996 or Equation J&E 17, Appendix C, Table L	0.15 or Calculated Value
$\theta_{w,crack}$	Water-filled porosity for soil in cracks	cm^3/cm^3	SSL, May 1996 or Equation J&E 17, Appendix C, Table L	0.15
$\theta_{w,i}$	Water-filled porosity of soil layer i	cm^3/cm^3	SSL, May 1996 or Equation J&E 17, Appendix C, Table L For capillary fringe, US EPA, Users Guide 2004	0.15 or Calculated Value For capillary fringe = 0.375 or 0.9 $\theta_{T,i}$

Symbol	Parameter	Units	Source	Tier 1 or Calculated Value
ρ_b	Dry soil bulk density	g/cm^3	SSL, May 1996 or Field Measurement, Appendix C, Table F	1.5 or Calculated Value
$\rho_{s,i}$	Soil particle density	g/cm^3	SSL, May 1996 or Field Measurement, Appendix C, Table F	2.65 or Calculated Value
ρ_w	Density of water	g/cm^3	Illinois EPA	1

(Source: Added at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX D Highway Authority Agreement

HIGHWAY AUTHORITY AGREEMENT

This Agreement is entered into this ____ day of _____, 200_ pursuant to 35 Ill. Adm. Code 742.1020 by and between the (1)_____ (“Property Owner”) [*or, in the case of a petroleum leaking underground storage tank, the owner/operator of the tank (“Owner/Operator”)*] and (2) *Name of Entity in Control of the Right-of-Way* (“Highway Authority”), collectively known as the “Parties.”

[Use this paragraph for sites with petroleum leaking underground storage tank(s)]
WHEREAS, _____ is the owner or operator of one or more leaking underground storage tanks presently or formerly located at *common address or description of Site location* (“the Site”);

[Use this paragraph for sites that do not have petroleum leaking underground storage tanks] **WHEREAS**, _____ is the owner of the property located at *common address or description of Site location* (“the Site”);

WHEREAS, as a result of one or more releases of contaminants [*insert either “from the above referenced underground storage tanks” or “at the above referenced Site”*] (“the Release(s)”), soil and/or groundwater contamination at the Site exceeds the Tier 1 residential remediation objectives of 35 Ill. Adm. Code 742;

WHEREAS, the soil and/or groundwater contamination exceeding Tier 1 residential remediation objectives extends or may extend into the Highway Authority’s right-of-way;

WHEREAS, the Owner/Operator or Property Owner is conducting corrective action in response to the Release(s);

WHEREAS, the Parties desire to prevent groundwater beneath the Highway Authority’s right-of-way that exceeds Tier 1 remediation objectives from use as a supply of potable or domestic water and to limit access to soil within the right-of-way that exceeds Tier 1 residential remediation objectives so that human health and the environment are protected during and after any access;

NOW, THEREFORE, the Parties agree as follows:

1. The recitals set forth above are incorporated by reference as if fully set forth herein.
2. *[Use this paragraph if IEMA has issued an incident number]* The Illinois Emergency Management Agency has assigned incident number(s) _____ to the Release(s).
3. Attached as Exhibit A is a scaled map(s) prepared by the *[Owner/Operator or Property Owner]* that shows the Site and surrounding area and delineates the

current and estimated future extent of soil and groundwater contamination above the applicable Tier 1 residential remediation objectives as a result of the Release(s). *[Use the following sentence if either soil or groundwater is not contaminated above applicable Tier 1 residential remediation objectives: [Soil] [Groundwater] is not contaminated above the applicable Tier 1 residential remediation objectives.]*

