

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

- 1) Heading of the Part: Standards for New Solid Waste Landfills
- 2) Code Citation: 35 Ill. Adm. Code 811
- 3)

<u>Section Numbers:</u>	<u>Proposed Actions:</u>
811.319	Amendment
811.320	Amendment
811, Appendix A, Illustration E	Amendment
811, Appendix C	Amendment
- 4) Statutory Authority: 415 ILCS 5/7.2, 22.40, and 27
- 5) A Complete Description of the Subjects and Issues Involved: The amendments to Part 811 are a single segment of consolidated docket R20-3/R20-11 rulemaking that also affects 35 Ill. Adm. Code 702, 705, 720 through 726, 728, 733, and 810. The consolidated R20-3/R20-11 rulemaking updates the Illinois hazardous waste rules to incorporate amendments adopted by the United States Environmental Protection Agency (USEPA) during 2019. A comprehensive description is contained in the Board's opinion and order of May 21, 2020, proposing amendments in consolidated docket R20-3/R20-11, which opinion and order is available from the address below.

The Notice of Proposed Amendments for 35 Ill. Adm. Code 702, which also appears in this issue of the *Illinois Register* summarizes the broader rulemaking that is consolidated docket R20-3/R20-11. The Board directs attention to that Notice for elaboration.

Specifically, the amendments to Part 811 incorporate needed corrections in rule not directly related to USEPA amendments, including corrections to prior amendments requested by the Joint Committee on Administrative Rules (JCAR).

Tables appear in a document entitled "Identical-in-Substance Rulemaking Addendum (Proposed)" that the Board added to consolidated docket R20-3/R20-11. The tables list the deviations from the literal text of the federal amendments and the several necessary corrections and stylistic revisions not directly derived from USEPA actions. Persons interested in the details of those deviations from the literal text should refer to the Identical-in-Substance Rulemaking Addendum (Proposed) in consolidated docket R20-3/R20-11.

Sections 22.40 of the Environmental Protection Act [415 ILCS 5/22.40] provides that Section 5-35 of the Administrative Procedure Act [5 ILCS 100/5-35] does not apply to

POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

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.

- 6) Published studies or reports, and sources of underlying data, used to compose this rulemaking: None
- 7) Does this rulemaking replace an emergency rule currently in effect? No
- 8) Does this rulemaking contain an automatic repeal date? No
- 9) Does this rulemaking contain incorporations by reference? No
- 10) Are there any other rulemakings pending on this Part? No
- 11) Statement of Statewide Policy Objective: These proposed amendments do not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act [30 ILCS 805/3(b)].
- 12) Time, Place and Manner in which interested persons may comment on this proposed rulemaking: The Board will accept written public comment on this proposal for a period of 45 days after the date of this publication. Comments should reference consolidated docket R20-3/R20-11 and be addressed to:

Don A. Brown, Clerk
Illinois Pollution Control Board
State of Illinois Center, Suite 11-500
100 W. Randolph St.
Chicago IL 60601

Please direct inquiries to the following person and reference consolidated docket R20-3/R20-11:

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POLLUTION CONTROL BOARD

NOTICE OF PROPOSED AMENDMENTS

Request copies of the Board's opinion and order at 312/814-3620, or download a copy from the Board's Website at pcb.illinois.gov.

- 13) Initial Regulatory Flexibility Analysis:
- A) Types of small businesses, small municipalities, and not-for-profit corporations affected: This rulemaking may affect those small businesses, small municipalities, and not-for-profit corporations disposing of industrial wastewaters into the sewage collection system of a publicly owned treatment works. These proposed amendments do not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act [30 ILCS 805/3(b)].
 - B) Reporting, bookkeeping or other procedures required for compliance: The existing rules and proposed amendments require extensive reporting, bookkeeping and other procedures, including the preparation of manifests and annual reports, waste analyses and maintenance of operating records. These proposed amendments do not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act [30 ILCS 805/3(b)].
 - C) Types of professional skills necessary for compliance: Compliance with the existing rules and proposed amendments may require the services of an attorney, certified public accountant, chemist and registered professional engineer. These proposed amendments do not create or enlarge a State mandate, as defined in Section 3(b) of the State Mandates Act [30 ILCS 805/3(b)].
- 14) Small Business Impact Analysis: Sections 1-5(c) and 5-30 of the Administrative Procedure Act [5 ILCS 100/1-5(c) and 5-30] provide that small business impact analysis and related requirements under Section 5-30 do not apply to this type of identical-in-substance rulemaking.
- 15) Regulatory Agenda on which this rulemaking was summarized: January 2020

The full text of the Proposed Amendments begins on the next page:

1 TITLE 35: ENVIRONMENTAL PROTECTION
2 SUBTITLE G: WASTE DISPOSAL
3 CHAPTER I: POLLUTION CONTROL BOARD
4 SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING
5

6 PART 811
7 STANDARDS FOR NEW SOLID WASTE LANDFILLS
8

9 SUBPART A: GENERAL STANDARDS FOR ALL LANDFILLS
10

11 Section

- 12 811.101 Scope and Applicability
13 811.102 Location Standards
14 811.103 Surface Water Drainage
15 811.104 Survey Controls
16 811.105 Compaction
17 811.106 Daily Cover
18 811.107 Operating Standards
19 811.108 Salvaging
20 811.109 Boundary Control
21 811.110 Closure and Written Closure Plan
22 811.111 Postclosure Maintenance
23 811.112 Recordkeeping Requirements for MSWLF Units
24 811.113 Electronic Reporting
25

26 SUBPART B: INERT WASTE LANDFILLS
27

28 Section

- 29 811.201 Scope and Applicability
30 811.202 Determination of Contaminated Leachate
31 811.203 Design Period
32 811.204 Final Cover
33 811.205 Final Slope and Stabilization
34 811.206 Leachate Sampling
35 811.207 Load Checking
36

37 SUBPART C: PUTRESCIBLE AND CHEMICAL WASTE LANDFILLS
38

39 Section

- 40 811.301 Scope and Applicability
41 811.302 Facility Location
42 811.303 Design Period
43 811.304 Foundation and Mass Stability Analysis

- 44 811.305 Foundation Construction
- 45 811.306 Liner Systems
- 46 811.307 Leachate Drainage System
- 47 811.308 Leachate Collection System
- 48 811.309 Leachate Treatment and Disposal System
- 49 811.310 Landfill Gas Monitoring
- 50 811.311 Landfill Gas Management System
- 51 811.312 Landfill Gas Processing and Disposal System
- 52 811.313 Intermediate Cover
- 53 811.314 Final Cover System
- 54 811.315 Hydrogeologic Site Investigations
- 55 811.316 Plugging and Sealing of Drill Holes
- 56 811.317 Groundwater Impact Assessment
- 57 811.318 Design, Construction, and Operation of Groundwater Monitoring Systems
- 58 811.319 Groundwater Monitoring Programs
- 59 811.320 Groundwater Quality Standards
- 60 811.321 Waste Placement
- 61 811.322 Final Slope and Stabilization
- 62 811.323 Load Checking Program
- 63 811.324 Corrective Action Measures for MSWLF Units
- 64 811.325 Selection of remedy for MSWLF Units
- 65 811.326 Implementation of the corrective action program at MSWLF Units

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67 SUBPART D: MANAGEMENT OF SPECIAL WASTES AT LANDFILLS

68

- 69 Section
- 70 811.401 Scope and Applicability
- 71 811.402 Notice to Generators and Transporters
- 72 811.403 Special Waste Manifests
- 73 811.404 Identification Record
- 74 811.405 Recordkeeping Requirements
- 75 811.406 Procedures for Excluding Regulated Hazardous Wastes

76

77 SUBPART E: CONSTRUCTION QUALITY ASSURANCE PROGRAMS

78

- 79 Section
- 80 811.501 Scope and Applicability
- 81 811.502 Duties and Qualifications of Key Personnel
- 82 811.503 Inspection Activities
- 83 811.504 Sampling Requirements
- 84 811.505 Documentation
- 85 811.506 Foundations and Subbases
- 86 811.507 Compacted Earth Liners

87	811.508	Geomembranes
88	811.509	Leachate Collection Systems
89		
90		SUBPART G: FINANCIAL ASSURANCE
91		
92	Section	
93	811.700	Scope, Applicability and Definitions
94	811.701	Upgrading Financial Assurance
95	811.702	Release of Financial Institution
96	811.703	Application of Proceeds and Appeals
97	811.704	Closure and Post-Closure Care Cost Estimates
98	811.705	Revision of Cost Estimate
99	811.706	Mechanisms for Financial Assurance
100	811.707	Use of Multiple Financial Mechanisms
101	811.708	Use of a Financial Mechanism for Multiple Sites
102	811.709	Trust Fund for Unrelated Sites
103	811.710	Trust Fund
104	811.711	Surety Bond Guaranteeing Payment
105	811.712	Surety Bond Guaranteeing Performance
106	811.713	Letter of Credit
107	811.714	Closure Insurance
108	811.715	Self-Insurance for Non-Commercial Sites
109	811.716	Local Government Financial Test
110	811.717	Local Government Guarantee
111	811.718	Discounting
112	811.719	Corporate Financial Test
113	811.720	Corporate Guarantee
114		
115	811.APPENDIX A	Financial Assurance Forms
116	811.ILLUSTRATION A	Trust Agreement
117	811.ILLUSTRATION B	Certificate of Acknowledgment
118	811.ILLUSTRATION C	Forfeiture Bond
119	811.ILLUSTRATION D	Performance Bond
120	811.ILLUSTRATION E	Irrevocable Standby Letter of Credit
121	811.ILLUSTRATION F	Certificate of Insurance for Closure and/or Post-Closure
122		Care or Corrective Action
123	811.ILLUSTRATION G	Owner's or Operator's Bond Without Surety
124	811.ILLUSTRATION H	Owner's or Operator's Bond With Parent Surety
125	811.ILLUSTRATION I	Letter from Chief Financial Officer
126	811.APPENDIX B	Section-by-Section correlation between the Standards of the RCRA
127		Subtitle D MSWLF regulations and the Board's nonhazardous waste
128		landfill regulations.
129	811.APPENDIX C	List of Leachate Monitoring Parameters

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AUTHORITY: Implementing Sections 7.2, 21, 21.1, 22, 22.17, and 22.40 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 21, 21.1, 22, 22.17, 22.40, and 27].

SOURCE: Adopted in R88-7 at 14 Ill. Reg. 15861, effective September 18, 1990; amended in R92-19 at 17 Ill. Reg. 12413, effective July 19, 1993; amended in R93-10 at 18 Ill. Reg. 1308, effective January 13, 1994; expedited correction at 18 Ill. Reg. 7504, effective July 19, 1993; amended in R90-26 at 18 Ill. Reg. 12481, effective August 1, 1994; amended in R95-13 at 19 Ill. Reg. 12257, effective August 15, 1995; amended in R96-1 at 20 Ill. Reg. 12000, effective August 15, 1996; amended in R97-20 at 21 Ill. Reg. 15831, effective November 25, 1997; amended in R98-9 at 22 Ill. Reg. 11491, effective June 23, 1998; amended in R99-1 at 23 Ill. Reg. 2794, effective February 17, 1999; amended in R98-29 at 23 Ill. Reg. 6880, effective July 1, 1999; amended in R04-5/R04-15 at 28 Ill. Reg. 9107, effective June 18, 2004; amended in R05-1 at 29 Ill. Reg. 5044, effective March 22, 2005; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 4136, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 1435, effective December 20, 2006; amended in R07-8 at 31 Ill. Reg. 16172, effective November 27, 2007; amended in R10-9 at 35 Ill. Reg. 10842, effective June 22, 2011; amended in R10-09(A) at 35 Ill. Reg. 18882, effective October 24, 2011; amended in R14-1/R14-2/R14-3 at 38 Ill. Reg. 7259, effective March 13, 2014; amended in R17-14/R17-15/R18-12/R18-31 at 42 Ill. Reg. 21330, effective November 19, 2018; amended in R20-3/R20-11 at 44 Ill. Reg. _____, effective _____.

SUBPART C: PUTRESCIBLE AND CHEMICAL WASTE LANDFILLS

Section 811.319 Groundwater Monitoring Programs

- a) Detection Monitoring Program. Any use of the term maximum allowable predicted concentration in this Section is a reference to Section 811.318(c). The operator must implement a detection monitoring program in accordance with the following requirements:
 - 1) Monitoring Schedule and Frequency
 - A) The monitoring period must begin as soon as waste is placed into the unit of a new landfill or before September 18, 1991 ~~within one year of September 18, 1990~~ for an existing landfill. Monitoring must continue for a minimum period of 15 years after closure, or in the case of MSWLF units, a minimum period of 30 years after closure, except as otherwise provided by subsection (a)(1)(C). The operator must sample all monitoring points for all potential sources of contamination on a quarterly basis except as specified in subsection (a)(3), for a period of five years from the date of

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issuance of the initial permit for significant modification under 35 Ill. Adm. Code 814.104 or a permit for a new unit pursuant to 35 Ill. Adm. Code 813.104. After the initial five-year period, the sampling frequency for each monitoring point must be reduced to a semi-annual basis, provided the operator has submitted the certification described in 35 Ill. Adm. Code 813.304(b). Alternatively, after the initial five-year period, the Agency must allow sampling on a semi-annual basis where the operator demonstrates that monitoring effectiveness has not been compromised, that sufficient quarterly data has been collected to characterize groundwater, and that leachate from the monitored unit does not constitute a threat to groundwater. For the purposes of this Section, the source must be considered a threat to groundwater if the results of the monitoring indicate either that the concentrations of any of the constituents monitored within the zone of attenuation is above the maximum allowable predicted concentration for that constituent or, for existing landfills, subject to Subpart D of 35 Ill. Adm. Code 814, that the concentration of any constituent has exceeded the applicable standard at the compliance boundary as defined in 35 Ill. Adm. Code 814.402(b)(3).

- B) Beginning 15 years after closure of the unit, or five years after all other potential sources of discharge no longer constitute a threat to groundwater, as defined in subsection (a)(1)(A), the monitoring frequency may change on a well by well basis to an annual schedule if either of the following conditions exist. However, monitoring must return to a quarterly schedule at any well where a statistically significant increase is determined to have occurred in accordance with Section 811.320(e), in the concentration of any constituent with respect to the previous sample.
 - i) All constituents monitored within the zone of attenuation have returned to a concentration less than or equal to ten percent of the maximum allowable predicted concentration; or
 - ii) All constituents monitored within the zone of attenuation are less than or equal to their maximum allowable predicted concentration for eight consecutive quarters.
- C) Monitoring must be continued for a minimum period of: 30 years after closure at MSWLF units, except as otherwise provided by

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subsections (a)(1)(D) and (a)(1)(E); five years after closure at landfills, other than MSWLF units, which are used exclusively for disposing waste generated at the site; or 15 years after closure at all other landfills regulated under this Part. Monitoring, beyond the minimum period, may be discontinued under the following conditions:

- i) No statistically significant increase is detected in the concentration of any constituent above that measured and recorded during the immediately preceding scheduled sampling for three consecutive years, after changing to an annual monitoring frequency; or
- ii) Immediately after contaminated leachate is no longer generated by the unit.

D) The Agency may reduce the groundwater monitoring period at a MSWLF unit upon a demonstration by the owner or operator that the reduced period is sufficient to protect human health and environment.

E) An owner or operator of a MSWLF unit must petition the Board for an adjusted standard in accordance with Section 811.303, if the owner or operator seeks a reduction of the post-closure care monitoring period for all of the following requirements:

- i) Inspection and maintenance (Section 811.111);
- ii) Leachate collection (Section 811.309);
- iii) Gas monitoring (Section 811.310); and
- iv) Groundwater monitoring (Section 811.319).

BOARD NOTE: Changes to subsections (a)(1)(A), (a)(1)(C), (a)(1)(D), and (a)(1)(E) are derived from 40 CFR 258.61-(2017).

