



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

Information Which Must be Provided in an Application for a RCRA Post-Closure Permit May 2021

Introduction/Purpose

35 Ill. Admin. Code 702.121 requires facilities that have closed a hazardous waste management unit as a landfill to obtain a RCRA post-closure permit. This permit will set forth the requirements which must be met in providing the closed unit at least thirty years of post-closure care: it will also contain requirements regarding corrective action efforts for the solid waste management units of concern at the facility. This document sets forth in an organized and logical form, the information which must be provided in an application for a RCRA post-closure permit; it was developed in general accordance with 35 Ill. Admin. Code 703.214

Hazardous waste management units closed as landfills (and thus must be covered by a RCRA post-closure permit) typically fall into one of four categories:

- Hazardous waste surface impoundments that could not achieve “clean closure” and thus were closed as landfills;
- Hazardous waste surface impoundments that were operated as disposal units and closed as a landfill;
- Landfills which co-disposed of hazardous waste with municipal and non-hazardous special waste; and
- Landfills which received hazardous waste as well as non-hazardous special waste.

The key components of post-closure care of a unit closed as a landfill includes: maintenance of the final cover; operation of any leachate/gas collection system(s); and implementation of a groundwater monitoring and, as necessary, remediation system. In addition, as noted above, another other key item that must be addressed under a RCRA post-closure permit is the implementation of an appropriate corrective action program on the solid waste manage units of concern at the facility.

This document is comprised of the following six sections which identify in outline form the information which should be contained in an application for a RCRA post-closure permit:

- A. Forms, Certifications, Confidentiality, and Public Involvement
- B. Facility Description
- C. Groundwater Monitoring
- D. Procedures to Prevent Hazards
- E. Post-Closure Requirements
- F. Corrective Action

The forms mentioned in this document can be found on Illinois EPA’s internet site (<https://www2.illinois.gov/epa/Pages/default.aspx>). Illinois EPA will follow the procedures set forth in 35 Ill. Admin. Code 702, 703, and 705, as well as the Illinois Environmental Protection Act, in reviewing and processing this application.

The Illinois EPA’s Bureau of Land Permit Section is responsible for reviewing RCRA post-closure permit applications; these applications should be submitted to Illinois EPA at the address above. Questions regarding the development of the groundwater-related aspects of an application should be directed to the Groundwater Unit of the Permit Section while questions related to other aspects of the application should be directed to the RCRA Unit of the Permit Section. The general telephone number for both the Groundwater Unit and the RCRA Unit is 217/524-3300.

4302 N. Main Street, Rockford, IL 61103 (815) 987-7760
595 S. State Street, Elgin, IL 60123 (847) 608-3131
2125 S. First Street, Champaign, IL 61820 (217) 278-5800
2009 Mall Street Collinsville, IL 62234 (618) 346-5120

9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
100 W. Randolph Street, Suite 4-500, Chicago, IL 60601

Table of Contents

In addition to identifying the sections, tables, figures and attachments, the Table of Contents for the application should include a list of acronyms used in the application. This information will aid both the Illinois EPA and anyone from the general public who reads the permit application.

SECTION A--FORMS, CERTIFICATIONS, CONFIDENTIALITY, and PUBLIC INVOLVEMENT

A.1 RCRA Part A Application Form: [702.121](#), [702.123](#), [702.126\(a\) and \(d\)](#),[703.181](#)

The Part A application must be complete and consistent with the Part B application. [703.181](#) specifies the contents of a Part A application. Signatures must be provided for both the owner and operator of the facility as described in Item A.2.1 below (of special concern is when the landowner(s) of a site are different from the company operating the hazardous waste facility).

A.2 Certification Using the LPC-PA23 Form: ([703.182](#))

A completed LPC-PA23 form must be included in the application (this form is available on Illinois EPA's internet site). Completion of this form should ensure the requirements of A.2.1 and A.2.2 below are met.

A.2.1. Facility Certification: [702.121](#), [703.182](#), [702.126](#)

Applications must be accompanied by a certification as specified in [702.126\(d\)](#) signed by authorized representatives of both the owner and operator of the facility (of special concern is when the landowner(s) of a site are different from the company operating the hazardous waste facility). Authorized representatives of an owner or operator which must complete and sign this certification are as follows: (1) for a corporation, a principal executive officer (at least at the level of vice-president); (2) for a partnership or sole proprietorship, a general partner or the proprietor, respectively; (3) for a municipal, state, Federal, or other public Agency, either a principal executive officer or ranking elected official. If the application is not signed by representatives other than those just described, information must be provided indicating that the person is authorized to sign RCRA permit applications for the owner or operator.

A.2.2. Technical Information Certification: [703.182](#), **Illinois Professional Engineering Act**

Technical data, such as design drawings, specifications and engineering studies, must be certified (sealed) by a qualified Professional Engineer licensed to practice in the State of Illinois in accordance with Ill. Rev. Stat., par. 5101, Sec. 1 and par. 5119, Sec. 13.1. Work required to be conducted in developing an application or work required to be conducted for compliance with the RCRA regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

A.2.3. 39i Certification: Section 39 (i) of Environmental Protection Act

Section 39, Paragraph (i) of the Illinois Environmental Protection Act requires that Illinois EPA conduct an evaluation of prospective owner's or operator's prior experience in waste management operations

before it issues a RCRA permit. This paragraph goes on to state that the Illinois EPA may deny such a permit if the prospective owner or operator or any employee or officer of the prospective owner or operator has a history of:

1. Repeated violations of federal, State, local laws, regulations, standards, or ordinances in the operation of waste management facilities; or
2. Conviction in this or another State of any crime which is a felony under the laws of this State, or conviction of a felony in a federal court, or conviction in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition; or
3. Proof of gross carelessness or incompetence in handling, storing, processing, transporting, or disposing of waste.

Illinois EPA has created a form (available on its internet site) which applicants (the owner and the operator) must use to provide it with the information necessary to make the evaluation described above.

A.3 Public Disclosure Exemption Claims and Trade Secret Claims:

Section 7 of the Act; 2 Ill. Adm. Code Part 1828; [35 Ill. Adm. Code Part 130](#)

Note: A.3.2 thru A.3.5 below are only applicable if an applicant desires to request a public disclosure exemption claim or trade secret claim. Any documents submitted that are not properly marked and justified will not be regarded as exempt and will be released to the public upon request.

A.3.1. No Information Claimed Exempt from Public Disclosure

If no information in the application is claimed exempt from public disclosure, the applicant should clearly state this in the cover letter and this subsection of the application. This will release any disclaimers on drawings, plans etc. that are included in the application.

A.3.2. Trade Secrets Claims

This claim should be asserted if any portion of the application is regarded as trade secret pursuant to [35 Ill. Adm. Code 130](#). To assert this claim

1. Provide a claim and justification letter;
2. Stamp each page in red ink "TRADE SECRET" that is to be exempt.
3. Provide a version for public review which does not include the trade secret information.

A.3.3. Exempt or Exempt In-Part Data Claims: 2 Ill. Adm. Code 1828.401

This claim should be asserted if any portion of the application is regarded as exempt or exempt in part pursuant to [2 Ill. Adm. Code 1828.401](#). To assert this claim:

1. Provide a claim and justification letter;
2. Appropriately mark those portions of the application for which the exemption is requested.
3. Provide a version of the application for public review which does not contain the information for which the exemption is requested.

A.3.4. Privileged Information: 2 Ill. Adm. Code 1828.401

This claim should be asserted if any portion of the submittal is regarded as privileged and meets the definition of privileged information pursuant to [1828.401](#). To assert this claim:

1. Provide a claim and justification letter;
2. Appropriately mark those portions of the application for which the claim is requested.
3. Provide a version of the application for public review which does not contain the information for which the exemption is requested.

A.4 Public Participation: Facility Mailing List & Information Repositories:

Environmental Protection Act, Section 39(d), [35 Ill. Admin. Code 703.193](#), [703.248](#), [705.163](#)

A.4.1. Facility Mailing List:

The Facility Mailing List required to be established and maintained in 35 Ill. Adm. Code 705.163(a) is a list of all entities who must be notified of any permit-related activities at a RCRA permitted facility. The application must include the most-recent list the facility has; this list must identify its last revision date and be provided as an attachment to the application. A printed copy and an electronic copy in MS Word format must be provided.

The list must be updated and resubmitted to the IEPA as needed to include individuals who have interacted with the facility such as: those attending the pre-application meeting, respondents to mailings, and those attending the public meeting when a permit modification is requested. IEPA will review and approve all updates prior to using the mailing list. Mailing lists originally developed by IEPA are available from IEPA's RCRA community involvement coordinator.

A.4.2. Identification of Repositories:

It is important that information regarding a RCRA permitted hazardous waste management facility be available to the local citizens for review. Thus, all information submitted to IEPA in furtherance of a RCRA permit application, (with the exception of trade secrets), must be made available to the public at the office of the County Board or governing body of the municipality and also in another location in the host community (or nearest community to the facility) no later than the date the permit application is submitted to IEPA. Provide the name, address, contact person, phone number, and business hours for each repository.

Note: The community repository may not be located at the facility and must be available to the community for review and copying of application documents after regular office hours. Public libraries are recommended repository locations.

A.4.3. Contents of Repository:

The repository contents must include all information submitted to IEPA in furtherance of a RCRA permit application (with the exception of trade secrets). The applicant is required to maintain, verify and update the contents of the repositories throughout the application process. Each time information is submitted to Illinois EPA, a copy must also be placed in the repository. Placement of a given submittal in the repository should be documented in the cover letter transmitting the submittal to Illinois EPA.

Repositories must be well-organized and kept up to date. A comprehensive inventory of all documents in the repository should be maintained, as well as a brief description of each document listed in the inventory. The applicant should visit each repository on a regular basis to ensure its organization is maintained.

A.4.4. Public Notice of Repository Availability:

The applicant must provide written notice of the repositories' availability for public review to everyone on the facility mailing list; this notice must include all of the following information:

1. Identification and address or map of the facility and the hazardous waste management operations that the permit application addresses;
2. A statement that permit application materials have been prepared and are available for community members to review and copy at the repository.
3. The location and business hours of the repository.
4. A statement that the applicant will update the repository materials periodically during the Illinois EPA's review of the permit application.
5. The name, address and telephone number of the applicant's contact person to address questions regarding the application or to be added to the facility's mailing list for future permit activities.
6. The following statement "For general information on the hazardous waste management permit program in Illinois, please contact" then provide the address of the Illinois EPA RCRA Community Involvement Coordinator.

This notice must be made no later than the date the permit application is submitted to the Illinois EPA. Documentation that the public notices were made must be included in the application. Specifically provide a copy of the letter sent to individuals on the approved facility mailing list. Indicate the date the letter was sent, and the revision date of the mailing list used for the mailings.