4. Attached as Exhibit B is a table(s) prepared by the *[Owner/Operator or Property Owner]* that lists each contaminant of concern that exceeds its Tier 1 residential remediation objective, its Tier 1 residential remediation objective and its concentrations within the zone where Tier 1 residential remediation objectives are exceeded. The locations of the concentrations listed in Exhibit B are identified on the map(s) in Exhibit A.
5. Attached as Exhibit C is a scaled map prepared by the *[Owner/Operator or Property Owner]* showing the area of the Highway Authority's right-of-way that is governed by this agreement ("Right-of-Way"). Because Exhibit C is not a surveyed plat, the Right-of-Way boundary may be an approximation of the actual Right-of-Way lines.
6. *[Use this paragraph if samples have not been collected within the Right-of-Way, sampling within the Right-of-Way is not practical, and contamination does not extend beyond the Right-of-Way].* Because the collection of samples within the Right-of-Way is not practical, the Parties stipulate that, based on modeling, soil and groundwater contamination exceeding Tier 1 residential remediation objectives does not and will not extend beyond the boundaries of the Right-of-Way.
7. The Highway Authority stipulates it has jurisdiction over the Right-of-Way that gives it sole control over the use of the groundwater and access to the soil located within or beneath the Right-of-Way.
8. The Highway Authority agrees to prohibit within the Right-of-Way all potable and domestic uses of groundwater exceeding Tier 1 residential remediation objectives.
9. The Highway Authority further agrees to limit access by itself and others to soil within the Right-of-Way exceeding Tier 1 residential remediation objectives. Access shall be allowed only if human health (including worker safety) and the environment are protected during and after any access. The Highway Authority may construct, reconstruct, improve, repair, maintain and operate a highway upon the Right-of-Way, or allow others to do the same by permit. In addition, the Highway Authority and others using or working in the Right-of-Way under permit have the right to remove soil or groundwater from the Right-of-Way and dispose of the same in accordance with applicable environmental laws and regulations. The Highway Authority agrees to issue all permits for work in the

Right-of-Way, and make all existing permits for work in the Right-of-Way, subject to the following or a substantially similar condition:

As a condition of this permit the permittee shall request the office issuing this permit to identify sites in the Right-of-Way where a Highway Authority Agreement governs access to soil that exceeds the Tier 1 residential remediation objectives of 35 Ill. Adm. Code 742. The permittee shall take all measures necessary to protect human health (including worker safety) and the environment during and after any access to such soil.

10. This agreement shall be referenced in the Agency's no further remediation determination issued for the Release(s).
11. The Agency shall be notified of any transfer of jurisdiction over the Right-of-Way at least 30 days prior to the date the transfer takes effect. This agreement shall be null and void upon the transfer unless the transferee agrees to be bound by this agreement as if the transferee were an original party to this agreement. The transferee's agreement to be bound by the terms of this agreement shall be memorialized at the time of transfer in a writing ("Rider") that references this Highway Authority Agreement and is signed by the Highway Authority, or subsequent transferor, and the transferee.
12. This agreement shall become effective on the date the Agency issues a no further remediation determination for the Release(s). It shall remain effective until the Right-of-Way is demonstrated to be suitable for unrestricted use and the Agency issues a new no further remediation determination to reflect there is no longer a need for this agreement, or until the agreement is otherwise terminated or voided.
13. In addition to any other remedies that may be available, the Agency may bring suit to enforce the terms of this agreement or may, in its sole discretion, declare this agreement null and void if any of the Parties or any transferee violates any term of this agreement. The Parties or transferee shall be notified in writing of any such declaration.
14. This agreement shall be null and void if a court of competent jurisdiction strikes down any part or provision of the agreement.
15. This agreement supersedes any prior written or oral agreements or understandings between the Parties on the subject matter addressed herein. It may be altered, modified or amended only upon the written consent and agreement of the Parties.
16. Any notices or other correspondence regarding this agreement shall be sent to the Parties at following addresses:

Manager, Division of Remediation Management
Bureau of Land
Illinois Environmental Protection Agency

Property Owner or Owner/Operator
[Address]

P.O. Box 19276
Springfield, IL 62974-9276

[Contact at Highway Authority]

[Address]

IN WITNESS WHEREOF, the Parties have caused this agreement to be signed by their duly authorized representatives.

