BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

BFI WASTE SYSTEMS OF NORTH AMERICA, LLC,	)	
Petitioner,	)	
v.	)	PCB No. 26-30
	)	(Permit Appeal - RCRA)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
Respondent.	)	

NOTICE OF FILING

Please take notice that on Wednesday, September 2, 2026, Respondent Illinois Environmental Protection Agency filed with the Clerk of the Illinois Pollution Control Board in the above referenced case via the "COOL" System, the attached Amended Record on Appeal and Supplemental Record, true and correct copies of which are attached hereto and hereby served upon you.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,

by KWAME RAOUL, Attorney General of the State of Illinois

BY: */s/ Rebecca Kanz*

Assistant Attorney General
Environmental Bureau
Office of the Illinois Attorney General
115 S. LaSalle St., Floor 23
Chicago, Illinois 60603
(312) 814-3531
Rebecca.Kanz@ilag.gov

SERVICE LIST

Mr. Bradley P. Halloran
Hearing Officer
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60 E. Van Buren Street, Suite 630
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Mr. Don Brown
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Brown, Hay & Stephens, LLP
205 S. Fifth Street, Suite 700
P.O. Box 2459
Springfield, IL 62705
ssievers@bhslaw.com

Certificate of Service

I, Rebecca Kanz, an Assistant Attorney General, hereby certify that on this 2nd day of September 2026, I caused to be served the foregoing Notice of Filing, Amended Record on Appeal, and Supplemental Record, upon the parties named in the attached service list by electronic mail.

BY: */s/ Rebecca Kanz*

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

BFI WASTE SYSTEMS OF NORTH AMERICA, LLC	)	
Petitioner,	)	
v.	)	PCB 2026-030
	)	(Permit Appeal - RCRA)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
Respondent.	)	

AMENDED RECORD ON APPEAL

Respondent, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("Illinois EPA"), in accordance with the procedural rules of the Illinois Pollution Control Board as set forth in 35 Ill. Adm. Code 105.212 and 105.116, files as its Amended Record in this cause the Illinois EPA's record of Final Decision approving with certain conditions modifications to RCRA Hazardous Waste Permit ILD980700728, Log No. B-23R2, for the Zion Site 1 Phase A Landfill operated by BFI Waste Systems of North America, LLC, on September 25, 2025, which is attached and consists of the following documents:

Volume I of VII:

Date	Description	Record Number
	Volume 1 of 7 Cover Page	R 000001
	Table of Contents	R 000002
9/25/2025	Letter J. Rhoades (IEPA) to Republic Services and GFL Environmental re: RCRA Post-Closure Permit renewal for BFI Zion Site 1 Phase A Landfill	R 000003-000100

Date	Description	Record Number
	BOL Permit Section RCRA Tracking Sheet for Zion Site 1 Phase I Landfill Log No. B-23R2	R 000101
	K. Huser Review Notes for Zion Site 1 Phase A Landfill RCRA Permit Log No. B-23R2	R 000102-000109
9/18/2025	Groundwater Unit Review Draft Response to Comments to BFI Zion Site 1 Phase A Landfill Log No. B-23R2 Hazardous Waste	R 000110-000118
	Public Participation Folder Cover	R 000119
	Public Participation Checklist for RCRA Review Administrative Record Zion Site 1 Phase A Landfill Comment Period July 25, 2025 to September 8, 2025	R 000120
8/12/2025	Public Notice of Hazardous Waste Permit Renewal for Zion Site 1 Phase A Landfill with Purchase Order and Invoice for Publication	R 000121-000128
7/22/2025	Letter: IEPA to Zion Benton Public Library enclosing repository documents for public viewing during comment period re Zion Site 1 Phase A Landfill	R 000129-000130
9/25/2025	Public Participation Mailing List	R 000131-000132
7/25/2025	Publication of Notice on RCRA Permit Renewal for Zion Site 1 Phase A Landfill	R 000133
9/5/2025	Letter Republic Services to IEPA attached to comments on draft RCRA Post-Closure Permit for Zion Site 1 Phase A Landfill	R 000134
9/5/2025	Letter: BFI Waste Systems to IEPA re Comments on Draft RCRA Renewal Post-Closure Permit for Zion Site 1 Phase A Landfill	R 000135-000145
	Draft File Folder	R 000146
	Administrative Record Zion Site 1 Phase A Landfill Draft Permit Decision Table of Contents	R 000147

Date	Description	Record Number
7/24/2025	Letter: IEPA to Republic Services and GFL Environmental re Draft RCRA Post Closure Renewal Permit for Zion Site 1 Phase A Landfill	R 000148-000230
	BOL Section RCRA Tracking Sheet Zion Site 1 Phase A Landfill Log No. B-23-R2	R 000231
	BOL Section RCRA Tracking Sheet Zion Site 1 Phase A Landfill Log No. B23R2	R 000232
	BOL Section RCRA Tracking Sheet Zion Site 1 Phase A Landfill Log No. B23R2	R 000233
	BOL Section RCRA Tracking Sheet Zion Site 1 Phase A Landfill Log No. B23R2	R 000234
	RCRA Review Folder Cover	R 000235
	K. Huser Review Notes RCRA Post Closure Permit Application Zion Site 1 Phase A Landfill	R 000236-000256
	EJ Review Folder Cover	R 000257
6/27/2025	IEPA Letter Zion Site 1 Phase A Landfill RCRA Permit Renewal Environmental Justice Review	R 000258-000261
6/27/2025	Email re EJ Review of Zion Site 1 Phase A Landfill Outreach	R 000262
6/18/2025	Email re EJ Review of Zion Site 1 Phase A Landfill Outreach	R 000263
6/17/2025	Email EJ Review of Zion Site 1 Phase A Landfill Outreach	R 000264-000265
	K. Lesko Technical Review Folder	R 000266-000267
	RCRA Post Closure Application Checklist for Zion Site 1 Phase A	R 000268-000274
	K. Lesko Review Notes RCRA Post-Closure Permit Application Review Zion Site 1 Phase A	R 000275-000315

Date	Description	Record Number
	Attachment to K. Lesko's Review Notes, Excerpts from September 30, 2011, RCRA Permit Renewal (Log No. B-23R)	R 000316-000329
4/24/2025	Attachment to K. Lesko's Review Notes, Email: T. Halteman to K. Lesko re Zion Renewal Part 620 Groundwater and Leachate Monitoring Programs - Attachment to Review Notes	R 000330-000334
	Completeness Review Cover Sheet	R 000335
6/2021	K. Lesko Review Notes for Completeness RCRA Post Closure Permit Zion Site 1 Landfill	R 000336-000344

Volume II of VII

Date	Description	Record Number
	Volume 2 of 7 Cover Page	R 000345
	Correspondence File Folder Cover	R 000346
6/20/2025	Republic Services Letter to IEPA enclosing Addendum 2 to RCRA Post-Closure Permit Renewal	R 000347-000499
5/7/2025	IEPA Response Letter and attached Notice of Deficiency to Republic Services	R 000500-000513
	BOL Permit Section RCRA Tracking Sheet Zion Site 1 Phase A Landfill	R 000514
7/2/2021	IEPA Letter to BFI Waste Systems and Advanced Disposal Services re Complete RCRA Part B Post-Closure Permit Renewal for Zion Site 1 Landfill	R 000515
	BOL Permit Section RCRA Tracking Sheet – Application Complete Zion Site 1 Phase B Landfill	R 000516

Date	Description	Record Number
5/11/2021	Public Notice of Submittal RCRA Part B Post-Closure Permit Renewal Application Zion Site 1 Landfill	R 000517
5/6/2021	Republic Letter to IEPA re Permit Application	R 000518-000539
	Groundwater Review File Folder	R 000540
6/26/2025	Memo: S. Dial to K. Huser re Technical Review of RCRA Part B Permit Renewal Response to Notice of Deficiency	R 000541-000548
7/2/2025	Right to Know Evaluation Zion Site 1 Phase A Landfill reviewed by S. Dial	R 000549
4/23/2025	Memo: S. Dial to K. Lesko re Technical Review of RCRA Part B Permit Renewal Application	R 000550
12/18/23, modified 2/28/2024	Memo: S. Dial to K. Lesko re Technical Review RCRA Part B Permit Renewal Application Modified from December 18, 2023	R 000551-000567
10/31/23-11/2/2023	Email chain between S. Dial and A. Guido re Zion Permit Renewal	R 000568-000569
2023	Right to Know Evaluation Zion Site 1 Phase A Landfill	R 000570
6/29/2021	Memo: S. Dial to K. Lesko re Completeness Review of RCRA Part B Permit Renewal Application	R 000571-000574
	Corrective Action Review File Folder	R 000575
6/28/2021	Memo: C. Samson to K. Lesko re Completeness Evaluation of Corrective Action Section RCRA Part B Renewal Permit Application Zion Site Phase A	R 000576-000588

Volume III of VII

Date	Description	Record Number
	Volume 3 of 7 Cover Page	R 000589
	Administrative Record Zion Site 1 Phase A Landfill, Volume 2 of 4 Table of Contents	R 000590
5/6/2021	Republic Services Letter to IEPA enclosing Zion Site 1 Landfill Permit Renewal Application	R 000591-000592
5/6/2021, Revised 6/2025	RCRA Part B Post Closure Permit Renewal Application for Zion Site 1 Phase A Landfill, Volume I Revised	R 000593-000924

Volume IV of VII

Date	Description	Record Number
	Volume 4 of 7 Cover Page	R 000925
	Administrative Record Zion Site 1 Phase A Landfill, Volume 3 of 4 Table of Contents: Appendix E-3 to E-8	R 000926
5/6/2021	Zion Site 1 Landfill Phase A RCRA Permit Renewal Application, Appendix E-3A to E-3G	R 000927-001526

Volume V of VII

Date	Description	Record Number
	Volume 5 of 7 Cover Page	R 001527
	Administrative Record Zion Site 1 Phase A Landfill, Volume 3 of 4 Table of Contents: Appendix E-3 to E-8 (continued)	R 001528

Date	Description	Record Number
5/6/2021	Zion Site 1 Landfill Phase A RCRA Permit Renewal Application, Appendix E-4 to E-8	R 001529-002081

Volume VI of VII

Date	Description	Record Number
	Volume 6 of 7 Cover Page	R 002082
	Administrative Record Zion Site 1 Phase A Landfill, Volume 4 of 4 Table of Contents: Appendix E-9 thru E-25	R 002083
5/6/2021	RCRA Part B Post Closure Permit Renewal Application for Zion Site 1 Phase A Landfill, Volume II Cover Page	R 002084
	RCRA Part B Post Closure Permit Renewal Application for Zion Site 1 Phase A Landfill, Appendix E-9 to E-21	R 002085-002762

Volume VII of VII

Date	Description	Record Number
	Volume 7 of 7 Cover Page	R 002763
	Administrative Record Zion Site 1 Phase A Landfill, Volume 4 of 4 Table of Contents: Appendix E-9 to E-25 (continued)	R 002764
5/6/2021	RCRA Part B Post Closure Permit Renewal Application for Zion Site 1 Phase A Landfill, Appendix E-22 to E-25	R 002765-002903
	Outtakes of June 20, 2025 Revisions	R 002904-002913
	Outtakes of June 5, 2025 Revisions	R 002914-003033