SECTION B--FACILITY DESCRIPTION

B.1 General Facility Description: [702.123](#), [703.183\(a\)](#), [703.183\(n\)](#), [703.183\(s\)](#)

B.1.1. Operation of Facility:

Provide the following information about the facility:

1. Identify the owner and operator of the facility as well as the address and size of the facility;
2. Describe the facility in general, its operations, and the specific activities conducted by the applicant that require a permit under RCRA, including the nature of the business.
 - a. Commercial facilities should identify the types of industry served;
 - b. On-site facilities should briefly describe the process(es) involved in the generation of hazardous waste.
3. A legal description of the facility developed and certified by a professional land surveyor licensed to practice in Illinois.
4. The Tax Property Identification Number(s) of the land which comprises the facility. If more than one Property Identification Numbers are associated with the facility, a scaled drawing showing the boundaries of each parcel within the facility must be provided.

B.1.2. Hazardous Waste Management Units at the Facility

Identify and briefly describe the hazardous waste management units at the facility.

Note: More information about these units will be provided in Section E of the application.

B.1.3. Solid Waste Management Units at the Facility

Identify and briefly describe the solid waste management units at the facility which are the focus of the RCRA corrective action program at the facility.

Note: More information about these units will be provided in Section F of the application.

B.2 Topographic Map: [702.123\(g\)](#), [703.183\(s\)](#), [703.184](#), [703.185\(c\)](#), [703.185\(d\)](#), [724.195](#), [724.197](#)

B.2.1. Facility + 1 mile:

Provide a topographic map (or Quadrangle map) that extends at least 1 mile beyond the property boundaries. This map must depict the legal boundaries of the facility and surrounding land uses.

B.2.2. Facility + 1000 feet:

Provide a topographic map that shows the layout of the facility and the surrounding area a distance of 1,000 feet outside the facility's property line. This map must be at a scale of 1 inch equal to not more than 200 feet. Ground surface contours must be shown on the map; the contour interval must be sufficient to clearly show the pattern of surface water flow in the vicinity of and from each hazardous waste management unit at the facility (a two foot interval should be used if the ground surface relief at the facility is less than 20' and a five foot interval should be used if the relief is greater than 20').

Multiple maps may be submitted to meet this requirement if necessary. The map(s) should contain/identify the following:

Map Requirements: Facility + 1,000 ft	
Map Orientation (north arrow)	Areas in the 100-year flood plain
Map Date	Flood control or drainage barriers
Scale	Run-on/run-off control systems
Legal boundaries of the facility	Fire control facilities
Surrounding land uses	A wind rose
Access controls	Hazardous waste management units
Buildings and Structures	Solid waste management units
Storm drains	Equipment required by Item D.2 below
Sewers: storm, sanitary and process	Surface waters including intermittent streams
Any waste injection or groundwater withdrawal wells (both on-site and off-site)	

If multiple maps are used, a discussion of how the various maps meet the above requirements must be provided. In addition, if an applicant feels that some of these requirements cannot be met for some reason or are not applicable, then sufficient information must be provided in the application to support this position. Finally, with appropriate supporting justification/discussion in the application, the applicant may vary from the above requirements if what is provided meets the general intent of these requirements.

B.3 Location Standards: [703.184](#), [724.118](#)

B.3.1 Seismic Standard:

Identify any hazardous waste management units within 200 feet (61 meters) of a fault which has had displacement during Holocene time.

B.3.2. Floodplain Standard:

Document whether or not the facility is located within a 100-year floodplain. Provide the source of this data as well as a copy of the relevant flood map produced by the National Flood Insurance Program (NFIP). Appropriate calculations/maps must be provided when NFIP maps are not available.

B.3.3. Facilities in the 100-year Floodplain

Facilities within the 100-year floodplain must provide the following information regarding procedures in place to prevent its flooding:

B.3.3.1. Engineering Analysis and Structural/Engineering Study.

Provide the following regarding information to demonstrate that flooding of the hazardous waste management units will not occur:

1. An engineering analysis that identifies and evaluates the various hydrodynamic and hydrostatic forces expected to result at the site as a consequence of a 100-year flood;
2. A structural or other engineering study that shows how the design of the hazardous waste management units and flood protection devices at the facility will prevent flooding of the units.

B.3.3.2. Procedures to Remove Waste

In lieu of B.3.3.1, provide a detailed description of the procedures to be followed to remove hazardous waste to safety before the facility is flooded. This information must include:

1. Timing of movement relative to flood levels, including estimated time to move the waste, to show that such movement can be completed before floodwaters reach the facility.
2. The location(s) to which the waste will be moved, and a demonstration that those facilities are eligible to receive hazardous waste in accordance with 35 Ill. Admin. Code 702, 703, 724 and 725;
3. The planned procedures, equipment, and personnel to be used, and the means to ensure that such resources will be available in time for such use;
4. The potential for accidental discharge of waste during movement.

B.3.4. Existing Facilities Not in Compliance with 35 Ill. Admin. Code 724.118(b)

Provide a plan showing how the facility will be brought in compliance and a schedule for compliance with 35 Ill. Admin. Code 724.118(b). A variance petition regarding this plan/schedule to come into compliance with 35 Ill. Admin. Code 724.118(b) must be filed concurrently with the Illinois Pollution Control Board.

B.4 Operating Record: 724.173

The Permittee must keep and maintain a written operating record that includes all the records, reports, notifications, and data required by 35 Ill. Admin. Code 724.173 and the conditions in this permit for the entirety of the post-closure care period. Identify the location where the Operating Record is maintained at the facility. Describe the procedures used to record the following information described in [724.173](#) in the facility's operating record (as such information becomes available) during the post-closure period:

1. Records of inspections, and repairs
2. Monitoring, testing, analytical data, and corrective action data when required,
3. All closure and post-closure cost estimates,
4. Annual certification that a program is in place to reduce the volume/toxicity of hazardous waste generated at the facility.

Separate documents may be used to compile this information, provided the requirements of [724.173](#) are met. A description of where the operating record will be maintained must also be provided.

SECTION C—GROUNDWATER MONITORING

C.1 **Exemption from Groundwater Protection Requirements:** [703.185](#), [724.190\(b\)](#)

If a waiver from the 35 Ill. Admin. Code 724, Subpart F groundwater monitoring requirements is requested, the applicant must demonstrate one of the following conditions applies to the facility or exempted under [724.101](#).

C.1.1. **Waste Piles:** [724.190\(b\)\(2\)](#) and [\(5\)](#)

The waste pile has been designed and operated to meet conditions specified in [724.350\(c\)](#).

C.1.2. **Landfill:** [724.190\(b\)\(2\)](#)

The landfill has been designed and operated to meet conditions specified herein.

C.1.3. **No Migration:** [724.190\(b\)\(4\)](#)

No potential for migration of liquid from a regulated unit to the uppermost aquifer exists during the active life of the regulated unit (including the closure period) and the post closure period. Predictions must be based on assumptions maximizing the rate of liquid migration.

C.2 **Interim Status Groundwater Monitoring Data:** [703.185\(a\)](#)

The applicant must provide, by reference, the location of a summary of the groundwater monitoring data obtained during the interim status period.

C.3 **Historical Hydrogeological Summary:** [703.185\(b\)](#), [620.210](#)

The applicant must provide an identification of the uppermost aquifer and aquifers hydraulically interconnected beneath the facility property. Include groundwater classification, flow direction and rate, and the basis for such identification (i.e., the information obtained from hydrogeologic investigations of the facility area). A table of hydraulic properties must be submitted which includes at a minimum permeability, sieve analysis, porosity, hydraulic conductivities, etc.

C.4 **Topographic Map Requirements:** [703.183\(s\)](#), [703.185\(c\)](#)

The applicant must provide on the map required in [703.183\(s\)](#) a complete legal description of the property boundary along with the following additional information:

The waste management area, the property boundary, the proposed point of compliance, the proposed groundwater monitoring zone (if applicable), the proposed location of groundwater monitoring wells and the information required in [703.185\(b\)](#)

C.5 **Contaminant Plume Description:** [703.185\(d\)](#), [721-Appendix I](#)

The applicant must provide a description of any plume of contamination detected in the groundwater originating from a regulated unit. Identify the concentrations of [Part 721, Appendix I](#) constituents (throughout the plume or the maximum concentration of each Appendix I constituent) for the plume of contamination delineated on the topographic map.

Note: The monitoring program for a given unit must be established based on the monitoring data from the facility and be appropriate for the groundwater conditions beneath the regulated unit.

Only complete the monitoring program section which is currently appropriate for the facility.

C.6: Detection, C.7: Compliance, C.8: Corrective action

C.6 Detection Monitoring Program: [703.185\(f\)](#), [724.198](#)

If the presence of hazardous constituents has not been detected in the groundwater at the time of permit application, the applicant must provide sufficient information, supporting data and analyses to establish a detection monitoring program which meets the requirements of [724.198](#).

A detection monitoring program must include at a minimum the ability to monitor for specific indicator parameters based upon the type and characteristics of waste(s) managed at the facility and to maintain a complete and accurate record and statistical evaluation of all groundwater monitoring data.

C.6.1. Indicator Parameters, Waste Constituents, Reaction Products to be Monitored: [703.185\(f\)\(1\)](#), [724.198\(a\)](#)

The applicant must provide a list of indicator parameters, waste constituents or reaction products to be used in providing a reliable indication of the presence of hazardous constituents in the groundwater.

C.6.2. General Monitoring Program Requirements: [703.185\(e\)](#), [724.197](#)

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of [724.197](#).

Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

C.6.3. Groundwater Monitoring System: [703.185\(f\)\(2\)](#), [724.197\(a\) & \(b\)](#), [724.198\(b\)](#)

The detection monitoring system must be installed at the established compliance point and comply with [724.197\(a\) & \(b\)](#). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (ft. bgs): well depth, screen interval, ground surface, and stick-up.

C.6.4. Description of Sampling and Analysis Procedures: [703.185\(f\)\(4\)](#), [724.197\(d\) & \(e\)](#)

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

C.6.5. Evaluation of Groundwater Surface: [724.197\(f\)](#), [724.198\(e\)](#)

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation each time the groundwater is sampled. The applicant must determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

C.6.6. Background Quality: [703.185\(f\)\(3\)](#), [724.197\(g\)](#), [724.198\(c\)](#)

The applicant must provide an evaluation of background groundwater quality and if necessary, reestablish background based on the historical data gathered over the active life of the permit using a trend analysis.

C.6.7. Statistical Evaluations: [703.185\(f\)\(4\)](#), [724.197\(h\)](#), [724.198\(d\)](#)

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

C.6.8. Statistically Significant Increases: [724.198\(f\)](#) & [\(g\)](#)

Using methods required in item C.6.7, the applicant must evaluate the existence of statistically significant evidence of contamination in the groundwater. If such evidence exists, specific measures of retesting and Illinois EPA notification must be provided.