2) Criteria for Choosing Constituents to be Monitored

A) The operator must monitor each well for constituents that will provide a means for detecting groundwater contamination. Constituents must be chosen for monitoring if they meet the following requirements:

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- i) The constituent appears in, or is expected to be in, the leachate; and
 - ii) Is contained within the following list of constituents:
 - Ammonia ~~nitrogen~~ Nitrogen (dissolved) (CAS No. 7664-41-7)
 - Arsenic (dissolved) (CAS No. 7440-38-2)
 - Boron (dissolved) (CAS No. 7440-42-8)
 - Cadmium (dissolved) (CAS No. 7440-43-9)
 - Chloride (dissolved) (CAS No. 16887-00-6)
 - Chromium (dissolved) (CAS No. 7447-47-3)
 - Cyanide (total) (CAS No. 57-12-5)
 - Lead (dissolved) (CAS No. 7439-92-1)
 - Magnesium (dissolved) (CAS No. 7439-95-4)
 - Mercury (dissolved) (CAS No. 7439-97-6)
 - Nitrate (dissolved) (CAS No. 14797-55-8)
 - Sulfate (dissolved) (CAS No. 14808-79-8)
 - Total ~~dissolved solids~~ Dissolved Solids (TDS)
 - Zinc (dissolved) (CAS No. 7440-66-6)
 - iii) This is the minimum list for MSWLFs.
 - iv) Any facility accepting more than 50% by volume non-municipal waste must determine additional indicator parameters based upon leachate characteristic and waste content.
- B) One or more indicator constituents, representative of the transport processes of constituents in the leachate, may be chosen for monitoring in place of the constituents it represents. The use of such indicator constituents must be included in an Agency approved permit.
- 3) Organic Chemicals Monitoring. The operator must monitor each existing well that is being used as a part of the monitoring well network at the facility before September 18, 1991 ~~within one year after September 18, 1990~~, and monitor each new well within the three months after its establishment. The monitoring required by this subsection (a)(3) must be for a broad range of organic chemical contaminants in accordance with the following procedures:

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- A) The analysis must be at least as comprehensive and sensitive as the tests for the 51 organic chemicals in drinking water described at 40 CFR 141.40 and appendix I of 40 CFR 258-(2017), each incorporated by reference at 35 Ill. Adm. Code 810.104 and:

Acetone (CAS No. 67-64-1)
 Acrylonitrile (CAS No. 107-13-1)
 Benzene
 Benzene (CAS No. 71-43-2)
 Bromobenzene (CAS No. 108-86-1)
 Bromochloromethane (CAS No. 74-97-5)
 Bromodichloromethane (CAS No. 75-27-0)
 Bromoform; tribromomethane (CAS No. 75-25-2)
Tribromomethane
 n-Butylbenzene (CAS No. 104-51-8)
 sec-Butylbenzene (CAS No. 135-98-8)
 tert-Butylbenzene (CAS No. 98-06-6)
 Carbon disulfide (CAS No. 75-15-0)
 Carbon tetrachloride (CAS No. 56-23-5)
 Chlorobenzene (CAS No. 108-90-7)
 Chloroethane (CAS No. 75-00-3)
 Chloroform; trichloromethane (CAS No. 67-66-3)
Trichloromethane
 o-Chlorotoluene (CAS No. 95-49-8)
 p-Chlorotoluene (CAS No. 106-43-4)
 Dibromochloromethane (CAS No. 124-48-1)
 1,2-Dibromo-3-chloropropane (CAS No. 106-43-4)
 1,2-Dibromoethane (CAS No. 106-93-4)
 1,2-Dichlorobenzene (CAS No. 95-50-1)
 1,3-Dichlorobenzene (CAS No. 541-73-1)
 1,4-Dichlorobenzene (CAS No. 106-46-7)
 trans-1,4-Dichloro-2-butene (CAS No. 110-57-6)
Dichlorodifluoromethane (CAS No. 75-71-8)
 1,1-Dichloroethane (CAS No. 75-34-3)
 1,2-Dichloroethane (CAS No. 107-06-2)

1,1-Dichloroethylene (CAS No. 75-35-4)
 cis-1,2-Dichloroethylene (CAS No. 156-59-2)
 trans-1,2-Dichloroethylene (CAS No. 156-60-5)
 1,2-Dichloropropane (CAS No. 78-87-5)
 1,3-Dichloropropane (CAS No. 142-28-9)
 2,2-Dichloropropane (CAS No. 594-20-7)
 1,1-Dichloropropene (CAS No. 563-58-6)
 1,3-Dichloropropene (CAS No. 542-75-6)
 cis-1,3-Dichloropropene (CAS No. 10061-01-5)
 trans-1,3-Dichloropropene (CAS No. 10061-02-6)
 Ethylbenzene (CAS No. 100-41-4)
 Hexachlorobutadiene (CAS No. 87-68-3)
 2-Hexanone; methyl methyl butyl ketone (CAS No. 591-78-6)
 Isopropylbenzene (CAS No. 98-82-8)
 p-Isopropyltoluene (CAS No. 99-87-6)
 Methyl bromide; bromomethane (CAS No. 74-83-9)
 Bromomethane
 Methyl chloride; chloromethane (CAS No. 74-87-3)
 Chloromethane
 Methylene bromide; dibromomethane (CAS No. 74-95-3)
 Dibromomethane
 Dichloromethane (CAS No. 75-09-2)
 Methyl ethyl ketone (CAS No. 78-93-3)
 Methyl iodide; iodomethane (CAS No. 74-88-4)
 Iodomethane
 4-Methyl-2-pentanone (CAS No. 108-10-1)
 Naphthalene (CAS No. 91-20-3)
 Oil and Grease (hexane soluble)
 n-Propylbenzene (CAS No. 103-65-1)
 Styrene (CAS No. 100-42-5)
 1,1,1,2-Tetrachloroethane (CAS No. 630-20-6)
 1,1,2,2-Tetrachloroethane (CAS No. 79-34-5)
 Tetrachloroethylene (CAS No. 127-18-4)
 Tetrahydrofuran (CAS No. 109-99-9)
 Toluene (CAS No. 108-88-3-23-8)

Total Phenolics

1,2,3-Trichlorobenzene

1,2,4-Trichlorobenzene (CAS No. 120-82-1)

~~1,2,4-Trichlorobenzene~~

1,1,1-Trichloroethane (CAS No. 71-55-6)

1,1,2-Trichloroethane (CAS No. 79-00-5)

Trichloroethylene (CAS No. 79-01-6)

Trichlorofluoromethane (CAS No. 75-69-4)

1,2,3-Trichloropropane (CAS No. 96-18-4)

1,2,4-Trimethylbenzene (CAS No. 526-73-8)

1,3,5-Trimethylbenzene (CAS No. 108-67-8)

Vinyl acetate (CAS No. 108-05-4)

Vinyl chloride (CAS No. 75-01-4)

Xylenes (CAS No. 1330-20-7)

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- B) At least once every two years, the operator must monitor each well in accordance with subsection (a)(3)(A).
- C) The operator of a MSWLF unit must monitor each well in accordance with subsection (a)(3)(A) on a semi-annual basis.

BOARD NOTE: Subsection (a)(3)(C) is derived from 40 CFR 258.54(b)-(2017).

4) Confirmation of Monitored Increase

- A) The confirmation procedures of this subsection must be used only if the concentrations of the constituents monitored can be measured at or above the practical quantitation limit (PQL). The PQL is defined as the lowest concentration that can be reliably measured within specified limits of precision and accuracy, under routine laboratory operating conditions. The operator must institute the confirmation procedures of subsection (a)(4)(B) after notifying the Agency in writing, within 10 days, of observed increases:
 - i) The concentration of any inorganic constituent monitored in accordance with subsections (a)(1) and (a)(2) shows a progressive increase over eight consecutive monitoring events;

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- ii) The concentration of any constituent exceeds the maximum allowable predicted concentration at an established monitoring point within the zone of attenuation;
 - iii) The concentration of any constituent monitored in accordance with subsection (a)(3) exceeds the preceding measured concentration at any established monitoring point; and
 - iv) The concentration of any constituent monitored at or beyond the zone of attenuation exceeds the applicable groundwater quality standards of Section 811.320.
- B) The confirmation procedures must include the following:
- i) The operator must verify any observed increase by taking additional samples within 90 days after the initial sampling event and ensure that the samples and sampling protocol used will detect any statistically significant increase in the concentration of the suspect constituent in accordance with Section 811.320(e), so as to confirm the observed increase. The operator must notify the Agency of any confirmed increase before the end of the next business day following the confirmation.
 - ii) The operator must determine the source of any confirmed increase, which may include, but must not be limited to, natural phenomena, sampling or analysis errors, or an offsite source.
 - iii) The operator must notify the Agency in writing of any confirmed increase. The notification must demonstrate a source other than the facility and provide the rationale used in such a determination. The notification must be submitted to the Agency no later than 180 days after the original sampling event. If the facility is permitted by the Agency, the notification must be filed for review as a significant permit modification pursuant to Subpart B of 35 Ill. Adm. Code 813.
 - iv) If an alternative source demonstration described in subsections (a)(4)(B)(ii) and (a)(4)(B)(iii) cannot be made,

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assessment monitoring is required in accordance with subsection (b).

- v) If an alternative source demonstration, submitted to the Agency as an application, is denied pursuant to 35 Ill. Adm. Code 813.105, the operator must commence sampling for the constituents listed in subsection (b)(5), and submit an assessment monitoring plan as a significant permit modification, both within 30 days after the dated notification of Agency denial. The operator must sample the well or wells that exhibited the confirmed increase.

b) **Assessment Monitoring.** The operator must begin an assessment monitoring program in order to confirm that the solid waste disposal facility is the source of the contamination and to provide information needed to carry out a groundwater impact assessment in accordance with subsection (c). The assessment monitoring program must be conducted in accordance with the following requirements:

- 1) The assessment monitoring must be conducted in accordance with this subsection to collect information to assess the nature and extent of groundwater contamination. The owner or operator of a MSWLF unit must comply with the additional requirements prescribed in subsection (b)(5). The assessment monitoring must consist of monitoring of additional constituents that might indicate the source and extent of contamination. In addition, assessment monitoring may include any other investigative techniques that will assist in determining the source, nature and extent of the contamination, which may consist of, but need not be limited to the following:
 - A) More frequent sampling of the wells in which the observation occurred;
 - B) More frequent sampling of any surrounding wells; and
 - C) The placement of additional monitoring wells to determine the source and extent of the contamination.
- 2) Except as provided for in subsections (a)(4)(B)(iii) and (a)(4)(B)(v), the operator of the facility for which assessment monitoring is required must file the plans for an assessment monitoring program with the Agency. If the facility is permitted by the Agency, then the plans must be filed for review as a significant permit modification pursuant to Subpart B of 35 Ill. Adm. Code 813 within 180 days after the original sampling event. The

- 419 assessment monitoring program must be implemented within 180 days
 420 after the original sampling event in accordance with subsection (a)(4) or,
 421 in the case of permitted facilities, within 45 days after Agency approval.
 422
- 423 3) If the analysis of the assessment monitoring data shows that the
 424 concentration of one or more constituents, monitored at or beyond the
 425 zone of attenuation is above the applicable groundwater quality standards
 426 of Section 811.320 and is attributable to the solid waste disposal facility,
 427 then the operator must determine the nature and extent of the groundwater
 428 contamination including an assessment of the potential impact on the
 429 groundwater should waste continue to be accepted at the facility and must
 430 implement the remedial action in accordance with subsection (d).
 431
- 432 4) If the analysis of the assessment monitoring data shows that the
 433 concentration of one or more constituents is attributable to the solid waste
 434 disposal facility and exceeds the maximum allowable predicted
 435 concentration within the zone of attenuation, then the operator must
 436 conduct a groundwater impact assessment in accordance with the
 437 requirements of subsection (c).
 438
- 439 5) In addition to the requirements of subsection (b)(1), to collect information
 440 to assess the nature and extent of groundwater contamination, the
 441 following requirements are applicable to MSWLF units:
 442
- 443 A) The monitoring of additional constituents pursuant to subsection
 444 (b)(1) must include, at a minimum (except as otherwise provided
 445 in subsection (b)(5)(E)), the constituents listed in appendix II of 40
 446 CFR 258, incorporated by reference at 35 Ill. Adm. Code 810.104,
 447 and constituents from 35 Ill. Adm. Code 620.410.
 448
- 449 BOARD NOTE: Subsection (b)(5)(A) is derived from 40 CFR
 450 258.55(b)-(2017).
 451
- 452 B) Within 14 days after obtaining the results of sampling required
 453 under subsection (b)(5)(A), the owner or operator must do as
 454 follows:
 455
- 456 i) The owner or operator must place a notice in the operating
 457 record identifying the constituents that have been detected;
 458 and
 459
- 460 ii) The owner or operator must notify the Agency that such a
 461 notice has been placed in the operating record.

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BOARD NOTE: Subsection (b)(5)(B) is derived from 40 CFR 258.55(d)(1)-(2017).

- C) The owner or operator must establish background concentrations for any constituents detected pursuant to subsection (b)(5)(A) in accordance with Section 811.320(e).

BOARD NOTE: Subsection (b)(5)(C) is derived from 40 CFR 258.55(d)(3)-(2017).

- D) Within 90 days after the initial monitoring in accordance with subsection (b)(5)(A), the owner or operator must monitor for the detected constituents listed in appendix II of 40 CFR 258, incorporated by reference in 35 Ill. Adm. Code 810.104, and 35 Ill. Adm. Code 620.410 on a semiannual basis during the assessment monitoring. The operator must monitor all the constituents listed in appendix II of 40 CFR 258 and 35 Ill. Adm. Code 620.410 on an annual basis during assessment monitoring.

BOARD NOTE: Subsection (b)(5)(D) is derived from 40 CFR 258.55(d)(2)-(2017).

- E) The owner or operator may request the Agency to delete any of the 40 CFR 258 and 35 Ill. Adm. Code 620.410 constituents by demonstrating to the Agency that the deleted constituents are not reasonably expected to be in or derived from the waste contained in the leachate.

BOARD NOTE: Subsection (b)(5)(E) is derived from 40 CFR 258.55(b)-(2017).

- F) Within 14 days after finding an exceedance above the applicable groundwater quality standards in accordance with subsection (b)(3), the owner or operator must do as follows:
 - i) The owner or operator must place a notice in the operating record that identifies the constituents monitored under subsection (b)(1)(D) that have exceeded the groundwater quality standard;
 - ii) The owner or operator must notify the Agency and the appropriate officials of the local municipality or county

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within whose boundaries the site is located that such a notice has been placed in the operating record; and

- iii) The owner or operator must notify all persons who own land or reside on land that directly overlies any part of the plume of contamination if contaminants have migrated off-site.

BOARD NOTE: Subsection (b)(5)(F) is derived from 40 CFR 258.55(g)(1)(i) through (g)(1)(iii)-(2017).

- G) If the concentrations of all constituents in appendix II of 40 CFR 258, incorporated by reference in 35 Ill. Adm. Code 810.104, and 35 Ill. Adm. Code 620.410 are shown to be at or below background values, using the statistical procedures in Section 811.320(e), for two consecutive sampling events, the owner or operator must notify the Agency of this finding and may stop monitoring the appendix II of 40 CFR 258 and 35 Ill. Adm. Code 620.410 constituents.

BOARD NOTE: Subsection (b)(5)(G) is derived from 40 CFR 258.55(e)-(2017).

- c) Assessment of Potential Groundwater Impact. An operator required to conduct a groundwater impact assessment in accordance with subsection (b)(4) must assess the potential impacts outside the zone of attenuation that may result from confirmed increases above the maximum allowable predicted concentration within the zone of attenuation, attributable to the facility, in order to determine if there is need for remedial action. In addition to the requirements of Section 811.317, the following requirements apply:
 - 1) The operator must utilize any new information developed since the initial assessment and information from the detection and assessment monitoring programs and such information may be used for the recalibration of the GCT model; and
 - 2) The operator must submit the groundwater impact assessment and any proposed remedial action plans determined necessary pursuant to subsection (d) to the Agency within 180 days after the start of the assessment monitoring program.
- d) Remedial Action. The owner or operator of a MSWLF unit must conduct corrective action in accordance with Sections 811.324, 811.325, and 811.326.