	RCRA Part B Post Closure Permit Renewal Application for Zion Site 1 Phase A Landfill, Appendix E-19 Blower Building	R 003034-003036
	RCRA Part B Post Closure Permit Renewal Application for Zion Site 1 Phase A Landfill, Appendix E-15 Contingency Plan	R 003037-003059
12/23/2016	Memorandum of Agreement between State of Illinois and U.S. Environmental Protection Agency, Region 5	R 003060-003073
12/15/2016	Guidelines for Evaluating the Post Closure Care Period for Hazardous Waste Disposal Facilities Under Subtitle C of RCRA	R 003074-003092
7/20/2022	Association of State and Territorial Solid Waste Management Officials (ASTSWMO) Position Paper Post-Closure Care Beyond 30 Years at RCRA Subtitle C Facilities	R 003093-003094

Respectfully Submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY,

By KWAME RAOUL, Attorney General of
the State of Illinois

BY: */s/ Rebecca Kanz*

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Electronic Filing: Received, Clerk's Office 09/02/2026

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

BFI WASTE SYSTEMS OF NORTH AMERICA, LLC,	)	
Petitioner,	)	
v.	)	PCB No. 26-30
	)	(Permit Appeal - RCRA)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
Respondent.	)	

SUPPLEMENTAL RECORD

R 0003060-003094

MEMORANDUM OF AGREEMENT

BETWEEN

THE STATE OF ILLINOIS

AND

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

I. GENERAL

This Memorandum of Agreement ("Agreement") establishes policies, responsibilities, and procedures pursuant to 40 CFR § 271.8 for the State of Illinois' Hazardous Waste Management Program ("Illinois Program") authorized under Section 3006 of the Resource Conservation and Recovery Act ("RCRA") of 1976 (42 USC § 6901 et seq.) as amended (Public Laws 94-580, 96-482, and 98-616), and the United States Environmental Protection Agency ("USEPA") regional office for Region 5.

This Agreement further sets forth the manner in which the Illinois Environmental Protection Agency ("Illinois EPA") and USEPA will coordinate in Illinois EPA's administration of the authorized Illinois Program and, pending State authorization revision, USEPA's administration of the provisions of the Hazardous and Solid Waste Amendments of 1984 ("HSWA") for which Illinois is not authorized. For purposes of this Agreement, references to RCRA include HSWA.

This Agreement is entered into by the Director of the Illinois Environmental Protection Agency ("Director" or "Illinois EPA") and the Regional Administrator of USEPA Region 5 ("Regional Administrator" or "USEPA").

Nothing in this Agreement shall be construed to restrict in any way USEPA's oversight and enforcement authority under RCRA. Nothing in this Agreement shall be construed to contravene any provision of 40 CFR Part 271.

The parties will review the Agreement jointly at least annually (and other times as appropriate) during preparation of the annual Performance Partnership Agreement ("PPA") for Illinois, in connection with grant funding under Section 3011 of RCRA. If a dispute arises under this Agreement, the parties agree to resolve the dispute in accordance with the PPA.

This Agreement may be modified upon the initiative of either party in order to ensure consistency with revisions to the Illinois Program or for any other purpose mutually agreed upon. Any modifications to this Agreement must be in writing and must be signed by the Director and the Regional Administrator. This Agreement will remain in effect until such time as the Illinois program authorization is withdrawn by or is voluntarily transferred to USEPA according to the criteria and procedures established in 40 CFR §§ 271.22 and 271.23.

This Agreement shall become effective after being signed by the Director and the Regional Administrator. This Agreement supersedes the Memorandum of Agreement that was effective on July 12, 1996 and any subsequent amendments or revisions thereto.

II. POLICY STATEMENT

Each of the parties to this Agreement is responsible for ensuring that its obligations under RCRA are met. Illinois EPA has assumed primary responsibility for implementing the authorized provisions of the RCRA hazardous waste program within its geographic boundaries. However, the details of the actual program will be negotiated on an annual basis in the PPA commensurate with Federal and state resources. Illinois EPA will conduct the Illinois Program in accordance with USEPA program policies and guidance, including the National Performance Partnership System guidance.

Illinois EPA will administer the Illinois Program in a manner that is equivalent to and consistent with the Federal program and does not render the Illinois Program less stringent than the Federal program. Illinois EPA agrees to consider US EPA guidance in administering the Illinois Program.

Cooperation between USEPA and Illinois EPA is necessary to successfully implement the RCRA program. Illinois EPA's actual priorities for implementing the Illinois Program are determined as part of the development of the annual PPA. Consequently, good faith negotiations that result in reasonable expectations between USEPA and Illinois EPA will need to be a part of the development of the annual PPA. These negotiations will determine what RCRA program activities will be accomplished by Illinois EPA given the resources available.

Section 3006(g) of RCRA provides that hazardous waste requirements and prohibitions promulgated pursuant to HSWA are applicable in authorized states at the same time that they are applicable in unauthorized states. While USEPA retains responsibility for the direct implementation of those provisions of HSWA that Illinois EPA is not authorized to implement, it is the intention of USEPA and Illinois EPA to coordinate the implementation of such provisions to the greatest degree possible.

Illinois EPA and USEPA agree to maintain a high level of cooperation and coordination to assure successful and effective administration of the Illinois Program. USEPA and Illinois EPA will coordinate implementation of the Illinois Program in order to ensure full execution of the requirements of RCRA, to promote national consistency in implementation of RCRA, to allow

USEPA to report to the President and Congress on the achievements of the hazardous waste program, and to encourage Illinois EPA and USEPA to agree on desirable technical support and targets for joint efforts to prevent and mitigate environmental problems associated with the improper management of hazardous wastes.

III. STATE PROGRAM REVIEW

USEPA will assess Illinois' administration and enforcement of the Illinois Program on a continuing basis for equivalence and consistency with RCRA, this Agreement, and all applicable Federal requirements and policies, and for adequacy of enforcement. USEPA will conduct this assessment by reviewing information submitted by Illinois EPA in accordance with this Agreement and the PPA, and USEPA's permit review, compliance and enforcement review and annual review of Illinois Program activities.

USEPA may also consider, as part of the regular assessment of the Illinois Program, written comments about the Illinois Program administration and enforcement that are received from regulated persons, the public, and Federal, state and local agencies. Copies of any such comments will be provided to Illinois EPA in a timely manner and Illinois EPA shall have the opportunity to provide a timely response to USEPA prior to completion of this assessment of the Illinois Program.

Illinois EPA agrees to allow USEPA access to all files and other information requested by USEPA and deemed necessary by USEPA for reviewing Illinois EPA's administration and enforcement of the Illinois Program. File reviews may be conducted at any time.

Program review meetings between Illinois EPA and USEPA will be scheduled at reasonable intervals, not less than annually, to review specific operating procedures and schedules, to resolve problems, and to discuss mutual program concerns. These meetings will be scheduled at least fifteen (15) days in advance unless mutually agreed to differently. A tentative agenda will be prepared by USEPA for each meeting.

Illinois EPA and USEPA agree to develop, on an annual basis as a part of the PPA, criteria for prioritization of activities under the Illinois Program. These criteria will be based on guidance issued by USEPA in the Agency Operating Year Guidance, other guidance documents as appropriate, and State-specific concerns, and will serve to identify those activities which should receive the highest priority during the grant period.

IV. INFORMATION SHARING

A. General

This Section covers information sharing for miscellaneous elements of the Illinois Program. Information sharing requirements for major Illinois Program elements are covered in the respective sections of this Agreement addressing those elements (Section V - Permit

Issuance; Section VI - Permit Administration; and Section VII - Compliance Monitoring and Enforcement) and in the PPA.

Detailed tables describing the flow of documents between Illinois EPA and USEPA are included in Attachment 1 to this Agreement.

B. USEPA

USEPA will keep Illinois EPA informed of the content and meaning of Federal statutes, regulations, guidelines, standards, policy decisions, directives, judicial or legislative actions, and any other factors that affect the Illinois Program. USEPA will also provide general technical guidance to Illinois EPA. USEPA will share with Illinois EPA any national reports developed by USEPA relating to hazardous waste management and any USEPA reports created from the data submitted through state reporting requirements.

USEPA agrees to provide to Illinois EPA notification information from USEPA Form 8700-12 obtained by USEPA prior to the effective date of this Agreement, to the extent such information has not already been provided. USEPA will provide a copy of the original notification forms and/or a computer print-out containing all the notification information. USEPA will provide such information to Illinois EPA within thirty days of the effective date of this Agreement.

USEPA will also forward to Illinois EPA, on a monthly basis, notification information submitted by persons in Illinois who file such forms with USEPA after the effective date of this Agreement.

USEPA will make available to Illinois EPA other information requested in writing that Illinois EPA needs to implement the approved Illinois Program. Information provided to Illinois EPA will be subject to the terms of 40 CFR Part 2, which requires authorization of Illinois EPA to receive confidential business information in accordance with the procedures therein.

Information to be sent by USEPA to Illinois EPA shall be sent to the following contact:

Illinois EPA
Bureau of Land
Attn: Todd Marvel, RCRA Coordinator/USEPA Liaison
1021 North Grand Ave. East
Springfield, Illinois 62702

C. State

Illinois EPA agrees to provide any pertinent information requested by USEPA within a mutually agreed upon time frame, as necessary for USEPA to carry out its oversight responsibilities.

Illinois EPA agrees to inform USEPA, with as much advanced notice as possible, of proposed or adopted modification of Illinois EPA's legal authorities, memoranda of agreement or understanding with other agencies, or modifications to resource levels, that would affect Illinois EPA's ability to implement the authorized Illinois Program. Such modifications also include changes that would affect compliance monitoring and enforcement, such as privileges and immunities laws. Illinois EPA recognizes that program revisions must be made in accordance with the provisions of 40 CFR § 271.21 and that until approved by USEPA, revisions are not authorized as part of the Illinois Program.

Information to be sent by Illinois EPA to USEPA shall be sent to the following contacts:

Permit-related Information

Section Chief
RCRA/TSCA Programs Section
Land and Chemicals Division
U.S. EPA Region 5
77 West Jackson Blvd.
Chicago, Illinois 60604

Enforcement-related Information

Section Chief
RCRA Compliance Section 1
Land and Chemicals Division
U.S. EPA Region 5
77 West Jackson Blvd.
Chicago, Illinois 60604

Upon request, Illinois EPA agrees to provide USEPA with a copy of any decisions regarding requests made by hazardous waste handlers to change their classifications (e.g., requests to be deleted as generators but to retain facility status).

The Illinois EPA agrees to grant no variances, waivers or exemptions that would render the Illinois program less stringent than the Federal program. Any less stringent variance, waiver or exemption issued by Illinois EPA or any other body, including the Illinois Pollution Control Board, or dictated by otherwise applicable law would not be part of the authorized program and would not be a shield from enforcement by U.S. EPA.

Illinois agrees to provide USEPA with a copy of each request for a RCRA variance or adjusted standard in a timely manner. Written notification and a copy of the decisions to grant or deny a variance or adjusted standard will be provided to USEPA within five working days of Illinois EPA's receipt of the decision.