C.7 Compliance Monitoring Program: [703.185\(g\)](#), [724.199](#)

If the presence of hazardous constituents has been detected in the groundwater at the point of compliance at the time of permit application, The applicant must submit sufficient information, supporting data and analyses to establish a compliance monitoring program which meets the requirements of [724.199](#).

C.7.1. Description of the Monitoring Program: [724.199\(a\)](#)

The program will be used to determine if compliance standards have been achieved by a regulated unit.

C.7.1.1. Waste Description: [703.185\(g\)\(1\)](#), [724.193\(a\)](#), [724.199\(a\)\(1\)](#)

The applicant must provide a list of hazardous constituents for groundwater that are reasonably expected to be in or derived from waste(s) in the regulated unit.

C.7.1.2. Concentration Limits: [703.185\(g\)\(4\)](#), [724.194\(a\)](#), [724.199\(a\)\(2\)](#)

The applicant must provide a discussion addressing the appropriate concentration limits for the hazardous constituents in groundwater.

C.7.1.3. Compliance Point: [724.195](#), [724.199\(a\)\(3\)](#)

The applicant must provide a discussion addressing the compliance point including rationale for location of groundwater monitoring wells utilized to delineate the compliance point.

C.7.1.4. Compliance Period: [724.196](#), [724.199\(a\)\(4\)](#)

The applicant must provide a discussion addressing the compliance period.

C.7.2. Alternate Concentration Limits: [703.185\(g\)\(4\)](#), [724.194\(b\)](#)

In situations where the Illinois EPA determines, based on information and supporting data provided by the applicant, a constituent will not pose a substantial hazard an alternate concentration limit can be established.

C.7.2.1. Adverse Effects on Groundwater Quality: [724.193\(b\)\(1\)](#), [724.194\(b\)\(1\)](#)

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on groundwater quality.

C.7.2.2. Potential Adverse Effects on Hydraulically Connected Surface Water Quality:
[724.193\(b\)\(2\)](#), [724.194\(b\)\(2\)](#)

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and potential adverse effects on hydraulically connected surface water quality.

C.7.3. General Monitoring Program Requirements: [703.185\(g\)\(5\)](#), [724.197](#)

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of [724.197](#). Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

C.7.4. Groundwater Monitoring System: [724.197\(a\), \(b\) & \(c\)](#), [724.199\(b\)](#)

The compliance monitoring system must be installed at the established compliance point as specified by [724.197\(a\)\(2\)](#), [724.197\(b\)](#) and [724.197\(c\)](#). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (ft bgs): well depth, screen interval, ground surface, and stick-up.

C.7.5. Description of Sampling and Analysis Procedures: [703.185\(g\)\(6\)](#), [724.197\(d\) & \(e\)](#), [724.199\(c\)](#)

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

C.7.6. Background Quality: [724.197\(g\)](#)

The applicant must provide an evaluation of background groundwater quality and if necessary, re-establish background based on the historical data gathered over the active life of the permit using a trend analysis.

C.7.7. Statistical Evaluations: [703.185\(g\)\(6\)](#), [724.197\(h\)](#), [724.199\(d\)](#)

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

C.7.8 Evaluation of Groundwater Surface: [724.197\(f\)](#), [724.199\(e\)](#)

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation must take place each time the groundwater is sampled. The owner or operator shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

C.7.9. Annual Appendix I: [724.199\(g\)](#)

The applicant must provide procedures for the Annual Appendix I sampling event. Samples from all monitoring wells at the compliance point must be analyzed for all constituents listed in Appendix I at least annually to determine whether additional hazardous constituents are present in the uppermost aquifer.

C.7.10. Statistically Significant Increases: [724.199\(h\)](#) & [\(i\)](#)

Using methods required in C.7.7, The applicant must evaluate the existence of statistically significant evidence of contamination in the groundwater of the point of compliance. If such evidence exists, specific measures of retesting and IEPA notification must be met.

C.8 Corrective Action Program: [703.185\(h\)](#), [724.191\(a\)\(2\)](#) & [\(3\)](#), [724.200](#)

If hazardous constituents have been measured in the groundwater which exceed the concentration limits established under [724.194](#), Table 1, or if groundwater monitoring conducted at the waste boundary indicates the presence of hazardous constituents from the facility in groundwater over background concentrations, The applicant must submit sufficient information supporting data and analyses to establish a corrective action program which meets the requirements of [724.200](#).

C.8.1. Description of Corrective Action Program: [703.185\(h\)](#), [724.200](#)

The program will be used to demonstrate the effectiveness of a corrective action measure.

C.8.1.1. Characterization of Contaminated Groundwater: [703.185\(h\)\(1\)](#), [724.200\(a\)\(1\)](#)

The applicant must include a characterization of the contaminated groundwater, including concentrations.

C.8.1.2. Concentration Limits: [703.185\(h\)\(2\)](#), [724.194\(a\)](#), [724.200\(a\)\(2\)](#)

The applicant must provide a discussion addressing the appropriate concentration limits for groundwater for each of the hazardous constituents.

C.8.1.3. Compliance Point: [724.195](#), [724.200\(a\)\(3\)](#)

The applicant must provide a discussion addressing the compliance point.

C.8.1.4. Compliance Period: [724.196](#), [724.200\(a\)\(4\)](#)

The applicant must provide a discussion addressing the compliance period.

C.8.1.5. Construction Detail: [703.185\(h\)\(3\)](#)

The applicant must provide detailed plans and an engineering report describing the corrective action to be taken, including all aspects of any groundwater and/or product removal/treatment system.

C.8.1.6 Effectiveness of Corrective Action: [703.185\(h\)\(4\)](#), [724.200\(d\)](#) & [\(g\)](#)

The applicant must describe how the groundwater monitoring program will assess the adequacy of the corrective action.

C.8.2. Alternate Concentration Limits: [724.194\(b\)](#)

In situations where the Illinois EPA determines, based on information and supporting data provided by the applicant, a constituent will not pose a substantial hazard an alternate concentration limit can be established.

C.8.2.1. Adverse Effects on Groundwater Quality: [724.193\(b\)\(1\)](#), [724.194\(b\)\(1\)](#)

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on groundwater.

C.8.2.2. Potential Adverse Effects on Hydraulically-Connected Surface Water Quality: [724.193\(b\)\(2\)](#), [724.194\(b\)\(2\)](#)

The applicant must provide information and supporting data addressing any proposed alternate concentration limit and adverse effects on hydraulically connected surface water quality.

C.8.3. Corrective Action Plan: [703.185\(h\)](#), [724.200\(b\)](#), [724.200\(c\)](#), [724.200\(e\)](#)

In addition to the other requirements of [724.200](#), The applicant must provide and describe a corrective action program to remove or treat in place hazardous waste constituents in groundwater between the point of compliance and the downgradient facility boundary, or beyond the facility boundary where necessary to protect human health and the environment.

The corrective action program must begin corrective action within a reasonable time period after the groundwater protection standard is exceeded considering the extent of contamination.

C.8.4. Groundwater Monitoring Program: [703.185\(h\)](#), [724.192](#), [724.200\(d\)](#)

The groundwater monitoring program must be as effective as the program required under C.7 above in determining compliance with groundwater protection standards and in determining the success of a corrective action program.

C.8.4.1. General Monitoring Program Requirements: [703.185\(e\)](#), [724.197](#)

The applicant must provide detailed plans and an engineering report describing the proposed groundwater monitoring program to be implemented to meet the requirements of [724.197](#).

Groundwater monitoring systems must be developed to provide a sufficient number of wells for the regulated unit(s), constructed in a manner to provide representative samples from the uppermost aquifer. The program must include appropriate procedures for sampling, analyzing and evaluating groundwater quality.

C.8.4.2. Groundwater Monitoring System: [724.197\(a\)](#) & [\(b\)](#), [724.200\(d\)](#)

The corrective action monitoring system must be installed at the established compliance point as specified by [724.197\(a\)\(2\)](#), [724.197\(b\)](#), and [724.197\(c\)](#). All groundwater monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples and be cased in a manner capable of maintaining the integrity of the monitoring well bore hole.

The applicant must reference, by location, boring logs and well completion reports (including a cross reference if necessary). A table of wells must be submitted identifying the well ID# and measurements for the following in both mean sea level (MSL) and feet below ground surface (ft. bgs): well depth, screen interval, ground surface, and stick-up.

C.8.4.3. Description of Sampling and Analysis Procedures: [724.197\(d\)](#) & [\(e\)](#)

The applicant must provide a description of sampling and analysis procedures including at a minimum procedures and techniques for sample collection, sample preservation and shipment, and analytical procedures and chain of custody control. The sampling and analytical methods must be appropriate for groundwater sampling and accurately measure hazardous constituents in groundwater samples. Alternative methods must be included for contingency basis.

C8.4.4. Background Quality: [724.197\(g\)](#), [724.199\(c\)](#)

The applicant must provide an evaluation of background groundwater quality and if necessary, re-establish background based on the historical data gathered over the active life of the permit using a trend analysis.

C.8.4.5. Statistical Evaluations: [703.185\(f\)](#), [724.197\(h\)](#), [724.199\(d\)](#)

The applicant must provide a demonstration that the current statistical method remains appropriate or justify a new method to be used for statistical evaluation of data.

C.8.4.6. Evaluation of Groundwater Surface: [724.197\(f\)](#), [724.199\(e\)](#)

The applicant must provide procedures for the evaluation of the groundwater surface at the facility. A determination of the groundwater surface elevation each time the groundwater is sampled. The owner or operator shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually.

C.8.4.7. Extension of Compliance Period: [724.200\(f\)](#)

The applicant must provide a discussion addressing the extension of the compliance period. The compliance period during which the groundwater protection standard applies shall be extended until the applicant demonstrates that the groundwater protection standard of [724.192](#) has not been exceeded for three consecutive years.

C.8.4.8. Effectiveness of Corrective Action: [724.200\(g\)](#)

The applicant must provide a discussion addressing the evaluation and reporting of the effectiveness of the corrective action program to the Illinois EPA. The written reports must be submitted semi-annually.

C.8.4.9. Evaluation of the Corrective Action Program: [724.200\(h\)](#)

The applicant must provide a discussion addressing any determination that the corrective action program no longer satisfies the requirements of [724.200](#).

C.9. Reporting Requirements: [724.197\(j\)](#)

The applicant must provide a discussion addressing groundwater monitoring data collected and the maintenance of the data in the facility operating record.

SECTION D--PROCEDURES TO PREVENT HAZARDS

D.1 **Security:** [703.183\(d\)](#), [724.114](#)

The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the unit(s) closed as landfills. Unless a waiver is granted, the facility must have either a 24-hour surveillance systems, or a barrier and a means to control entry as set forth in Item D.1.2 below.

D.1.1. Waiver from the Security Requirements:

Facilities seeking a waiver from the security requirements must provide information demonstrating that:

1. Physical contact with the waste, structures or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility; and
2. Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of 724.