[NAME OF LOCAL GOVERNMENT]

Date: _____ By: _____

Its: _____

Property Owner or Owner/Operator

Date: _____ By: _____

_____ Title

(Source: Added at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX E Highway Authority Agreement Memorandum of Agreement

HIGHWAY AUTHORITY AGREEMENT MEMORANDUM OF AGREEMENT

This Memorandum of Agreement is entered by and between the Illinois Environmental Protection Agency (“Agency”) and *Name of Local Government* (“Highway Authority”), collectively known as the “Parties.”

[Use this paragraph for sites with petroleum leaking underground storage tank(s)]
WHEREAS, the Highway Authority is the owner or operator of one or more leaking underground storage tanks presently or formerly located at *common address or description of Site location* (“the Site”);

[Use this paragraph for sites where the highway authority is also the property owner]
WHEREAS, the Highway Authority is the owner of the property located at *common address or description of Site location* (“the Site”);

WHEREAS, as a result of one or more releases of contaminants *[insert either “from the above referenced underground storage tanks” or “at the above referenced Site”]* (“the Release(s)”), soil and/or groundwater contamination at the Site exceeds the Tier 1 residential remediation objectives of 35 Ill. Adm. Code 742;

WHEREAS, the soil and/or groundwater contamination exceeding Tier 1 residential remediation objectives extends or may extend into the Highway Authority’s right-of-way adjacent to the Site;

WHEREAS, the Highway Authority is conducting corrective action in response to the Release(s);

WHEREAS, the Parties desire to prevent groundwater beneath the Highway Authority’s right-of-way that exceeds Tier 1 residential remediation objectives from use as a supply of potable or domestic water and to limit access to soil within the right-of-way that exceeds Tier 1 residential remediation objectives so that human health and the environment are protected during and after any access;

NOW, THEREFORE, the Parties agree as follows:

1. The recitals set forth above are incorporated by reference as if fully set forth herein.
2. *[Use this paragraph if IEMA has issued an incident number]* The Illinois Emergency Management Agency has assigned incident number(s) to the Release(s).

3. Attached as Exhibit A is a scaled map(s) prepared by the Highway Authority that shows the Site and surrounding area and delineates the current and estimated future extent of soil and groundwater contamination above the applicable Tier 1 residential remediation objectives as a result of the Release(s). [Use the following sentence if either soil or groundwater is not contaminated above applicable Tier 1 residential remediation objectives: [Soil] [Groundwater] is not contaminated above the applicable Tier 1 residential remediation objectives.]
4. Attached as Exhibit B is a table(s) prepared by the Highway Authority that lists each contaminant of concern that exceeds its Tier 1 residential remediation objective, its Tier 1 residential remediation objective and its concentrations within the zone where Tier 1 residential remediation objectives are exceeded. The locations of the concentrations listed in Exhibit B are identified on the map(s) in Exhibit A.
5. Attached as Exhibit C is a scaled map prepared by the Highway Authority showing the area of the Highway Authority's right-of-way that is governed by this agreement ("Right-of-Way"). Because Exhibit C is not a surveyed plat, the Right-of-Way boundary may be an approximation of the actual Right-of-Way lines.
6. *[Use this paragraph if samples have not been collected within the Right-of-Way, sampling within the Right-of-Way is not practical, and contamination does not extend beyond the Right-of-Way].* Because the collection of samples within the Right-of-Way is not practical, the Parties stipulate that, based on modeling, soil and groundwater contamination exceeding Tier 1 residential remediation objectives does not and will not extend beyond the boundaries of the Right-of-Way.
7. The Highway Authority stipulates it has jurisdiction over the Right-of-Way that gives it sole control over the use of the groundwater and access to the soil located within or beneath the Right-of-Way.
8. The Highway Authority agrees to prohibit within the Right-of-Way all potable and domestic uses of groundwater exceeding Tier 1 residential remediation objectives.
9. The Highway Authority further agrees to limit access by itself and others to soil within the Right-of-Way exceeding Tier 1 residential remediation objectives. Access shall be allowed only if human health (including worker safety) and the environment are protected during and after any access. The Highway Authority may construct, reconstruct, improve, repair, maintain and operate a highway upon the Right-of-Way, or allow others to do the same by permit. In addition, the Highway Authority and others using or working in the Right-of-Way under permit have the right to remove soil or groundwater from the Right-of-Way and dispose of the same in accordance with applicable environmental laws and regulations. The Highway Authority agrees to issue all permits for work in the