D. Site Visits

Whenever USEPA determines that it needs to obtain information concerning the Illinois Program, USEPA will first seek to gain this information from Illinois EPA and will provide, in writing, the reasons for its request of the information. Illinois EPA agrees to supply USEPA with this information within a mutually agreeable time frame. If Illinois EPA is unable to provide the information requested by USEPA, or if it is necessary to supplement the Illinois EPA information, USEPA may conduct a special inventory or perform information collection site visits after notifying Illinois EPA. USEPA will share with Illinois EPA any reports developed by USEPA as a result of such information collection.

E. Emergency Situations

Upon receipt of any information that the handling, storage, treatment, transportation, or disposal of hazardous waste is endangering human health or the environment, the party in receipt of such information shall immediately notify by telephone the other party to this Agreement of the existence of such situation. USEPA shall call 217/782-3637 and notify Illinois EPA's Emergency Response Unit, Illinois Environmental Protection Agency, 1021 N. Grand Ave. East, P.O. Box 19276, Springfield, Illinois 62794-9276. Illinois EPA shall call the 24-hour emergency number 312/353-2318 and notify Donald J. Bruce, Chief, Response Section II, Emergency and Enforcement Branch, SE-5J, USEPA (Region 5), 77 West Jackson Boulevard, Chicago, Illinois 60604-3590.

F. Confidentiality

Any information obtained or used in the administration of the Illinois Program shall be available to USEPA without restriction. If the information has been submitted to Illinois EPA under a claim of confidentiality, Illinois EPA must submit that claim to USEPA when providing that information to USEPA, in accordance with Section 7 and 7.1 of the Environmental Protection Act, 415 ILCS 5/7 and 5/7.1 as amended. Any information obtained from Illinois EPA and subject to a claim of confidentiality will be treated in accordance with the regulations in 40 CFR Part 2.

USEPA agrees to furnish to Illinois EPA information in USEPA files that is not submitted under a claim of confidentiality and which Illinois EPA needs to implement the Illinois Program. Subject to the conditions in 40 CFR Part 2, USEPA will furnish Illinois EPA information submitted to USEPA under a claim of confidentiality that Illinois EPA needs to implement the Illinois Program. All information USEPA agrees to transfer to Illinois EPA will be transferred in accordance with the requirements of 40 CFR Part 2. USEPA will notify affected facilities when such information is sent to Illinois EPA.

G. RCRA Data Management

Illinois EPA is responsible for receiving, processing, and verifying information on notification Form 8700-12 and for assigning RCRA identification numbers. If Illinois EPA receives a notification form from USEPA or an applicant, Illinois EPA will assign a RCRA

Identification number to the applicant and inform the applicant of its number. Illinois EPA will assign all RCRA Identification numbers and enter all notification data into the national RCRA data management system (currently, RCRAInfo).

Illinois EPA agrees to use, maintain, and enter data into the national RCRA data management system.

Illinois EPA is responsible for the correctness of the data Illinois EPA enters. Illinois EPA will timely correct any data errors in the national RCRA data management systems that Illinois EPA has created.

USEPA is responsible for the correctness of the data USEPA enters and will timely correct any data errors that USEPA has created.

USEPA will inform Illinois EPA promptly when changes are made to the national RCRA data management system that might affect Illinois EPA's implementation of that system.

Illinois EPA will input Biennial Reporting data into the national RCRA data management system within the time frames established by the USEPA Office of Resource Conservation and Recovery.

Neither Illinois EPA nor USEPA will unilaterally change their RCRA data management system in any way without advance consultation with, and agreement of, the other party.

Both USEPA and Illinois EPA, as implementers of the national RCRA data management systems, can choose and change their hardware platforms to optimize system efficiency, but will not do so in such a way as to affect the merged data base, access to the merged data base reports, or the potential for updating their implementer databases with the other party's data.

V. PERMIT ISSUANCE

Illinois EPA and USEPA have agreed to the permitting process described in this Agreement. Under this process, Illinois EPA and USEPA have established policies and procedures by which each will pursue their respective permitting responsibilities under RCRA. This permitting process is established in accordance with Section 3006(c)(3) of RCRA. The duties and responsibilities of Illinois EPA and USEPA for permitting, including any work sharing agreements, are also specified in the PPA.

USEPA and Illinois EPA may enter into a separate written agreement for the purpose of implementing a work-sharing program for permit issuance.

USEPA agrees to transfer to Illinois EPA any pending Part A and Part B hazardous waste management facility permit applications originally submitted directly to USEPA prior to the effective date of this Agreement pursuant to 40 CFR § 270.10 by facilities located in Illinois and

which have not already been transferred to Illinois EPA, together with all pertinent file information, for those portions of the program for which Illinois EPA has received authorization. Pertinent file information includes applications (including accompanying narratives, plans, maps, etc.), draft permits, public notices, administrative notices, fact sheets and correspondence. Such materials will be provided within thirty days after the effective date of this Agreement and according to any arrangements Illinois EPA and USEPA may make regarding the priority of transfer.

USEPA will also provide to Illinois EPA, within ten days of receipt by USEPA, Part A and Part B permit applications submitted directly to USEPA by persons in Illinois after the effective date of this Agreement.

A. USEPA Permitting

Illinois EPA and USEPA have agreed to a process for the processing and enforcement of permits for those provisions of RCRA for which Illinois EPA does not have authorization.

Pursuant to Section 3006(g)(1) of RCRA, whenever new HSWA standards are established under RCRA or USEPA revises federal HSWA regulations to add permitting standards for processes not currently covered by federal regulations, USEPA shall process and enforce HSWA permits applying those new standards to facilities in Illinois affected by those standards until Illinois EPA receives interim or final program authorization for those standards. If USEPA promulgates new standards requiring permit modification, USEPA retains the right, pursuant to 40 CFR § 270.42(b)(6)(vii), to extend the time period for final approval or denial of a modification request until such time that the State receives authorization for the new standards and the Illinois EPA completes review of the modification request in accordance with those standards. As Illinois EPA receives program authorization for additional provisions of RCRA, USEPA will suspend issuance of federal permits imposing those standards in Illinois.

B. USEPA Overview of State Permits

USEPA may comment in writing on any draft permit or on any proposed permit modification, whether or not USEPA commented on the permit application, within forty-five days of its receipt. Illinois EPA will ensure that USEPA will receive the draft or proposed permit materials that are out for public comment at least 45 days before issuance or denial of a permit. Where USEPA indicates in a comment that
issuance of the permit would be inconsistent with the approved Illinois Program, USEPA shall include in the comment:

1. a statement of the reasons for the comment (including the section or sections of Illinois regulations that support the comment and why they support that comment); and

2. the recommended actions that should be taken by Illinois EPA in order to address the comments (including the conditions that the permit would include if it were issued by USEPA).

USEPA shall notify Illinois EPA when satisfied that Illinois EPA has met or refuted its concerns and shall also provide the permit applicant with a copy of such notification.

Under Section 3008(a)(3) of RCRA, USEPA may terminate a State-issued permit in accordance with the procedures of 40 CFR Part 124, Subpart E, or bring an enforcement action in accordance with the procedures of 40 CFR Part 22 in the case of a violation of a State program requirement. In exercising these authorities, USEPA will observe the conditions established in 40 CFR § 271.19(e).

C. Illinois EPA Permitting

Illinois EPA is responsible for drafting, circulating for public review and comment, issuing, modifying, reissuing, and terminating all RCRA permits for all hazardous waste treatment, storage, and disposal facilities in Illinois which are subject to the authorized Illinois Program, and shall do so in a manner consistent with the Environmental Protection Act, 415 ILCS 5/1 et seq, as amended, with regulations adopted at 35 Illinois Administrative Code ("IAC") Parts 700, 702, 703, 705, 724, with this Agreement, and with the original Illinois EPA Program Description and all amendments thereto. Illinois EPA shall include as permit conditions all applicable provisions of 35 IAC Parts 702, 703, and 724. Illinois EPA agrees that any compliance schedules contained in permits it issues will require compliance with applicable standards as soon as possible.

If Illinois EPA has not yet received interim or final authorization to implement and enforce new standards established under HSWA or new standards adopted by USEPA, then USEPA will issue and enforce RCRA permits in Illinois for those new standards until Illinois EPA receives authorization of equivalent and consistent State standards.

Upon request by the holder of a USEPA-issued RCRA permit or upon expiration of that permit, Illinois EPA will issue or deny a State RCRA permit for newly-authorized provisions addressed in that USEPA-issued permit.

Illinois EPA agrees to consider all comments USEPA makes on permitting applications, draft permits, and permit modifications. Illinois EPA will satisfy or refute USEPA's concerns on a particular permit application, proposed permit modification, or draft permit in writing before issuing the permit or making the modification. To meet repository requirements, Illinois EPA will transmit to USEPA as they are received, copies of all Part A and Part B applications.

D. Other Federal Acts

Illinois EPA will ensure that it follows procedures required in applicable Federal laws identified in 40 CFR § 270.3.

VI. PERMIT ADMINISTRATION

USEPA will administer the RCRA permits it has issued to facilities in Illinois until they expire or are terminated. USEPA will be responsible for enforcing the terms and conditions of federal permits while they remain in force.

Illinois EPA agrees to review all hazardous waste permits which were issued under Illinois law prior to the effective date of this Agreement in accordance with 40 CFR § 271.13(d) and to modify, or revoke and reissue, such permits as necessary to require compliance with the authorized Illinois Program. Illinois EPA shall notify USEPA of any permits not equivalent to Federal permit requirements, including any permits that have been issued but are pending administrative or judicial appeal. Except for these non-equivalent permits, once USEPA has determined that Illinois EPA has fulfilled the requirements of 40 CFR § 271.13(d), USEPA will terminate applicable Federal permits, or Federal portion of permits, pursuant to the procedures in 40 CFR § 124.5(d).

Where the State permit is not equivalent to the federal permit requirements, the State may modify, or revoke and reissue the State permit as necessary to require compliance with its authorized program in a manner consistent with RCRA as amended by HSWA. If the State does not modify, or revoke and reissue, a permit equivalent to the federal permit, USEPA will administer and enforce its permit until it expires or is terminated.

Upon the effective date of an equivalent State permit, USEPA will terminate the federal permit pursuant to 40 CFR §§271.8(6) and 124.5(d). USEPA will notify the permittee by certified mail of its intent to terminate the federal permit, and give the permittee 30 days in which to agree or object to termination of the permit.

USEPA will notify Illinois EPA that the permits are terminated, will no longer administer those permits or portions of permits for which Illinois EPA is authorized, and will rely on Illinois EPA to enforce those terms and conditions of the State RCRA permits in accordance with this Agreement.

The State agrees to resolve all State permit appeals in a manner consistent with its authorized RCRA program.

VII. COMPLIANCE MONITORING AND ENFORCEMENT

A. USEPA

Nothing in this Agreement shall restrict USEPA's right to inspect any hazardous waste generator, transporter, or facility, or bring enforcement action against any person believed to be in violation of the Illinois Program or Federal hazardous waste program or believed to have a release of hazardous waste or hazardous constituents. Before conducting an inspection of a generator, transporter, or facility, USEPA will normally give Illinois EPA at least seven, and whenever possible, 15 days notice of the intent to inspect in accordance with 40 CFR

§ 271.8(b)(3)(i). USEPA will offer Illinois EPA an opportunity to accompany the USEPA inspector on such inspections. In case of an imminent hazard to human health and the environment, USEPA may shorten or waive the notice period. In the event that USEPA waives the notice period, USEPA shall, on the day of the inspection, inform Illinois EPA that an inspection has occurred and its findings, if any.