D.1.2. Restricting Entry to the Facility

Describe the means used to restrict entry the facility

1. 24-Hour Surveillance System. Describe the 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) at the facility that continuously monitors and controls entry onto the active portion of the facility; or
2. Barrier and Controlled Entry: Describe the artificial or natural barrier system (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and the means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance or controlled roadway access to the facility).

D.1.3. Warning Signs

Identify the locations of all warning signs on a scale drawing of the facility. A sign with the legend, "Danger - Unauthorized Personnel Keep Out", must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The sign must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger - Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

D.2. **Equipment Requirements:** [703.183](#), [724.132](#), [724.133](#), [724.134](#), [724.135](#)

All facilities must have the equipment and procedures listed in D.2.2 thru D.2.8 below in place unless the applicant submits a waiver request as identified in D.2.1 below. The location within the facility of the equipment described in this section must be shown on the drawings required in Section B.2.2 above.

D.2.1. Waiver

Facilities may seek a waiver from any or all of the equipment/procedure requirements below. To obtain a waiver, the applicant must demonstrate that none of the hazards posed at the facility would require the particular type of equipment/procedure at issue.

D.2.2. Internal Communications

Describe the internal communications or alarm system for providing immediate emergency instruction (voice or signal) to facility personnel.

D.2.3. External Communications

Describe the device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, state or local emergency response teams.

D.2.4. Emergency Response Equipment

Describe the following emergency response equipment present at the facility: portable fire extinguishers; fire control equipment, spill control equipment; and decontamination equipment.

D.2.5. Water for Fire Control

Provide a statement signed by an independent fire control professional, or the responsible fire department, certifying that the facility has water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems. The document must include an original signature from the fire control professional or responsible fire department.

D.2.6. Personnel Protection Equipment

Describe the procedures, structures, and clothing equipment used to protect personnel from undue exposure to hazardous waste.

D.2.7. Testing & Maintenance of Emergency Equipment

Demonstrate that all facility communications or alarm systems, fire protection equipment, spill control equipment and decontamination equipment, where required, is tested, maintained, and calibrated, as necessary to assure its proper operation in time of emergency.

D.2.7.1. Equipment Testing:

Identify all emergency equipment and describe how the equipment is tested, maintained, and calibrated.

D.2.7.2. Schedule

Provide a testing and maintenance/calibration schedule for all communications, monitoring, safety, spill control, decontamination, and emergency equipment.

D.2.8. Equipment and Power Failure

Describe the procedures, structures, and equipment used to mitigate the effects of equipment failure and power outage.

D.3 Inspection Requirements: [703.183\(e\)](#), [724.115](#)

Describe the procedures followed to inspect/ensure the functionality of everything needed to provide adequate post-closure care of the unit closed as a landfill at the facility in accordance with the RCRA requirements.

Copies of the inspection log and repair log that are used to document inspections and repairs at the facility in accordance with the RCRA requirements must be provided as part of the permit application.

Indicate that copies of the inspection log and repair log are maintained at the facility as part of the operating record.

D.3.1. Inspection Log

An inspection log must be maintained which includes all of the items listed below. The log must also include the date and time of each inspection, the name of the inspector, notation of the observations made, and the date of any repairs or remedial actions.

D.3.1.1. Items Inspected

Identify each item to be inspected at the facility in order to comply with the RCRA requirements. these items include, all RCRA regulated units, monitoring equipment, safety and emergency equipment, security and communication devices, and operating and structural equipment that are vital to prevent, detect, or respond to environmental or human health hazards.

D.3.1.2. Types of Problems

Identify the types of problems (e.g. malfunctions or deterioration) the inspector must look for during an inspection (e.g. inoperable sump pump, leaking fitting, eroding dike).

D.3.1.3. Inspection Frequency:

Identify the inspection frequency for each item in the log. In addition, provide justification for the inspection frequency proposed for each item. (This justification should be separate from the actual inspection log.). The frequency of inspection needs to be based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections.

D.3.2. Repair Log

The repair log must be used to schedule and record repairs (deterioration, or malfunction of equipment or structures) revealed by an inspection of the items listed in the inspection log. The repair log must include the following items:

1. The item needing repair;
2. The problem identified during the inspection that needs repair;
3. The date the inspection took place;
4. The name of the person who conducted the inspection;
5. The name of the person who makes the corrected repair;
6. The date the repair was made;
7. The efforts carried out in making the repair;
8. Any other appropriate comments.

Most repairs should be made at the time it is determined to be necessary and all repairs should be made within 24 hours. The timeliness of the repair is dependent on the potential impact the problem needing repair may have on protecting human health, the environment, and the safe operation of the facility.

D.3.3. 24 Hour Reporting (702.152(f), 703.245(b))

Describe the procedures to be followed if an inspection reveals any noncompliance with the permit which may endanger health or the environment: 1) report the required information about the incident orally within 24 hours from the time the Permittee becomes aware of the circumstances, and 2) provide a written description of the incident within 5 days of the time the Permittee becomes aware of the circumstances.

SECTION E--POST-CLOSURE REQUIREMENTS

See [703.183\(m\)](#), [703.203\(f\)](#), [703.204\(h\)](#), [703.207\(e\)](#), [724.218](#), [724.297\(b\)](#) and [\(c\)](#), [724.328\(b\)](#), [724.328\(c\)\(1\)\(B\)](#), [724.380\(c\)](#), [724.410\(b\)](#)

E.1 Information Regarding the Unit(s) Closed as a Landfill

The foundation for developing an appropriate post-closure care program for a unit closed as a landfill is a thorough understanding of the unit, focusing on its surroundings, construction, operation and closure.

E.1.1. General Information Regarding of the Unit to Receive Post-Closure Care

Identify the unit(s) at the facility which were closed as landfills to which the post-closure requirements of 35 Ill. Admin. 724, Subpart G apply. Among other things, provide:

1. A scaled drawing showing the location and boundaries of the unit within the facility;
2. A copy of Illinois EPA's letter accepting certification of closure of the unit as a landfill;
3. The date that the post-closure care period for the unit began; and
4. A certified copy of the survey plat and post-closure notices filed in accordance with 35 Ill. Admin. Code 724, Subpart G or 725, Subpart G with the county in which the facility is located.

E.1.2. Geology and Hydrogeology Around/Beneath the Unit

Provide a detailed description of the geology and hydrogeology around/beneath the unit. Of special concern is the presence of silt, sand or other permeable zones around and beneath the unit which, if not properly addressed, could be a conduit for the migration of leachate or landfill gas away from the landfill. This description should be supplemented with boring logs, drawings and cross-sections.

E.1.3. Characterization of Waste/Contaminated Soil Present in the Landfill Unit

Provide a description of the type, quantity and characteristics of the waste and/or contaminated soil remaining in the unit.

E.1.4. Initial Closure Activities

Provide a detailed description, as appropriate, of the following initial activities carried out in closing the unit as a landfill:

1. Removal of waste and contaminated soil;
2. Stabilization of material remaining in the unit; and
3. Use of structural fill material to establish final contours.

E.1.5. Details Associated with the Closed Unit

Provide a detailed description, as-built drawings, cross-sections, and scaled drawings of the overall unit that includes/shows the following. Of special concern is the vertical elevations associated with each component of the unit. Note: the specific information regarding any leachate collection system, leak detection system and/or gas management system present in the landfill that must be described/shown is identified in Sections E.3 thru E.5 below.

1. The soils underlying the unit;

2. The bottom liner system of the unit (if any is present);
3. A description of the base of the unit if it has no constructed liner system;
4. Any permeable zones around or beneath the landfill and a description of the procedures used to seal off these zones;
5. Any cut-off walls or slurry walls constructed outside the landfill boundaries to address migration of leachate or landfill gas from the landfill;
6. The final cover system over the unit;
7. The final contours established for the unit; and
8. The run-on and run-off control systems of the unit.

E.2 Contact Person

Provide the name, address and phone number of the person or office to contact about the unit during the post-closure care period. A copy of the post-closure permit and associated approved permit modifications must be maintained by this person/office; a copy of these documents must also be maintained at the facility subject to the permit.

E.3 Operation of the Leachate Collection System

Note: This section need only be addressed if a leachate collection system is present in the landfill unit.

E.3.1. Quality of Leachate in the Leachate Collection System

1. The leachate needs to be analyzed for the parameters listed below, and the results of annual analyses conducted on representative samples of leachate must be provided in the permit application. This will give an indication of the potential contaminants in a subsurface release from the unit to the groundwater. The leachates need to be analyzed for:
 - a. Those constituents for which a public or food processing water supply standard has been established in 35 Ill. Admin. Code 302;
 - b. Those constituents for which a groundwater quality standard has been established in 35 IAC 620;
 - c. The 51 organic chemicals in drinking water described in 40 CFR 141.40.
 - d. Any other contaminants expected to be present in the leachate, based on the characteristics of the waste and materials present in the unit.

A list of all the above contaminants is provided as Attachment 1 to this document. This list may be reduced if information is provided indicating that certain listed contaminants are not expected to be present in the leachate.

2. If the list of analytes has been reduced, provide an analysis for all constituents listed in E.3.1.1 each time the post-closure permit is renewed. Compare the reduced list, to the full list. If no new parameters are detected, the application can propose to resume analyzing leachate for the previously approved reduced list. If any new parameters are detected, they must be added to the reduced list and the list of groundwater monitoring parameters.
3. If there is more than one leachate sump but the application does not propose to analyze the leachate from each sump, provide justification for how the leachate sample(s) are considered “representative” for a given landfill.

4. Describe the procedures used to collect, handle, and analyze the leachate samples discussed above. All such efforts must be carried out in accordance with procedures approved/established by Illinois EPA or USEPA.

E.3.2. Leachate Collection System Within the Landfill

1. Identify the general components of the leachate collection system within the landfill (includes the filter layer, leachate collection layer, leachate collection trenches, the leachate collection pipes, leachate level monitoring locations, leachate collection sumps, leachate collection wells, leachate removal pumps or other equipment used to remove leachate, manholes, clean-outs, etc.).
2. Provide a detailed description of the procedures used to construct the leachate collection system within the landfill. Provide specifications and as-built drawings (plan view, detail and cross-sectional) of the installed system. Identify the contours of the top of the liner system including any leachate collection trenches; the elevation of the lateral leachate collection pipes; the screened interval of any leachate collection wells or monitoring points; and the elevation of the bottom of the leachate collection sumps, wells, manholes and clean-outs.
3. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system within the landfill. Specifically:
 - a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
 - b. Identify each piece of equipment on a piping and instrumentation diagram; and
 - c. Describe the operational function and capabilities of each piece of equipment.
4. If the landfill was designed to meet the requirements of 35 Ill. Admin. Code 724.401, then an engineering report must be provided demonstrating that the system was constructed and will be operated in such a manner to prevent the leachate depth over the top liner from exceeding one foot. Appropriate calculations must be provided as part of this demonstration along with justification of all assumed parameters and of the numerical techniques used in making the demonstration.
5. If it was not necessary for the landfill to meet the requirements of 35 Ill. Admin. Code 724.401, then information must be provided regarding the maximum leachate levels which will be present at the leachate removal points and throughout the landfill. An engineering report/analysis of the leachate levels which will be present in the landfill must be provided as well as information from past operations of the leachate collection system which will verify the projected levels.