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- The owner or operator of a landfill facility, other than a MSWLF unit, must conduct remedial action in accordance with this subsection (d).
- 1) The operator must submit plans for the remedial action to the Agency. Such plans and all supporting information including data collected during the assessment monitoring must be submitted within 90 days after determination of either of the following:
 - A) The groundwater impact assessment, performed in accordance with subsection (c), indicates that remedial action is needed; or
 - B) Any confirmed increase above the applicable groundwater quality standards of Section 811.320 is determined to be attributable to the solid waste disposal facility in accordance with subsection (b).
 - 2) If the facility has been issued a permit by the Agency, then the operator must submit this information as an application for significant modification to the permit;
 - 3) The operator must implement the plan for remedial action program within 90 days after the following:
 - A) Completion of the groundwater impact assessment that requires remedial action;
 - B) Establishing that a violation of an applicable groundwater quality standard of Section 811.320 is attributable to the solid waste disposal facility in accordance with subsection (b)(3); or
 - C) Agency approval of the remedial action plan, where the facility has been permitted by the Agency.
 - 4) The remedial action program must consist of one or a combination of one of more of the following solutions:
 - A) Retrofit additional groundwater protective measures within the unit;
 - B) Construct an additional hydraulic barrier, such as a cutoff wall or slurry wall system;
 - C) Pump and treat the contaminated groundwater; or

- 591 D) Any other equivalent technique which will prevent further
592 contamination of groundwater.
593
594 5) Termination of the Remedial Action Program
595
596 A) The remedial action program must continue in accordance with the
597 plan until monitoring shows that the concentrations of all
598 monitored constituents are below the maximum allowable
599 predicted concentration within the zone of attenuation, below the
600 applicable groundwater quality standards of Section 811.320 at or
601 beyond the zone of attenuation, over a period of four consecutive
602 quarters no longer exist.
603
604 B) The operator must submit to the Agency all information collected
605 under subsection (d)(5)(A). If the facility is permitted, then the
606 operator must submit this information as a significant modification
607 of the permit.
608

609 (Source: Amended at 44 Ill. Reg. _____, effective _____)
610

611 **Section 811.320 Groundwater Quality Standards**
612

- 613 a) Applicable Groundwater Quality Standards
614
615 1) Groundwater quality must be maintained at each constituent's background
616 concentration, at or beyond the zone of attenuation. The applicable
617 groundwater quality standard established for any constituent must be:
618
619 A) The background concentration; or
620
621 B) The Board established standard adjusted by the Board in
622 accordance with the justification procedure of subsection (b).
623
624 2) Any statistically significant increase above an applicable groundwater
625 quality standard established pursuant to subsection (a)(1) that is
626 attributable to the facility and which occurs at or beyond the zone of
627 attenuation within 100 years after closure of the last unit accepting waste
628 within such a facility must constitute a violation.
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630 3) For the purposes of this Part:
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632 A) "Background concentration" means that concentration of a
633 constituent that is established as the background in accordance

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with subsection (d); and

- B) "Board established standard" is the concentration of a constituent adopted by the Board as a groundwater quality standard adopted by the Board pursuant to Section 14.4 of the Act or Section 8 of the Illinois Groundwater Protection Act [415 ILCS 55].

b) Justification for Adjusted Groundwater Quality Standards

- 1) An operator may petition the Board for an adjusted groundwater quality standard in accordance with the procedures specified in Section 28.1 of the Act and 35 Ill. Adm. Code 104.Subpart D.
- 2) For groundwater which contains naturally occurring constituents which meet the applicable requirements of 35 Ill. Adm. Code 620.410, 620.420, 620.430, or 620.440 the Board will specify adjusted groundwater quality standards no greater than those of 35 Ill. Adm. Code 620.410, 620.420, 620.430 or 620.440, respectively, upon a demonstration by the operator that:
 - A) The change in standards will not interfere with, or become injurious to, any present or potential beneficial uses for thesueh water;
 - B) The change in standards is necessary for economic or social development, by providing information including, but not limited to, the impacts of the standards on the regional economy, social disbenefits such as loss of jobs or closing of landfills, and economic analysis contrasting the health and environmental benefits with costs likely to be incurred in meeting the standards; and
 - C) All technically feasible and economically reasonable methods are being used to prevent the degradation of the groundwater quality.
- 3) Notwithstanding subsection (b)(2), in no case must the Board specify adjusted groundwater quality standards for a MSWLF unit greater than the following levels:

<u>Chemical</u>	<u>Concentration</u> <u>(mg/l)</u>
Arsenic (CAS No. 7440-38-2)	0.05

Barium (CAS No. 7440-39-3)	1.0
Benzene (CAS No. 71-43-2)	0.005
Cadmium (CAS No. 7440-43-9)	0.01
Carbon tetrachloride (CAS No. 56-23-5)	0.005
Chromium (hexavalent) (CAS No. 18540-29-9)	0.05
2,4-Dichlorophenoxy acetic acid	0.1
1,4-Dichlorobenzene (CAS No. 106-46-7)	0.075
1,2-Dichloroethane (CAS No. 107-06-2)	0.005
1,1-Dichloroethylene (CAS No. 75-35-4)	0.007
2,4-Dichlorophenoxy acetic acid (CAS No. 94-75-7)	0.1
Endrin (CAS No. 72-20-8)	0.0002
Fluoride (CAS No. 16984-48-8)	4
Lindane (CAS No. 58-89-9)	0.004
Lead (CAS No. 7439-92-1)	0.05
Mercury (CAS No. 7439-97-6)	0.002
Methoxychlor (CAS No. 72-43-5)	0.1
Nitrate (CAS No. 14797-55-8)	10
Selenium (CAS No. 7782-49-2)	0.01
Silver (CAS No. 7440-22-4)	0.05
Toxaphene (CAS No. 8001-35-2)	0.005
1,1,1-Trichloroethane (CAS No. 71-55-6)	0.2
1,1,1-Trichloromethane	
Trichloroethylene (CAS No. 79-01-6)	0.005
2,4,5-Trichlorophenoxyacetic acid (CAS No. 93-76-5)	0.01
2,4,5-Trichlorophenoxy acetic acid	
Vinyl chloride (CAS No. 75-01-4) Chloride	0.002

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BOARD NOTE: Subsection (b)(3) is derived from 40 CFR 258.40 Table 1.

- 4) For groundwater that contains naturally occurring constituents which do not meet the standards of 35 Ill. Adm. Code 620.410, 620.420, 620.430, or 620.440, the Board will specify adjusted groundwater quality standards, upon a demonstration by the operator that:
- A) The groundwater does not presently serve as a source of drinking water;
 - B) The change in standards will not interfere with, or become injurious to, any present or potential beneficial uses for those waters;
 - C) The change in standards is necessary for economic or social

- 690 development, by providing information including, but not limited
 691 to, the impacts of the standards on the regional economy, social
 692 disbenefits such as loss of jobs or closing of landfills, and
 693 economic analysis contrasting the health and environmental
 694 benefits with costs likely to be incurred in meeting the standards;
 695 and
 696
 697 D) The groundwater cannot presently, and will not in the future, serve
 698 as a source of drinking water because:
 699
 700 i) It is impossible to remove water in usable quantities;
 701
 702 ii) The groundwater is situated at a depth or location such that
 703 recovery of water for drinking purposes is not
 704 technologically feasible or economically reasonable;
 705
 706 iii) The groundwater is so contaminated that it would be
 707 economically or technologically impractical to render that
 708 water fit for human consumption;
 709
 710 iv) The total dissolved solids content of the groundwater is
 711 more than 3,000 mg/ℓ and that water will not be used to
 712 serve a public water supply system; or
 713
 714 v) The total dissolved solids content of the groundwater
 715 exceeds 10,000 mg/ℓ.
 716
 717 c) Determination of the Zone of Attenuation
 718
 719 1) The zone of attenuation, within which concentrations of constituents in
 720 leachate discharged from the unit may exceed the applicable groundwater
 721 quality standard of this Section, is a volume bounded by a vertical plane at
 722 the property boundary or 100 feet from the edge of the unit, whichever is
 723 less, extending from the ground surface to the bottom of the uppermost
 724 aquifer and excluding the volume occupied by the waste.
 725
 726 2) Zones of attenuation must not extend to the annual ~~high-water~~
 727 high-water mark of navigable surface waters.
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 729 3) Overlapping zones of attenuation from units within a single facility may
 730 be combined into a single zone for the purposes of establishing a
 731 monitoring network.
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d) Establishment of Background Concentrations

- 1) The initial monitoring to determine background concentrations must commence during the hydrogeological assessment required by Section 811.315. The background concentrations for those parameters identified in Sections 811.315(e)(1)(G) and 811.319(a)(2) and (a)(3) must be established based on consecutive quarterly sampling of wells for a minimum of one year, monitored in accordance with the requirements of subsections (d)(2), (d)(3) and (d)(4). Non-consecutive data may be considered by the Agency, if only one data point from a quarterly event is missing, and it can be demonstrated that the remaining data set is representative of consecutive data in terms of any seasonal or temporal variation. Statistical tests and procedures must be employed, in accordance with subsection (e), depending on the number, type and frequency of samples collected from the wells, to establish the background concentrations.
- 2) Adjustments to the background concentrations must be made if changes in the concentrations of constituents observed in background wells over time are determined, in accordance with subsection (e), to be statistically significant, and due to natural temporal or spatial variability or due to an off-site source not associated with the landfill or the landfill activities. Such adjustments may be conducted no more frequently than once every two years during the operation of a facility and modified subject to approval by the Agency. Non-consecutive data may be used for an adjustment upon Agency approval. Adjustments to the background concentration must not be initiated prior to November 27, 2009 unless required by the Agency.
- 3) Background concentrations determined in accordance with this subsection must be used for the purposes of establishing groundwater quality standards, in accordance with subsection (a). The operator must prepare a list of the background concentrations established in accordance with this subsection. The operator must maintain such a list at the facility, must submit a copy of the list to the Agency for establishing standards in accordance with subsection (a), and must provide updates to the list within ten days of any change to the list.
- 4) A network of monitoring wells must be established upgradient from the unit, with respect to groundwater flow, in accordance with the following standards, in order to determine the background concentrations of constituents in the groundwater:

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- A) The wells must be located at such a distance that discharges of contaminants from the unit will not be detectable;
 - B) The wells must be sampled at the same frequency as other monitoring points to provide continuous background concentration data, throughout the monitoring period; and
 - C) The wells must be located at several depths to provide data on the spatial variability.
- 5) A determination of background concentrations may include the sampling of wells that are not hydraulically upgradient of the waste unit where:
- A) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient of the waste; and
 - B) Sampling at other wells will provide an indication of background concentrations that is representative of that which would have been provided by upgradient wells.
- 6) If background concentrations cannot be determined on site, then alternative background concentrations may be determined from actual monitoring data from the aquifer of concern, which includes, but is not limited to, data from another landfill site that overlies the same aquifer.
- e) Statistical Analysis of Groundwater Monitoring Data
- 1) Statistical tests must be used to analyze groundwater monitoring data. One or more of the normal theory statistical tests must be chosen first for analyzing the data set or transformations of the data set. If these normal theory tests are demonstrated to be inappropriate, tests listed in subsection (e)(4) must be used. The level of significance (Type I error level) must be no less than 0.01, for individual well comparisons, and no less than 0.05, for multiple well comparisons. The statistical analysis must include, but not be limited to, the accounting of data below the detection limit of the analytical method used, the establishment of background concentrations and the determination of whether statistically significant changes have occurred in:
 - A) The concentration of any chemical constituent with respect to the background concentration or maximum allowable predicted concentration; and

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- B) The established background concentration of any chemical constituents over time.
- 2) The statistical test or tests used must be based upon the sampling and collection protocol of Sections 811.318 and 811.319.
- 3) Monitored data that are below the level of detection must be reported as not detected (ND). The level of detection for each constituent must be the practical quantitation limit (PQL), and must be the lowest concentration that is protective of human health and the environment, and can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions. In no case, must the PQL be established above the level that the Board has established for a groundwater quality standard under the Illinois Groundwater Protection Act. The following procedures must be used to analyze such data, unless an alternative procedure in accordance with subsection (e)(4), is shown to be applicable:
 - A) If the percentage of ~~non-detects~~~~non-detects~~ in the data base used is less than 15 percent, the operator must replace NDs with the PQL divided by two, then proceed with the use of one or more of the normal theory statistical tests;
 - B) If the percentage of ~~non-detects~~~~non-detects~~ in the data base used is between 15 and 50 percent, and the data are normally distributed, the operator must use Cohen's or Aitchison's adjustment to the sample mean and standard deviation, followed by an applicable statistical procedure;
 - C) If the percentage of ~~non-detects~~~~non-detects~~ in the database used is above 50 percent, then the owner or operator must use an alternative procedure in accordance with subsection (e)(4).
- 4) Nonparametric statistical tests or any other statistical test if it is demonstrated to meet the requirements of 35 Ill. Adm. Code 724.197(i).

~~BOARD NOTE: Subsection (b)(3) is derived from 40 CFR 258.40 Table 1 (2017).~~

(Source: Amended at 44 Ill. Reg. _____, effective _____)

860 **Section 811.APPENDIX A Financial Assurance Forms**

861

862 **Section 811.ILLUSTRATION E Irrevocable Standby Letter of Credit**

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864 IRREVOCABLE STANDBY LETTER OF CREDIT

865

866 Director
867 Illinois Environmental Protection Agency
868 C/O Bureau of Land #24
869 Financial Assurance Program
870 1021 North Grand Avenue East
871 Post Office Box 19276
872 Springfield, Illinois 62794-9276

873

874 Dear Sir or Madam:

875

876 We have authority to issue letters of credit. Our letter-of-credit operations are regulated by the
877 Illinois Department of Financial and Professional Regulation or our deposits are insured by the
878 Federal Deposit Insurance Corporation. (Omit language that does not apply.)

879

We hereby establish our Irrevocable Standby Letter of Credit No. _____ in your favor,
at the request and for the account of _____ up to the
aggregate amount of _____ U.S. dollars (\$ _____)
available upon presentation of:

1. your sight draft, bearing references to this letter of credit _____ ; and
No. _____
2. your signed statement reading as follows: "I certify that the amount of the draft is
payable pursuant to regulations issued under authority of the Environmental
Protection Act [415 ILCS 5] and 35 Ill. Adm. Code 811.713(e)."

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This letter of credit is effective as of _____ [date] and ~~expire~~shall
expire on _____ [date]
at least one year later]; but that expiration date shall be automatically extended for a period of
[at least one year] on _____ [date] and on each successive expiration date, unless, at least
120 days before the current expiration date, we notify both you and _____
[owner's or operator's name] by certified mail that we have decided not to extend
this letter of credit beyond the current expiration date. The 120 days will begin on the date
when both the _____ [owner's or operator's name]
and the IEPA have received the notice, as evidenced by the return receipts. In the event you are
so notified, any unused portion of the credit ~~must~~shall be available upon presentation of your
sight

draft for 120 days after the date of receipt by both you and _____
_____ [owner's or operator's name], as shown on the signed return receipts.

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Whenever this letter of credit is drawn on, under and in compliance with the terms of this credit, we ~~must~~ shall duly honor that draft upon presentation to us, and we ~~must~~ shall deposit the amount of the draft directly into the State of Illinois Landfill Closure and Post-Closure or Corrective Action Fund in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in 35 Ill. Adm. Code 811.Appendix A, Illustration E as that regulation was constituted on the date shown below.

Signature _____

Typed Name _____

Title _____

Date _____

Name and address of issuing institution _____

This credit is subject to _____ [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce", or "the Uniform Commercial Code"].

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(Source: Amended at 44 Ill. Reg. _____, effective _____)

895 **Section 811.APPENDIX C List of Leachate Monitoring Parameters**
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- pH
- Elevation Leachate Surface
- Bottom of Well Elevation
- Leachate Level from Measuring Point
- Arsenic (total)
- Barium (total)
- Cadmium (total) mg/l
- Iron (total)
- Ammonia Nitrogen—N
- Bacteria (Fecal Coliform)
- Biochemical Oxygen Demand (BOD5)
- 1,1,1,2-Tetrachloroethane
- 1,1,1-Trichloroethane
- 1,1,2,2-Tetrachloroethane
- 1,1,2-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethylene
- 1,1-Dichloropropene
- 1,2,3-Trichlorobenzene
- 1,2,3-Trichloropropane
- 1,2,4-Trichlorobenzene
- 1,2,4-Trimethylbenzene
- 1,2-Dibromo-3-Chloropropane
- 1,2-Dichloroethane
- 1,2-Dichloropropane
- 1,3,5-Trimethylbenzene
- 1,3-Dichloropropane
- 1,3-Dichloropropene
- 1,4-Dichloro-2-Butene
- 1-Propanol
- 2,2-Dichloropropane
- 2,4,5-tp (Silvex)

2,4,6-Trichlorophenol
 2,4-Dichlorophenol
 2,4-Dichlorophenoxyacetic Acid (2,4-D)
 2,4-Dimethylphenol
 2,4-Dinitrotoluene
 2,4-Dinitrophenol
 2,6-Dinitrotoluene
 2-Chloroethyl Vinyl Ether
 2-Chloronaphthalene
 2-Chlorophenol
 2-Hexanone
 2-Propanol (Isopropyl Alcohol)
 3,3-Dichlorobenzidine
 4,4-DDD
 4,4-DDE
 4,4-DDT
 4,6-Dinitro-*o*-Cresol
 4-Bromophenyl Phenyl Ether
 4-Chlorophenyl Phenyl Ether
 4-Methyl-2-Pentanone
 4-Nitrophenol
Acenaphthene (1,2-dihydroacenaphthylene; CAS No. 83-32-9)
Acetone (dimethyl ketone, propan-2-one; CAS No. 67-64-1)
Alachlor (2-chloro-N-(2,6-diethylphenyl)-N-(methoxymethyl)acetamide; CAS No. 15972-60-8)
Aldicarb (2-methyl-2-(methylthio)propanal O-((methylamino)carbonyl)oxime; CAS No. 116-06-3)
Aldrin (CAS No. 309-00-2)
 α -BHC ((1 α ,2 α ,3 β ,4 α ,5 β ,6 β)-1,2,3,4,5,6-hexachlorocyclohexane, α -hexachlorocyclohexane; CAS No. 319-84-6)
 Alpha-BHC
 β -BHC ((1 α ,2 β ,3 α ,4 β ,5 α ,6 β)-1,2,3,4,5,6-hexachlorocyclohexane, β -hexachlorocyclohexane; CAS No. 319-85-7)
 δ -BHC ((1 α ,2 α ,3 α ,4 β ,5 α ,6 β)-1,2,3,4,5,6-hexachlorocyclohexane, δ -hexachlorocyclohexane; CAS No. 319-86-8)
Aluminum (CAS No. 7429-90-5)