Prior to the beginning of each fiscal year, USEPA will notify Illinois EPA of the frequency of USEPA joint inspections to be conducted during the fiscal year. USEPA will negotiate, on an annual basis with Illinois EPA, the percentage of Illinois EPA's compliance inspections on which USEPA will accompany Illinois EPA.

USEPA may take enforcement action against any person determined to be in violation of RCRA in accordance with Section 3008(a)(2). However, USEPA will normally take enforcement action only when requested to do so by Illinois EPA, or upon determining that Illinois EPA has not taken timely and appropriate enforcement action. USEPA will notify Illinois EPA prior to issuing an order or commencing a civil action under Section 3008(a)(2) of RCRA. In most instances, this notice will be in writing. USEPA also retains its rights to issue orders and bring actions under Sections 3008(h), 3013, and 7003 of RCRA and any other applicable federal statute.

After providing notice to Illinois EPA, USEPA may take action under Section 3008 of RCRA against a holder of a permit issued by Illinois EPA on the ground that the permittee is not complying with a condition of that permit. In addition, USEPA may take action under Section 3008 of RCRA against a holder of a permit issued by Illinois EPA on the ground that the permittee is not complying with a condition that USEPA, in commenting on the permit application or draft permit, stated was necessary to implement approved Illinois program requirements, whether or not that condition was included in the final permit.

USEPA agrees to provide to Illinois EPA copies of any final inspection reports resulting from compliance inspections within a reasonable time from completion of the inspections.

B. Illinois EPA

Illinois EPA agrees to carry out a program for monitoring the compliance by generators, transporters, and facilities with applicable Illinois Program requirements (see 40 CFR § 271.15). As part of this program, Illinois EPA will conduct compliance inspections to assess compliance with generator and transporter standards (including manifest requirements), facility standards, permit requirements, compliance schedules, and all other Illinois Program requirements. Compliance monitoring activities and priorities will be specified in Illinois EPA's Enforcement Management System ("EMS") and the annual PPA and shall be consistent with all applicable federal requirements and with Illinois EPA's Program Description.

USEPA and Illinois EPA may enter into a separate written agreement for the purpose of implementing a work-sharing program for compliance activities.

Illinois EPA agrees to provide USEPA, upon request, compliance, monitoring inspection and enforcement data, including copies of inspection reports and subsequent enforcement actions, for all commercial and federal facilities and any other facilities requested by USEPA in accordance with the PPA or this Agreement.

In accordance with its EMS, Illinois EPA agrees to take timely and appropriate enforcement action against persons in violation of generator and transporter standards (including manifest requirements), facility standards, permit requirements, compliance schedules, and all other Illinois Program requirements, including violations detected by Illinois or Federal compliance inspections. Appropriate Illinois enforcement action or response will be set forth by Illinois EPA's EMS and will not include more than two warning letters.

Illinois EPA will maintain procedures for receiving and ensuring proper consideration of information about violations submitted by the public.

Any civil penalty sought, or agreed upon by Illinois EPA shall be appropriate to the violation, as defined in 40 CFR § 271.16(c).

Illinois EPA agrees to retain all records pertaining to compliance monitoring and enforcement for at least three years unless there is an enforcement action pending. In that case, all records pertaining to that action will be retained until such action is resolved.

VIII. AVAILABILITY OF INFORMATION

A. General

Illinois EPA agrees to provide for the public availability of information it obtains regarding facilities and sites for the treatment, storage, and disposal of hazardous waste, and to make such information available to the public in substantially the same manner, and to the same degree, as USEPA would under Federal law.

Illinois EPA agrees to maintain the authorized Illinois Program to allow public availability of information in a manner and to a degree that is at least equivalent to that available under Federal law.

A reduction or waiver of fees will be considered in connection with each request from a representative of the press or other communication medium, or from a public interest group. Illinois EPA agrees to reduce or waive the fee if it determines that a reduction or waiver of the fee is in the public interest because furnishing the information can be considered as primarily benefitting the general public.

B. Requests for information.

If it denies a written request for information, Illinois EPA agrees to provide the requestor the basis for the denial and to notify the requestor of any applicable Illinois judicial or

administrative procedures or statues of limitations.

Illinois EPA agrees to make the fullest possible disclosure of records to the public, except where the record would qualify for any of the exemptions under the Federal Freedom of Information Act, 5 U.S.C. § 552(a)(2), if such exemption is recognized by Illinois.

C. Confidentiality of Business Information

If a claim of confidentiality is asserted and cannot be resolved in the time period provided for Illinois EPA to respond to a request, Illinois EPA agrees to notify the requestor of the confidentiality claim within the maximum 30-day time limit provided for an Illinois EPA response. In addition, the requestor will be told that the request was initially denied in order to resolve the confidentiality claim.

D. Oversight

Illinois EPA agrees to keep a log of denials of requests for information (or a file containing copies of denial letters sent to requestors) which will be made available to USEPA during the review of the Illinois Program.

Illinois EPA agrees to keep USEPA fully informed of any proposed modifications to its basic statutory or regulatory authority, its forms, procedures, or priorities, as applied to Section 3006(f) of RCRA.

IX. CORRECTIVE ACTION

A. Illinois EPA Role

Illinois EPA will conduct the RCRA Corrective Action Program under Sections 3004(u) and (v) of RCRA in a manner that promotes rapid achievement of cleanups while protecting human health and the environment. Specifically, Illinois EPA will, to the extent practicable:

1. Embrace flexible, practical, results-based approaches that focus on control of human exposure and contaminated groundwater migration in the short term, with final cleanup being the long term goal;

2. Provide ready public access to information and meaningful opportunities for public involvement in the cleanup process;

3. Foster a culture of innovation, creativity, communication and technical expertise, focused on accelerating cleanups and meeting program goals; and

4. Carefully consider key Federal program guidance (and any updates) in conducting the RCRA Corrective Action Program.

B. USEPA Role

USEPA will assist Illinois EPA with all aspects of the cleanup program and support its efforts to conduct faster, focused and more flexible RCRA cleanups.

STATE OF ILLINOIS
ENVIRONMENTAL
PROTECTION AGENCY

BY: _____
Alec Messina
Acting Director

DATE: 10/11/16

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
REGION 5

BY: _____
Robert A. Kaplan
Acting Regional Administrator

DATE: 12/23/2016

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 15 2016

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

NOW THE
OFFICE OF LAND AND
EMERGENCY MANAGEMENT

MEMORANDUM

SUBJECT: Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA

FROM: Barnes Johnson, Director
Office of Resource Conservation and Recovery

TO: RCRA Division Directors, Regions 1-10
RCRA Enforcement Managers, Regions 1-10
Regional Counsels, Regions 1-10

Purpose

The purpose of this memorandum is to provide guidance to assist regulators in evaluating conditions at hazardous waste disposal facilities subject to Subtitle C of the Resource Conservation and Recovery Act (RCRA) that are approaching the end of the original 30-year post-closure care period, and in determining whether the post-closure care period should be adjusted or allowed to end. Any such determinations must ensure ongoing protection of human health and the environment. This guidance also provides information to assist facility owners and operators in preparing documentation to inform the regulators' evaluations.

This guidance has the additional benefit of helping regulated entities understand what may be necessary to ensure protection of human health and the environment at units subject to post-closure care requirements. This enables waste generators and handlers to have a better understanding of the costs associated with land disposal so they can better evaluate long-term waste management strategies, including waste minimization.

Introduction and Need for Guidance

The RCRA Subtitle C hazardous waste management regulations establish a post-closure care[1] period for certain hazardous waste treatment, storage and disposal facilities, and specify post-closure care activities. The post-closure care requirements apply to land disposal units (landfills, land treatment units,

[1] Post-closure care can be generally described as the period of time after closure during which owners and operators conduct specified monitoring and maintenance activities to preserve the integrity of the containment system and to continue to prevent or control releases of contaminants.

and surface impoundments) that leave hazardous waste in place after closure. Post-closure care also applies to some non-land-based units (*e.g.,* certain tanks or containment buildings) that cannot fully decontaminate or "clean close" [1] all equipment, structures, and soils. Post-closure care activities consist of two primary responsibilities: monitoring and reporting, and maintaining the integrity of the waste containment systems (see 40 CFR 264/265.117). Post-closure care for each hazardous waste management unit must begin after completion of closure of the unit and normally continue for 30 years after that date; the regulations also provide discretion to the permitting authority to adjust the length of the post-closure care period.

Many facilities around the country are approaching the end of the initial post-closure care period established in their RCRA permits or post-closure plans. Accordingly, questions have arisen about how to evaluate conditions at these facilities to determine whether the post-closure care period needs to be adjusted – that is, extended, or whether a 30-year post-closure care period is protective for a specific unit. In response, the Office of Resource Conservation and Recovery has developed this guidance recommending criteria to consider when evaluating facilities nearing the end of the post-closure care period [2] and thus ensure that human health and the environment will continue to be protected by the resulting determination. It also sets forth a recommended process for evaluating the post-closure care period in a timely fashion. Finally, this guidance discusses additional considerations that may be important for decision-makers when evaluating the adequacy of the post-closure care period.

This guidance supplements existing guidance on the post-closure care period, including the Technical Evaluation Criteria and Site-Specific Factors to Consider in Determining the Length of the Post-Closure Care Period, presented in the Appendix B of the *RCRA Guidance Manual for Subpart G Closure and Post-Closure Care Standards and Subpart H Cost Estimating Requirements* of January 1987.[3]

Regulatory Overview of the Post-Closure Care Period

[1] The RCRA Subtitle C regulations generally provide for two types of closure: closure by removal or decontamination (referred to as "clean closure") and closure with waste in place. The premise of clean closure is that all hazardous wastes have been removed from a given RCRA unit and any releases at or from the unit have been remediated. More information on clean closure is available in *Memorandum: Risk-Based Clean Closure* from Elizabeth Cotsworth, Acting Director Office of Solid Waste, March 16, 1998.

[2] This document is solely intended to provide guidance to federal and state regulators on implementing the RCRA Subtitle C regulations and to provide policy advice and recommendations. As such, this document does not impose any legally binding requirements, and the use of such phrases as "guidance," "recommend," "may," "should," and "can," are not intended to impose or connote any legal obligations. Accordingly, this document does not change or substitute for any law, regulation, or any other legally binding requirement and is not legally enforceable. The policies described in this document may not apply to a particular situation based upon the circumstances, and EPA may deviate from or revise any of the policies described in this document without prior notice to the public. While EPA has made every effort to ensure the accuracy of the discussion in this document, the obligations of the regulated community are determined by statutes, regulations or other legally binding requirements. In the event of a conflict between the discussion in this document and any statute or regulation, this document would not be controlling.

[3] OSWER Policy Directive #9476.00-5, EPA/530-SW-87-10.