E.3.3. Leachate Collection System Outside the Landfill

1. Identify the general components of the leachate collection system which allow for the removal and of the leachate and its storage on-site (includes the piping from each leachate pump to the top of each leachate sump/well, the piping and associated appurtenances which transfer the leachate to a final storage tank, any pump stations needed in this transfer, and the tank where the leachate is eventually stored). In addition:
 - a. Provide a detailed description of the procedures used to install the components of leachate collection system mentioned above;
 - b. Provide specifications, piping and instrumentation diagram, and as-built drawings (plan view, detail, elevations and cross-sectional) of these components.
 - c. Identify the sample point(s) used to collect leachate samples on the piping and instrumentation diagram.

- d. Indicate the locations of the leachate collection system sampling points on a scale drawing of each landfill. Identify the sample points by both the facility and Illinois EPA identification numbers for each sample point.
2. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system outside the landfill. Specifically:
 - a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
 - b. Identify each piece of equipment on a piping and instrumentation diagram; and
 - c. Describe the operational function and capabilities of each piece of equipment.

E.3.4. Management of Leachate Collection System (LCS)

Describe how the LCS is managed. Discuss how all parts of the leachate collection system are operated.

1. Provide piping and instrumentation diagrams and other schematics which depicts the overall leachate collection system, from the pump within each leachate collection sump/well to the leachate accumulation tank. For each leachate collection sump/well, identify:
 - a. The approximate elevation of the bottom of the sump or landfill at that location,
 - b. The leachate elevation which activates the pump in each sump or extraction well,
 - c. The leachate level which activates the pump within the sump/well,
 - d. The leachate elevation when the pump shuts off, and
 - e. A description of the instrumentation in place so that the amount of leachate removed from a given sump/well over a given time period can be determined.
2. Describe the procedures which will be followed to document/record all aspects of the management of the leachate collection system(s). At a minimum, the results of leachate quality analyses and the amount of leachate removed from a given sump/well each month must be documented in the operating record.
3. Describe how the collected leachate will ultimately be managed and provide copies of the permits in place to take the leachate to an off-site facility for treatment or disposal.

E.3.5. Summary of Leachate Management Program Conducted to Date

Provide information addressing the items in Section E.3.4 regarding the leachate management program implemented during the past ten years. This information should discuss the efficiency of the existing leachate management program or identify deficiencies which must be addressed to ensure leachate is adequately managed in the landfill.

E.4 Operation of the Leak Detection System: 724.402, 724.403 and 724.404

This subsection must be addressed if a Leak Detection System (LDS) is present in the landfill. The LDS must be capable of detecting, collecting and removing leaks through the upper liner system at the earliest practicable time throughout all areas of the landfill. The LDS must be constructed of a drainage layer along with sumps and pumps of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer.

1. Each landfill unit must have its own set of LDS sumps.

2. Each LDS sump and associated removal system must be designed so that volume of liquid in the LDS sump can be measured and as well as the volume of leachate removed from the sump.

E.4.1. Description of the Leak Detection System Within the Landfill

Provide an engineering report describing how the leak detection system was constructed and will be operated to ensure the requirements of 35 Ill. Admin. Code 724.401 are met. Among other things, this report must:

1. Identify the general components of the leak detection system within the landfill (includes the drainage layer, the leachate collection trenches, the leachate collection pipes, leachate level monitoring locations, leachate collection sumps; manholes, clean-outs, etc.).
2. Provide a detailed description of the procedures used to construct the leak detection system. Provide specifications and as-built drawings (plan view, detail and cross-sectional) of the installed system. Information of special importance includes: the contours of the top of the liner system; the elevation of the leachate collection pipes; and the elevation of the bottom of the leachate collection sumps, manholes and clean-outs.
3. Provide detailed information regarding all equipment associated with the leak detection system (pumps, monitoring equipment, etc.) within the landfill. Specifically:
 - a. Provide information regarding the make, model and specifications of each piece of equipment;
 - b. Identify each piece of equipment on a piping and instrumentation diagram;
 - c. Describe the operational functions and capabilities of each piece of equipment.
4. Provide the pump operating level for each LDS sump within each landfill unit. This is the maximum level of leachate which can accumulate in each LDS sump before the pump within the sump is activated and leachate is removed from the sump.
 - a. This level can be no more than the depth of leachate that can accumulate within the LDS sump without allowing any leachate to back-up into the drainage layer.
 - b. This level must also minimize the hydraulic head on the liner of the LDS sump.
 - c. Development of the pump operating level for each LDS sump should also take into account the pump activation level and the sump dimensions.
5. Provide the action leakage rate (ALR) (in gallons per acre per day) for each LDS sump. The action leakage rate is the maximum design flow, modified by a factor of safety, that the LDS can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate factor of safety to allow for uncertainties in the:
 - a. Design; construction; layout and operation of the system;
 - b. Characteristics of the waste and leachate in the landfill;
 - c. Likelihood and amounts of other sources of liquids in the LDS and
 - d. Proposed response actions

Examples of uncertainties/concerns with the LDS include decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, and overburden pressure.

E.4.2. Description of the Leak Detection System Outside the Landfill

1. Identify the general components of the leak detection system which allow for the removal of the leachate from the landfill and its storage on-site (includes the piping from each leachate pump to the top of each leachate sump/well, the piping and associated appurtenances which transfer the leachate to a final storage tank, any pump stations needed in this transfer, and the tank where the leachate is eventually stored). In addition:
 - a. Provide a detailed description of the procedures used to install the components of leak detection system mentioned above.
 - b. Provide specifications and as-built drawings (plan view, detail, elevations and cross-sectional) of these components.
2. Provide detailed information regarding all equipment (pumps, monitoring equipment, etc.) associated with the leachate collection system outside the landfill. Specifically:
 - a. Provide (as appropriate) the make, model and specifications for each piece of equipment;
 - b. Identify each piece of equipment on a piping and instrumentation diagram;
 - c. Describe the operational function and capabilities of each piece of equipment.

E.4.3. Management of Leachate Accumulating in the Leak Detection System

Describe how the LDS is managed. Discuss how all parts of the leak detection system are operated.

1. Provide piping and instrumentation diagrams and other schematics which depict the overall leak detection system, from the pump within each leachate collection sump to the leachate accumulation tank. For each leak detection sump/well, identify:
 - a. The approximate elevation of the bottom of the landfill at that location,
 - b. The pump operating level,
 - c. The leachate level which activates the pump within the sump/well, and
 - d. The leachate elevation when the pump shuts off.
2. Describe the procedures which will be followed to document/record all aspects of the management of the LDS. At a minimum, the permittee needs to provide documentation of the amount of leachate removed from a given LDS sump over a set time period, and any exceedances of the action leakage rate in the operating record.
3. Describe how the leachate collected in the LDS will ultimately be managed and provide copies of the permits in place to take the leachate to an off-site facility for treatment or disposal.

E.4.4. Recent Operation of the Leak Detection System

Provide information addressing the items discussed in Section E.4.3 regarding the operation of the LDS during the past ten years. This information should discuss the efficiency of the existing LDS or identify deficiencies which must be addressed to ensure system is operating properly.

E.5 Operation of the Gas Monitoring/Collection System

This subsection must be addressed if the closed unit has a landfill gas monitoring/collection system.

E.5.1. Detailed Description of the Landfill Gas Collection System

The following information needs to be provided regarding any landfill gas collection system at the facility (in addition to drawings, it is also important to include text describing the various aspects of this system and the chronological history of the installation of this system).

1. A map and detailed drawings showing the location of the collection points and the layout and construction details of the collection system.
2. A description and specifications for all machinery, compressors, flares, piping and appurtenances in the system.
3. A piping and instrumentation diagram as well as other schematics to depict the system's operation.
4. A description of how the landfill gas collection system operates. Describe the information which will be monitored, evaluated and recorded regarding the operation of the system. Frequent evaluation of this information will be essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.
5. Documentation or assurance that the gas collection system meets the following standards:
 - a. The system is designed and will be operated such that the limits described in 35 IAC 811.311(a)(1), (a)(2) and (a)(3) will not be exceeded;
 - b. The gas collection system will transport gas to a central point or points for processing for beneficial uses or disposal in accordance with the requirements of 35 IAC 811.312;
 - c. The gas collection system has been designed to function for the entire design period;
 - d. All materials and equipment used in construction of the system have been rated by the manufacturer as safe for use in hazardous or explosive environments and shall be resistant to corrosion by constituents of the landfill gas;
 - e. The gas collection system has been designed to withstand all landfill operating conditions, including settlement;
 - f. Provisions have been made for collecting and draining gas condensate to a management system meeting the requirements of 35 IAC 811.309;
 - g. The gas collection system will not compromise the integrity of the liner, leachate collection or cover systems; and
 - h. The gas collection system shall be equipped with a mechanical device, such as a compressor, capable of withdrawing gas, or has been designed so that a mechanical device can be easily installed.
6. A description of the criteria that will be used to determine when operation of the gas collection system may be discontinued.
7. A description of the testing procedures that will be used to assure that the lines from the collection points to the gas processing or disposal facility are air tight.
8. Identify where condensate in the system will be collected and then stored prior to shipment off-site for treatment or disposal. Include a description of all equipment associated with collection and storage of the condensate.

E.5.2. Landfill Gas Monitoring Plan

Provide the following information regarding the landfill gas monitoring system's ability to monitor the buildup and composition of landfill gas.

1. A narrative and plan sheets describing the most likely paths of migration for gas generated by the unit and demonstrating that the proposed gas monitoring program will detect any gas buildup and/or migration.
2. Detailed drawings and material specifications of the four types of gas monitoring devices required (i.e., devices within the waste unit, below ground devices around the unit, air ambient monitoring devices and continuous air monitoring devices within buildings) on site or near the facility if there is an indication of gas.
3. A map showing the locations of the below ground monitoring devices and the continuous air monitoring devices.
4. Documentation that the various types of below ground gas monitoring devices:
 - a. Are placed at intervals and elevations within the waste to provide a representative sampling of the composition and buildup of gases within the unit.
 - b. Are placed around the unit at locations and elevations capable of detecting migrating gas from the ground surface to the lowest elevation of the liner system or the top elevation of the groundwater, whichever is higher.
 - c. Are constructed from materials that will not react with or be corroded by the landfill gas.
 - d. Have been designed and constructed to measure pressure and allow collection of a representative sample of gas.
 - e. Are constructed and maintained to minimize gas leakage.
 - f. Do not interfere with the operation of the liner, leachate collection system or delay the construction of the final cover system.
5. A description of the procedures and prerequisite weather conditions for performing ambient air monitoring including the location standards for placement of the monitoring devices and maximum wind speed.
6. A description (narrative or graphic) of the location of the continuous air monitoring devices inside the buildings within the facility (and nearby buildings if applicable).
7. A schedule specifying the frequency and minimum duration of gas monitoring.
8. Identification of the parameters that samples from each type of monitoring device will be analyzed.
9. A description of the procedures which will be used to collect and analyze the various air samples to be obtained as part of the landfill gas monitoring program.