Ammonia nitrogen as N (CAS No. 7664-41-7)
Anthracene (CAS No. 120-12-7)
Antimony (CAS No. 7440-36-0)
Arsenic (total) (CAS No. 7440-38-2)
Atrazine (6-chloro-N-ethyl-N-(propan-2-yl)-1,3,5-triazine-2,4-diamine; CAS No. 1912-24-9)
Bacteria (fecal coliform)
Barium (total) (CAS No. 7440-39-3)
Benzene (CAS No. 71-43-2)
Benzo(a)anthracene (tetraphene; CAS No. 56-55-3)
~~Benzo (a) Anthracene~~
~~Benzo (a) Pyrene~~
Benzo(b)fluoranthene (benz(e)acephenanthrylene; CAS No. 205-99-2)
~~Benzo (b) Fluoranthene~~
Benzo(k)fluoranthene (CAS No. 207-08-9)
Benzo(ghi)perylene (CAS No. 191-24-2)
~~Benzo (ghi) Perylene~~
Benzo(a)pyrene (benzo(pqr)tetraphene; CAS No. 50-32-8)
~~Benzo (k) Fluoranthene~~
Beryllium (total) (CAS No. 7440-41-7)
~~Beta—BHC~~
Bicarbonate (CAS No. 71-52-3)
Biochemical oxygen demand (BOD₅)
Bis(2-chloro-1-methylethyl) ether (1-chloro-2-(1-chloropropan-2-yloxy)propane, 2,2'-oxybis(1-chloropropane); CAS No. 108-60-1)
~~Bis (2-Chloro-1-Methylethyl) Ether~~
Bis(2-chloroethoxy)methane (1-chloro-2-(2-chloroethoxymethoxy)ethane, 1,1'-(methylenebis(oxy))bis(2-chloroethane); CAS No. 111-91-1)
~~Bis (2-Chloroethoxy) Methane~~
Bis(2-chloroethyl) ether (1-chloro-2-(2-chloroethoxy)ethane; CAS No. 111-44-4)
~~Bis (2-Chloroethyl) Ether~~
Bis(2-ethylhexyl) ether (3-(2-ethylhexoxymethyl)heptane; CAS No. 10143-60-9)
~~Bis (2-Ethylhexyl) Ether~~
Bis(2-ethylhexyl) phthalate (bis(2-ethylhexyl) benzene-1,2-dicarboxylate; CAS No. 117-81-7)
~~Bis (2-Ethylhexyl) Phthalate~~

Bis(chloromethyl) ether (chloro(chloromethoxy)methane, 1,1'-oxybis(1-chloromethane); CAS No. 542-88-1)

Bis(Chloromethyl) Ether

Boron (CAS No. 7440-42-8)

Bottom of well elevation

Bromobenzene (CAS No. 108-86-1)

Bromochloromethane (CAS No. 74-97-5)

Bromodichloromethane (CAS No. 75-27-0)

Bromoform (tribromomethane; CAS No. 75-25-2)

Bromomethane (CAS No. 74-83-9)

4-Bromophenyl phenyl ether (1-bromo-4-phenoxybenzene; CAS No. 101-55-3)

Butanol (including four structural isomers, one of which has two stereoisomers: n-butanol (butan-1-ol; CAS No. 71-36-3), sec-butanol (butan-2-ol; CAS No. 78-92-2 (for both stereoisomers)), isobutanol (2-methylpropan-1-ol; CAS No. 78-83-1), and tert-butanol (2-methylpropan-2-ol; CAS No. 75-65-0)

n-Butylbenzene (butyl benzene, 1-butylbenzene; CAS No. 104-51-8)

sec-Butylbenzene (butan-2-ylbenzene, (1-methylpropyl)benzene; CAS No. 135-98-8)

tert-Butylbenzene (1,1-dimethylethylbenzene; CAS No. 98-06-6)

Butyl benzyl phthalate (benzyl butyl benzene-1,2-dicarboxylic acid; CAS No. 85-68-7) Benzyl Phthalate

Cadmium (total) (CAS No. 7440-43-9)

Calcium (CAS No. 7440-70-2)mg/l

Carbofuran ((2,2-dimethyl-3H-1-benzofuran-7-yl) N-methylcarbamate, 2,2-dimethyl-2,3-dihydro-1-benzofuran-7-yl N-methylcarbamate; CAS No. 1563-66-2)

Carbon disulfide (methanedithione; CAS No. 75-15-0) Disulfide

Carbon tetrachloride (tetrachloromethane; CAS No. 56-23-5) Tetrachloride

Chemical oxygen demand Oxygen Demand (COD)

Chlordane (including two stereoisomers; 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane; CAS No. 57-74-9)

Chloride (CAS No. 16887-00-6)mg/l

Chlorobenzene (CAS No. 108-90-7)

Chloroethane (CAS No. 75-00-3)

2-Chloroethyl vinyl ether ((2-chloroethoxy)ethene; CAS No. 110-75-8)

Chloroform (trichloromethane; CAS No. 67-66-3)

Chloromethane (CAS No. 74-87-3)

2-Chloronaphthalene (CAS No. 91-58-7)

2-Chlorophenol (o-chlorophenol; CAS No. 95-57-8)
4-Chlorophenyl phenyl ether (1-chloro-4-phenoxybenzene, p-chlorophenyl phenyl ether; CAS No. 7005-72-3)
o-Chlorotoluene (1-chloro-2-methylbenzene; CAS No. 95-49-8)
p-Chlorotoluene (1-chloro-4-methylbenzene; CAS No. 106-43-4)
Chromium (hexavalent) (CAS No. 18540-29-9)
Chromium (total) (CAS No. 7447-47-3)
Chrysene (1,2-benzophenanthrene, benzo(a)phenanthrene; CAS No. 218-01-9)
Cis-1,2-Dichloroethylene
Cobalt (total) (CAS No. 7440-48-4)
Copper (total) (CAS No. 7440-50-8)
p-Cresol (4-methylphenol; CAS No. 106-44-5)
Cyanide (CAS No. 57-12-5)
4,4-DDD (1-chloro-4-(2,2-dichloro-1-(4-chlorophenyl)ethyl)benzene, p,p'-DDD, dichlorodiphenyldichloroethane; CAS No. 72-54-8)
4,4-DDE (1-chloro-4-(2,2-dichloro-1-(4-chlorophenyl)ethenyl)benzene, p,p'-DDE, dichlorodiphenyldichloroethylene; CAS No. 72-55-9)
4,4-DDT (1-chloro-4-(2,2,2-trichloro-1-(4-chlorophenyl)ethyl)benzene, p,p'-DDD; CAS No. 50-29-3)
DDT
Delta-BHC
Di-N-Butyl Phthalate
Di-N-Octyl Phthalate
Dibenzo(a,h)anthracene (dibenz(a,h)anthracene; CAS No. 53-70-3)
Dibenzo (a,h) Anthracene
1,2-Dibromo-3-chloropropane (CAS No. 96-12-8)
Dibromochloromethane (CAS No. 124-48-1)
Dibromomethane (methylenedibromide; CAS No. 74-95-3)
Di-n-butyl phthalate (dibutyl benzene-1,2-dicarboxylate; CAS No. 84-74-2)
m-Dichlorobenzene (1,3-dichlorobenzene; CAS No. 541-73-1)
o-Dichlorobenzene (1,2-dichlorobenzene; CAS No. 95-50-1)
p-Dichlorobenzene (1,4-dichlorobenzene; CAS No. 106-46-7)
3,3'-Dichlorobenzidine (3,3'-dichloro(1,1'-biphenyl)-4,4'-diamine; CAS No. 91-94-1)
1,4-Dichloro-2-butene (including two stereoisomers; CAS No. 764-41-0)
Dichlorodifluoromethane (CAS No. 75-71-8)

- 1,1-Dichloroethane (CAS No. 75-34-3)
- 1,2-Dichloroethane (CAS No. 107-06-2)
- 1,1-Dichloroethylene (1,1-dichloroethene; CAS No. 75-35-4)
- cis-1,2-Dichloroethylene ((Z)-1,2-dichloroethene; CAS No. 156-59-2)
- trans-1,2-Dichloroethylene ((E)-1,2-dichloroethene; CAS No. 156-60-5)
- 2,4-Dichlorophenol (CAS No. 120-83-2)
- 2,4-Dichlorophenoxyacetic acid (2,4-D; CAS No. 94-75-7)
- 1,2-Dichloropropane (propylene dichloride; CAS No. 78-87-5)
- 1,3-Dichloropropane (CAS No. 142-28-9)
- 2,2-Dichloropropane (dichlorodimethylmethane; CAS No. 594-20-7)
- 1,1-Dichloropropene (1,1-dichloroprop-1-ene; CAS No. 563-58-6)
- 1,3-Dichloropropene (1,3-dichloroprop-1-ene; including two stereoisomers; CAS No. 542-75-6)
- trans-1,3-Dichloropropene ((E)-1,3-dichloroprop-1-ene; CAS No. 10061-02-6)
- Dieldrin (1aR,2R,2aS,3S,6R,6aR,7S,7aS)-3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-2,7:3,6-dimethanonaphtho(2,3-b)oxirene; CAS No. 60-57-1)
- Diethyl phthalate (diethyl benzene-1,2-dicarboxylate; CAS No. 84-66-2)Phthalate
- 2,4-Dimethylphenol (2,4-xylenol; CAS No. 105-67-9)
- Dimethyl phthalate (dimethyl benzene-1,2-dicarboxylate; CAS No. 131-11-3)Phthalate
- 4,6-Dinitro-o-cresol (2-methyl-4,6-dinitrophenol; CAS No. 534-52-1)
- 2,4-Dinitrophenol (CAS No. 51-28-5)
- 2,4-Dinitrotoluene (1-methyl-2,4-dinitrobenzene; CAS No. 121-14-2)
- 2,6-Dinitrotoluene (1-methyl-2,6-dinitrobenzene; CAS No. 573-56-8)
- Di-n-octyl phthalate (dioctyl benzene-1,2-dicarboxylic acid; CAS No. 117-84-0)
- Elevation leachate surface
- Endosulfan I ((3 α ,5 α β ,6 α ,9 α ,9 α β)-6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin-3-oxide, α -endosulfan; CAS No. 959-98-8)
- Endosulfan II ((3 α ,5 $\alpha\alpha$,6 β ,9 β ,9 $\alpha\alpha$)-6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin-3-oxide, β -endosulfan; CAS No. 19670-15-6)
- Endosulfan sulfate (6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin-3,3-dioxide; CAS No. 1031-07-8)Sulfate
- Endrin ((1R,2S,2aS,3S,6R,7R,7aS)-3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-2,7:3,6-dimethanobaphtho(2,3-b)oxirene; CAS No. 72-20-8)
- Endrin aldehyde ((1 α ,2 β ,2a β ,4a β ,5 β ,6a β ,6b β ,7R*)-2,2a,3,3,4,7-hexachlorodecahydro-1,2,4-methenocyclopenta(cd)pentalene-5-carboxaldehyde; CAS No. 7421-93-4)Aldehyde
- Ethyl acetate (ethyl ethanoate; CAS No. 141-78-6)Acetate

Ethylbenzene (CAS No. 100-41-4)
Ethylene dibromide~~Dibromide~~ (EDB) (1,2-dibromoethane; CAS No. 106-93-4)
Fluoranthene (benzo(jk)fluorene; 1,2-(1,8-naphthalenediyl)benzene; CAS No. 206-44-0)
Fluorene (9H-fluorene; CAS No. 86-73-7)
Fluoride (CAS No. 16984-48-8)
Heptachlor Epoxide
Heptachlor (1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene; CAS No. 76-44-8)
Heptachlor epoxide (1,4,5,6,7,8,8-heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro-4,7-methanoindan; CAS No. 1024-57-3)
Hexachlorobenzene (CAS No. 118-74-1)
Hexachlorobutadiene (1,1,2,3,4,4-hexachlorobuta-1,3-diene; CAS No. 87-68-3)
Hexachlorocyclopentadiene (1,2,3,4,5,5-hexachlorocyclopenta-1,3-diene; CAS No. 77-47-4)
Hexachloroethane (CAS No. 67-72-1)
2-Hexanone (hexan-2-one, n-butyl methyl ketone; CAS No. 591-78-6)
Indeno(1,2,3-cd)pyrene (2,3-(o-phenylene)pyrene; CAS No. 193-39-5)
Indeno (1,2,3-cd) Pyrene
Iodomethane (CAS No. 74-88-4)
Iron (total) (CAS No. 7439-89-6)
Isopropylbenzene (cumene; (propan-2-yl)benzene; CAS No. 98-82-8)
p-Isopropyltoluene (1-methyl-4-(propan-2-yl)benzene, p-cymene; CAS No. 99-87-6)
Lead (total) (CAS No. 7439-92-1)
Leachate level from measuring point
Lindane ((1r,2R,3S,4r,5R,6S)-1,2,3,4,5,6-hexachlorocyclohexane, γ -hexachlorocyclohexane; CAS No. 58-89-9)
Magnesium (total) (CAS No. 7439-95-4)
Manganese (total) (CAS No. 7439-96-5)
Mercury (total) (CAS No. 7439-97-6)
Methoxychlor (1,1,1-trichloro-2,2-bis(4-methoxyphenyl)ethane; CAS No. 72-43-5)
Methyl chloride (chloromethane; CAS No. 74-87-3)~~Chloride~~
Methyl ethyl ketone (butan-2-one; CAS No. 78-93-3)~~Ethyl Ketone~~
Methylene bromide (dibromomethane; CAS No. 74-95-3)~~Bromide~~
Methylene chloride (dichloromethane; CAS No. 75-09-2)~~Chloride~~
4-Methylpentan-2-one (methyl isobutyl ketone; CAS No. 108-10-1)
Naphthalene (CAS No. 91-20-3)

Nickel (total) (CAS No. 7440-02-0)
Nitrate as nitrogen (CAS No. 14797-55-8)~~Nitrate-Nitrogen~~
Nitrobenzene (CAS No. 98-95-3)~~Nitrobenzine~~
o-Nitrophenol (2-nitrophenol; CAS No. 88-75-5)
p-Nitrophenol (4-nitrophenol; CAS No. 100-02-7)
N-Nitrosodimethylamine (N,N-dimethylnitrous amide; CAS No. 62-75-9)
N-Nitrosodiphenylamine (the IUPAC name N,N-diphenylnitrous amide; CAS No. 86-30-6)
N-Nitrosodipropylamine (dipropylnitrous amide, N-nitroso-N-propyl-1-propanamine; CAS No. 621-64-7)
Oil – hexane soluble (or equivalent)~~Oil, Hexane Soluble (or Equivalent)~~
Parathion (O,O-diethyl O-(4-nitrophenyl) phosphorothioate; CAS No. 56-38-2)
Pentachlorophenol (CAS No. 87-86-6)
pH
Phenanthrene (CAS No. 85-01-8)
Phenol (benzenol; CAS No. 108-95-2)~~Phenols~~
Phosphorous (CAS No. 7723-14-0)
Polychlorinated biphenyls (including several compounds with varied chlorination and their isomers; CAS No. 1336-36-3)~~Biphenyls~~
Potassium (CAS No. 7440-09-7)
1-Propanol (n-propyl alcohol; CAS No. 71-23-8)
2-Propanol (isopropyl alcohol; CAS No. 67-63-0)
n-Propylbenzene (propylbenzene, isocumene; CAS No. 103-65-1)
Pyrene (benzo(def)phenanthrene; CAS No. 129-00-0)
Selenium (CAS No. 7782-49-2)
Silver (total) (CAS No. 7440-22-4)
Specific conductance~~Conduetance~~
Sodium (CAS No. 7440-23-5)
Styrene (ethenylbenzene; CAS No. 100-42-5)
Sulfate (CAS No. 14808-79-8)
Temperature of leachate sample~~Leachate Sample (°F)~~
tert-Butylbenzene
Tetrachlorodibenzo-p-dioxins (2,3,7,8-tetrachlorodibenzo(be)(1,4)dioxine; CAS No. 1746-01-6)
Tetrachlorodibenzo-p-Dioxins
1,1,1,2-Tetrachloroethane (R-130a; CAS No. 630-20-6)