Right-of-Way, and make all existing permits for work in the Right-of-Way, subject to the following or a substantially similar condition:

As a condition of this permit the permittee shall request the office issuing this permit to identify sites in the Right-of-Way where a Highway Authority Memorandum of Agreement governs access to soil that exceeds the Tier 1 residential remediation objectives of 35 Ill. Adm. Code 742. The permittee shall take all measures necessary to protect human health (including worker safety) and the environment during and after any access to such soil.

10. This agreement shall be referenced in the Agency's no further remediation determination issued for the Release(s).
11. The Agency shall be notified of any transfer of jurisdiction over the Right-of-Way at least 30 days prior to the date the transfer takes effect. This agreement shall be null and void upon the transfer unless the transferee agrees to be bound by this agreement as if the transferee were an original party to this agreement. The transferee's agreement to be bound by the terms of this agreement shall be memorialized at the time of transfer in a writing ("Rider") that references this Highway Authority Memorandum of Agreement and is signed by the Highway Authority, or subsequent transferor, and the transferee.
12. This agreement shall become effective on the date the Agency issues a no further remediation determination for the Release(s). It shall remain effective until the Right-of-Way is demonstrated to be suitable for unrestricted use and the Agency issues a new no further remediation determination to reflect there is no longer a need for this agreement, or until the agreement is otherwise terminated or voided.
13. In addition to any other remedies that may be available, the Agency may bring suit to enforce the terms of this agreement or may, in its sole discretion, declare this agreement null and void if the Highway Authority or a transferee violates any term of this agreement. The Highway Authority or transferee shall be notified in writing of any such declaration.
14. This agreement shall be null and void if a court of competent jurisdiction strikes down any part or provision of the agreement.
15. This agreement supersedes any prior written or oral agreements or understandings between the Parties on the subject matter addressed herein. It may be altered, modified or amended only upon the written consent and agreement of the Parties.
16. Any notices or other correspondence regarding this agreement shall be sent to the Parties at following addresses:

Manager, Division of Remediation Management
Bureau of Land
Illinois Environmental Protection Agency

P.O. Box 19276
Springfield, IL 62974-9276

[Contact at Highway Authority]

[Address]

IN WITNESS WHEREOF, the Parties have caused this agreement to be signed by their duly authorized representatives.

[NAME OF LOCAL GOVERNMENT]

Date: _____ By: _____

Its: _____

ILLINOIS ENVIRONMENTAL PROTECTION
AGENCY

Date: _____ By: _____

Director

(Source: Added at 31 Ill. Reg. 4063, effective February 23, 2007)

Section 742.APPENDIX F: Environmental Land Use Control

PREPARED BY:

Name: _____

Address: _____

RETURN TO:

Name: _____

Address: _____

THE ABOVE SPACE FOR RECORDER'S OFFICE

Model Environmental Land Use Control

THIS ENVIRONMENTAL LAND USE CONTROL ("ELUC"), is made this _____ day of _____, 20__, by _____, ("Property Owner") of the real property located at the common address _____ ("Property").

WHEREAS, 415 ILCS 5/58.17 and 35 Ill. Adm. Code 742 provide for the use of an ELUC as an institutional control in order to impose land use limitations or requirements related to environmental contamination so that persons conducting remediation can obtain a No Further Remediation determination from the Illinois Environmental Protection Agency ("IEPA"). The reason for an ELUC is to ensure protection of human health and the environment. The limitations and requirements contained herein are necessary in order to protect against exposure to contaminated soil, groundwater, or soil gas that may be present on the property as a result of [VARIABLE] activities. Under 35 Ill. Adm. Code 742, the use of risk-based, site-specific remediation objectives may require the use of an ELUC on real property, and the ELUC may apply to certain physical features (e.g., engineered barriers, indoor inhalation building control technologies, monitoring wells, caps, etc.).