E.5.3. Landfill Gas Disposal/Processing System

The following information must be provided regarding the gas disposal system or gas processing system at this facility. These systems can be either an on-site or an off-site facility.

1. For on-site facilities (either flare systems or facilities which process the gas for beneficial use) the following information must be provided:
 - a. A map showing the location of the facility;

- b. Engineered drawings showing the layout and details of landfill gas processing and disposal system, including compressors, blowers, raw gas monitoring systems, devices used to control the flow of gas from the unit, flares, gas treatment devices, air pollution control devices and monitoring equipment;
 - c. A copy of the approved air discharge permit or, if the permit is pending, a copy of the air discharge permit application required by 35 Ill. Admin. Code 200 through 245; and
 - d. A list of the parameters and constituents for which the gas shall be monitored.
2. For off-site processing facilities the following information must be provided:
 - a. A list of the parameters and constituents for which the gas shall be monitored;
 - b. A description of the means by which the gas shall be conveyed from the landfill to the off-site processing facility; and
 - c. Documentation that the off-site processing facility meets the following requirements:
 - (1) The solid waste disposal facility will contribute less than 50 percent of the total volume of gas accepted by the gas processing facility. (Otherwise, the processing facility must be considered a part of the solid waste management facility); and
 - (2) The gas processing facility is sized to handle the expected volume of gas.

E.5.4. Summary of the Landfill Gas Collection / Monitoring / Processing Systems

1. Describe the procedures followed to document/record information associated with the operation of the landfill gas collection, monitoring, and processing systems in the operating record.
2. Summarize the operation of the landfill gas collection, monitoring, and processing systems during the past ten years. Describe any adjustments to the design or operation of the systems since the unit was closed.

E.6 Post-Closure Inspection Plan

Describe the procedures followed to inspect/ensure the functionality of everything needed to provide adequate post-closure care of the unit closed as a landfill at the facility in accordance with the RCRA requirements.

Copies of the inspection log and repair log that are used to document inspections and repairs at the facility in accordance with the RCRA requirements must be provided as part of the permit application.

Indicate that copies of the inspection log and repair log are maintained at the facility as part of the operating record and where they are located.

E.6.1. Inspection Log

An inspection log must be maintained which includes all of the items listed below. The log must include the date and time of each inspection, the name of the inspector, notation of the observations made, and the date of any repairs or remedial actions.

E.6.1.1. Items Inspected

The plan must identify each item to be inspected in order to comply with the RCRA requirements. These include, but not necessarily limited to:

1. All RCRA regulated units;
2. Monitoring equipment;

3. Safety and emergency equipment;
4. Security control devices;
5. Erosion damage;
6. Cover settlement, subsidence and displacement;
7. Vegetative cover condition;
8. Integrity of run-on and run-off control measures;
9. Cover drainage system functioning;
10. Leachate collection and removal system;
11. Leak detection system;
12. Gas monitoring/extraction system;
13. Condition of the groundwater monitoring wells;
14. Benchmark integrity; and
15. All operating and structural equipment that are vital to prevent, detect, or respond to environmental or human health hazards.

E.6.1.2. Types of Problems

For each item to be inspected as identified above, describe the types of problems (e.g. malfunctions or deterioration) the inspector must look for during an inspection (e.g. inoperable sump pump, leaking fitting, cracks, eroding berm, etc.).

E.6.1.3. Inspection Frequency

Identify the inspection frequency for each item in the log. In addition, provide justification for the inspection frequency proposed for each item. (This justification should be separate from the actual inspection log.). The frequency of inspection needs to be based on the rate of possible deterioration of equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or operator error goes undetected between inspections.

Indicate the facility will be inspected within 24 hours of any rain fall event of 2 or more inches in 24 hours to detect evidence of any of deterioration, malfunctions, or improper operation of run-on and run off systems. Indicate that appropriate corrective action shall be taken if problems, including erosion, blockage of the channels, slope failure, etc. are observed.

E.6.2. Repair Log:

The repair log must be used to schedule and record repairs (deterioration, or malfunction of equipment or structures) revealed by an inspection of the items listed in the inspection log. The repair log must include the following items:

1. The item needing repair;
2. The problem identified during the inspection that needs repair;
3. The date the inspection took place;
4. The name of the person who conducted the inspection;
5. The name of the person who made the corrected repair;
6. The date the repair was made;

7. The efforts carried out in making the repair;
8. Any other appropriate comments.

Most repairs should be made at the time it is determined to be necessary and all repairs should be made within 24 hours. The timeliness of the repair is dependent on the potential impact the problem needing repair may have on protecting human health, the environment, and the safe operation of the facility.

E.6.3. 24 Hour Reporting (702.152(f), 703.245(b))

Describe the how the Permittee will take the following actions if an inspection reveals any noncompliance with the permit which may endanger health or the environment: 1) report the required information about the incident orally within 24 hours from the time the Permittee becomes aware of the circumstances, and 2) provide a written description of the incident within 5 days of the time the Permittee becomes aware of the circumstances.

E.7 Post-Closure Monitoring Plan

Describe the monitoring to be conducted during the post-closure care period, including, as applicable, the procedures for conducting and evaluating the data gathered in accordance with the RCRA requirements.

Indicate that copies of the monitoring reports and data are maintained at the facility as part of the operating record.

E.7.1. Facility Controls

Indicate that the benchmarks used to identify the location of disposal units, solid waste management units, and units/areas covered by an Environmental Land Use Controls (ELUCs) or the Uniform Environmental Covenants Act (UECA) are surveyed at least once every five (5) years.

E.7.2. Surveys and Corrective Action

Identify the units at the facility that will be surveyed every five years. The following units need to be surveyed at least once every five years:

- Units subject to post-closure requirements per 35 Ill. Admin. Code 724.210(b)
- Solid Waste Management Units (SWMUs) with cover systems and/or engineered barriers
- Units/Areas subject to an Environmental Land Use Controls (ELUCs) or the Uniform Environmental Covenants Act (UECA).

E.7.2.1. Provide the following for the units identified in Item E.7.2:

1. A copy of the survey provided to the Illinois EPA when the unit was certified closed.
2. A copy of the survey for each unit generated every five years since the unit was closed that shows the horizontal and vertical extent of the unit, drainage control structures, leachate collection wells, and groundwater monitoring wells.
3. Scale drawing(s) (1 inch = 200ft) and cross sections that identify those areas of the cover system or engineered barrier that have changed 1 foot or more in elevation since the unit was closed.
4. If corrective action was required in response to a release, damage to the cover system, settlement, erosion, stressed vegetation, or damage to a leachate well, groundwater monitoring well, or benchmark since post-closure care began, identify the date and location of the corrective action on the scale drawings required above. Also, provide copies of the inspection

and repair logs that includes the date each incident was discovered, a description of the incident & corrective action taken, and the date corrective action was completed.

5. If corrective action occurred in the same general area 2 or more times since post-closure began, discuss the actions the permittee has implemented to prevent this from happening again.

E.7.3. Leachate Collection System

Describe how the information about the leachate collection system for each unit identified in E.7.2 is monitored, evaluated, and recorded. Frequent evaluation of this information is essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

E.7.3.1. Leachate Quality

Describe the procedures which are followed to monitor the quality of the leachate in the unit on a regular basis during the post-closure care period (including sample collection, sample handling and sample analysis). Discuss if the concentrations of the constituents in the leachate have changed during the post closure period and any actions taken in response.

These samples should be collected quarterly for the first two years at which time the frequency can be decreased to semi-annually. The samples must be analyzed for the constituents described in Item E.3.1 above

1. Summary of Sample Results: Provide a summary table of the leachate sampling results for each unit since post closure began for that unit. Identify the concentration for each parameter detected in each sampling event.
2. Parameter Comparison: Indicate if any of the leachate analyses detected a parameter for which the groundwater is/was not being analyzed and the actions taken if this occurred.

E.7.3.2. Leachate Quantity

1. Provide a record of the amount of liquid removed from each leachate collection sump (in gallons) at least monthly after closure of the unit identified in E.7.2 above. The following information regarding leachate generation rates needs to be provided both in table form and graphically:
 - a. Monthly for each year for each sump since the unit was closed
 - b. Annually for each sump since the unit was closed
 - c. Annually for each unit since the unit was closed
2. If the leachate generation rates are not trending downward during the post closure period, discuss why this is not happening. Provide information regarding precipitation rates during the post-closure period, as well as groundwater elevations relative to the invert of the LCS sumps.

E.7.3.3. Leachate Reporting

Describe the procedures followed to electronically report the quality and quantity of leachate generated at the facility to the Illinois EPA.

E.7.4. Leak Detection System (LDS) 724.402, 724.403, 724.404

Describe how the information from the leak detection system for each unit identified in E.7.2 will be monitored, evaluated, and recorded. Frequent evaluation of this information will be essential in ensuring

the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

E.7.4.1. LDS Leachate Quantity

1. Describe the procedures used to determine the volume of leachate removed from each LDS sump over a given time period. This determination must initially be made monthly. If the liquid level in a LDS sump stays below the pump operating level (and thus no leachate is removed during that time period) for two consecutive months, then the amount of liquids in the LDS sump need only be recorded quarterly. Similarly, if the liquid level in a LDS sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps need only be recorded semi-annually. Finally, if the pump operating level for an LDS sump is exceeded during the quarterly or semi-annual monitoring, then monitoring of the amount of leachate removed from that LDS sump must revert back to monthly.
2. Provide a record of the amount of liquid removed from each LDS sump (in gallons) at least monthly after closure of the unit identified in E.7.2 above. The following information regarding leachate generation rates needs to be provided both in table form and graphically:
 - a. Monthly for each year for each sump since the unit was closed
 - b. Annually for each sump since the unit was closed
 - c. Annually for each unit since the unit was closed
3. If the leachate generation rates are not trending downward during the post closure period, discuss why this is not happening. Provide information regarding precipitation rates during the post-closure period, as well as groundwater elevations relative to the invert of the LDS sumps.