1,1,2,2-Tetrachloroethane (R-130; CAS No. 79-34-5)
Tetrachloroethylene (tetrachloroethene; perchloroethylene; CAS No. 127-18-4)
Tetrahydrofuran (oxolane; 1,4-epoxybutane; CAS No. 109-99-9)
Thallium (CAS No. 7440-28-0)
Tin (CAS No. 7440-31-5)
Toluene (methylbenzene; CAS No. 108-88-3-23-8)
~~Total Organic Carbon (TOC)~~
~~Total dissolved solids~~~~Dissolved Solids (TDS)-mg/l~~
Total organic carbon (TOC)
~~Total suspended solids~~~~Suspended Solids (TSS)-mg/l~~
Toxaphene (including several compounds with varied chlorination and their isomers; chlorinated camphene; CAS No. 8001-35-2)
2,4,5-TP ((2,4,5-trichlorophenoxy)propionic acid, Silvex, fenoprop; CAS No. 93-72-1))
~~trans-1,2-Dichloroethylene~~
~~trans-1,3-Dichlorpropene~~
1,2,3-Trichlorobenzene (CAS No. 87-61-6)
1,2,4-Trichlorobenzene (CAS No. 120-82-1)
1,1,1-Trichloroethane (methyl chloroform; CAS No. 71-55-6)
1,1,2-Trichloroethane (vinyl trichloride; CAS No. 79-00-5)
Trichloroethylene (trichloroethene; CAS No. 79-01-6)
Trichlorofluoromethane (Freon 11; CAS No. 75-69-4)
2,4,6-Trichlorophenol (CAS No. 88-06-2)
1,2,3-Trichloropropane (CAS No. 96-18-4)
1,2,4-Trimethylbenzene (hemellitene; CAS No. 526-73-8)
1,3,5-Trimethylbenzene (mesitylene; CAS No. 108-67-8)
Vinyl acetate (ethenyl acetate; CAS No. 108-05-4)~~Acetate~~
Vinyl chloride (chloroethene; CAS No. 75-01-4)~~Chloride~~
m-Xylene (1,3-dimethylbenzene; CAS No. 108-38-3)
o-Xylene (1,2-dimethylbenzene; CAS No. 95-47-6)
p-Xylene (1,4-dimethylbenzene; CAS No. 106-428-3)
Xylenes (dimethylbenzene, xylol; mixed structural isomers; CAS No. 1330-20-7)~~Xylene~~
Zinc (total) (CAS No. 7440-66-6)
~~m-Dichlorobenzene~~
~~m-Xylene~~

n-Butylbenzene
n-Nitrosodimethylamine
n-Nitrosodiphenylamine
n-Nitrosodipropylamine
n-Propylbenzene
o-Chlorotoluene
o-Dichlorobenzene
o-Nitrophenol
o-Xylene
p-Chlorotoluene
p-Cresol
p-Dichlorobenzene
p-Isopropyltoluene
p-Nitrophenol
p-Xylene
sec-Butylbenzene

897
898
899
900

Note: All parameters must be determined from unfiltered samples.

(Source: Amended at 44 Ill. Reg. _____, effective _____)

AGENCY P vs JCAR 01

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE G: WASTE DISPOSAL
CHAPTER I: POLLUTION CONTROL BOARD
SUBCHAPTER i: SOLID WASTE AND SPECIAL WASTE HAULING

PART 811
STANDARDS FOR NEW SOLID WASTE LANDFILLS

SUBPART A: GENERAL STANDARDS FOR ALL LANDFILLS

Section

811.101 Scope and Applicability
811.102 Location Standards
811.103 Surface Water Drainage
811.104 Survey Controls
811.105 Compaction
811.106 Daily Cover
811.107 Operating Standards
811.108 Salvaging
811.109 Boundary Control
811.110 Closure and Written Closure Plan
811.111 Postclosure Maintenance
811.112 Recordkeeping Requirements for MSWLF Units
811.113 Electronic Reporting

SUBPART B: INERT WASTE LANDFILLS

Section

811.201 Scope and Applicability
811.202 Determination of Contaminated Leachate
811.203 Design Period
811.204 Final Cover
811.205 Final Slope and Stabilization
811.206 Leachate Sampling
811.207 Load Checking

SUBPART C: PUTRESCIBLE AND CHEMICAL WASTE LANDFILLS

Section

811.301 Scope and Applicability
811.302 Facility Location
811.303 Design Period
811.304 Foundation and Mass Stability Analysis
811.305 Foundation Construction
811.306 Liner Systems
811.307 Leachate Drainage System
811.308 Leachate Collection System
811.309 Leachate Treatment and Disposal System
811.310 Landfill Gas Monitoring
811.311 Landfill Gas Management System
811.312 Landfill Gas Processing and Disposal System
811.313 Intermediate Cover

811.314 Final Cover System
811.315 Hydrogeologic Site Investigations
811.316 Plugging and Sealing of Drill Holes
811.317 Groundwater Impact Assessment
811.318 Design, Construction, and Operation of Groundwater Monitoring
Systems
811.319 Groundwater Monitoring Programs
811.320 Groundwater Quality Standards
811.321 Waste Placement
811.322 Final Slope and Stabilization
811.323 Load Checking Program
811.324 Corrective Action Measures for MSWLF Units
811.325 Selection of remedy for MSWLF Units
811.326 Implementation of the corrective action program at MSWLF
Units

SUBPART D: MANAGEMENT OF SPECIAL WASTES AT LANDFILLS

Section

811.401 Scope and Applicability
811.402 Notice to Generators and Transporters
811.403 Special Waste Manifests
811.404 Identification Record
811.405 Recordkeeping Requirements
811.406 Procedures for Excluding Regulated Hazardous Wastes

SUBPART E: CONSTRUCTION QUALITY ASSURANCE PROGRAMS

Section

811.501 Scope and Applicability
811.502 Duties and Qualifications of Key Personnel
811.503 Inspection Activities
811.504 Sampling Requirements
811.505 Documentation
811.506 Foundations and Subbases
811.507 Compacted Earth Liners
811.508 Geomembranes
811.509 Leachate Collection Systems

SUBPART G: FINANCIAL ASSURANCE

Section

811.700 Scope, Applicability and Definitions
811.701 Upgrading Financial Assurance
811.702 Release of Financial Institution
811.703 Application of Proceeds and Appeals
811.704 Closure and Post-Closure Care Cost Estimates
811.705 Revision of Cost Estimate
811.706 Mechanisms for Financial Assurance
811.707 Use of Multiple Financial Mechanisms
811.708 Use of a Financial Mechanism for Multiple Sites
811.709 Trust Fund for Unrelated Sites

811.710 Trust Fund
811.711 Surety Bond Guaranteeing Payment
811.712 Surety Bond Guaranteeing Performance
811.713 Letter of Credit
811.714 Closure Insurance
811.715 Self-Insurance for Non-Commercial Sites
811.716 Local Government Financial Test
811.717 Local Government Guarantee
811.718 Discounting
811.719 Corporate Financial Test
811.720 Corporate Guarantee

811.APPENDIX A Financial Assurance Forms

811.ILLUSTRATION A Trust Agreement
811.ILLUSTRATION B Certificate of Acknowledgment
811.ILLUSTRATION C Forfeiture Bond
811.ILLUSTRATION D Performance Bond
811.ILLUSTRATION E Irrevocable Standby Letter of Credit
811.ILLUSTRATION F Certificate of Insurance for Closure and/or
Post-Closure Care or Corrective Action
811.ILLUSTRATION G Owner's or Operator's Bond Without Surety
811.ILLUSTRATION H Owner's or Operator's Bond With Parent Surety
811.ILLUSTRATION I Letter from Chief Financial Officer

811.APPENDIX B Section-by-Section correlation between the Standards of the RCRA Subtitle D MSWLF regulations and the Board's nonhazardous waste landfill regulations.

811.APPENDIX C List of Leachate Monitoring Parameters

AUTHORITY: Implementing Sections 7.2, 21, 21.1, 22, 22.17, and 22.40 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 21, 21.1, 22, 22.17, 22.40, and 27].

SOURCE: Adopted in R88-7 at 14 Ill. Reg. 15861, effective September 18, 1990; amended in R92-19 at 17 Ill. Reg. 12413, effective July 19, 1993; amended in R93-10 at 18 Ill. Reg. 1308, effective January 13, 1994; expedited correction at 18 Ill. Reg. 7504, effective July 19, 1993; amended in R90-26 at 18 Ill. Reg. 12481, effective August 1, 1994; amended in R95-13 at 19 Ill. Reg. 12257, effective August 15, 1995; amended in R96-1 at 20 Ill. Reg. 12000, effective August 15, 1996; amended in R97-20 at 21 Ill. Reg. 15831, effective November 25, 1997; amended in R98-9 at 22 Ill. Reg. 11491, effective June 23, 1998; amended in R99-1 at 23 Ill. Reg. 2794, effective February 17, 1999; amended in R98-29 at 23 Ill. Reg. 6880, effective July 1, 1999; amended in R04-5/R04-15 at 28 Ill. Reg. 9107, effective June 18, 2004; amended in R05-1 at 29 Ill. Reg. 5044, effective March 22, 2005; amended in R06-5/R06-6/R06-7 at 30 Ill. Reg. 4136, effective February 23, 2006; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 1435, effective December 20, 2006; amended in R07-8 at 31 Ill. Reg. 16172, effective November 27, 2007; amended in R10-9 at 35 Ill. Reg. 10842, effective June 22, 2011; amended in R10-09(A) at 35 Ill. Reg. 18882, effective October 24, 2011; amended in R14-1/2R14-2/3R14-3 at 38 Ill. Reg. 7259, effective March 13, 2014; amended in R17-14/R17-15/R18-12/R18-31 at 42 Ill. Reg. 21330,

effective November 19, 2018; amended in R20-3/R20-11 at 44 Ill. Reg. _____, effective _____.

SUBPART C: PUTRESCIBLE AND CHEMICAL WASTE LANDFILLS

Section 811.319 Groundwater Monitoring Programs

a) Detection Monitoring Program. Any use of the term maximum allowable predicted concentration in this Section is a reference to Section 811.318(c). The operator must implement a detection monitoring program in accordance with the following requirements:

1) Monitoring Schedule and Frequency

A) The monitoring period must begin as soon as waste is placed into the unit of a new landfill or before September 18, 1991 ~~within one year of the September 18, 1990~~ for an existing landfill. Monitoring must continue for a minimum period of 15 years after closure, or in the case of MSWLF units, a minimum period of 30 years after closure, except as otherwise provided by subsection (a)(1)(C). The operator must sample all monitoring points for all potential sources of contamination on a quarterly basis except as specified in subsection (a)(3), for a period of five years from the date of issuance of the initial permit for significant modification under 35 Ill. Adm. Code 814.104 or a permit for a new unit pursuant to 35 Ill. Adm. Code 813.104. After the initial five-year period, the sampling frequency for each monitoring point must be reduced to a semi-annual basis, provided the operator has submitted the certification described in 35 Ill. Adm. Code 813.304(b). Alternatively, after the initial five-year period, the Agency must allow sampling on a semi-annual basis where the operator demonstrates that monitoring effectiveness has not been compromised, that sufficient quarterly data has been collected to characterize groundwater, and that leachate from the monitored unit does not constitute a threat to groundwater. For the purposes of this Section, the source must be considered a threat to groundwater if the results of the monitoring indicate either that the concentrations of any of the constituents monitored within the zone of attenuation is above the maximum allowable predicted concentration for that constituent or, for existing landfills, subject to Subpart D of 35 Ill. Adm. Code 814, that the concentration of any constituent has exceeded the applicable standard at the compliance boundary as defined in 35 Ill. Adm. Code 814.402(b)(3).

B) Beginning 15 years after closure of the unit, or five years after all other potential sources of discharge no longer constitute a threat to groundwater, as defined in subsection (a)(1)(A), the monitoring frequency may change on a well by well basis to an annual schedule if either of the following conditions exist. However, monitoring must return to a quarterly schedule at any well where a statistically significant increase is determined to have occurred in accordance with Section 811.320(e), in the concentration of any constituent with respect to the previous sample.

i) All constituents monitored within the zone of attenuation have returned to a concentration less than or equal to ten percent of the maximum allowable predicted concentration; or

ii) All constituents monitored within the zone of attenuation are less than or equal to their maximum allowable predicted concentration for eight consecutive quarters.

C) Monitoring must be continued for a minimum period of: 30 years after closure at MSWLF units, except as otherwise provided by subsections (a)(1)(D) and (a)(1)(E); five years after closure at landfills, other than MSWLF units, which are used exclusively for disposing waste generated at the site; or 15 years after closure at all other landfills regulated under this Part. Monitoring, beyond the minimum period, may be discontinued under the following conditions:

i) No statistically significant increase is detected in the concentration of any constituent above that measured and recorded during the immediately preceding scheduled sampling for three consecutive years, after changing to an annual monitoring frequency; or

ii) Immediately after contaminated leachate is no longer generated by the unit.

D) The Agency may reduce the groundwater monitoring period at a MSWLF unit upon a demonstration by the owner or operator that the reduced period is sufficient to protect human health and environment.

E) An owner or operator of a MSWLF unit must petition the Board for an adjusted standard in accordance with Section 811.303, if the owner or operator seeks a reduction of the post-closure care monitoring period for all of the following requirements:

i) Inspection and maintenance (Section 811.111);

ii) Leachate collection (Section 811.309);

iii) Gas monitoring (Section 811.310); and

iv) Groundwater monitoring (Section 811.319).

BOARD NOTE: Changes to subsections (a)(1)(A), (a)(1)(C), (a)(1)(D), and (a)(1)(E) are derived from 40 CFR ~~258.61-(2017)~~.258.61.

2) Criteria for Choosing Constituents to be Monitored

A) The operator must monitor each well for constituents that will provide a means for detecting groundwater contamination. Constituents must be chosen for monitoring if they meet the following requirements:

i) The constituent appears in, or is expected to be in, the leachate; and

ii) Is contained within the following list of constituents:

Ammonia nitrogen—~~Nitrogen~~ (dissolved) (CAS No. 7664-41-7)
Arsenic (dissolved) (CAS No. 7440-38-2)
Boron (dissolved) (CAS No. 7440-42-8)
Cadmium (dissolved) (CAS No. 7440-43-9)
Chloride (dissolved) (CAS No. 16887-00-6)
Chromium (dissolved) (CAS No. 7447-47-3)
Cyanide (total) (CAS No. 57-12-5)
Lead (dissolved) (CAS No. 7439-92-1)
Magnesium (dissolved) (CAS No. 7439-95-4)
Mercury (dissolved) (CAS No. 7439-97-6)
Nitrate (dissolved) (CAS No. 14797-55-8)
Sulfate (dissolved) (CAS No. 14808-79-8)
Total dissolved solids—~~Dissolved Solids~~ (TDS)
Zinc (dissolved) (CAS No. 7440-66-6)

iii) This is the minimum list for MSWLFs.

iv) Any facility accepting more than 50% by volume non-municipal waste must determine additional indicator parameters based upon leachate characteristic and waste content.

B) One or more indicator constituents, representative of the transport processes of constituents in the leachate, may be chosen for monitoring in place of the constituents it represents. The use of such indicator constituents must be included in an Agency approved permit.

3) Organic Chemicals Monitoring. The operator must monitor each existing well that is being used as a part of the monitoring well network at the facility before September 18, ~~1991 within one year after September 18, 1990, 1991~~, and monitor each new well within the three months after its establishment. The monitoring required by this subsection (a)(3) must be for a broad range of organic chemical contaminants in accordance with the following procedures:

A) The analysis must be at least as comprehensive and sensitive as the tests for the 51 organic chemicals in drinking water described at 40 CFR 141.40 and appendix I of 40 CFR ~~258 (2017)~~, 258, each incorporated by reference at 35 Ill. Adm. Code 810.104 and:

Acetone (CAS No. 67-64-1) Acrylonitrile (CAS No. 107-13-1)
~~Benzene~~ Benzene (CAS No. 71-43-2) Bromobenzene (CAS No. 108-86-1) Bromochloromethane (CAS No. 74-97-5) Bromodichloromethane (CAS No. 75-27-0) Bromoform; tribromomethane (CAS No. 75-25-2)—
~~Tribromomethane~~ n-Butylbenzene (CAS No. 104-51-8) sec-Butylbenzene (CAS No. 135-98-8) tert-Butylbenzene (CAS No. 98-06-6) Carbon disulfide (CAS No. 75-15-0) Carbon tetrachloride (CAS No. 56-23-5) Chlorobenzene (CAS No. 108-90-7) Chloroethane (CAS No. 75-00-3) Chloroform; trichloromethane (CAS No. 67-66-3)—~~Trichloromethane~~ o-Chlorotoluene (CAS No. 95-49-8) p-Chlorotoluene (CAS No. 106-43-4) Dibromochloromethane (CAS No.