EPA regulations[4] require that the post-closure care period for each hazardous waste management unit subject to the requirements of 40 CFR 264/265.117 through 264/265.120 must begin after completion of closure of the unit and continue for 30 years after that date. Still, the regulations' identification of a default 30-year post-closure care period does **not** reflect a determination by EPA that 30 years of post-closure care is necessarily sufficient to eliminate potential threats to human health and the environment in all cases. Nor is the full 30-year period always necessary. In fact, the regulations provide for a permit authority to conduct a case-by-case review of the post-closure care period and establish arrangements to adjust the length of the post-closure care period on a facility or unit-specific basis, where the record supports a determination that the revised post-closure care period will remain protective of human health and the environment.[5]

The regulations provide that the decision to alter the length of the post-closure care period can be made at any time preceding *partial closure*[6] of a hazardous waste management unit subject to post-closure care; at any time preceding *final closure*[7] of a facility; or at any time during the post-closure care period for a particular unit. For permitted facilities, such a decision must be made through the permit renewal or modification procedures in parts 124 and 270 of the regulations. For interim status facilities, adjustment to the post-closure care period must be made in accordance with § 265.118(g).

According to § 264.117 the post-closure care period may be modified under certain circumstances provided the modifications are protective of human health and the environment:

- The post-closure care period may be shortened where "the reduced period is sufficient to protect human health and the environment (*e.g.*, leachate or ground-water monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure)."

- The post-closure care period may be extended where "the extended period is necessary to protect human health and the environment (*e.g.*, leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health or the environment)."

The provisions for interim status facilities are similar [§§ 265.117 and 265.118(g)].

For more details on particularly relevant portions of the federal RCRA hazardous waste regulations, see Appendix A.

Criteria to Consider for Evaluating the Post-Closure Care Period

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[4] 40 CFR 264.117 (for permitted facilities) and 265.117 (for interim status facilities)

[5] EPA explained this approach early in the RCRA program. *See* 45 Fed. Reg. 33197 (May 19, 1980); *see also* 47 Fed. Reg. 32287-88 (July 26, 1982); 46 Fed. Reg. 2819 (Jan. 12, 1981).

[6] *Partial closure* is defined in 40 CFR 260.10 as "the closure of a hazardous waste management unit in accordance with the applicable closure requirements of parts 264 and 265 of this chapter at a facility that contains other active hazardous waste management units. For example, partial closure may include the closure of a tank (including its associated piping and underlying containment systems), landfill cell, surface impoundment, waste pile or other hazardous waste management unit, while other units of the same facility continue to operate."

[7] *Final closure* is defined in 40 CFR 260.10 as "the closure of all hazardous waste management units at the facility in accordance with all applicable closure requirements so that hazardous waste management activities under parts 264 and 265 of this chapter are no longer conducted at the facility unless subject to the provisions in § 262.34."

An overarching consideration in determining whether to extend the post-closure care period, or allow it to end, is the inherent uncertainty associated with the long-term presence of hazardous waste in the unit. Because many hazardous wastes degrade slowly or do not degrade under containment in these units, the continued presence of hazardous waste in the unit (*i.e.*, any case other than clean closure) indicates the potential for unacceptable impacts on human health and the environment in the future if post-closure care is not maintained. For instance, there are often uncertainties in whether controls will continue to function as planned and whether future activities will lead to unplanned exposures to human and environmental receptors. Even if there is no current evidence of actual releases from the facility, significant factors can change over time. For example, groundwater flow can change direction due to the sequencing of dry and wet years, pumping at municipal water supply or other well fields, or shifting gradients resulting from seasonal variations or tidal influences. Landfill components, such as caps and liners (which have a finite design life), can degrade over time, especially if maintenance is discontinued. Exposure pathways that have been eliminated by means of an engineered control may be reopened (*e.g.*, if animals burrow through the cap). Thus, continued monitoring and maintenance activities may be appropriate unless or until it can be demonstrated that site-specific conditions adequately minimize the risk that contaminants will migrate from the unit (*e.g.*, site geology/hydrogeology) or that, in the event the engineering controls fail, a release would not pose an unacceptable risk to human health and the environment. This section provides recommended criteria that can be used to evaluate site-specific conditions and associated risks or remaining uncertainties in determining whether to adjust the post-closure care period.

These criteria can also be periodically used to evaluate whether activities in the post-closure plan should be amended. For instance, if the regulator determines it is necessary to extend the post-closure care period, these criteria can be used to determine if the frequency of one or more post-closure care monitoring requirements could be reduced during that extended timeframe. Each criterion is not necessarily applicable for every unit in post-closure care, for example, the "Gas Collection System Integrity" criterion would not apply to units without a gas collection system. The questions provided under each criterion are intended to help identify potential threats to human health and the environment. However, they do not all need to be answered in order to make a decision concerning the appropriate post-closure care period and the monitoring/maintenance activities.

Waste Treatment: Knowing whether the hazardous waste was disposed prior to the effective date of the Land Disposal Restrictions (LDR) program is an important piece of information when evaluating site-specific conditions. Hazardous waste treatment that destroys harmful contaminants or reduces toxicity of the waste before placement in a land disposal unit provides a more lasting form of groundwater protection than waste containment alone. Similarly, through a process called stabilization or immobilization, metal contaminants – that cannot be treated – can be chemically and physically solidified or bound into the wastes that contain them (*e.g.,* through chemical fixation). Thus, reducing the mobility or leachability of hazardous constituents in a waste is another means of achieving LDR's groundwater protection goal. Relevant questions for this criterion include:

- Were all the wastes pre-treated in accordance with the treatment standards of the LDR program or does the unit contain wastes that were placed on the land prior to the effective dates of the LDR rules?

EPA recommends reviewing the waste analysis data for treated wastes in the land disposal unit.

Nature of Hazardous Wastes Remaining in the Unit: The current properties of the hazardous waste (*e.g.,* degradation, solubility, liquid-to-solid ratio) provide an important indication of the waste's ability to migrate or disperse in the environment.

- What is the degree of risk (*e.g.*, exposure pathways, probability of exposure) presently associated with the wastes in the unit?
  - Are the wastes highly toxic?
  - Do they degrade into substances that are more or less toxic, or non-toxic?
  - Are there indications that the waste might become incompatible with the liner?
- What is the potential for adverse impacts from releases based on the current understanding of contaminant fate and transport considerations (*e.g.,* presence of persistent, bioaccumulative contaminants, as compared to biodegradable contaminants; constituent speciation(s); and leaching profiles)?
- Is the waste in a stable state? Are there indications that the waste may become unstable?

EPA recommends that current data from regulatory standards be used for comparison to facility-specific performance goals articulated in the post-closure plan, and that, as necessary, the plan be updated to account for any new information on toxicity and carcinogenicity. EPA also recommends reviewing and possibly updating the list of constituents to analyze, since scientific understanding of constituents of concern may change over time. In addition, the data gathered should include an analysis of potential degradation products as well as of the types of wastes known to have been placed in the unit(s).

Unit Type/Design: The main objective of the disposal units is the containment of the hazardous waste. Thus, emphasis should be placed on the unit's ability to contain hazardous wastes over the long term.

- Is the unit, for example, a landfill, a surface impoundment, or a closed tank with residual contamination?
- Does the unit meet the minimum technology requirements (*e.g.,* double liners, leachate collection system)? Or was the unit already in existence at the time these requirements were promulgated and closed before retrofitting?
- To what extent does the overall design and construction of the unit minimize the need for long-term maintenance, resist the generation of leachate and emissions, and contain any remaining waste in perpetuity?

It is recommended that the permitting authority consider any unit-specific design, in concert with applicable closure and post-closure care requirements, when evaluating whether adjustment of the post-closure care period is warranted to protect against any potential impact on human health and the environment. There can be circumstances in which continuing to maintain unit-specific controls may be necessary to protect human health and the environment, particularly if the unit pre-dated the minimum technology requirements; this could support a decision to extend the post-closure care period. Conversely, there might be circumstances where the overall design and construction of the unit minimize the need for long-term maintenance and could support a decision to shorten or end the post-closure care period.

Leachate: The leachate collection and removal system controls leachate build-up on the liner, working in conjunction with the liner's barrier system to minimize the potential for groundwater contamination.

Monitoring for leachate generation serves as the most effective way of examining the integrity of the waste management unit (*e.g.,* it can suggest a cover or liner failure when leachate is detected late in the post-closure care period). [8]

- Will the integrity and functionality of the leachate collection system, leachate generation rate, and leachate quality remain adequate to prevent harm to human health or the environment in the absence of post-closure care?
- Can the facility owner or operator show through monitoring/modeling and/or statistical analysis that the leachate would not pose a threat to human health and the environment because it would not exceed applicable standards at compliance or exposure points?
- Is it likely those standards will be exceeded in the future, for example, through formation and release of degradation products? Do the data demonstrate that there are no increasing trends in the concentration of leachate constituents?
- Can the facility owner or operator demonstrate that maintenance and operation of the leachate collection system can be ceased without posing a threat to human health and the environment?

EPA recommends that potential impacts from changes in leachate characteristics and generation rate that could result from discontinued maintenance be considered.

Groundwater: Groundwater monitoring serves as the primary means of detecting leachate releases and groundwater contamination. It is important that groundwater analytical results, adequacy and reliability of the groundwater-monitoring network, and groundwater-monitoring well integrity be evaluated before the post-closure care period nears its end.

Groundwater should not exceed risk-based concentrations for a reasonable exposure scenario (or point of exposure) using currently acceptable risk assessment methods and up-to-date risk-based levels and scenarios. If the evaluation determines that unacceptable risk exists, these risks should be addressed. The risk evaluation should consider reasonable current or future groundwater use in the general area of the site (*e.g.*, if a drinking water source is located nearby).

Review of the groundwater monitoring system should have been done as part of operation and maintenance inspections over time. Evaluation of the groundwater monitoring network should refer to the most recent operation and maintenance inspection. The well network evaluation should look at groundwater flow direction, well construction, and placement relative to groundwater flow direction.

[8] "If leachate is generated late in the post-closure care period, this could suggest a cover or liner failure warranting an extension of the post-closure care period." See page B-13 of the RCRA Guidance Manual for Subpart G Closure & Post-Closure Care Standards and Subpart H Cost Estimating Requirements, EPA/530-SW-87-010 (January, 1987).

- Is groundwater quality in compliance with current standards?
- Have there been changes or are changes anticipated in land use/groundwater use that could change the applicable standards (*e.g.,* introduction of agricultural irrigation to an area) or the directional flow (*e.g.,* sequencing of dry and wet years, pumping at municipal water supply or other well fields, or shifting gradients resulting from seasonal variations or tidal influences)?
- Do the data indicate any trend in the concentration of analytes in groundwater?
- Has an expanded list of analytes (*e.g.,* selected from Appendix VIII of 40 CFR part 261) been considered for analysis within a reasonable time frame?
- Have the monitoring wells been maintained to provide valid data, for example, no well screen occlusion?