E.7.4.2. Action Leakage Rate (ALR)

1. Identify the Action Leakage Rate (ALR) from Section E.4 for each LDS sump, and indicate if the action leakage rate has been exceeded during the post-closure period.
2. To determine if the ALR has been exceeded, the owner or operator must convert the monthly flow rate from the monitoring data to an average daily flow rate (gallons per acre per day) for each sump. The average daily flow rate for each LDS sump must be calculated monthly during the post-closure care period, unless Illinois EPA approves a different frequency pursuant to Section 724.403(c)(2).
3. Describe the response action(s) meeting the requirements of 35 Ill. Admin. Code 724.404 that will be implemented if the leachate removal rate exceeds the action leakage rate.

E.7.5. Groundwater Monitoring System

E.7.6. Gas Collection System

For units required to have a gas collection / monitoring system, describe how the information about the gas collection system for each unit identified in E.7.2 is monitored, evaluated, and recorded. Frequent evaluation of this information will be essential in ensuring the system is operating effectively and will also give insight into any adjustments that need to be made to the operations of the system.

E.7.6.1. Gas Quality

Describe the procedures followed to monitor the quality of the gas in the unit on a regular basis during the post-closure care period (including sample collection, sample handling and sample

analysis). Discuss how the parameters (Methane, Pressure, Oxygen; and Carbon Dioxide) in the gas system have changed during the post closure period and any actions taken in response to those changes.

1. Summary of Sample Results: Provide a summary table of the gas sampling results for each unit since post closure began for that unit. Identify the concentration for each parameter detected in each sampling event.
2. Parameter Comparison: Describe the parameter thresholds used to adjust the gas collection system to improve overall efficiency of the system. Describe any major gas system upgrades/ overhauls since post closure began.

E.7.6.2. Gas Quantity

1. Provide a record of the amount of gas removed from each unit at least monthly after closure of the unit identified in E.7.2 above. The following information regarding gas generation rates needs to be provided both in table form and graphically:
 - a. Monthly for each year for each unit since the unit was closed
 - b. Annually for each unit since the unit was closed
2. If the gas generation rates are not trending downward during the post closure period, discuss why this is not happening.

E.7.6.3. Summary of Results from the Gas Collection / Monitoring System

1. Describe the procedures followed to document/record information associated with the operation of the landfill gas collection, monitoring, and processing systems in the operating record.
2. Summarize the operation of the landfill gas collection, monitoring, and processing systems since the unit was closed. Describe any adjustments to the design or operation of the systems since the unit was closed.

E.8 Post-Closure Maintenance Plan

E.8.1. Procedures, Equipment & Materials:

Describe the preventive and corrective maintenance procedures, equipment and materials that will be required to properly maintain everything needed to provide adequate post-closure care of the unit closed as a landfill. Include the following items in the maintenance plan, as applicable:

1. Repair of security control devices;
2. Erosion damage repair;
3. Correction of settlement, subsidence and displacement;
4. Mowing, fertilization and other vegetative cover maintenance;
5. Repair of run-on and run-off control structures;
6. Maintenance of any leachate removal system(s) including the flushing of the LCS and LDS;
7. Maintenance of any gas monitoring/extraction system;
8. Replacement of groundwater monitoring wells; and
9. Surveyed benchmarks

E.8.2. Rationale

Provide the rationale which will be used to determine the need for corrective maintenance activities for each of the items mentioned above.

E.8.3. Frequency

Provide the frequency for maintaining each of the items mentioned above if it is known. This needs to include, but not be limited to:

1. The frequency for mowing, fertilization and other vegetative cover maintenance, and
2. Annual maintenance / cleaning of pumps used in the LCS, LDS, and gas collection systems.
3. The manufacturer's recommended replacement rate for the pumps used in the LCS, LDS or gas collection systems.
4. High pressure jet flushing of the LCS & LDS collection pipes and sump every 5 years.
5. Procedures and scheduling of non-routine maintenance and change-out of equipment.

E.9 Survey Plat: 724.216

The application must include documentation that a survey plat was prepared/submitted no later than the submission of the certification of closure for each disposal unit or areas where hazardous waste is left in place. The application must also describe the wording placed on the survey plat.

- The survey plat must indicate the location and dimensions of landfill cells or other disposal units/areas with respect to permanently surveyed benchmarks and the legal boundary of the facility.
- The plat must contain a note, prominently displayed that states: (1) the land has been used to manage hazardous wastes; and (2) the owner's and operator's obligations to restrict disturbance of the units containing hazardous waste in accordance with the applicable Subpart G regulations.
- The plat must be prepared and certified using the wording at 702.126(d)(1) by a professional land surveyor.
- The survey plat must be filed with any local zoning authority or authority with jurisdiction over local land use, the IEPA, and recorded with the land titles.
- If the facility includes a RCRA disposal unit that is already certified closed, provide a copy of the survey plat for that unit.

E.10 Notice in Deed and Certification: 703.183(n), 724.216, 724.217(c), 724.219

The application must include copies, as appropriate, of the notation recorded on the deed to the facility property, or on some other instrument which is normally examined during title search that will in perpetuity notify any potential purchaser of the property that:

- The land has been used to manage hazardous waste.
- Use of these areas is restricted.
- A survey plat and record of the type, location, and quantity of material in the disposal units or areas have been filed with the Illinois EPA, the County Recorder, and any local zoning authority or authority with jurisdiction over local land use.

- For hazardous wastes disposed prior to January 12, 1981, identify the type, location and quantity of the hazardous waste to the best of the owner or operator's knowledge and in accordance with any records the owner or operator has kept.

A certification signed by the owner or operator, that the owner or operator has properly recorded the notification must be developed after this notice has been recorded and submitted to Illinois EPA. This submittal must include a copy of the document in which the notification has been placed.

For facilities which have already filed: Provide a copy of the notice for the unit and the document in which it was placed, the required notice of or the deed, the application should contain: a certified copy of the filed notice; the document that the notice was placed in, and certification by the owner or operator that it was properly filed.

E.11 Post Closure Cost Estimate: 703.183(p), 724.244

Provide an estimate of the cost of completing the required post-closure care activities, based on current year costs, including all calculations and supporting information used in developing the estimate. The following must be used in preparing this estimate:

1. Cost estimates must be based on third party costs and cannot include the salvage value from the sales of hazardous wastes, structures or equipment present at the facility.
2. The number of years for which post-closure care must still be provided must be identified.
3. Due to the fact that inflation affects the actual value of a given amount of money over time, the year in which this cost estimate is developed must be clearly identified. It must be noted that inflation will always need to be taken into account to bring estimates from previous year up to the current year.
4. The various tasks need to carry out the required post-closure care activities must be identified as well as the cost associated with each task;
5. The amount of time/materials/efforts needed to complete each task must be provided as well as their unit costs. Justification must be provided for all values used in making these calculations;
6. An estimate of the annual cost of providing all required post-closure care activities should be developed;
7. Some post-closure care activities are not carried out on an annual basis, but at some other frequency. These activities, their frequency, and their cost must be presented.
8. The estimate for providing all required post-closure care activities must be developed using the information in Items 4 and 5 above.

A copy of the most recent post-closure care cost estimate provided to the Illinois EPA must also be provided. In general, these estimates are provided in annual reports and financial assurance documents.

E.12 Financial Assurance Mechanism for Post-Closure Care: 703.183(p), 724.245

Provide a copy of the established financial assurance mechanism for post-closure care of the facility. The mechanism must be one of those described in 724.245. Contact the Illinois EPA Bureau of Land Permit Section to obtain the proper forms and instructions.

E.13 State Mechanisms: 40 CFR 264.149, 40 CFR 264.150, 40 CFR 264.151, 40 CFR 220.14(b)(18)

If the State of Illinois assumes legal responsibility for compliance with closure, post closure, or liability requirements, or the state assures that state funds are available to cover those requirements, submit a copy of a letter from the state describing the state assumption of responsibility and including the facility EPA ID number, name, address, and amounts of liability coverage or funds for closure or post-closure care that are assured by the state, together with a letter requesting that the state's assumption of responsibility be considered acceptable.

SECTION F—CORRECTIVE ACTION

[35 Ill. Adm. Code 724.201](#) requires that facilities seeking a RCRA permit institute corrective action, as necessary, to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit. The information identified in Items F.1 through F.3 below must be contained in the original RCRA permit application submitted by a facility to allow Illinois EPA to develop permit conditions for ensuring this requirement is met; only the information in Item F.4 below needs to be submitted by facilities seeking a renewed RCRA permit.

F.1 Identification of Solid Waste Management Units (703.187(a))

Identify the solid waste management units (SWMUs) present at the facility. A SWMU includes any unit where solid waste has been managed in the past and which is not a hazardous waste management unit. Units that are SWMUs include, but are not limited to, the following:

- Landfills
- Surface impoundments
- Waste piles
- Land treatment units
- Injection wells
- Incinerators
- Tanks (including wastewater treatment units)
- Container storage areas
- Waste transfer areas
- Waste recycling operations

F.2 Characterization of the SWMUs (703.187(a))

For each solid waste management unit identified above, submit the following information:

1. Type of unit
2. Location on the topographic map required by Item B.2 of the decision guide/checklist
3. Engineering drawings and construction details as available
4. General dimensions
5. Dates when the unit was in operation
6. Description (including physical/chemical characteristics) of the materials/wastes managed in the unit
7. Quantity or volume of waste managed in the unit, if known
8. A description of: (1) the soil types present at the unit; and (2) the geology of the area where the unit is located.
9. An indication of whether the wastes managed in the unit have been removed or still remain in it.

F.3 Characterization of Releases from SWMUs (703.187(b))

Provide all available information on whether or not any releases have occurred from each of the SWMUs identified above. Reasonable efforts to identify releases must be made, even if releases have not been verified. A release may include: spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment. If a determination is made that there has not been a release from a given SWMU, then a description of the efforts and information used to reach this conclusion must be provided.

The information to be provided regarding any releases from a SWMU, as available, includes:

1. Date of the release
2. Type of waste or constituent released
3. Physical and chemical characteristics of the released material
4. Quantity or volume released
5. Nature of the release (such as spill, overflow, ruptured pipe or tank, etc.).
6. Groundwater monitoring or other analytical data describing the nature/extent of the release.
7. Physical evidence of distressed vegetation or soil contamination
8. Historical evidence of releases, such as tanker truck accidents
9. Any state, local or federal enforcement actions which may address releases
10. Any public citizen complaints about the facility which could indicate a release
11. Any information showing the migration of the release.
12. A detailed description of any remedial activities taken in response to the release.

F.4 Information Required for Renewal Applications (703.187(c))

Facilities seeking a renewed RCRA permit have likely completed a substantial amount of corrective action under the original permit. Illinois EPA has only been authorized to implement the corrective action program in RCRA permits since April 1990; the USEPA portion of permits issued before this date contained corrective action requirements. For permits issued before April 1990, Illinois EPA likely does not have a complete file of corrective action efforts carried out at the facility, as such efforts were overseen by USEPA. However, for permits issued after April 1990, Illinois EPA already has a complete file of all corrective action efforts carried out to date at the facility.