124-48-1) 1,2-Dibromo-3-chloropropane (CAS No. 106-43-4) 1,2-Dibromoethane (CAS No. 106-93-4) 1,2-Dichlorobenzene (CAS No. 95-50-1) 1,3-Dichlorobenzene (CAS No. 541-73-1) 1,4-Dichlorobenzene (CAS No. 106-46-7) trans-1,4-Dichloro-2-butene (CAS No. 110-57-6) Dichlorodifluoromethane (CAS No. 75-71-8) 1,1-Dichloroethane (CAS No. 75-34-3) 1,2-Dichloroethane (CAS No. 107-06-2) 1,1-Dichloroethylene (CAS No. 75-35-4) cis-1,2-Dichloroethylene (CAS No. 156-59-2) trans-1,2-Dichloroethylene (CAS No. 156-60-5) 1,2-Dichloropropane (CAS No. 78-87-5) 1,3-Dichloropropane (CAS No. 142-28-9) 2,2-Dichloropropane (CAS No. 594-20-7) 1,1-Dichloropropene (CAS No. 563-58-6) 1,3-Dichloropropene (CAS No. 542-75-6) cis-1,3-Dichloropropene (CAS No. 10061-01-5) trans-1,3-Dichloropropene (CAS No. 10061-02-6) Ethylbenzene (CAS No. 100-41-4) Hexachlorobutadiene (CAS No. 87-68-3) 2-Hexanone; methyl ~~Methyl~~-butyl ketone (CAS No. 591-78-6) Isopropylbenzene (CAS No. 98-82-8) p-Isopropyltoluene (CAS No. 99-87-6) Methyl bromide; bromomethane (CAS No. 74-83-9) ~~Bromomethane~~ Methyl chloride; chloromethane (CAS No. 74-87-3) ~~Chloromethane~~ Methylene bromide; dibromomethane (CAS No. 74-95-3) ~~Dibromomethane~~ Dichloromethane (CAS No. 75-09-2) Methyl ethyl ketone (CAS No. 78-93-3) Methyl iodide; iodomethane (CAS No. 74-88-4) ~~Iodomethane~~ 4-Methyl-2-pentanone (CAS No. 108-10-1) Naphthalene (CAS No. 91-20-3) Oil and Grease (hexane soluble) n-Propylbenzene (CAS No. 103-65-1) Styrene (CAS No. 100-42-5) 1,1,1,2-Tetrachloroethane (CAS No. 630-20-6) 1,1,2,2-Tetrachloroethane (CAS No. 79-34-5) Tetrachloroethylene (CAS No. 127-18-4) Tetrahydrofuran (CAS No. 109-99-9) Toluene (CAS No. 108-88-3-23-8) Total

Phenolics 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene (CAS No. 120-82-1) ~~1,2,4-Trichlorobenzene~~ 1,1,1-Trichloroethane (CAS No. 71-55-6) 1,1,2-Trichloroethane (CAS No. 79-00-5) Trichloroethylene (CAS No. 79-01-6) Trichlorofluoromethane (CAS No. 75-69-4) 1,2,3-Trichloropropane (CAS No. 96-18-4) 1,2,4-Trimethylbenzene (CAS No. 526-73-8) 1,3,5-Trimethylbenzene (CAS No. 108-67-8) Vinyl acetate (CAS No. 108-05-4) Vinyl chloride (CAS No. 75-01-4) Xylenes (CAS No. 1330-20-7)

B) At least once every two years, the operator must monitor each well in accordance with subsection (a) (3) (A).

C) The operator of a MSWLF unit must monitor each well in accordance with subsection (a) (3) (A) on a semi-annual basis.

BOARD NOTE: Subsection (a) (3) (C) is derived from 40 CFR 258.54 (b) ~~-(2017)~~.

4) Confirmation of Monitored Increase

A) The confirmation procedures of this subsection must be used only if the concentrations of the constituents monitored can be measured at or above the practical quantitation limit (PQL). The PQL is defined as the lowest concentration that can be reliably measured within specified limits of precision and accuracy, under routine laboratory operating conditions. The operator must institute the confirmation procedures of

subsection (a)(4)(B) after notifying the Agency in writing, within 10 days, of observed increases:

i) The concentration of any inorganic constituent monitored in accordance with subsections (a)(1) and (a)(2) shows a progressive increase over eight consecutive monitoring events;

ii) The concentration of any constituent exceeds the maximum allowable predicted concentration at an established monitoring point within the zone of attenuation;

iii) The concentration of any constituent monitored in accordance with subsection (a)(3) exceeds the preceding measured concentration at any established monitoring point; and

iv) The concentration of any constituent monitored at or beyond the zone of attenuation exceeds the applicable groundwater quality standards of Section 811.320.

B) The confirmation procedures must include the following:

i) The operator must verify any observed increase by taking additional samples within 90 days after the initial sampling event and ensure that the samples and sampling protocol used will detect any statistically significant increase in the concentration of the suspect constituent in accordance with Section 811.320(e), so as to confirm the observed increase. The operator must notify the Agency of any confirmed increase before the end of the next business day following the confirmation.

ii) The operator must determine the source of any confirmed increase, which may include, but must not be limited to, natural phenomena, sampling or analysis errors, or an offsite source.

iii) The operator must notify the Agency in writing of any confirmed increase. The notification must demonstrate a source other than the facility and provide the rationale used in such a determination. The notification must be submitted to the Agency no later than 180 days after the original sampling event. If the facility is permitted by the Agency, the notification must be filed for review as a significant permit modification pursuant to Subpart B of 35 Ill. Adm. Code 813.

iv) If an alternative source demonstration described in subsections (a)(4)(B)(ii) and (a)(4)(B)(iii) cannot be made, assessment monitoring is required in accordance with subsection (b).

v) If an alternative source demonstration, submitted to the Agency as an application, is denied pursuant to 35 Ill. Adm. Code 813.105, the operator must commence sampling for the constituents listed in subsection (b)(5), and submit an assessment monitoring plan as a significant permit modification, both within 30 days after the dated

notification of Agency denial. The operator must sample the well or wells that exhibited the confirmed increase.

b) Assessment Monitoring. The operator must begin an assessment monitoring program in order to confirm that the solid waste disposal facility is the source of the contamination and to provide information needed to carry out a groundwater impact assessment in accordance with subsection (c). The assessment monitoring program must be conducted in accordance with the following requirements:

1) The assessment monitoring must be conducted in accordance with this subsection to collect information to assess the nature and extent of groundwater contamination. The owner or operator of a MSWLF unit must comply with the additional requirements prescribed in subsection (b) (5). The assessment monitoring must consist of monitoring of additional constituents that might indicate the source and extent of contamination. In addition, assessment monitoring may include any other investigative techniques that will assist in determining the source, nature and extent of the contamination, which may consist of, but need not be limited to the following:

A) More frequent sampling of the wells in which the observation occurred;

B) More frequent sampling of any surrounding wells; and

C) The placement of additional monitoring wells to determine the source and extent of the contamination.

2) Except as provided for in subsections (a) (4) (B) (iii) and (a) (4) (B) (v), the operator of the facility for which assessment monitoring is required must file the plans for an assessment monitoring program with the Agency. If the facility is permitted by the Agency, then the plans must be filed for review as a significant permit modification pursuant to Subpart B of 35 Ill. Adm. Code 813 within 180 days after the original sampling event. The assessment monitoring program must be implemented within 180 days after the original sampling event in accordance with subsection (a) (4) or, in the case of permitted facilities, within 45 days after Agency approval.

3) If the analysis of the assessment monitoring data shows that the concentration of one or more constituents, monitored at or beyond the zone of attenuation is above the applicable groundwater quality standards of Section 811.320 and is attributable to the solid waste disposal facility, then the operator must determine the nature and extent of the groundwater contamination including an assessment of the potential impact on the groundwater should waste continue to be accepted at the facility and must implement the remedial action in accordance with subsection (d).

4) If the analysis of the assessment monitoring data shows that the concentration of one or more constituents is attributable to the solid

waste disposal facility and exceeds the maximum allowable predicted concentration within the zone of attenuation, then the operator must conduct a groundwater impact assessment in accordance with the requirements of subsection (c).

5) In addition to the requirements of subsection (b)(1), to collect information to assess the nature and extent of groundwater contamination, the following requirements are applicable to MSWLF units:

A) The monitoring of additional constituents pursuant to subsection (b)(1) must include, at a minimum (except as otherwise provided in subsection (b)(5)(E)), the constituents listed in appendix II of 40 CFR 258, incorporated by reference at 35 Ill. Adm. Code 810.104, and constituents from 35 Ill. Adm. Code 620.410.

BOARD NOTE: Subsection (b)(5)(A) is derived from 40 CFR 258.55(b)-
~~(2017)~~.

B) Within 14 days after obtaining the results of sampling required under subsection (b)(5)(A), the owner or operator must do as follows:

i) The owner or operator must place a notice in the operating record identifying the constituents that have been detected; and

ii) The owner or operator must notify the Agency that such a notice has been placed in the operating record.

BOARD NOTE: Subsection (b)(5)(B) is derived from 40 CFR 258.55(d)(1)-
~~(2017)~~.

C) The owner or operator must establish background concentrations for any constituents detected pursuant to subsection (b)(5)(A) in accordance with Section 811.320(e).

BOARD NOTE: Subsection (b)(5)(C) is derived from 40 CFR 258.55(d)(3)-
~~(2017)~~.

D) Within 90 days after the initial monitoring in accordance with subsection (b)(5)(A), the owner or operator must monitor for the detected constituents listed in appendix II of 40 CFR 258, incorporated by reference in 35 Ill. Adm. Code 810.104, and 35 Ill. Adm. Code 620.410 on a semiannual basis during the assessment monitoring. The operator must monitor all the constituents listed in appendix II of 40 CFR 258 and 35 Ill. Adm. Code 620.410 on an annual basis during assessment monitoring.

BOARD NOTE: Subsection (b)(5)(D) is derived from 40 CFR 258.55(d)(2)-
~~(2017)~~.

E) The owner or operator may request the Agency to delete any of the 40 CFR 258 and 35 Ill. Adm. Code 620.410 constituents by demonstrating

to the Agency that the deleted constituents are not reasonably expected to be in or derived from the waste contained in the leachate.

BOARD NOTE: Subsection (b) (5) (E) is derived from 40 CFR 258.55(b)–~~(2017)~~.

F) Within 14 days after finding an exceedance above the applicable groundwater quality standards in accordance with subsection (b) (3), the owner or operator must do as follows:

i) The owner or operator must place a notice in the operating record that identifies the constituents monitored under subsection (b) (1) (D) that have exceeded the groundwater quality standard;

ii) The owner or operator must notify the Agency and the appropriate officials of the local municipality or county within whose boundaries the site is located that such a notice has been placed in the operating record; and

iii) The owner or operator must notify all persons who own land or reside on land that directly overlies any part of the plume of contamination if contaminants have migrated off-site.

BOARD NOTE: Subsection (b) (5) (F) is derived from 40 CFR 258.55(g) (1) (i) through (g) (1) (iii)–~~(2017)~~.

G) If the concentrations of all constituents in appendix II of 40 CFR 258, incorporated by reference in 35 Ill. Adm. Code 810.104, and 35 Ill. Adm. Code 620.410 are shown to be at or below background values, using the statistical procedures in Section 811.320(e), for two consecutive sampling events, the owner or operator must notify the Agency of this finding and may stop monitoring the appendix II of 40 CFR 258 and 35 Ill. Adm. Code 620.410 constituents.

BOARD NOTE: Subsection (b) (5) (G) is derived from 40 CFR 258.55(e)–~~(2017)~~.

c) Assessment of Potential Groundwater Impact. An operator required to conduct a groundwater impact assessment in accordance with subsection (b) (4) must assess the potential impacts outside the zone of attenuation that may result from confirmed increases above the maximum allowable predicted concentration within the zone of attenuation, attributable to the facility, in order to determine if there is need for remedial action. In addition to the requirements of Section 811.317, the following requirements apply:

1) The operator must utilize any new information developed since the initial assessment and information from the detection and assessment monitoring programs and such information may be used for the recalibration of the GCT model; and

2) The operator must submit the groundwater impact assessment and any proposed remedial action plans determined necessary pursuant to subsection (d) to the Agency within 180 days after the start of the assessment monitoring program.

d) Remedial Action. The owner or operator of a MSWLF unit must conduct corrective action in accordance with Sections 811.324, 811.325, and 811.326. The owner or operator of a landfill facility, other than a MSWLF unit, must conduct remedial action in accordance with this subsection (d).

1) The operator must submit plans for the remedial action to the Agency. Such plans and all supporting information including data collected during the assessment monitoring must be submitted within 90 days after determination of either of the following:

A) The groundwater impact assessment, performed in accordance with subsection (c), indicates that remedial action is needed; or

B) Any confirmed increase above the applicable groundwater quality standards of Section 811.320 is determined to be attributable to the solid waste disposal facility in accordance with subsection (b).

2) If the facility has been issued a permit by the Agency, then the operator must submit this information as an application for significant modification to the permit;

3) The operator must implement the plan for remedial action program within 90 days after the following:

A) Completion of the groundwater impact assessment that requires remedial action;

B) Establishing that a violation of an applicable groundwater quality standard of Section 811.320 is attributable to the solid waste disposal facility in accordance with subsection (b)(3); or

C) Agency approval of the remedial action plan, where the facility has been permitted by the Agency.

4) The remedial action program must consist of one or a combination of one or more of the following solutions:

A) Retrofit additional groundwater protective measures within the unit;

B) Construct an additional hydraulic barrier, such as a cutoff wall or slurry wall system;

C) Pump and treat the contaminated groundwater; or

D) Any other equivalent technique which will prevent further contamination of groundwater.

5) Termination of the Remedial Action Program

A) The remedial action program must continue in accordance with the plan until monitoring shows that the concentrations of all monitored constituents are below the maximum allowable predicted concentration within the zone of attenuation, below the applicable groundwater quality standards of Section 811.320 at or beyond the zone of attenuation, over a period of four consecutive quarters no longer exist.

B) The operator must submit to the Agency all information collected under subsection (d) (5) (A). If the facility is permitted, then the operator must submit this information as a significant modification of the permit.

(Source: Amended at 44 Ill. Reg. _____, effective _____)

Section 811.320 Groundwater Quality Standards

a) Applicable Groundwater Quality Standards

1) Groundwater quality must be maintained at each constituent's background concentration, at or beyond the zone of attenuation. The applicable groundwater quality standard established for any constituent must be:

A) The background concentration; or

B) The Board established standard adjusted by the Board in accordance with the justification procedure of subsection (b).

2) Any statistically significant increase above an applicable groundwater quality standard established pursuant to subsection (a) (1) that is attributable to the facility and which occurs at or beyond the zone of attenuation within 100 years after closure of the last unit accepting waste within such a facility must constitute a violation.

3) For the purposes of this Part:

A) "Background concentration" means that concentration of a constituent that is established as the background in accordance with subsection (d); and

B) "Board established standard" is the concentration of a constituent adopted by the Board as a groundwater quality standard adopted by the Board pursuant to Section 14.4 of the Act or Section 8 of the Illinois Groundwater Protection Act [415 ILCS 55].

b) Justification for Adjusted Groundwater Quality Standards

1) An operator may petition the Board for an adjusted groundwater quality standard in accordance with the procedures specified in Section 28.1 of the Act and 35 Ill. Adm. Code 104.Subpart D.

2) For groundwater which contains naturally occurring constituents which meet the applicable requirements of 35 Ill. Adm. Code 620.410, 620.420, 620.430, or 620.440 the Board will specify adjusted groundwater quality standards no greater than those of 35 Ill. Adm. Code 620.410, 620.420, 620.430 or 620.440, respectively, upon a demonstration by the operator that:

A) The change in standards will not interfere with, or become injurious to, any present or potential beneficial uses for the water;

B) The change in standards is necessary for economic or social development, by providing information including, but not limited to, the impacts of the standards on the regional economy, social disbenefits such as loss of jobs or closing of landfills, and economic analysis contrasting the health and environmental benefits with costs likely to be incurred in meeting the standards ; and

C) All technically feasible and economically reasonable methods are being used to prevent the degradation of the groundwater quality.