WHEREAS, _____ [the party performing remediation] intends to request risk-based, site specific soil, groundwater, or soil gas remediation objectives from IEPA under 35 Ill. Adm. Code 742 to obtain risk-based closure of the site, identified by Bureau of Land [10-digit LPC or Identification number] _____, utilizing an ELUC.

NOW, THEREFORE, the recitals set forth above are incorporated by reference as if fully

set forth herein, and the Property Owner agrees as follows:

Date: _____ By: _____

Director

Section One. Property Owner does hereby establish an ELUC on the real estate, situated in the County of _____, State of Illinois and further described in Exhibit A attached hereto and incorporated herein by reference (the "Property").

Attached as Exhibit B are site maps that show the legal boundary of the Property, any physical features to which the ELUC applies, the horizontal and vertical extent of the contaminants of concern above the applicable remediation objectives for soil, groundwater, or soil gas, and the nature, location of the source, and direction of movement of the contaminants of concern, as required under 35 Ill. Adm. Code 742.

Section Two. Property Owner represents and warrants **he/she** is the current owner of the Property and has the authority to record this ELUC on the chain of title for the Property with the Office of the Recorder or Registrar of Titles in _____ County, Illinois.

Section Three. The Property Owner hereby agrees, for **himself/herself**, and **his/her** heirs, grantees, successors, assigns, transferees and any other owner, occupant, lessee, possessor or user of the Property or the holder of any portion thereof or interest therein, that **[INSERT RESTRICTION (e.g. the groundwater under the Property shall not be used as a potable supply of water, and any contaminated groundwater or soil that is removed, excavated, or disturbed from the Property described in Exhibit A herein must be handled in accordance with all applicable laws and regulations)]**.

Section Four. This ELUC is binding on the Property Owner, **his/her** heirs, grantees, successors, assigns, transferees and any other owner, occupant, lessee, possessor or user of the Property or the holder of any portion thereof or interest therein. This ELUC shall apply in perpetuity against the Property and shall not be released until the IEPA determines there is no longer a need for this ELUC as an institutional control; until the IEPA, upon written request, issues to the site that received the no further remediation determination a new no further remediation determination approving modification or removal of the limitation(s) or requirement(s); the new no further remediation determination is filed on the chain of title of the site subject to the no further remediation determination; and until a release or modification of the land use limitation or requirement is filed on the chain of title for the Property.

Section Five. Information regarding the remediation performed on the Property may be obtained from the IEPA through a request under the Freedom of Information Act (5 ILCS 140) and rules promulgated thereunder by providing the IEPA with the [10-digit LPC or identification number] listed above.

Section Six. The effective date of this ELUC shall be the date that it is officially recorded in the chain of title for the Property to which the ELUC applies.

WITNESS the following signatures:

Property Owner(s)

By: _____

Its: _____

Date: _____

STATE OF ILLINOIS)
) SS:
COUNTY OF)

I, _____ the undersigned, a Notary Public for said County and State, DO HEREBY CERTIFY, that _____ and _____, personally known to me to be the Property Owner(s) of _____, and personally known to me to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that in said capacities they signed and delivered the said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and official seal, this _____ day of _____, 20__.

Notary Public

STATE OF _____)
) S.S.
COUNTY OF _____)

I, _____, a notary public, do hereby certify that before me this day in person appeared _____, personally known to me to be the Property Owner(s), of _____, each severally acknowledged that they signed and delivered the foregoing instrument as the Property Owner(s) herein set forth, and as their own free and voluntary act, for the uses and purposes herein set forth.

Given under my hand and seal this _____ day of _____, 20__.

Notary Public

PIN NO. XX-XX-XXX-XXX-XXXX
(Parcel Index Number)

Exhibit A

The subject property is located in the City of _____, _____ County, State of Illinois, commonly known as _____, _____, Illinois and more particularly described as:

LIST THE COMMON ADDRESS;

LEGAL DESCRIPTION; AND

REAL ESTATE TAX INDEX OR PARCEL #

(PURSUANT TO SECTION 742. 1010(d)(2))

PIN NO. XX-XX-XXX-XXX-XXXX

Exhibit B

IN ACCORDANCE WITH SECTION 742.1010(d)(8)(A) through (D), PROVIDE ALL THE FOLLOWING ELEMENTS. ATTACH SEPARATE SHEETS, LABELED AS EXHIBIT B, WHERE NECESSARY.