Siting and Site Geology/Hydrogeology: Relevant facility location characteristics (which might have changed since the post-closure plan was approved) may include proximity to vulnerable areas such as residential areas and surface and drinking water sources. The current and reasonably anticipated future land use of the facility and surrounding properties may also be relevant. Location in potentially vulnerable areas increases the likelihood and potential severity of releases. For example, if units are located in areas prone to flooding or with a high water table, it may be appropriate for reviewers to consider the potential for continuing risks to surface water in evaluating whether to modify the post-closure care period. Conversely, units located in areas not prone to flooding, or at great distance from the water table, might have less need for long-term maintenance. Additional hydrologic and geologic conditions such as wetlands and earthquake zones, unstable soils, and areas at risk for subsurface movement could have changed since a unit first entered post-closure care and might also need to be taken into account. Proximity to residential areas can also present unique considerations. It is also appropriate to consider whether facility conditions minimize the potential for adverse impacts on local populations if there is a release from the unit. [9]

[9] If a unit managing vapor-forming chemicals has releases to the environment, it creates the potential for vapor intrusion issues to neighboring communities due to migrating plumes of contaminated groundwater or migrating soil gases, even when the community is some distance away. Consider evaluating risks from subsurface intrusion of toxic constituents (*e.g.,* vinyl chloride from aerobic degradation of perchloroethylene/trichloroethylene), or landfill gases such as methane and hydrogen sulfide, into buildings or structures located near the unit in post-closure care. See the *Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air*, June 2015.

- Does the site geology include subsurface strata that might contain or retard migration?
- What is the distance to the groundwater table, bearing in mind seasonal fluctuations, and the proximity of any useable aquifers?
- Is the unit located in a dry climate that provides minimal precipitation?
- Is the pattern of land use changing or likely to change in the future in a way that would bring people closer to or farther away from the facility?
- Have zoning laws changed?
- Is there a sizable buffer zone around the facility that could limit human activity near the site into the future?
- What is the distance to sensitive receptors for groundwater flow and emissions?
- Could the distance to sensitive receptors change under reasonably foreseeable future conditions, as reflected, for example, in land use development plans for the area?
- Is there the potential for impact on surface water quality?
- Have new potential exposure pathways been identified and evaluated? For example, vapor intrusion had not been identified as a potential exposure pathway at the time many permits were issued.[11]

In addition, EPA recommends that the potential effects of climate change be taken into account in making these assessments.[10] For example, flooding from more intense and frequent storms and sea-level rise may lead to contaminant releases from units subject to post-closure care requirements by transport of contaminants through surface soils, groundwater, surface waters and/or coastal waters. Saltwater intrusion and increased groundwater salinity in coastal aquifers may increase the permeability of clay liners installed at waste sites, such as landfills. Changes in precipitation patterns and temperature may also adversely affect the performance and efficacy of engineering controls.

Facility History: All waste management units (during active life or in post-closure care) must be adequately managed to prevent releases of contaminants to the environment. A well-managed facility is more likely to maintain its structural integrity. Good compliance records, routine maintenance and inspections, emergency procedures to handle natural disasters, and prompt and efficient response to spills and other incidents, are some of the management practices that help demonstrate whether the unit has been adequately managed.

[10] For more information on climate change adaptation consult the "Climate Change Adaptation Technical Fact Sheet: Landfills and Containment as an Element of Site Remediation," EPA 542-F-14-001 (May 2014).

- From the facility records (including frequency of all maintenance activities), to what extent did the unit closure design and activities described in the closure plan and closure certification minimize the need for ongoing monitoring and maintenance?
- Has past noncompliance with regulatory requirements contributed to present environmental conditions that warrant an extension of the post-closure care period (*e.g.*, non-compliance with current LDR standards)?
- Is there a history of any releases and what are current contaminant levels?
- If a release did occur, have corrective measures been successfully implemented and has subsequent monitoring shown no evidence of a recurrence?
- Are analyses being conducted for the correct parameters?
- How complete and accurate is the facility operating record?
- Is there confidence that the record accurately reflects spills, releases, lapses in maintenance or other events that may have a bearing on potential facility impacts?
- To what extent have closure activities minimized or eliminated escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, surface waters or the atmosphere during the post-closure care period?

In order to fully understand the facility history, EPA recommends that the permit authority also review the closure plan and certification of closure. [11]

Gas Collection System Integrity: For units that have a landfill gas collection system, it is important to analyze the extent to which it is capable of being modified or shut down at the end of the post-closure care period without exceeding emission levels that are consistent with applicable regulatory standards and with public safety at the facility. In addition, because gas emissions can increase or decrease over time, it is recommended that statistical or graphical analysis of the data be used to identify any significant changes in gas emissions.

- To what extent is the gas collection system capable of being modified or shut down at the end of the post-closure care period without exceeding emission levels that are consistent with applicable regulatory standards and with public safety at the facility?

Integrity of Cover System: A viable cover is the most important mechanism in preventing leachate generation and, ultimately, releases of contaminants. Cracks, burrows from animals, and other problems are likely to occur after termination of post-closure care. If testing and inspection end, problems can go undetected and releases could occur. Thus, it is vital to evaluate the performance of the cover system during the post-closure care period.

[11] For further information on closure performance standards, see 40 CFR 264.111 and 265.111.

- Has the cover system been designed and maintained to minimize migration of water into the management unit and to prevent contaminants from escaping into the environment?
- Has periodic testing or inspection been conducted to identify and assure any necessary repairs? Potential concerns include differential settlement, problems with cover integrity (cracks, burrows, etc.), cover drainage, and the adequacy of the diversion or drainage system. Even where such problems have not occurred, are they likely to arise without long-term care, *e.g.*, will the cover system remain intact without mowing to prevent growth of trees?
- Is the remaining waste likely to be so benign that even with a compromised cover system release of hazardous constituents is unlikely?
- To what extent will the integrity of the cover system be preserved in the absence of long-term care or with reduced maintenance requirements?

For alternative covers, it is recommended that the potential effects of climate change (*e.g.,* increasing frequency and intensity of weather events) be taken into account to the extent practical. For example, will the vegetation remain viable under altered precipitation patterns?

Long-Term Care: The concept of long-term care (also known as long-term stewardship) generally includes the establishment and maintenance of physical and legal controls that are necessary to prevent unacceptable exposure to hazardous waste or contaminated environmental media left in place at a site or closed facility. As a general matter, the RCRA post-closure care requirements (for example, monitoring and cap maintenance) fall under the umbrella of long-term care. When considering whether to adjust the post-closure care period, permitting authorities should evaluate any continuing need to maintain engineering controls (ECs),[12] particularly those specified in the RCRA post-closure care regulations.

- How will the potential for human exposure to contamination be minimized in the absence of RCRA post-closure care?
- How is the integrity of the entire containment system going to be preserved over time?
- Can maintenance and monitoring activities cease or be reduced without causing an adverse impact to human health and the environment?

A further need to maintain ECs could justify an extension of the post-closure care period. This may be the case even if the frequency of some activities could be adjusted (*e.g.,* some activities may be needed more frequently in the early years of the post-closure care period and less frequently later).

The RCRA post-closure care regulations provide for the imposition of institutional controls (ICs)[13] as well. For example, §§ 264/265.117(c) provides that post-closure uses of a property where hazardous wastes remain after final or partial closure must never be allowed to disturb the integrity of the containment system or the functioning of the monitoring system, with limited exceptions. In addition, §§ 264/265.119(b)(1)(ii) provide that the owner or operator must record a notation, in accordance with state law, 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, among other things, the property's use is restricted under the RCRA closure/post-closure regulations. States can

[12] Engineering controls are the engineered physical barriers or structures (*e.g.*, caps, impermeable liners, mitigation barriers, or fencing) designed to monitor and prevent exposure to the contamination.
[13] Institutional controls are administrative or legal instruments (*e.g.*, deed restrictions/notices, easements, restrictive covenants, zoning) intended to minimize the potential for human exposure to contamination by limiting land or resource use.

choose to supplement or support such deed restrictions under state law, *e.g.*, by setting up a deed restriction tracking system, ensuring that deed restrictions remain in place, or ensuring that information on existing ICs is available to interested parties.

Even in cases where the post-closure care period need not be extended to protect human health and the environment, the permitting authority may want to ensure that some long-term ICs, such as an easement that provides access to the property, are continued. EPA recommends that any ICs (under state or local authority) needed beyond the post-closure care period be in place before the post-closure care period ends. EPA expects that the permit authority would typically need to assess the availability and adequacy of other potential mechanisms for overseeing ICs as part of evaluating whether any modification to the post-closure care period was warranted.

EPA also recommends that consideration be given as to whether a funding source is available to support any necessary ECs and ICs in the future (see Appendix B for a list of ICs resources.) This could be done, for example, as part of an anticipated future use (or end-use strategy) that generates revenue, so that protective controls at the unit can be continued while supporting beneficial reuse of the land into the future.

Recommended Approach for Reviewing Hazardous Waste Management Units Approaching the End of the Post-Closure Care Period

EPA believes that, at a minimum, it is important to make a decision about the length of the post-closure care period, and to document such decision, well before that period nears its end. Therefore, EPA recommends that regulators assess the overall status of all the units under post-closure care, and plan to evaluate the adequacy of their post-closure care periods well in advance of their anticipated conclusions. EPA also recommends that the results from the evaluation of the post-closure care period be included in the regulator's administrative record for the facility.

As stated before, the federal RCRA hazardous waste regulations provide discretionary authority to the permitting authority to extend or shorten the length of the post-closure care period. However, the facility owner or operator is responsible for providing the information necessary to support this decision (see, for example, 40 CFR 270.30(h), Duty to provide information). A lack of relevant and complete information may justify a conclusion by the regulatory authority that extension of the post-closure care period is necessary to protect human health and the environment until such information is provided.

EPA's recommendations for evaluating units approaching the end of the post-closure care period are discussed in more detail below.

Timing: Regulators should track permit terms and dates of all post-closure permits and have a strategy for when they will begin looking at whether to adjust the post-closure care period, allowing enough time for the necessary steps to take place prior to the 30-year expiration:

- Identify and gather necessary information
- Evaluate information
- Decide whether to adjust the post-closure care period
- Incorporate tentative decision into permit renewal (or modification) process.

For units with operating permits, EPA recommends starting the process at least 18 months before the expiration of the post-closure permit or post-closure care period, whichever comes first. It is important to keep in mind that in accordance with § 270.1(c) units subject to post-closure care must have post-closure permits or an enforceable document in lieu of a post-closure permit and, under § 270.50, permits can be issued for no longer than ten years. Consequently, over the course of a 30-year post-closure care period, the permit would normally need to be renewed at least twice (unless the post-closure care period has been modified). In addition, for a permitted land disposal facility, the length of the post-closure care period is an important component of the five-year review required under § 270.50(d). The facility owner or operator may also initiate the post-closure care evaluation and/or modification process by submitting a permit modification. Similarly, regulators should evaluate petitions to end or shorten the post-closure care period in a timely manner.

For facilities conducting post-closure care under interim status, regulators might want to adopt time frames for review similar to those of permits (*e.g.*, every ten years) to initiate the process of identifying and gathering relevant information. At a minimum, they should evaluate the adequacy of the post-closure care period well in advance of its end date. The facility owner or operator may also initiate the process by submitting a revision to their post-closure plan, including a petition in accordance with § 265.118(g)(1).

Post-Closure Plan: When considering adjusting or ending the post-closure care period, regulators should request a copy of the most current version of the approved post-closure plan, along with any proposed revisions provided by the owner or operator. Under §§ 264.118(b) and 265.118(c), the post-closure plan identifies certain activities (and their frequency) that must be conducted during the post-closure care period (*e.g.*, monitoring and maintenance). The post-closure plan may also identify performance standards or performance goals, which should be updated to account for any new information on toxicity and carcinogenicity. The post-closure plan thus provides an important starting point for the review. The project file should have a history of permit modifications including those made to the post-closure plan. It is also important that the results of the post-closure period assessment be incorporated into a revised post-closure plan (and the permit), as appropriate.