3) Notwithstanding subsection (b)(2), in no case must the Board specify adjusted groundwater quality standards for a MSWLF unit greater than the following levels:

ChemicalConcentration

(mg/l)Arsenic (CAS No. 7440-38-2)0.05Barium (CAS No. 7440-39-3)1.0Benzene (CAS No. 71-43-2)0.005Cadmium (CAS No. 7440-43-9)0.01Carbon tetrachloride (CAS No. 56-23-5)0.005Chromium (hexavalent) (CAS No. 18540-29-9)~~0.052,4-Dichlorophenoxyacetic acid~~0.11,4,0.051,4-Dichlorobenzene (CAS No. 106-46-7)0.0751,2-Dichloroethane (CAS No. 107-06-2)0.0051,1-Dichloroethylene (CAS No. 75-35-4)0.0072,4-Dichlorophenoxy acetic acid (CAS No. 94-75-7)0.1Endrin (CAS No. 72-20-8)0.0002Fluoride (CAS No. 16984-48-8)4Lindane (CAS No. 58-89-9)0.004Lead (CAS No. 7439-92-1)0.05Mercury (CAS No. 7439-97-6)0.002Methoxychlor (CAS No. 72-43-5)0.1Nitrate (CAS No. 14797-55-8)10Selenium (CAS No. 7782-49-2)0.01Silver (CAS No. 7440-22-4)0.05Toxaphene (CAS No. 8001-35-2)0.0051,1,1-Trichloroethane (CAS No. 71-55-6)~~1,1,1-Trichloromethane~~0.2Trichloroethylene (CAS No. 79-01-6)0.0052,4,5-Trichlorophenoxyacetic acid (CAS No. 93-76-5)~~2,4,5-Trichlorophenoxy acetic acid~~ 0.01Vinyl chloride (CAS No. 75-01-4)~~Chloride~~0.002

BOARD NOTE: Subsection (b)(3) is derived from 40 CFR 258.40 Table 1.

4) For groundwater that contains naturally occurring constituents which do not meet the standards of 35 Ill. Adm. Code 620.410, 620.420,

620.430, or 620.440, the Board will specify adjusted groundwater quality standards, upon a demonstration by the operator that:

A) The groundwater does not presently serve as a source of drinking water;

B) The change in standards will not interfere with, or become injurious to, any present or potential beneficial uses for those waters;

C) The change in standards is necessary for economic or social development, by providing information including, but not limited to, the impacts of the standards on the regional economy, social disbenefits such as loss of jobs or closing of landfills, and economic analysis contrasting the health and environmental benefits with costs likely to be incurred in meeting the standards; and

D) The groundwater cannot presently, and will not in the future, serve as a source of drinking water because:

i) It is impossible to remove water in usable quantities;

ii) The groundwater is situated at a depth or location such that recovery of water for drinking purposes is not technologically feasible or economically reasonable;

iii) The groundwater is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption;

iv) The total dissolved solids content of the groundwater is more than 3,000 mg/l and that water will not be used to serve a public water supply system; or

v) The total dissolved solids content of the groundwater exceeds 10,000 mg/l.

c) Determination of the Zone of Attenuation

1) The zone of attenuation, within which concentrations of constituents in leachate discharged from the unit may exceed the applicable groundwater quality standard of this Section, is a volume bounded by a vertical plane at the property boundary or 100 feet from the edge of the unit, whichever is less, extending from the ground surface to the bottom of the uppermost aquifer and excluding the volume occupied by the waste.

2) Zones of attenuation must not extend to the annual high-water ~~high-water~~ mark of navigable surface waters.

3) Overlapping zones of attenuation from units within a single facility may be combined into a single zone for the purposes of establishing a monitoring network.

d) Establishment of Background Concentrations

1) The initial monitoring to determine background concentrations must commence during the hydrogeological assessment required by Section 811.315. The background concentrations for those parameters identified in Sections 811.315(e)(1)(G) and 811.319(a)(2) and (a)(3) must be established based on consecutive quarterly sampling of wells for a minimum of one year, monitored in accordance with the requirements of subsections (d)(2), (d)(3) and (d)(4). Non-consecutive data may be considered by the Agency, if only one data point from a quarterly event is missing, and it can be demonstrated that the remaining data set is representative of consecutive data in terms of any seasonal or temporal variation. Statistical tests and procedures must be employed, in accordance with subsection (e), depending on the number, type and frequency of samples collected from the wells, to establish the background concentrations.

2) Adjustments to the background concentrations must be made if changes in the concentrations of constituents observed in background wells over time are determined, in accordance with subsection (e), to be statistically significant, and due to natural temporal or spatial variability or due to an off-site source not associated with the landfill or the landfill activities. Such adjustments may be conducted no more frequently than once every two years during the operation of a facility and modified subject to approval by the Agency. Non-consecutive data may be used for an adjustment upon Agency approval. Adjustments to the background concentration must not be initiated prior to November 27, 2009 unless required by the Agency.

3) Background concentrations determined in accordance with this subsection must be used for the purposes of establishing groundwater quality standards, in accordance with subsection (a). The operator must prepare a list of the background concentrations established in accordance with this subsection. The operator must maintain such a list at the facility, must submit a copy of the list to the Agency for establishing standards in accordance with subsection (a), and must provide updates to the list within ten days of any change to the list.

4) A network of monitoring wells must be established upgradient from the unit, with respect to groundwater flow, in accordance with the following standards, in order to determine the background concentrations of constituents in the groundwater:

A) The wells must be located at such a distance that discharges of contaminants from the unit will not be detectable;

B) The wells must be sampled at the same frequency as other monitoring points to provide continuous background concentration data, throughout the monitoring period; and

C) The wells must be located at several depths to provide data on the spatial variability.

5) A determination of background concentrations may include the sampling of wells that are not hydraulically upgradient of the waste unit where:

A) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient of the waste; and

B) Sampling at other wells will provide an indication of background concentrations that is representative of that which would have been provided by upgradient wells.

6) If background concentrations cannot be determined on site, then alternative background concentrations may be determined from actual monitoring data from the aquifer of concern, which includes, but is not limited to, data from another landfill site that overlies the same aquifer.

e) Statistical Analysis of Groundwater Monitoring Data

1) Statistical tests must be used to analyze groundwater monitoring data. One or more of the normal theory statistical tests must be chosen first for analyzing the data set or transformations of the data set. If these normal theory tests are demonstrated to be inappropriate, tests listed in subsection (e) (4) must be used. The level of significance (Type I error level) must be no less than 0.01, for individual well comparisons, and no less than 0.05, for multiple well comparisons. The statistical analysis must include, but not be limited to, the accounting of data below the detection limit of the analytical method used, the establishment of background concentrations and the determination of whether statistically significant changes have occurred in:

A) The concentration of any chemical constituent with respect to the background concentration or maximum allowable predicted concentration; and

B) The established background concentration of any chemical constituents over time.

2) The statistical test or tests used must be based upon the sampling and collection protocol of Sections 811.318 and 811.319.

3) Monitored data that are below the level of detection must be reported as not detected (ND). The level of detection for each constituent must be the practical quantitation limit (PQL)_T and must be the lowest concentration that is protective of human health and the

environment, and can be achieved within specified limits of precision and accuracy during routine laboratory operating conditions. In no case, must the PQL be established above the level that the Board has established for a groundwater quality standard under the Illinois Groundwater Protection Act. The following procedures must be used to analyze such data, unless an alternative procedure in accordance with subsection (e) (4), is shown to be applicable:

- A) If the percentage of non-detects ~~nondetects~~ in the data base used is less than 15 percent, the operator must replace NDs with the PQL divided by two, then proceed with the use of one or more of the normal theory statistical tests;
- B) If the percentage of non-detects ~~nondetects~~ in the data base used is between 15 and 50 percent, and the data are normally distributed, the operator must use Cohen's or Aitchison's adjustment to the sample mean and standard deviation, followed by an applicable statistical procedure;
- C) If the percentage of non-detects ~~nondetects~~ in the database used is above 50 percent, then the owner or operator must use an alternative procedure in accordance with subsection (e) (4).

4) Nonparametric statistical tests or any other statistical test if it is demonstrated to meet the requirements of 35 Ill. Adm. Code 724.197(i).

~~BOARD NOTE: Subsection (b) (3) is derived from 40 CFR 258.40 Table 1- (2017).~~

(Source: Amended at 44 Ill. Reg. , effective)

~~SUBPART G: FINANCIAL ASSURANCE~~

Section 811.APPENDIX A Financial Assurance Forms

Section 811.ILLUSTRATION E Irrevocable Standby Letter of Credit

IRREVOCABLE STANDBY LETTER OF CREDIT

Director
Illinois Environmental Protection Agency
C/O Bureau of Land #24
Financial Assurance Program
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

Dear Sir or Madam:

We have authority to issue letters of credit. Our letter-of-credit operations are regulated by the Illinois Department of Financial and Professional Regulation or our deposits are insured by the Federal Deposit Insurance Corporation. (Omit language that does not apply.)

We hereby establish our Irrevocable Standby Letter of Credit No. in your favor, at the request and for the account of up to the aggregate amount of U.S. dollars (\$) available upon presentation of: 1. your sight draft, bearing references to this letter of credit No.; and 2. your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of the Environmental Protection Act [415 ILCS 5] and 35 Ill. Adm. Code 811.713(e)."

This letter of credit is effective as of [date] and ~~must shall~~ ~~expire~~ expires on [date] at least one year later]; but that expiration date ~~must~~ shall be automatically extended for a period of [at least one year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify both you and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. The 120 days will begin on the date when both the [owner's or operator's name] and the IEPA have received the notice, as evidenced by the return receipts. In the event you are so notified, any unused portion of the credit ~~must shall~~ be available upon presentation of your ~~sight~~ ~~draft~~ sight draft for 120 days after the date of receipt by both you and [owner's or operator's name], as shown on the signed return receipts. Whenever this letter of credit is drawn on, under and in compliance with the terms of this credit, we ~~must shall~~ duly honor that draft upon presentation to us, and we ~~must shall~~ deposit the amount of the draft directly into the State of Illinois Landfill Closure and Post-Closure or Corrective Action Fund in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in 35 Ill. Adm. Code 811. Appendix A, Illustration E as that regulation was constituted on the date shown below.

Signature Typed Name Title Date Name and address of issuing institution This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the ~~International Chamber~~ International Chamber of Commerce", or "the Uniform Commercial Code"]. ~~for Documentary Credits, published and copyrighted by the International Chamber of Commerce", or "the Uniform Commercial Code"]~~.

(Source: Amended at 44 Ill. Reg. _____, effective _____)

Section 811.APPENDIX C List of Leachate Monitoring Parameters

~~pH~~
~~Elevation Leachate Surface~~
~~Bottom of Well Elevation~~
~~Leachate Level from Measuring Point~~
~~Arsenic (total)~~
~~Barium (total)~~
~~Cadmium (total) mg/l~~
~~Iron (total)~~

~~Ammonia Nitrogen—N~~
~~Bacteria (Fecal Coliform)~~
~~Biochemical Oxygen Demand (BOD5)~~
~~1,1,1,2-Tetrachloroethane~~
~~1,1,1-Trichloroethane~~
~~1,1,2,2-Tetrachloroethane~~
~~1,1,2-Trichloroethane~~
~~1,1-Dichloroethane~~
~~1,1-Dichloroethylene~~
~~1,1-Dichloropropene~~
~~1,2,3-Trichlorobenzene~~
~~1,2,3-Trichloropropane~~
~~1,2,4-Trichlorobenzene~~
~~1,2,4-Trimethylbenzene~~
~~1,2-Dibromo-3-Chloropropane~~
~~1,2-Dichloroethane~~
~~1,2-Dichloropropane~~
~~1,3,5-Trimethylbenzene~~
~~1,3-Dichloropropane~~
~~1,3-Dichloropropene~~
~~1,4-Dichloro-2-Butene~~
~~1-Propanol~~
~~2,2-Dichloropropane~~
~~2,4,5-tp (Silvex)~~
~~2,4,6-Trichlorophenol~~
~~2,4-Dichlorophenol~~
~~2,4-Dichlorophenoxyacetic Acid (2,4-D)~~
~~2,4-Dimethylphenol~~
~~2,4-Dinitrotoluene~~
~~2,4-Dinitrophenol~~
~~2,6-Dinitrotoluene~~
~~2-Chloroethyl Vinyl Ether~~
~~2-Chloronaphthalene~~
~~2-Chlorophenol~~
~~2-Hexanone~~
~~2-Propanol (Isopropyl Alcohol)~~
~~3,3-Dichlorobenzidine~~
~~4,4-DDD~~
~~4,4-DDE~~
~~4,4-DDT~~
~~4,6-Dinitro-o-Cresol~~
~~4-Bromophenyl Phenyl Ether~~
~~4-Chlorophenyl Phenyl Ether~~
~~4-Methyl-2-Pentanone~~
~~4-Nitrophenol~~

Acenaphthene (1,2-dihydroacenaphthylene; CAS No. 83-32-9) Acetone
(dimethyl ketone, propan-2-one; CAS No. 67-64-1) Alachlor
(2-chloro-N-(2,6-diethylphenyl)-N-(methoxymethyl)acetamide; CAS No.
15972-60-8) Aldicarb (2-methyl-2-(methylthio)propanal
O-((methylamino)carbonyl)oxime; CAS No. 116-06-3) Aldrin (CAS No.

309-00-2) a-BHC ((1a, 2a, 3β, 4a, 5β, 6β)-1, 2, 3, 4, 5, 6-hexachlorocyclohexane, a-hexachlorocyclohexane; CAS No. 319-84-6)
~~Alpha-BHC~~β-BHC ((1a, 2β, 3a, 4β, 5a, 6β)-1, 2, 3, 4, 5, 6-hexachlorocyclohexane, β-hexachlorocyclohexane; CAS No. 319-85-7) d-BHC ((1a, 2a, 3a, 4β, 5a, 6β)-1, 2, 3, 4, 5, 6-hexachlorocyclohexane, d-hexachlorocyclohexane; CAS No. 319-86-8) Aluminum (CAS No. 7429-90-5) Ammonia nitrogen as N (CAS No. 7664-41-7) Anthracene (CAS No. 120-12-7) Antimony (CAS No. 7440-36-0) Arsenic (total) (CAS No. 7440-38-2) Atrazine (6-chloro-N-ethyl-N-(propan-2-yl)-1,3,5-triazine-2,4-diamine; CAS No. 1912-24-9) Bacteria (fecal coliform) Barium (total) (CAS No. 7440-39-3) Benzene (CAS No. 71-43-2) Benzo(a)anthracene (tetraphene; CAS No. 56-55-3)
~~Benzo (a) Anthracene~~
~~Benzo (a) Pyrene~~ Benzo(b) fluoranthene (benz(e)acephenanthrylene; CAS No. 205-99-2)
~~Benzo (b) Fluoranthene~~ Benzo(k) fluoranthene (CAS No. 207-08-9) Benzo(ghi)perylene (CAS No. 191-24-2)
~~Benzo (ghi) Perylene~~ Benzo(a)pyrene (benzo(pqr) tetraphene; CAS No. 50-32-8)
~~Benzo (k) Fluoranthene~~ Beryllium (total) (CAS No. 7440-41-7)
~~Beta-BHC~~ Bicarbonate (CAS No. 71-52-3) Biochemical oxygen demand (BOD5) Bis(2-chloro-1-methylethyl) ether (1-chloro-2-(1-chloropropan-2-yloxy)propane, 2,2'-oxybis(1-chloropropane); CAS No. 108-60-1)
~~Bis (2 Chloro 1 Methylethyl) Ether~~ Bis(2-chloroethoxy) methane (1-chloro-2-(2-chloroethoxymethoxy)ethane, 1,1'-(methylenebis(oxy))bis(2-chloroethane); CAS No. 111-91-1)
~~Bis (2 Chloroethoxy) Methane~~ Bis(2-chloroethyl) ether (1-chloro-2-(2-chloroethoxy)ethane; CAS No. 111-44-4)
~~Bis (2 Chloroethyl) Ether~~ Bis(2-ethylhexyl) ether (3-(2-ethylhexoxymethyl)heptane; CAS No. 10143-60-9)
~~Bis (2 Ethylhexyl) Ether~~ Bis(2-ethylhexyl) phthalate (bis(2-ethylhexyl) benzene-1,2-dicarboxylate; CAS No. 117-81-7)
~~Bis (2 Ethylhexyl) Phthalate~~ Bis(chloromethyl) ether (chloro(chloromethoxy)methane, 1,1'-oxybis(1-chloromethane); CAS No. 542-88-1)
~~Bis (Chloromethyl) Ether~~ Boron (CAS No. 7440-42-8) Bottom of well elevation ~~Bromobenzene~~ elevation Bromobenzene (CAS No. 108-86-1) Bromochloromethane (CAS No. 74-97-5) Bromodichloromethane (CAS No. 75-27-0) Bromoform (tribromomethane; CAS No. 75-25-2) Bromomethane (CAS No. 74-83-9) 4-Bromophenyl phenyl ether (1-bromo-4-phenoxybenzene; CAS No. 101-55-3) Butanol (including four structural isomers, one of which has two stereoisomers: n-butanol (butan-1-ol; CAS No. 71-36-3), sec-butanol (butan-2-ol; CAS No. 78-92-2 (for both stereoisomers)), isobutanol (2-methylpropan-1-ol; CAS No. 78-83-1), and tert-butanol (2-methylpropan-2-ol; CAS No. 75-65-0) n-Butylbenzene (butyl benzene, 1-butylbenzene; CAS No. 104-51-8) sec-Butylbenzene (butan-2-ylbenzene, (1-methylpropyl)benzene; CAS No. 135-98-8) tert-Butylbenzene (1,1-dimethylethylbenzene; CAS No. 98-06-6) Butyl benzyl phthalate (benzyl butyl benzene-1,2-dicarboxylic acid; CAS No. 85-68-7) ~~Benzyl Phthalate~~ Cadmium (total) (CAS No. 7440-43-9) Calcium (CAS No. 7440-70-2) -