- (A) A scaled map showing the legal boundary of the property to which the ELUC applies.
- (B) Scaled maps showing the horizontal and vertical extent of contaminants of concern above the applicable remediation objectives for soil, groundwater, and soil gas to which the ELUC applies.
- (C) Scaled maps showing the physical features to which an ELUC applies (e.g., engineered barriers, indoor inhalation building control technologies, monitoring wells, caps, etc.).
- (D) Scaled maps showing the nature, location of the source, and direction of movement of the contaminants of concern.

(Source: Amended at 37 Ill. Reg. 7506, effective July 15, 2013)

Section 742.APPENDIX G Model Ordinance

ORDINANCE NUMBER _____

AN ORDINANCE PROHIBITING THE USE OF GROUNDWATER AS A POTABLE WATER SUPPLY BY THE INSTALLATION OR USE OF POTABLE WATER SUPPLY WELLS OR BY ANY OTHER METHOD

WHEREAS, certain properties in the City [Village] of _____, Illinois have been used over a period of time for commercial/industrial purposes; and

WHEREAS, because of said use, concentrations of certain chemical constituents in the groundwater beneath the City [Village] may exceed Class I groundwater quality standards for potable resource groundwater as set forth in 35 Illinois Administrative Code 620 or Tier 1 remediation objectives as set forth in 35 Illinois Administrative Code 742; and

WHEREAS, the City [Village] of _____ desires to limit potential threats to human health from groundwater contamination while facilitating the redevelopment and productive use of properties that are the source of said chemical constituents;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY [VILLAGE] OF _____, ILLINOIS:

Section One. Use of groundwater as a potable water supply prohibited.

[Except for such uses or methods in existence before the effective date of this ordinance,] The use or attempt to use as a potable water supply groundwater from within the corporate limits of the City [Village] of _____, as a potable water supply, by the installation or drilling of wells or by any other method is hereby prohibited. This prohibition [expressly includes] [does not include] the City [Village] of _____.

Section Two. Penalties.

Any person violating the provisions of this ordinance shall be subject to a fine of up to _____ for each violation.

Section Three. Definitions.

“Person” is any individual, partnership, co-partnership, firm, company, limited liability company, corporation, association, joint stock company, trust, estate, political subdivision, or any other legal entity, or their legal representatives, agents or assigns.

“Potable water” is any water used for human or domestic consumption, including, but not limited to, water used for drinking, bathing, swimming, washing dishes, or preparing foods.

Section Four. Memorandum of Understanding.

[This Section is only necessary if ordinance does not expressly prohibit installation of potable water supply wells by the city or village--could be separate resolution]

The Mayor of the City [Village] of _____ is hereby authorized and directed to enter into a Memorandum of Understanding with the Illinois Environmental Protection Agency (“Illinois EPA”) in which the City [Village] of _____ assumes responsibility for tracking all sites that have received no further remediation determinations from the Illinois EPA, notifying the Illinois EPA of changes to this ordinance, and taking certain precautions when siting public potable water supply wells.

Section Five. Repealer.

All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed insofar as they are in conflict with this ordinance.

Section Six. Severability.

If any provision of this ordinance or its application to any person or under any circumstances is adjudged invalid, such adjudication shall not affect the validity of the ordinance as a whole or of any portion not adjudged invalid.

Section Seven. Effective date.

This ordinance shall be in full force and effect from and after its passage, approval and publication as required by law.

ADOPTED: _____
(Date)

APPROVED: _____
(Date)

(City Clerk)

(Mayor)

Officially published this _____ day of _____, 20__.