Relevant Information: As part of the review of the post-closure plan and any relevant historical information, regulators should determine whether they possess the information necessary to adequately evaluate the conditions at the unit so that a decision about the post-closure care period can be made. Relevant information may include monitoring reports, results from testing or inspections of the cover system, information concerning land use and institutional controls, and any other information that would be helpful in determining whether post-closure care continues to be needed for the unit. The absence of adequate information (*e.g.*, to address unresolved risk issues), including failure of the permittee to provide necessary information, will make it difficult for the permitting authority to conclude that allowing the post-closure period to end or shortening the post-closure care period meets the regulatory standard. The permitting authority can conclude that an extension of the post-closure care period is necessary to protect human health and the environment until the information necessary to make a final determination is available. Any proposal to adjust the post-closure care period should be supported by adequate data and analysis to demonstrate the anticipated long-term performance of the unit. To account for cyclical fluctuations in weather and hydrology, EPA recommends that multiple-year performance data be considered (*e.g.,* ten years).

The recommended criteria outlined in the previous section are also relevant to inform deliberations on whether and what additional information about the facility is necessary.

If information becomes available indicating changing circumstances that might necessitate the need to revisit the post-closure care (*e.g.,* monitoring results show leaching) it is recommended that the regulator immediately request any additional information needed from the facility owner or operator to inform a decision about adjusting the post-closure care period. This can be accomplished through various means, including under the facility's permit terms (*e.g.,* under § 270.30(h), the permit holder has a duty to provide relevant information and records; under § 270.30(k)(4), monitoring results must be reported at intervals specified in the permit); through enforcement of the relevant interim status regulations; or through inspections or studies required pursuant to RCRA sections 3007 or 3013.

Expiration/Renewal of Post-Closure Permits: Permits are issued for a fixed term not to exceed ten years, which means post-closure permits will need to be renewed periodically throughout the post-closure care period (*e.g.,* a 30 year period could span three permit terms). Renewal applications must be submitted 180 days before the expiration date of an effective permit (see § 270.10(h)). Frequently, facility owners or operators do not submit a renewal application as they approach the permit's expiration date because they believe they will submit an acceptable certification that they have completed post-closure care for the unit(s). If, towards the end of the permit term, the permitting authority has not received a permit renewal application from the facility or if the permitting authority anticipates that there may be any issues regarding the acceptability of the certification of completion of post-closure care, EPA recommends that the regulatory authority remind the owner or operator that the regulations require the facility to provide the required certification or reapply for a permit, and request submission of the permit renewal application (see §§ 270.10(h) and 270.30(b)). Timely submission of an application for permit renewal will ensure that a valid permit is in effect (pursuant to § 270.51) pending a resolution. If a facility owner or operator does not submit a timely renewal application, and the permit is not administratively continued, the regulator may consider initiating an enforcement action or issuing a new permit (see § 270.51(c)).

Public Participation: Any potential adjustments to the length of the post-closure care period are subject to requirements for involving the public. For permitted facilities, extensions to the post-closure care period would be processed as a Class 2 modification, and reductions would be Class 3. In both cases, the regulator must provide public notice, hold a public meeting, and allow an opportunity for written comments to be submitted. Similarly, for adjustments in the length of the post-closure care period at interim status facilities, the regulator must provide public notice and an opportunity for written comments. Although there is no specific provision in the regulations to notify the public when a post-closure care period ends, we recommend that the regulatory authority consider providing notice to the local community when they release a facility owner or operatory from their post-closure care obligation.

Financial Assurance Requirements: Finally, permitting authorities should keep in mind that an adjusted post-closure care period may also necessitate revisions to the associated post-closure cost estimate and financial assurance.

Additional Considerations

Benefits of Post-Closure Permits: Permits are site-specific legal documents that establish the technical and administrative conditions to which a facility must adhere, in order to ensure that monitoring and maintenance activities are performed to prevent and address releases that could potentially threaten

public health and the environment and lead to cleanup obligations.[14] Thus, it is critical that any modifications to the permit are made, as necessary, to ensure they are complete and current. Permits are issued in, at most, ten-year increments to ensure they are periodically reviewed and requirements are updated as necessary. Additionally, facility owners and operators may request modifications to a permit. Although there are resources associated with permit maintenance, permits provide numerous benefits and protections such as:

- Basic Permitting Requirements – Permits are subject to the regulations governing facility permitting as set forth in 40 CFR part 270, which covers basic EPA permitting requirements, such as application requirements, standard permit conditions (*e.g.,* duty to comply, duty to reapply, duty to provide information), and monitoring and reporting requirements (*e.g.,* annual monitoring reports, compliance schedules).

- Unit-Specific Informational Requirements – Where applicable, owners or operators of a permit must submit information including detailed plans and engineering reports under § 270.14(b)(13).

- Financial Assurance – The owner or operator of a permitted unit must establish and maintain financial assurance. At facilities with units in post-closure, requirements include financial assurance for post-closure care in accordance with the approved post-closure plan for the facility, for as long as the unit remains subject to RCRA post-closure care requirements, including the post-closure permit requirement (§ 264.145).

- Corrective Action – Section 264.101 requires that all permits include requirements for facility-wide corrective action as necessary to protect human health and the environment.

- Enforceability – The permitting authority can enforce RCRA permit requirements including through facility inspections, record reviews, and other means. Section 270.28 provides that the permittee shall allow the regulatory authority to perform inspections at the facility.

- Public Participation – The permitting process of 40 CFR parts 270 and 124, and the permit modifications procedures in § 270.42 provide for public involvement. The public has the opportunity to comment on a facility's closure and post-closure plans as part of the initial permitting process and any amendments made to the plans as part of the permit modification procedures.

- Additional Conditions – Section 3005(c)(3) of RCRA (codified at 40 CFR 270.32(b)(2) and commonly referred to as the "omnibus authority"), allows for additional site-specific permit conditions to be incorporated into RCRA permits, should such conditions be necessary to protect human health and the environment.

- When permits incorporate the technical requirements contained in parts 264, 266, and 267 of the regulations, those permit conditions are not subject to challenge (*i.e.,* a number of permit conditions are required by the regulations themselves).

- Permit requirements cannot be terminated merely by sale of the property or bankruptcy of the owner or operator.

Relationship of Subpart F Corrective Action and Post-Closure Care: Corrective action and post-closure care requirements for a regulated unit may be linked, for example, in the case of groundwater

[14] Owners and operators of units subject to post-closure care, must have post-closure permits, "unless they demonstrate closure by removal or decontamination as provided under § 270.1(c)(5) and (6), or obtain an enforceable document in lieu of a post-closure permit, as provided under paragraph (c)(7) of this section" (see §270.1(c)).

monitoring and/or corrective action for releases from closed regulated units being handled pursuant to 40 CFR 264.90–264.100. In many cases, it may be desirable (either by the facility owner/operator, the regulatory agency, or both) to coordinate the post-closure care and monitoring/corrective action requirements. EPA recommends that the regulatory agency consider extending the post-closure care period (and associated permits or other enforceable documents) when corrective action continues beyond the original post-closure care period (see §§ 264.90(c)(3) and 264.96(c)).

Post-Closure Rule:[15] This rule amended the regulations applicable to facilities with land disposal units in two areas. First, it modified the requirement for a post-closure permit to provide EPA and the authorized states discretion to use a variety of authorities to address the post-closure period at non-permitted facilities. In addition, it amended the regulations governing closure of land-based units to allow EPA and the authorized states to address those units through the corrective action program in certain situations where regulated units and other solid waste management units have contributed to a release.

Scope of Guidance and Relationship to Existing Guidance: This document is not intended to provide guidance on decisions to extend or shorten the post-closure care period for *non-hazardous* waste units (*i.e.,* units regulated under RCRA Subtitle D), nor is it intended to replace existing guidance concerning establishment and attainment of remedial goals at contaminated facilities addressed under RCRA Subtitle C authority. This guidance is meant to supplement any existing guidance on the post-closure care period, and should be used in concert with the Technical Evaluation Criteria and Site-Specific Factors to Consider in Determining the Length of the Post-Closure Care Period, presented in the Appendix B of the *RCRA Guidance Manual for Subpart G Closure and Post-Closure Care Standards and Subpart H Cost Estimating Requirements* of January 1987.[16] This document provides additional considerations and factors that are not included in the 1987 guidance, such as vapor intrusion, updated toxicity values, and climate change considerations – although the updates presented in this guidance are not intended to be comprehensive.

Relationship to State Authorities: Under RCRA, states may apply to, and receive from EPA, authorization of a state program to operate in lieu of the federal RCRA hazardous waste program. *These state programs may be broader in scope or more stringent than EPA's RCRA hazardous waste regulations, and requirements can vary from state to state*. Members of the regulated community are encouraged to contact their state agencies for the particular post-closure care requirements that apply to them in any particular state.

For additional information, feel free to contact me, or your staff may contact Lilybeth Colon (colon.lilybeth@epa.gov, 703-308-2392) or Tricia Buzzell (buzzell.tricia@epa.gov, 703-308-8622).

[15] See *Standards Applicable to Owners and Operators of Closed and Closing Hazardous Waste Management Facilities: Post-Closure Permit Requirement and Closure Process*; Final Rule, October 22, 1998 (63 FR 56710).
[16] OSWER Policy Directive #9476.00-5, EPA/530-SW-87-10. Appendix B of this guidance presents technical factors to consider in determining the length of the post-closure care period as well as a number of hypothetical scenarios illustrating how site-specific information might be used to support an extension or reduction in the length of the period.

Appendix A: Overview of Federal Regulatory Provisions

Regulations governing RCRA post-closure care are set forth in 40 CFR part 264 subpart G for permitted facilities and part 265 subpart G for interim status facilities. Additional requirements for post-closure care of specific types of units are included in the regulations for those units. See §§ 264/265.197 (Tank Systems); §§ 264/265.228 (Surface Impoundments); §§ 264/265.258 (Waste Piles); §§ 264/265.280 (Land Treatment Units); §§ 264/265.310 (Landfills); § 264.603 (Miscellaneous Units); §§ 264/265.1102 (Containment Buildings); and §§ 264/265.1202 (Hazardous Waste Munitions and Explosives Storage).

Regulations governing financial assurance for post-closure care are set forth in 40 CFR part 264 subpart H for permitted facilities and part 265 subpart H for interim status facilities.

Regulations governing facility permitting are set forth in 40 CFR part 270.