A summary/description of the corrective action efforts completed to date at the facility must be provided in the application. The level of detail of this summary/description will be dependent on whether Illinois EPA oversaw these corrective action efforts and thus has a complete file of these efforts already. This summary/description will create an administrative record adequate to support the corrective action requirements eventually placed in the renewed permit and will form the foundation for determining future corrective action efforts to ensure the requirements of 35 Ill. Admin. Code 724.201 are met.

F.4.1. Required Information if USEPA Oversaw Initial Corrective Action Program

Facilities applying for a renewed RCRA permit which conducted corrective action efforts in accordance with requirements of the USEPA portion of the original RCRA permit issued to the facility must provide the following information:

1. A detailed chronology of all corrective action correspondence between USEPA and the facility, starting from the issuance of the original permit;
2. Copies of all letters received from USEPA regarding corrective action efforts, starting with the issuance of the original RCRA permit;
3. Copies of all letters and documents sent to the USEPA regarding corrective action efforts conducted in accordance with the original RCRA permit;
4. A detailed discussion of each of the SWMU identified and addressed in accordance with the provision of the facility's original RCRA permit, including:
 - a. A detailed description of each unit as outlined in Item F. 2 above, including layout drawings;

- b. A summary of the investigation/remediation efforts completed to date; and
 - c. A discussion of any investigation/remediation efforts which must still be carried out to complete corrective action responsibilities for the unit.
5. The information in the appropriate portions of Section C (Groundwater Monitoring) of this document regarding any on-going groundwater monitoring/remediation program being carried out at the facility.

F.4.2 Required Information if IEPA Oversaw the Initial Corrective Action Program

Facilities which carried out corrective action under the requirements of the Illinois EPA portion of the original permit must provide the following information regarding corrective action efforts at the facility:

1. A chronological list of all documents submitted to Illinois EPA regarding the corrective action efforts required by the original RCRA permit and Illinois EPA's response to each submittal. For each document, provide:
 - a. The name of the document;
 - b. A brief discussion of the contents/purpose of the document;
 - c. The date the document was submitted to Illinois EPA;
 - d. The person who submitted the document
 - e. A discussion of Illinois EPA's response to the document (include the date of the response and the general conclusions/requirements in the response).
2. Copies of all Illinois EPA letters, in chronological order, regarding corrective action efforts at the facility (these letters serve as important decision documents and will help to verify corrective action efforts completed to date and what must still be done to complete corrective action responsibilities at the facility).
3. A detailed discussion of each of the SWMUs identified and addressed in accordance with the facility's permit. This should include:
 - a. A detailed description of each unit as outlined in Item F.2 above;
 - b. A summary of the investigation/remediation efforts completed to date; and
 - c. A discussion of any investigation/remediation efforts which must still be carried out to complete corrective action responsibilities for the unit.
4. The information in the appropriate portions of Section C (Groundwater Monitoring) of this document regarding any on-going groundwater monitoring/remediation program being carried out at the facility.

F.5 Proposed Interim Measures to be Conducted: (703.187)

An applicant may propose to begin/continue interim measures for the purpose of preventing/mitigating releases from a SWMU before completing a formal RCRA Facility Investigation or Corrective Measures Program. Requests to begin/continue interim measures should contain detailed information about the proposed effort, including:

1. Background information about the unit and surrounding area (including, but not limited to, construction/operation of the unit, wastes managed in the unit; geology/hydrogeology of the area; and discussion/presentation of all sampling/analysis efforts conducted in/around the unit);
2. The objectives of the interim measure. Of special concern is how the measure will prevent/mitigate the release of concern and how it will be integrated into any necessary long-term corrective measures at the facility;

3. Information regarding the design, construction, operation and maintenance of the measure;
4. Schedules for design, construction and operation of the measure.

It must be noted that it may be necessary to complete a RCRA Facility Investigation and a Corrective Measures Study for the SWMU of concern while the interim measure is being carried out. Such efforts will be necessary if the extent of contamination at the SWMU has not been completely determined or if additional remedial efforts are needed to properly address the contamination resulting from the release in the long term.

F.6 Cost Estimate for Required Corrective Action (724.201)

35 Ill. Admin. Code 724.201 requires that permitted facilities provide financial assurance for any required corrective action. As such, the application must contain an estimate of the cost of the required corrective action efforts to be carried out at the facility.

1. If a facility proposes to conduct an interim measure as set forth in Item F.5 above, then an estimate of the cost of these measures must be provided in the application.
2. Development/presentation of a cost estimate must be carried out in accordance with Item E.5 above. This cost estimate will then form the foundation for the establishment of financial assurance for corrective action in the permit. This estimate will need to be updated, as appropriate, to reflect the cost of carrying out all approved corrective action activities at this facility.
3. As each workplan/report associated with corrective action is developed, they must contain cost estimates for carrying out the activities proposed in the workplans and then financial assurance must be established for these activities once they are approved.

F.7 Financial Assurance for Corrective Action (724.201)

Adequate financial assurance must be provided in the amount developed in Item F.6 above. Establishment of this financial assurance must meet the requirements of 35 Ill. Admin. Code 724, Subpart H and Item E.6 above. Financial assurance for corrective action must be updated, as appropriate, to reflect the current corrective action cost estimate.

Instructions for RCRA Post-Closure Permit Applications

Attachment 1

Baseline List of Constituents Expected to be Present in Landfill Leachate							
Parameter	Predicted Values for SW Landfill (ug/l) ^{1,2}	Basis for Inclusion on List					
		40 CFR 258 App. II	Expected In Leachate	35 IAC Part 620	35 IAC Part 302	40 CFR Part 141.40	40 CFR 258 App. I ³
Butanol	15,000	X	X				
N-butylbenzene						X	
Sec-butylbenzene						X	
Butyl benzyl phthalate	150	X	X				
Cadmium (total)	100	X	X	X	X		5
Calcium	1,200,000		X				
Carbofuran				X			
Carbon disulfide	6	X	X				22
Carbon tetrachloride	400	X	X	X			23
Chemical oxygen demand (COD)	10,000,000		X				
Chlordane		X		X	X		
Chloride	3,000,000		X	X	X		
Chlorobenzene	400	X	X	X		X	24
Chloroethane	400	X	X			X	25
Bis (2-chloroethoxy) methane	25	X	X				
Chloroform	400	X	X			X	26
Chloromethane	400	X	X			X	44
Bis (chloromethyl) ether	400	X	X			X	
O-chlorotoluene						X	
P-chlorotoluene						X	
Chromium (total)	50	X	X	X	X		6
Chlorodibromomethane		X				X	27
Cobalt	130	X	X	X			7
Copper	1,000	X	X	X	X		8
P-cresol		X					
Cyanide	300	X	X	X	X		
Dalapon							
DDT		X		X	X		
Dibromomethane	10	X	X			X	45
M-dichlorobenzene		X				X	
O-dichlorobenzene		X				X	30
P-dichlorobenzene		X		X			31
Dichlorodifluoromethane	450	X	X			X	
Dichloromethane		X		X		X	46

Baseline List of Constituents Expected to be Present in Landfill Leachate							
Parameter	Predicted Values for SW Landfill (ug/l) ^{1,2}	Basis for Inclusion on List					
		40 CFR 258 App. II	Expected In Leachate	35 IAC Part 620	35 IAC Part 302	40 CFR Part 141.40	40 CFR 258 App. I ³
Dieldrin		X			X		
Diethyl phthalate	200	X	X				
Dimethyl phthalate	60	X	X				
Di-n-butyl phthalate	150		X				
Dinoseb		X		X			
1,4-dioxane			X				
Endothall		X		X			
Endrin		X	X				
Ethyl acetate	130		X				
Bis (2-ethylhexyl) phthalate	400		X				
Ethyl methacrylate		X					
Ethylbenzene	500	X	X	X		X	41
Ethylene dibromide (EDB)		X		X		X	29
Fluoride				X			
Fluorotrichloromethane						X	
gross alpha (pCi/l)				X			
Heptachlor		X		X	X		
Heptachlor epoxide		X		X	X		
Hexachlorobutadiene		X				X	
Hexachlorocyclopentadiene		X		X			
Iodomethane		X		X	X		48
Iron	500,000		X	X	X		
Isophorone	2,500	X	X				
Isopropylbenzene						X	
p-isopropyltoluene						X	
Lead	500	X	X	X	X		9
Lindane	25		X	X	X		
Magnesium	500,000		X				
Manganese	20,000		X	X	X		
Mercury	10	X	X	X			
Methoxychlor				X	X		
methylene chloride (Chloromethene)	46	X	X				
Naphthalene	75	X	X			X	
Nickel	1,000	X	X	X			10
Nitrate				X	X		
Nitrobenzene	120	X	X				
Oil (hexane-soluble or equivalent)					X		
Parathion		X			X		

Baseline List of Constituents Expected to be Present in Landfill Leachate							
Parameter	Predicted Values for SW Landfill (ug/l) ^{1,2}	Basis for Inclusion on List					
		40 CFR 258 App. II	Expected In Leachate	35 IAC Part 620	35 IAC Part 302	40 CFR Part 141.40	40 CFR 258 App. I ³
Pentachlorophenol	400	X	X	X			
pH	9-May		X	X			
Phenanthrene	3	X	X				
Phenols	5,000	X	X	X	X		
Picloram				X			
Polychlorinated biphenyls (PCBs)		X		X			
Potassium	500,000		X				
N-propylbenzene						X	
Radium				X			
Selenium	50	X	X	X	X		11
Silver	50	X	X	X			12
Simazene							
Sodium	1,500,000		X	X			
strontium - 90				X			
Styrene		X		X		X	50
Sulfate	1,000,000		X	X	X		
TDS	10,000,000		X	X	X		
TOC	6,000,000		X				
tert-butylbenzene						X	
Tetrachloroethylene	300	X	X	X		X	53
Tetrahydrofuran	1,000		X				
Thallium	500	X	X	X			13
Tin	2,000	X	X				
Toluene	2,000	X	X	X		X	54
Toxaphene	2	X	X	X	X		
Trichloroethylene (or ethene)	400	X	X	X			57
Trichlorofluoromethane	150	X	X				58
Tritium				X			
Vanadium	30	X	X				14
Vinyl chloride	60	X	X	X			61
Vinyl acetate							60
Xylenes (total)	300	X	X	X			62
m-xylene	200	X	X			X	
o-xylene						X	
p-xylene						X	
Zinc	20,000	X	X	X			15

References

- ¹ Gasper, James A. and Jeff M. Harris, Management of Leachate from Sanitary Landfills (for Browning Ferris Industries).
- ² Dolan, David, Helen Keough, R.E. O'Hara and Kevin O'Leary, 1991, A Comparison of Chemical Constituents in Industrial Hazardous Waste Municipal Waste Landfill Leachates (for Waste Management of North America, Inc.).
- ³ From 40 CFR Part 258 Appendix I & II numbered as presented in Federal Register, Vol. 56, No. 196, October 9, 1991 pages 51032-51038