(Source: Added at 31 Ill. Reg. 4063, effective February 23, 2007)

MEMORANDUM OF UNDERSTANDING BETWEEN _____
AND THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY REGARDING THE
USE OF A LOCAL GROUNDWATER OR WATER WELL ORDINANCE AS AN
ENVIRONMENTAL INSTITUTIONAL CONTROL

I. PURPOSE AND INTENT

- A. This Memorandum of Understanding (“MOU”) between _____ and the Illinois Environmental Protection Agency (“Illinois EPA”) is entered into for the purpose of satisfying the requirements of 35 Ill. Adm. Code 742.1015 for the use of groundwater or water well ordinances as environmental institutional controls. The Illinois EPA has reviewed the groundwater or water well ordinance of _____ (Attachment A) and determined that the ordinance prohibits the use of groundwater for potable purposes and/or the installation and use of new potable water supply wells by private entities but does not expressly prohibit those activities by the unit of local government itself. In such cases, 35 Ill. Adm. Code 742.1015(a) provides that the unit of local government may enter into an MOU with the Illinois EPA to allow the use of the ordinance as an institutional control.
- B. The intent of this Memorandum of Understanding is to specify the responsibilities that must be assumed by the unit of local government to satisfy the requirements for MOUs as set forth at 35 Ill. Adm. Code 742.1015(i).

II. DECLARATIONS AND ASSUMPTION OF RESPONSIBILITY

In order to ensure the long-term integrity of the groundwater or water well ordinance as an environmental institutional control and that risk to human health and the environment from contamination left in place in reliance on the groundwater or water well ordinance is effectively managed, _____ hereby assumes the following responsibilities pursuant to 35 Ill. Adm. Code 742.1015(d)(2) and (i):

- A. _____ will notify the Illinois EPA Bureau of Land of any proposed ordinance changes or requests for variance at least 30 days prior to the date the local government is scheduled to take action on the proposed change or request (35 Ill. Adm. Code 742.1015(i)(4));
- B. _____ will maintain a registry of all sites within its corporate limits that have received “No Further Remediation” determinations in reliance on the ordinance from the Illinois EPA (35 Ill. Adm. Code 742.1015(i)(5));

- C. _____ will review the registry of sites established under paragraph II. B. prior to siting public potable water supply wells within the area covered by the ordinance (35 Ill. Adm. Code 742.1015(i)(6)(A));
- D. _____ will determine whether the potential source of potable water has been or may be affected by contamination left in place at the sites tracked and reviewed under paragraphs II. B. and C. (35 Ill. Adm. Code 742.1015(i)(6)(B)); and
- E. _____ will take action as necessary to ensure that the potential source of potable water is protected from contamination or treated before it is used as a potable water supply (35 Ill. Adm. Code 742.1015(i)(6)(C)).

NOTE: Notification under paragraph II. A. above or other communications concerning this MOU should be directed to:

Manager, Division of Remediation Management
Bureau of Land
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, IL 62794-9276

III. SUPPORTING DOCUMENTATION

The following documentation is required by 35 Ill. Adm. Code 742.1015(i) and is attached to this MOU:

- A. Attachment A: A copy of the groundwater or water well ordinance certified by the city clerk or other official as the current, controlling law (35 Ill. Adm. Code 742.1015(i)(3));
- B. Attachment B: Identification of the legal boundaries within which the ordinance is applicable (certification by city clerk or other official that the ordinance is applicable everywhere within the corporate limits; if ordinance is not applicable throughout the entire city or village, legal description and map of area showing sufficient detail to determine where ordinance is applicable) (35 Ill. Adm. Code 742.1015(i)(2));
- C. Attachment C: A statement of the authority of the unit of local government to enter into the MOU (council resolution, code of ordinances, inherent powers of mayor or other official signing MOU -- attach copies) (35 Ill. Adm. Code 742.1015(i)(1)).

IN WITNESS WHEREOF, the lawful representatives of the parties have caused this MOU to be signed as follows:

FOR: _____
(Name of city or village)

BY: _____
(Name and title of signatory)

DATE: _____

FOR: Illinois Environmental Protection Agency

BY: _____ DATE: _____
Manager, Division of Remediation Management
Bureau of Land

(Source: Added at 31 Ill. Reg. 4063, effective February 23, 2007)