> *Post-Closure Care* – Sections 264.117(a) and 265.117(a) establish general requirements for post-closure care and a 30-year post-closure care period. However, the regulations also allow the permitting authority to shorten the 30-year post-closure care period if the reduced period is sufficient to protect human health and the environment, or to extend it, if necessary (see the *Post-Closure Plan Amendment* section for more details). Sections 264.117(a)(2)(i) and 265.117(a)(2)(i) provide the following examples for shortening the post-closure care period: "...(*e.g.*, leachate or groundwater monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure)."
>
> Sections 264.117(a)(2)(ii) and 265.117(a)(2)(ii) provide the following example for extending the post-closure care period: "...(*e.g.,* leachate or groundwater monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment)."
>
> *Post-Closure Plan* – Under §§ 264.118 and 265.118, the owner or operator of specified units must have a written post-closure plan. The plan must identify monitoring and maintenance activities that will be carried out after closure, and their frequency, to assure compliance with the requirements of specific subparts, including subparts F, K, L, M, N and X, where applicable. For permitted facilities (§ 264.118(a)), the post-closure plan must be submitted with the permit application and approved by the permitting authority as part of permit issuance procedures. The approved post-closure plan becomes a condition of any RCRA permit issued (see the *Post-Closure Plan Amendment* section for more details). For interim status facilities (§ 265.118), the owner or operator must submit the post-closure plan to the permitting authority within specified time frames, and the regulations provide for making the post-closure plan available to the regulatory authority.
>
> *Procedures for Post-Closure Plan Amendment* – For permitted facilities*,* the process for making changes to the post-closure plan is through permit modification (permit modification procedures are set forth in § 270.42). Under § 264.118(d)(1), the owner or operator may submit a written notification or request for a permit modification to amend the post-closure plan. Under § 264.118(d)(2), the owner or operator must submit a written notification of the permit modification or request for a permit modification to authorize a change in the approved post-closure plan under certain circumstances. Specific reasons set forth in the regulations include changes in operating plans or facility design that affect the approved post-closure plan, and

events occurring during the active life of the facility that affect the approved post-closure plan. For interim status facilities, § 265.118(d) prescribes procedures for amending the post-closure plan. The permitting authority may also request modifications to the post-closure plan under §§ 264.118(d)(4) and 265.118(d)(4).

Procedures for Post-Closure Care Period Adjustment – Adjustments to the post-closure care period may be initiated at any time preceding partial or final closure or at any time during the post-closure care period of a particular unit. For interim status facilities, § 265.118(g) prescribes a process for extending or shortening the post-closure care period that includes provisions for public involvement. For permitted facilities, § 264.117(a)(2) provides for shortening or extending the post-closure care period in accordance with the permit modification provisions in parts 124 and 270.

Section 270.41 provides for Agency-initiated permit modifications. EPA may modify a permit for the following reasons: if there have been material and substantial alterations or additions to the facility; there is new information that was not available at the time of permit issuance; new statutory or regulatory requirements were promulgated; EPA has cause to initiate a compliance schedule under § 270.33; or as necessary to assure that the facility continues to comply with the currently applicable requirements in parts 124, 260 through 266, and 270, when a permit for a land disposal facility is reviewed by the Director under § 270.50(d).

Section 270.42 contains the regulations that apply to the modification of a permit at the request of the permittee. For all modifications, the permittee submits information to EPA that describes the exact change to be made to the permit conditions, identifies whether the modification is Class 1, 2, or 3, and provides the applicable permit application information.

The process for extending the post-closure care period is a Class 2 modification, while the process for shortening the post-closure care period is a Class 3 modification (§ 270.42, Appendix I, E2 and E3). These procedures include provisions for public involvement. The post-closure care period can also be modified through permit renewal under § 270.32(d).

Financial Assurance for Post-Closure Care – EPA's regulations under parts 264/265 subpart H establish requirements for financial assurance, including financial assurance requirements for post-closure care (see §§ 264.140 and 265.140). Under §§ 264.144 and 265.144, the owner or operator is required to have detailed written cost estimates for post-closure monitoring and maintenance in accordance with the applicable post-closure care requirements. Under §§ 264.145 and 265.145 generally, the owner or operator is required to establish financial assurance for post-closure care in an amount equal to the current post-closure cost estimate.

Certification of Completion of Post-Closure Care and Release of Owner and Operator from Financial Assurance Requirements – Under §§ 264.120 and 265.120, the owner or operator must submit certification that the post-closure care for the unit(s) was performed in accordance with the approved post-closure plan; the certification must be sent by registered mail to the permitting authority. This certification must be submitted no later than 60 days after the completion of the post-closure care period for each hazardous waste disposal unit. The certification must be signed by the owner or operator and a qualified professional engineer. Documentation supporting the professional engineer's certification must be furnished to the permitting authority upon request until the permitting authority releases the owner or operator from the financial assurance requirements for post-closure care under §§ 264.145(i) and 265.145(h).

Under §§ 264.145(i) and 265.145(h), within 60 days of receipt of certification from the owner or operator and a qualified professional engineer that the post-closure care has been completed for a hazardous waste disposal unit in accordance with the approved plan, the permitting authority will notify the owner or operator that it is no longer required to maintain financial assurance for post-closure care for that unit. If the permitting authority has reason to believe that post-closure care has not been in accordance with the approved post-closure plan, the permitting authority must provide the owner or operator a detailed written statement of any such reason.

Scope of the Post-Closure Permit Requirements – Under § 270.1(c), owners and operators of surface impoundments, landfills, land treatment units, and waste pile units that received waste after July 26, 1982, or that certified closure (according to § 265.115) must have post-closure permits, unless they demonstrate closure by removal or decontamination, or obtain an enforceable document in lieu of a post-closure permit as provided under § 270.1(c)(7). Under § 270.10(h), if a permittee has an effective permit and they want to renew it, they must submit a new application at least 180 days before the expiration date of the effective permit.

Monitoring and Records – Under § 270.30(j)(2), the permittee must retain records of all monitoring information for a period of at least three years from the date of sample, measurement, report, or certification, unless extended by request of the permitting authority at any time. Records from all groundwater monitoring wells and associated groundwater surface elevations must be maintained for the active life of the facility, and for disposal facilities for the entire post-closure care period.

Compliance with an Expiring Permit – Under § 270.51(c), if the permittee is not in compliance with the conditions of the expiring or expired permit, the permitting authority may issue a new permit under part 124, initiate enforcement action, or take other actions authorized by the RCRA regulations.

Appendix B: Institutional Controls (ICs) Resources

The following resources may be helpful in implementing and maintaining ICs throughout the post-closure care period and beyond.

- EPA guidance on *Ensuring Effective and Reliable Institutional Controls at RCRA Facilities* (Matt Hale, Director, Office of Solid Waste, and Susan Bromm, Director Office of Site Remediation and Enforcement, June 14, 2007) sets forth guiding principles and recommendations that can help EPA and state decision makers on the use of ICs at RCRA facilities, and EPA resources for additional information and assistance.

- *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating, and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups* guidance provides some discussion about how ICs can be used at post-closure care facilities. (p.3 text box) EPA 540-F-00-005, OSWER 9355.0-74FS-P, September 2000, https://www.epa.gov/fedfac/institutional-controls-site-managers-guide-identifying-evaluating-and-selecting-institutional

- *Institutional Controls: A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites* provides information and recommendations that should be useful for planning, implementing, maintaining and enforcing ICs, and offers an overview of EPA's policy regarding the roles and responsibilities of the parties involved in the various life-cycle stages of ICs. Final, December 2012. OSWER 9200.0-77, EPA-540-R-09-002, https://www.epa.gov/fedfac/institutional-controls-guide-preparing-institutional-control-implementation-and-assurance

- *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites* guidance also discusses how ICs could be used at RCRA post-closure care facilities. (Section 2.3) Final, December 2012. OSWER 9355.0-89, EPA-540-R-09-001, https://www.epa.gov/fedfac/institutional-controls-guide-planning-implementing-maintaining-and-enforcing-institutional

- *Long-Term Stewardship: Ensuring Environmental Site Cleanups Remain Protective over Time* report identifies long-term stewardship challenges and opportunities for improvement, and makes recommendations for how EPA and its state, tribal, and local partners should proceed in addressing them. This report also includes a definition of long-term stewardship, why long-term stewardship is important, and what EPA and others are currently doing to address long-term stewardship issues. Final, September 2005, EPA 500-R-05-001, https://nepis.epa.gov/Exe/ZyNET.exe/P100119V.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C00thru05%5CTxt%5C00000015%5CP100119V.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL

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ASTSWMO POSITION PAPER
POST-CLOSURE CARE BEYOND 30 YEARS AT RCRA SUBTITLE C FACILITIES

BACKGROUND

Regulations promulgated under the authority of Subtitle C of the Resource Conservation and Recovery Act (RCRA), include provisions regarding the post-closure care of hazardous waste land disposal units. The Subtitle C regulations establish a 30-year post-closure care period as the default requirement (See 40 CFR § 264.117).

These regulations include provisions allowing the 30-year period to be extended or shortened. The 30-year period may be extended if the Environmental Protection Agency (EPA) Regional Administrator (RA) or Director of an authorized State program "finds that the extended period is necessary to protect human health and the environment" and may be shortened if the RA or State Director finds that a reduced period is sufficient to protect human health and the environment. After completion of the established post-closure care period, the owner or operator is required to certify that the post-closure period was performed in accordance with the approved post-closure plan. Similar provisions are found in regulations for nonhazardous waste disposal units promulgated under the authority of Subtitle D of RCRA.

Facilities around the country are approaching or have already arrived at the end of the initial 30-year post-closure period, and many States are grappling with the issue of how to address this situation. ASTSWMO raised several questions and asked EPA to address a number of issues regarding this topic in its October 17, 2012 Position Paper.

While EPA's December 15, 2016 Memorandum addressed several of ASTSWMO's requests, and provides guidance on this issue, it does not fully address all of ASTSWMO's concerns and the situations faced by the States with disposal units at the end of the 30-year post closure period cited in the regulations. Failure to address these concerns may lead to hazardous waste disposal units exiting post-closure care without sufficient controls (including land use restrictions) in place. If this occurs, ASTSWMO is concerned that unregulated development, or even simple neglect of these units will result in the release of hazardous wastes and hazardous constituents. This will ultimately lead to those units/facilities being regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

ASTSWMO members agree that controls need to remain in place in perpetuity if wastes are present in the disposal units. These controls must be required even if the unit has met all the requirements of its post-closure permit and there is currently no groundwater contamination associated with the unit.

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ASTSWMO POSITION PAPER
POST-CLOSURE CARE BEYOND 30 YEARS AT RCRA SUBTITLE C FACILITIES

ISSUES

The Hazardous Waste Subcommittee's Corrective Action and Permitting (CAP) Task Force has highlighted the following as key issues:

- A clear statement is needed from the EPA that there is a presumption that a Subtitle C post-closure care obligation remains as long as hazardous waste remains in a closed land disposal unit, even if there is no evidence of a release after 30 years of post-closure care (although a facility may be able to rebut this presumption on a case-by-case basis),

- The need for a clear statement identifying facility financial assurance obligations during an extended post-closure period, that ensures cost estimates are periodically updated and that financial assurance instruments are maintained to ensure adequate coverage,

- If an alternate enforceable document (such as an order or environmental covenant under the Unified Environmental Covenant Act) can be used in place of a post-closure permit, identification of the minimum controls and restrictions that need to be included in this document or order, and

- Guidance addressing the addition of an emerging or newly listed contaminant to monitoring requirements.

POSITION

The ASTSWMO Board of Directors recommends that EPA either revise the RCRA regulations for post-closure or issue supplemental guidance on the implementation of the post-closure regulations under Subtitle C of RCRA. Such guidance should be congruent with the key issues highlighted in the issues section of this position paper. ASTSWMO remains ready to work with EPA to achieve a mutually satisfactory outcome on this very important issue.

Approved by the ASTSWMO Board of Directors on July 20, 2022 in Park City, UT.