~~mg/l~~Carbofuran ((2,2-dimethyl-3H-1-benzofuran-7-yl) N-methylcarbamate, 2,2-dimethyl-2,3-dihydro-1-benzofuran-7-yl N-methylcarbamate; CAS No. 1563-66-2)Carbon disulfide (methanedithione; CAS No. 75-15-0)–
~~Disulfide~~Carbon tetrachloride (tetrachloromethane; CAS No. 56-23-5)–
~~Tetrachloride~~Chemical oxygen demand ~~Oxygen Demand~~–(COD)Chlordane (including two stereoisomers; 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane; CAS No. 57-74-9)Chloride (CAS No. 16887-00-6)–~~mg/l~~Chlorobenzene (CAS No. 108-90-7)Chloroethane (CAS No. 75-00-3)2-Chloroethyl vinyl ether ((2-chloroethoxy)ethene; CAS No. 110-75-8)Chloroform (trichloromethane; CAS No. 67-66-3)Chloromethane (CAS No. 74-87-3)2-Chloronaphthalene (CAS No. 91-58-7)2-Chlorophenol (o-chlorophenol; CAS No. 95-57-8)4-Chlorophenyl phenyl ether (1-chloro-4-phenoxybenzene, p-chlorophenyl phenyl ether; CAS No. 7005-72-3)o-Chlorotoluene (1-chloro-2-methylbenzene; CAS No. 95-49-8)p-Chlorotoluene (1-chloro-4-methylbenzene; CAS No. 106-43-4)Chromium (hexavalent) (CAS No. 18540-29-9)Chromium (total) (CAS No. 7447-47-3)Chrysene (1,2-benzophenanthrene, benzo(a)phenanthrene; CAS No. 218-01-9)
~~Cis-1,2-Dichloroethylene~~Cobalt (total) (CAS No. 7440-48-4)Copper (total) (CAS No. 7440-50-8)p-Cresol (4-methylphenol; CAS No. 106-44-5)Cyanide (CAS No. 57-12-5)4,4-DDD (1-chloro-4-(2,2-dichloro-1-(4-chlorophenyl)ethyl)benzene, p,p'-DDD, dichlorodiphenyldichloroethane; CAS No. 72-54-8)4,4-DDE (1-chloro-4-(2,2-dichloro-1-(4-chlorophenyl)ethenyl)benzene, p,p'-DDE, dichlorodiphenyldichloroethylene; CAS No. 72-55-9)4,4-DDT (1-chloro-4-(2,2,2-trichloro-1-(4-chlorophenyl)ethyl)benzene, p,p'-DDD; CAS No. 50-29-3)
~~DDT~~
~~Delta~~–BHC
~~Di-N-Butyl Phthalate~~
~~Di-N-Octyl Phthalate~~Dibenzo(a,h)anthracene (dibenz(a,h)anthracene; CAS No. 53-70-3)
~~Dibenzo(a,h)Anthracene~~1,2-Dibromo-3-chloropropane (CAS No. 96-12-8)Dibromochloromethane (CAS No. 124-48-1)Dibromomethane (methylenedibromide; CAS No. 74-95-3)Di-n-butyl phthalate (dibutyl benzene-1,2-dicarboxylate; CAS No. 84-74-2)m-Dichlorobenzene (1,3-dichlorobenzene; CAS No. 541-73-1)o-Dichlorobenzene (1,2-dichlorobenzene; CAS No. 95-50-1)p-Dichlorobenzene (1,4-dichlorobenzene; CAS No. 106-46-7)3,3'-Dichlorobenzidine (3,3'-dichloro(1,1'-biphenyl)-4,4'-diamine; CAS No. 91-94-1)1,4-Dichloro-2-butene (including two stereoisomers; CAS No. 764-41-0)~~Dichlorodifluormethane~~Dichlorodifluoromethane (CAS No. 75-71-8)1,1-Dichloroethane (CAS No. 75-34-3)1,2-Dichloroethane (CAS No. 107-06-2)1,1-Dichloroethylene (1,1-dichloroethene; CAS No. 75-35-4)cis-1,2-Dichloroethylene ((Z)-1,2-dichloroethene; CAS No. 156-59-2)trans-1,2-Dichloroethylene ((E)-1,2-dichloroethene; CAS No. 156-60-5)2,4-Dichlorophenol (CAS No. 120-83-2)2,4-Dichlorophenoxyacetic acid (2,4-D; CAS No. 94-75-7)1,2-Dichloropropane (propylene dichloride; CAS No. 78-87-5)1,3-Dichloropropane (CAS No. 142-28-9)2,2-Dichloropropane (dichlorodimethylmethane; CAS No. 594-20-7)1,1-Dichloropropene (1,1-dichloroprop-1-ene; CAS No. 563-58-6)1,3-Dichloropropene (1,3-dichloroprop-1-ene; including two

stereoisomers; CAS No. 542-75-6)trans-1,3-Dichlorpropene
(E)-1,3-dichloroprop-1-ene; CAS No. 10061-02-6)Dieldrin
(1aR,2R,2aS,3S,6R,6aR,7S,7aS)-3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a
-octahydro-2,7:3,6-dimethanonaphtho(2,3-b)oxirene; CAS No.
60-57-1)Diethyl phthalate (diethyl benzene-1,2-dicarboxylate; CAS No.
84-66-2)-~~Phthalate~~2,4-Dimethylphenol (2,4-xyleneol; CAS No.
105-67-9)Dimethyl phthalate (dimethyl benzene-1,2-dicarboxylate; CAS No.
131-11-3)-~~Phthalate~~4,6-Dinitro-o-cresol (2-methyl-4,6-dinitrophenol; CAS
No. 534-52-1)2,4-Dinitrophenol (CAS No. 51-28-5)2,4-Dinitrotoluene
(1-methyl-2,4-dinitrobenzene; CAS No. 121-14-2)2,6-Dinitrotoluene
(1-methyl-2,6-dinitrobenzene; CAS No. 573-56-8)Di-n-octyl phthalate
(dioctyl benzene-1,2-dicarboxylic acid; CAS No. 117-84-0)Elevation
leachate ~~surface~~Endosulfan~~surface~~Endosulfan I
(3a,5a β ,6a,9a,9a β)-6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9
-methano-2,4,3-benzodioxathiepin-3-oxide, α -endosulfan; CAS No.
959-98-8)Endosulfan II
(3a,5aa,6 β ,9 β ,9aa)-6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9
-methano-2,4,3-benzodioxathiepin-3-oxide, β -endosulfan; CAS No.
19670-15-6)Endosulfan sulfate
(6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benz
odioxathiepin-3,3-dioxide; CAS No. 1031-07-8)-~~Sulfate~~Endrin
(1R,2S,2aS,3S,6R,7R,7aS)-3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-oct
ahydro-2,7:3,6-dimethanobaphtho(2,3-b)oxirene; CAS No. 72-20-8)Endrin
aldehyde
(1a,2 β ,2a β ,4a β ,5 β ,6a β ,6b β ,7R*)-2,2a,3,3,4,7-hexachlorodecahydro-1,2,4-m
ethenocyclopenta(cd)pentalene-5-carboxaldehyde; CAS No. 7421-93-4)-
~~Aldehyde~~Ethyl acetate (ethyl ethanoate; CAS No. 141-78-6)-
~~Acetate~~Ethylbenzene (CAS No. 100-41-4)Ethylene dibromide ~~Dibromide~~-(EDB)
(1,2-dibromoethane; CAS No. 106-93-4)Fluoranthene (benzo(jk)fluorene;
1,2-(1,8-naphthalenediyl)benzene; CAS No. 206-44-0)Fluorene
(9H-fluorene; CAS No. 86-73-7)Fluoride (CAS No. 16984-48-8)
~~Heptachlor-Epoxide~~Heptachlor
(1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene;
CAS No. 76-44-8)Heptachlor epoxide
(1,4,5,6,7,8,8-heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro-4,7-methanoind
an; CAS No. 1024-57-3)Hexachlorobenzene (CAS No.
118-74-1)Hexachlorobutadiene (1,1,2,3,4,4-hexachlorobuta-1,3-diene; CAS
No. 87-68-3)Hexachlorocyclopentadiene
(1,2,3,4,5,5-hexachlorocyclopenta-1,3-diene; CAS No.
77-47-4)Hexachloroethane (CAS No. 67-72-1)2-Hexanone (hexan-2-one,
n-butyl methyl ketone; CAS No. 591-78-6)Indeno(1,2,3-cd)pyrene
(2,3-(o-phenylene)pyrene; CAS No. 193-39-5)
~~Ideno(1,2,3-cd) Pyrene~~Iodomethane (CAS No. 74-88-4)Iron (total) (CAS
No. 7439-89-6)Isopropylbenzene (cumene; (propan-2-yl)benzene; CAS No.
98-82-8)p-Isopropyltoluene (1-methyl-4-(propan-2-yl)benzene, p-cymene;
CAS No. 99-87-6)Lead (total) (CAS No. 7439-92-1)Leachate level from
measuring ~~point~~Lindane~~point~~Lindane
(1r,2R,3S,4r,5R,6S)-1,2,3,4,5,6-hexachlorocyclohexane,
 β -hexachlorocyclohexane; CAS No. 58-89-9)Magnesium (total) (CAS No.
7439-95-4)Manganese (total) (CAS No. 7439-96-5)Mercury (total) (CAS No.
7439-97-6)Methoxychlor (1,1,1-trichloro-2,2-bis(4-methoxyphenyl)ethane;
CAS No. 72-43-5)Methyl chloride (chloromethane; CAS No. 74-87-3)-

~~Chloride~~ Methyl ethyl ketone (butan-2-one; CAS No. 78-93-3) ~~Ethyl-~~
~~Ketone~~ Methylene bromide (dibromomethane; CAS No. 74-95-3) ~~-~~
~~Bromide~~ Methylene chloride (dichloromethane; CAS No. 75-09-2) ~~-~~
~~Chloride~~ 4-Methylpentan-2-one (methyl isobutyl ketone; CAS No.
108-10-1) Naphthalene (CAS No. 91-20-3) Nickel (total) (CAS No.
7440-02-0) Nitrate as nitrogen (CAS No. 14797-55-8) ~~Nitrogen~~ Nitrobenzene
(CAS No. 98-95-3) ~~Nitrobenzene~~ o-Nitrophenol (2-nitrophenol; CAS No.
88-75-5) p-Nitrophenol (4-nitrophenol; CAS No.
100-02-7) N-Nitrosodimethylamine (N,N-dimethylnitrous amide; CAS No.
62-75-9) N-Nitrosodiphenylamine (the IUPAC name N,N-diphenylnitrous
amide; CAS No. 86-30-6) N-Nitrosodipropylamine (dipropylnitrous amide,
N-nitroso-N-propyl-1-propanamine; CAS No. 621-64-7) Oil - hexane soluble
(or equivalent) ~~Oil. Hexane Soluble (or Equivalent)~~ Parathion (O,O-diethyl
O-(4-nitrophenyl) phosphorothioate; CAS No. 56-38-2) Pentachlorophenol
(CAS No. 87-86-6)
~~pH~~ Phenanthrene ~~pH~~ Phenanthrene (CAS No. 85-01-8) Phenol (benzenol; CAS No.
108-95-2) ~~Phenols~~ Phosphorous ~~v~~ Phosphorous (CAS No.
7723-14-0) Polychlorinated biphenyls (including several compounds with
varied chlorination and their isomers; CAS No. 1336-36-3) ~~-~~
~~Biphenyls~~ Potassium (CAS No. 7440-09-7) 1-Propanol (n-propyl alcohol; CAS
No. 71-23-8) 2-Propanol (isopropyl alcohol; CAS No.
67-63-0) n-Propylbenzene (propylbenzene, isocumene; CAS No.
103-65-1) Pyrene (benzo(def)phenanthrene; CAS No. 129-00-0) Selenium (CAS
No. 7782-49-2) Silver (total) (CAS No. 7440-22-4) Specific ~~conductance-~~
~~Conductance~~ Sodium conductance Sodium (CAS No. 7440-23-5) Styrene
(ethenylbenzene; CAS No. 100-42-5) Sulfate (CAS No.
14808-79-8) Temperature of leachate sample ~~Leachate Sample~~ (°F)
~~Tert-Butylbenzene~~ Tetrachlorodibenzo-p-dioxins
(2,3,7,8-tetrachlorodibenzo(be)(1,4)dioxine; CAS No. 1746-01-6)
~~Tetrachlorodibenzo-p-Dioxins~~ 1,1,1,2-Tetrachloroethane (R-130a; CAS No.
630-20-6) 1,1,2,2-Tetrachloroethane (R-130; CAS No.
79-34-5) Tetrachloroethylene (tetrachloroethene; perchloroethylene; CAS
No. 127-18-4) Tetrahydrofuran (oxolane; 1,4-epoxybutane; CAS No.
109-99-9) Thallium (CAS No. 7440-28-0) Tin (CAS No. 7440-31-5) Toluene
(methylbenzene; CAS No. 108-88-3-23-8)
~~Total Organic Carbon (TOC)~~ Total dissolved solids ~~Dissolved Solids~~ (TDS) ~~-~~
~~mg/l~~ Total organic carbon (TOC) Total suspended solids ~~Suspended Solids~~
(TSS) ~~mg/l~~ Toxaphene (including several compounds with varied
chlorination and their isomers; chlorinated camphene; CAS No.
8001-35-2) 2,4,5-TP ((2,4,5-trichlorophenoxy)propionic acid, Silvex,
fenoprop; CAS No. 93-72-1))
~~Trans-1,2-Dichloroethylene~~
~~Trans-1,3-Dichloropropene~~ 1,2,3-Trichlorobenzene (CAS No.
87-61-6) 1,2,4-Trichlorobenzene (CAS No. 120-82-1) 1,1,1-Trichloroethane
(methyl chloroform; CAS No. 71-55-6) 1,1,2-Trichloroethane (vinyl
trichloride; CAS No. 79-00-5) Trichloroethylene (trichloroethene; CAS No.
79-01-6) Trichlorofluoromethane (Freon 11; CAS No.
75-69-4) 2,4,6-Trichlorophenol (CAS No. 88-06-2) 1,2,3-Trichloropropane
(CAS No. 96-18-4) 1,2,4-Trimethylbenzene (hemellitene; CAS No.
526-73-8) 1,3,5-Trimethylbenzene (mesitylene; CAS No. 108-67-8) Vinyl
acetate (ethenyl acetate; CAS No. 108-05-4) ~~Acetate~~ Vinyl chloride
(chloroethene; CAS No. 75-01-4) ~~Chloride~~ m-Xylene (1,3-dimethylbenzene;

CAS No. 108-38-3) o-Xylene (1,2-dimethylbenzene; CAS No. 95-47-6) p-Xylene (1,4-dimethylbenzene; CAS No. 106-428-3) Xylenes (dimethylbenzene, xylol; mixed structural isomers; CAS No. 1330-20-7) ~~Xylene~~ Zinc (total) (CAS No. 7440-66-6)

~~m-Dichlorobenzene~~

~~m-Xylene~~

~~n-Butylbenzene~~

~~n-Nitrosodimethylamine~~

~~n-Nitrosodiphenylamine~~

~~n-Nitrosodipropylamine~~

~~n-Propylbenzene~~

~~o-Chlorotoluene~~

~~o-Dichlorobenzene~~

~~o-Nitrophenol~~

~~o-Xylene~~

~~p-Chlorotoluene~~

~~p-Cresol~~

~~p-Dichlorobenzene~~

~~p-Isopropyltoluene~~

~~p-Nitrophenol~~

~~p-Xylene~~

~~see-Butylbenzene~~

Note: All parameters must be determined from unfiltered samples.

(Source: Amended at 44 Ill. Reg. _____, effective

_____)

~~ILLINOIS REGISTER~~

~~POLLUTION CONTROL BOARD~~

~~NOTICE OF PROPOSED AMENDMENTS~~

JCAR350811-2009881r01

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Legend:	
<u>Insertion</u>	
Deletion	
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Style change	
Format change	
Moved deletion	
Inserted cell	
Deleted cell	
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Split/Merged cell	
Padding cell	

Statistics:	
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Deletions	197
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Moved to	0
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Total changes	215